



City of Houston – Code Change Proposal Form  
 Building Code Enforcement, Regulatory Affairs  
 1002 Washington Ave., Houston, TX 77002

**INSTRUCTIONS**

- Each code section must be submitted on a separate form.
- Each proposal must be written in legislative format. (It is recommended that you copy and paste your change proposal from a separate word document to maintain legislative format.)
- Proposed code changes shall not reduce any fire or life-safety provision without including additional provisions that comply with the intent of the unaltered code, and results in an amendment that is no less equivalent of that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety for the purpose intended.
- The justification should address safety impact, enforceability, cost effectiveness, or unique local conditions.
- This proposal form must be completed electronically. Handwritten forms will not be accepted.
- If additional space is needed, please complete page 2.
- Return the form during the established comment period to the Building Code Enforcement Regulatory Affairs office via email at [heath.wierck@houston.tx.gov](mailto:heath.wierck@houston.tx.gov) or [michael.howard@houston.tx.gov](mailto:michael.howard@houston.tx.gov).

**CONTACT INFORMATION**

Heath Wierck — 832-394-9171 or Michael Howard — 832-394-9042

<b>Name: <u>Tammy Betancourt</u></b>	<b><u><a href="mailto:tbetancourt@houstonboma.org">tbetancourt@houstonboma.org</a></u></b>
<b>Houston Building Owners and Managers Association</b>	<b>713-203-0726</b>
<b>2015 International Building Code</b>	<b>Code Section: <u>3003.4, 3003.4.1</u></b>
<p><b><u>3003.4 Emergency Hoistway Water Sensor(s).</u></b> Each elevator hoistway located within the 100-year flood plain with access to a floor below grade-level within a building shall <del>include</del> have a water sensor installed in the hoistway below the landing of the lowest floor served by the elevator(s). The water sensor(s) shall be installed to override the elevator controls to prevent the elevator(s) and or elevator equipment from descending into flooded areas and limiting the lowest level of elevator cab travel to a designated floor until the flooding has receded. Water sensor override shall activate visual or audio notification. Normal operation of the elevator control systems shall require a manual reset by authorized personnel. <del>This code provision shall be retroactive and applicable to all existing and annexed structures having elevators.</del></p>	
<p><b><u>3003.4.1 Compliance timeline for existing and annexed structures.</u></b> On or before December 31, 2030<del>22</del>, or within <del>two</del> ten years after the date of annexation of the building into the jurisdiction, each elevator hoistway shall include an emergency hoistway water sensor installed in accordance with Section 3003.4.</p>	
<p><b><u>Exception:</u></b> Existing elevator systems with water sensor(s) installed in the hoistway below the landing of the lowest floor level served, that remove the elevator from service while the hoistway is flooded. A manual reset shall be installed as specified by Section 3003.4.</p>	

**Justification:**

**Date: 6/9/2020**

Houston BOMA is recommending the above change to the proposed building code for the following reasons:

- 1) Initially, only buildings in flood plains that have been identified as such by the federal government should be required to retroactively install the water sensors as these buildings would be the most at risk for flooding. Requiring buildings not in the flood plain to comply with this requirement is onerous and will create an unnecessary financial burden.
- 2) Not all buildings have elevators with access below grade. Buildings without access below grade should be exempted as the chance of flooding is extremely low for those buildings.
- 3) As discussed with Director Mark Savasta and Michael Howard (with guidance from Houston elevator experts, including the former executive director of the Texas State Elevator Board), a two-year length of time is not achievable for sensor installation. There are simply not enough elevator service providers to achieve installation in that time frame. In 2017, the code language provided by Mr. Howard to the Houston High-Rise Triad included a five-year time frame, it now states a two-year time frame. We contend that a five-year timeframe is the **minimum** amount of time to allow for sensor installation (Triad document attached) and that ten years should be allowed for the installation of the sensors.

**FOR OFFICE USE ONLY**

Approved

Denied

Modified

Date: 2/12/2021

Comments: HPC recognizes and appreciates the work and recommendations submitted by Ms. Betancourt and the BOMA organization. After review of the proposed amendment the request is denied by the Houston Codes Development Committee based on several factors including but not limited to: (1) Relying only on the City's 100-year floodplain designation does not provide the appropriate level of proactive life-safety and equipment damage prevention (building resiliency) during potential floods in the Houston area. The last flood event alone flooded buildings and caused equipment damage to elevators not only located in the City's 100-year floodplain but extending even beyond the 500-year flood plain. (2) Even elevator equipment located in building's without below grade access have experienced extensive damage due to flooding. (3) The retroactive nature of this amendment has been discussed thoroughly since Triad and the City of Houston initially submitted this joint proposal to stakeholders starting in 2017 (see Triad submitted 2017 Code Change Proposal attached). Adding an additional 10-year timeframe for a known life-safety hazard directly related to multiple injuries and deaths is unreasonable particularly for a concern raised 4-years earlier. Postponing these retrofits beyond the proposed additional 2-years could be detrimental to the health and safety of Houston citizens and first responders during future flood events. The 2017 life-safety hazard notice is the second time this issue has been identified by the City of Houston. Many elevators damaged by flooding caused by Hurricane Harvey now already include these necessary flood sensors. Retro fitting remaining elevator equipment is essential to preventing additional loss of life and property damage. BCE understands that potential issues and/or hardships that could arise from this retroactive timeframe. However, the previous 4-years and proposed 2-years provided in the current Houston amendment is expected to be a reasonable timeline for remaining systems to be addressed. However, in the spirit of cooperation an additional modification is recommended to the language of proposed Section 3003.4 that will allow the Building Official to grant a one-time 180-day extension to the specified timeframe when sufficient justification has been provided.

## Wierck, Heath - HPC - HPW

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**From:** Wierck, Heath - HPC - HPW  
**Sent:** Tuesday, May 25, 2021 1:56 PM  
**To:** Tammy Betancourt  
**Cc:** Savasta, Mark - HPC-HPW; 'Michael - HPC-HPW Howard' (Michael.Howard@houstontx.gov)  
**Subject:** FW: 3003 - HPC Response

Good afternoon Tammy,

I'm emailing to inform you that your proposed update to the elevator water sensor section has been accepted and incorporated into the 2015 Houston amended Building Code. I've pasted a copy of the updated amendment below for your convenience.

**3003.4 Emergency Hoistway Water Sensor(s).** Each elevator hoistway and/or each connected bank of elevator hoistways within a structure located within the 100-year and 500-year floodplain and elevators located outside the floodplain where elevator cabs travel floor levels below grade level shall include a water sensor installed in the hoistway below the landing of the lowest floor served by the elevator(s). The water sensor(s) shall be installed to override the elevator controls to prevent the elevator(s) and or elevator equipment from descending into flooded areas and limiting the lowest level of elevator cab travel to a designated floor approved by the Fire Code Official until the flooding has receded. Water sensor override shall activate visual or audio notification. Normal operation of the elevator control systems shall require a manual reset by a Texas licensed elevator contractor. This code provision shall be retroactive and applicable to all existing and annexed structures having elevators.

**3003.4.1 Compliance timeline for existing and annexed structures.** On or before December 31, 2026, or within five-years after the date of annexation of the building into the jurisdiction, each elevator hoistway shall include an emergency hoistway water sensor installed in accordance with Section 3003.4.

**Exception:** Existing elevator systems with water sensor(s) installed in the hoistway below the landing of the lowest floor level served that remove the elevator from service when the hoistway is flooded to a designated floor level approved by the *fire code official*. A manual reset shall be installed as specified by Section 3003.4.

Please let me know if there are any issues and/or concerns.

Respectfully,

**Heath Wierck**  
Senior Plan Analyst  
Code Development  
City of Houston | Houston Public Works  
832.394.9171 | Cell 832.358.1508



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**From:** Howard, Michael - HPC-HPW <Michael.Howard@houstontx.gov>  
**Sent:** Tuesday, May 25, 2021 1:38 PM  
**To:** Wierck, Heath - HPC - HPW <heath.wierck@houstontx.gov>  
**Subject:** FW: 3003

Heath,

Please draft an email to Tammy of the acceptance of her proposed amendment to the elevator float switch.

Thanks,

Respectfully,

Michael G. Howard  
Deputy Assistant Director/Deputy  
Building Official  
Code Development  
Building Code Enforcement Branch  
Houston Permitting Center  
1002 Washington Avenue, Floor 4, Office 432,  
Houston, TX 77002  
O: 832.394.9042

**E-mail:** [michael.howard@houstontx.gov](mailto:michael.howard@houstontx.gov)

**CACD Email:** [HPCRA@houstontx.gov](mailto:HPCRA@houstontx.gov)



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**From:** Savasta, Mark - HPC-HPW <Mark.Savasta@houstontx.gov>  
**Sent:** Tuesday, May 25, 2021 1:33 PM  
**To:** Howard, Michael - HPC-HPW <Michael.Howard@houstontx.gov>  
**Subject:** FW: 3003

Michael, please update Tammy.

**From:** Tammy Betancourt <[tbetancourt@houstonboma.org](mailto:tbetancourt@houstonboma.org)>  
**Sent:** Tuesday, May 25, 2021 9:37 AM  
**To:** Savasta, Mark - HPC-HPW <Mark.Savasta@houstontx.gov>  
**Cc:** Elisa Barnes <[ebarnes@houstonboma.org](mailto:ebarnes@houstonboma.org)>; Shannon Roberts <[sroberts@houstonboma.org](mailto:sroberts@houstonboma.org)>; Bill Carey ([billc@sentera.com](mailto:billc@sentera.com)) <[billc@sentera.com](mailto:billc@sentera.com)>  
**Subject:** 3003

[Message Came from Outside the City of Houston Mail System]

Hello Mark, good morning. Thank you again for your consideration of our requests regarding this code item.

The attached has some very minor but clarifying edits that we hope you will consider incorporating:  
The use of the word "structure" instead of building to make the language consistent;  
Inclusion of the words "where cabs travel below grade" to clarify the intent you outlined in your previous email.

Again, thank you again for your consideration and willingness to work with the CRE on this very important issue.



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**CONTACT INFORMATION**

Heath Wierck — 832-394-9171 or Michael Howard — 832-394-9042

<b>Name:</b> <u>Curtis Dady</u>	<b>Email:</b> <u>curtis.dady@viega.us</u>
<b>Organization:</b> <u>Viega, LLC</u>	<b>Phone:</b> <u>832-651-2503</u>
<b>Code:</b> <u>2015 UPC</u>	<b>Code Section:</b> <u>605.9 PEX Plastic Tubing and Joints.</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**605.9 PEX Plastic Tubing and Joints.** PEX plastic tubing and fitting joining methods shall be installed in accordance with the manufacturer’s installation instructions and shall comply with Section 605.9.1 ~~and~~ through Section 605.9.23.

**605.9.1 Fittings.** Fittings for PEX tubing shall comply with the applicable standards referenced in Table 604.1. PEX tubing in accordance with ASTM F876 shall be marked with the applicable standard designation for the fittings, specified by the tubing manufacturer for use with the tubing.

**605.9.2 Mechanical Joints.** Mechanical joints shall be installed in accordance with the manufacturer’s installation instructions.

**605.9.3 Tubing.** PEX tubing shall have a minimum chlorine designation code of “5” to allow 100% usage at end use conditions up to 140°F. Acceptable markings on the tubing are: PEX 5106, PEX 5206 and PEX 5306.

**Justification:**

**Date:** 8/6/2018

The standard ASTM F876 includes 3 separate designation codes. Only the top code of “5” is suitable for installation in Texas attics and where hot water is continuously circulated. Most PEX distributed in the US has the top listing, but not all, and there are ongoing lawsuits over “thousands of leaks” in Central Texas where a PEX with the designation code of “1” was used. The following is from ASTM F876:

Designation code of “1” = 75% at 73F; 25% at 140F

Designation code of “3” = 50% at 73F; 50% at 140F

Designation code of “5” = 100% at 140F

This is not a quality issue. Chlorine disinfection is not used in most of the world’s water systems but in the US it is and PEX is often installed in hot Texas attics and/or in hot water recirculation. This designation code is given based on

testing to ASTM F2023 Oxidative Resistance to Chlorine and featured on the printline of the tubing where it can be verified during inspection.

**FOR OFFICE USE ONLY**

Approved

Denied

Modified

Date: 3/2/2021

Comments: HPC recognizes and appreciates the work and recommendations submitted by Mr. Dady and Viega, LLC. After review of the proposed amendment the request has been approved by the Houston Code Development Committee. The committee agreed this change would help clearly identify what requirements are necessary, and would additionally ensure protection when PEX tubing is utilized.



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Heath Wierck — 832-394-9171 or Michael Howard — 832-394-9042

<b>Name:</b> <u>Curtis Dady</u>	<b>Email:</b> <u>curtis.dady@viega.us</u>
<b>Organization:</b> <u>Viega, LLC</u>	<b>Phone:</b> <u>832-651-2503</u>
<b>Code:</b> <u>2015 IRC</u>	<b>Code Section:</b> <u>2906.9.1.5</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**P2906.9.1.5 Cross-linked polyethylene plastic (PEX).** Tubing and joints between cross-linked polyethylene plastic tubing or fittings shall comply with Section 2906.9.1.5.1 ~~or through~~ Section P2906.9.1.5.23.

**P2906.9.1.5.1 Flared joints.** Flared pipe ends shall be made by a tool designed for that operation.

**P2906.9.1.5.2 Mechanical joints.** Mechanical joints shall be installed in accordance with the manufacturer’s instructions. Fittings for cross-linked polyethylene (PEX) plastic tubing shall comply with the applicable standards indicated in Table P2906.6 and shall be installed in accordance with the manufacturer’s instructions. PEX tubing shall be factory marked with the applicable standards for the fittings that the PEX manufacturer specifies for use with the tubing.

**P2906.9.1.5.3 Tubing.** PEX tubing shall have a minimum chlorine designation code of “5” to allow 100% usage at end use conditions up to 140°F. Acceptable markings on the tubing are: PEX 5106, PEX 5206 and PEX 5306.

**Justification:**

**Date:** 8/6/2018

The standard ASTM F876 includes 3 separate designation codes. Only the top code of “5” is suitable for installation in Texas attics and where hot water is continuously circulated. Most PEX distributed in the US has the top listing, but not all, and there are ongoing lawsuits over “thousands of leaks” in Central Texas where a PEX with the designation code of “1” was used. The following is from ASTM F876:

Designation code of “1” = 75% at 73F; 25% at 140F

Designation code of “3” = 50% at 73F; 50% at 140F

Designation code of “5” = 100% at 140F

This is not a quality issue. Chlorine disinfection is not used in most of the world’s water systems but in the US it is and PEX is often installed in hot Texas attics and/or in hot water recirculation. This designation code is given based on

testing to ASTM F2023 Oxidative Resistance to Chlorine and featured on the printline of the tubing where it can be verified during inspection.

**FOR OFFICE USE ONLY**

Approved

Denied

Modified

Date: 3/2/2021

Comments: HPC recognizes and appreciates the work and recommendations submitted by Mr. Dady and Viega, LLC. After review of the proposed amendment the request has been approved by the Houston Code Development Committee. The committee agreed this change would help clearly identify what requirements are necessary, and would additionally ensure protection when PEX tubing is utilized.



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**CONTACT INFORMATION**

Heath Wierck — 832-394-9171 or Michael Howard — 832-394-9042

<b>Name:</b> <u>John Williams</u>	<b>Email:</b> <u>Houston CIC Residential Code Chair</u> <u>&lt;cichoustonrescodechair@gmail.com&gt;</u>
<b>Organization:</b> <u>Houston Consturction Industry Council</u>	<b>Phone:</b> <u>281-652-6548</u>
<b>Code:</b> <u>Appendix U</u>	<b>Code Section:</b> <u>Appendix U</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck-out~~):

### APPENDIX U

#### SOLAR-READY PROVISIONS—DETACHED ONE- AND TWO-FAMILY DWELLINGS, MULTIPLE SINGLE-FAMILY DWELLINGS (TOWNHOUSES)

*(The provisions contained in this appendix are not-mandatory-unless specifically referenced herein.)*

**U103.6 Interconnection pathway.** ~~Construction documents shall indicate pathways for routing of conduit or plumbing from the solar ready zone to the electrical service panel or service hot water system.~~ Conduit not less than 1 ¼ inches shall be installed to provide a pathway from the electrical panel to the underside of the roof sufficient to allow future installation of solar equipment.

**Exception:** New single-family homes subject to discount in the building code based on valuation.

**Justification:****Date: 2/7/2021**

The inclusion of Appendix U as written unjustly enforces optional provisions as mandatory that were never agreed to by the stakeholders or citizen in the City of Houston. As currently proposed in the 2015 draft Houston Residential Code, the full base code appendix would still be applicable, with exception of the revisions noted for U103.6. Section U103.6 is agreeable as currently drafted by itself without any other provisions of the appendix as mandatory.

On September 21<sup>st</sup> 2016, the Houston City Council approved the adoption of a revised Residential Energy Conservation Code based on the Residential Provisions of the 2015 International Energy Conservation Code (IECC). After a waiting period, the code became effective on October 24<sup>th</sup>.

In addition to the base code and amendments, the Appendix RB (now referred to as "Appendix U" in the draft proposed Houston Residential Code), an optional set of solar readiness requirements, was included as mandatory. This was a surprise to the stakeholder as well as the acting Building Official, who had not briefed on the change. While the GHBA worked with Public Works on amending the new energy code prior to council's adoption, this appendix was not agreed to by the GHBA and the Construction Industry Council (CIC.) In fact, the amendments went to City Council without any official vote or approval from CIC. After working with City of Houston permitting officials, we were successful in obtaining a temporary moratorium on those provisions until November 28<sup>th</sup> with the intention of using that time to pursue a compromise.

Specifically, GHBA builders and the CIC Residential Code Chairman met with Earl Greer and Code Enforcement staff on two occasions (October 18<sup>th</sup> and November 2<sup>nd</sup>) to present concerns with what the appendix requires and questions about how the appendix will be enforced. At these meetings, our questions and concerns focused on three main issues: enforcement, costs and liability.

**Enforcement**

The City of Houston offers builders who build ten or more units of the same home in a year the chance to participate in the Residence Master Plan Program. This program is beneficial for builders who build the same product because it requires few plans to be submitted for plan review, which helps expedite the permitting process and helps save time and money.

As a result, there are many builders that participate in the program with dozens of plans mastered in and hundreds of those designs are being permitted each year. Builders that participate in the program have incorporated the expedited permitting process into their delivery timelines, which helps keep cost down for the homebuilder and the homebuyer. The implementation of Appendix RB and will render the master plan program null because it will require documents specific to each home site that are not currently part of the process.

There are and have been concerns regarding permitting times for construction projects within the city, but the master plan program has been an effective and pragmatic tool to help address those concerns. Eliminating its effectiveness would be a step back in service standards.

The appendix requires that construction documents indicate a "solar-ready" zone of 300/150 square feet depending on the size and type of the house. This zone must be shown on a drawing so that an inspector can determine whether the plans are compliant. This is problematic because when a drawing goes from paper to 3-d, angle and pitch change. Which could alter the solar-ready zone location and result in a failed inspection.

The solar-ready zone requirement presents numerous technical issues for the inspectors, which can create uncertainty for the builder. Incorporating a solar-ready zone may, in some cases, contradict or violate other current code requirements which leads to questions in the field and ultimately a loss of time and money.

Logistical questions arise from requiring the solar-ready zone, including, how are the inspectors actually going to inspect this? In some cases, these are three story homes. If an inspector cannot visually see the

roof from the ground, how can he or she inspect it to determine if there is the proper square footage of solar-ready area? If in practice, something that is being required cannot be inspected then that begs the question of why is it being required in the first place.

### Costs

In order to comply with the new solar readiness appendix requirements builders would spend approximately \$1000 to \$1500. This estimation includes required work completed by an engineer and additional administrative costs; not to mention, potential costs should a builder fail at final inspection, relocating gas fired appliance vents and chimneys thus requiring the expensive repair and replacement of a roof structure. Unfortunately, these new costs would trickle down to the homebuyer and likely double, totaling approximately, \$2000 to \$2500.

These additional costs have a dramatic effect on the affordability of a new home. In fact, our national association recently completed a comprehensive analysis on the financial impact of housing construction-related regulations. The report concluded that for every \$1000 increase to the construction of a home, in the greater Houston area, over 4,000 homebuyers would be priced out of the market.

It is true that some code updates yield benefits for homebuyers. For example, energy code changes as a result of the 2015 IECC provided homebuyers with qualitative energy savings through the life of the home. However, this is not the case with the solar readiness appendix requirements.

Requiring builders to construct a "solar-ready" home when the current cost of installing a small solar system is conservatively \$20,000 to \$35,000 yields no qualitative benefit to the homeowner because most homebuyers cannot afford to install such expensive solar panels when purchasing a new home.

At this time, installation of solar panels for new or existing homes is not cost effective for wide market consumption. Yet, the City of Houston is requiring home builders to add solar-ready costs to a new home when the homeowner is unlikely to afford the current solar panel technology, rendering the homeowner unable to capture savings from these requirements. There are no other amendments that particularly favor one business industry such as this.

### Safety/Liability

Rooftop solar arrays create hazards to occupants and fire department staff during fires due to the space they take up on the roof keeping fire department water from reaching the fire as well as the danger imposed by the increased weight on the structure. As the roof deck fails, large, heavy and cumbersome arrays fall through the roof and into the house below potentially crushing occupants or blocking their path of egress to safety.

The City of Houston requiring home builders to construct a "solar ready" home while the market does not support wide consumption of solar panel installation poses a liability risk to builders.

According to the international builders shows that GHBA members annually attend, mass consumption of solar panels is years away. However, since the solar panel product available at this time will likely be smaller and less expensive in future years, the modifications to the construction of a home that the City of Houston is now requiring will likely be outdated and insufficient in future years.

Imagine the disappointment of a homebuyer who is told in 2017 that their new home is "solar ready," only to discover in 2025, when solar panels are more cost effective, that their home cannot accommodate the new technology. In addition, building in a "hurricane-prone region", there is no guarantee that the addition of solar arrays will not compromise the windstorm rating of the structure. Given that the technology is constantly changing, it is impractical to design plans for solar ready systems at this time.

GHBA third party energy compliance inspectors have warned that this situation poses a significant safety and liability risk to builders and to the City of Houston.

We believe it is for this reason (among others) that this appendix was designed to be optional and consideration should be given to allowing the requirements to remain optional to Houston builders as it is written in the code.

In closing, GHBA builders strongly believe that Appendix U should be omitted moving forward. Unfortunately, we did not have the opportunity to fully vet the solar readiness requirements through the normal CIC review process as we were unaware that the requirements were going to be included in the residential energy code.

Additionally, we did not have the opportunity to vet these new requirements with council members prior to council's adoption as the solar-ready appendix requirements were not entirely presented before the Council's Transportation, Technology & Infrastructure Committee on September 19. They were simply explained as only costing the amount of a plastic conduit. See clip here: [https://youtu.be/bL\\_o-O6404](https://youtu.be/bL_o-O6404)

This appendix is not being enforced in the City of Houston for the numerous issues documented herein and should be made optional in lieu of mandatory in future code.

Approved

Denied

Modified

**Date:** 3/9/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposed amendment the request has been denied. A critical component of the City of Houston's first-ever Climate Action Plan is to increase the number of Houstonian's using solar power. As per directive from Houston Public Works' Director Carol Haddock, and City of Houston Mayor Turner, the City's focus on energy efficiency and residential resiliency is a priority moving forward in residential construction. Because of these reasons the requested proposal has been denied.

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<b>Name:</b> <u>John Williams</u>	<b>Email:</b> <u>Houston CIC Residential Code Chair</u> <u>&lt;cichoustonrescodechair@gmail.com&gt;</u>
<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>281-652-6548</u>
<b>Code:</b> <u>G2411.1.1.3 (310.1.1.3) Bonding jumper length.</u>	<b>Code Section:</b> <u>Chapter 24 – Fuel Gas</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

Proposed Change in Legislative Format (new words underlined ~~deleted words struck out~~)

**G2427.8 (503.8) Venting system termination location.** The location of venting system terminations shall comply with the following (see Appendix C):

1. A mechanical *draft* venting system shall terminate not less than 3 feet (914 mm) above any forced-air inlet located within 10 feet (3048 mm).

**Exceptions:**

1. This provision shall not apply to the *combustion air* intake of a direct-vent *appliance*.
2. This provision shall not apply to the separation of the integral outdoor air inlet and flue gas discharge of *listed* outdoor *appliances*.

2. A mechanical *draft* venting system, excluding *direct vent appliances*, shall terminate not less than 4 feet (1219 mm) below, 4 feet (1219 mm) horizontally from, or 1 foot (305 mm) above any door, operable window or gravity air inlet into any building. The bottom of the vent terminal shall be located not less than 12 inches (305 mm) above finished ground level.

3. The vent terminal of a *direct-vent appliance* with an input of 10,000 *Btu* per hour (3 kW) or less shall be located not less than 6 inches (152 mm) from any air opening into a building. Such an

*appliance* with an input over 10,000 Btu per hour (3 kW) but not over 50,000 Btu per hour (14.7 kW) shall be installed with a 9-inch (230 mm) vent termination *clearance*, and an *appliance* with an input over 50,000 Btu per hour (14.7 kW) shall have not less than a 12-inch (305 mm) vent termination *clearance*. The bottom of the vent terminal and the air intake shall be located not less than 12 inches (305 mm) above grade finished ground level.

4. Through-the-wall vents for Category II and IV *appliances* and noncategorized condensing *appliances* shall not terminate over public walkways or over an area where *condensate* or vapor could create a nuisance or hazard or could be detrimental to the operation of *regulators*, *relief valves* or other *equipment*. Where local experience indicates that *condensate* is a problem with Category I and III *appliances*, this provision shall also apply. Drains for *condensate* shall be installed in accordance with the appliance and vent manufacturer's installation instructions.

5. Vent systems for Category IV appliances that terminate through an outside wall of a building and discharge flue gases perpendicular to the adjacent wall shall be located not less than ~~40~~ 6 feet (3048 ~~1828.8~~ mm) horizontally from an operable opening in an adjacent building. This requirement shall not apply to vent terminals that are 2 feet (607 mm) or more above or 25 feet (7620 mm) or more below operable openings

**Justification:**

**Date:** 2/7/2021

The intent of this proposal is to allow category IV appliance clearances to correlate with common 3' separation between a residence and the building line or aggregate of a minimum of 6' between two adjacent residences.

Impact to enforceability: This should be favorable to enforceability by allowing increased flexibility.

Impact to cost effectiveness: This should be favorable to cost effectiveness by allowing increased design and construction flexibility.

Unique Local Conditions: The proposed language should better fit our local design conditions where a large number of homes are located 3' from the property line and a minimum of 6' from a neighboring residence.

Approved

Denied

Modified

**Date:** 3/9/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposed amendment, the request is denied by the Houston Codes Development Committee on the basis of a couple factors. Firstly, the proposed amendment would be in conflict with the currently proposed fire separation distance requirements of R302.1. The proposed amendment is a reduction in life-safety provisions built into the base code. These changes could present life-safety issues when considering that the appliances being ducted are exhausting carbon monoxide and similar harmful substances. For these reasons the Code Development Committee has decided to deny this request.

**INSTRUCTIONS**

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- The justification should address safety impact, enforceability, cost effectiveness, or unique local conditions.
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- If additional space is needed, please complete page 2.
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**CONTACT INFORMATION**

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<b>Name:</b> <u>John Williams</u>	<b>Email:</b> <u>Houston CIC Residential Code Chair</u> <u>&lt;cichoustonrescodechair@gmail.com&gt;</u>
<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>281-652-6548</u>
<b>Code:</b> <u>M1202.3 Maintenance</u>	<b>Code Section:</b> <u>Existing Mechanical Systems</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**M1202.3 Maintenance.** Mechanical systems, both existing and new, and parts thereof shall be maintained in proper operating condition in accordance with the original design and in a safe and sanitary condition. Devices or safeguards that are required by this code shall be maintained in compliance with

the code edition under which installed. The owner or the owner's designated agent shall be responsible for maintenance of the mechanical systems. ~~To determine compliance with this provision, the building official shall have the authority to require a mechanical system to be reinspected.~~

**Justification:**
**Date:** 2/8/2021

This is a proposal to keep City of Houston Residential Code as currently enforced and a carry-forward of a previous amendment. Consideration should be given to the cost effectiveness for the City of mandating a Building Official's right to require future re-inspections of mechanical systems for residences. Effective enforceability of this provision would be impossible without significant added cost and with no proven impact on safety.

Approved

Denied

Modified

**Date:** 3/9/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposed amendment the request has been denied. At present, the Code Development Committee has concluded there is not sufficient justification to remove the stricken part of the Maintenance Section. Reinspection of new and existing mechanical systems is not a type of inspection that happens regularly at the City; however, in the event a reinspection should be required for issues and/or life-safety presented to the City, this provision provides the Building Official a course of action.



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<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>281-652-6548</u>
<b>Code:</b> <u>M1308.2 Protection against physical damage</u>	<b>Code Section:</b> <u>Chapter 13 – General Mechanical Systems</u>
<b>Proposed Change in Legislative Format</b> ( <u>new words underlined</u> <del>deleted words struck out</del> ): <b>M1308.2 Protection against physical damage.</b> Where piping will be concealed within light-frame construction assemblies, the piping shall be protected against penetration by fasteners in accordance with Sections M1308.2.1 through M1308.2.3.  <b>Exception:</b> Cast iron piping, <u>black pipe</u> , and galvanized steel piping shall not be required to be protected.	
<b>Justification:</b> <p>This justification is to aid local conditions where black pipe is extensively used. The proposed language will increase enforceability as this is a commonly used material that where protection is not typically enforced. The proposed language will mimic current regional practices.</p> <p>Impact to cost effectiveness: The proposed language herein should aid in cost effectiveness.</p> <p>Impact on Safety: Excluding black pipe from the grouping which doesn't require protection would provide no a proven increase in safety.</p>	
<b>Date:</b> 2/10/2021	

Approved

Denied

Modified

**Date:** 3/10/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposed amendment the Code Development Committee has decided to approve the request but with a modification included. The request by CIC and Mr. Williams to include black pipe to the exceptions of Section 1308.2 are acceptable when clarified that the black pipe allowed in the exception shall be steel to coincide with similar pipes allowed in the exception.

Modified Text will Include the Following:

"Exception: Cast iron piping, black steel pipe, and galvanized steel piping shall not be required to be protected."

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<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>281-652-6548</u>
<b>Code:</b> <u>M1411.3</u>	<b>Code Section:</b> <u>Chapter 14 – Condensate Disposal</u>

**Proposed Change in Legislative Format (new words underlined ~~deleted words struck-out~~):**

**M1411.3 Condensate disposal.** Condensate from all cooling coils or evaporators shall be conveyed from the drain pan outlet to an approved plumbing fixture or place of disposal area. Such piping shall maintain a minimum horizontal slope in direction of discharge of not less than 1/8 unit vertical in 12 units horizontal (1-percent slope). Condensate shall not discharge into a street, alley or other areas where it would cause a nuisance. ~~Drain pans and coils shall be arranged to allow thorough drainage and access for cleaning. Primary drain piping inside buildings shall be insulated for the first 15 feet horizontally from the drain pan.~~

**Justification:**
**Date:** 2/7/2021

This proposal suggests removing unnecessary verbiage in the proposed draft 2015 Houston Residential Code regarding drain pans and insulating of drain line.

Safety: In some cases, in our climate it is better to allow some length of the drain line to be uninsulated so the water and pipe can warm by way of attic air contact before entering the building envelope. Modern, code regulated HVAC design calls for system that run longer for energy efficiency as well as increased dehumidification. This results in a more constant flow of cool condensate in the drain line run. Even with tight air sealing at the building envelope, if the pipe and condensate water are not given an opportunity to warm slightly, this can result in sweating inside the wall cavity or most commonly sweating of the p-trap under the sink in the "plumbing fixture disposal area". Water intrusion in these conditions leads to an increase in chances for mold, which present health safety concerns.

Cost effectiveness impact concerns: In some cases warming units are applied to help prevent p-trap condensation which negatively affects cost impact. The code proposal herein increases flexibility of design and installation practices which had a favor impact on cost effectiveness.

Unique Local Conditions: Houston is located in a Hot and Humid code classified climate, which present unique local conditions for design and construction to prevent water intrusion and to aid indoor air quality. This proposal allows for an increase in design and construction flexibility which helps address our unique local conditions.

Approved

Denied

Modified

**Date:** 3/10/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposed amendment by the Code Development Committee the request has been denied for several reasons. Firstly, the proposed changes in the request eliminating the insulation requirements for primary drain piping would conflict with the insulation provisions of the IECC. Also, the 15 feet insulation requirement has been an accepted standard in the industry for years for any piping that may have a 15 degree delta T difference in temperature where condensate may develop. Additionally, eliminating provisions that allow for thorough drainage and access for cleaning could provide issues with the equipment resulting in potential property damage. The Houston amendment provides clarity to the code of what is expected in this area for condensate disposal. For these reasons the Code Development Committee decided this request should be denied.

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<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>281-652-6548</u>
<b>Code:</b> <u>M1506.2 – Duct Length</u>	<b>Code Section:</b> <u>Exhaust Ducts and Exhaust Openings</u>

#### **Proposed Change in Legislative Format** (new words underlined deleted words struck-out):

**M1506.2 Duct length.** The length of exhaust and supply ducts used with ventilating equipment shall not exceed the lengths determined in accordance with Table M1506.2.

**Exception:** Duct length shall not be limited where the duct system complies with the manufacturer's design criteria or where the flow rate of the installed ventilating equipment is verified by the installer or approved third party using a flow hood, flow grid or other airflow measuring device.

#### **TABLE M1506.2**

#### **DUCT LENGTH**

DUCT TYPE	FLEX DUCT								SMOOTH-WALL DUCT							
	50	80	100	125	150	200	250	300	50	80	100	125	150	200	250	300
Fan airflow rating (CFM @ 0.25 inch wc.)																
Diameter (inches)	Maximum length <sup>c, d, e</sup> (feet)															

3	<u>40</u>	X	X	X	X	X	X	X	5	X	X	X	X	X	X	X
4	<del>56</del> <u>70</u>	4	X	X	X	X	X	X	114	31	10	X	X	X	X	X
5	NL	81	42	16	2	X	X	X	NL	152	91	51	28	4	X	X
6	NL	NL	158	91	55	18	1	X	NL	NL	NL	168	112	53	25	9
7	NL	NL	NL	NL	161	78	40	19	NL	NL	NL	NL	NL	148	88	54
8 and above	NL	NL	NL	NL	NL	189	111	69	NL	NL	NL	NL	NL	NL	198	133

For SI: 1 foot = 304.8 mm.

- a. Fan airflow rating shall be in accordance with ANSI/AMCA 210-ANSI/ASHRAE 51.
- b. For noncircular ducts, calculate the diameter as four times the cross-sectional area divided by the perimeter.
- c. This table assumes that elbows are not used. ~~Fifteen feet~~ Five feet of allowable duct length shall be deducted for hard 90 degree turns and 2.5 feet for sweeping 90 degree turns or 45 degree turns for each elbow installed in the duct run.
- d. NL = no limit on duct length of this size.
- e. X = not allowed. Any length of duct of this size with assumed turns and fittings will exceed the rated pressure drop.

**Justification:**

**Date: 2/8/2021**

Allowable duct length modified to more closely mimic ASHREA 62.2-2010. This should aid in enforceability. The increased stringency of the new code unjustly burdens new homeowners with the added construction expense of either unnecessarily increasing the fan CFM or paying an inspection company to verify by flow test. 50 CFM bath fans are most commonly used and have performed adequately over time in most cases. The proposed code all but eliminates their use in favor of larger fans that use more electricity and could potentially create dangerous negative pressures within the home. Larger and louder fans are also a common complaint by homeowners. The proposed change in reduction of duct length due to elbows has been changed in order to bring alignment with the dryer vent provisions in order to make the code more consistent and to aid in enforceability. One revision also made to the table title to fix a base code spelling error.

Approved

Denied

Modified

**Date: 3/10/2021**

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review by the Code Development Committee the request has been denied. The requested changes in duct length lessens the base code requirements and do not match the requirements of ASHRAE 62.2. As stated in the 2015 IRC Significant Changes, this prescriptive table is taken from Addendum F of ASHRAE 62.2 for sizing exhaust ducts, and is intended to match duct size to the airflow capacity of the exhaust fan to ensure the exhaust system operates efficiently and at the intended designed airflow rate. For this reason, the Code Development Committee has decided to deny this request.

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<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>281-652-6548</u>
<b>Code:</b> <u>M1602.2 – Return Air Openings</u>	<b>Code Section:</b> <u>Return Air</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**M1602.2 Return air openings.** Return air openings for heating, ventilation and air conditioning systems shall comply with all of the following:

1. Openings shall not be located less than 10 feet (3048 mm) measured in any direction from an open combustion chamber or draft hood of another appliance located in the same room or space.
2. The amount of return air taken from any room with a door installed that confines the room or space with a door installed that confines the space shall be not greater than the flow rate of supply air delivered to such room or space.
3. Return and transfer openings shall be sized in accordance with the appliance or equipment manufacturers' installation instructions, Manual D or the design of the registered design professional.
4. Return air shall not be taken from a closet, bathroom, toilet room, kitchen, garage, mechanical room, boiler room, furnace room or unconditioned attic.

**Exceptions:**

1. Taking return air from a kitchen is not prohibited where such return air openings serve the kitchen only, and are located not less than 10 feet (3048 mm) from the cooking appliances.

2. Dedicated forced-air systems serving only the garage shall not be prohibited from obtaining return air from the garage.
3. Taking return air from an unconditioned crawl space shall not be accomplished through a direct connection to the return side of a forced-air furnace.  
Transfer openings in the crawl space enclosure shall not be prohibited.
4. Return air from one dwelling unit shall not be discharged into another dwelling unit.

**Justification:**

**Date:** 2/8/2021

The proposed revision is suggested to clear up possible confusion or conflict with the provisions for central air return in ACCA Manual D. It is common and effective to install a central air return in a hallway, which may contain a small supply, but service return from adjoining areas such as great rooms, family rooms, dining rooms, etc. The proposed language herein should aid in cost effectiveness, enforceability, and aid in design and construction flexibility to better suit our unique local conditions.

Approved

Denied

Modified

**Date:** 3/9/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposed amendment the request has been approved. The Code Development Committee agrees the proposed amendment would add clarification to the provisions, and would allow for better understanding of the requirements and what is expected by both inspectors and contractors. Also, the clarifying language coincides with how the City currently enforces these types of situations.



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<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>713-460-6207</u>
<b>Code:</b> <u>P2801.6, P2801.6.1, P2804.6.1</u>	<b>Code Section:</b> <u>Water Heaters - General</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck-out~~):  
***Strike CoH proposed amendments to P2801.6, P2801.6.1 & P2804.6.1 and keep base code.***

**Justification:**
**Date:** 2/8/2021

Proposal submitted to strike current City of Houston proposed language in favor of true code. This should increase enforceability by staying consistent with the 2015 IRC. There has not been any presented documentation by which the CoH proposed language and amendments would serve safety, enforceability, cost effectiveness or local conditions. Enforcing the 2015 IRC base code would certainly aid in enforceability. Allowing increased flexibility as established in the base code will allow for benefits in cost effectiveness. In addition, for replacement installations, the increased flexibility may allow a homeowner to increase their energy efficiency by utilizing a tankless water heater, which may have otherwise been required to carry the burden of extra costs and installation issues mandated in the CoH proposed amendment. Keeping base code will have no impact on safety compared to base code, as they are the same.

Approved

Denied

Modified

**Date:** 3/9/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review by the Code Development Committee this request has been denied. The Houston proposed amendments for IRC Sections P2801.6, P2801.6.1, and P2804.6.1 are to provide protective measures for damage against property and to increase the resiliency of construction around Houston. These amendments were recommended by the former Houston Plumbing Inspections Chief due to his experience with existing conditions with no pans or drainage, as well as the propensity for tankless water heaters to leak. Additionally, the majority of water heater manufacturer's installations instructions require suitable drain pans that are adequately drained. For these reasons the Code Development Committee has decided to deny the proposed amendments in this request.

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<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>281-652-6548</u>
<b>Code:</b> <u>P3113.3 &amp; P3114.4</u>	<b>Code Section:</b> <u>Air Admittance Valves</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**P3114.3 Where permitted.** Individual vents, branch vents, circuit vents and stack vents shall be permitted to terminate with a connection to an *air admittance valve*. Individual and branch type air admittance valves shall vent only fixtures that are on the same floor level and connect to a horizontal branch drain.

**P3114.4 Location.** ~~Individual and branch~~ The *air admittance valves* shall be located not less than 4 6 inches (102 mm) above the horizontal branch drain or *fixture drain* being vented. Stack-type air admittance valves shall be located not less than 6 inches (152 mm) above the flood level rim of the highest fixture being vented. The *air admittance valve* shall be located within the maximum *developed length* permitted for the vent. The *air admittance valve* shall be installed not less than 6 inches (152 mm) above insulation materials where installed in *attics*.

**Justification:**
**Date:** 2/8/2021

Strike CoH proposed limitation on air admittance valves for branch vents, circuit vents and stack vents to stay with base code as far as that is concerned. Further, revise CoH proposed language to include the words "not less than" before the 6" requirement to aid in enforceability by properly establishing that the intent is to have a minimum height and not a specific maximum. This should also aid in cost effectiveness by providing clarity to the requirement.

Approved

Denied

Modified

**Date:** 3/25/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review by the Code Development Committee this request has been denied. The requirements of this section have been amended in order to protect property from potential damage and to allow the system better venting capabilities and increased resiliency by limiting the types of vents allowed to terminate with an air admittance valve. The types of vents stricken from the section have shown a high rate of failure in the past and limiting their use is an established local requirement. Additionally, the Houston proposed amendment indicates the minimum height for air admittance valves and does not specify a maximum to aid in enforceability. The Code Development Committee agrees there isn't sufficient justification to change the Houston proposed amendment from current established policy for vents and as such denies the proposed request.

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<b>Organization:</b> <u>WATER QUALITY ASSOCIATION</u>	<b>Phone:</b> <u>630-947-5955</u>
<b>Code:</b> <u>UPC</u>	<b>Code Section:</b> <u>603.5.18.2</u>

**Public Comment/Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**603.5.18.2 Water Treatment Units.** Reverse osmosis drinking water treatment units shall meet the requirements of the appropriate standards referenced in Table 1401.1. Waste or discharge from reverse osmosis or other types of water treatment units shall enter the drainage system through an airgap. Water supply for commercial water softeners shall be protected by a double check valve assembly. Water supply for residential water softeners shall be protected by either an atmospheric vacuum breaker or a residential dual check valve.

**Justification:**

**Date:** 2/25/2021

UPC, IPC and IRC already require an air gap which is the highest level of cross connection protection available. None of these standard writing bodies require a double check valve assembly on a residential water softener. Neither a water softener treatment system, including tanks control and resin nor its salt brine tank or salt contains any hazardous material per EPA, TCEQ or certifying bodies including NSF, ANSI, IAPMO and WQA. Back siphonage may be possible, but back pressure in a residential application is highly unlikely. Therefore, adding either an atmospheric vacuum breaker or residential dual check valve would add redundancy and an extra ordinary level of protection. Safety will be maintained and will be equally effective at lower cost with a simpler and more stable device than with a double (inspectable) check valve.

Approved

Denied

Modified

Date: 4/7/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Loveday and the Water Quality Association. After review of the proposal by the Code Development Committee the request has been denied. The Committee agrees the proposal would contrast with the Mayor’s resiliency in residential construction initiative and would conflict with Public Works’ policies on protecting drinker water operations and the City’s infrastructure. Additionally, the requirements of this section have been endorsed and supported by the City’s Water Quality department. For these reasons the request has been denied.

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<b>Organization:</b> <u>Houston Consturction Industry Council</u>	<b>Phone:</b> <u>713-460-0264</u>
<b>Code:</b> <u>R102.4</u>	<b>Code Section:</b> <u>Scope and Administration</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**R102.5 Appendices.** Provisions in the appendices shall not apply unless specifically referenced in the adopting ordinance this section. Appendices A, B, C, H, K, L, M, Q, T, U, and V are hereby adopted and made part of this code.

**Justification:**
**Date:** 2/7/2021

On September 21<sup>st</sup> 2016, the Houston City Council approved the adoption of a revised Residential Energy Conservation Code based on the Residential Provisions of the 2015 International Energy Conservation Code (IECC). After a waiting period, the code became effective on October 24<sup>th</sup>.

In addition to the base code and amendments, the Appendix RB (now "Appendix U", an optional set of solar readiness requirements, was included. This was a surprise to the stakeholders, constituents, as well as the acting Building Official, who had not briefed on the change. While the Consturction Industry Council and the GHBA worked with Building Code enforacment and Public Works on amending the new energy code prior to council's adoption, this appendix was not agreed to by the GHBA and the Construction Industry Council (CIC.) In fact, the amendments went to City Council without any official vote or approval from CIC. After working with City of Houston permitting officials, we were successful in obtaining a temporary moratorium on those provisions until November 28<sup>th</sup> with the intention of using that time to pursue a compromise.

Specifically, GHBA builders and the CIC Residential Code Chairman met with Earl Greer and Code Enforcement staff on two occasions (October 18<sup>th</sup> and November 2<sup>nd</sup>) to present concerns with what the appendix requires and questions about how the appendix will be enforced. At these meetings, our questions and concerns focused on three main issues: enforcement, costs and liability.

### Enforcement

The City of Houston offers builders who build ten or more units of the same home in a year the chance to participate in the Residence Master Plan Program. This program is beneficial for builders who build the same product because it requires few plans to be submitted for plan review, which helps expedite the permitting process and helps save time and money.

As a result, there are many builders that participate in the program with dozens of plans mastered in and hundreds of those designs are being permitted each year. Builders that participate in the program have incorporated the expedited permitting process into their delivery timelines, which helps keep cost down for the homebuilder and the homebuyer. The implementation of Appendix RB and will render the master plan program null because it will require documents specific to each home site that are not currently part of the process.

There are and have been concerns regarding permitting times for construction projects within the city, but the master plan program has been an effective and pragmatic tool to help address those concerns. Eliminating its effectiveness would be a step back in service standards.

The appendix requires that construction documents indicate a “solar-ready” zone of 300/150 square feet depending on the size and type of the house. This zone must be shown on a drawing so that an inspector can determine whether the plans are compliant. This is problematic because when a drawing goes from paper to 3-d, angle and pitch change. Which could alter the solar-ready zone location and result in a failed inspection.

The solar-ready zone requirement presents numerous technical issues for the inspectors, which can create uncertainty for the builder. Incorporating a solar-ready zone may, in some cases, contradict or violate other current code requirements which leads to questions in the field and ultimately a loss of time and money.

Logistical questions arise from requiring the solar-ready zone, including, how are the inspectors actually going to inspect this? In some cases, these are three story homes. If an inspector cannot visually see the roof from the ground, how can he or she inspect it to determine if there is the proper square footage of solar-ready area? If in practice, something that is being required cannot be inspected then that begs the question of why is it being required in the first place.

### Costs

In order to comply with the new solar readiness appendix requirements builders would spend approximately \$1000 to \$1500. This estimation includes required work completed by an engineer and additional administrative costs; not to mention, potential costs should a builder fail at final inspection, relocating gas fired appliance vents and chimneys thus requiring the expensive repair and replacement of a roof structure. Unfortunately, these new costs would trickle down to the homebuyer and likely double, totaling approximately, \$2000 to \$2500.

These additional costs have a dramatic effect on the affordability of a new home. In fact, our national association recently completed a comprehensive analysis on the financial impact of housing construction-related regulations. The report concluded that for every \$1000 increase to the construction of a home, in the greater Houston area, over 4,000 homebuyers would be priced out of the market.



It is true that some code updates yield benefits for homebuyers. For example, energy code changes as a result of the 2015 IECC provided homebuyers with qualitative energy savings through the life of the home. However, this is not the case with the solar readiness appendix requirements.

Requiring builders to construct a "solar-ready" home when the current cost of installing a small solar system is conservatively \$20,000 to \$35,000 yields no qualitative benefit to the homeowner because most homebuyers cannot afford to install such expensive solar panels when purchasing a new home.

At this time, installation of solar panels for new or existing homes is not cost effective for wide market consumption. Yet, the City of Houston is requiring home builders to add solar-ready costs to a new home when the homeowner is unlikely to afford the current solar panel technology, rendering the homeowner unable to capture savings from these requirements. There are no other amendments that particularly favor one business industry such as this.

### Safety/Liability

Rooftop solar arrays create hazards to occupants and fire department staff during fires due to the space they take up on the roof keeping fire department water from reaching the fire as well as the danger imposed by the increased weight on the structure. As the roof deck fails, large, heavy and cumbersome arrays fall through the roof and into the house below potentially crushing occupants or blocking their path of egress to safety.

The City of Houston requiring home builders to construct a "solar ready" home while the market does not support wide consumption of solar panel installation poses a liability risk to builders.

According to the International Builders Show that GHBA members annually attend, mass consumption of solar panels is years away. However, since the solar panel product available at this time will likely be smaller and less expensive in future years, the modifications to the construction of a home that the City of Houston is now requiring will likely be outdated and insufficient in future years.

Imagine the disappointment of a homebuyer who is told in 2017 that their new home is "solar ready," only to discover in 2025, when solar panels are more cost effective, that their home cannot accommodate the new technology. In addition, building in a "hurricane-prone region", there is no guarantee that the addition of solar arrays will not compromise the windstorm rating of the structure. Given that the technology is constantly changing, it is impractical to design plans for solar ready systems at this time.

GHBA third party energy compliance inspectors have warned that this situation poses a significant safety and liability risk to builders and to the City of Houston.

We believe it is for this reason (among others) that this appendix was designed to be optional and consideration should be given to allowing the requirements to remain optional to Houston builders as it is written in the code.

In closing, GHBA builders and CIC strongly believe that Appendix U should be omitted moving forward. Unfortunately, prior to original adoption, we did not have the opportunity to fully vet the solar readiness requirements through the normal CIC review process as we were unaware that the requirements were going to be included in the residential energy code and we were never given an opportunity to vote.

Additionally, we did not have the opportunity to vet these new requirements with council members prior to council's adoption as the solar-ready appendix requirements were not entirely presented before the Council's Transportation, Technology & Infrastructure Committee on September 19. They were simply explained as only costing the amount of a plastic conduit. See clip here: [https://youtu.be/bL\\_o-O6404](https://youtu.be/bL_o-O6404)

This appendix is not being enforced in the City of Houston for the numerous issues documented herein and should be taken out of the amended code moving forward. This will certainly aid enforceability.

Approved

Denied

Modified

**Date:** 4/15/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposal by the Code Development Committee the request has been denied. The Committee agrees removing Appendix U from the adopted appendices would stand in contrast to the City's move towards more resilient construction. The directive of Mayor Turner and Director Haddock is to focus on energy efficiency and resiliency in residential construction as laid out in the base code provisions of Appendix U. The Committee believes Appendix U establishes a cost effective solution that incentivizes homeowner's to transition to solar power usage. For these reasons the Committee agrees the request should be denied.

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<b>Organization:</b> <u>Houston Consturction Industry Council</u>	<b>Phone:</b> <u>281-652-6548</u>
<b>Code:</b> <u>R202</u>	<b>Code Section:</b> <u>Chapter 2 - Definitions</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**ATTIC, HABITABLE.** A finished ~~or unfinished~~ area, not considered a *story*, complying with all of the following requirements:

1. The occupiable floor area is not less than 70 square feet (17m<sup>2</sup>), in accordance with Section R304.
2. The occupiable floor area has a ceiling height in accordance with Section R305.
3. The occupiable space is enclosed by the roof assembly above, knee walls ~~(if applicable)~~ on the sides and the floor-ceiling assembly below.
4. The occupiable space is within a one- or two- family dwelling containing not more than two stories above grade plane in height.

**Justification:**
**Date:** 2/7/2021

There are two options to this proposal. One accepts the striking on "or unfinished area" and the other strikes the City's addition of a 4<sup>th</sup> requirement. There is no reasonable justification for denying a habitable attic above a 3<sup>rd</sup> story home. The base code allows for habitable attic above a 3<sup>rd</sup> floor above grade plane and not technical justification has been provided to stakeholders on why this should not be allow in the future.

Impact to Enforceability: As proposed is favorable to enforceability. Striking the requirement on "unfinished area", makes interpretation of the area much easier to decipher.

Impact to Safety: None. There is no documented evidence presented that indicates a habitable attic above a 3<sup>rd</sup> floor should not be allowed in the base code.

Impact to Cost Effectiveness: As proposed is favorable to cost effectiveness. By removing the ambiguity around the definition of the space, this will facilitate clearer understanding on the defined space resulting in greater efficiencies for the City and for Builders and Architects. Unjustly burdening homes of 3 story to not allowing a habitable attic above 3 stories would render some designs or lot configurations much less cost effective. In addition, since it is a deviation from base code, there is a high likelihood that homes will be designed and have to redesign after the permit is rejected, which is a huge added costs as well as an unnecessary delay.

Unique Local Conditions: As a housing shortage continues to plague our City an increase in development and drainage regulations continue to add cost and reduce the buildable area within a lot. As this continues, our local conditions and increase in efficiency in maximizing the buildable area of the footprint of the home. Our local regulations should work in conjunction with the increasing need.

Approved

Denied

Modified

**Date:** 3/24/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposed amendment by the Code Development Committee the request has been denied. The current proposed Houston amendment for "habitable attics" was created after HPC received numerous complaints and litigations from Houston area HOA's and POA's regarding City approved residential structures that contained habitable attics they viewed as exceeding the story limitations in their HOA/POA regulations. The Code Development Committee agreed that habitable attics, when used as sleeping rooms, etc., would require the same protections and egress as if the attic were another story. And, keeping in mind the sprinkler requirements when three stories are present, the Committee provided a clarification to the base code definition of when habitable attics can be considered a story. Because of this reason, the request to amend the "habitable attic" definition has been denied.

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<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>281-652-6548</u>
<b>Code:</b> <u>R301.2.1.4</u>	<b>Code Section:</b> <u>Design Criteria</u>

Code Section: \_\_\_\_\_ R301.2.1.4

 Proposed Change in Legislative Format (new words underlined ~~deleted words struck out~~)

**R301.2.1.4 Exposure category.** ~~For each wind direction considered, an exposure category that adequately reflects the characteristics of ground surface irregularities shall be determined for the site at which the building or structure is to be constructed. For a site located in the transition zone between categories, the category resulting in the largest wind forces shall apply. Account shall be taken of variations in ground surface roughness that arise from natural topography and vegetation as well as~~

~~from constructed features. For a site where multiple detached one- and two-family dwellings, townhouses or other structures are to be constructed as part of a subdivision or master-planned community, or are otherwise designated as a developed area by the authority having jurisdiction, the exposure category for an individual structure shall be based upon the site conditions that will exist at the time when all adjacent structures on the site have been constructed, provided that their construction is expected to begin within one year of the start of construction for the structure for which the exposure category is determined. For any given wind direction, the exposure in which a specific building or other structure is sited shall be assessed as being one of the following categories:~~

1. Exposure B. Urban and suburban areas, wooded

areas or other terrain with numerous closely spaced obstructions having the size of single family dwellings or larger. Exposure B shall be assumed unless the site meets the definition of another type exposure.

2. Exposure C. Open terrain with scattered obstructions, including surface undulations or other irregularities, having heights generally less than 30 feet (9144 mm) extending more than 1,500 feet (457 m) from the building site in any quadrant.

This exposure shall also apply to any building located within Exposure B type terrain where the building is directly adjacent to open areas of Exposure C type terrain in any quadrant for a distance of more than 600 feet (183 m). This category includes flat, open country and grasslands.

3. Exposure D. Flat, unobstructed areas exposed to wind flowing over open water, smooth mud flats, salt flats and unbroken ice for a distance of not less than 5,000 feet (1524 m). This exposure shall apply only to those buildings and other structures exposed to the wind coming from over the unobstructed area. Exposure D extends downwind from the edge of the unobstructed area a distance of 600 feet (183 m) or 20 times the height of the building or structure, whichever is greater.

**Justification:**

**Date: 2/24/2021**

Increased construction costs associated with increasing exposure categories cannot be justified as similar structures located in both exposure B & C have proven to perform equally well. Several studies following hurricanes have demonstrated this.

These studies have shown that once the Hurricane has moved inland, even the presence of small obstructions including open golf courses have been sufficient enough to eliminate the differences between exposure B and C as the wind flow has already become "turbulent". Turbulent air flow is the primary action required to be designated as an exposure B area.

Impact to cost effectiveness: The costs associated with building to exposure C can be in excess of 15% when considering the frame and all components and cladding. This is an unnecessary increase in construction with no proven benefit to the homeowner, when considering historical forensic data.

Impact to enforceability: In addition, designing to one exposure category should inherently aid in enforceability of the code by reducing confusion by increasing uniformity.

Approved

Denied

Modified

**Date:** 3/24/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposed amendment the request has been denied. The Code Development Committee agrees that there is no justification in removing exposure categories from the IRC requirements. The exposure categories consider the characteristics of ground surface irregularities and accounts for variations in ground surface roughness from topography and vegetation, as well as constructed features, when designating exposure ratings. In the event an Exposure C category designation is given, it is important that structure meets the requirements of that exposure. Being inland does not prohibit or eliminate the potential for significant damage from hurricane wind forces. Additionally, removing Exposure Categories from the code would be in contrast to the Mayor's Resiliency Initiative. For these reasons, Code Development Committee has denied the proposed request.





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<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>281-652-6548</u>
<b>Code:</b> <u>Tables R302.1(1) R302.1(2) &amp; R302.1.1</u>	<b>Code Section:</b> <u>Fire Resistant Construction</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**R302.1 Exterior walls.** Construction, projections, openings and penetrations of *exterior walls* of *dwelling*s and accessory buildings shall comply with Table R302.1(1); ~~or *dwelling*s equipped throughout with an *automatic sprinkler system* installed in accordance with Section P2904 shall comply with Table R302.1(2).~~ Projections shall not extend beyond a point one-third the distance into the areas where openings are prohibited.

**Exceptions:**

1. Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the *fire separation distance*.
2. Walls of *dwelling*s and *accessory structures* located on the same *lot*.
3. Detached tool sheds and storage sheds, playhouses and similar structures exempted from permits are not required to provide wall protection based on location on the *lot*. Projections beyond the *exterior wall* shall not extend over the *lot line*.
4. Detached garages accessory to a *dwelling* located within 2 feet (610 mm) of a *lot line* are permitted to have roof eave projections not exceeding 4 inches (102 mm).
5. Foundation vents installed in compliance with this code are permitted.

**Delete Tables R302.1(1) and R302.1(2) and footnotes and replace with new table.**

TABLE R302.1 EXTERIOR WALLS

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	Fire-resistance rated	1 hour—tested in accordance with ASTM E 119 or UL 263 with exposure from the outside	0 feet
	Not fire-resistance rated	0 hours	3 feet <sup>a</sup>
Projections	Not allowed	N/A	< 2 feet
	Fire-resistance rated	1 hour on the underside <sup>a, c</sup>	2 feet <sup>a</sup>
	Not fire-resistance rated	0 hours	3 feet
Openings in walls	Not allowed	N/A	< 3 feet
	Unlimited	0 hours	3 feet <sup>a</sup>
Penetrations	All	Comply with Section R302.4	< 3 feet
		None required	3 feet <sup>a</sup>

For SI: 1 foot = 304.8 mm.

N/A = Not Applicable

- a. For residential subdivisions where all *dwelling*s are equipped throughout with an automatic sprinkler system installed in accordance with Section P2904, the *fire separation distance* for nonrated exterior walls and rated projections shall be permitted to be reduced to 0 feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining *lot* provides an open setback *yard* that is 6 feet or more in width on the opposite side of the property line.
- b. The roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave if fireblocking is provided from the wall top plate to the underside of the roof sheathing.
- c. The roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave provided that gable vent openings are not installed.

R302.1.1 Zero lot line separation. Where perpetual, platting, and recorded easements create a non-buildable minimum fire separation distance of at least 6 feet between structures on adjacent properties, the one-hour fire-resistive ratings shall not apply.

**Justification:**

**Date: 2/11/2021**

*The City of Houston Code Development Department is proposing a change to the historic minimum fire separation distance between homes, which will negatively impact housing affordability as well as penalizing and financially harming, homeowners, prospective homebuyers, as well as builders, developers, and supporting industries. This proposal is not supported by any illustrated or documented need for such a change. In addition, by changing historical requirements, many to be built homes or additions will be forced to move to such a small front lot width that a street facing front door may be impossible or impractical. From our understanding the Fire Department and the City of Houston much prefer front facing doors to better serve Egress.*

**HISTORY**

The 2006 International Residential Code (IRC) instituted an unwarranted increase in the minimum fire separation distances due to a lobby by fire sprinkler companies. This was a first step in a lobby effort in moving towards mandatory sprinklers.

The City of Houston Building Code Enforcement/Development, the Greater Houston Builders Association (GHBA) and the Construction Industry Council (CIC) agreed this was unwarranted and before adopting the 2006 IRC agreed to an amendment keeping the minimum fire separation distance requirements as they have always been. This amendment was passed on 11/3/2010 and made effective for permits after 12/31/2010.

The 2009 IRC included the introduction of a mandatory requirement for automatic fire sprinkler systems. The inclusion of this code change came from a strategic lobby by special interest parties and was met with the extreme dismay of many stakeholders. Many homeowner and home buyers were outraged at the mandatory requirement because of a number of factors including not wanting to have to pay for the mandatory

requirement (Cost is about \$8000 for 2500 ft<sup>2</sup>), displeasure with the appearance of the sprinklers, anger over not being able to opt-out, and worrying about the real possibility of nuisance tripping or leaking of the sprinkler system, which can cause health safety issues as well as expensive repairs and damage to personal effects. Texas pushed back on this unwarranted and undesired requirement.

On June 19, 2009, SB1410 was signed into law in Texas, barring municipalities from requiring fire sprinkler systems in new construction homes.

*”Notwithstanding any other provision of state law, after January 1, 2009, a municipality may not enact an ordinance, bylaw, order, building code, or rule requiring the installation of a multipurpose residential fire protection sprinkler system or any other fire sprinkler protection system in a new or existing one- or two-family dwelling.”*

In fact, Texas is not the only state to implement such legislation. More than 22 states have also passed laws that stop mandatory fire sprinkler requirements including Georgia, Florida, Arizona, Rhode Island, Vermont, Maine, West Virginia, Connecticut, Kansas, Iowa, South Dakota, North Dakota, New Mexico, Idaho, Utah, Missouri, Washington, Minnesota, Arkansas and Tennessee. In 2015, the City of Houston transitioned from the 2006 IRC, and adopted the 2012 IRC. Again, the City of Houston, GHBA, and CIC agreed and adopted an amendment keeping the minimum fire separation distances as they have always been. This was passed in December of 2015 and was effective as of February of 2016.

In 2021, City of Houston Building Code Enforcement is now transitioning to the 2015 IRC and proposes changing the historical fire separation requirements for home buildings without any presented change in need or justification.

#### **OTHER THINGS TO CONSIDER: NEW HOMES ARE SAFER**

The 2006 IRC code change to historic minimum fire separation distances was agreed to be unwarranted by both the City of Houston and stakeholder groups, which is why all parties agreed to a Houston amendment which still stands today. The reduction in fire separation distance is unwarranted and the argument for it carries much less weight as life and fire safety requirements have increased substantially over the years.

During the time since the 2006 IRC was published there have been numerous of fire safety measures that have been instituted in the IRC and National Electric Code (NEC), which were not argued and have been implemented and supported by the building community. They have added substantial cost increases, but no one can deny they have increased the fire and life safety of homes. Here are some examples:

- 2009 IRC institutes a mandatory requirement for self-closing hinges on attached garage pedestrian doors to prevent fires that start in garages from entering the home.
- 2009 IRC expanded requirements for:
  - Emergency escape and rescue.
  - For smoke and carbon detection systems.
    - Carbon Monoxide detection systems were now required outside the sleeping areas and near fuel fired appliances and in units with attached garages.
  - Cabinet and vent clearances from cooktops to prevent fires.
- 2009 NEC instituted massive and expensive changes to the amount of required AFCI and GFCI protection throughout the home. AFCI protection is provided to prevent electrical arcing which can start fire. Arc-fault protection was made to be required in all rooms except kitchens, baths, laundry and garages.

- 2009 NEC also instituted mandatory tamper resistant receptacles throughout the home.
- 2011 NEC expanded the requirements for AFCI and GFCI protection.
- 2012 IRC expanded fire protection requirements for unprotected floors in living spaces above garages and similar situations.
- 2014 NEC further expanded the GFCI requirements.
- 2020 NEC now requires emergency disconnects primarily based upon providing first responders an outdoor accessible emergency or service disconnecting means.
- 2020 NEC now requires service surge protection at residential dwellings to protect lifesaving electrical devices from surge spikes such as AFCIs, GFCIs, fire alarms, smoke alarms, etc.

**As proposed herein, homes being built in 2021 are required to be significantly safer than homes built previous to the 2006 IRC code change and there does not exist justification for an unnecessary change to the historic building practices in the City of Houston.**

### **IMPACT TO COST EFFECTIVENESS**

The City of Houston, in conjunction with the CIC and the GHBA, went through a four-year-long process negotiating and incorporating improvements and changes to Chapter 42 of the Code of Ordinances in order to increase density throughout Houston. The Mayor (at the time), her Administration, and City Council were heavily involved in this process in hopes of providing neighborhood improvements and greater development opportunities within the city's limits. However, a reduction in fire separation distance would have a significant impact on residential development and abruptly halt the many positive effects of Chapter 42.

Land developers and builders purchase property for development of homes many years in advance based on the allowances and requirements of current codes. For example, a recent three-year project by a GHBA builder yielded 46 lots based on building with a 3' setback. If the City of Houston chooses not to maintain the current local 2012 IRC amendment, that same project would yield only 42 lots.

Further, on a typical 25 x 100 ft. lot, the home width would decrease from 22' wide to 19' wide. On two-story homes, this would take away 140 square feet, and on three-story homes, the code change would subtract 270 square feet. Homes are already utilizing maximum space on their building footprint with the recent decrease in allowable lot coverage, and with this significant code change, the City would essentially be forcing builders to build smaller homes.

Unfortunately, the largest impact will hit smaller projects of smaller, local builders (three per lot) as an un-amended 2015 IRC would make their modest development nearly impossible, unless they intend to build very small or very expensive homes. The alternatives would be to offset the additional costs imposed by the new code by expanding the square footage and minimizing the side yards to less than 3' by means of sprinkler or firewall. In recent meetings the Fire Chief has said he is specifically trying to avoid having less than homes built closer to the property line than 3', as evidenced in a recent meeting when he showed a picture on his phone to 2 homes that were only about 2' apart. He said, "this is what I am trying to avoid". Our proposed language herein allows Houston to keep design and construction flexibility to build safely and help the Fire Chief avoid having more homes less than 3' from the line of fire separation.

Additionally, almost every plan that has been designed over the last year would have to be thrown out and replaced as builders would be unexpectedly required to utilize the new 5' setback on their home designs. This would result in an incredible financial burden to builders as well as a heavy burden on City of Houston permitting staff as they grapple with an overwhelming workload of new plans.

## CURRENT SITUATION

City of Houston Building Code Enforcement is proposing elimination of our current amendments and thus changing the historical methods for which new home construction has always been conducted for the City of Houston. The 2015 IRC Review Task Force as assigned by the City of Houston through the Houston Construction Industry Council is confident that the City of Houston's proposal to change current local building code, requiring a new 5' firewall separation distance, poses many problems, including a serious and unjustified burden on local home building and existing homeowners without any proven public benefit. In a time when home affordability is at an all-time low and new housing supply has been at a substantial shortage for 10+ years, this would create a massive increase in costs which will bar thousands of prospective buyers from qualifying for a new home as well as render some land parcels ineffective for future development.

Houston is unique in that for years stakeholders have worked with the City in protecting safe and cost-effective codes that are tailored to Houston's geography, climate, development guidelines and urban density. The ability to locally amend national code in order fit the needs of the City of Houston has yielded great economic growth within the city's limits.

It is our strong belief that together, stakeholders and City officials, can continue to determine the appropriate building codes in Houston. We have the local expertise and experience necessary to evaluate what is best for our unique city, guided by the recommendations of national code officials, and assessed with consideration to historic performance of the codes. Please also consider input from the National Association of Builders on the topic.

The National Association of Builders weighs in on this topic with the following:

*"NAHB urges all state and local jurisdictions to adopt the 2012 International Residential Code with this amendment to the fire separation distance requirements for exterior walls. For years, NAHB has asked the IRC code committee to return to the requirements found in the 2003 IRC. During the supplemental code cycle, the fire separation distances were increased by 2 feet without any scientific data or reports that proved the allowable distance found in the 2003 IRC contributed to any increase in exposure fires from one dwelling to another. To this day, there are no known reports or studies that demonstrate the previously allowed 3-foot separation distance from the property line and 6-foot separation between structures failed to provide the minimum required safe distance."*

Approved

Denied

Modified

Date: 3/24/2021

**Comments:** HPC comments for this request are on the following page.

Approved

Denied

Modified

**Date:** 3/24/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposed amendment by the Code Development Committee the request has been denied. The consensus as to the minimum distance necessary to provide a sufficient buffer against the spread of fire has remained unchanged in the IRC since the 2004 supplement when the minimum fire separation distance was increased to 5 feet. This change was to provide a higher level of safety and to correlate with the provisions for residential construction regulated by the IBC. Additionally, this change was in response to Fire Engineering research reports showing a minimum fire separation distance of 3 feet was not an adequate distance to protect adjacent unprotected structures from exposure to emitted heat radiation levels high enough to cause fire to ignite and spread. The Code Development Committee agrees that amending the minimum fire separation distance to 3 feet without any additional fire-safety protections would be lessening the fire- and life-safety provisions of the code, and would be in contrast to the Mayor's Resiliency Initiative. For these reasons, the Committee has agreed to deny this proposed request.

**INSTRUCTIONS**

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**CONTACT INFORMATION**

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<b>Name:</b> <u>John Williams</u>	<b>Email:</b> <u>Houston CIC Residential Code Chair</u> <u>&lt;cichoustonrescodechair@gmail.com&gt;</u>
<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>281-652-6548</u>
<b>Code:</b> <u>R302.1 &amp; Tables R302.1(1) R302.1(2) &amp; R302.1.1</u>	<b>Code Section:</b> <u>Chapter 3 – Building Planning</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**R302.1 Exterior walls.** Construction, projections, openings and penetrations of *exterior walls* of *dwellings* and accessory buildings shall comply with Table R302.1(1); ~~or *dwellings* equipped throughout with an *automatic sprinkler system* installed in accordance with Section P2904 shall comply with Table R302.1(2).~~ Projections shall not extend beyond a point one-third the distance into the areas where openings are prohibited.

**Exceptions:**

1. Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the *fire separation distance*.
2. Walls of *dwellings* and *accessory structures* located on the same *lot*.
3. Detached tool sheds and storage sheds, playhouses and similar structures exempted from permits are not required to provide wall protection based on location on the *lot*. Projections beyond the *exterior wall* shall not extend over the *lot line*.
4. Detached garages accessory to a *dwelling* located within 2 feet (610 mm) of a *lot line* are permitted to have roof eave projections not exceeding 4 inches (102 mm).
5. Foundation vents installed in compliance with this code are permitted.

6. Gutters 6 inches (152 mm) or less in width, that are not an integral part of the structure are not considered projections.

**Delete Tables R302.1(1) and R302.1(2) and footnotes and replace with new table.**

**TABLE R302.1 EXTERIOR WALLS**

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	Fire-resistance rated	1 hour—tested in accordance with ASTM E 119 or UL 263 with exposure from the outside	0 feet
	Not fire-resistance rated	0 hours	3 feet <sup>a</sup>
Projections	Not allowed	N/A	< 2 feet
	Fire-resistance rated	1 hour on the underside <sup>b, c</sup>	2 feet <sup>a</sup>
Openings in walls	Not fire-resistance rated	0 hours	3 feet
	Not allowed	N/A	< 3 feet
Penetrations	Unlimited	0 hours	3 feet <sup>a</sup>
	All	Comply with Section R302.4	< 3 feet
		None required	3 feet <sup>a</sup>

For SI: 1 foot = 304.8 mm.

N/A = Not Applicable

a. For residential subdivisions where all *dwelling*s are equipped throughout with an automatic sprinkler system installed in accordance with Section P2904, the *fire separation distance* for nonrated exterior walls and rated projections shall be permitted to be reduced to 0 feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining *lot* provides an open setback *yard* that is 6 feet or more in width on the opposite side of the property line.

b. The roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave if fireblocking is provided from the wall top plate to the underside of the roof sheathing.

c. The roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave provided that gable vent openings are not installed.

R302.1.1 Zero lot line separation. Where perpetual, platting, and recorded easements create a non-buildable minimum fire separation distance of at least 6 feet between structures on adjacent properties, the one-hour fire-resistive ratings shall not apply.

**Justification:**

**Date: 2/11/2021**

This proposal is to be considered separately from our other proposal for the elimination of replacement of tables R302.1(1) and R302.1(2) as well as our proposal for R302.1.1. The intent for this proposal is to include a clarification that gutters which are not an integral part of the structure should not be considered projections. The intent is that special and separate consideration should be made to this exception.

Impact to safety: Favorable. There is no impact to fire protection. Many jurisdictions across the country already make this distinction either by code amendment or official interpretation. By allowing this consideration, new and existing homes have better flexibility in ensuring proper drainage of their property, which will be a positive impact to safety.

Impact of enforceability: From stakeholder experience, this is establishing a written interpretation that is already being enforced within the City of Houston. In cases where gutters are installed prior to final inspection, our experience has been that gutters installed as described herein have not been considered projections. Bringing the code in line with current enforcement will aid in enforceability. In addition, gutters do not require permits and are frequently added after final inspections. Making this distinction now will aid enforceability by limiting the scope of projections to items that are more likely to be inspected.



Impact to cost effectiveness: Favorable by allowing increased flexibility in design and construction.

Impact to unique local conditions: Favorable. Many local ordinances and code provisions have changed over the years due to large rain fall events and floods. Drainage of properties and special consideration of adjacent properties mandate enforceable action in preventing water flow to neighboring properties. Regardless of whether existing amendments to R302.1 carry forward, the City of Houston should allow provisions for existing and future homeowners to meet the requirements newer code and ordinance provisions for structure and lot drainage. By allowing increased flexibility in means and methods of draining a roof structure and lot, the City of Houston will help address unique local conditions and existing ordinances and code provisions to better protect citizens and property within the City of Houston.

Approved

Denied

Modified

**Date:** 3/24/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposed amendment by the Code Development Committee the request has been denied. The Committee agrees there is no justification for codifying the proposed requirements when BCE does not consider gutters to be a projection and doesn't require gutters to be shown on residential plans when submitting to plan review. For these reasons the request has been denied by the Code Development Committee.



**INSTRUCTIONS**

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**CONTACT INFORMATION**

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<b>Organization:</b> <u>Kendall/Heaton Associates</u>	<b>Phone:</b> <u>713 877 1192</u>
<b>Code:</b> <u>IBC 2015 Houston Amendments</u>	<b>Code Section:</b> <u>2902.7</u>

**Public Comment/Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**2902.7 Fixture Types.**

Proposed Exception:

(1) When equipped with a dual flush valve, a single-use male-designated toilet room requires one water closet and no urinal.

**Justification:**
**Date:** 3/2/2020

The proposed exception will provide reduced water usage while removing the requirement for adding a urinal to a Single-use Toilet Room in a building where more than one plumbing fixture is required for males. There is no reduction in the number of minimum required plumbing fixtures based on the assumed 50% male and 50% female composition of a building's Occupant Load. The cost of construction and square footage are reduced since a water closet and a urinal in a Single-use Toilet Room can only be counted as "one" code-required plumbing fixture because both fixtures cannot be used simultaneously.

<b>APPROVED</b>			
<input type="checkbox"/> Approved	<input checked="" type="checkbox"/> Denied	<input type="checkbox"/> Modified	<b>Date:</b> 4/7/2021
<b>Comments:</b> Code Development Committee response on following page:			

Approved

Denied

Modified

**Date:** 4/7/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Ahmadi. After review of the proposal by the Code Development Committee the request has been denied. The Committee agrees the proposal would conflict with the established plumbing fixture provisions of the Building Code and would be a reduction in base code provisions. Additionally, the urinal provisions are endorsed and supported by the City Water Department to help reduce water consumption and protect City infrastructure. For these reasons the request has been denied.

**INSTRUCTIONS**

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**CONTACT INFORMATION**

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<b>Organization:</b> <u>Kendall/Heaton Associates</u>	<b>Phone:</b> <u>713 877 1192</u>
<b>Code:</b> <u>UPC 2015</u>	<b>Code Section:</b> <u>422.2</u>

**Public Comment/Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**422.2 Separate toilet facilities shall be provided for each sex.**

Proposed Exception:

(4) A single-use toilet facility shall be assigned to a sex only for the purpose calculating the minimum number of plumbing fixtures. The permanent signage for a single-use toilet facility is left to the discretion of the Property Owner.

**Justification:**

**Date:** 3/2/2020

The proposed exception will allow a Property Owner to determine whether or not to provide All Gender Toilet Rooms as is the growing practice in jurisdictions around the United States. There is no reduction in the number of minimum required plumbing fixtures based on the assumed 50% male and 50% female composition of a building's Occupant Load. There is no cost impact due to this proposed exception.

Approved

Denied

Modified

**Date:** 4/7/2021

**Comments:** Code Development Committee response on following page:

Approved

Denied

Modified

**Date:** 4/7/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Ahmadi. After review of the proposal by the Code Development Committee the request has been denied. The Committee agrees the proposal would conflict with the established plumbing fixture provisions of the Building Code and would be a reduction in base code provisions. For these reasons the request has been denied.

**INSTRUCTIONS**

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**CONTACT INFORMATION**

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<b>Name:</b> <u>DAINA GRACE</u>	<b>Email:</b> <u>twqadirector@twqa.org</u>
<b>Organization:</b> <u>TEXAS WATER QUALITY ASSOCIATION</u>	<b>Phone:</b> <u>(361)573-6707</u>
<b>Code:</b> <u>UPC</u>	<b>Code Section:</b> <u>603.5.18.2</u>
<b>Public Comment/Proposed Change in Legislative Format</b> ( <u>new words underlined</u> <del>deleted words struck out</del> ): <p style="margin-top: 10px;"><b>603.5.18.2 Water Treatment Units.</b> Reverse osmosis drinking water treatment units shall meet the requirements of the appropriate standards referenced in Table 1401.1. Waste or discharge from reverse osmosis or other types of water treatment units shall enter the drainage system through an airgap. Water supply for <u>commercial</u> water softeners shall be protected by a double check valve assembly. <u>Water supply for residential water softeners shall be protected by either an atmospheric vacuum breaker or a residential dual check valve.</u></p>	
<b>Justification:</b> <p style="margin-top: 10px;">UPC, IPC and IRC already require an air gap which is the highest level of cross connection protection available. None of these standard writing bodies require a double check valve assembly on a residential water softener. Neither a water softener treatment tank nor salt tank contains any hazardous material per EPA, TCEQ or certifying bodies including NSF, ANSI, IAPMO and WQA. Back siphonage may be possible, but back pressure in a residential application is highly unlikely. Therefore, adding either an atmospheric vacuum breaker or residential dual check valve would add redundancy and an extra ordinary level of protection. Safety will be maintained and will be equally effective at lower cost with a simpler and more stable device than with a double (inspectable) check valve.</p>	
<b>Date:</b> <u>2/25/2021</u>	

Approved Denied Modified**Date:** 4/7/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by the Water Quality Association. After review of the proposal by the Code Development Committee the request has been denied. The Committee agrees the proposal would contrast with the Mayor's resiliency in residential construction initiative and would conflict with Public Works' policies on protecting drinker water operations and the City's infrastructure. Additionally, the requirements of this section have been endorsed and supported by the City's Water Quality department. For these reasons the request has been denied.



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**CONTACT INFORMATION**

Heath Wierck — 832-394-9171 or Michael Howard — 832-394-9042

<b>Name:</b> <u>Robert S. Hicks, PE</u>	<b>Email:</b> <u>rob.hicks@wsp.com</u>
<b>Organization:</b> <u>SFPE/CIC</u>	<b>Phone:</b> <u>713-229-7430</u>
<b>Code:</b> <u>IFC</u>	<b>Code Section:</b> <u>901.13</u>

**Proposed Change in Legislative Format (new words underlined ~~deleted words struck out~~):**

~~901.13 Fire pumps. Fire pumps shall be listed by Factory Mutual, Underwriters Laboratories or another approved agency and shall not deliver less than the required fire flow and pressure in accordance with the listing. Such pumps shall be automatic operation. (See the Electrical Code for additional requirements.) When such pumps are not approved for direct connection to the city main, the source of supply for such pumps shall be a minimum 2500-gallon break tank served from the city main.~~

Fire pumps shall be listed by Factory Mutual, Underwriters Laboratories or another approved agency. Such pumps shall be automatic operation, and the system flow and pressure shall be sized based on the requirements of NFPA 20. See the Electrical Code for additional requirements. When such pumps are not approved for direct connection to the city main, the source of supply for such pumps shall be a suction tank served from the city main sized in accordance with NFPA 20 and NFPA 22. A smaller tank may be provided when an engineering analysis can show that the refill of the tank will maintain the 150% design flow of the fire pump.

**Justification:**
**Date: 3/3/2021**

This draft proposed language reverts to the 2006 IBC/IFC code language and not the 2012 approved amended language. This language was changed to the proposed language in the 2012 amended IFC language to address the issue that the previous (2006 and earlier) language is now in conflict with NFPA 20 and NFPA 22 regarding the sizing of break tanks that are mandated by COH Water Department. This language will set the default break tank to the NFPA 20 size (which is larger than legacy 2,500 gal size) unless an analysis proves that the refill can keep up with the 150% flow of the pump.

Note there is another proposed option that eliminates any adjustment and all new break tanks must meet NFPA 20 sizing.

Approved

Denied

Modified

**Date:** 4/8/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Hicks. After review of the proposal by the Code Development Committee the request has been denied. It's unclear how the provisions are in conflict; 2500 is the minimum required and doesn't prohibit larger sizes if required by NFPA. The Committee, and the Houston Fire Department, agrees the proposal would eliminate established break tank provisions that are required by Public Works policy to protect City infrastructure. The proposal would additionally conflict with the Mayor's construction resiliency initiative. For these reasons the request has been denied.

**INSTRUCTIONS**

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<b>Organization:</b> <u>SFPE/CIC</u>	<b>Phone:</b> <u>713-229-7430</u>
<b>Code:</b> <u>IFC</u>	<b>Code Section:</b> <u>901.13</u>

**Proposed Change in Legislative Format (new words underlined ~~deleted words struck out~~):**

~~901.13 Fire pumps. Fire pumps shall be listed by Factory Mutual, Underwriters Laboratories or another approved agency and shall not deliver less than the required fire flow and pressure in accordance with the listing. Such pumps shall be automatic operation. (See the Electrical Code for additional requirements.) When such pumps are not approved for direct connection to the city main, the source of supply for such pumps shall be a minimum 2500-gallon break tank served from the city main.~~

Fire pumps shall be listed by Factory Mutual, Underwriters Laboratories or another approved agency. Such pumps shall be automatic operation, and the system flow and pressure shall be sized based on the requirements of NFPA 20. See the Electrical Code for additional requirements. When such pumps are not approved for direct connection to the city main, the source of supply for such pumps shall be a suction tank served from the city main sized in accordance with NFPA 20 and NFPA 22.

**Justification:**
**Date: 3/3/2021**

This draft proposed language reverts to the 2006 IBC/IFC code language and not the 2012 approved amended language. This language was changed to the proposed language in the 2012 amended IFC language to address the issue that the previous (2006 and earlier) language is now in conflict with NFPA 20 and NFPA 22 regarding the sizing of break tanks that are mandated by COH Water Department. This language will set the default break tank to the NFPA 20 size (which is larger than legacy 2,500 gal size).

Note there is another proposed option that allows an Engineering Analysis to reduce the size of the tank when the refill can meet the 150% flow rate.

Approved

Denied

Modified

**Date:** 4/8/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Hicks. After review of the proposal by the Code Development Committee the request has been denied. It's unclear how the provisions are in conflict; 2500 is the minimum required and doesn't prohibit larger sizes if required by NFPA. The Committee, and the Houston Fire Department, agrees the proposal would eliminate established break tank provisions that are required by Public Works policy to protect City infrastructure. The proposal would additionally conflict with the Mayor's construction resiliency initiative. For these reasons the request has been denied.

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Heath Wierck — 832-394-9171 or Michael Howard — 832-394-9042

<b>Name:</b> <u>Robert S. Hicks, PE</u>	<b>Email:</b> <u>rob.hicks@wsp.com</u>
<b>Organization:</b> <u>SFPE/CIC</u>	<b>Phone:</b> <u>713-229-7430</u>
<b>Code:</b> <u>IBC</u>	<b>Code Section:</b> <u>717.5.2</u>

**Proposed Change in Legislative Format (new words underlined ~~deleted words struck out~~):**
**717.5.2 Fire barriers**

Ducts and air transfer openings of *fire barriers* shall be protected with *approved fire dampers* installed in accordance with their listing. Ducts and air transfer openings shall not penetrate enclosures for *interior exit stairways* and *ramps* and *exit passageways*, except as permitted by Sections 1023.4 and 1024.6 respectively.

Exception: *Fire dampers* are not required at penetrations of fire barriers where any of the following apply:

1. Penetrations are tested in accordance with ASTM E119 or UL 263 as part of the fire-resistance-rated assembly.
2. Ducts are used as part of an *approved* smoke control system in accordance with Section 909 and where the use of a *fire damper* would interfere with the operation of a smoke control system.
3. Such walls are penetrated by fully ducted HVAC systems, have a required *fire-resistance rating* of 1 hour or less, are in areas of other than Group H and are in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. For the purposes of this exception, a fully ducted HVAC system shall be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than No. 26 gage thickness and shall be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals. Nonmetal flexible air connectors shall be permitted in the following locations:

3.1 At the duct connection to the air handling unit or equipment located within the mechanical room in accordance with Section 603.10 of the *Uniform Mechanical Code*.

3.2 From an overhead metal duct to a ceiling diffuser within the same room in accordance with Section 603.6.2 of the *Uniform Mechanical Code*.

**Justification:**
**Date: 3/3/2021**

In the base 2015 IBC there is no change to the fire damper requirement. IBC Section 717.5.2 requires fire dampers in fire barriers. Exception 3 of this section specifically permits the elimination of these fire dampers in 1 hour fire barriers when very specific requirements meeting this specific exception's requirement for the term fully ducted are met. In this case "fully ducted" does not allow for any flex duct to be part of the fully ducted system.

The Life Safety Code references NFPA 90A which allows the use of flex duct in fully ducted system and where NFPA 90A Section 5.3.1.1 only requires dampers in 2 hour fire barriers and Section 5.3.1.2 requires dampers that have transfer openings. While not explicitly stated, the meaning of these sections is that fire dampers are not required in fully ducted systems in 1 hour fire barriers.

(Continued on Next Page)

Approved

Denied

Modified

Date: 4/9/2021

**Comments:** Code Development Committee response is on the following page:

#### JUSTIFICATION (cont.)

In the case of the two codes, the definition of fully ducted is completely different and hence leads to confusion on how to apply these sections.

The requirements in the 2018 IBC Section 717.5.2 are unchanged. However, based on the work of ASHE (American Society for Health Care Engineering) and ICC to align the LSC and IBC requirements, the 2021 IBC Section 717.5.2 Exception 3 has been modified to apply the definition consistently between the two. (See below the revisions in blue from the 2021 edition).

##### 717.5.2 Fire barriers.

Ducts and air transfer openings of *fire barriers* shall be protected with *listed fire dampers* installed in accordance with their listing. Ducts and air transfer openings shall not penetrate enclosures for *interior exit stairways* and *ramps* and *exit passageways*, except as permitted by Sections 1023.5 and 1024.6, respectively.

**Exceptions:** *Fire dampers* are not required at penetrations of *fire barriers* where any of the following apply:

1. Penetrations are tested in accordance with ASTM E119 or UL 263 as part of the fire-resistance-rated assembly.
2. Ducts are used as part of an *approved* smoke control system in accordance with Section 909 and where the use of a *fire damper* would interfere with the operation of a smoke control system.
3. Such walls are penetrated by fully ducted HVAC systems, have a required *fire-resistance rating* of 1 hour or less, are in areas of other than Group H and are in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. For the purposes of this exception, a fully ducted HVAC system shall be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than No. 26 gage thickness and shall be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals. Nonmetal flexible air connectors shall be permitted in the following locations:
  - 3.1. At the duct connection to the air handling unit or equipment located within the mechanical room in accordance with Section 603.9 of the *International Mechanical Code*.
  - 3.2. From an overhead metal duct to a ceiling diffuser within the same room in accordance with Section 603.6.2 of the *International Mechanical Code*.

The IMC/UMC has always allowed flex duct to be provided in ducted systems with specific limitations (which are the same as in NFPA 90A).

The change to the 2021 IBC is really a clarification that should have been made long ago to align the definition of fully ducted with the IMC (note the UMC 603 requirements for ducts are almost identical to the IMC 603 requirements). I propose that we consider making an amendment to the 2015 IBC Section 717.5.2 as outlined in the 2021 IBC.

The proposal change made in the code revision cycle to explain this justification to the 2021 IBC is attached for further clarification/justification.

Approved

Denied

Modified

**Date:** 4/9/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Hicks. After review of the proposal by the Code Development Committee the request has been denied. The Committee believes that allowing flex ducts in these types of configurations would be a reduction in the provisions of the code that could allow smoke or flame to be introduced into the enclosure from other parts of the building. Additionally, the inclusion of this particular portion of the 2018 IBC Section doesn't account for other modifications/upgrades in the 2018 code that provide increased protection to coordinate with the new flex duct requirements. The Committee has agreed to look more closely at this change during the next code review cycle. For these reasons the request has been denied.

## FS67-18

IBC: 717.5.2 (IMC 607.5.2)

**Proponent:** John Williams, Chair, representing Healthcare Committee (AHC@iccsafe.org)

### 2018 International Building Code

#### Revise as follows:

**717.5.2 Fire barriers.** Ducts and air transfer openings of *fire barriers* shall be protected with *listed fire dampers* installed in accordance with their listing. Ducts and air transfer openings shall not penetrate enclosures for *interior exit stairways* and *ramps* and *exit passageways*, except as permitted by Sections 1023.5 and 1024.6, respectively.

**Exception:** *Fire dampers* are not required at penetrations of *fire barriers* where any of the following apply:

1. Penetrations are tested in accordance with ASTM E119 or UL 263 as part of the fire-resistance-rated assembly.
2. Ducts are used as part of an *approved* smoke control system in accordance with Section 909 and where the use of a *fire damper* would interfere with the operation of a smoke control system.
3. Such walls are penetrated by fully ducted HVAC systems, have a required *fire-resistance rating* of 1 hour or less, are in areas of other than Group H and are in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. For the purposes of this exception, a fully ducted HVAC system shall be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than No. 26 gage thickness and shall be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals. Flexible air connectors shall be permitted in the following locations:
  - 3.1. Non-metal flex connections shall be permitted at the duct connection to the air handling unit or equipment located within the mechanical room in accordance with Section 603.9 of the International Mechanical Code.
  - 3.2. Non-metal flex connections shall be permitted from an overhead metal duct to a ceiling diffuser within the same room in accordance with Section 603.6.2 of the International Mechanical Code.

#### Reason:

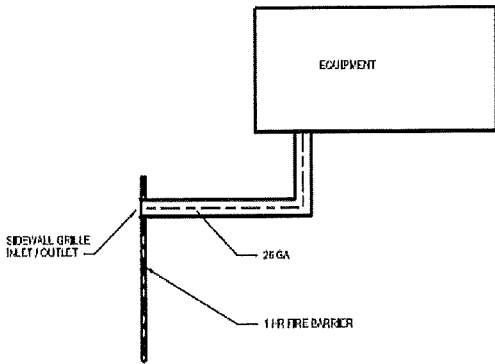
The intention of this code change is to more accurately reflect typical installations found in most buildings. As currently written, the code implies that any flex duct (or equipment flexible connections) negates the use of the exception for fire dampers in 1 hour walls in fully ducted, fully sprinklered buildings.

The code permits the omission of the fire damper for a metal duct system that terminates either at a wall (such as a sidewall grille) or continues on to a duct opening past the fire barrier and has openings in the duct ("continuous from the air-handling appliance or equipment to the air outlet and inlet terminals"). This section does not prohibit openings to be on both sides of the duct as long as the openings are in metal duct. However, as currently written, if flex duct is used to connect a metal duct to a ceiling diffuser (standard practice) this triggers the requirement for a fire damper.

The flex connection within the concealed space does not constitute a greater hazard than other conditions that would permit the omission of the fire dampers (see attached sketches below).

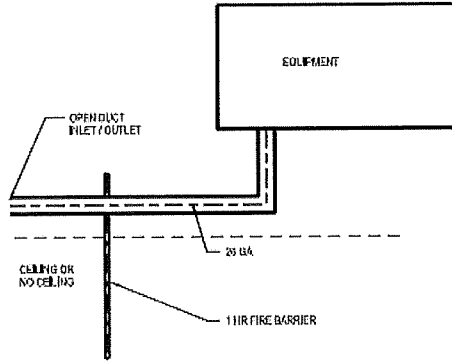


FULLY SPRINKLERED BUILDING  
FULLY DUCTED HVAC



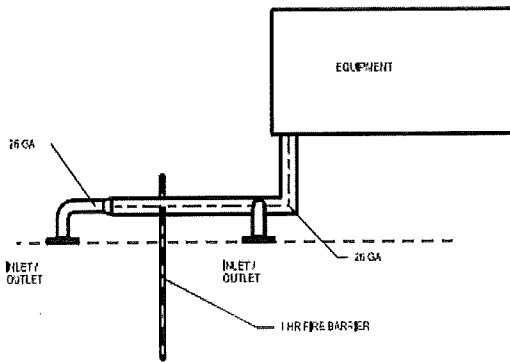
NO FIRE DAMPER REQUIRED

FULLY SPRINKLERED BUILDING  
FULLY DUCTED HVAC



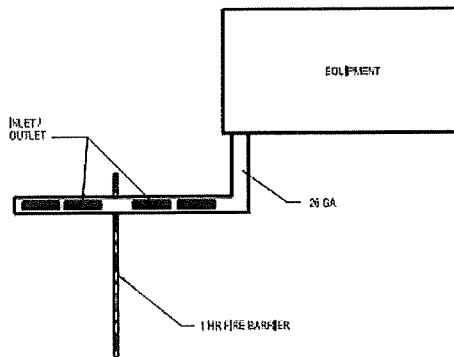
NO FIRE DAMPER REQUIRED

FULLY SPRINKLERED BUILDING  
FULLY DUCTED HVAC

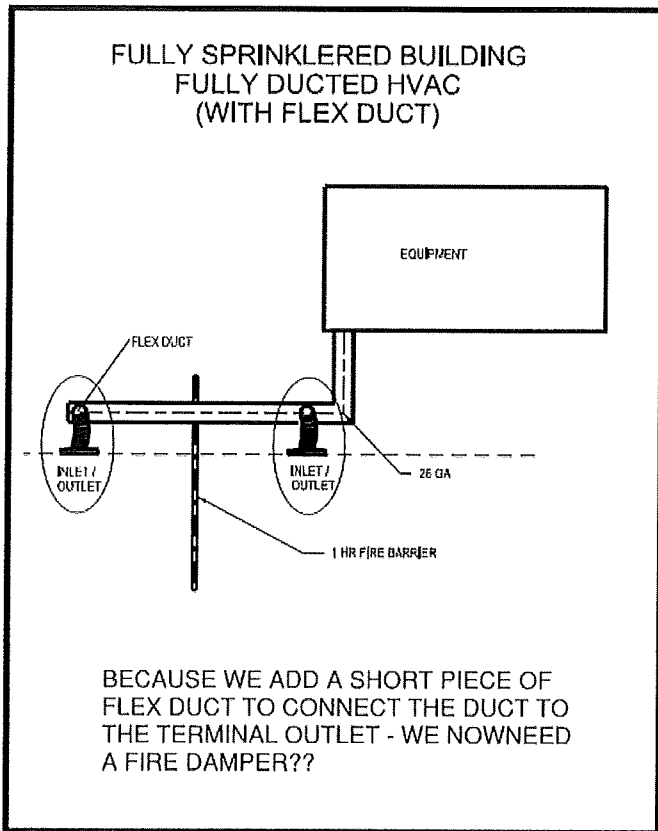


NO FIRE DAMPER REQUIRED

FULLY SPRINKLERED BUILDING  
FULLY DUCTED HVAC



NO FIRE DAMPER REQUIRED



Likewise, a flex connection at the AHU within the mechanical space does not constitute a hazard that should trigger the fire damper within the system

As proposed, this section will coordinate with the requirements already established in the International Mechanical Code. IMC Section 606.6.3 limits the design air temperature for flexible air connectors to 250 degrees F (121 C). Under the vast majority of conditions where flexible air connectors will be used (installed above a ceiling, light or ordinary hazard occupancy, ordinary or intermediate temperature sprinklers, quick or standard response), the sprinkler response can be demonstrated by calculation to occur before the ceiling jet temperature from a fire reaches the limit of 606.6.3.

The intention is to maintain the allowance of flexible connectors at the terminal end of hard ductwork within the room of the air register. This public comment maintains the requirements of the IMC, including:

Limiting the length of the flexible connector to 14 feet actual length.

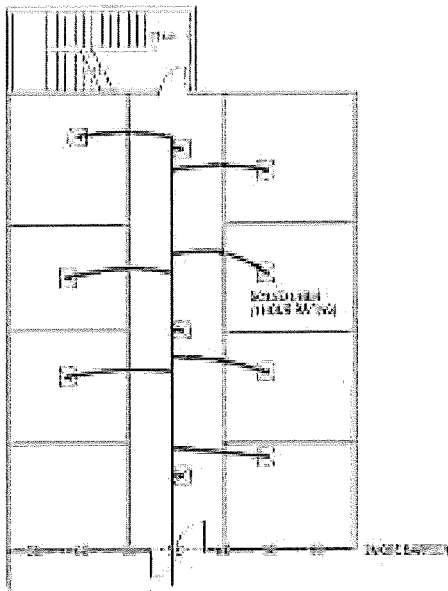
Requiring the flexible connector to be tested in accordance with UL 181.

Requiring use only at the end of hard ductwork.

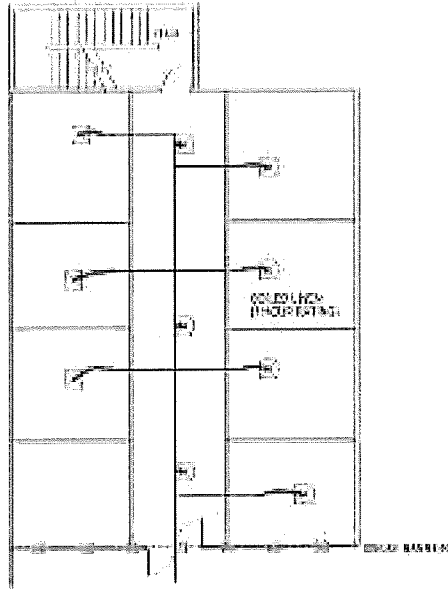
Maintains the requirement for hard ductwork to pass through the barrier.

This allows constructability of a fully ducted system, and maintains the integrity of the system throughout the building.

It is not the intention of the code change to allow flexible ducts through any vertical barriers (as already prohibited by Section 717.7). The flexible ductwork is only to be allowed within a room, and above the ceiling. See the sketch below to better clarify the intention.



ALL FIRE DAMPERS  
**NOT ACCEPTABLE**



ALL FIRE DAMPERS EXCEPT COLLECTOR (HALLWAY)  
**ACCEPTABLE**

This proposal is submitted by the ICC Committee on Healthcare (CHC). The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. In 2017 the CHC held 2 open meetings and numerous conference calls, which included members of the committees as well as any interested parties, to discuss and debate the proposed changes. Information on the CHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at: <https://www.iccsafe.org/codes-tech-support/cs/icc-committee-on-healthcare/>.

**Cost Impact**

The code change proposal will decrease the cost of construction .

This proposed code change would result in a decrease in construction cost since this will eliminate fire dampers where the building/installation complies with the requirements of the proposed exception. Where a building does not meet the requirements of the proposed exception, there would be no change in construction cost (dampers would still be required as they are now).

Internal ID: 1286

inspection and maintenance of the damper and its operating parts. Dampers equipped with fusible links, internal operators, or both shall be provided with an access door that is not less than 12 inches (305 mm) square or provided with a removable duct section.

**~~717.4.3 Periodic inspection and testing.~~**

~~Periodic inspection and testing of fire dampers shall be in accordance with NFPA 80. Periodic inspection and testing of smoke dampers shall be in accordance with NFPA 105. Periodic inspection and testing of combination fire/smoke dampers shall be in accordance with NFPA 80 and NFPA 105.~~

**Committee Reason:** The proposal provides key information in the IBC regarding access to fire and smoke dampers. The access is needed for periodic testing required by the IFC. Therefore the construction aspects of providing the access is now positioned in the IBC. The modifications leave the periodic inspection and testing as part of the IFC. (Vote 14-0)

**Assembly Motion:** **NONE**

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**FS67-18**

**Committee Action:** **Approved as Submitted**

**Committee Reason:** The proposal reflects common practice for many of these installations. It is consistent with the IMC. Flex duct is limited to 14 feet. (Vote 13-1)

**Assembly Motion:** **NONE**

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**FS68-18**

**Committee Action:** **Withdrawn**

**Assembly Motion:** **NONE**

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**FS69-18**

**Committee Action:** **Disapproved**

**Committee Reason:** The proposal expands an existing exception significantly. There is not adequate substantiation for this expansion. Among the issues is it expands the exception from occupancies required to provide fast response sprinkler heads to those which do not. (Vote 14-0)

**Assembly Motion:** **NONE**

**Staff Analysis:**

If this proposal is reconsidered and approved, changes made to the IBC text will also be made to text in Section 607 of the IMC which parallels these IBC provisions.

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**FS70-18**

**Committee Action:** **Approved as Submitted**

**Committee Reason:** The committee was convinced by the proponent's reason statement. The clarification of the guage is important. (Vote 14-0)

**Assembly Motion:** **NONE**

**Staff Analysis:**

New provisions in the IBC would be also added to Section 607 of the IMC.

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**FS71-18**

**INSTRUCTIONS**

- Each code section must be submitted on a separate form.
- Each proposal must be written in legislative format.
- Proposed code changes shall not reduce any fire or life-safety provision without including additional provisions that comply with the intent of the unaltered code, and results in an amendment that is no less equivalent of that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety for the purpose intended.
- The justification should address safety impact, enforceability, cost effectiveness, or unique local conditions.
- This proposal form must be completed electronically. Handwritten forms will not be accepted.
- If additional space is needed, please complete page 2.
- Return the form during the established comment period to the Building Code Enforcement Regulatory Affairs office via email at [heath.wierck@houstontx.gov](mailto:heath.wierck@houstontx.gov) or [michael.howard@houstontx.gov](mailto:michael.howard@houstontx.gov).

**CONTACT INFORMATION**

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<b>Organization:</b> <u>SFPE/CIC</u>	<b>Phone:</b> <u>713-229-7430</u>
<b>Code:</b> <u>IBC</u>	<b>Code Section:</b> <u>901.9</u>

**Proposed Change in Legislative Format (new words underlined ~~deleted words struck out~~):**

~~901.9 Fire pumps. Fire pumps shall be listed by Factory Mutual, Underwriters Laboratories or another approved agency and shall not deliver less than the required fire flow and pressure in accordance with the listing. Such pumps shall be automatic operation. (See the Electrical Code for additional requirements.) When such pumps are not approved for direct connection to the city main, the source of supply for such pumps shall be a minimum 2500-gallon break tank served from the city main.~~

Fire pumps shall be listed by Factory Mutual, Underwriters Laboratories or another approved agency. Such pumps shall be automatic operation, and the system flow and pressure shall be sized based on the requirements of NFPA 20. See the Electrical Code for additional requirements. When such pumps are not approved for direct connection to the city main, the source of supply for such pumps shall be a suction tank served from the city main sized in accordance with NFPA 20 and NFPA 22. A smaller tank may be provided when an engineering analysis can show that the refill of the tank will maintain the 150% design flow of the fire pump.

**Justification:**
**Date: 3/3/2021**

This draft proposed language reverts to the 2006 IBC/IFC code language and not the 2012 approved amended language. This language was changed to the proposed language in the 2012 amended IFC language to address the issue that the previous (2006 and earlier) language is now in conflict with NFPA 20 and NFPA 22 regarding the sizing of break tanks that are mandated by COH Water Department. This language will set the default break tank to the NFPA 20 size (which is larger than legacy 2,500 gal size) unless an analysis proves that the refill can keep up with the 150% flow of the pump.

Note there is another proposed option that eliminates any adjustment and all new break tanks must meet NFPA 20 sizing.

Approved

Denied

Modified

**Date:** 4/8/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Hicks. After review of the proposal by the Code Development Committee the request has been denied. It's unclear how the provisions are in conflict; 2500 is the minimum required and doesn't prohibit larger sizes if required by NFPA. The Committee agrees the proposal would eliminate established break tank provisions that are required by Public Works policy to protect City infrastructure. The proposal would additionally conflict with the Mayor's construction resiliency initiative. For these reasons the request has been denied.

**INSTRUCTIONS**

- Each code section must be submitted on a separate form.
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<b>Code:</b> <u>IBC</u>	<b>Code Section:</b> <u>901.9</u>

**Proposed Change in Legislative Format (new words underlined ~~deleted words struck out~~):**

~~901.9 Fire pumps. Fire pumps shall be listed by Factory Mutual, Underwriters Laboratories or another approved agency and shall not deliver less than the required fire flow and pressure in accordance with the listing. Such pumps shall be automatic operation. (See the Electrical Code for additional requirements.) When such pumps are not approved for direct connection to the city main, the source of supply for such pumps shall be a minimum 2500-gallon break tank served from the city main.~~

Fire pumps shall be listed by Factory Mutual, Underwriters Laboratories or another approved agency. Such pumps shall be automatic operation, and the system flow and pressure shall be sized based on the requirements of NFPA 20. See the Electrical Code for additional requirements. When such pumps are not approved for direct connection to the city main, the source of supply for such pumps shall be a suction tank served from the city main sized in accordance with NFPA 20 and NFPA 22.

**Justification:**
**Date: 3/3/2021**

This draft proposed language reverts to the 2006 IBC/IFC code language and not the 2012 approved amended language. This language was changed to the proposed language in the 2012 amended IFC language to address the issue that the previous (2006 and earlier) language is now in conflict with NFPA 20 and NFPA 22 regarding the sizing of break tanks that are mandated by COH Water Department. This language will set the default break tank to the NFPA 20 size (which is larger than legacy 2,500 gal size).

Note there is another proposed option that allows an Engineering Analysis to reduce the size of the tank when the refill can meet the 150% flow rate.

Approved

Denied

Modified

**Date:** 4/8/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Hicks. After review of the proposal by the Code Development Committee the request has been denied. It's unclear how the provisions are in conflict; 2500 is the minimum required and doesn't prohibit larger sizes if required by NFPA. The Committee agrees the proposal would eliminate established break tank provisions that are required by Public Works policy to protect City infrastructure. The proposal would additionally conflict with the Mayor's construction resiliency initiative. For these reasons the request has been denied.



**INSTRUCTIONS**

- Each code section must be submitted on a separate form.
- Each proposal must be written in legislative format.
- Proposed code changes shall not reduce any fire or life-safety provision without including additional provisions that comply with the intent of the unaltered code, and results in an amendment that is no less equivalent of that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety for the purpose intended.
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<b>Organization:</b> <u>SFPE/CIC</u>	<b>Phone:</b> <u>713-229-7430</u>
<b>Code:</b> <u>IBC/IFC</u>	<b>Code Section:</b> <u>905.4</u>

**Proposed Change in Legislative Format (new words underlined ~~deleted words struck out~~):**

905.4 Location of Class I standpipe hose connections

Class I standpipe hose connections shall be provided in all of the following locations:

1. In every required interior exit stairway, a hose connection shall be provided for each story above and below grade plane. Hose connections shall be located at an ~~intermediate~~ the main floor landing ~~between stories~~, unless otherwise approved by the fire code official.

**Justification:**
**Date: 3/3/2021**

Prior to the 2012 IBC/IFC amendments, Houston always required the hose connections to be at the main landings and amendments were made to adjust that. With the 2012 adoption, no amended language was adopted. The 2018 and 2021 editions of the IBC/IFC as well as the 2010, 2013, 2016, and 2019 editions of NFPA 14 all require the hose connections to be at the main landing.

This modification should be adopted as many of the existing buildings throughout the city have the hose connections at the main landing and this interim period with the 2012 adoption of the intermediate landings causes inconsistencies in buildings that are being modified. The future code path shows the intent for the connections to be at the main landing (as Houston has always done). This will eliminate confusion in both the design process as well as for the responding firefighters.

Approved

Denied

Modified

**Date:** 4/9/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Hicks. After review of the proposal by the Code Development Committee the request has been denied. The Houston Fire Department prefers hose connections to be located at intermediate landings to reduce congestion at the main floor stairway door, reduce the hose lay distance, and to eliminate open doors on the same floor fire is being fought. Hose connections may still be permitted at the main landings when specifically approved by the fire code official. For these reasons the request has been denied.

### INSTRUCTIONS

- Each code section must be submitted on a separate form.
- Each proposal must be written in legislative format.
- Proposed code changes shall not reduce any fire or life-safety provision without including additional provisions that comply with the intent of the unaltered code, and results in an amendment that is no less equivalent of that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety for the purpose intended.
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<b>Code:</b> <u>IBC</u>	<b>Code Section:</b> <u>1023.9.3</u>

#### **Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

1023.9.3 Reentry. Where stairway doors may be locked from the stairway side in accordance with this code, provisions for reentry shall be provided. In buildings not provided with an emergency control ~~situation~~ station or where the control station is not attended at all times while the building is occupied, alternate methods for rereleasing stairway doors shall be provided as required by the fire code official.

#### **Justification:**

Typographical error.

**Date:** 3/3/2021

Approved

Denied

Modified

**Date:** 4/8/2021

**Comments:** HPC appreciates the correction and will fix the error before adoption.



## Wierck, Heath - HPC - HPW

---

**From:** Wierck, Heath - HPC - HPW  
**Sent:** Wednesday, May 5, 2021 11:52 AM  
**To:** Hicks, Rob; Savasta, Mark - HPC-HPW; Peter Rollinger; Paul McKenna  
**Cc:** Valenti, John - HFD; Howard, Michael - HPC-HPW  
**Subject:** RE: Hicks PCP Discussion

Good morning Mr. Hicks:

My apologies for the lack of communication; it's been a little hectic on our end.

In regards to your submissions we discussed in our previous meeting I can confirm we've accepted and made the appropriate changes to the break tank and hose connection sections. Below I've posted the newly revised amendments for both.

### **R. Hicks; IFC/IBC – 905.4** – Amendment to be changed in both IFC and IBC.

**905.4 Location of Class I standpipe hose connections.** Class I standpipe hose connections shall be provided in all of the following locations:

1. In every required *interior exit stairway*, a hose connection shall be provided for each story above and below grade plane. Hose connections shall be located at ~~an intermediate~~ the main floor landing ~~between stories~~, unless otherwise *approved by the fire code official*.

[REMAINDER OF SECTION REMAINS AS IS IN THE 2015 INTERNATIONAL FIRE CODE]

### **R. Hicks; IFC/IBC – 901.9** – Amendment to be changed in both IFC and IBC.

**901.9 Fire Pumps.** Fire pumps shall be listed by Factory Mutual, Underwriters Laboratories or another approved agency and shall not deliver less than the required fire flow and pressure in accordance with the listing. Such pumps shall be automatic operation. (See the Electrical Code for additional requirements.) The source of supply for such pumps shall be a break tank served from the city main sized as required by NFPA 20 or a minimum 2500 gallons, whichever is more restrictive.

As for the flex duct submission, we're still in the process of researching this issue more in depth. Though, I believe we're leaning towards waiting until our next code cycle to incorporate these specific provisions. If anything changes we'll be sure to let you know.

If you have any additional questions and/or concerns, please feel free to reach out to myself or Mr. Howard.

Respectfully,

**Heath Wierck**  
Senior Plan Analyst  
Code Development  
City of Houston | Houston Public Works  
832.394.9171 | Cell 832.358.1508



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**From:** Hicks, Rob <ROB.HICKS@wsp.com>  
**Sent:** Wednesday, May 5, 2021 9:13 AM  
**To:** Savasta, Mark - HPC-HPW <Mark.Savasta@houston.tx.gov>; Peter Rollinger <peter@reifirepro.com>; Paul McKenna <pmckenna@brigade-fire.com>  
**Cc:** Valenti, John - HFD <John.Valenti@houston.tx.gov>; Wierck, Heath - HPC - HPW <heath.wierck@houston.tx.gov>; Howard, Michael - HPC-HPW <Michael.Howard@houston.tx.gov>  
**Subject:** RE: Hicks PCP Discussion

[Message Came from Outside the City of Houston Mail System]  
Any update on the decisions from our meeting?

Rob

**Robert S Hicks, PE**  
National Director, Fire & Life Safety



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Direct: +1 713 229 7430  
Mobile: +1 713 385 9446  
Email: [rob.hicks@wsp.com](mailto:rob.hicks@wsp.com)

WSP USA

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**From:** Savasta, Mark - HPC-HPW <Mark.Savasta@houston.tx.gov>  
**Sent:** Monday, April 19, 2021 12:22 PM  
**To:** Hicks, Rob <ROB.HICKS@wsp.com>; Peter Rollinger <peter@reifirepro.com>; Paul McKenna <pmckenna@brigade-fire.com>  
**Cc:** Valenti, John - HFD <John.Valenti@houston.tx.gov>; Wierck, Heath - HPC - HPW <heath.wierck@houston.tx.gov>; Howard, Michael - HPC-HPW <Michael.Howard@houston.tx.gov>; Howard, Michael - HPC-HPW <Michael.Howard@houston.tx.gov>  
**Subject:** RE: Hicks PCP Discussion

Thank you for your participation!!!

-----Original Appointment-----

**From:** Hicks, Rob <ROB.HICKS@wsp.com>  
**Sent:** Wednesday, April 14, 2021 8:28 PM  
**To:** Wierck, Heath - HPC - HPW  
**Cc:** Savasta, Mark - HPC-HPW  
**Subject:** Accepted: Hicks PCP Discussion

**When:** Monday, April 19, 2021 11:00 AM-12:00 PM (UTC-06:00) Central Time (US & Canada).

**Where:** HPC - Conference Rm 4A

[Message Came from Outside the City of Houston Mail System]

Heath,

I forwarded the invitation to Peter Rollinger (my CIC delegate and former lead for the Fire Code committee) as he was involved in the initial discussions on this topic.

He will also be joining us and I just wanted to give you heads up as to why I included him.

See you on Monday and thanks for scheduling.

Thanks,

Rob

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- If additional space is needed, please complete page 2.
- Return the form during the established comment period to the Building Code Enforcement Regulatory Affairs office via email at [heath.wierck@houstontx.gov](mailto:heath.wierck@houstontx.gov) or [michael.howard@houstontx.gov](mailto:michael.howard@houstontx.gov).

**CONTACT INFORMATION**

Heath Wierck — 832-394-9171 or Michael Howard — 832-394-9042

<b>Name:</b> <u>John Williams</u>	<b>Email:</b> <u>Houston CIC Residential Code Chair</u> <u>&lt;cichoustonrescodechair@gmail.com&gt;</u>
<b>Organization:</b> <u>Houston Consturction Industry Council</u>	<b>Phone:</b> <u>281-652-6548</u>
<b>Code:</b> R101.1	<b>Code Section:</b> <u>Chapter 1 – Use and Occupancy</u>
<p><b>Proposed Change in Legislative Format</b> (<u>new words underlined</u> <del>deleted words struck-out</del>):</p> <p>CERTIFICATE OF OCCUPANCY COMPLIANCE</p> <p>R110.1 Use and occupancy. <u>When requested by the applicant, the building official is authorized to issue a certificate of compliance after all the final inspections have been approved.</u> <del>A building or structure shall not be used or occupied, and a change in the existing use or occupancy classification of a building or structure or portion thereof shall not be made, until the building official has issued a certificate of occupancy therefor as provided herein. Issuance of a certificate of occupancy shall not be construed as an approval of a violation of the provisions of this code or of any other ordinances of the jurisdiction. Certificates presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid.</del></p> <p>Exceptions:</p> <ol style="list-style-type: none"> <li>1. <del>Certificates of occupancy are not required for work exempt from permits under Section R105.2.</del></li> <li>2. <del>Accessory buildings or structures</del></li> </ol>	

**Justification:**

**Date: 2/7/2021**

Several revisions were included in the newly proposed amendment language in the 2.1.2021 version of the City amendments which differ from previous versions released and no explanation has been given to intent. None of these suggested changes were brought to the attention of the stakeholder group in previous discussions or city analysis. Our proposal is to keep the language in the current amendments (2012 Houston Residential Code) and strike revisions made in the February 2021 Houston proposed amendments.

Impact to enforceability: The impact should be favorable for the City, stakeholders, and citizens by keeping current and existing regulations and language intact and avoiding unnecessary and confusing administrative revisions.

Impact to cost effectiveness: The impact should be favorable for the City, stakeholders, and citizens by keeping current and existing regulations and language intact.

Approved

Denied

Modified

**Date: 3/24/2021**

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposed amendment by the Code Development Committee the request has been denied. The City frequently has issues securing final inspections for some residential permits, and residential dwellings being occupied before the dwelling is completed and inspected for final code compliance. The current proposed Houston amendment for Section R110.1 requiring a Certificate of Compliance for single-family residences was put forth in order to help clean up and streamline BCE's permitting and final inspection process for residential dwellings. Requiring a Certificate of Compliance will ensure homeowners are moving into a code compliant residence that provides efficient fire- and life-safety. Additionally, BCE receives numerous requests every year by homeowners seeking a Certificate of Compliance for their residence. Homeowners who have secured a Certificate of Compliance for their residence typically see increased benefits in home loans and insurance. For these reasons the Code Development Committee has agreed to deny the proposed request.

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<b>Organization:</b> <u>Houston Consturction Industry Council</u>	<b>Phone:</b> <u>281-652-6548</u>
<b>Code:</b> <u>R202</u>	<b>Code Section:</b> <u>Chapter 2 - Definitions</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck-out~~):

ALLEY. ~~A public or private *Public Way* that is not used primarily for through traffic and that provides vehicular access to rear entrances to buildings or properties that front on an adjacent street. Private alleys shall comply with the definition in this code of *Public Way*. Public alleys shall comply with the definition in this code for *Right of way*.~~

**Justification:**
**Date:** 2/7/2021

Strike complete definition of "Alley" in City's proposed language. There were multiple revisions in the latest version of the City of Houston proposed amendment to the 2015 IRC that were unannounced and no justification has been provided for them. A comparison between the versions published in April 2020 versus the current version published 2.1.2021 show s a mulititude of revision and new defintions without any explanation of intent. Several of these revisions have dramatic impact on existing and future "Alleys" defining them now as "public way", which by another newly introduced definition of Public restricts them to 20' in width and height. There is also a newly added definition for "exit discharge" that would restrict the alley as a path of egress if less than 20' in width and height. These new restrictions have multiple impacts:

- 1) Impact on enforceability. The 2 new definitions will create areas of unneccasary confusion for new permits and development on existing properties that may us the alley for a path of egress that is no longer allowed if the existing alley is less than 20' in width. Many areas will also have issue with the 20' in height requirement.

- 2) Impact on cost effectiveness. The combination of this new definition along with the definition of "Public Way" and "Exit Discharge" will render many properties less favorable to future work due to newly established restrictions on egress. This will devalue some properties.
- 3) Impact of Safety. Many alleys are used for parking purposes to avoid backing in from a busy street. By forcing citizens with alleys less than 20' wide or 20' high from utilizing this space for use as an alley will decrease the safety for the occupants.
- 4) Unique Local Conditions. The Planning Commission, in conjunction with the Mayor's office, has been working towards policy that encourages more rear access units through alley ways. Making them 20' wide and high will make alleys less attractive to developers, more difficult to design for and construct, as well as reduce buildable area for housing during a prolonged housing shortage. There are an abundance of lots served by alleys that no longer meet the proposed definition. Restricting the use of alleys moving forward ignores our local conditions and will promote future development that is detrimental to neighborhood design/function/aesthetic, as well as lead to an less efficient use of urban land during a prolonged housing shortage.
- 5) City of Houston Planning Commission is consistently looking for ways to use more alleys for rear access to create a better city streetscape as well as limit unnecessary curb cuts. Use of alleys is a goal of the Planning Commission. Chapter 42 also encourages alley way development.
- 6) The proposed amendment is unnecessary and is in direct conflict of the goals of the Mayor's Livable Spaces initiative.

Approved

Denied

Modified

**Date:** 4/15/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposal by the Code Development Committee the request has been approved. The Code Development Committee agrees the proposed language should be removed. The intent behind the proposed definition was to coordinate BCE and OCE provisions for alley to eliminate any conflicts. OCE has stated they're still in the lengthy process of coordinating these requirements, and as such BCE will wait to incorporate this amendment until BCE, OCE and HFD have had the opportunity to coordinate the requirements. The definition will be removed prior to adoption.

**INSTRUCTIONS**

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<b>Organization:</b> <u>Houston Consturction Industry Council</u>	<b>Phone:</b> <u>281-652-6548</u>
<b>Code:</b> <u>R202</u>	<b>Code Section:</b> <u>Chapter 2 - Definitions</u>

**Proposed Change in Legislative Format (new words underlined ~~deleted words struck-out~~):**

~~**EXIT.** That portion of a means of egress system between the exit access and the exit discharge or public way. Exit components include exterior exit doors at the level of exit discharge, interior exit stairways and ramps, exit passageways, exterior exit stairways and ramps and horizontal exits.~~

~~**EXIT ACCESS.** That portion of a means of egress system that leads from any occupied portion in a building or structure to an exit.~~

~~**EXIT ACCESS DOORWAY.** A door or access point along the path of egress travel from an occupied room, area or space where the path of egress enters an intervening room, corridor, exit access stairway or ramp.~~

~~**EXIT ACCESS RAMP.** A ramp within the exit access portion of the means of egress system.~~

~~**EXIT ACCESS STAIRWAY.** A stairway with the exit access portion of the means of egress system.~~

~~**EXIT DISCHARGE.** That portion of a means of egress system between the termination of an exit and a public way.~~

~~**EXIT DISCHARGE, LEVEL OF.** The story at the point at which an exit terminates and an exit discharge begins.~~

**MEANS OF EGRESS.** A continuous and unobstructed path of vertical and horizontal egress travel from any occupied portion of a building or structure to a public way. A means of egress consists of three separate and distinct parts: the exit access, the exit and the exit discharge.

**Justification:**

**Date: 2/7/2021**

8 new definitions appear in the 2.1.2021 version of the proposed Houston Residential Code which have not been previously published or reviewed by the Construction Industry Council. These proposed definitions carry heavy burdensome additional regulations upon the stakeholders and citizens and have been presented without announcement and without proper time to review the impacts. Our recommendation is to stay with base code and delete each of the unwarranted additions.

2015 IRC Base Code intent for "Means of Egress" from R311 is summarized as follows: *"Dwellings shall be provided with a means of egress in accordance with this section. The means shall provide a continuous and unobstructed path of vertical and horizontal egress travel from all portions of the dwelling to the required egress door without requires travel through a garage. The required egress door shall open directly into a public way or to a yard or court that opens into a public way."* There is no justifiable need for an additional definition.

Impact on enforceability: The new definitions apply egress home regulations to the outside of the home as well by the new definition. These will be difficult to interpret and enforce, especially with remodel work. Previous direction for the City of Houston has dictated to keep base code whenever possible. There is no justification provided by the City of Houston on how this could possibly aid enforceability. Base code should remain, and the proposed definitions dropped.

Impact of cost effectiveness. By applying egress code regulations from the "Egress Door" now to the entire newly defined "Means of Egress", there are now tight restrictions on all aspects of egress outside the dwelling including illumination, max./min. riser/tread heights for stairs, minimum headroom, floor elevations, etc. This is an unjustified code proposal that we have been surprised with and do not have proper time to thoroughly review. In addition, The combination of this new definition along with the definition of "Public Way" and "Exit Discharge" will render many properties less favorable to future work due to newly established restrictions on egress. This will devalue some properties.

Unique Local Conditions. The Planning Commission, in conjunction with the Mayor's office, has been working towards policy that encourages more rear access units through alley ways. When referencing the impact of these 8 newly proposed definitions in conjunction with newly proposed definitions of "Public Way", "Alley", "Right of Way", etc., the result is a newly imposed and unjustified much higher set of restrictions on single family lot development and remodeling which is in direct conflict with many of the Mayor's Livable Spaces initiative. There are an abundance of lots served by alleys and other configurations that no longer meet the proposed definition. Restricting the use of alleys moving forward ignores our local conditions and will promote future development that is detrimental to neighborhood design/function/aesthetic, as well as lead to a less efficient use of urban land during a prolonged housing shortage.

City of Houston Planning Commission is consistently looking for ways to use more alleys for rear access to create a better city streetscape as well as limit unnecessary curb cuts. Use of alleys is a goal of the Planning Commission. Chapter 42 also encourages alley way development.

Inclusion of these unnecessary definitions cloud the intent of the code, hindering enforceability, as well as unnecessarily deviating from the existing base code with no prior written justification.

There should be no negative impact to safety compared to base code as base code should prevail.

Approved

Denied

Modified

**Date:** 3/24/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposed amendment by the Code Development Committee the request has been denied. The 2012 IRC added provisions for egress but didn't add supplement definitions to define the different aspects of egress. The Houston proposed amendments for these definitions were taken from the IBC and included to clarify and define portions of egress. Furthermore, when definitions are not located in one code but are located in the IBC, the general practice of BCE is to use the IBC definitions. The addition of these definitions is to provide clarity, ease of access, and correlation to already established IBC definitions. For these reasons the Code Development Committee has denied this request.

**R201.3 Terms defined in other codes.** Where terms are not defined in this code such terms shall have the meanings ascribed in other code publications of the International Code Council.





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<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>713-460-6207</u>
<b>Code:</b> <u>R202</u>	<b>Code Section:</b> <u>Definitions</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck-out~~):

**PUBLIC WAY.** A street, alley or other parcel of land open to the outside air leading to a street, that has been deeded, dedicated or otherwise permanently appropriated to the public for public use and which has a clear width and height of not less than 10 20-feet (~~30486096~~ mm).

**Justification:**
**Date:** 2/7/2021

Strike revised definition of "Public Way" in City's proposed language and keep base code language. This code proposal from the City is one of several revisions to the proposed language have changed in the city version of the proposed amendments that were released on 2.1.2021 which have dramatic impact on existing and future development. For example, "Alleys" defining them now as "public way". "Public Way" now having a new definition. As proposed by the City of Houston "Public Way" definition as well as proposed language for "Right of Way" place a multitude of unnecessary and burdensome restricts upon the areas listed. These new restrictions have multiple impacts:

- 1) Impact on enforceability. The new definitions will create areas of unnecessary confusion for new permits and development on existing properties that may use the alley for a path of egress that is no longer allowed if the existing alley is less than 20' in width. Many areas will also have issue with the 20' in height requirement. Enforceability and appropriation issues will unnecessarily arise on what is public versus private by new definitions.

- 2) Impact on cost effectiveness. The combination of this new definition along with the definition of “Right of Way”, “Public Way” and “Exit Discharge” will render many properties less favorable to future work due to newly established restrictions on egress. This will devalue some properties.
- 3) Impact of Safety. Many alleys are used for parking purposes to avoid backing in from a busy street. By forcing citizens with alleys less than 20’ wide or 20’ high from utilizing this space for use as an alley will decrease the safety for the occupants.
- 4) Unique Local Conditions. The Planning Commission, in conjunction with the Mayor’s office, has been working towards policy that encourages more rear access units through alley ways. Making them 20’ wide and high will make alleys less attractive to developers, more difficult to design for and construct, as well as reduce buildable area for housing during a prolonged housing shortage. There are an abundance of lots served by alleys that no longer meet the proposed definition. Restricting the use of alleys moving forward ignores our local conditions and will promote future development that is detrimental to neighborhood design/function/aesthetic, as well as lead to an less efficient use of urban land during a prolonged housing shortage.
- 5) City of Houston Planning Commission is consistently looking for ways to use more alleys for rear access to create a better city streetscape as well as limit unnecessary curb cuts. Use of alleys is a goal of the Planning Commission. Chapter 42 also encourages alley way development.
- 6) The proposed amendment is unnecessary and is in direct conflict of the goals of the Mayor’s Livable Spaces initiative by restricting ability to use alley access for development.
- 7) This unnecessary proposed definition revision clouds the intent of the code, hindering enforceability, as well as unnecessarily deviating from the existing base code with no prior written justification. This is also another revision and new regulation included only after the public comment version of the draft amendment has been released. This is deceptive and unnecessary.

Approved

Denied

Modified

**Date:** 4/15/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposal by the Code Development Committee the request has been approved. The Code Development Committee agrees the proposed language should be removed. The intent behind the proposed definition was to coordinate BCE and OCE provisions for public way to eliminate any conflicts. OCE has stated they’re still in the lengthy process of coordinating these requirements, and as such BCE will wait to incorporate this amendment until BCE, OCE and HFD have had the opportunity to coordinate the requirements. The definition will be removed prior to adoption.

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<b>Code:</b> <u>R202</u>	<b>Code Section:</b> <u>Chapter 2 - Definitions</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**RIGHT-OF-WAY.** ~~The entire area between the property boundary lines of every way (including but not limited to roads, streets, alleys, highways, boulevards, bridges, tunnels, or similar thoroughfares), whether acquired by purchase, grant, or dedication by the state or federal government, or acceptance by the authority having jurisdiction for public use.~~

**Justification:**
**Date: 2/7/2021**

Strike complete definition of "Right-of-Way" in City's proposed language. Several revisions to the proposed language have changed in the city version of the proposed amendments that were released on 2.1.2021 which were unannounced and differ entirely from the version of amendments published by the City of Houston in April of 2020. These changes have dramatic potential impact on existing and future "Alleys" defining them now as "public way" and herin as "right of way", which by another newly introduced definition of Public Way and now Right of Way puts a mulitide of unneccesary and burdensome restricts upon the areas listed. These new restrictions have multiple impacts:

- 1) Impact on enforceability. The 2 new definitions will create areas of unneccasary confusion for new permits and development on existing properties that may us the alley for a path of egress that is no longer allowed if the existing alley is less than 20' in width. Many areas will also have issue with the 20' in height requirement. Enforceability issues on what is public versus private by new definitions.

- 2) Impact on cost effectiveness. The combination of this new definition along with the definition of “Right of Way”, “Public Way” and “Exit Discharge” will render many properties less favorable to future work due to newly established restrictions on egress. This will devalue some properties.
- 3) Impact of Safety. Many alleys are used for parking purposes to avoid backing in from a busy street. By forcing citizens with alleys less than 20’ wide or 20’ high from utilizing this space for use as an alley will decrease the safety for the occupants.
- 4) Unique Local Conditions. The Planning Department in conjunction with the Mayor’s office has been working towards policy that encourages more rear access units through alley ways. The new restrictions will adversely affect the desired outcome, as well as reduce buildable area for housing during a prolonged housing shortage. There are an abundance of lots served by alleys that no longer meet the proposed definition. Restricting the use of alleys moving forward ignores our local conditions and will promote future development that is detrimental to neighborhood design/function/aesthetic, as well as lead to an less efficient use of urban land during a prolonged housing shortage.
- 5) City of Houston Planning Commission is consistently looking for ways to use more alleys for rear access to create a better city streetscape as well as limit unnecessary curb cuts. Use of alleys is a goal of the Planning Commission. Chapter 42 also encourages alley way development.
- 6) The proposed amendment is unnecessary and is in direct conflict of the goals of the Mayor’s Livable Spaces initiative by restricting uses of alleys.
- 7) Inclusion of this unnecessary definition clouds the intent of the code, hindering enforceability, as well as unnecessarily deviating from the existing base code with no prior written justification. This is also another added definition and new regulation included only after the public comment version of the draft amendment has been released. This is deceptive and unnecessary.

Approved

Denied

Modified

**Date:** 4/15/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposal by the Code Development Committee the request has been approved. The Code Development Committee agrees the proposed language should be removed. The intent behind the proposed definition was to coordinate BCE and OCE provisions for right-of-way to eliminate any conflicts. OCE has stated they’re still in the lengthy process of coordinating these requirements, and as such BCE will wait to incorporate this amendment until BCE, OCE and HFD have had the opportunity to coordinate the requirements. The definition will be removed prior to adoption.

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<b>Name:</b> <u>John Williams</u>	<b>Email:</b> <u>Houston CIC Residential Code Chair</u> <u>&lt;cichoustonrescodechair@gmail.com&gt;</u>
<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>281-652-6548</u>
<b>Code:</b> <u>R311.7.5 Stair treads and riser</u>	<b>Code Section:</b> <u>Chapter 3 – Building Planning</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**R311.7.5 Stair treads and risers.** Stair treads and risers shall meet the requirements of this section. For the purposes of this section, dimensions and dimensioned surfaces shall be exclusive of carpets, rugs or runners.

**R311.7.5.1 Risers.** The riser height shall be not more than 8 ¼ inch (210mm) ~~7¾ inches (196 mm)~~. The riser shall be measured vertically between leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm) at adjacent risers and ½ inch (12.7 mm) maximum variation over all risers in the flight. Risers shall be vertical or sloped from the underside of the nosing of the tread above at an angle not more than 30 degrees (0.51 rad) from the vertical. Open risers are permitted provided that the openings located more than 30 inches (762 mm), as measured vertically, to the floor or grade below do not permit the passage of a 4-inch-diameter (102 mm) sphere.

**Exceptions:**

1. The opening between adjacent treads is not limited on spiral stairways.
2. The riser height of spiral stairways shall be in accordance with Section R311.7.10.1.

**R311.7.5.2 Treads.** The tread depth shall be not less than 9 inches (229mm) ~~10 inches (254 mm)~~. The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 ½" inch (9.5 mm 12.7 mm).

**Justification:****Date: 2/8/2021**

This amendment retains the stair geometry requirements allowed under the Building Officials and Code Administrators National Building Code (BOCA). Prior to the Building Officials and Code Administrators 1996 BOCA National Building Code, and the 1995 CABO One-and-Two Family Building Code, stair geometry requirements were set at the 8¼" x 9" dimensions as well. These dimensions are still accepted by many state and local jurisdictions across the country. The maximum variation in riser height and tread depth has also been revised.

These dimensions, originally accepted in the first draft of the IRC and the historic dimensions in the Council of American Building Official's CABO One- and Two-family Building Code, adequately provide for stair safety in residential occupancies.

No sound documentation or data has ever been presented demonstrating these proposed dimensions are any less safe or are a contributing factor in accidental residential falls than a stair geometry of 7¾"x 10".

The safety benefits of the 7¾"riser and 10" tread stair geometry are technically unsubstantiated and are not practical in many home designs. If the footprint of the house must be increased to accommodate the additional space needed, adequately sized living spaces are sacrificed without any demonstrated gain. This can lead to an economic hardship on first-time home buyers of smaller homes, and in particular for construction on smaller lots, infill projects, and townhomes which are so common in Houston. This simple correction in the code could provide an extra 2 ft2 to 3ft2 of living space. Examples provided at the end of this text.

As outlined in Section R101.3 of the IRC, the code is to provide minimum requirements for occupant safety and health. There is adequate substantiation to show that 8¼-inch x 9 inch geometry provides this minimum level of occupant safety.

Impact to cost effectiveness: very favorable.

Impact to enforceability: very favorable.

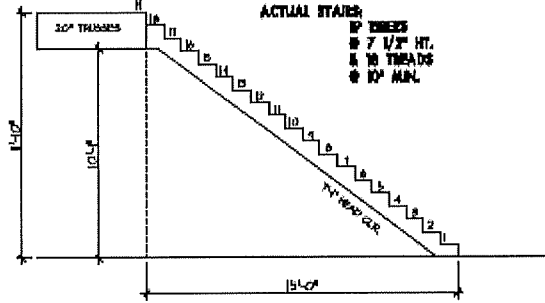
The language proposed herein by allowing increased design and construction flexibility also specifically caters to our unique local conditions where housing is at a shortage, costs have dramatically increased, and developable, affordable lots are scarce.

Examples of gained living space continue on the next page.

## EXISTING CODE

10 FT CEILING WITH 20" TRUSSES

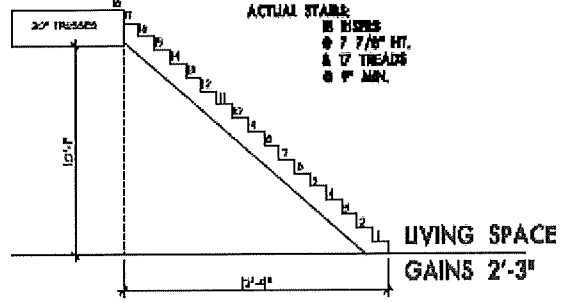
RISERS: 7 3/4" MAX.  
TREADS: 10" MIN.



## PROPOSED CODE

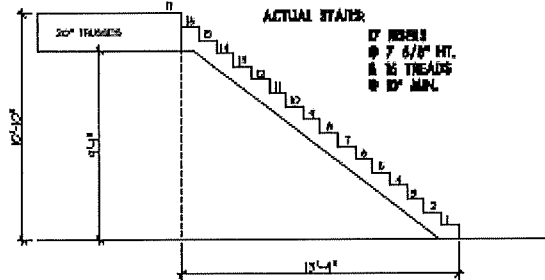
10 FT CEILING WITH 20" TRUSSES

RISERS: 8 1/4" MAX.  
TREADS: 9" MIN.



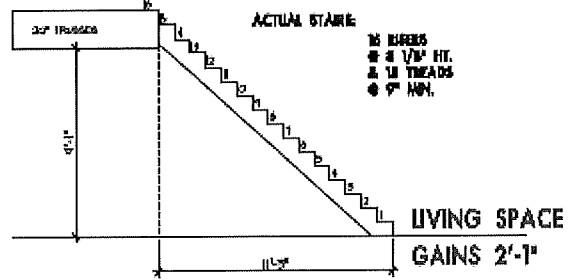
9 FT CEILING WITH 20" TRUSSES

RISERS: 7 3/4" MAX.  
TREADS: 10" MIN.



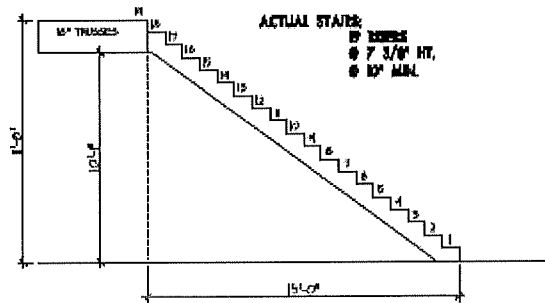
9 FT CEILING WITH 20" TRUSSES

RISERS: 8 1/4" MAX.  
TREADS: 9" MIN.



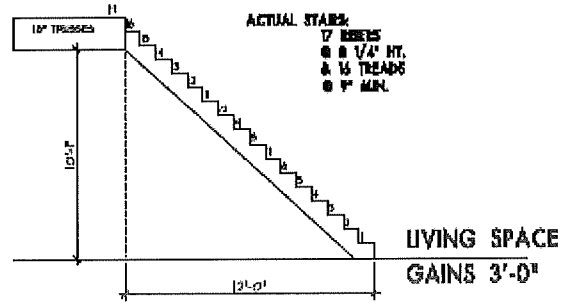
10 FT CEILING WITH 18" TRUSSES

RISERS: 7 3/4" MAX.  
TREADS: 10" MIN.



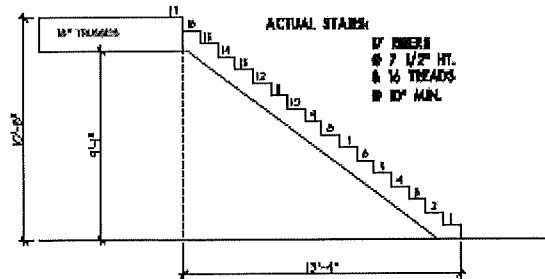
10 FT CEILING WITH 18" TRUSSES

RISERS: 8 1/4" MAX.  
TREADS: 9" MIN.



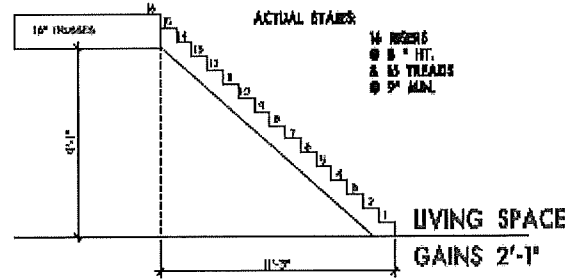
9 FT CEILING WITH 18" TRUSSES

RISERS: 7 3/4" MAX.  
TREADS: 10" MIN.



9 FT CEILING WITH 18" TRUSSES

RISERS: 8 1/4" MAX.  
TREADS: 9" MIN.



Approved

Denied

Modified

**Date:** 3/24/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposed amendment by the Code Development Committee the request has been denied. The requirements for stair treads and risers have changed over the years to greatly reduce the potential for accidents. Reverting to 15-year old requirements for treads and risers would be a reduction in life-safety and would lessen the provisions of model code. For these reasons the Committee has agreed the proposed request should be denied.



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<b>Name:</b> <u>John Williams</u>	<b>Email:</b> <u>Houston CIC Residential Code Chair</u> <u>&lt;cichoustonrescodechair@gmail.com&gt;</u>
<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>713-460-6207</u>
<b>Code:</b> <u>R703.7</u>	<b>Code Section:</b> <u>Exterior Plaster</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck-out~~):

**R703.7 Exterior plaster.** Installation of these materials shall be in compliance with ASTM C 926, ASTM C 1063 and the provisions of this code.

**Exception: Lath may be continuous behind control joints**

**Justification:**
**Date: 3/3/2021**

ASTM c1063 does not recognize the distinction between control joints and expansion joints. Control joints in stucco cladding are to serve as artificial planes of weakness where stress generated in the building or due to thermal changes can dissipate without forming cracks. Control joints are an integral part of successful stucco applications in our region. Lath and plaster association and bureaus have published a number of standards and best practice documents that recognize this distinction (see further in this justification for a sample). These associations recognize that cutting the lath behind the control joints is not necessary nor always practical for the control joints to function as relievers of stress within the membrane. In addition, when mandating expansion joint requirements on control joints, the requirement to lap the weather resistive barrier unnecessarily creates big concerns with water intrusion by mandating breaks which are susceptible to wind driven rain. Temperature fluctuations, wind load considerations, and wind driven rain frequency are all local design conditions that this amendment will serve. By recognizing a standardly accepted industry best practice in the code, cost effectiveness will increase. This is already a common application that is accepted by inspectors, so allowing this amendment into the code will increase enforceability by officially allowing

something that is already commonly accepted. By providing design and construction flexibility to incorporate this best practice, the amendment will aid in safety by creating a more durable cladding that will perform better for longer as well as help mitigate health and safety concerns associated with water intrusion and potential future frame failure due to wood rot.

In addition to the supporting documents provided in this justification, Northwest Walls and Ceilings Bureau (NWWCB) is another leading plastering industry association that collaborates with the Texas Lathing and Plastering Contractors Assoc. (TLPCA) and supports continuous lath behind one-piece stucco control joints. In their 'Stucco Resource Guide' publication, the NWWCB states:

"Installing control joints over continuous lath is an approved method but not when they are to function as an expansion joint. Control joints are a one-piece accessory." Item #24 p208

"Self-furring lath should be continuous behind control joints." Item #43 p210

Industry associations that recognize and support continuous lath behind control joints as an accepted installation method are:

Association of Wall and Ceiling Industry (AWCI)

Stucco Manufacturers Association (SMA)

In addition, there are several studies supporting continuous lath behind control joints in so much as the studies found little to no benefit to discontinuous lath as it pertains to crack control, crack mitigation, or overall stucco performance. One such study was conducted on Galveston island over a 9-12 month period.

(NOTE: Supporting documents fall on the next pages).



TEXAS  
LATHING &  
PLASTERING  
CONTRACTORS  
ASSOCIATION

Lath • Plaster • Stucco  
E.I.F.S. • Drywall  
Veneer Stone  
Fireproofing

### CONTROL JOINT – ALTERNATE METHOD OF APPLICATION

The contract documents make reference to *ASTM C1063 – Installation of Lathing & Furring for Portland Cement Plaster*. A clarification and definition of Control Joints as well as an alternate method of installing Control Joints in the Portland Cement Plaster is being submitted for use on this project.

**ALTERNATE METHOD OF INSTALLATION:** The control joints installed in the field of the stucco cladding will be installed on top of the metal lath plaster base without cutting the lath behind the control joint.

#### RATIONALE

ASTM C1063 Article 7.11.4 *Control Joints-General* and 7.11.4.1 *Control Joints*, do not recognize the distinction between expansion joints and control joints. In fact, Section 8 Keywords uses the term “*expansion control joint*.” Article 7.10.1.4 reads “*Lath shall not be continuous through control joints but shall be stopped and tied at each side.*” If this statement is applied to the control joint when used as a true expansion joint, then you will find no confusion or disagreement in the industry.

Control joints, as recognized in the lath and plaster industry, are a part of the lath and plaster assembly, not of the structure. Control joints in stucco cladding installations are to serve as artificial planes of weakness where stresses, generated in the building or due to thermal changes and introduced into the stucco, can dissipate without forming cracks in the stucco. Control joints do not imply that cracks will not occur in stucco. Control joints do not act like an expansion joints. Control joints do not move in an accordion fashion.

Lath and plaster promotional bureaus have, over the years, published industry standards, practices and documents which are representative of successful installations in the lath and plaster industry. Two of the oldest and most respected bureaus in the country are the Northwest Wall and Ceiling Bureau (NWWCB) and the Texas Bureau for Lathing and Plastering (TBLP). For years Architects and Engineers have recognized the protracted political process when trying to effect changes or get clarification in national standards such as ASTM and ANSI and have relied on promotional bureaus for up to date accurate means and methods. Both the NWWCB and TBLP recognize that the cutting of the lath behind the control joints is not necessary nor always practical for the control joints to function as relievers of stress within the membrane. Each has published documents which express this opinion.

The Guide Specifications for Metal Lathing and Furring published by the Metal Lath/Steel Framing Association in 1991 references different methods of installing control joints. Where a double stud is not present, the metal lath is shown as continuous behind the control joint. This concurs with the TBLP and NWWCB position.

When metal lath is installed the sheets of metal lath are staggered to prevent alignment of sheet laps to line up which would create an unwanted plane of weakness in the wall. ASTM C1063 Article 7.8.1 states that *side laps of metal plaster bases shall be secured to framing members*. If you cut the lath behind control joints without placing metal support framing behind each leg of the control joint, then you violate Article 7.8.1. It is not practical to install double stud framing at each side of a control joint, vertical or horizontal. To do so in effect makes the control joint an expansion joint.

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[info@tlpca.org](mailto:info@tlpca.org) TOLL-FREE 866-96-TLPCA [www.tlpca.org](http://www.tlpca.org)

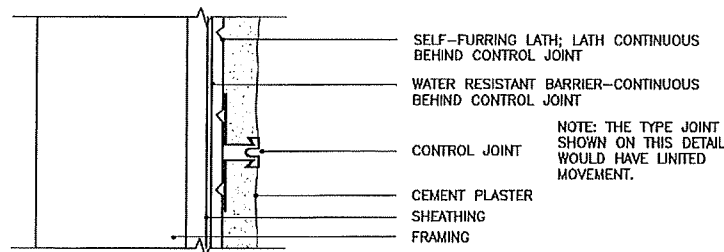


## Lath & Plaster Control Joints over Continuous Lath

The ASTM C1063<sup>1</sup> is the specification for installation of lathing and furring materials. ASTM C1063 states that the lath shall not be continuous through the control joints. However, it does not state proper backing is required at vertical control joint locations to properly secure the discontinuous ends of the metal lath/wire. This is only a concern for vertical control joint locations on vertical walls (control joints that are installed parallel to the framing). Control joints and proper backing (framing) shall be specified by the architect or designer and installed where indicated on the plans.

Where backing is not provided and cannot be added for financial, scheduling or other issues, an option is to surface-apply the vertical control joint accessory to the face of the continuous lath and attach with tie wire (or equal). If the vertical control joint accessory is to be surface applied, it is recommended that all of the control joint accessories are installed in the same manner. Additional backing for horizontal control joints is not required.

The method of "continuous lath" has been practiced successfully for decades; however this method will need to be approved by the architect and building code official before proceeding. The below detail (courtesy of the Northwest Walls and Ceilings Bureau's "Stucco Resource Guide") illustrates the lath being continuous and the control joint accessory surface-applied to the metal lath/wire.



J4 – Horizontal or Vertical Control Joint

Control joint accessories are utilized for aesthetic purposes, create workable panel sizes, work as screeds to aid in stucco thickness control, and to help minimize stress due to stucco curing, drying shrinkage and minor movement. The accessories isolate one plaster panel to another, but are not intended to be a substitution for an expansion joint.

*This technical document is to serve as a guideline and not intended for any specific construction project. TSIB makes no warranty or guarantee, expressed or implied.*

<sup>1</sup> Standard Specification for Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster  
Technical Services Information Bureau

1910 North Lime Street · Orange, CA 92665-4123 · (714) 221-5530 · Fax (714) 221-5535 · www.tsib.org

Approved

Denied

Modified

**Date:** 3/25/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposed amendment by the Code Development Committee the request has been approved. The Committee agrees the proposed amendment is an accepted industry practice and clarifies the intent of these type of lath applications. In order to provide additional clarity for the inspection process two definitions for "control joint" and "expansion joint" will be included in the Houston amendments as shown below.

**Control Joint.** A one-piece material of metal, zinc, or plastic installed in the surface membrane only of plaster or stucco finish in order to allow for minimal stress relief and reduce minor cracking of the surface. A control joint may not serve as an Expansion Joint.

**Expansion Joint.** A two-piece slip joint of metal, zinc, or plastic installed in a stucco or plaster finish system to accommodate expansion and contraction of the system as well as building movement, and where the framing, sheathing, and lath are cut to create a true plane of expansion. An Expansion Joint may also serve as a Control Joint.



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<b>Organization:</b> <u>IW Consulting Service, LLC</u>	<b>Phone:</b> <u>888-615-5615</u>
<b>Code:</b> <u>2015 UPC</u>	<b>Code Section:</b> <u>1014.1.3</u>

**Public Comment/Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

1014.1.3 Food Waste Disposers and Dishwashers. No food waste disposers shall be installed in a commercial kitchen unless approved by the Authority Having Jurisdiction. When approved for installation, food waste disposers shall be connected to a grease interceptor. A solids separator shall be installed either in the drain line from the food waste disposer or upstream of the grease interceptor to prevent food waste particles from entering the grease interceptor. ~~or dishwashers shall~~ may be connected to or discharge into a grease interceptor. Commercial food waste disposers shall not be permitted to discharge directly into the building's drainage system.

~~Exception: Food waste disposers shall be permitted to discharge to grease interceptors that are designed to receive the discharge of food waste.~~

**Justification:**
**Date:** 3/22/2021

Food waste disposers (FWD) have been documented to discharge very high concentrations of fats, oils, and grease (FOG).

The New York City Department of Environmental Protection published a study titled Commercial Food Waste Disposal Study on December 31, 2008. The purpose of the study was to evaluate "the costs and benefits of allowing the use of commercial food waste disposers (FWDs) in New York City."

The study concluded that the costs and risks associated with allowing the use of commercial FWDs in New York was not sustainable for a variety of reasons including, "While it is illegal to discharge fats, oil, and grease (FOG) into the sewer system, FOG is still a cause of sewer backups. Due to the high fat content of food waste, use of FWDs would discharge substantial amounts of FOG to the sewer system, which could lead to more sewer backups and maintenance needs."

The fat content of the food was assessed from 172 samples taken from colleges and universities, medical facilities, retail food establishments (supermarkets), restaurants and hotels, as well as other FSEs such as caterers, shelters, non-public schools and senior centers. The samples were sent to City College of New York where they were subjected to FWD grinding and then analyzed for chemical composition; see the table below for a summary of the relevant data.

Category	No. of Samples	1664 Oil and Grease (mg/L food waste)
Colleges and Universities	15	14830
Medical Facilities	32	1030
Retail Food Establishments (supermarkets)	29	6160
Restaurants and hotels	61	18590
Other FSEs (caterers, shelters, non-public schools, and senior centers)	35	18210

The header in Table 1 “1664 Oil and Grease” refers to EPA test method 1664A, which determines FOG concentration levels in a grab sample.

To put these numbers into perspective, consider that the majority of pretreatment programs around the country allow a maximum FOG concentration discharge of only 100 mg/L. The FOG concentration discharges recorded from these samples are extremely high, supporting the conclusion that food waste from FSEs does in fact have a “high fat content”.

The 2008 ASPE Plumbing Engineering Design Handbook – Volume 4, makes the following statement, “It is recommended that food waste disposers be connected to HGIs and GRDs (in conjunction with a solids strainer) when allowed by the authority having jurisdiction due to the fact that disposer waste discharge is a prime carrier of FOG-laden material (emphasis added),” chapter 8, page 162.

As recent as May 2013, ASPE offered a continuing education course titled Grease Interceptors CEU 1992, in which it makes the same exact recommendation to connect FWDs to HGIs and GRDs in conjunction with a solids strainer and for the same reason, “disposer waste discharge is a prime carrier of FOG-laden material.”

According to EPA’s 2002 Onsite Wastewater Treatment Systems Manual<sup>3</sup>, “Eliminating the use of garbage disposals can significantly reduce the amount of grease, suspended solids, and BOD in wastewater.” Table 15 in the manual shows a potential reduction in fats, oils and grease of 60 to 70 percent for residential installations. We would expect significantly higher reductions from commercial FSEs that forgo the use of a FWD.

There is widespread agreement that food waste is a source of high concentrations of FOG, and since a FWD is not capable of removing FOG from food waste, it simply does not make sense to route a FWD directly to sanitary.



Approved

Denied

Modified

**Date:** 4/7/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Loucks. After review of the proposal by the Code Development Committee the request has been denied. The Committee agrees that current model code best coordinates with Houston Health Department regulations and the Public Works policies on protecting City infrastructure. For these reasons the request has been denied.





**BUILDING CODE ENFORCEMENT**  
**PUBLIC COMMENT/CODE CHANGE PROPOSAL FORM**  
**INSTRUCTIONS**

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<b>Organization:</b> <u>IW Consulting Service, LLC</u>	<b>Phone:</b> <u>888-615-5615</u>
<b>Code:</b> <u>2015 UPC</u>	<b>Code Section:</b> <u>1014.2.1 Sizing Criteria</u>

**Public Comment/Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**1014.2.1 Capacity.** The total capacity in gallons (gal) (L) of fixtures discharging into a hydromechanical grease interceptor shall not exceed two and one-half times the certified gallon per minute (gpm) (L/s) flow rate of the interceptor in accordance with Table 1014.2.1.

For the purpose of this section, the term “fixture” shall mean and include each plumbing fixture, appliance, apparatus, or other equipment required to be connected to or discharged into a grease interceptor by a provision of this section.

**1014.2.1.1 Sizing.** Hydromechanical grease interceptors shall be sized by flow rate in accordance with Table 1014.2.1 for sizing by the diameter of the drainage piping or Example 1014.2.1 for sizing by the volume of the fixtures connected to the interceptor. Where the fixtures are not known, the flow rate shall be determined in accordance with Table 1014.2.1. Sizing shall also include calculating the minimum required grease storage capacity of the grease interceptor in accordance with Example 1014.2.1.1.

{NOTE: the following Example 1014.2.1.1 should be placed *after* Example 1014.2.1.}

**EXAMPLE 1014.2.1.1**

**Determine Grease Storage Capacity for Hydromechanical Grease Interceptors**

**Calculate the anticipated grease production loading from food service establishment**

Formula:  $[Grease\ Production\ Value] \times [Servings\ per\ Day^1] \times [days\ between\ pumpouts^2] = Grease\ Storage\ Capacity\ Required^3$

<b>Restaurant Type</b>	<b>Grease Production Values</b>	<b>Examples</b>
------------------------	---------------------------------	-----------------

## FORM NAME

<u>Low grease producer</u>	<u>0.005 lbs (2.268 g)/meal (no flatware)</u>	<u>Elementary cafeteria, grocery meat department, hotel breakfast bar, sub shop, sushi, take-and-bake pizza</u>
	<u>0.0065 lbs (2.948 g)/meal (with flatware)</u>	
<u>Medium grease producer</u>	<u>0.025 lbs (11.340 g)/meal (no flatware)</u>	<u>Cafe, coffee shop, convenience store, grocery deli, Greek, Indian, Japanese, Korean, Thai, Vietnamese</u>
	<u>0.0325 lbs (14.742 g)/meal (with flatware)</u>	
<u>High grease producer</u>	<u>0.035 lbs (15.876 g)/meal (no flatware)</u>	<u>Full-fare family, fast-food hamburger, hamburger bar and grill, German, Italian, fast-food Mexican</u>
	<u>0.0455 lbs (20.638 g)/meal (with flatware)</u>	
<u>Very high grease producer</u>	<u>0.058 lbs (26.308 g)/meal (no flatware)</u>	<u>Full-fare BBQ, fast-food fried chicken, full-fare Mexican, steak and seafood, Chinese, Hawaiian</u>
	<u>0.075 lbs (34.019 g)/meal (with flatware)</u>	

<sup>1</sup> Use servings per day when known. When servings are not known, use [number of seats in the food service establishment] X [4 (average customer turnover per seat)].

<sup>2</sup> Days between pumpouts should typically be 90 days but may be as few as 30 days depending on space or installation constraints.

<sup>3</sup> The grease storage capacity of the hydromechanical grease interceptor is either the "Rated Grease Capacity" by flow rate in accordance with PDI G101 (Table 1), the "Minimum Grease Capacity" by flow rate in accordance with ASME A112.14.3 (Table 1), or the "Maximum Grease Capacity" as determined at the breakdown point during testing in accordance with either PDI G101 or ASME A112.14.3. Maximum capacity, when used for selecting a hydromechanical grease interceptor must be validated by a third-party test report.

NOTE: To determine the grease capacity required for shell and core building spaces, use the Grease Production Value for High grease producer with flatware and calculate the servings by multiplying the [square footage of shell space] X [.6 (average dining area for food service establishments)] / [14 (average square foot per seat)] X [4 (average customer turnover per seat)] X [90 days between pump outs].

### Justification:

**Date: 03/19/2021**

The Code needs some clarification regarding sizing hydromechanical grease interceptors. For instance, section 1014.1 directs the user to section 1014.2.1 for sizing but the referred to section does not actually direct the user to using Table 1014.2.1 or Example 1014.2.1. The user is expected to rely upon the titles of both Table 1014.2.1 and Example 1014.2.1 to determine the correct sizing method. The proposed change would clarify whether to use Table 1014.2.1 or Example 1014.2.1 and why.

The code has some elements that are confusing to plumbing plan reviewers, inspectors as well as the engineering community at large. When it comes to shell and core building spaces, when the DUF's are not

## FORM NAME

known the code specifically addresses what to do for sizing gravity grease interceptors in section 1014.3.6. However, there is no clear instruction for how to size hydromechanical grease interceptors under the same circumstance. Yet, the pipe diameter sizing table is intended to be used for just such a circumstance. It was originally developed by the Plumbing Drainage Institute as a part of PDI G101 and subsequently adopted as Table 1014.2.1 in the UPC. Here is the exact section of PDI where this is described:

### “8.3.1 Sizing Method Based on Pipe Diameter Size and Slope

When the final configuration of fixtures in a facility is not known or to allow for additional fixtures in the future, this method shall be used or to size the interceptor for the maximum flow that the drain line from the facility can carry.”

Further, the proposed amendment adds a grease production calculation to determine the appropriate grease storage capacity that a hydromechanical grease interceptor should have appropriate to the type of food service establishment that it will be required to serve. The proposed Example 1014.2.1.1 the instructions on how to do the sizing and is based on the American Society of Plumbing Engineers (ASPE) Plumbing Engineering Design Handbook, Volume Four, Plumbing Components and Equipment, Chapter 8, Grease Interceptors.

ASPE considers both **flow rate** and **grease production** to determine the capacity of the interceptor and its recommended pump out frequency. (reference 2016 ASPE Plumbing Engineering Design Handbook – Volume 4, chapter 8, table 8-3) Grease Production Sizing evaluates the kitchen’s grease production to establish an expected grease load value for a desired pump cycle (typically 90 days). Identifying expected grease production allows for a direct correlation with the appropriate performance certified HGI with known grease capacity (ASME and PDI).

The Uniform Plumbing Code (UPC) does not address grease being produced by a facility. Without this critical second step, grease interceptors are often oversized or undersized – both scenarios are bad for the plumbing system. However, Grease Production Sizing will right size the HGI based on grease produced by the facility and determine an appropriate pump out cycle that will offer the best protection for the plumbing system. Grease Production Sizing is now employed or approved in several municipalities across North America including Miami, FL, Peoria, AZ, Chicago, IL, Arlington, VA, Springfield, MO, Portland, ME, Hampton Roads, VA, Mt. Pleasant, SC, Surprise, AZ, Seattle, WA, and many more.

Approved

Denied

Modified

**Date:** 4/7/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Loucks. After review of the proposal by the Code Development Committee the request has been denied. Because hydromechanical grease interceptors cannot be sized more than 2.5 times its flow rate, and there are too many variables present when fixtures are unknown, clarification on how to determine the proper sizing of hydromechanical grease interceptors is needed. However, the Committee believes it would be better to change current policy to not allow installation until buildout or DFU’s are known than to add additional provisions to the Plumbing Code. A Code Word Interpretation for this section will be issued to clarify the intent of sizing all types of interceptors.



**INSTRUCTIONS**

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- If additional space is needed, please complete page 2.
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**CONTACT INFORMATION**

Heath Wierck — 832-394-9171 or Michael Howard — 832-394-9042

<b>Name:</b> <u>Ken Loucks</u>	<b>Email:</b> <u>ken@iwconsultingservice.com</u>
<b>Organization:</b> <u>IW Consulting Service, LLC</u>	<b>Phone:</b> <u>888-615-5615</u>
<b>Code:</b> <u>2015 UPC</u>	<b>Code Section:</b> <u>Table 1014.2.1</u>

**Public Comment/Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

Table 1014.2.1

 HYDROMECHANICAL GREASE INTERCEPTOR SIZING USING GRAVITY FLOW RATES<sup>1</sup>

DIAMETER OF GREASE WASTE PIPE (inches)	MAXIMUM FULL PIPE FLOW (gpm) <sup>2</sup>	SIZE OF GREASE INTERCEPTOR	
		ONE-MINUTE DRAINAGE PERIOD (gpm)	TWO-MINUTE DRAINAGE PERIOD (gpm)
2	20	20	10
3	60	75	35
4	125	150	75
5	230	250	125
6	375	<del>500</del> <u>400</u>	<del>250</del> <u>200</u>

**Justification:**
**Date:** 3/18/2021

The sizing of grease interceptor's using 6 inch pipe diameter is arbitrary and doesn't follow the logic of sizing used for the other pipe diameters. This creates unnecessary confusion. Since the maximum flow rate for 6 inch diameter pipe is listed at 375 gpm the logical flow rate that should be used for sizing an HGI with a one-minute drainage period should be 400 gpm (not 500). Likewise, the correct flow rate for a two-minute drainage period should be half of that required for a one-minute drainage period or 200 gpm. This simplifies

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the sizing of hydromechanical grease interceptors using 6 inch diameter pipe allowing for multiple 100 gpm or 200 gpm units as needed to satisfy the needs of any particular project. This amendment has already been approved for the 2018 edition of the Uniform Plumbing Code.

The obvious benefit to anyone using 6 inch diameter pipe is to LOWER the cost of the grease interceptors that would otherwise be required.

Approved

Denied

Modified

Date: 4/7/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Loucks. After review of the proposal by the Code Development Committee the request has been approved. The Committee agrees the proposed amendment would provide clarification concerning sizing these types of interceptors, and the changes coordinate with IAPMO approved code changes in the 2018 UPC. For these reasons the proposed request has been approved and will be incorporated into the 2015 Houston amended Plumbing Code.



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**CONTACT INFORMATION**

Heath Wierck — 832-394-9171 or Michael Howard — 832-394-9042

<b>Name:</b> <u>John Williams</u>	<b>Email:</b> <u>Houston CIC Residential Code Chair</u> <u>&lt;cichoustonrescodechair@gmail.com&gt;</u>
<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>713-460-6207</u>
<b>Code:</b> <u>R302.13 Fire protection of floors</u>	<b>Code Section:</b> <u>Fire Resistant Consturction</u>

**Proposed Change in Legislative Format (new words underlined ~~deleted words struck out~~):**

**R302.13 Fire protection of floors.** Floor assemblies that are not required elsewhere in this code to be fire-resistance rated, shall be provided with a 1/2-inch (12.7 mm) gypsum wallboard membrane, 5/8-inch (16 mm) wood structural panel membrane, or equivalent on the underside of the floor framing member where the underside of the floor framing is exterior to the building or is exposed to a room below. Penetrations or openings for ducts, vents, electrical outlets, lighting, devices, luminaires, wires, speakers, drainage, piping and similar openings or penetrations shall be permitted.

**Exceptions:**

1. Floor assemblies located directly over a space protected by an automatic sprinkler system in accordance with Section P2904, NFPA 13D, or other approved equivalent sprinkler system.
2. Floor assemblies located directly over a crawl space not intended for storage or fuel-fired appliances.
3. Portions of floor assemblies shall be permitted to be unprotected where complying with the following:
  - 3.1. The aggregate area of the unprotected portions does not exceed 80 square feet (7.4 m<sup>2</sup>) per story
  - 3.2. Fireblocking in accordance with Section R302.11.1 is installed along the perimeter of the unprotected portion to separate the unprotected portion from the remainder of the floor assembly.
4. Wood floor assemblies using dimension lumber or structural composite lumber equal to or greater than 2-inch by 10-inch (50.8 mm by 254 mm) nominal dimension, or other approved floor assemblies demonstrating equivalent fire performance.

**Justification:****Date: 2/8/2021**

The proposal herein is a carry forward of previously agreed upon amendment to R501.2 which now is found in R302.13 in the 2015 IRC. This allows for cantilevering of the floor system over a brick veneer pocket. Having upper floor cladding either overlap or extend to the face of lower floor cladding or veneer is a fundamental best practice in mitigating water intrusion those helping to ensure the safety of the building and it's occupants.

Impact to cost effectiveness: favorable as proposed herein.

Impact to safety: favorable as proposed herein due to mitigation of water intrusion concerns.

Impact to enforceability: favorable as proposed herein.

 Approved Denied Modified**Date: 4/14/2021**

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposal by the Code Development Committee the request has been denied. The Code Development Committee agrees the proposed language is unnecessary as base code already allows for these types of applications. The Committee has agreed a Code Word Interpretation with detailed drawings shall be issued for this section to address these types of applications. For these reasons the request has been denied.

**INSTRUCTIONS**

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<b>Name:</b> <u>John Williams</u>	<b>Email:</b> <u>Houston CIC Residential Code Chair</u> <u>&lt;cichoustonrescodechair@gmail.com&gt;</u>
<b>Organization:</b> <u>Houston Consturction Industry Council</u>	<b>Phone:</b> <u>713-460-6207</u>
<b>Code:</b> <u>IRC</u>	<b>Code Section:</b> <u>Appendix U</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

## APPENDIX U

### SOLAR-READY PROVISIONS—DETACHED ONE- AND TWO-FAMILY DWELLINGS, MULTIPLE SINGLE-FAMILY DWELLINGS (TOWNHOUSES)

*(The provisions contained in this appendix are mandatory-unless specifically referenced herein.)*

**U101 General.** These provisions shall be applicable for new construction where solar-ready provisions are required.

**Exceptions:**

- 1) New single-family homes subject to discount in the building code based on valuation.; or
- 2) New residential dwellings with a supplemental garage receptacle for use for future electric car chargers; or
- 3) New residential dwellings installed with 100% or greater high efficacy lamps; or
- 4) New residential dwellings that demonstrate compliance with one of the following approved energy code programs: ENERGY STAR, ICC-700 Green Building Standard, LEED for Homes, and/or other equivalent local utility energy rebate programs.

**U103.6 Interconnection pathway.** ~~Construction documents shall indicate pathways for routing of~~

conduit or plumbing from the solar ready zone to the electrical service panel or service hot water system. Conduit not less than 1 ¼ inches shall be installed to provide a pathway from the electrical panel to the underside of the roof sufficient to allow future installation of solar equipment.

**Justification:**

**Date: 3/24/2021**

This proposal has been resubmitted and revised to include new exceptions to the proposed mandatory requirements of Appendix U as previously agreed upon with with the City of Houston. We have increased the amount of high efficacy lamps to 100% as well as provided another exception for cases where homes are equipped with an extra receptacle in the garage for future electric car charging. We are open to conversations about other alternatives that would provide real savings. Please see email below from 6/8/2018 asking for support for revised requirements. By providing exceptions, we can increase eforecability by allowing an increase in design and construction flexibility. In addition, this will better suit the needs of the citizens of Houston as there are options a homeowner could choose to implement that provide real savings and carbon reduction as opposed to spending thousands of dollars for solar readiness where studies show that less than .01% of people in the City of Houston choose to install solar.

From: Howard, Michael - HPC-HPW [mailto:Michael.Howard@houstonx.gov]  
Sent: Friday, June 08, 2018 3:43 PM  
To: Bradley Pepper <bpepper@ghba.org>  
Cc: Construction Industry Council of Houston (CIC) (reihl@svbell.net); Butler, Christon - HPW <Christon.Butler@houstonx.gov>; Savasta, Mark - HPC-HPW <Mark.Savasta@houstonx.gov>; Oakes, Bob - HPC-HPW <Bob.Oakes@houstonx.gov>  
Subject: Support Letters from CIC & GHBA for Solar Ready Modification

Mr. Pepper:

It was good speaking with you earlier today.

As I explained over the phone, I was notified that the Council agenda office has put a hold on the IECC energy code modification to the Solar Ready exceptions.

I was asked to provide a copy of a letter of support from both GHBA and CIC for the proposed modifications.

I am including a copy of the city legal-final proposed modification with this email.

Please feel free to share it with anyone and get back with me as soon as possible so we can move this forward.

Thanks in advance for your assistance and I look forward to hearing from you soon.

Respectfully,

Michael G. Howard  
Senior Staff Analyst (Exec. Level)  
Regulatory Affairs Office  
Building Code Enforcement Branch  
Houston Permitting Center Division  
Houston Public Works  
1002 Washington Ave., Floor 4, Houston, TX 77002  
Of: (832) 394-9042  
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E-mail: [michael.howard@houstonx.gov](mailto:michael.howard@houstonx.gov)  
Forms & Publications: <http://www.houstonpermittingcenter.org/code-enforcement/publications.html>  
Building Code Enforcement: <http://www.houstonpermittingcenter.org/code-enforcement/blog.html>  
City of Houston: <http://www.houstonx.gov>

The inclusion of Appendix U as written unjustly enforces optional provisions as mandatory that were never agreed to by the stakeholders or citizen in the City of Houston. As currently proposed in the 2015 draft Houston Residential Code, the full base code appendix would still be applicable, with exception of the revisions noted for U103.6. Section U103.6 is agreeable as currently drafted by itself without any other provisions of the appendix as mandatory. In the case that other provisions are decided to be mandatory, we simply ask for alternatives or exceptions.

In addition, current Texas law under HB2439 prohibits cities from writing codes that limit the use of a building product. By mandating solar ready requirements, the City of Houston is deciding which product manufacturers will benefit. The intent of the bill is to avoid these types of conflicts of interest. This should be explored deeper by City of Houston Legal Department.

On September 21<sup>st</sup> 2016, the Houston City Council approved the adoption of a revised Residential Energy Conservation Code based on the Residential Provisions of the 2015 International Energy Conservation Code (IECC). After a waiting period, the code became effective on October 24<sup>th</sup>.

In addition to the base code and amendments, the Appendix RB (now referred to as "Appendix U" in the draft proposed Houston Residential Code), an optional set of solar readiness requirements, was included as mandatory. This was a surprise to the stakeholder as well as the acting Building Official, who had not briefed on the change. While the GHBA worked with Public Works on amending the new energy code prior to council's adoption, this appendix was not agreed to by the GHBA and the Construction Industry Council (CIC.) In fact, the amendments went to City Council without any official vote or approval from CIC. After working with City of Houston permitting officials, we were successful in obtaining a temporary moratorium on those provisions until November 28<sup>th</sup> with the intention of using that time to pursue a compromise.

Specifically, GHBA builders and the CIC Residential Code Chairman met with Earl Greer and Code Enforcement staff on two occasions (October 18<sup>th</sup> and November 2<sup>nd</sup>) to present concerns with what the appendix requires and questions about how the appendix will be enforced. At these meetings, our questions and concerns focused on three main issues: enforcement, costs and liability.

### Enforcement

The City of Houston offers builders who build ten or more units of the same home in a year the chance to participate in the Residence Master Plan Program. This program is beneficial for builders who build the same product because it requires few plans to be submitted for plan review, which helps expedite the permitting process and helps save time and money.

As a result, there are many builders that participate in the program with dozens of plans mastered in and hundreds of those designs are being permitted each year. Builders that participate in the program have incorporated the expedited permitting process into their delivery timelines, which helps keep cost down for the homebuilder and the homebuyer. The implementation of Appendix RB will render the master plan program null because it will require documents specific to each home site that are not currently part of the process.

There are and have been concerns regarding permitting times for construction projects within the city, but the master plan program has been an effective and pragmatic tool to help address those concerns. Eliminating its effectiveness would be a step back in service standards.

The appendix requires that construction documents indicate a "solar-ready" zone of 300/150 square feet depending on the size and type of the house. This zone must be shown on a drawing so that an inspector can determine whether the plans are compliant. This is problematic because when a drawing goes from paper to 3-d, angle and pitch change. Which could alter the solar-ready zone location and result in a failed inspection.

The solar-ready zone requirement presents numerous technical issues for the inspectors, which can create uncertainty for the builder. Incorporating a solar-ready zone may, in some cases, contradict or violate other current code requirements which leads to questions in the field and ultimately a loss of time and money.

Logistical questions arise from requiring the solar-ready zone, including, how are the inspectors actually going to inspect this? In some cases, these are three story homes. If an inspector cannot visually see the roof from the ground, how can he or she inspect it to determine if there is the proper square footage of solar-ready area? If in practice, something that is being required cannot be inspected then that begs the question of why is it being required in the first place.

### Costs

In order to comply with the new solar readiness appendix requirements builders would spend approximately \$1000 to \$1500. This estimation includes required work completed by an engineer and additional administrative costs; not to mention, potential costs should a builder fail at final inspection, relocating gas fired appliance vents and chimneys thus requiring the expensive repair and replacement of a roof structure.

Unfortunately, these new costs would trickle down to the homebuyer and likely double, totaling approximately, \$2000 to \$2500.

These additional costs have a dramatic effect on the affordability of a new home. In fact, our national association recently completed a comprehensive analysis on the financial impact of housing construction-related regulations. The report concluded that for every \$1000 increase to the construction of a home, in the greater Houston area, over 4,000 homebuyers would be priced out of the market.

It is true that some code updates yield benefits for homebuyers. For example, energy code changes as a result of the 2015 IECC provided homebuyers with qualitative energy savings through the life of the home. However, this is not the case with the solar readiness appendix requirements.

Requiring builders to construct a "solar-ready" home when the current cost of installing a small solar system is conservatively \$20,000 to \$35,000 yields no qualitative benefit to the homeowner because most homebuyers cannot afford to install such expensive solar panels when purchasing a new home.

At this time, installation of solar panels for new or existing homes is not cost effective for wide market consumption. Yet, the City of Houston is requiring home builders to add solar-ready costs to a new home when the homeowner is unlikely to afford the current solar panel technology, rendering the homeowner unable to capture savings from these requirements. There are no other amendments that particularly favor one business industry such as this.

#### Safety/Liability

Rooftop solar arrays create hazards to occupants and fire department staff during fires due to the space they take up on the roof keeping fire department water from reaching the fire as well as the danger imposed by the increased weight on the structure. As the roof deck fails, large, heavy and cumbersome arrays fall through the roof and into the house below potentially crushing occupants or blocking their path of egress to safety.

The City of Houston requiring home builders to construct a "solar ready" home while the market does not support wide consumption of solar panel installation poses a liability risk to builders.

According to the international builders shows that GHBA members annually attend, mass consumption of solar panels is years away. However, since the solar panel product available at this time will likely be smaller and less expensive in future years, the modifications to the construction of a home that the City of Houston is now requiring will likely be outdated and insufficient in future years.

Imagine the disappointment of a homebuyer who is told in 2017 that their new home is "solar ready," only to discover in 2025, when solar panels are more cost effective, that their home cannot accommodate the new technology. In addition, building in a "hurricane-prone region", there is no guarantee that the addition of solar arrays will not compromise the windstorm rating of the structure. Given that the technology is constantly changing, it is impractical to design plans for solar ready systems at this time.

GHBA third party energy compliance inspectors have warned that this situation poses a significant safety and liability risk to builders and to the City of Houston.

We believe it is for this reason (among others) that this appendix was designed to be optional and consideration should be given to allowing the requirements to remain optional to Houston builders as it is written in the code.

In closing, GHBA builders strongly believe that Appendix U should be omitted moving forward. Unfortunately, we did not have the opportunity to fully vet the solar readiness requirements through the normal CIC review process as we were unaware that the requirements were going to be included in the residential energy code.

Additionally, we did not have the opportunity to vet these new requirements with council members prior to council's adoption as the solar-ready appendix requirements were not entirely presented before the Council's

Transportation, Technology & Infrastructure Committee on September 19. They were simply explained as only costing the amount of a plastic conduit. See clip here: [https://youtu.be/b\\_L\\_o-O6404](https://youtu.be/b_L_o-O6404)

This appendix is not being enforced in the City of Houston for the numerous issues documented herein and should be made optional in lieu of mandatory in future code.

Approved

Denied

Modified

**Date:** 4/6/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the revised proposal for Appendix U by the Code Development Committee the request has been denied. As stated in the previous Appendix U proposal, the directive of Mayor Turner and Director Haddock moving forward is to focus on energy efficiency and resiliency in residential construction as laid out in the base code provisions of Appendix U. The addition of exceptions to Appendix U stands in contrast to Houston's move towards resiliency, and as such, the proposed request has been denied.





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<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>713-460-6207</u>
<b>Code:</b> <u>M1411.3</u>	<b>Code Section:</b> <u>Chapter 14 – Condensate Disposal</u>

### **Proposed Change in Legislative Format** (new words underlined ~~deleted words struck-out~~):

**M1411.3 Condensate disposal.** Condensate from all cooling coils or evaporators shall be conveyed from the drain pan outlet to an approved plumbing fixture or place of disposal area or to a plumbing vent when using a check valve. Such piping shall maintain a minimum horizontal slope in direction of discharge of not less than 1/8 unit vertical in 12 units horizontal (1-percent slope). Condensate shall not discharge into a street, alley or other areas where it would cause a nuisance. Drain pans and coils shall be arranged to allow thorough drainage and access for cleaning. Primary drain piping inside buildings shall be insulated for the first 15 feet horizontally from the drain pan.

### **Justification:**

**Date:** 3/24/2021

This proposal is a new submission. The purpose is to allow alternative means to dispose of condensation in order to prevent water accumulation due to sweating and potential future mold. The amended Houston code requires 15 feet of insulation for the condensation line. Due to increases in energy code, right-sized HVAC system run longer which creates more condensation. This condensation can be so cold that it will create sweating when collected in the p-trap on a sink. By allowing the condensate to be disposed through use of a plumbing vent, there is no need to run the condensation line within the thermal envelope. Many jurisdictions already accept this practice. This better fits enforceability, cost effectiveness and our local hot and humid design conditions.

Approved

Denied

Modified

**Date:** 4/6/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the revised proposal for M1411 the request has been denied. The City of Houston has historically never allowed condensate disposal to be terminated to a plumbing vent. The Code Development Committee believes the proposed amendment would increase the risk of an occurrence of air build-up in the P-trap that would allow harmful gases into living spaces. For these reasons, the proposed request has been denied.

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<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>713-460-6207</u>
<b>Code:</b> R115.3	<b>Code Section:</b> <u>Chapter 1 – Private Plan Review and Inspection Services</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**SECTION 115**
**PRIVATE PLAN REVIEW AND INSPECTION SERVICES**

**R115.1 Applicability.** The application of this section is limited to structures that are constructed under this code.

**R115.2 Scope.** This section applies to any *permit* required under this code, the *Electrical Code*, the *Plumbing Code*, or the *Mechanical Code* for the construction, repair, or renovation of a structure to which this code applies.

**R115.3 Program established.** The *building official* may establish a private plan review and inspection program under which qualified persons who are not city employees may review plans, conduct certain building inspections, and provide related services for structures to which this section applies to assure compliance with all applicable construction codes. The program shall be conducted in accordance with the regulations and forms promulgated by the *building official*, which shall, without limitation, address the following:

1. Qualifications of the firms and individuals authorized to perform plan reviews, conduct inspections, and provide other related *permit* services. The qualifications shall include licensing in accordance with any applicable laws and regulations and certification in accordance with state or federally recognized standards.
2. Requirement of appropriate liability coverages in an amount of not less than ~~\$1,000,000~~ \$300,000 per occurrence, with indemnity agreements and coverage of the jurisdiction, as an additional insured, for the protection of the jurisdiction and other persons who may be affected by the performance of any services under the program.

3. Provisions to ensure that the firms and individuals participating in the program will act independently of building owners, contractors, and others so as to avoid conflicts of interest.
4. Provisions for any non-building-code-related review of plans and issuance of *permits* to applicants who utilize plan review, inspection, and other related services under the program.
5. Provisions regarding the keeping of records and filing of reports with the *building official*.
6. Administrative provisions for the acceptance, suspension, and revocation of the right of a firm or individual to participate in the program, which shall include elements of due process, including a right of appeal to a hearing officer designated by the jurisdiction's Director of Houston Public Works, whose decision, notwithstanding any other provision of this code, shall be final and not appealable to the General Appeals Board or City Council.
7. Provisions to ensure that no firm or individual may be certified to participate in the program unless qualified to conduct plan reviews and inspections under the Codes currently enforced by the jurisdiction and/or nationally recognized uniform or international code.
8. Provisions relating to fees charged by any firm or individual for services rendered under the program, including any fees required by law to be paid directly to the jurisdiction and remitted by the *building official* to a firm or individual.
- ~~9. Provisions prohibiting any private developer, builder, or contractor from employing any firm or individual, including subcontractors, to perform more than 25% of that developer's, builder's or contractor's services under the program in any one calendar year unless a greater amount is approved by the *building official*.~~
10. Provisions requiring any private developer, builder or contractor utilizing any services under the program and the *building official* to file reports as set forth below:

a. Each private developer, builder or contractor utilizing any services under the program shall file a report with the *building official*, supported by affidavit, containing the following information:

1. The total number of *permits* received during the preceding calendar year for the construction of any residential *structure* in connection with which services under the program were rendered;
2. The name of each firm or individual utilized under the program on each residential structure during the reporting period; and
3. A statement certifying that the developer, builder or contractor has fully complied with all rules and regulations under the program during the reporting period, including but not limited to, all rules governing the maximum number of plan reviews and inspections permitted to be performed by any firm or individual, including subcontractors, rendering any services under the program.

The report shall be filed with the *building official* not later than the last day of January and July in each calendar year and shall cover the preceding six month period ending on the last day of December and June, respectively, in each year.

b. The *building official* shall file a report with the Mayor and City Council containing the following information:

1. A listing of the names of all companies or contractors that utilized individuals or firms for services under the program and the name of each firm or individual so utilized;
2. Names of all firms and individuals approved to perform services under the program;
3. Total number of plan reviews and inspections performed by firms and individuals for each private developer, builder or contractor operating under the program;

4. Number of plan rechecks and oversight inspections conducted by the jurisdiction for each firm or individual utilized under the program and the percentage of that firm or individual's work, including subcontractors, so inspected;
5. The number of Code violations found through plan rechecks and oversight inspections, including the name of the firm or individual, including subcontractors, who performed such services;
6. A list of any firms or individuals removed from the program by the *building official*; and
7. An assessment of program effectiveness as demonstrated by available data, including comments and complaints received by the *jurisdiction* regarding the program pertaining to work performed by a participating developer, builder or contractor, or any firm or individual, including subcontractors, providing private plan review or inspection services under the program.

The *building official's* report shall be filed with the Mayor and City Council not later than the last day of August and February in each calendar year and shall cover the preceding 6 month period ending on the last day of July and January, respectively, in each year and may include such additional information relating to the program as he may deem appropriate.

**11 10.** Provisions prohibiting any private plan reviewer or inspector from being related to *building owners*, contractors, and other similarly situated individuals or entities within the third degree of consanguinity or within the second degree of affinity.

**R115.4 Oversight inspections.** The provisions of this section do not affect the jurisdiction of the *building official* over any work or preclude oversight inspections by the *building official* of structures that are subject to the provisions of services under the program. For purposes of quality assurance, the *building official* shall be authorized to recheck plans, perform inspections or reinspections, issue stop work orders, and take any and all actions that are authorized to be taken under this code, the *Electrical Code*, the *Plumbing Code*, or the *Mechanical Code*. No prior notice need be provided to any program firm or individual, contractor, or owner, unless otherwise required by law.

**R115.5 Fees.** To cover administrative costs, including registration of firms and individuals, management of the program, and oversight inspections, the *building official* shall assess fees equal to 25 percent of the amount otherwise payable under this code for any *permit*, but not less than the minimum fee stated in the city fee schedule. In addition to the reduced *permit* fees charged in connection with the program, an additional fee for each payment voucher issued, as stated for this provision in the city fee schedule, shall be assessed to cover the jurisdiction's costs in connection with any fee required to be paid to and remitted by the jurisdiction. If any contractor or owner requests an inspection by the *building official* of any structure that is subject to private inspection under this section, then the *building official* may perform the inspection for the fee states for this provision in the city fee schedule. The administrative fee that is payable under Section 118.1 of the *Building Code* shall be collected in addition to the fees otherwise provided under this section.

Notwithstanding any maximum fee established pursuant to the *Construction Code*, the fees in this section or in any volume of the *Construction Code*, as adjusted according to this provision, shall be automatically increased on the first day of each subsequent calendar year as provided in Section 1-13 of the *City Code*.

**Justification:****Date: 3/24/2021**

Houston falls in a hurricane prone region. In addition, during 2020 and 2021 we have experienced declared emergencies for Covid-19 as well as an extended freeze. Revising and incorporating a better third party alternative during times of emergency will better serve our local conditions, as well as increase cost effectiveness. Revisions to the program were made as follows: 1) reduce the amount of required liability to match other current City of Houston requirements 2) eliminate requirement limiting use a particular third party agency for more than 25%. Eliminating the 25% limitation will increase cost effectiveness, safety and enforceability. The existing 25% limitation is not effective because it would mean builders would need to have 4 different companies to provide these services. This was a revision that was previously approved by the City of Houston, but failed to be revised in existing or proposed code.

 Approved Denied Modified**Date: 4/6/2021**

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposal by the Code Development Committee the request has been denied. The Committee agrees that the proposed amendment would create a liability for both the City and Houston homeowner's by lowering the standards by which third-party reviews and inspections are held. Ensuring third-party reviews and inspections are held to the appropriate standard will provide more resilient residential construction and help eliminate constituent complaints of negligent work during extreme weather events.

### INSTRUCTIONS

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- The justification should address safety impact, enforceability, cost effectiveness, or unique local conditions.
- This proposal form must be completed electronically. Handwritten forms will not be accepted.
- If additional space is needed, please complete page 2.
- Return the form during the established comment period to the Building Code Enforcement Regulatory Affairs office via email at [heath.wierck@houston.tx.gov](mailto:heath.wierck@houston.tx.gov) or [michael.howard@houston.tx.gov](mailto:michael.howard@houston.tx.gov).

### CONTACT INFORMATION

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<b>Name:</b> <u>John Williams</u>	<b>Email:</b> <u>Houston CIC Residential Code Chair</u> <u>&lt;cichoustonrescodechair@gmail.com&gt;</u>
<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>713-460-6207</u>
<b>Code:</b> <u>P2801.6, P2801.6.1, P2804.6.1</u>	<b>Code Section:</b> <u>Water Heaters - General</u>

#### Proposed Change in Legislative Format (new words underlined ~~deleted words struck-out~~):

**P2801.6 Required pan.** Where a storage tank type water heater or a hot water storage tank is installed in a location where water leakage from the water heater, the hot water storage tank, or the connections thereto will cause damage, the tank shall be installed in a pan constructed of one of the following:

1. Galvanized steel or aluminum of not less than 0.0236 inch (0.6010 mm) in thickness.
2. Plastic not less than 0.036 inch (0.9 mm) in thickness.
3. Other approved materials.

#### Justification:

**Date:** 2/8/2021

Proposal submitted to strike current City of Houston proposed language in favor of true code. This should increase enforceability by staying consistent with the 2015 IRC. The City of Houston has been working towards trying to find alignment with the provisions of the IPC. The IPC requirements are listed below:

#### 604.7 Required pan.

Where a storage tank-type water heater or a hot water storage tank is installed in a location where water leakage from the tank will cause damage, the tank shall be installed in a pan constructed of one of the following:

1. Galvanized steel or aluminum of not less than 0.0236 inch (0.6010 mm) in thickness.
2. Plastic not less than 0.036 inch (0.9 mm) in thickness.
3. Other *approved* materials.

A plastic pan shall not be installed beneath a gas-fired water heater.

The justification provided to the stakeholder group was that these amendments came from a former Houston Plumbing Inspection Chief. Why would we enforce code around someone who is no longer here. Also, the justification refers to the "propensity for tankless water heater to leak". There have been numerous

improvements over the years both to tankless water heater products as well as the experience of the plumbers installing them. Our stakeholder group has not experienced such concerns and we are responsible for over 1000 homes a year in the Houston area. Please provide justification or evidence of the need.

In addition, there has not been any presented documentation by which the CoH proposed language and amendments would serve safety, enforceability, cost effectiveness or local conditions. Enforcing the 2015 IRC base code would certainly aid in enforceability. Allowing increased flexibility as established in the base code will allow for benefits in cost effectiveness. In addition, for replacement installations, the increased flexibility may allow a homeowner to increase their energy efficiency by utilizing a tankless water heater, which may have otherwise been required to carry the burden of extra costs and installation issues mandated in the CoH proposed amendment. Keeping base code will have no impact on safety compared to base code, as they are the same.

Approved

Denied

Modified

**Date:** 4/6/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the revised proposal for P2801.6, P2801.6.1, and P2804.6.1 the request has been denied. The Code Development Committee believes the proposed request would lessen the level of protection and stands in contrast of the Mayor's directive to improve residential resiliency around Houston. Additionally, the current Plumbing Inspections Chief continues to agree that these added protective measures are needed to protect against the potential for water damage due to his inspectors firsthand experience with these issues.



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<b>Name:</b> <u>John Williams</u>	<b>Email:</b> <u>Houston CIC Residential Code Chair</u> <u>&lt;cichoustonrescodechair@gmail.com&gt;</u>		
<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>713-460-6207</u>		
<b>Code:</b> <u>R318 – Protection against subterranean termites</u>	<b>Code Section:</b> <u>Chapter 3 – Building Planning</u>		
<b>Proposed Change in Legislative Format</b> ( <u>new words underlined</u> <del>deleted words struck-out</del> ): {Editor's note: <u>Delete Section R318 in its Entirety</u> }			
<table style="width: 100%; border: none;"> <tr> <td style="width: 60%;"><b>Justification:</b></td> <td style="width: 40%; text-align: right;"><b>Date:</b> 3/24/2021</td> </tr> </table> <p>The proposal herein is a carry forward of previously agreed upon removal of R318 from the Houston Residential Code. This has always been amended out of the code at the direction of the City of Houston Code Enforcement Department due to, "enforceability and health risks to occupants". We believe this may have been a clerical error by the City Staff in omitting the inclusion of the proposed strike of R318.</p> <p>Impact to cost effectiveness: favorable as proposed herein.</p> <p>Impact to safety: increased as proposed herein.</p> <p>Impact to enforceability: favorable as proposed herein.</p>		<b>Justification:</b>	<b>Date:</b> 3/24/2021
<b>Justification:</b>	<b>Date:</b> 3/24/2021		

Approved

Denied

Modified

**Date:** 4/7/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposal by the Code Development Committee the request has been denied. The provisions for Section R318 were purposefully left as base code in both the 2012 Houston amended Residential Code and the 2015 Houston proposed Residential Code. Table R301.2(6) establishes the potential for termite damage and places Houston in the "very heavy" category, therefore requiring structures to be protected from termite damage in an appropriate manner. Section R318.1 provides a number of methods permitted by the code to provide the necessary protection against termite damage. For these reasons the Committee agrees the request should be denied.

### INSTRUCTIONS

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<b>Organization:</b> <u>Hotel &amp; Lodging Association of Greater Houston</u>	<b>Phone:</b> <u>713-853-8958</u>
<b>Code:</b> <u>2015 International Building Code</u>	<b>Code Section:</b> <u>3003 Emergency Hoistway Water Sensor</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**3003.4 Emergency Hoistway Water Sensor(s).** *Each elevator hoistway within a building located within a 100 year floodplain and with access to a floor below grade level shall include a water sensor installed in the hoistway below the landing of the lowest floor served by the elevator(s).*

**Justification:**

**Date:** 3/31/2021

The requirement applies to all elevators in the city, even those who have not nor would experience a rising water incident that could impact personal safety. A targeted approach that will impact those buildings that do and or are highly likely to experience flooding will be more beneficial. We request that sensors only be required on elevators located within the 100-year floodplain, particularly those buildings who have previously experienced flooding. Additionally, the requirement should not apply to elevators that do not have access to below grade level. Both measures will reduce the burden of compliance while effecting the change desired on those buildings anticipated to experience flooding incidents.

Approved

Denied

Modified

**Date:** 4/13/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Ms. Haynes and the Hotel & Lodging Association of Greater Houston. After review of the proposal by the Code Development Committee the request has been denied. Relying on the City's 100-year floodplain designation, as shown in past Houston flooding events, does not provide the appropriate level of proactive life-safety and equipment damage protection during flooding in the Houston area. (The last flooding event alone flooded buildings and caused equipment damage to elevators not only located in the City's 100-year floodplain but extending even beyond the 500-year floodplain.) Additionally, even elevator equipment located in buildings without below grade access have experienced extensive damage due to flooding in Houston. Limiting the scope for elevator safety in flood events would stand in contrast to the Mayor's construction resiliency initiative. For these reasons the Committee agrees the proposed request should be denied.

**INSTRUCTIONS**

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<b>Code:</b> <u>2015 International Building Code</u>	<b>Code Section:</b> <u>3003 Emergency Hoistway Water Sensor</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

***3003.4.1 Compliance timeline for existing and annexed structures. On or before December 31, 2022 2032, or within two ten years after the date of annexation of the building into the jurisdiction, each elevator hoistway shall include an emergency hoistway water sensor installed in accordance with Section 3003.4***

**Justification:**
**Date:** 3/31/2021

The short timeframe of less than two years creates a significant demand on limited resources, including supplies and availability of technicians. With the number of elevators in Houston and a limited number of technicians available to install the devices, compliance will be impossible to achieve by December 2022. The impact of the COVID-19 pandemic on the hospitality industry has been devastating. Houston hotels are struggling to keep their doors open and workers employed. This has forced several properties in our city to permanently close and a significant number of others into near bankruptcy. In addition, thousands of employees have been released and have been without work during the duration of this pandemic. It is our hope that business levels will once again return with increased vaccination rates, however, the projections reflect it will be years before hotels will return to pre-pandemic revenue levels. The estimated cost per elevator of this requirement will be significant, and would apply additional hardships, especially on small and individual operators. Changing the installation requirement to a ten-year timeframe will allow businesses the time to adequately budget the additional cost and allow for installation.

Approved

Denied

Modified

**Date:** 4/13/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Ms. Haynes and the Hotel & Lodging Association of Greater Houston. After review of the proposal by the Code Development Committee the request has been denied. The retroactive nature of this amendment has been discussed since the water sensor proposal was initially submitted by the Triad group in 2017. The Committee agrees that adding an additional 10-year timeframe for a known life-safety hazard that is directly related to multiple injuries and deaths is unreasonable, particularly for an issue raised almost five years earlier. Postponing these retrofits beyond the proposed additional 2-years could be detrimental to the health and safety of Houston citizens and first responders during future flooding events. In response to a previous Public Comment Proposal regarding the retroactive timeline of this section, the Committee approved a modification to the section that will allow the Building Official to grant a one-time, 180-day extension to the specified timeframe when sufficient justification has been provided. For these reasons the Committee agrees the request should be denied.

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### CONTACT INFORMATION

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<b>Name:</b> <u>Scott Lang</u>	<b>Email:</b> <u>scott.lang@honeywell.com</u>
<b>Organization:</b> <u>Honeywell</u>	<b>Phone:</b> <u>630-762-5257</u>
<b>Code:</b> <u>2015 IFC</u>	<b>Code Section:</b> <u>Chapter 11</u>

### **Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

#### SECTION 1107 ENERGY STORAGE SYSTEMS

1107.1 Lithium-ion technology energy storage systems. The owner of an energy storage system (ESS) utilizing lithium-ion battery technology having capacities exceeding the values in Table 1207.1.1 and that was installed prior to the jurisdiction's adoption of the 2018 or later edition of the International Fire Code shall provide the fire code official a failure modes and effects analysis (FMEA) or other approved hazard mitigation analysis in accordance with Section 104.8.2 for review and approval.

Exception: Detached one- and two-family dwellings and townhouses

1107.1.1 Early detection. In addition to the requirements of Section 1207.1.4.1 and 1207.1.4.2, the analysis shall include an assessment of the ability of the installed protection systems to provide for early detection and notification of a thermal runaway event in relation to the ability of emergency responders to safely mitigate the size and impact of a thermal runaway event.

1107.1.2 Corrective action plan. Where hazards are identified by the analysis, a plan that includes a timetable for corrective action shall be submitted to the fire code official for review and approval. The plan shall include actions and system improvements necessary for eliminating or mitigating any identified hazards, including listed methods for early detection and notification of a thermal runaway event.

### **Justification:**

**Date: 3/29/2021**

This proposal mirrors one from Bob Davidson (Davidson Code Concepts) and Paul Rogers (Energy Safety Response Group) for the 2024 IFC.

The 2018 International Fire Code was updated with enhanced safety requirements for energy storage systems including those based upon lithium-ion technologies. The reason statement for those changes included:

"Unfortunately the IFC/IBC have no specific requirements that regulate the use of these new battery technologies in occupancies and buildings, including high-rise and underground buildings. At the same time societal needs for energy solutions such as load shedding and load sharing, while well intentioned, have created a situation where thousands of pounds of storage batteries, and millions was watt-hours of stored energy systems can be installed with little if any building or fire official oversight."

The absence of necessary protection was due to a lack of knowledge of the potential hazards should a thermal runaway event occur. One of the reasons for this was how the topic of lithium-ion batteries was presented leading up to the 2006 edition when the proposal was submitted for adding lithium-ion battery technology to the existing stationary battery storage requirements. The proposal included the justification that the technology was virtually maintenance free and not prone to thermal runaway.

Even though the 2018 International Fire Code and 2018 NFPA 1 Fire Code received significant changes to provide necessary protection levels which were improved further with the provisions of the 2020 NFPA 855 Energy Storage Systems, the 2021 International Fire Code and the 2021 NFPA 1 Fire Code, there are numerous installations that do not meet the new and necessary safety requirements. Even after the printing of the 2018 International Fire Code installers continued to install systems that did not meet the new standard of care, taking advantage of earlier editions of the codes that were still being enforced locally. A glaring example of a system that did not meet the requirements of the 2018 or 2021 editions of the International Fire Code occurred at the APS site in Arizona where a thermal runaway event seriously injured members of the fire service.

The purpose of this proposal is to start to address potential protection shortcomings in the design, installation and maintenance of existing energy storage systems employing lithium-ion technology by requiring that a hazard analysis conforming to the requirements of Sections 1207.1.4.1 and 1207.1.4.2 of the current ESS requirements.

Proposed Section 1107.1 sets the scope to those systems installed prior to the local adoption of the 2018 IFC or later that exceed the thresholds in Table 1207.1.1 which is the trigger for new installations. It utilizes similar language for the hazard mitigation analysis that currently exists for new systems at 1207.1.4 for consistency in application. An exception for one- and two-family dwellings and townhouses is included. Proposed Section 1107.1.1, in addition to the requirements of Sections 1207.1.4.1 and 1207.1.4.2, requires the inclusion of an assessment of the ability of the installed protection to provide an early warning of a thermal runaway event and to provide notification of that event in relation to the ability of responders to safely mitigate the event. Early detection of a thermal runaway utilizing listed methods of early detection, such as sensing cell off-gassing or other compliant methods, is essential to mitigation efforts and the safety of responders. Proposed Section 1107.1.2 requires the submission of a corrective action plan for the review and approval of the fire code official that includes actions and system improvements necessary for eliminating or mitigating identified hazards. This comment is consistent with a similar requirement proposed during the First Draft of NFPA 855 (Energy Storage Systems).

Approved

Denied

Modified

**Date:** 4/14/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Lang. After review of the proposal by the Code Development Committee the request has been denied. While the Committee agrees additional protection for Energy Storage Systems is sensible, it was agreed that the Committee would like to see how the proposed language is viewed at the ICC Hearings before including it in our Houston amendments. Additionally, because the City plans to adopt the 2018 Chapter 12 provisions of the IFC, the proposed section would not appropriately coordinate with the 2018 version of Chapter 12. The Committee agrees to look more into this proposal during our analysis of the 2021 IFC. Lastly, if an immediate need for this language and referenced standards is necessary for fire- and life-safety on specific projects, the Committee and the Houston Fire Department agrees an update to the Fire Department LSB's can be made if needed to reference energy storage systems not already addressed by this language. For these reasons the proposal has been denied.



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<b>Code:</b> <u>2015 IFC</u>	<b>Code Section:</b> <u>1206</u>

#### **Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**1206.2.11.4 Gas detection system.** Where required by Section 1206.2.3 or 1206.2.12, rooms containing stationary storage battery systems shall be protected by a gas detection system complying with Section 916. The gas detection system shall be designed to activate where the level of flammable gas exceeds 25 percent of the lower flammable limit (LFL), or where the level of toxic or highly toxic gas exceeds one-half of the IDLH, or where gas indicative of venting from a lithium-ion cell is detected.

#### **Justification:**

**Date:** 3/29/2021

Depending upon the abuse factor of a lithium-ion cell, venting and off-gas can precede thermal runaway by several minutes, providing time to shut down the battery charging system and isolate the affected module or rack. This gas is at a trace level that will not be detected at 25% LFL. There are off-gas detection systems available that can detect these trace levels and provide signals to shut down the system. While the BMS has detection, it is typically only one or two temperature sensors that may not provide adequate granularity. This proposal will increase the cost of construction for the additional sensors.

Approved     Denied     Modified    **Date:** 4/13/2021

**Comments:** Code Development Committee response is on the following page:

Approved

Denied

Modified

**Date:** 4/13/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Lang. After review of the proposal by the Code Development Committee the request has been approved. The Committee, and the Houston Fire Department, agrees the proposal would add additional protection for stationary battery storage systems. The proposal will be incorporated into the 2015 Houston amended Fire Code.

**INSTRUCTIONS**

- Each code section must be submitted on a separate form.
- Each proposal must be written in legislative format.
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- If additional space is needed, please complete page 2.
- Return the form during the established comment period to the Building Code Enforcement Regulatory Affairs office via email at [heath.wierck@houston.tx.gov](mailto:heath.wierck@houston.tx.gov) or [michael.howard@houston.tx.gov](mailto:michael.howard@houston.tx.gov).

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<b>Name:</b> <u>Scott Lang</u>	<b>Email:</b> <u>scott.lang@honeywell.com</u>
<b>Organization:</b> <u>Honeywell</u>	<b>Phone:</b> <u>630-762-5257</u>
<b>Code:</b> <u>2015 IFC</u>	<b>Code Section:</b> <u>Chapter 12</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**CHAPTER 12  
ENERGY SYSTEMS**

 {EDITORIAL NOTE: THE REMAINDER OF THIS SECTION SHALL BE AS SET FORTH IN THE ~~2018~~ 2021 INTERNATIONAL FIRE CODE CHAPTER 12 – ENERGY SYSTEMS.}

**Justification:**
**Date:** 3/29/2021

The 2021 International Fire Code will have the latest information and requirements for Energy Systems based on the 2020 edition of NFPA 855. The draft Houston Amendment already calls for referencing the 2018 edition, but the 2021 edition is complete and published. It has many good changes to enhance safety for energy storage systems. The cost will be neutral.

 Approved

 Denied

 Modified

**Date:** 4/14/2021

**Comments:** Code Development Committee response on the following page:

Approved

Denied

Modified

**Date:** 4/14/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Lang. After review of the proposal by the Code Development Committee the request has been denied. The references to the 2018 IFC Chapter 12 have already been extensively vetted and coordinated to fit with the 2015 Houston amended Fire Code. This includes coordinating referenced sections in Chapter 12 and updating Reference Standards to include all 2018 IFC updates for energy storage systems. The Committee believes it's unfeasible, given time constraints of the adoption process, to incorporate the 2021 IFC Chapter 12 into our Houston amended Fire Code before City Council adoption. Since the Code Development Committee will go immediately into review of the 2021 codes after the adoption of our 2015 Houston amendments, the Committee and the Houston Fire Department agrees that should an immediate need for the updated 2021 Chapter 12 is required, an update to Fire Department LSB's can be made to reference the 2021 version of Chapter 12 to address any specific system not included in the 2015 amendment. For these reasons the Committee, and the Houston Fire Department, agrees the request should be denied.

**INSTRUCTIONS**

- Each code section must be submitted on a separate form.
- Each proposal must be written in legislative format.
- Proposed code changes shall not reduce any fire or life-safety provision without including additional provisions that comply with the intent of the unaltered code, and results in an amendment that is no less equivalent of that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety for the purpose intended.
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**CONTACT INFORMATION**

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<b>Name:</b> <u>Stephanie Haynes</u>	<b>Email:</b> <u>shaynes@houstonhotels.org</u>
<b>Organization:</b> <u>Hotel &amp; Lodging Association of Greater Houston</u>	<b>Phone:</b> <u>713-853-8938</u>
<b>Code:</b> <u>International Fire Code</u>	<b>Code Section:</b> <u>Click here to enter text.</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck-out~~):

**403.2.1 Seating plan and permits.** In addition to the requirements of Section 404.2, the fire safety and evacuation plans for assembly occupancies, including carnivals, festivals, fair grounds, and trade show exhibitions, shall be submitted when required by the fire code official. Plans shall include a detailed seating plan, occupant load and occupant load limit. Deviations from the approved plans shall be allowed when approved by the fire code official, provided the occupant load limit for the occupancy is not exceeded and the aisles and exit accessways remain unobstructed. Permits and plans are required to operate a place of assembly, ~~or a carnival, festival or fair~~, to use liquid- or gas-fueled vehicles or equipment for competition or display inside an assembly occupancy, to use an assembly area for trade show exhibition purposes, or to use candles or other open-flame devices in assembly areas.

**Justification:**
**Date: 4/7/2021**

With regards to the proposed changes as put forth in the adoption of the 2012 International Fire Code and proposed amendments, the Hotel & Lodging Association of Greater Houston has some concerns. It should be noted, the Association and property owners are always supportive of safety measures that could possibly prevent injury and deaths. To that end, we have worked with the Houston Fire Department over the years to assure the safety of our clients and community. However, there are several concerns regarding the proposed language changes requiring submission of seating plans for all meetings/events as presented in section 403.2.1:

- The language is overbroad and burdensome as it encompasses all types of events and meetings, including small meetings in hotel lobbies to standard business meetings. With over 400 hotels in Houston, the need to secure approval for each meeting / event set ups becomes an onerous issue for the industry and fire department as well. Event bookings can occur with less than 24 hours' notice, which would stretch the ability to for the fire marshals to review and approve in a timely manner. Should a longer submission

timeframe requirement be implemented, the industry would suffer the significant loss of short-term business.

- This language would also negatively affect hotel clients who often need to change meeting diagrams multiple times due to various business needs and attendance.
- Currently, all hotels have fire safety and evacuations plans which are approved the Houston Fire Department. Occupancy capacities are established, approved, and permitted for each public assembly area and meeting space. The plans include a variety of measures such as evacuation routes, egress routes, exits and other safety protocols. These plans are reviewed on a yearly basis as a part of the annual inspection.
- Any event that is outside of the standard meetings package that impact safety standards are presented to the HFD to secure suggestions and/or permits and their approval.

Considering these concerns, we are asking that requirement to submit seating plans/diagrams for all events be removed and the language in section 403.2.1 be amended to " Permits and plans are required to operate a place of assembly, or a carnival, festival or fair, to use liquid- or gas-fueled vehicles or equipment for competition or display inside an assembly occupancy, or to use candles or other open-flame devices in assembly areas." The lodging industry continues to partner with the Houston Fire Department and wishes to be a leader of the solution on this issue.

Approved

Denied

Modified

**Date:** 4/13/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Ms. Haynes and the Hotel & Lodging Association of Greater Houston. After review of the proposal by the Code Development Committee the request has been denied. The Committee believes a misinterpretation of this section has occurred. Seating plans and/or diagrams are only required when deemed necessary by the fire code official. In regards to this section, permits and plans are required for a place of assembly, carnival, festival, or fair in three specific instances: when using liquid- or gas-fueled vehicles or equipment for competition or display, using an assembly area for trade show purposes, or using candles or other open-flame devices in assembly areas. In these instances, the Houston Fire Department agrees it wants to continue requiring the approval of plans and permits, and also confirms that these instances are a rare occurrence. This section does not pertain to smaller events and meetings. For these reasons, the Committee agrees the request should be denied.

**INSTRUCTIONS**

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**CONTACT INFORMATION**

Heath Wierck — 832-394-9171 or Michael Howard — 832-394-9042

<b>Name:</b> <u>John Williams</u>	<b>Email:</b> <u>Houston CIC Residential Code Chair</u> <u>&lt;cichoustonrescodechair@gmail.com&gt;</u>
<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>713-460-6207</u>
<b>Code:</b> <u>IRC</u>	<b>Code Section:</b> <u>Chapter 3 – Building Planning</u>
<b>Proposed Change in Legislative Format</b> ( <u>new words underlined</u> <del>deleted words struck-out</del> ): <u>R311.1.2 Accessory Stairs, Ramps, Doors and Landings. Unless specifically addressed in this code, accessory stairs, ramps, doors and landings that are not components of a means of egress system shall meet the appropriate provisions of this code for the application and scope of work proposed as if they are components of a means of egress system</u>	
<b>Justification:</b> The proposal herein is strike the above proposed City of Houston amendment. Apply these requirements puts an unnecessary and unjust burden upon builders, developers, remodelers, homebuyers and existing homeowners. One of target initiatives of Resilient Houston is to provide more affordable housing. A key initiative of Houston BCE during code review has been to attempt to keep base code where possible. The inclusion of this amendment does not serve either of those needs. In addition, applying these requirements to the entire egress system may make some paths of egress none code compliant and the corrections may not be under the control of the builder or owner. Impact to cost effectiveness: favorable as proposed herein. Impact to safety: equal to base code as proposed herein. Impact to enforceability: favorable as proposed herein. This avoids confusion by removing unnecessary requirements.	
<b>Date:</b> 3/24/2021	

Impact to local conditions: favorable. As the Livable Spaces Initiative has promoted alley loaded development, by staying with base code existing and future alley development is much more feasible.

Approved

Denied

Modified

**Date:** 4/16/2021

**Comments:** HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. After review of the proposal by the Code Development Committee the request has been denied with modification. The Committee agrees that accessory stairs, ramps, and landings need to be constructed as prescriptively detailed in the code for those specific items, but follow-up research shows code provisions will specifically address egress doors and accessory doors to meet specific width requirements per Section R311.2. Therefore, the Committee has agreed to a modification of the proposed amendment by removing doors from Houston amendment R311.1.2. The revised amendment will be as such:

**R311.1.2 Accessory Stairs, Ramps, and Landings.** Unless specifically addressed in this code; accessory stairs, ramps, and landings that are not components of a means of egress system shall meet the appropriate provisions of this code for the application and scope of work proposed as if they are components of a means of egress system.



**INSTRUCTIONS**

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**CONTACT INFORMATION**

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<b>Name:</b> <u>John Williams</u>	<b>Email:</b> <u>Houston CIC Residential Code Chair</u> <u>&lt;cichoustonrescodechair@gmail.com&gt;</u>
<b>Organization:</b> <u>Houston Construction Industry Council</u>	<b>Phone:</b> <u>713-460-6207</u>
<b>Code:</b> <u>IRC</u>	<b>Code Section:</b> <u>Appendix K</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck out~~):

**R102.5 Appendices.** Provisions in the appendices shall not apply unless specifically referenced in the adopting ordinance this section. Appendices A, B, C, H, K, L, M, Q, T, U, and V are hereby adopted and made part of this code.

**STRIKE CoH Proposed Revisions to Appendix K, as well.**

## **APPENDIX K**

### **SOUND TRANSMISSION**

*(The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.)*

**Justification:**

**Date:** 3/10/2021

The intent of this proposal is solely limited to Appendix K. There are other proposals that have been submitted regarding R102.5 which must be considered separately.

There is no justifiable need for making this OPTIONAL appendix MANDATORY. There would be no increase in safety, however there would be a serious negative impact to the following:

**Enforceability:** Changing the base code in this case will create confusion which will harm enforceability. The appendix also requires sound testing and in our research it is difficult to impossible to find local companies that can provide testing in accordance with ASTM E 90. Further, City of Houston Code Enforcement direction has historically been that we should keep base code where possible. The addition of an optional appendix is

counter to that charge. Introducing this new requirement will also tax the City of Houston with training to inspect to the new standard. This is a very unusual appendix to be adopted and as such will create confusion that will inhibit enforceability.

Cost Effectiveness: This will make building, designing and inspecting homes far less cost effective, both for the City of Houston as well as constituents, builders, remodelers, and developers. In addition, currently housing affordability is at an all-time low. The City of Houston is ranked 5 in the nation for cities with the least amount of affordable housing and ranks 1 for cities in Texas with the least amount of affordable housing. Goal #7 for Resilient Houston is to promote affordable housing. Our research shows NAHB estimates the cost of this provision is \$8000-\$15000 per home, which would price out 36,424 – 68,295 Houston families from qualifying for a mortgage on a new home.

Local Design Conditions: Whereas the City is in a housing crisis with a lack of available land and housing, the proposed language puts further restrictions on denser housing types, such as: townhomes, duplexes, or dwellings with more than one dwelling unit, which creates unnecessary additional barriers to affordable homes and homeownership.

Approved

Denied

Modified

Date: 5/13/2021

Comments: HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. The request to eliminate Appendix K as a mandatory appendix of the 2015 IRC has been denied; with a modification to the requirements for clarification purposes. The appendix does not require testing of the structures being constructed. It does require the use of wall and floor assemblies that have already met the test criteria. These types of assemblies are published by US Gypsum Association, National Gypsum and other manufacturers. Part of the City of Houston's move towards resiliency is to provide higher levels of sound attenuation in multi-family residential structures such as townhouses, apartments, condos, etc. The application of this appendix was never intended to require all single-family residences to comply with the provisions of Appendix K. To clarify the intent of this appendix the following Houston amendment is included in the appendix to narrow the scope of Appendix K as originally intended:

**AK101.1 General.** Wall and floor-ceiling assemblies separating dwelling units in multi-family residential structures, including those separating adjacent *townhouse* units, shall provide air-borne sound insulation for walls, and both air-borne and impact sound insulation for floor-ceiling assemblies.

**INSTRUCTIONS**

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<b>Code:</b> <u>IRC</u>	<b>Code Section:</b> <u>Chapter 3 – Building Planning</u>

**Proposed Change in Legislative Format** (new words underlined ~~deleted words struck-out~~):

~~**R311.1.2 Accessory Stairs, Ramps, Doors and Landings. Unless specifically addressed in this code; accessory stairs, ramps, doors and landings that are not components of a means of egress system shall meet the appropriate provisions of this code for the application and scope of work proposed as if they are components of a means of egress system**~~

**Justification:**
**Date:** 4/28/2021

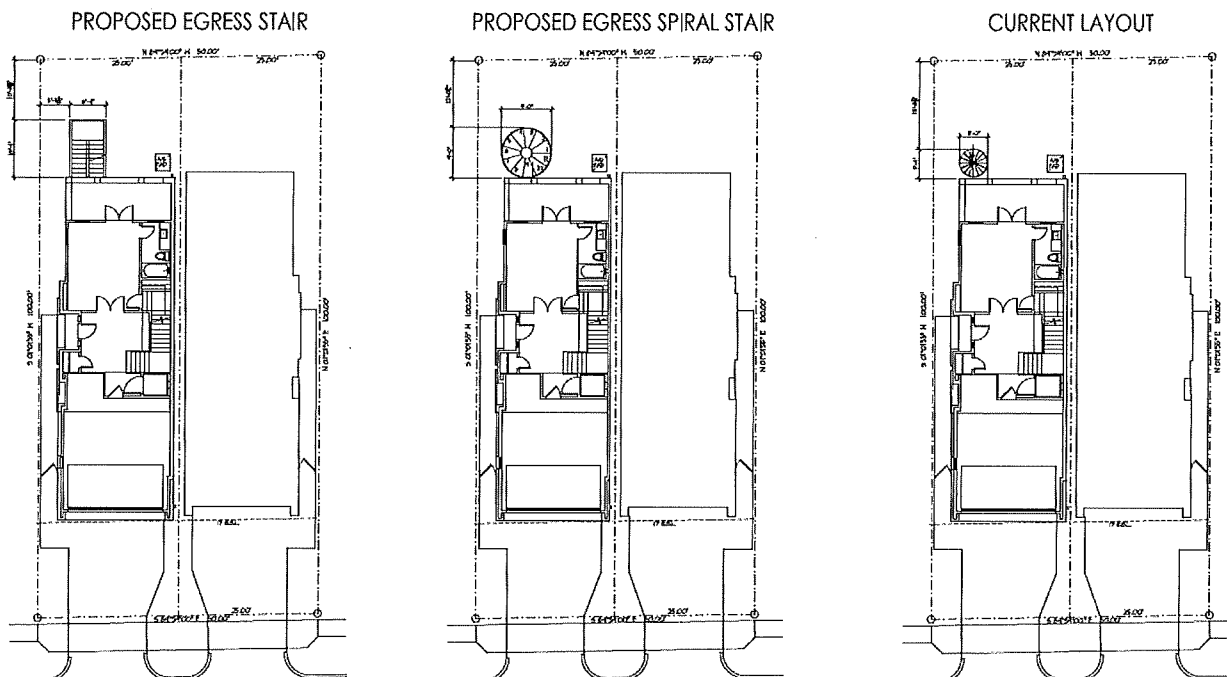
This is the second proposal for striking the above proposed City of Houston amendment.

Our original justification was based on the interpretation that this was bring applied to “Stairs, Ramps, Doors, and Landings” of “Accessory Structures”. In our meeting with BCE, it was explained that this was to be interpreted and enforced on all stairs, landings, and ramps unless specifically addressed elsewhere in the code. How would this be applied to non-egress related doors, such as closet door landings, bathroom doors landings, pantry door landings, etc.? This is infeasible in many remodel situations and wouldn’t make sense for new construction. IBC also makes allowances for ramps which are not used as a means of egress, so why wouldn’t similar provisions be made here? Why expand these requirements to all stairs, ramps, and landings on the property?

Another important note is that the IRC defines “stair” as a change in elevation, consisting of one or more risers”. A “riser” is defined as “the vertical component of a step or stair”. The definitions are circular which creates an enforcement issue in what could be interpreted as a stair on the property.

In addition to the comments above, there are much less stringent requirements already provided for *Tiny Homes*, which by any interpretation are more applicable to Egress than a ramp to the shed in my backyard or perhaps a non-egress secondary stairway serving a balcony, as examples.

Applying these requirements puts an unnecessary and unjust burden upon builders, developers, remodelers, homebuyers and existing homeowners. One of target initiatives of Resilient Houston is to provide more affordable housing. A key initiative of Houston BCE during code review has been to attempt to keep base code where possible. The inclusion of this amendment does not serve either of those needs. The example below shows a simple accessory spiral staircase, which is not needed for egress, which would have to be redesigned and replaced to match the proposed code language. With denser living being an initiative by the City of Houston, this proposal creates unnecessary and expensive changes.



Impact to cost effectiveness: favorable as proposed herein.

Impact to safety: equal to base code as proposed herein.

Impact to enforceability: favorable as proposed herein. This avoids confusion by removing unnecessary requirements.

Impact to local conditions: favorable. As the Livable Spaces Initiative has promoted alley loaded development, by staying with base code makes existing and future alley development is much more feasible. In addition, this promotes Resilient Houston initiatives by removing unnecessary barriers to energy efficient retrofits and remodels which may have been infeasible if all ramps, landings and stairs within the property would be needed to be brought into compliance of this code proposal.

Approved

Denied

Modified

Date: 5/13/2021

Comments: HPC recognizes and appreciates the work and recommendations submitted by Mr. Williams and the CIC organization. The request to remove Houston amendment R311.1.2 for Accessory Stairs, Ramps, and Landings has been denied. It was previously agreed by the Code Development Committee that "doors" would be removed from the

section due to the provisions of R311.2 governing. The Committee continues to believe that accessory stairs, ramps, and landings in residential structures should be constructed as prescriptively detailed in the code to increase the safety for those same types of elements when they're not part of the means of egress system. This is not a change to construction in Houston as historically this has always been the practice. This amendment will aid the reader in knowing the intent and expectations for appropriate code established standardized dimensions and structural requirements for these types of structures.



# Houston Construction Industry Council Residential Code Taskforce Request for Items of Clarification with Proposed 2015 Houston Residential Code

Items in Red have been added since 2.24 meeting. We have not received comments or feedback on proposals or items of clarification that were submitted to CoH on 2.10.

Please provide clarification on intent or a summary of impact for the following. Are Zone 1 and Zone 2 referring to TDI areas inland 1 and Inland 2?

GROUND SNOW LOAD	WIND DESIGN				SEISMIC DESIGN CATEGORY <sup>f</sup>	SUBJECT TO DAMAGE FROM			WINTER DESIGN TEMP <sup>g</sup>	ICE BARRIER UNDERLAYMENT REQUIRED <sup>h</sup>	FLOOD HAZARDS <sup>g</sup>	AIR FREEZING INDEX <sup>i</sup>	MEAN ANNUAL TEMP <sup>j</sup>
	Speed <sup>d</sup> (mph)	Topographic effects <sup>k</sup>	Special wind region <sup>l</sup>	Wind-borne debris zone <sup>m</sup>		Weathering <sup>t</sup>	Frost line depth <sup>b</sup>	Termite <sup>c</sup>					
0	See Footnote n	NO	NO	Zone 1 or 2 <sup>o</sup>	A	Negligible	6 inches	Very heavy	28	NO	Reference Ch. 19 of City Code	<1500	68.2

For SI: 1 pound per square foot= 0.0479 kPa, 1 mile per hour= 0.447 m/s.

{EDITORIAL NOTE: FOOTNOTES NOT SHOWN REMAIN AS SET FORTH IN 2015 IRC.}

n. Ultimate Design Windspeed shall be determined by entering the physical address of the property where the building will be constructed into the ASCE 7 Windspeed. Website: <http://windspeed.atcouncil.org/>. Buildings shall be considered Risk Category II. A copy of the windspeed printout from the website shall be attached to the plans for verification.

City Response: No, the above mentioned Zones do not refer to TDI areas. Footnote "m" of Table R301.2(1) states the AHJ shall indicate the wind-borne debris wind zone(s) applicable, and as such, put applicable Zones 1 and 2 in the table. The zones and their requirements are defined in the Windborne Debris Region definition.

Items below submitted to CoH on 2.10.21:

Please provide:

- 1) Clarification on intent for these newly defined or revised terms for Building Official, Deputy Building Official and Chief Building Official.
- 2) Justification for change in the base code. Note: Purple text revised in newest version on proposed codes as of 2.1.2021. Not previously reviewed by Task Force.
- 3) Clarification on intent for revised definitions for one-and two-family dwellings, single family residence, as well as townhouses? (see below for examples of all)

~~[A] BUILDING OFFICIAL. The officer or other designated authority charged with the administration and enforcement of this code shall be, director of Houston Public Works or a the duly authorized representative designated by the director to act as the chief construction code enforcement official of the city; also known as the Chief Building Official. The Chief Building Official may authorize the appointment of a representative, or representatives, to Deputy Building Official. term relates primarily to~~

~~those Houston Public Works employees who are engaged in the administration and enforcement of the City of Houston Construction Code and related laws.~~

~~CHIEF BUILDING OFFICIAL. The officer or other designated authority charged with the administration and enforcement of this code. The Chief Building Official may authorize the appointment of a representative, or representatives, to Deputy Building Official.~~

**“Deputy Building Official” added after 2012 Houston Residential Code.**

~~DEPUTY BUILDING OFFICIAL. A duly authorized representative appointed by the Chief Building Official to act on behalf of, and in the absence of, the Chief Building Official.~~

**Revised definitions below:**

~~**ONE- AND TWO-FAMILY RESIDENTIAL DWELLING.** A singleAn individual free-standing structure containing not more than two dwelling units, also referred to as a dwelling, duplex or single-family dwelling depending on the number of dwelling units within.~~

~~**SINGLE-FAMILY RESIDENCE.** A separateDWELLING. An individual free-standing residential structure intended to –serve a single-family, or household, as a dwelling and/or other uses authorized by the Building Code and Residential Code.~~



**[RB] TOWNHOUSE.** A multi-family structure constructed in a group of three or more attached ~~single family dwelling units constructed in a group of three or more attached units~~ in which each unit extends from foundation to roof and with a yard or public way on not less than two sides, where units are separated by which may or may not include lot lines or property lines separating the dwelling units.

City Response:

The definitions provided for Building Official, Deputy Building Official, and Chief Building Official were included to define HPC internal administrative positions, and provide clarification for who shall have authority in absence of the Building Official

The definitions provided for Townhouse, Single-Family Dwelling, and One- and Two-Family Residential Dwelling were included by request of the City Legal department to clarify and differentiate townhomes from single-family dwellings and duplexes. The clarified definitions helps ensure applicability of other code sections when enforcing the specific requirements of each townhouse and/or single-family dwelling.

