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TREATED WOOD PRODUCTS

TECHNICAL NOTE

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NFPA 285 & FIRE-RETARDANT-TREATED WOOD

Occasionally, the question of applicability of NFPA 285, *"Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components"*, for testing wall assemblies containing fire-retardant-treated wood is asked by building designers and regulators when structures exceed 40 feet in height, above grade plane, and contain a combustible water-resistive barrier. Exceptions for testing exist in Section 1403.5 of the 2015 International Building Code (IBC) when the water-resistive barrier is the only combustible component.

Section 703.5 of the 2015 IBC has two criteria for acceptance of a material as noncombustible.

1. Any material meeting the requirements in ASTM E136 - "*Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750C*."
2. Materials with a noncombustible core (as tested with ASTM E136) with a facing not more than 1/8 inch thick. The facing must have a flame spread index of 50 or less when tested with ASTM E84 - "*Standard Test Method for Surface Burning Characteristics of Building Materials*" or UL 723 - "*Standard for Test for Surface Burning Characteristics of Building Materials*."

Fire-retardant-treated wood (FRTW) is defined in Section 2303.2 of the IBC as "*any wood product which, when impregnated with chemicals by a pressure process or other means during manufacture, shall have, when tested in accordance with ASTM E 84 or UL 723, a listed flame spread index of 25 or less and show no evidence of significant progressive combustion when the test is continued for an additional 20-minute period. Additionally, the flame front shall not progress more than 10 1⁄2 feet (3200 mm) beyond the centerline of the burners at any time during the test.*"

As a result, pressure impregnated FRTW is not tested to ASTM E136. However, FRTW is prescriptively allowed for use in construction requiring noncombustible materials, specifically roofs and non-bearing walls and partitions in Type I and Type II construction and the exterior bearing and non-bearing walls in Type III and IV construction (see Technical Note: *Combustible Materials in Noncombustible Buildings* on www.frtw.com).

Sections 602.3 and 602.4 of the IBC explicitly permit the use of FRTW as an accepted, basic material in the exterior walls of Type III and Type IV construction. Table 504.3 of the 2015 edition allows maximum building heights up to 75′ for Type IIIB and up to 85′ for Type IIIA and Type IV construction. Therefore, because FRTW is allowed in construction over 40 feet, compliance with Section 1403.5 of the 2015 IBC is not required for these types of construction using FRTW framing components within the exterior wall system.

By extension, if a combustible water resistive barrier (WRB) is provided in the exterior wall system using FRTW, then Section 1403.5 and its related Exceptions should apply. Importantly, for the purposes of Section 1403.5, the WRB is considered the "combustible material", not the FRTW. So, where the term "only combustible component" is used in the Exceptions, it means the WRB. The presence of FRTW would not constitute an "additional" combustible component voiding the use of the Exceptions. If the exterior wall insulation were Foam Plastic, NFPA 285 would apply per Section 2603.5.5 (with its Exceptions).