CCMC CANADIAN CODE COMPLIANCE EVALUATION

CCMC EVALUATION

CCMC 14508-R

CCMC Canadian code compliance evaluation

CCMC number:	14508-R
Status:	Active
Issue date:	2024-01-09
Modified date:	2024-03-12
Evaluation holder:	**AcuTruss Industries 1996 Ltd.** 2003 43rd Street Vernon BC V1T 6K7 Canada Website: www.acutruss.com Telephone: 877-545-3215
Product names:	• AcuTruss®AcuJoist®ACJ-40 • AcuTruss®AcuJoist®ACJ-80
Compliance:	NBC 2015
Criteria:	CCMC-TG-061733.01-15, "CCMC Technical Guide for Prefabricated Wood I-Joists"

In most jurisdictions this document is sufficient evidence for approval by Canadian authorities.
Learn more about CCMC recognition Look for the trusted CCMC mark on products to verify compliance.

Compliance opinion

It is the opinion of the Canadian Construction Materials Centre that the evaluated products, when used as joists in floor and roof applications in accordance with the conditions and limitations stated in this evaluation, comply with the following code:

National Building Code of Canada 2015

Code provision	Solution type
4.3.1.1.(1) Buildings and their structural members m ...	Acceptable
9.10.8.10. Application to Houses	Alternative
9.23.4.2.(2) Spans for floor joists that are not sele ...	Alternative

The above opinion(s) is/are based on the evaluation by the CCMC of technical evidence provided by the evaluation holder, and is bound by the stated conditions and limitations. For the benefit of the user, a summary of the technical information that forms the basis of this evaluation has been included.

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Product information

Product names

- AcuTruss®AcuJoist®ACJ-40
- AcuTruss®AcuJoist®ACJ-80

Product description

The products are prefabricated wood I-joists consisting of two fingerjointed sawn lumber flanges glued flatwise to a 9.5-mm-thick oriented strandboard (OSB) web. The I-joists series are available in depths ranging from 241 mm to 457 mm. Table 1 provides a description of the products. The OSB web material is installed with the wafer orientation perpendicular to the length of the joist, and sections are end-jointed together to form a continuous web. The flange fingerjoints, web-to-web, and web-to-flanges are bonded using a single-component polyurethane wood adhesive (see CCMC 14103-L).

Table 1. Description of products

Joist series	Joist depth (mm)	Flange dimension (mm)	Flange grade	Web thickness (mm)
ACJ-40	241	38 × 64	2 × 3 enhanced No. 2 and better Spruce-Pine-Fir (S-P-F) lumber, Ripped 2 × 6 enhanced No. 2 and better S-P-F lumber, or Proprietary enhanced machine stress rated (MSR) lumber	9.5
	302	38 × 64		9.5
	356	38 × 64		9.5
	406	38 × 64		9.5
ACJ-80	302	38 × 89	Proprietary enhanced MSR lumber	9.5
	356	38 × 89		9.5
	402	38 × 89		9.5
	457	38 × 89		9.5

Manufacturing plant

This evaluation is valid only for products produced at the following plant:

Product names	Manufacturing plant
	Kelowna, BC, CA
AcuTruss®AcuJoist®ACJ-40	⊘
AcuTruss®AcuJoist®ACJ-80	⊘

⊘ Indicates that the product from this manufacturing facility has been evaluated by the CCMC

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Conditions and limitations

The CCMC's compliance opinion is bound by this product being used in accordance with the conditions and limitations set out below.

- The products are intended for use in structural applications, such as floor joists. They are intended for dry service [(1)] applications only.
- The following pre-engineering information has been provided to the CCMC by the manufacturer to demonstrate compliance with Part 9, Housing and Small Buildings, of the National Building Code of Canada 2015 (NBC 2015), for acceptance by the local authority having jurisdiction (AHJ):

Manufacturer's pre-engineered design table

When the products are used to support uniform loads only, the installation must be in accordance with the span tables (including vibration criteria [(2)]) found in the document entitled: "AcuJoist Specifier Guide" (Revised July 2023).

The product must be installed in accordance with the manufacturer's installation guidelines included in the above-mentioned document, for those applications falling within its scope. Applications outside the scope of these installation guidelines will require engineering on a case-by-case basis.

Manufacturer's pre-engineered installation details

The manufacturer's pre-engineered details within the document noted above are limited in scope to building designs where the anticipated loads on the following structural details are not exceeded (page references are to the "AcuJoist Specifier Guide"):

- floor span tables (page 2);
- blocking panels and floor installation details (pages 3 to 6);
- web stiffeners (page 7);
- cantilevers (pages 8 to 10); and
- web hole details and table (pages 11 and 12).

Engineering required

When required by the AHJ, or for structural applications beyond the scope/limitations of those referenced in the Code compliance opinion section, the drawings or related documents must bear the authorized seal of a professional engineer skilled in wood design and licensed to practise under the appropriate provincial or territorial legislation. Installations beyond the scope/limitations of the two sections above imply, but are not limited to, the following:

- higher loads / longer spans than the manufacturer's pre-engineered details;
- roof joists or rafters;
- concentrated loads;
- offset bearing walls;
- areas of high wind and/or seismicity;
- stair openings;
- the design of supporting wall studs/beams when the total load exceeds the NBC 2015 pre-engineered floor/roof joist tables;
- the design of supporting foundation footings when the total load exceeds the NBC 2015 pre-engineered floor/roof joist tables; and

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- fire resistance (see applicable fire-resistance assembly listings for special joist and adhesive used).

Engineering support provided by the manufacturer

The manufacturer provides engineering support and must be consulted in the use of the product. Their technical services may be reached at:

AcuTruss Industries

Tel: 250-766-3331

Email: bgreenslade@acutruss.com

Notes:

1 All lumber, wood-based panels, and proprietary engineered wood products are intended for dry service conditions. "Dry service conditions" are defined as the in-service environment in which the average equilibrium moisture content (MC) of lumber is 15% or less over a year and does not exceed 19% at any time. Wood contained within the interior of dry, heated or unheated buildings has generally been found to have an MC of between 6% and 14%, depending on season and location. During construction, all wood-based products should be protected from the weather to ensure that the 19% MC is not exceeded, in accordance with Article 9.3.2.5., Moisture Content, of Division B of the NBC 2015.

2 In cases where concrete topping is applied or bridging/blocking is used and joists are installed at the maximum spans, the current vibration criteria may not address all occupant performance expectations. The manufacturer should therefore be consulted for span adjustments, if necessary, in these types of installations.

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Technical information

This evaluation is based on demonstrated conformance with the following criteria:

Criteria number	Criteria name
CCMC-TG-061733.01-15	CCMC Technical Guide for Prefabricated Wood I-Joists

General

The evaluation holder has submitted technical documentation for the CCMC's evaluation. Testing was conducted at laboratories recognized by the CCMC. The corresponding technical evidence for this product is summarized below. Additional engineering data and load/span tables are available from the manufacturer, as outlined in the Conditions and limitations section.

Design requirements

Table 2. Factored resistances of the products (1) (2) (3)

Joist series	Depth (mm)	Factored moment resistance (N·m)	Factored shear resistance (N)	EI × 10^6 (kN·mm^2)	K (kN)
ACJ-40	241	6 167	7 860	528	21 973
ACJ-40	302	7 994	9 970	898	27 489
ACJ-40	356	9 854	12 010	1 317	32 381
ACJ-40	406	11 432	13 830	1 794	37 007
ACJ-80	302	15 649	9 970	1 487	27 489
ACJ-80	356	18 825	12 010	2 169	32 381
ACJ-80	406	21 851	13 830	2 939	38 007
ACJ-80	457	24 578	17 550	3 814	51 241

Notes:

1 Design values were developed in accordance with CSA O86-19, "Engineering design in wood".

2 All factored resistance values include the resistance factor and the reliability normalization factor (Kr).

3 Additional engineering data and load/span tables are available from the manufacturer.

Table 3. Factored reaction resistances (1) (2) (3)

Joist series	Depth (mm)	End reaction (N)		Intermediate reaction (N)
		44 mm bearing	102 mm bearing	89 mm bearing

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Joist series	Depth (mm)	End reaction (N)				Intermediate reaction (N)
		Bearing stiffeners		Bearing stiffeners		Bearing stiffeners
		No	Yes	No	Yes	No
ACJ-40	241	7 580	7 580	7 860	7 860	15 160
ACJ-40	302	8 420	8 420	9 970	9 970	17 550
ACJ-40	356	8 420	8 420	10 880	12 010	17 550
ACJ-40	406	8 420	8 420	10 880	13 830	17 550
ACJ-80	302	8 990	8 990	9 970	9 970	19 380
ACJ-80	356	8 990	8 990	10 880	13 830	21 200
ACJ-80	406	8 990	8 990	10 880	13 830	21 200
ACJ-80	457	9 830	14 290	11 410	16 810	23 550

Notes:

1 Design values were developed in accordance with CSA O86.

2 All factored resistance values include the resistance factor and the reliability normalization factor (Kr).

3 Additional engineering data and load/span tables are available from the manufacturer.

Additional test information for the products

The characteristic values obtained from testing to ASTM D5055-19e01, "Standard Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-joists", as specified in CSA O86, are summarized below. The manufacturer's published pre-engineered joist spans were designed in accordance with CSA O86.

Table 4. Additional product testing information

Property	Test information
Shear capacity	The shear capacity of the specimens was established by combining data in accordance with ASTM D5055. Data from quality control (QC) tests were used to establish the applicable coefficient of variation, CV_w, and the reliability normalization factor from Table 16.1 of CAN/CSA-O86 was used to determine the specified strength.

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Property	Test information
Moment capacity	The moment capacity qualification was carried out using the analytical method, based on the characteristics of the flange material, with confirmatory testing in accordance with ASTM D5055. Data from QC tests were used to establish the applicable coefficient of variation, CV_w, and the reliability normalization factor from Table 16.1 of CAN/CSA-O86 was used to determine the specified strength.
Stiffness	An appropriate test program was used to confirm the stiffness capacity. The following formula was used to predict mid-span deflection: Deflection = $(5wL^4 / 384EI) + (wL^2/K)$ where w = load (kN/mm), L = span (mm), and EI and K are taken from Table 2 in this evaluation.
End joints	Flange tension tests were conducted in accordance with Section 6.4.1.3. of ASTM D5055. The tensile capacity was determined in accordance with Section 6.4.1.4. of ASTM D5055. Tests have been used to establish the applicable coefficient of variation, CV_w. The reliability normalization factor from Table 16.1 of CSA O86 was used to determine the specified strength.
Creep	Specimens were tested for creep performance in accordance with ASTM D5055. The specimens recovered more than 90% of the basic dead load deflection.
Bearing length	Tests were conducted to qualify minimum bearing lengths. The I-joist design properties on end reaction and intermediate reaction were analyzed using ASTM D5055. Qualification tests for the reaction values were used to establish the applicable coefficient of variation, CV_w. The reliability normalization factor from Table 16.1 of CSA O86 was used to determine the specified strength.
Adhesive qualification	The adhesive complies with CSA O112.9-10, "Evaluation of adhesives for structural wood products (exterior exposure)" (see CCMC 14103-L).
Web stock	The web stock meets the requirements of CSA O325-07, "Construction Sheathing," and is certified by APA, a third-party certification agency.

Fire-protection options

The performance of the fire-protection options below are presented as additional information for AHJs. This section is beyond the scope of the CCMC's Code compliance opinion related to the evaluation of structural performance.

Fire performance of innovative structural products

The CCMC Registry of Product Assessments contains opinions on the suitability-for-use of products intended as structural elements in houses. Although historically there has been no need to regulate the structural fire performance of houses, an inherent intent of the National Building Code of Canada (NBC) is that occupants have sufficient time to escape from a building in the event of a fire. There are many factors that may determine whether that intent is achieved. The fire endurance of structural elements may be one. However, its importance may be minimized by other factors such as combustible content load, early warning devices, smoke movement and toxicity, and fire department response time; all contributing to the overall system performance. Research is underway within the NRC Construction Research Centre to determine the critical factors that affect occupant escape from houses.

Some innovative structural products have been used in the marketplace for several years and have gained the confidence of design professionals, code authorities and users with respect to their performance under typical fire

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scenarios in today's house system. Some newer products have not been in service long enough to have gained that confidence and may present a more obvious concern.

The minimum fire performance of innovative structural materials, or alternative solutions, as compared to that of the NBC-specified conventional wood-frame construction, or acceptable solution, has been the subject of analysis and discussion for several years among fire officials, provincial and territorial regulators, and AHJs. In fire tests conducted between 2002 and 2008 at the NRC, the innovative structural joist systems tested, and currently in the marketplace (i.e., I-joists, C-channel steel joists, metal-plated wood trusses and metal-web trusses), had a time-to-collapse below the performance of exposed 38 mm × 235 mm (2 × 10) lumber joists.

The CCMC provides this floor fire performance information to the local AHJs across Canada to aid their decision-making on whether the fire performance of floors (i.e., the time to evacuate before failure occurs) for alternative joist systems performs “as well as” the inherent fire performance of exposed 38 mm × 235 mm (2 × 10) lumber joists. As is the case for all innovative products, designers and authorities should exercise judgment in considering the use of innovative structural products for houses. Unless otherwise stated, innovative structural products for houses have not been evaluated in the context of the NBC intent noted above.

Industry-based fire-protection options

Fire-protection options

The details of the following industry-based fire-protection floor assemblies [(1)] are outlined in the figures below.

1. FP-01 - 12.5 mm (1/2 in.) Gypsum Board Attached to Bottom of Flange
2. FP-02 - 12.5 mm (1/2 in.) Gypsum Board Attached Directly to Web
3. FP-03 - 12.5 mm (1/2 in.) Gypsum Board Attached Directly to Sides of Flange
4. FP-04 - Mineral Wool Insulation
5. FP-06 - 12.5 mm (1/2 in.) Gypsum Board Installed on Top of the Bottom Flange
6. FP-07 - 15.8 mm (5/8 in.) Gypsum Board Installed on Top of the Bottom Flange
7. FP-09 - Rockwool SAFE’n’Sound® Mineral Wool Insulation

Note:

1 These floor assemblies and supporting fire test data have been provided to the CCMC by the I-joist industry in collaboration with the APA – Engineered Wood Association. The floor assemblies contained herein reviewed by the CCMC provide equivalent fire performance to exposed 38 mm × 235 mm (2 × 10) lumber joists, and are a subset of those published in APA System Report SR-405G, dated April 2019.

Fire protection assembly details

The following floor assembly design (FP-01) is the default alternative solution for all cases and where the manufacturer has not undertaken any specific testing to show equivalency to exposed 38 x 235 mm (2×10) lumber with proprietary joist fire-protection options.

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Fire protection of floors FP-01

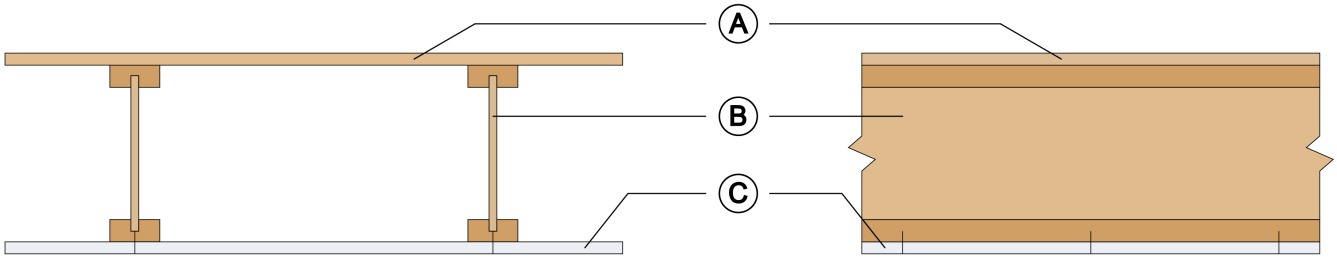

Figure 1. Fire protection of floors FP-01 - fire protection: 12.5 mm (1/2-in.) gypsum board attached to bottom of flange

A. Floor sheathing: materials and installation in accordance with the NBC 2015.
B. I-joist: installation in accordance with Section 3 of this Report. Maximum 24 in. on centre (o.c.) spacing. Applicable to all flange sizes. Minimum web thickness of 9.5 mm (3/8 in.).
C. 12.5 mm (1/2 in.) gypsum board: materials and installation in accordance with the NBC 2015. 1 × 3 (nominal) wood furring strips are permitted to be installed perpendicular to the bottom flange of the I-joists at 400 mm (16 in.) o.c. provided that the gypsum boards are directly attached to the furring strips using 32 mm (1-1/4 in.) Type W drywall screws at 300 mm (12 in.) o.c. Gypsum board not required to be finished with tape and joint compound.

The remaining fire-resistance designs, FP-02 to FP-09, provide fire performance as good as to 38 mm × 235 mm (2 × 10) dimensional lumber exposed floor joists.

Fire protection of floors FP-02

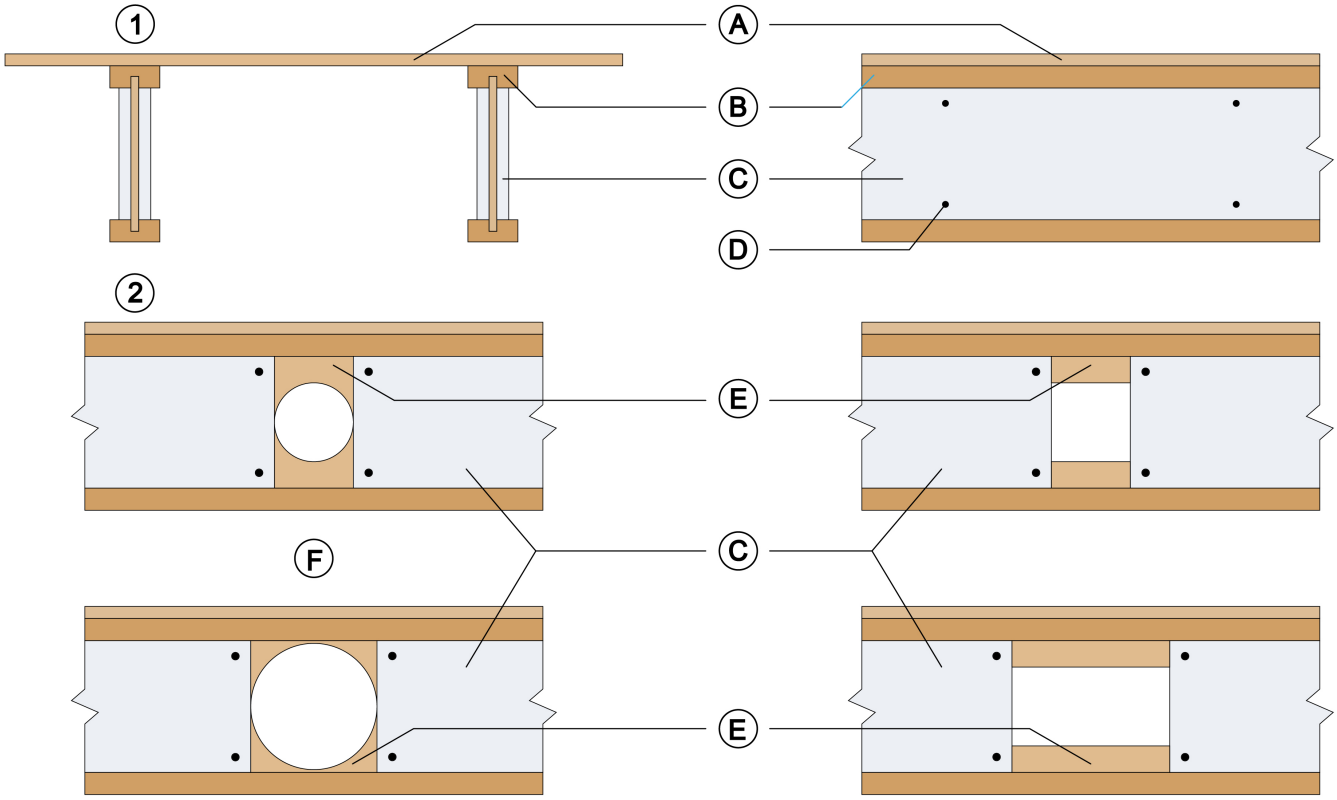

Figure 2. Fire protection of floors FP-02 - fire protection: 12.5 mm (1/2 in.) gypsum board attached directly to web

1. 12.5 mm (1/2 in.) gypsum board attached to web
2. installation requirements at web holes

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A. Floor sheathing: materials and installation in accordance with the NBC 2015.
B. I-joist: installation in accordance with Section 3 of this Report. Maximum 24 in. on centre (o.c.) spacing. Minimum flange size of 38 mm (1-1/2 in.) thick × 50 mm (2 in.) wide. Minimum web thickness of 9.5 mm (3/8 in.). At hole location, fasteners shall be installed 25 mm (1 in.) from the edge and end of the gypsum board.
C. 12.5 mm (1/2 in.) gypsum board: materials (over entire length of I-joist) not required to be finished with tape and joint compound. Fasteners: minimum 25 mm (1 in.) screws (Type W or Type S) or nails installed 25 mm (1 in.) from edges and ends and 400 mm (16 in.) o.c., top and bottom. Fasteners may be staggered from top to bottom.
D. Fastener
E. I-joist web
F. Or

Fire protection of floors FP-03

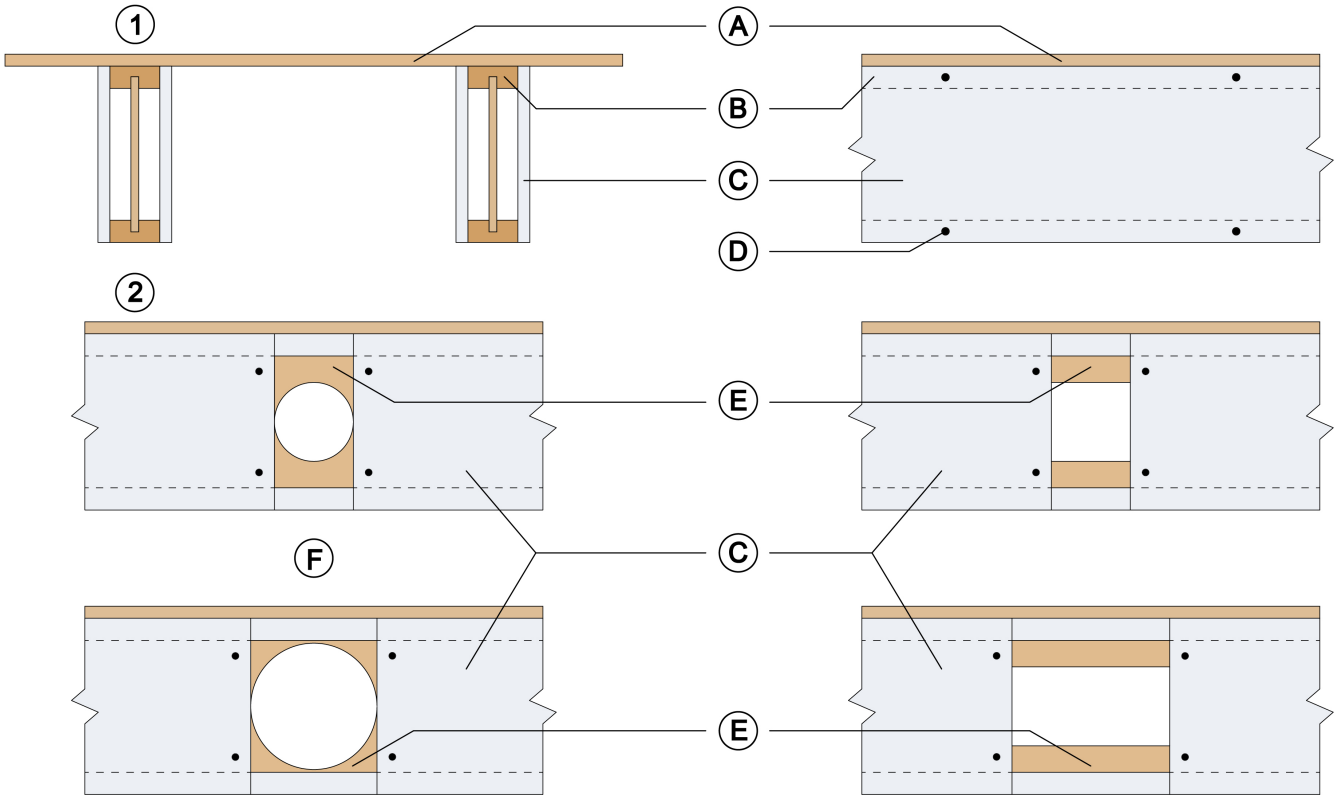

Figure 3. Fire protection of floors FP-03 - fire protection: 12.5 mm (1/2 in.) gypsum board attached directly to sides of flange

1. 12.5 mm (1/2 in.) gypsum board attached to sides of flange
2. installation requirements at web holes

A. Floor sheathing: materials and installation in accordance with the NBC 2015.
B. I-joist: installation in accordance with Section 3 of this Report. Maximum 600 mm (24 in.) on centre (o.c.) spacing. Minimum flange size of 28.5 mm (1-1/8 in.) thick × 44.5 mm (1-3/4 in.) wide. Minimum web thickness of 9.5 mm (3/8 in.). At hole location, fasteners shall be installed 12.5 mm (1/2 in.) from the edge and 1 in. from the end of the gypsum board. Maximum fastener spacing shall be no more than 8 in. on gypsum board above and below the hole.
C. 12.5 mm (1/2 in.) gypsum board: materials (over entire length of I-joist) not required to be finished with tape and joint compound. Fasteners: minimum 25 mm (1 in.) screws (Type W or Type S) or nails installed 12.5 mm (1/2 in.) from edges and 1 in. from ends, and 400 mm (16 in.) o.c., top and bottom. Fasteners may be staggered from top to bottom.
D. Fastener
E. I-Joist web
F. Or

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Fire protection of floors FP-04

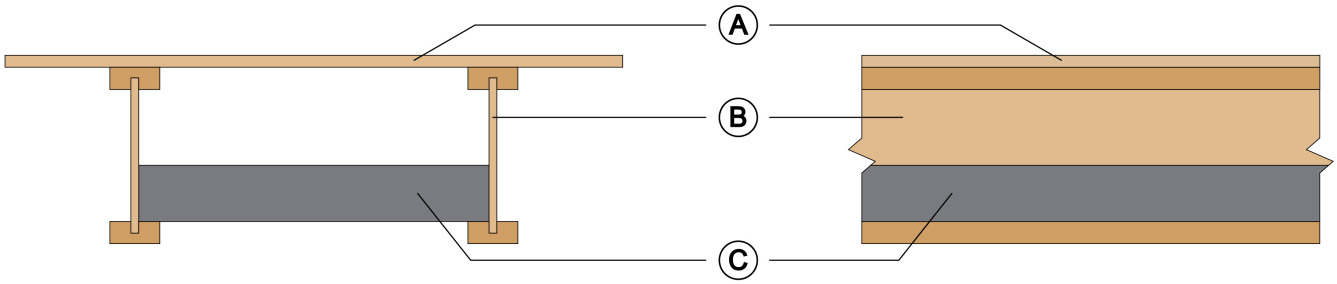

Figure 4. Fire protection of floors FP-04 - fire protection: mineral wool insulation

A. Floor sheathing: materials and installation in accordance with the NBC 2015.
B. I-joist: installation in accordance with the "Conditions and limitations" section of this evaluation. Maximum 487 mm (19.2 in.) on centre (o.c.) spacing. Minimum flange size of 28.5 mm (1 1/8 in.) thick × 44.5 mm (1 3/4 in.) wide. Minimum web thickness of 9.5 mm (3/8 in.).
C. Mineral wool insulation: minimum 46.5 kg/m^3 (2.9 lb/ft^3) (nominal) and 50 mm (2 in.) thick mineral wool insulation made of rock slag, complying with CAN/ULC-S702 and with CCMC Listing, installed without gaps between individual batts as shown with stay wire insulation supports, spaced no more than 600 mm (24 in.) apart and no more than 100 mm (4 in.) from ends of batts. Minimum 40 kg/m^3 (2.5 lb/ft^3) (nominal) and 50 mm (2 in.) thick mineral wool insulation shall be permitted if the I-joists are spaced no more than 400 mm (16 in.) o.c. Use minimum 387 mm (15.25 in.) and 470 mm (18.5 in.) wide batts when I-joist spacing is 400 mm (16 in.) and 487 mm (19.2 in.) o.c., respectively.

Note: *As per NBC 2015, Sentence 9.25.2.3.(7), any insulation that may be subjected to mechanical damage is to be protected by a covering such as gypsum board, plywood, particleboard, OSB or hardboard.*

For assemblies where mineral-fibre insulation is installed to provide joist protection in a fire, as per NBC 2015, Sentence 9.25.2.3.(7), any insulation that may be subjected to mechanical damage is to be protected by a covering such as gypsum board, plywood, particleboard, oriented strandboard (OSB) or hardboard

Fire protection of floors FP-06

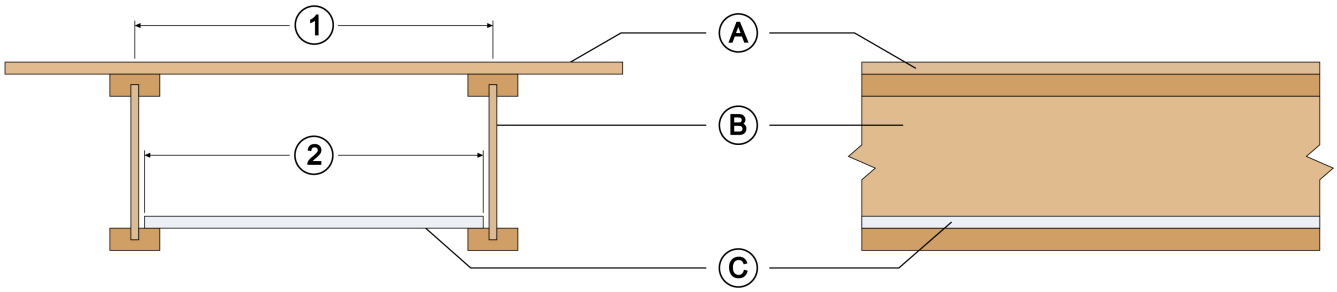

Figure 5. Fire protection of floors FP-06 - fire protection: 12.5 mm (1/2-in.) gypsum board installed on top of the bottom flange

A. Floor sheathing: materials and installation in accordance with NBC 2015.
B. I-joist: installation in accordance with Section 3 of this Report. Maximum 487 mm (19.2 in.) on centre spacing. Minimum flange size of 28.5 mm (1-1/8 in.) thick × 50 mm (2 in.) wide. Minimum web thickness of 9.5 mm (3/8 in.).
C. One layer of 12.5 mm (1/2 in.) lightweight or normal weight (nominal 7.3 kg/m^2 (1.5 psf) minimum) gypsum wall board meeting ASTM C 1396, installed on the top of the bottom flange. Mechanical fastener or adhesive attachment to the top of the bottom flange is not required.

1. 19.2 inches maximum
2. Gypsum board length (see table below)

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Table 5. Table for FP-06 [(3)]

Joist spacing	Required length for gypsum boards
300 mm (12 in.)	282.5 mm (11-1/8 in.) ± 3.2 mm (1/8 in.)
400 mm (16 in.)	384.2 mm (15-1/8 in.) ± 3.2 mm (1/8 in.)
487 mm (19.2 in.)	467 mm (18-3/8 in.) ± 3.2 mm (1/8 in.)

Note:

3 Gypsum board lengths shown above provide at least a 6 mm (1/4 in.) bearing on the top of the bottom flange in each I-joist as installed. For other joist spacings, the required gypsum board lengths shall be adjusted so that the required gypsum board lengths are determined based on a full bearing on the flange at one end of the joist spacing, while maintaining at least a 6 mm (1/4 in.) bearing at the other end. If double joists are used, the required gypsum board lengths shall be reduced from the table above by a length equal to the flange width.

Fire protection of floors FP-07

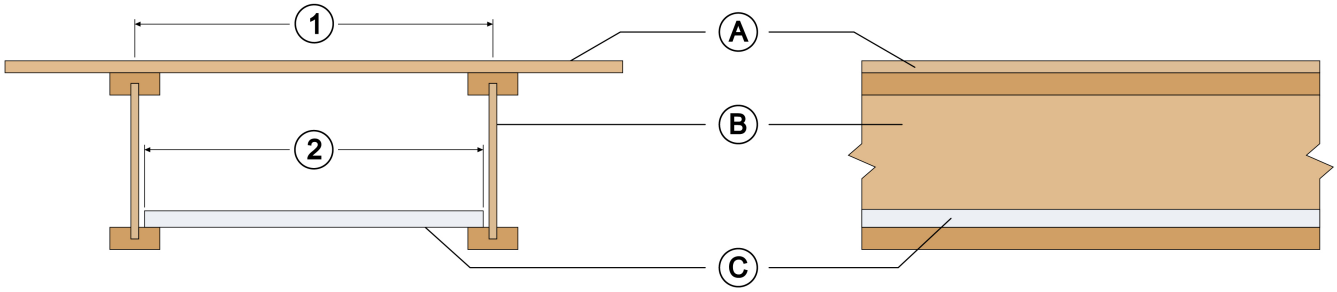

Figure 6. Fire protection of floors FP-07 - fire protection: 15.8 mm (5/8-inch) gypsum board installed on top of the bottom flange

A. Floor sheathing: materials and installation in accordance with the NBC 2015.
B. I-joist: installation in accordance with Section 3 of this Report. Maximum 600 mm (24 in.) on centre spacing. Minimum flange size of 28.5 mm (1-1/8 in.) thick × 50 mm (2 in.) wide. Minimum web thickness of 9.5 mm (3/8 in.).
C. One layer of 15.8 mm (5/8 in.) lightweight or normal weight (nominal 9.3 kg/m2 (1.9 psf) minimum) gypsum wall board meeting ASTM C 1396, installed on the top of the bottom flange. Mechanical fastener or adhesive attachment to the top of the bottom flange is not required.

1. 24 inches maximum
2. Gypsum board length (see table below)

Table 6. Gypsum board length for FP-07 [(4)]

Joist spacing	Required length for gypsum boards
300 mm (12 in.)	282.5 mm (11-1/8 in.) ± 3.2 mm (1/8 in.)
400 mm (16 in.)	384.2 mm (15-1/8 in.) ± 3.2 mm (1/8 in.)
487 mm (19.2 in.)	467 mm (18-3/8 in.) ± 3.2 mm (1/8 in.)
600 mm (24 in.)	587 mm (23-1/8 in.) ± 3.2 mm (1/8 in.)

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Note:

4 Gypsum board lengths shown above provide at least a 6 mm (1/4 in.) bearing on the top of the bottom flange in each I-joist as installed. For other joist spacings, the required gypsum board lengths shall be adjusted so that the required gypsum board lengths are determined based on a full bearing on the flange at one end of the joist spacing, while maintaining at least a 6 mm (1/4 in.) bearing at the other end. If double joists are used, the required gypsum board lengths shall be reduced from the table above by a length equal to the flange width.

Fire protection of floors FP-09

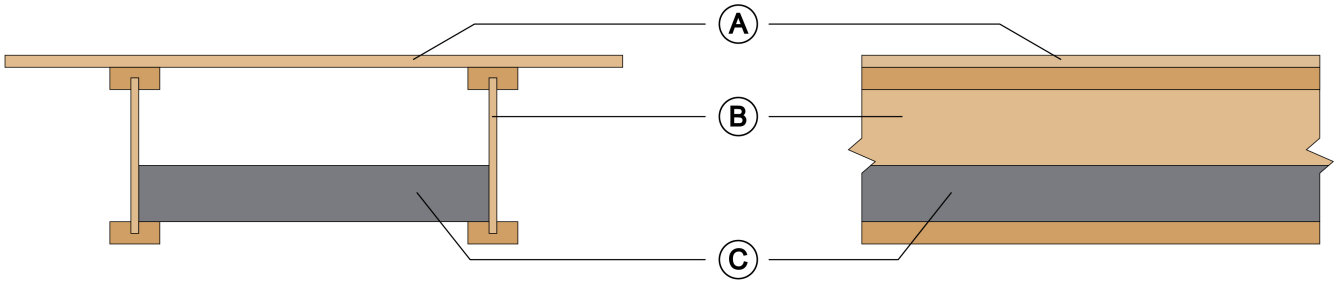

Figure 7. Fire protection of floors FP-09 - fire protection: Rockwool SAFE'n'Sound® mineral wool insulation

A. floor sheathing: materials and installation in accordance with the NBC 2015.
B. I-joist: installation in accordance with the "Conditions and limitations" section of this evaluation. Maximum 600 mm (24 in.) on centre (o.c.) spacing. Minimum flange size of 28.5 mm (1 1/8 in.) thick × 50 mm (2 in.) wide. Minimum web thickness of 9.5 mm (3/8 in.).
C. mineral wool insulation: Rockwool SAFE'n'SOUND® minimum 40 kg/m^3 (2.5 lb/ft^3) (nominal) and 75 mm (3 in.) thick mineral wool batt insulation made of rock or furnace slag (ASTM C 665 Type 1-compliant) installed as shown with insulation stay wire supports, spaced no more than 600 mm (24 in.) apart and no more than 100 mm (4 in.) from ends of batts. Use minimum 387 mm (15.25 in.), 470 mm (18.5 in.) and 584 mm (23 in.) wide batts when I-joist spacing is 400 mm (16 in.), 487 mm (19.2 in.) and 600 mm (24 in.) o.c., respectively.

Note: *As per NBC 2015, Sentence 9.25.2.3.(7), any insulation that may be subjected to mechanical damage is to be protected by a covering such as gypsum board, plywood, particleboard, OSB or hardboard.*

For assemblies where mineral-fibre insulation is installed to provide joist protection in a fire, as per NBC 2015, Sentence 9.25.2.3.(7), any insulation that may be subjected to mechanical damage is to be protected by a covering such as gypsum board, plywood, particleboard, oriented strandboard (OSB) or hardboard

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Saskatchewan Building Officials Association (SBOA)	(Saskatchewan Building Officials Association (SBOA))
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Code compliance as an acceptable solution

Code Compliance via Acceptable Solutions

> If a building design (e.g. material, component, assembly or system) can be shown to meet all provisions of the applicable **acceptable solutions** in Division B (e.g. it complies with the applicable provisions of a referenced standard), it is deemed to have satisfied the objectives and functional statements linked to those provisions and thus to have complied with that part of the Code.
>
> — **National Building Code of Canada, Sentence A-1.2.1.1.(1)(a)**

The CCMC has determined that compliance with this provision of the Code has been demonstrated as an **Acceptable Solution**. The evaluation report provides a summary of the basis of CCMC's compliance opinion.

CCMC's code compliance opinions

All CCMC evaluation reports are opinions of code compliance established in accordance with the National Building Code of Canada, Subsection 1.2.1. "Compliance with this Code," which requires compliance to be achieved by:

- complying with the applicable acceptable solutions in Division B, or
- using an alternative solution that will achieve at least the minimum level of performance required by Division B in the areas defined by the objective and functional statements attributed to the applicable acceptable solutions.

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Code compliance as an alternative solution

Code Compliance via Alternative Solutions

> Where a design differs from the acceptable solutions in Division B, then it should be treated as an "**alternative solution**." A proponent of an alternative solution must demonstrate that the alternative solution addresses the same issues as the applicable acceptable solutions in Division B and their attributed objectives and functional statements. However, because the objectives and functional statements are entirely qualitative, demonstrating compliance with them in isolation is not possible. Therefore, Clause 1.2.1.1.(1)(b) identifies the principle that Division B establishes the quantitative performance targets that alternative solutions must meet. In many cases, these targets are not defined very precisely by the acceptable solutions [...] Nevertheless, Clause 1.2.1.1.(1)(b) makes it clear that an effort must be made to demonstrate that an alternative solution will perform as well as a design that would satisfy the applicable acceptable solutions in Division B—not “well enough” but “as well as.”
>
> — **National Building Code of Canada, Sentence A-1.2.1.1.(1)(b)**

The CCMC has determined that compliance with this provision of the Code has been demonstrated as an **Alternative Solution**. The evaluation report provides a summary of the basis of CCMC's compliance opinion.

CCMC's code compliance opinions

All CCMC evaluation reports are opinions of code compliance established in accordance with the National Building Code of Canada, Subsection 1.2.1. "Compliance with this Code," which requires compliance to be achieved by:

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