

**Proposed Clarifications, Adjustment and Amendments to the City of Phoenix  
2018 Fire Prevention Code (2018 International Fire Code {IFC} with Phoenix  
Amendments) currently adopted by Ordinance Number G-6677 § 1, 2020**

**Strikethrough represents proposed code text deletion and underscore represents text addition**

**Updated 3/8/2021**

Code Change Categories

ERRC (Emergency  
Radio Coverage  
Systems)

Two-Way  
Hardwired Fire  
Communications

Agro, Wood Chip,  
and Mulch  
Facilities

Photovoltaic/Solar  
and Energy  
Storage Systems

Chapter 80 NFPA  
Standards

1.	<b>Section 510.4.1.2</b>	<b><u>510.4.1.2 Minimum signal strength out of the building.</u></b> The minimum outbound signal strength shall be sufficient to provide usable voice communications throughout the coverage area as specified by the fire code official. The outbound signal level shall be sufficient to provide not less than a DAQ of 3.0 or an equivalent SINR applicable to the technology for either analog or digital signals. <u>A Bit Error Rate (BER) of 2.6%. is equivalent to a DAQ 3.0 and is acceptable to meet this equivalency.</u>
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**Reason:** Current fire code requires system acceptance testing meet a minimum of 3.0 on the DAQ scale. The Regional Wireless Cooperative (RWC) recommends any emergency responder radio coverage system (ERRCS) on their network meet a Bit Error Rate (BER) of 2.6% as a more effective alternative acceptable method of measurement. A BER of 2.6% is equal to a DAQ 3.0 as noted in a National Telecommunications and Information Administration (NTIA) report 99-358, Delivered Audio Quality Measurements on Project 25 Land Mobile Radios. This report was created by the U.S. Department of Commerce. By adopting the ERRCS testing of BER 2.6%, this action will help standardize all in-building treatments throughout the City of Phoenix. BER is measurable data and can be provided by the vendor on their testing result grid reports.

**Action Taken:** Presented to the Fire Safety Advisory Board on 3/11/2021.

2.	<b>Section 508.1.6.2</b>	<b><u>508.1.6.2 Fire Department Communications System.</u></b> Two way hard wired communication system is required in high rise buildings
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**Reason:** Two way hard wired communication system is required in high rise buildings to augment the VHF radio system used by the Phoenix Fire Department on hazard scenes such as fires, hazmat incidents and environmental hazards. Base International Fire Code language assumes that in building emergency VHF radio coverage is provided for fire fighter use and removed this wired system requirement. Technological limitations do not allow for this proper coverage currently. Therefore, wire communications are still required for fire fighter safety during high rise fire incidents.

**Action Taken:** Presented to the Fire Safety Advisory Board on 3/11/2021.

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3.	<b>Section 907.2.12.2</b>	<p><b><u>907.2.12.2 Fire department communication system.</u></b>  Two way hard wired fire department communication system is required in high-rise buildings. In other buildings <del>where</del> <u>where</u> a wired communication system is approved in lieu of an emergency responder radio coverage system in accordance with Section 510, the wired fire department communication system shall be designed and installed in accordance with NFPA 72 and shall operate between a fire command center complying with Section 508, elevators, elevator lobbies, emergency and standby power rooms, fire pump rooms, areas of refuge and inside interior exit stairways. The fire department communication device shall be provided at each floor level within the interior exit stairway.</p> <p><b>Reason:</b> Two way hard wired communication system is required in high rise buildings to augment the VHF radio system used by the Phoenix Fire Department on hazard scenes such as fires, hazmat incidents and environmental hazards. Base International Fire Code language assumes that in building emergency VHF radio coverage is provided for fire fighter use and removed this wired system requirement. Technological limitations do not allow for this proper coverage currently.</p> <p><b>Action Taken:</b> Presented to the Fire Safety Advisory Board on 3/11/2021.</p>
4.	<b>Section 914.3.5</b>	<p><b><u>914.3.5 Emergency voice/alarm communication system.</u></b> An emergency voice/alarm communication system shall be provided in accordance with Section 907.6.2.2. <u>Two way hard wired fire department communication system is required in high-rise buildings.</u></p> <p><b>Reason:</b> Two way hard wired communication system is required in high rise buildings to augment the VHF radio system used by the Phoenix Fire Department on hazard scenes such as fires, hazmat incidents and environmental hazards. Base International Fire Code language assumes that in building emergency VHF radio coverage is provided for fire fighter use and removed this wired system requirement. Technological limitations do not allow for this proper coverage currently. Therefore, wire communications are still required for fire fighter safety during high rise fire incidents.</p> <p><b>Action Taken:</b> Presented to the Fire Safety Advisory Board on 3/11/2021.</p>

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5.	<b>Section 2808.7.3</b>	<del><b>2808.7.3 Conveyor Systems</b></del> Automatic sprinkler protection shall be provided in conveyor tunnels and combustible enclosures that pass under a pile. Combustible conveyor systems and enclosed conveyor systems shall be equipped with an approved automatic sprinkler system
	<b>Reason:</b> Duplicate to section 2808.7	
	<b>Action Taken:</b> Presented to the Fire Safety Advisory Board on 3/11/2021.	
6.	<b>Section 2808.7.4</b>	<del><b>2808.7.4.3 Fire Hydrants.</b></del> The fire code official may increase the distance required to a fire hydrant as set forth in Section 507 where the conditions of this section are complied with. The omitting of an on-site hydrant or increased overall distance to the nearest hydrants will be evaluated with the application for permit.
	<b>Reason:</b> To correct numbering sequence after section 2808.7.3 is removal.	
	<b>Action Taken:</b> Presented to the Fire Safety Advisory Board on 3/11/2021.	
7.	<b>Section 2808.9</b>	<del><b>2808.9 Material-handling equipment.</b></del> Approved material handling equipment shall be available for moving wood chips, hogged material, wood fines and raw product during fire fighting operations. <u>by contract to aid in the event of emergency for moving wood chips and hogged material. Equipment available shall include:</u> <u>1. Equipment to move stored material during a fire</u> <u>2. Water trucks</u> <u>3. Water pumps if using pond for any piece of water source</u>
	<b>Reason:</b> Allows customer to have a heavy equipment rental agreement rather than equipment on site at all times.	
	<b>Action Taken:</b> Presented to the Fire Safety Advisory Board on 3/11/2021.	

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8.	Section 2808.6	<p><b>2808.6.1 Internal temperature.</b> If any location in a pile is found to have an internal temperature of 160°F (71° C) immediate action must be taken to reduce the temperature. If any location in a pile is found to have an internal temperature of 180° F (82°C) or greater, the following procedures must immediately be taken:</p> <ol style="list-style-type: none"> <li>1. The area with the high temperature shall be dug out of the main pile. This overheated material shall be pushed out in the designated push out area. The material shall be no greater than 3ft. in depth in the push out area.</li> <li>2. Water shall be stationed closely to the affected area, prior to digging out the hotspot, to immediately douse any flare ups that may occur when air is added to overheated area.</li> <li>3. Continual temperature probing and removal of material greater than 180° F (82° C) shall be conducted until all overheated material is separated into the push out area.</li> </ol> <p><b>Reason:</b> Clarification as to how a pile shall be monitored as currently required by Section 2808.6 Static Pile Protection.</p> <p><b>Action Taken:</b> Presented to the Fire Safety Advisory Board on 3/11/2021.</p>
9.	Section 2808.7.1	<p><b>2808.7.1 Delivery and tipping area.</b> <del>Not more than two designated tipping areas may be provided at a single facility and</del> <u>Delivery and tipping areas</u> shall be shown on the approved facility site plan. Tipping areas shall comply with the following:</p> <ol style="list-style-type: none"> <li>1. Size. Tipping areas shall not exceed a maximum area of 50 feet by (15 240 mm) by 50 feet (15 240 mm).</li> <li>2. Height. Material within a tipping area shall not exceed 5 feet (1524 mm) in height at any time.</li> <li>3. Separation. Tipping areas shall be separated from all piles and other tipping areas by a fire access lane that is not less than 20 feet (6096 mm) wide.</li> <li>4. Water system. A water system shall be available to wet down/ cool the raw product in case of fire within the tipping area.</li> <li>5. Duration. Raw product shall be kept in tipping area long enough to ensure no load was delivered that is already over heated. Raw product shall be less than 160° F before mixing with main pile.</li> </ol> <p><b>Reason:</b> Limit of “not more than two” was an error in the original language.</p> <p><b>Action Taken:</b> Presented to the Fire Safety Advisory Board on 3/11/2021.</p>

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10.	Section 202	<b>TIPPING AREA.</b> An area within an <u>an</u> <del>solid waste management facility or recycling</del> agro-industrial, solid biomass facility for vehicles to unload <u>new material</u> . <del>solid wastes or recyclables.</del>
	<b>Reason:</b> Correct the language of a tipping area. Was not the intention	
	<b>Action Taken:</b> Presented to the Fire Safety Advisory Board on 3/11/2021.	
11.	Section 1204.2.1	<b>1204.2.1 Solar photovoltaic systems for Group R-3 buildings.</b> Solar photovoltaic systems for Group R-3 buildings shall comply with Sections 1204.2.1.1 through 1204.2.1.3
	<b>Reason:</b> As a result of continued dialog with the solar industry and other stakeholders, we are altering the numbering sequence of this section to reflect additional solar code changes below	
	<b>Action Taken:</b> Presented to the Fire Safety Advisory Board on 3/11/2021.	
12.	Section 1204.2.1.1	<del><b>1204.2.1.1 Roof access points.</b> Roof access points shall be located in areas that do not require the placement of ground ladders over openings such as windows or doors and located at strong points of building construction in locations where the access point does not conflict with overhead obstructions such as tree limbs, wires, or signs.</del>  <u><b>1204.2.1.1 Pathways to ridge.</b> Not fewer than two 36 inch- wide (914 mm) pathways on separate roof planes, from lowest roof edge to ridge, shall be provided on all buildings. Not fewer than one pathway shall be provided on the street or driveway side of the roof. For each roof plane with a photovoltaic array, not fewer than one 36-inch-wide (914 mm) pathway from lowest roof edge to ridge shall be provided on the same roof plane as the photovoltaic array, on an adjacent roof plane or straddling the same and adjacent roof planes.</u>
	<b>Reason:</b> As a result of continued dialog with the solar industry and other stakeholders, we will be reverting this section to base 2018 International Fire Code language.	
	<b>Action Taken:</b> Presented to the Fire Safety Advisory Board on 3/11/2021.	

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13.	Section 1204.2.1.2	<p><del>1204.2.1.2 Residential systems for one- and two- family dwellings.</del> Access to residential systems for one- and two- family dwellings shall be provided in accordance with Sections <del>1204.2.1.3</del> through <del>1204.2.1.6</del>.</p> <p><u>1204.2.1.2 Setbacks at ridge.</u> For photovoltaic arrays occupying 33 percent or less of the plan view total roof area, a setback of not less than 18 inches (457 mm) wide is required on both sides of a horizontal ridge. For photovoltaic arrays occupying more than 33 percent of the plan view total roof area, a setback of not less than 36 inches (457 mm) wide is required on both sides of a horizontal ridge.</p> <p><b>Reason:</b> As a result of continued dialog with the solar industry and other stakeholders, we will be reverting this section to base 2018 International Fire Code language.</p> <p><b>Action Taken:</b> Presented to the Fire Safety Advisory Board on 3/11/2021.</p>
14.	Section 1204.2.1.3	<p><del>1204.2.1.3 Residential buildings with hip roof layouts.</del> Panels/modules installed on residential buildings with hip roof layouts shall be located in a manner that provides a 3- foot wide (914 mm) clear access pathway from the eave to the ridge on each roof slope where panels/modules are located. The access pathway shall be located at a structurally strong location on the building capable of supporting the live load of fire fighters accessing the roof.</p> <p><u>1204.2.1.3 Alternative setbacks at ridge.</u> Where an automatic sprinkler system is installed within the dwelling in accordance with Section 903.3.1.3, setbacks at the ridge shall conform to one of the following:</p> <ol style="list-style-type: none"> <li><u>1. For photovoltaic arrays occupying 66 percent or less of the plan view total roof area, a setback of not less than 18 inches (457 mm) wide is required on both sides of a horizontal ridge.</u></li> <li><u>2. For photovoltaic arrays occupying more than 66 percent of the plan view total roof area, a setback of not less than 36 inches (914 mm) wide is required on both sides of a horizontal ridge.</u></li> </ol> <p><b>Reason:</b> As a result of continued dialog with the solar industry and other stakeholders, we will be reverting this section to base 2018 International Fire Code language.</p> <p><b>Action Taken:</b> Presented to the Fire Safety Advisory Board on 3/11/2021.</p>

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15.	<b>Section</b> <u><b>1204.2.1.4</b></u>	<del><b>1204.2.1.4 Residential buildings with a single ridge.</b> Panels/modules installed on residential buildings with a single ridge shall be located in a manner that provides two, 3-foot wide (914 mm) access pathways from the eave to the ridge on each roof slope where panels/modules are located.</del>
		<b>Reason:</b> As a result of continued dialog with the solar industry and other stakeholders, we will be reverting this section to base 2018 International Fire Code language.
		<b>Action Taken:</b> Presented to the Fire Safety Advisory Board on 3/11/2021.
16.	<b>Section</b> <u><b>1204.2.1.5</b></u>	<del><b>1204.2.1.5 Residential buildings with roof hips and valleys.</b> Panels/modules installed on residential buildings with roof hips and valleys shall be located no closer than 18 inches (457 mm) to a hip or a valley where panels/modules are to be placed on both sides of a hip or valley. Where panels are to be located on only one side of a hip or valley that is of equal length, the panels shall be permitted to be placed directly adjacent to the hip or valley.</del>
		<b>Reason:</b> As a result of continued dialog with the solar industry and other stakeholders, we will be reverting this section to base 2018 International Fire Code language.
		<b>Action Taken:</b> Presented to the Fire Safety Advisory Board on 3/11/2021.
17.	<b>Section</b> <u><b>1204.2.1.6</b></u>	<del><b>1204.2.1.6 Residential building smoke ventilation.</b> Panels/modules installed on residential buildings shall be located no higher than 3 feet below the ridge in order to allow for fire department smoke ventilation operations.</del>
		<b>Reason:</b> As a result of continued dialog with the solar industry and other stakeholders, we will be reverting this section to base 2018 International Fire Code language.
		<b>Action Taken:</b> Presented to the Fire Safety Advisory Board on 3/11/2021.

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18.	Chapter 80	<p>NFPA 2 Hydrogen Technologies Code <del>2016</del> <u>2020</u></p> <p>NFPA 12 Standard on Carbon Dioxide Extinguishing Systems <del>2015</del> <u>2018</u></p> <p>NFPA 13 Standard for the Installation of Sprinkler Systems <del>2016</del> <u>2019</u></p> <p>NFPA 13D Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes <del>2016</del> <u>2019</u></p> <p>NFPA 13R Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies <del>2016</del> <u>2019</u></p> <p>NFPA 14 Standard for the Installation of Standpipe and Hose Systems <del>2014</del> <u>2019</u></p> <p>NFPA 16 Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems <del>2015</del> <u>2019</u></p> <p>NFPA 24 Standard for the Installation of Private Fire Service Mains and Their Appurtenances <del>2016</del> <u>2019</u></p> <p>NFPA 30B Code for the Manufacture and Storage of Aerosol Products <del>2015</del> <u>2019</u></p> <p>NFPA 33 Standard for Spray Application Using Flammable or Combustible Materials <del>2016</del> <u>2018</u></p> <p>NFPA 34 Standard for Dipping, Coating and Printing Processes Using Flammable or Combustible Liquids <del>2015</del> <u>2018</u></p> <p>NFPA 45 Standard on Fire Protection for Laboratories Using Chemicals <del>2015</del> <u>2019</u></p> <p>NFPA 52 Vehicular Natural Gas Fuel Systems Code <del>2016</del> <u>2019</u></p> <p>NFPA 55 Standard for storage, use and handling of compressed gases and cryogenic Fluids in portable and stationary containers, cylinders and tanks <del>2016</del> <u>2020</u></p>
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	NFPA 61 Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities <del>2017</del> <u>2020</u>
	NFPA 69 Standard on Explosion Prevention Systems <del>2014</del> <u>2019</u>
	NFPA 72 National Fire Alarm and Signaling Code <del>2016</del> <u>2019</u>
	NFPA 86 Standard for Ovens and Furnaces <del>2015</del> <u>2019</u>
	NFPA 92 Standard for Smoke Control Systems <del>2015</del> <u>2018</u>
	NFPA 110 Standard for Emergency and Standby Power Systems <del>2016</del> <u>2019</u>
	NFPA 111 Standard for Stored Electrical Energy Emergency and Standby Power Systems <del>2016</del> <u>2019</u>
	NFPA 160 Standard for the Use of Flame Effects Before an Audience <del>2016</del> <u>2021</u>
	NFPA 241 Standard for Safeguarding Construction, Alteration, and Demolition Operations <del>2013</del> <u>2019</u>
	NFPA 484 Standard for Combustible Metals <del>2015</del> <u>2019</u>
	NFPA 652 The Fundamentals of Combustible Dust <del>2016</del> <u>2019</u>
	NFPA 654 Standard for Prevention of Fire and Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids <del>2017</del> <u>2020</u>
	NFPA 664 Standard for the Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities <del>2017</del> <u>2020</u>
	NFPA 853 Installation of Stationary Fuel Cell Power Systems <del>2015</del> <u>2020</u>
	NFPA 914 Code for Fire Protection of Historic Structures <del>2015</del> <u>2019</u>

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**NFPA 1126 Standard for the Use of Pyrotechnics Before a Proximate Audience 2016  
2021**

**NFPA 2001 Standard on Clean Agent Fire Extinguishing Systems ~~2015~~ 2018**

**Reason:** Updating current fire code adopted NFPA Standards to currently published editions. Allows use of latest testing, technology and code developments. Improves cross reference compatibility of codes.

**Action Taken:** Presented to the Fire Safety Advisory Board on 3/11/2021.

**End of Changes**