



BULLETIN RB06-045

(Updated 2015 Dec 18)

FIRE SEPARATION DETAILS AT FLOOR/WALL ASSEMBLY INTERSECTIONS BETWEEN SUITES IN MULTI-FAMILY RESIDENTIAL BUILDINGS

Reference: Sentence 9.10.11.1.(1), Sentences 9.10.11.2.(1) to (3), Div B, Appendix A-9.10.3.1. Tables A & B, and Div. B, Appendix 2.3.4. Tables A to D

Sentence 9.10.11.1.(1) “Except as provided in **Article 9.10.11.2.**, a *party wall* on a property line shall be constructed as a *firewall*.”

Sentence 9.10.11.2.(1) “In a building of residential occupancy in which there is no *dwelling unit* above another dwelling unit, a party wall on a property line between dwelling units need not be constructed as a firewall provided it is constructed as a *fire separation* having not less than a 1 h *fire-resistance* rating.”

Sentence 9.10.11.2.(2) “The wall described in **Sentence (1)** shall provide continuous protection from the top of the footings to the underside of the roof deck.”

Sentence 9.10.11.2.(3) “Any space between the top of the wall described in **Sentence (1)** and the roof deck shall be tightly filled with mineral wool or noncombustible material.”

Div B, Appendix A-9.10.3.1., Table A “Fire and Sound Resistance of Walls”

Div B, Appendix A-9.10.3.1., Table B “Fire and Sound Resistance of Floors, Ceilings and Roofs”

Div. B, Appendix 2.3.4., Table A “Time Assigned to Wallboard Membranes on Fire-Exposed Side”

Div. B, Appendix 2.3.4., Table B “Time Assigned for Contribution of Lath and Plaster Protection on Fire-Exposed Side, min (1)”

Div. B, Appendix 2.3.4., Table C “Time Assigned for Contribution of Wood or Light Steel Frame”

Div. B, Appendix 2.3.4., Table D “Time Assigned for Additional Protection”

Commentary / Relevant Facts:

In the past we have approved assemblies based on one of the two following criteria:

- 1) **Appendix D** of the **ABC 2006** for “Fire-Performance Ratings” and their assigned values in **Tables 2.3.4. A to D**, or
- 2) **Appendix A** of the **ABC 2006** for **A-9.10.3.1. “Fire and Sound Resistance of Building Assemblies”**, **Tables A-9.10.3.1. A and B**.

The “traditional” assemblies are based on **Article 2.3.4.** and **Tables 2.3.4.A to 2.3.6.D** of **Appendix D** of the **ABC 2006**. These can be built up using generic components and are usually conservative in design to compensate for this.

Another approach to providing approved assemblies for floor/wall intersections is to use a tested assembly.

These assemblies incorporate proprietary products, e.g. manufactured floor joists, as key components. Such assemblies, listed in the approved laboratories handbooks, must be built exactly as specified in the listing to be accepted by the Authority Having Jurisdiction.

Tested assemblies often use less material than those based on the guidelines provided in **Appendix D** of the **ABC 2006** and are therefore more economical to use.

Intertek (Warnock Hersey) has implemented a third concept, one of evaluation of fire-rated assemblies. Such assemblies are not tested, and their use is subject to prior approval of the Authority Having Jurisdiction.

Conclusion:

This Regs Bulletin accepts the designs 1 thru 10 for continuity of wall/floor fire separations under **Article 9.10.11.2..** (See sketches on pages 3 to 7)

NOTE:

The rim boards for Designs No. 3 to 9 may be any of the following:

- a) TrusJoist (TJM) "Timber strand" 1 1/4" thick.
- b) Ainsworth Lumber Co. "Rimboard Plus" OSB, 1 1/8" thick.
- c) Weldwood LVL (formerly "Truebar" LVL) 1 1/4" thick.
- d) Any product complying with **ASTM - D5456-99A** "Standard specifications for Evaluation of Structural Composite Lumber Products", 1 1/4" thick.

With regards to all of these designs, Type “X” or Type “C” gypsum wallboard are inter-changeable.

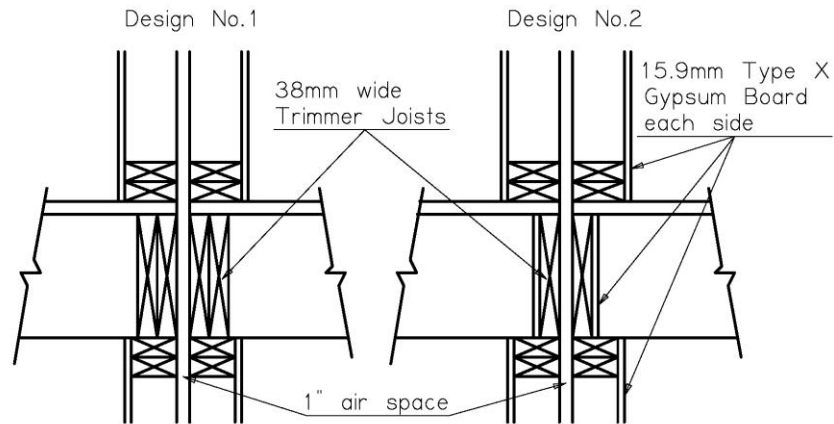
Use of fire stops to block off concealed spaces within wall assemblies shall be determined by the requirements of **Article 9.10.16.2**. Typically, fire stops are not required for the following designs unless the air space between the assemblies is to be more than 25mm.

In accordance with **Article 9.11.2.1.**, each dwelling unit must be separated from each other and other spaces by construction providing an STC of 50. Refer to **tables A9.10.3.1.A & B** for partitions which may provide both the fire resistance rating and the STC rating.

Design No.1 & No.2

Wall Fire-Resistance Rating = 60 minutes

Application: These designs are only used for true dimensional lumber.
Engineered rim boards cannot be substituted for solid
sawn trimmer joists.



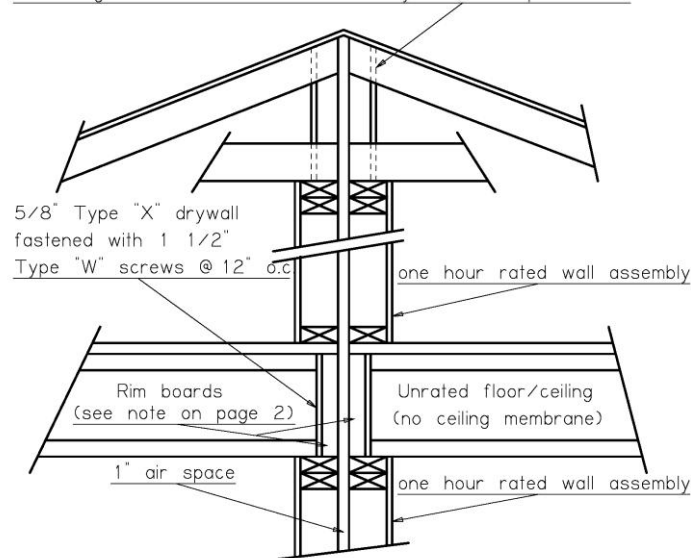
Note: Double dimensional trimmer joists on both sides have traditionally been acceptable as meeting a 60 minute fire-resistant rating.

Design No. 3

Wall Fire-Resistance Rating = 60 minutes

Application: Semi-Detached, Single Family, load on rim joist applied individually to each wall, such that load is not transferred when support on one side is lost.

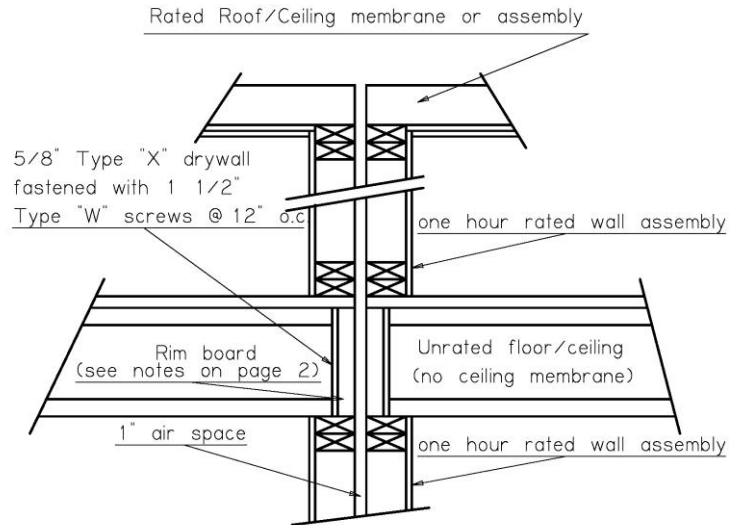
Trusses clad with 5/8 Type X drywall to underside of roof sheathing in order to maintain continuity of fire separation



Design No. 4

Wall Fire-Resistance Rating = 60 minutes

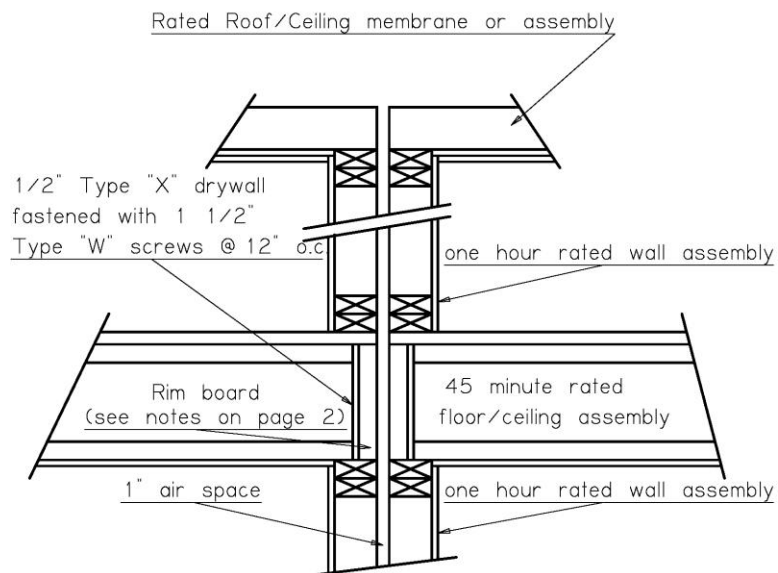
Application: Multi-storey, load on rim joist applied individually to each wall, such that load is not transferred when support on one side is lost.



Design No. 5

Wall Fire-Resistance Rating = 60 minutes

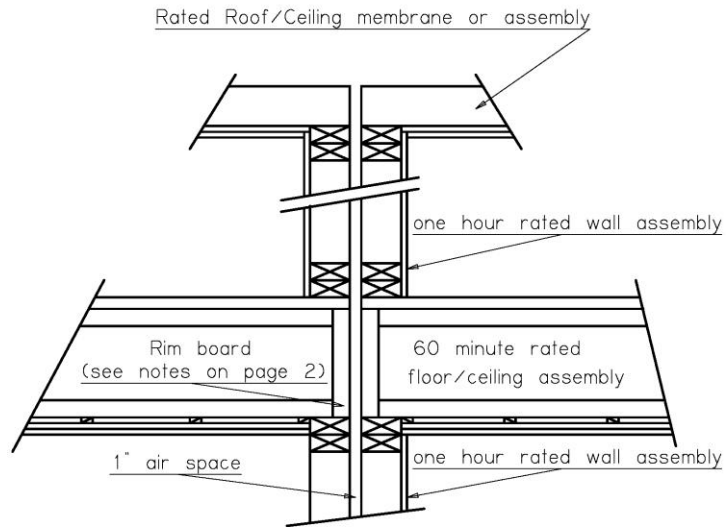
Application: Multi-storey, load on rim joist applied individually to each wall, such that load is not transferred when support on one side is lost.



Design No. 6

Wall Fire-Resistance Rating = 60 minutes

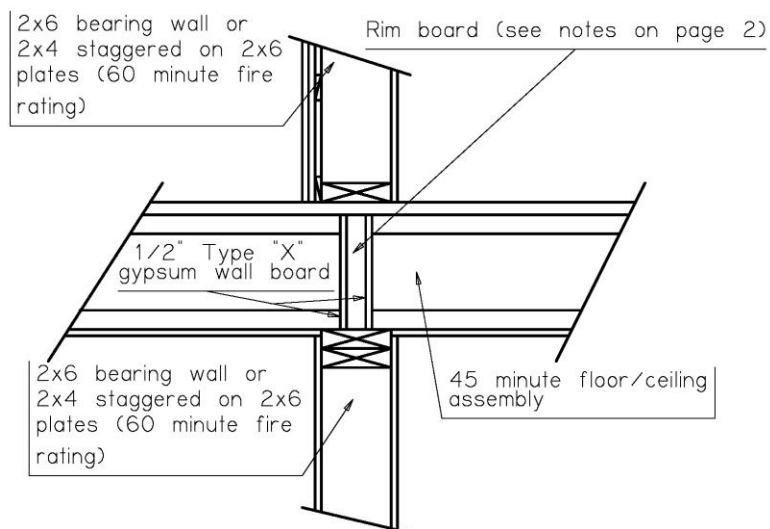
Application: Multi-storey, load bearing walls. Rim joist carry loads individually for each wall, such that load is not transferred when support on one side is lost.



Design No.7

Wall Fire-Resistance Rating = 60 minutes

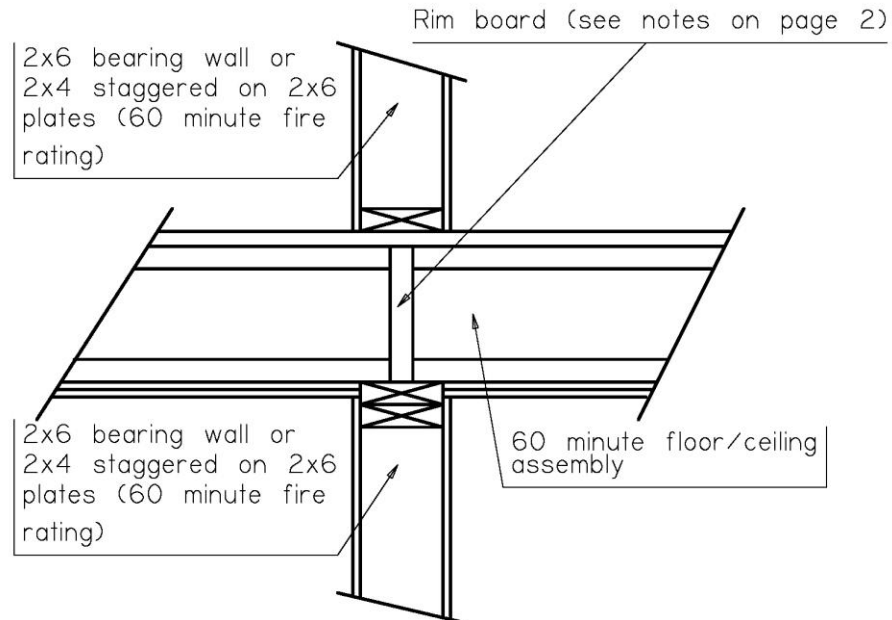
Application: Multi-storey, load bearing party walls or corridor walls



Design No.8

Wall Fire-Resistance Rating = 60 minutes

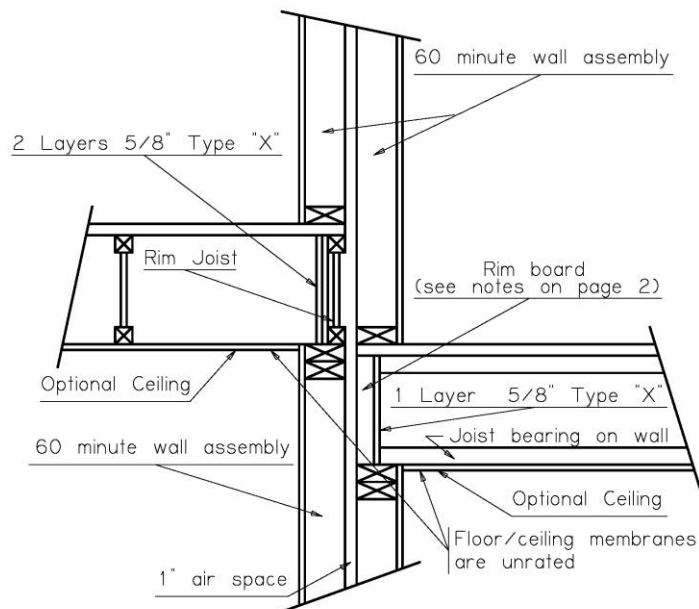
Application: Multi-storey party walls or corridor walls



Design No.9

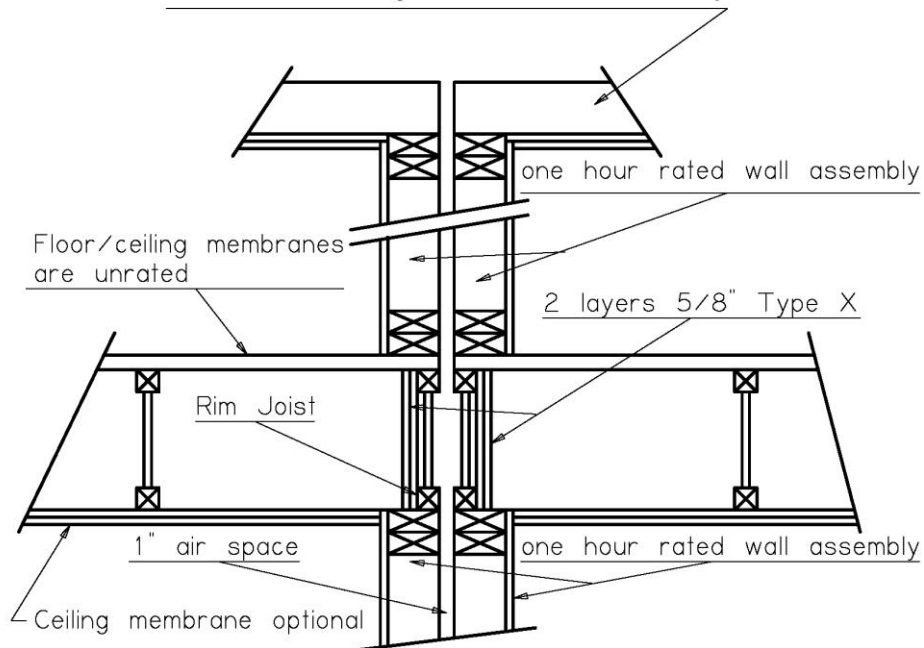
Wall Fire-Resistance Rating = 60 minutes

Application: Multi-storey, non-load bearing and load bearing party walls or corridor walls



Design No. 10

Wall Fire-Resistance Rating = 60 minutes
Application: Multi-storey, non-load bearing party walls
Rated Roof/Ceiling membrane or assembly



Chief Building Inspector

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Unless stated otherwise, the Code references in this bulletin are to Division B of the Alberta Building Code 2014 (ABC 2014). Bulletins do not overrule the ABC 2014 nor constitute a relaxation of the Code. They serve to clarify the Code in areas where the latter is ambiguous or does not cover a specific topic. Bulletins are City of Calgary clarifications for staff use to enable consistency in the application of the Code. These bulletins should always be read in the context of the appropriate requirements of the Code.