

FIRESTOPPING

AS REQUIRED BY BUILDING & SAFETY CODES

FIRESTOPPING AS MANDATED BY THE BUILDING AND SAFETY CODES

Firestopping is well defined in the major building and safety codes. This is designed as a reference chart that assists users in quickly finding the relevant code requirement. It is not intended to take the place of the code. Always refer to the individual building or safety code. When in doubt, verify requirements with the local authority having jurisdiction.

INTERNATIONAL BUILDING CODE (IBC); 2015 EDITION		NFPA 101, "LIFE SAFETY CODE"; 2015 EDITION	
702 Definitions	Points to Chapter 2 (Section 202) to define firestopping and other relevant terms.	8.3.5 Penetrations	States where penetration requirements are defined.
714.1.1 Ducts	Requires ducts penetrating walls and horizontal assemblies to be firestopped. Points to 717 for damper requirements.	8.3.5.1 Firestop Systems and Devices Required	States that firestop systems are required and shall be tested to ASTM E814 or ANSI/UL1479.
714.2 Installation Details	Requires sleeves to be fastened and sealed internally and externally.	8.3.5.1.3 Penetrations	F Rating must match barrier.
714.3.1.2 Through Penetration Firestop	States that firestop systems are required in walls and shall be tested to ASTM E814 or ANSI/UL1479 for F Rating.	8.3.5.1.4 Penetrations	T Rating required in floors. Exceptions for wall cavity and no contact with combustibles.
714.3.2 Membrane Penetrations	Membrane penetrations in walls treated as through penetrants. Outlines requirements for boxes.	8.3.5.2 Sleeves	Sleeves shall be securely installed and firestopped inside and out.
714.3.3 Dissimilar Materials	Prohibits connections beyond the point of firestopping in walls of non-combustible and combustible penetrants (pipes, etc.) unless tested.	8.3.5.3 Insulation and Coverings	Pipe covering shall terminate unless it can be properly firestopped.
714.4.1.2 Through Penetration Firestop	States that firestop systems are required in horizontal assemblies (floor, floor/ceiling, etc.) and shall be tested to ASTM E814 or ANSI/UL1479 for F&T Ratings. No T Rating required for penetrants inside wall cavity, drain pipe contained in concealed horizontal space, or max 4 inch diameter penetrations into metal-enclosed switchgear.	8.3.5.5.1 Dissimilar Material	Requires combustible pipe to noncombustible pipe transitions to occur 36" away unless tested.
714.4.2 Membrane Penetrations	Membrane penetrations in horizontal assemblies (floor, floor/ceiling, etc.) treated as through penetrants.	8.3.5.6.1 Membrane Penetrations	States membrane penetrations shall be protected by firestop system or device meeting the same requirements as through penetrations.
714.4.3 Dissimilar Materials	Prohibits connections beyond the point of firestopping in horizontal assemblies (floor, floor/ceiling, etc.) of noncombustible and combustible penetrants (pipes, etc.) unless tested.	8.3.5.6.2 Membrane Penetrations	States firestop systems for membrane penetrations shall be tested to ASTM E814 or ANSI/UL1479.
714.4.4 Smoke Barriers	Outlines L Rating requirements in smoke barriers, and requires L Rating tests. Allows air leakage rate of 50 CFM/100 square feet or 5 CFM/square foot.	8.3.5.6.3 Outlet Boxes	Allows outlet boxes. Dictates 24" separation, 100 sq in. per 100 sq ft, max 0.1 sq ft box. Allows firestop under Option D.
715.1 Joints	States joints need to be firestopped.	8.3.6 and 8.3.6.1 Joints	Defines requirements for joints.
715.2 Installation (Joints)	States joint systems must be securely installed.	8.3.6.2 Joints and Smoke	States that joint shall limit smoke transfer.
715.3 Fire Test Criteria (Joints)	States joints shall be tested to ASTM E1966 or UL2079.	8.3.6.3 Joints and Smoke	Another reference to smoke-tight joints.
715.4 Curtain Wall	States slab edge systems shall be tested to ASTM E2307. Exception allowed for vision glass extending to finished floor level.	8.3.6.4 Representative Joints	Joints shall be typical of actual condition.
715.5 Spandrel Wall	Pointer to spandrel height requirements in 705.8.5.	8.3.6.5 Joints and Test Standards	Joints shall be tested to ASTM E1966 (UL2079).
715.6 Joints (Smoke Barriers)	Outlines L Rating requirements for joints in smoke barriers.	8.3.6.6 Joint and Test Standards	Joints shall be tested at fully extended width and subject to hose stream (walls only).
		8.3.6.7.1 Curtain Walls and Perimeter Joints	States slab edge systems shall be tested to ASTM E2307.
		8.3.6.7.2 Curtain Wall	Requires F Rating of perimeter joint system to match floor rating.
		8.4.4 and 8.4.4.1 Penetrations in Smoke Partitions	Requires penetrations in smoke partitions to limit smoke transfer. No specific value mandated.
		8.4.5 and 8.4.5.1 Joints and Smoke Partitions	Discusses joints in or between smoke partitions and requires them to limit smoke transfer.
		A.8.3.5.1 Inspections – Penetrations	References ASTM E2174 inspection standard.

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702 Definitions	Points to Chapter 2 (Section 202) to define firestopping and other relevant terms.	8.3.5 Penetrations	States where penetration requirements are defined.
714.1.1 Ducts	Requires ducts penetrating walls and horizontal assemblies to be firestopped. Points to 717 for damper requirements.	8.3.5.1 Firestop Systems and Devices Required	States that firestop systems are required and shall be tested to ASTM E814 or ANSI/UL1479.
714.2 Installation Details	Requires sleeves to be fastened and sealed internally and externally.	8.3.5.1.3 Penetrations	F Rating must match barrier.
714.3.1.2 Through Penetration Firestop	States that firestop systems are required in walls and shall be tested to ASTM E814 or ANSI/UL1479 for F Rating.	8.3.5.1.4 Penetrations	T Rating required in floors. Exceptions for wall cavity and no contact with combustibles.
714.3.2 Membrane Penetrations	Membrane penetrations in walls treated as through penetrants. Outlines requirements for boxes.	8.3.5.2 Sleeves	Sleeves shall be securely installed and firestopped inside and out.
714.3.3 Dissimilar Materials	Prohibits connections beyond the point of firestopping in walls of non-combustible and combustible penetrants (pipes, etc.) unless tested.	8.3.5.3 Insulation and Coverings	Pipe covering shall terminate unless it can be properly firestopped.
714.4.1.1.2 Through Penetration Firestop	States that firestop systems are required in horizontal assemblies (floor, floor/ceiling, etc.) and shall be tested to ASTM E814 or ANSI/UL1479 for F&T Ratings. No T Rating required for penetrants inside wall cavity or drain pipe contained in concealed horizontal space.	8.3.5.5.1 Dissimilar Material	Requires combustible pipe to noncombustible pipe transitions to occur 36" away unless tested.
714.4.1.2 Membrane Penetrations	Membrane penetrations in horizontal assemblies (floor, floor/ceiling, etc.) treated as through penetrants.	8.3.5.6.1 Membrane Penetrations	States membrane penetrations shall be protected by firestop system or device meeting the same requirements as through penetrations.
714.4.1.3 Dissimilar Materials	Prohibits connections beyond the point of firestopping in horizontal assemblies (floor, floor/ceiling, etc.) of noncombustible and combustible penetrants (pipes, etc.) unless tested.	8.3.5.6.2 Membrane Penetrations	States firestop systems for membrane penetrations shall be tested to ASTM E814 or ANSI/UL1479.
714.5 Smoke Barriers	Outlines L Rating requirements in smoke barriers, and requires L Rating tests. Allows air leakage rate of 50 CFM/100 square feet or 5 CFM/square foot.	8.3.5.6.3 Outlet Boxes	Allows outlet boxes. Dictates 24" separation, 100 sq in. per 100 sq ft, max 0.1 sq ft box. Allows firestop under Option D.
715.1 Joints	States joints need to be firestopped.	8.3.6 and 8.3.6.1 Joints	Defines requirements for joints.
715.2 Installation (Joints)	States joint systems must be securely installed.	8.3.6.2 Joints and Smoke	States that joint shall limit smoke transfer.
715.3 Fire Test Criteria (Joints)	States joints shall be tested to ASTM E1966 or UL2079.	8.3.6.3 Joints and Smoke	Another reference to smoke-tight joints.
715.4 Curtain Wall	States slab edge systems shall be tested to ASTM E2307. Exception allowed for vision glass extending to finished floor level.	8.3.6.4 Representative joints	Joints shall be typical of actual condition.
715.5 Spandrel Wall	Pointer to spandrel height requirements in 705.8.5.	8.3.6.5 Joints and Test Standards	Joints shall be tested to ASTM E1966 (UL2079).
715.6 Joints (Smoke Barriers)	Outlines L Rating requirements for joints in smoke barriers.	8.3.6.6 Joint and Test Standards	Joints shall be tested at fully extended width and subject to hose stream (walls only).
		8.3.6.7.1 Curtain Walls and Perimeter Joints	States slab edge systems shall be tested to ASTM E2307.
		8.3.6.7.2 Curtain Wall	Requires F Rating of perimeter joint system to match floor rating.
		8.4.4 and 8.4.4.1 Penetrations in Smoke Partitions	Requires penetrations in smoke partitions to limit smoke transfer. No specific value mandated.
		8.4.5 and 8.4.5.1 Joints and Smoke Partitions	Discusses joints in or between smoke partitions and requires them to limit smoke transfer.
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NATIONAL BUILDING CODE OF CANADA (2010 EDITION)		NFPA 70 "NATIONAL ELECTRICAL CODE" (2014 EDITION)	
Volume 1/Division A 1.4	Terms and Abbreviations.	300.21 Spread of Fire or Products of Combustion	Requires electrical installations to be firestopped.
Volume 2/Division B 3.1.9	Penetrations in Fire Separations and Fire-Rated Assemblies.	760.3(A) Spread of Fire or Products of Combustion	Requires fire alarm cables to be firestopped with pointer to 300.21.
Volume 2/Division B 3.1.9.1	Fire Stops. Outlines requirements of tests per ULC-S115.	770.26 Spread of Fire or Products of Combustion	Requires openings for fiber optics and innerducts to be firestopped.
Volume 2/Division B 3.1.9.3	Penetrations by Wires, Cables and Outlet Boxes.	800.26 Spread of Fire or Products of Combustion	Requires openings for communications cables to be firestopped.
Volume 2/Division B 3.1.9.4	Combustible Piping Penetrations. Defines requirements for 50 Pa testing per ULC-S115.	820.26 Spread of Fire or Products of Combustion	Requires openings for coaxial and CATV cables to be firestopped.
Volume 2/Division B APPENDIX D	Fire Performance Ratings and Document numbers for building materials.	830.26 Spread of Fire or Products of Combustion	Requires openings for network-powered broadband cables to be firestopped.
NATIONAL BUILDING CODE OF CANADA (2005 EDITION)		NFPA 70 "NATIONAL ELECTRICAL CODE" (2011 EDITION)	
Volume 1/Division A 1.4	Terms and Abbreviations.	300.21 Spread of Fire or Products of Combustion	Requires electrical installations to be firestopped.
Volume 1/Division B 3.1.9	Building Services in Fire Separations and Fire-Rated Assemblies.	760.3(A) Spread of Fire or Products of Combustion	Requires fire alarm cables to be firestopped with pointer to 300.21.
Volume 1/Division B 3.1.9.1	Fire Stopping of Service Penetrations. Outlines requirements of tests per ULC-S115.	770.26 Spread of Fire or Products of Combustion	Requires openings for fiber optics and innerducts to be firestopped.
Volume 1/Division B 3.1.9.3	Penetrations by Wires, Cables and Outlet Boxes.	800.26 Spread of Fire or Products of Combustion	Requires openings for communications cables to be firestopped.
Volume 1/Division B 3.1.9.4	Combustible Pipe Penetrations. Defines requirements for 50 Pa testing per ULC-S115.	820.26 Spread of Fire or Products of Combustion	Requires openings for coaxial and CATV cables to be firestopped.
Volume 2/Division B APPENDIX D	Fire Performance Ratings and Document numbers for building materials.	830.26 Spread of Fire or Products of Combustion	Requires openings for network-powered broadband cables to be firestopped.
INTERNATIONAL FIRE CODE (2015 EDITION)		NFPA 70 "NATIONAL ELECTRICAL CODE" (2008 EDITION)	
703.1 Maintenance	Requires maintenance of fire-rated construction, including firestops. Imposes strict requirements for annual inspection and repair/replacement. Requires records of inspections and repairs to be maintained.	300.21 Spread of Fire or Products of Combustion	Requires electrical installations to be firestopped.
INTERNATIONAL FIRE CODE (2012 EDITION)		760.3(A) Spread of Fire or Products of Combustion	Requires fire alarm cables to be firestopped with pointer to 300.21.
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