



CONFORM® - Code Compliance

National Building Code of Canada 2015

All provincial building codes in Canada use the 2015 National Building Code of Canada as their model code. Only Ontario modifies the requirements of the 2015 National Building Code of Canada which impact the CONFORM and CONFORM CF8i. The following review applies to all provincial codes in Canada, with the exception of the Ontario Building Code.

It has been determined that CONFORM and CONFORM CF8i complies with the requirements of the 2015 National Building Code of Canada as follows (Note – Where only CONFORM is mentioned, CONFORM CF8i is excluded): (2)

Interior Finish Requirements

3.1.12 Flame Spread Rating and Smoke Developed Classification

3.1.12.1 Determination of Ratings

CONFORM formwork with concrete fill tested in conformance with CAN/ULCS102.2 indicated that Flame-Spread rating (FS) is not more than 25 and Smoke Developed classification (SD) is not more than 350. (3)

The foamed plastic insulation in CONFORM CF8i formwork tested in conformance with CAN/ULC-S102 and CAN/ULC-S127 indicated that Flame-Spread rating (FS) is not more than 280 and Smoke Developed classification (SD) is not more than 405. (4)

3.1.13 Interior Finish

3.1.13.2(1) Flame Spread Rating

CONFORM formwork meets the most stringent code requirements of this Article for wall application, FS not more than 25.

3.1.13.6 Corridors

CONFORM formwork meets the code requirements of this Article, FS not more than 25.

3.1.13.7 High Buildings

CONFORM formwork is NOT permitted in high buildings, unless the building is sprinklered, since SD may exceed the maximum smoke developed classification of this Article.

3.6.4 Horizontal Service Spaces and Service Facilities

3.6.4.3 Plenum Requirements

CONFORM formwork is NOT permitted in a concealed space used as a plenum, since SD exceeds the maximum smoke developed classification of this Article.

Noncombustible Construction Requirements

3.1.5 Noncombustible Construction

3.1.5.1 Noncombustible Materials

Concrete with cross web of CONFORM, tested in accordance with CAN/ULC-S135, met the requirements for noncombustible construction. (1) (5) (6)

3.1.5.6 Combustible Components for Exterior Walls

The insulated CONFORM CF8i formwork was tested in conformance with CAN/ULC-S134 and met the requirements of this Article. (7)

3.1.5.12(2) Combustible Interior Finishes

The CONFORM formwork meets the requirements of this article, FS not more than 25.

3.1.5.15 Foamed Plastic Insulation

The insulation of CONFORM CF8i formwork meets the requirements of this Article, FS not more than 500.

The exterior insulation of CONFORM CF8i formwork is protected from the adjacent space within the building by the cast-in-place concrete, as required by this Article.

If the insulated face of the CONFORM CF8i formwork is exposed to adjacent space in the building, it must be protected as noted in Article 3.1.5.15.(2). This may occur where an insulated, exterior wall extends below a low roof.

3.1.7 Fire Resistance Ratings

3.1.7.1 Determination of Ratings

A bearing concrete wall with CONFORM CF6 formwork, tested in conformance with CAN/ULC-S101, indicated that it met the requirements of this Article for a 2-hr fire-resistance rating. (8)

Based on the CAN/ULC-S101 test, fire consultant, Locke MacKinnon Domingo Gibson & Associates Ltd. (LMDG) determined that walls with CONFORM CF8i formwork meet the requirements for a 2-hr fire-resistance rating. (9)

3.1.9 Penetrations in Fire Separations and Fire-Rated Assemblies

3.1.9.1 Fire Stopping of Service Penetrations

Fire stopping shall be provided as required and the combustible finish, CONFORM PVC material, shall be removed where any fire stop materials are required to overlap the faces of the concrete wall.

Exterior Finish Requirements

3.2.3 Spatial Separation and Exposure Protection

3.2.3.7 Construction of Exposed Building Face

As per 3.2.3.7.(3), the noncombustible cladding requirement of 3.2.3.7.(2) are waived for Groups A, B, C, D and Group F Division 3 occupancies and for Groups E and Group F Divisions 1 or 2 occupancies, where the maximum permitted area of unprotected openings is more than 10% of the exposed building face, since the wall assembly with CONFORM formwork complies with the requirements of Article 3.1.5.5., when tested in conformance with CAN/ULC-S134.

3.2.3.8 Protection of Exterior Building Face

As per 3.2.3.8.(3), the requirement for protection of foamed plastic insulation of 3.2.3.8.(1) is waived, since the insulated CONFORM CF8i formwork complies the requirements of Article 3.1.5.5., when tested in conformance with CAN/ULCS134.

Structural Requirements

4.3.3 Plain, Reinforced and Pre-stressed Concrete

4.3.3.1 Design Basis for Plain, Reinforced and Pre-stressed Concrete

Cast-in-place concrete walls constructed using CONFORM shall be designed in conformance with standard CSA A23.3 "Design of Concrete Structures", by a Professional Engineer skilled in such designs and licensed to practice under the appropriate legislation.

References:

- (1) BMEC Product Review for Nuform Building Technologies Inc. Stay-in-place Wall Form (CONFORM) for Use in Noncombustible Buildings by Randal Brown & Associates Ltd., RBAL File No. 08-056, November 20, 2009.
- (2) "CONFORM" Compliance with National Building Code of Canada, 2015 Edition and Ontario Building Code 2012 Edition by Leber Rubes Inc., File No. 26288
- (3) CAN/ULC-S102.2-07, Surface Burning Characteristics of "PT8021ELS" by Exova Canada Inc, File No. 16-002-223, April 28, 2016.
- (4) CAN/ULC-S102-07, Surface Burning Characteristics of "FE244 / FE800 (HFC-134a Blown)" Insulation by Exova, Report No. 09-002-946(A), January 20, 2010.
- (5) CAN/ULC-S135, Standard Method of Test for Determination of Degrees of Combustibility of Building Materials using an Oxygen Consumption Calorimeter (Cone Calorimeter), by Underwriters Laboratories Inc., File No. R19435, June 16, 2003
- (6) BMEC Application by Ontario Building Materials Evaluation Commission, BMEC Application No. A2009-08: CONFORM, July 30, 2010.
- (7) CAN/ULC-S134-92, Standard Method of fire Test of Exterior Wall Assemblies by National Research Council of Canada, Report No. B-4115.1 Revised, August 10, 1999
- (8) CAN/ULC-S101-M89, Standard Methods of Fire Endurance Tests of Building Construction and Materials by Underwriters' Laboratories of Canada, File No. CR2598, April 22, 1997.
- (9) Fire Resistance Evaluation - Royal Building Systems™ (CONFORM) by Locke MacKinnon Domingo Gibson & Associates Ltd. (LMDG), File No. 97-172, August 26, 1997.

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