

# BBRS Official Interpretation No. 2012\_7

**Date:** Originally considered on October 9, 2012 and reviewed again on April 9, 2013 after receipt of FPPF input.

**Subject:** 8th Edition 780 CMR, Fire rating of exterior composite walls and NFPA 285

## Background/Discussion:

The use of metal composite materials (MCM) for the *exterior wall covering*<sup>1</sup> of buildings is not uncommon. Designers may choose it for its aesthetic appeal and because it can be bent, curved, and joined together in a wide range of geometric configurations. When MCM is used there are several general code requirements in Section 1407 **Metal Composite Materials (MCM)** that must be met. For example, if the MCM is installed above a height of 40 feet in any of Type I, II, III, or IV construction then it must be tested to NFPA 285<sup>2</sup> per section 1407.10.4 **Full-scale tests**. So it appears, at least according to section 1407, that if an MCM system meets all the requirements of 1407 then a designer can use it as the exterior wall covering. However, if an exterior wall assembly has in it *foam plastic insulation*<sup>3</sup> then section 1407 is overshadowed by section 2603 **Foam Plastic Insulation**, which includes section 2603.5.5 **Exterior walls of buildings of any height**. This section requires for an exterior wall of any height in any of Type I, II, III, or IV construction, that the wall assembly be tested in accordance with and comply with the acceptance criteria of NFPA 285.

This interpretation is intended to clarify code requirements related to NFPA 285 testing.

## QUESTION 1

What is an accepted interpretation of the words 'wall assembly' in Section 2603.5.5?

### ANSWER 1

Although the *International Building Code 2009* (IBC) does not include a definition of 'wall assembly' it is reasonable to assume that it is the assembly of materials that separate the conditioned space from the outside environment. This is consistent with the definition of *roof assembly* found in IBC Section 1502 and the *International Energy Conservation Code 2009* (IECC) Section 202.

## QUESTION 2

Must an MCM 'system' for the purpose of compliance to NFPA 285 include the insulation, water and/or vapor barriers?

**ANSWER 2** Yes. The intent of the NFPA 285 test is to evaluate the fire propagation characteristics of exterior wall assemblies as a whole assembly, not individual components.

## QUESTION 3

Exterior wall design can and does vary greatly from building to building and project to project. What if I need to modify the assembly that passed the NFPA 285 test or substitute a component?

### ANSWER 3

Test results are required to be submitted to the building official for the exterior wall assembly that will be constructed. Alternatively, Sections 104.11 **Alternative materials, design, and methods of construction** in conjunction with 104.10 **Modifications** may be used to seek approval from the building official or the building code appeals board. Factors to be considered in the Section 104.11 review shall include all wall components including but not limited to the MCM, the insulation, the weather barrier, and materials of the wall assembly.

1. **EXTERIOR WALL COVERING.** A material or assembly of materials applied on the exterior side of exterior walls for the purpose of providing a weather-resisting barrier, insulation or for aesthetics, including but not limited to, veneers, siding, exterior insulation and finish systems, architectural trim and embellishments such as cornices, soffits, fascias, gutters and leaders.
2. NFPA 285, *Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components*
3. **FOAM PLASTIC INSULATION.** A plastic that is intentionally expanded by the use of a foaming agent to produce a reduced-density plastic containing voids consisting of open or closed cells distributed throughout the plastic for thermal insulating or acoustical purposes and that has a density less than 20 pounds per cubic foot (pcf) (320 kg/m<sup>3</sup>).