

SECTION 1406 METAL COMPOSITE MATERIALS (MCM)

1406.1 General. The provisions of this section shall govern the materials, construction and quality of *metal composite materials (MCM)* for use as *exterior wall coverings* in addition to other applicable requirements of Chapters 14 and 16.

1406.2 Exterior wall finish. MCM used as *exterior wall finish* or as elements of balconies and similar projections and bay and oriel windows to provide cladding or weather resistance shall comply with Sections 1406.4 through 1406.14.

1406.3 Architectural trim and embellishments. MCM used as architectural *trim* or embellishments shall comply with Sections 1406.7 through 1406.14.

1406.4 Structural design. MCM systems shall be designed and constructed to resist wind loads as required by Chapter 16 for components and cladding.

1406.5 Approval. Results of *approved* tests or an engineering analysis shall be submitted to the *building official* to verify compliance with the requirements of Chapter 16 for wind loads.

1406.6 Weather resistance. MCM systems shall comply with Section 1402 and shall be designed and constructed to resist wind and rain in accordance with this section and the manufacturer's installation instructions.

1406.7 Durability. MCM systems shall be constructed of *approved* materials that maintain the performance characteristics required in Section 1406 for the duration of use.

1406.8 Fire-resistance rating. Where MCM systems are used on *exterior walls* required to have a *fire-resistance rating* in accordance with Section 705, evidence shall be submitted to the *building official* that the required *fire-resistance rating* is maintained.

Exception: MCM systems not containing foam plastic insulation, which are installed on the outer surface of a fire-resistance-rated *exterior wall* in a manner such that the attachments do not penetrate through the entire *exterior wall* assembly, shall not be required to comply with this section.

1406.9 Surface-burning characteristics. Unless otherwise specified, MCM shall have a *flame spread index* of 75 or less and a smoke-developed index of 450 or less when tested in the maximum thickness intended for use in accordance with ASTM E84 or UL 723.

1406.10 Type I, II, III and IV construction. Where installed on buildings of Type I, II, III and IV construction, MCM systems shall comply with Sections 1406.10.1 through 1406.10.4, or Section 1406.11.

1406.10.1 Surface-burning characteristics. MCM shall have a *flame spread index* of not more than 25 and a smoke-developed index of not more than 450 when tested as an assembly in the maximum thickness intended for use in accordance with ASTM E84 or UL 723.

1406.10.2 Thermal barriers. MCM shall be separated from the interior of a building by an approved thermal barrier consisting of $\frac{1}{2}$ -inch (12.7 mm) gypsum wallboard or

a material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275.

1406.10.3 Thermal barrier not required. The thermal barrier specified for MCM in Section 1406.10.2 is not required where:

1. The MCM system is specifically approved based on tests conducted in accordance with NFPA 286 and with the acceptance criteria of Section 803.1.1.1, UL 1040 or UL 1715. Such testing shall be performed with the MCM in the maximum thickness intended for use. The MCM system shall include seams, joints and other typical details used in the installation and shall be tested in the manner intended for use.
2. The MCM is used as elements of balconies and similar projections, architectural *trim* or embellishments.

1406.10.4 Full-scale tests. The MCM system shall be tested in accordance with, and comply with, the acceptance criteria of NFPA 285. Such testing shall be performed on the MCM system with the MCM in the maximum thickness intended for use.

1406.11 Alternate conditions. MCM and MCM systems shall not be required to comply with Sections 1406.10.1 through 1406.10.4 provided that such systems comply with Section 1406.11.1, 1406.11.2, 1406.11.3 or 1406.11.4.

1406.11.1 Installations up to 40 feet in height. MCM shall not be installed more than 40 feet (12 190 mm) in height above grade where installed in accordance with Sections 1406.11.1.1 and 1406.11.1.2.

1406.11.1.1 Fire separation distance of 5 feet or less. Where the *fire separation distance* is 5 feet (1524 mm) or less, the area of MCM shall not exceed 10 percent of the *exterior wall* surface.

1406.11.1.2 Fire separation distance greater than 5 feet. Where the *fire separation distance* is greater than 5 feet (1524 mm), the area of *exterior wall* surface coverage using MCM shall not be limited.

1406.11.2 Installations up to 50 feet in height. MCM shall not be installed more than 50 feet (15 240 mm) in height above grade where installed in accordance with Sections 1406.11.2.1 and 1406.11.2.2.

1406.11.2.1 Self-ignition temperature. MCM shall have a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D1929.

1406.11.2.2 Limitations. Sections of MCM shall not exceed 300 square feet (27.9 m²) in area and shall be separated by not less than 4 feet (1219 mm) vertically.

1406.11.3 Installations up to 75 feet in height (Option 1). MCM shall not be installed more than 75 feet (22 860 mm) in height above grade plane where installed in accordance with Sections 1406.11.3.1 through 1406.11.3.5.

Exception: Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 shall be exempt from the height limitation.