CITY OF CHICAGO
DEPARTMENT OF BUILDINGS

Noncombustible Exterior Walls

BUILDING CODE INTERPRETATION B14-2018-001

The Chicago Building Code (CBC) requires that both structural elements and exterior coverings of exterior walls in buildings of Type I, II and III construction be noncombustible, with limited exceptions. The purpose of this interpretation is to clarify these requirements and identify procedures for establishing that a design meets these requirements by reference to widely-used tests and standards. Noncombustibility is determined in accordance with CBC section 15-12-040 or IBC section 703.5. Fire retardant treated wood does not qualify as noncombustible.

Definitions

For the purposes of this interpretation, the following words and terms have the meanings shown:

EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS). Nonstructural, non-load-bearing, exterior wall cladding systems that consist of: an insulation board attached either adhesively or mechanically, or both, to the substrate; an integrally reinforced base coat; and a textured protective finish coat.

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 acoustic purposes and that has a density of less than 20 pounds per cubic foot.

FIBER-CEMENT PRODUCTS. Manufactured thin section composites of hydraulic cementitious matrices and discrete nonasbestos fibers.

HIGH-PRESSURE DECORATIVE EXTERIOR-GRADE COMPACT LAMINATE (HPL). Panels consisting of layers of cellulose fibrous material impregnated with thermosetting resins and bonded together by a high-pressure process to form a homogenous nonporous core suitable for exterior use.

IBC. The *International Building Code*, 2018 edition.

INSULATED METAL PANEL (IMP). A factory-manufactured panel consisting of an insulating foam core completely wrapped with a cold formed metal skin.

METAL COMPOSITE MATERIAL (MCM). A factory-manufactured panel consisting of metal skins bonded to both faces of a solid plastic core.

METAL COMPOSITE MATERIAL (MCM) SYSTEM. An exterior wall covering fabricated using MCM in a specific assembly including joints, seams, attachment, substrate, framing and other details as appropriate to a particular design.

WATER-RESISTIVE BARRIER. A material behind an exterior wall covering that is intended to resist liquid water that has penetrated behind the exterior covering from further intruding into the exterior wall assembly.

Combustible Water-Resistive Barrier

Exterior walls on buildings of Type I, II, or III construction, regardless of height, may contain a combustible water-resistive barrier if the wall meets the testing requirement of IBC section 1402.5 or either of the exceptions to that section.

Fiber-Cement Siding

Fiber-cement siding will be considered non-combustible if it meets the requirements of IBC section 1403.10. Where fiber-cement siding is installed over a combustible water-resistive barrier, the exterior wall assembly must be tested in accordance with NFPA 285, or the water-resistive barrier must meet the performance requirements of IBC section 1402.5, exception 2.

Metal Composite Materials (MCM) Systems

MCM systems that meet the fire performance requirements of IBC sections 1402.5, 1405*, 1406.1 through 1406.8, 1406.10, 1406.13, and 1406.14 (including NFPA 285 test compliance) are deemed to meet CBC fire performance requirements for exterior walls. MCM panels shall be permanently labeled to allow field verification of compliance with approved plans.

Requests to use limited areas of MCM not meeting these requirements on the exterior side of exterior walls, up to 40 feet above grade, may be requested on a project-specific basis through the Alternative Code Approval process. Generally, such requests should show that, if approved, the MCM and building will meet or exceed the requirements of IBC section 1407.11.1 and the IBC and CBC requirements for automatic sprinkler systems, except that MCM shall be limited to 10

percent of eligible exterior wall surface if the fire separation distance is less than 12 feet. Alternative Code Approval will not be granted based on IBC sections 1407.11.2 through 1407.11.4.

Exterior Insulation and Finish Systems (EIFS)

EIFS installed on buildings of Type I, II, or III construction must comply with CBC sections 15-8-081 through -086.

EIFS meeting the requirements of IBC section 1407, including construction to meet the performance characteristics required in ASTM E2568, meets or exceeds these CBC requirements.

High-Pressure Decorative Exterior-Grade Compact Laminates (HPL)

HPL that meets the fire performance requirements of sections 1402.5, 1405*, 1408.1 through 1408.8, 1408.10, 1408.13, and 1408.14 (including NFPA 285 test compliance) is deemed to meet CBC fire performance requirements for exterior walls.

Requests to use limited areas of HPL not meeting these requirements on the exterior side of exterior walls, up to 40 feet above grade, may be requested on a project-specific basis through the Alternative Code Approval process. Generally, such requests should show that, if approved, the HPL and building meet or exceed the requirements of IBC section 1409.11.1 and the IBC and CBC requirements for automatic sprinkler systems, except that HPL shall be limited to 10 percent of eligible exterior wall surface if the fire separation distance is less than 12 feet. Alternative Code Approval will not be granted based on IBC section 1408.11.2.

Foam Plastic Insulation in Exterior Walls

Foam plastic insulation (including foam plastic insulation in insulated metal panels) must comply with CBC section 15-12-350.

Foam plastic insulation used in the exterior of a wall of a building meeting the requirements of IBC sections 2603.1 through 2603.5 (excluding 2603.4.1.4) meets or exceeds these CBC requirements.

Other Combustible Materials on the Exterior Side of Exterior Walls

Combustible materials, other than those specifically described above, on the exterior side of exterior walls of buildings of Type I, II, and III construction are generally prohibited by the CBC. Requests to use limited areas of other combustible materials on buildings of Type I, II or III construction, on the exterior side of exterior walls, not more than 40 feet above grade, may be requested on a project-specific basis through the Alternative Code Approval process. Generally, such requests should show that the cladding material and building will, if approved, meet or exceed the requirements of IBC section 1405* and the IBC and CBC requirements for automatic sprinkler systems.

Substitution of Evaluation Report or Engineering Judgment for Required Testing

If the CBC or this formal interpretation requires that a product or assembly be tested in accordance with a standard (such as NFPA 285), but such test results are not available for the product or assembly, the Department will review requests to substitute an evaluation report or letter or engineering judgment, prepared by an engineer or agency independent of the product manufacturer and design team, on a project-specific basis. At a minimum, such a substitution must be approved through the Alternative Code Approval Process; the Department may require any evaluation report or engineering judgment to be reviewed and approved by the Committee on Standards and Tests. For more information, contact the Manager of Regulatory Review.

* Excluding exception 3 to section 1405.1.1.1.

A chart summarizing the application of this code interpretation is attached.

Interpretation Number: B14-2018-001

Interpretation of Section(s): Ch. 13-16; 13-76-100; 15-8-070 through -110; 15-8-280 through -320; 15-12-350

Revision History: Issued November 9, 2018.

This formal interpretation of the specified provision(s) of the Chicago Building Code is adopted by the building commissioner pursuant to section 13-8-031 of the Municipal Code of Chicago and is enforceable in the same manner as the building code. To confirm current version, please visit www.cityofchicago.org/buildings.

Summary Table: Limited Use of Combustible Materials in Noncombustible Exterior Walls

	Allowed as equivalent to CBC requirements	Requires project-specific approval
more than 40'-0" above grade	• Combustible water resistive barrier in NFPA 285 test-compliant assembly • Combustible water resistive barrier meeting IBC section 402.5, Exception 1 • Combustible water resistive barrier meeting IBC section 402.5, Exception 2 • Fiber-cement siding, as described above • MCM system as part of NFPA 285 test-compliant assembly and as described above** • EIFS, as described above • HPL as part of NFPA 285 test-compliant assembly and as described above** • Foam plastic as part of NFPA 285 test-compliant assembly and as described above**	• Any material substitutions in NFPA 285 tested assembly substantiated by evaluation report or engineering judgment, as described above**
up to 40'-0" above grade	• Combustible water resistive barrier in NFPA 285 test-compliant assembly • Combustible water resistive barrier meeting IBC section 402.5, Exception 1 • Combustible water resistive barrier meeting IBC section 402.5, Exception 2 • Fiber-cement siding, as described above • MCM system as part of NFPA 285 test-compliant assembly and as described above** • EIFS, as described above • HPL as part of NFPA 285 test-compliant assembly and as described above** • Foam plastic insulation, as described above**	• Any material substitutions in NFPA 285 tested assembly substantiated by evaluation report or engineering judgment, as described above** • MCM or MCM system in non-tested assembly (limited to 10% of eligible wall surface if FSD < 12'-0")** • HPL in non-tested assembly, except as described on left (limited to 10% of eligible wall surface if FSD < 12'-0")** • HPL panels meeting the requirements of IBC sections 1405 and 1408.10.1, installed outside wall assembly with minimum 1-hour fire resistance rating, as described above** • Other combustible materials, as described above**

** Note: NFPA 268 testing may also be required for fire separation distance of 25'-0" or less. See IBC section 1405.1.1.1.