



HILTI FIRESTOP SELECTION CHART — U.S.

*These sections contain systems that may not satisfy CAN/ULC S115-11 (Canada) requirements. See Canada-only selection chart for alternative firestop solutions for those systems without the cUL designation.

CLICK
CATEGORY
INFO BELOW:

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	Framed (Gypsum) Walls
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Wood-Framed Floors
Miscellaneous Mechanical/Ducts*	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Steel-Framed Floors
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	Joints
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



CONCRETE FLOORS/WALLS

Hilti Firestop Selection Chart – U.S.

CLICK CATEGORY INFO BELOW:

Size of Blank Opening	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number (Similar FM Approved System)
BLANK OPENINGS IN CONCRETE FLOORS/WALLS						
Max. 4" steel pipe sleeve	3 Hr				Firestop Block	C-AJ-0055
Max. 4" un-sleeved opening	3 Hr	■			CP 618	C-AJ-0058 [hgf]
Max. 7" un-sleeved opening	2 Hr	■			FS-ONE MAX	C-AJ-0070
Max. 32" x 32" un-sleeved opening (2-1/2" Concrete)	1 Hr	■			CP 637	C-AJ-0074
Max. 32" x 32" un-sleeved opening	4 Hr	■	■		CP 637	C-AJ-0081
Max. 24" x 12" un-sleeved opening	3 Hr	■			CP 637	C-AJ-0082
Max. 6" un-sleeved opening	3 Hr	■			CP 618	C-AJ-0086
Max. 6" (optional sleeve) opening	2 Hr				FS-ONE MAX	C-AJ-0090
Max. 4" steel pipe sleeve (optional sleeve)	2 Hr		■		Firestop Plug	C-AJ-0097
Max. 24" x 24" blank opening	2 Hr	■			CP 675T	C-AJ-0105
Max. 24" x 12" blank opening	2 Hr				Firestop Block	C-AJ-0138
Max. 24" blank opening	2 Hr				CFS-S SIL GG CFS-S SIL SL	C-AJ-0141
Max. 6" blank opening	3 Hr	■			CFS-S SIL GG CFS-S SIL SL	C-AJ-0142
Max. 30" x 30" blank opening (install both sides)	2 or 4 Hr	■			CFS-COS	C-AJ-0155
Max. 30" x 30" blank opening (top side install)	2 Hr	■			CFS-COS	C-AJ-0157
Max. 24" x 12" un-sleeved opening	2 Hr	■			Firestop Block	C-BJ-0022
Blank CP 680-P or CP 680-PX (2-1/2" Concrete)	2 Hr				CP 680-P or CP 680-PX w/ CP 618	F-A-0005
Blank CP 680-P or CP 680-PX	3 Hr	■			CP 680-P or CP 680-PX w/ CP 618 or m.w.	F-A-0006
Max. 6" un-sleeved opening	2 Hr				CFS-S SIL GG CFS-S SIL SL	F-A-0008
Max. 30" x 12" or 12" diameter opening	2 Hr	■			CP 604 CFS-S SIL GG CFS-S SIL SL	F-A-0012
Blank CP 680-M [2", 3", or 4"], CP 680-P [2", 3", or 4"], or CP 680-PX [2" or 3"]	3 Hr	■			CP 680-M, CP 680-P or CP 680-PX w/ m.w.	F-A-0014
NEW Blank CFS-CID MD P or PX	2 or 3 Hr	■			CFS-CID MD P or PX, CP 618	F-A-0040
NEW Blank CFS-CID MD M, P, or PX	3 Hr	■			CFS-CID MD M, P, or PX	F-A-0041
Blank CFS-CID M [8" or 10"] or CFS-CID P [8" or 10"]	2 Hr	■			CFS-CID M or P FS-ONE MAX CFS-S SIL GG CFS-S SIL SL	F-B-0005
Max. 30" x 15" un-sleeved opening	1 or 2 Hr	■			Fire Foam	W-J-0006
Max. 24" x 36" blank opening	2 Hr		■		CP 675T	W-J-0007
Max. 24" x 36" blank opening	2 Hr				CP 675T w/ Z-frame	W-J-0008
Max. 4" (optional sleeve) opening	2 Hr	■			Firestop Plug	W-J-0010

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) – ASTM E2307	



Size of Blank Opening	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
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BLANK OPENINGS IN CONCRETE FLOORS/WALLS (CONTINUED)

Max. area of opening = 240 sq in with max dim of 20"	2 Hr	■			FS-ONE MAX	W-J-0015
Max. 2-1/2" dia or 2" x 2" blank opening	3 Hr				FS-ONE MAX	W-J-0022
Max. 2-1/2" Blank opening	3 Hr				CP 680 and FS-ONE MAX	FM 336
Max. 4" Blank opening	2 Hr				CP 618	FM 593
Max. 900 sq. in. opening	4 Hr				CFS-COS, CP 619, and FS-ONE MAX	FM 710

Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
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METALLIC PENETRANTS IN CONCRETE FLOORS/WALLS

Max. 12" steel, max. 4" copper, conduit or EMT pipe (one or more) (2-1/2" Concrete) (AS varies)	3 Hr				CP 637	C-AJ-1140
Max. 10" steel, cast iron, max. 4" copper, conduit or EMT pipe (AS=0" to 1-1/4")	2 Hr		■	■	FS-ONE MAX CP 606 CFS-S SIL GG CFS-S SIL SL	C-AJ-1149
Max. 6" steel, cast iron, conduit or max. 4" EMT pipe (AS = 0" to 1-3/8")	3 Hr		■	■	FS-ONE MAX CP 606 CFS-S SIL GG CFS-S SIL SL	C-AJ-1150
Max. 10" steel, max. 4" copper, conduit or EMT pipe (foam as backer) (AS=0" to 3-1/4")	3 Hr	■	■		FS-ONE MAX	C-AJ-1154
Max. 20" steel, cast iron, max. 6" copper, conduit or max. 4" EMT pipe (Sleeve Optional) (AS=0" to 2-1/4" for 3 Hr) (AS=0" to 12" for 2 Hr)	2 or 3 Hr		■	■	FS-ONE MAX	C-AJ-1155
Max. 21" steel pipe (AS=0" to 3")	3 Hr		■		FS-ONE MAX	C-AJ-1156
Max. 10" steel or cast iron pipe (AS=0" to 1-1/4")	2 Hr		■	■	FS-ONE MAX CP 606 CFS-S SIL GG CFS-S SIL SL	C-AJ-1158
Max. 10" steel, cast iron, max. 4" copper, conduit or EMT pipe (includes Hollow Core) (AS=0" to 3-1/4")	3 Hr				FS-ONE MAX	C-AJ-1184
Max. 30" steel, cast iron, max. 6" copper, conduit or max. 4" EMT pipe (Sleeve Optional) (AS=0" to 1-7/8") (may be installed with continuous POC)	3 Hr		■		FS-ONE MAX	C-AJ-1226
Max. 4" steel, conduit, or EMT pipe (AS = 3/4")	3 Hr				CP 618	C-AJ-1276
Max. 2" steel, cast iron, conduit, or EMT pipe (AS= 0" to 1-13/16")	3 Hr				CP 618	C-AJ-1277
Max. 30" steel, max. 6" copper, conduit or max. 4" EMT pipe (AS=0" to 7/8")	3 Hr				FS-ONE MAX	C-AJ-1278
Max. 30" steel, cast iron, max. 6" copper, conduit or max. 4" EMT pipe (2-1/2" concrete) (AS=0" to 7/8")	2 Hr				FS-ONE MAX	C-AJ-1291
Max. 1" flexible steel conduit (AS=1/2" to 1-1/2")	2 Hr		■		FS-ONE MAX	C-AJ-1326
Max. 8" aluminum tubing (sleeve optional) (AS=1/2" to 1-1/2")	2 Hr		■	■	FS-ONE MAX	C-AJ-1342
Max. 1" flexible steel conduit (2-1/2" Concrete) (AS=1/2" to 1-1/4")	2 Hr				FS-ONE MAX	C-AJ-1346
Max. 8" steel, max. 4" copper, conduit or EMT pipe (AS=0" to 1-7/8")	3 Hr		■		CP 606	C-AJ-1372
Max. 30" steel, cast iron, max. 6" copper, conduit or max. 4" EMT pipe (2-1/2" Concrete) (AS=0" to 1-7/8")	2 Hr		■		FS-ONE MAX	C-AJ-1380
Max. 4" Copper, steel, cast iron, steel conduit or EMT (AS=0" to 5-7/8")	2 or 3 Hr			■	Fire Foam	C-AJ-1382
Max. 4" Steel conduit or EMT (Multiple in max 32" x 7" opening) (AS varies)	2 Hr				Fire Foam	C-AJ1-388
Max. 4" steel, cast iron, copper, steel conduit or EMT (Optional sleeve) (AS=0" to 5-3/8")	2 or 3 Hr		■		FS-ONE MAX CFS-S SIL GG CFS-S SIL SL	C-AJ-1421

Blank Openings
Metallic Penetrants
Non-Metallic Pipes*
Cables/Cable Trays
Insulated Pipes
Miscellaneous Electrical (Busway)
Miscellaneous Mechanical/Ducts
Mixed Penetrating Items*
Blank Openings
Metallic Penetrants
Non-Metallic Pipes*
Cables
Cable Trays
Insulated Pipes
Miscellaneous Electrical (Busway)
Miscellaneous Mechanical/Ducts*
Mixed Penetrating Items*
Blank Openings
Metallic Penetrations
Non-Metallic Pipes*
Cables
Insulated Pipes
Miscellaneous Mechanical/Duct Penetrations
Mixed Penetrating Items*
Metallic Penetrations
Non-Metallic Pipes*
Cables
Insulated Pipes
Miscellaneous Mechanical/Duct Penetrations
Mixed Penetrating Items*
Bottom of Wall (BW-S Series)
Continuity Head-of-Wall (CJ-D Series)
Floor-to-Floor (FF-D Series)
Floor-to-Wall (FW-D Series)
Intertek Series (ASTM E 1966)
Head-of-Wall (HW-D Series)
Head-of-Wall (HW-S Series)
Wall-to-Wall (WW-D Series)
Wall-to-Wall (WW-S Series)
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307

Concrete Floors/Walls

Framed (Gypsum) Walls

Wood-Framed Floors

Steel-Framed Floors

Joints



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
METALLIC PENETRANTS IN CONCRETE FLOORS/WALLS (CONTINUED)						
Max. 30" steel, cast iron, max. 6" copper, conduit or max. 4" EMT pipe (AS=0" to 1-7/8")	3 Hr		■	■	CP 604 CFS-S SIL GG CFS-S SIL SL	C-AJ-1425
Max. 30" steel, cast iron, max. 6" copper, steel conduit or max. 4" EMT (AS=0" to 1-7/8")	2 Hr		■		CP 606	C-AJ-1435
Max. 12" steel, cast iron, max. 6" conduit, max. 4" copper or EMT (AS=0" to 5-1/4")	3 Hr			■	Fire Foam	C-AJ-1449
Max. 30" steel, cast iron, max. 6" copper, conduit or max. 4" EMT pipe (optional sleeve) (AS=0" to 2")	2 Hr		■		CP 606	C-AJ-1453
Max. 6" steel, cast iron, copper, conduit, or 4" EMT (sleeve w/ welded flange) (AS varies)	3 Hr				FS-ONE MAX	C-AJ-1454
Max. 8" steel, cast iron, max. 6" conduit, max 4" copper or EMT (sleeve optional) (AS=0" to 2")	2 Hr			■	CP 601s CFS-S SIL GG CFS-S SIL SL	C-AJ-1498
Multiple max. 4" steel conduit, EMT, or max. 2" flexible steel gas piping (AS=0" to 12")	2 Hr				FS-ONE MAX	CAJ1513
Max. 24" steel, cast iron, max. 6" copper, conduit, or max. 4" EMT (2-1/2" Concrete) (AS=0" to 2")	2 Hr		■		CP 606	C-AJ-1517
Max. 8" steel, cast iron, max. steel conduit, max. 4" copper, EMT (bottom side access) (AS=0" to 1-7/8")	2-Hr				FS-ONE MAX	C-AJ-1534
Max. 2" steel, cast iron, steel conduit or EMT (bottom side access) (AS = 3/16" to 7/16")	2-Hr				CP 648S	C-AJ-1572
Max. 30" steel, cast iron, max. 6" steel conduit, max. 4" EMT or copper (sleeve optional) (min. 2-1/2" concrete) (bottom or top access) (with and without backer)	2 Hr or 3Hr			■	FS-ONE MAX	C-AJ-1575
Max. 8" steel, cast iron, max. 6" steel conduit, 4" EMT or copper (AS=0" to 2")	3 Hr	■	■		FS-ONE MAX CP 604 CFS-S SIL GG CFS-S SIL SL	C-AJ-1597
Max. 4" steel, cast iron, steel conduit, EMT, or 3" copper (PVC sleeve) (AS = 0" to 2-7/8")	2 Hr		■	■	FS-ONE MAX CP 606	C-AJ-1609
Multiple max. 4" steel, cast iron, steel conduit or EMT (AS=0" to 7")	2 Hr				CFS-SP WB	C-AJ-1606
Max. 4" steel, cast iron, or steel conduit (glass fiber duct insulation above floor) (AS=0" to 1-1/2")	2 Hr	■	■	■	FS-ONE MAX CP 606 CFS-S SIL GG CFS-S SIL SL	C-AJ-1610
Max. 30" steel, cast iron, max. 6" steel conduit, max. 4" copper or EMT (optional sleeve) (AS = 0" to 2-1/8" for 3 Hr) (AS = 0" to 1-7/8" for 4 Hr)	3 or 4 Hr		■	■	CFS-S SIL GG CFS-S SIL SL	C-AJ-1630
Max. 4" steel, conduit or EMT pipe (5-1/2" concrete) (AS=3/4" to 3")	4 Hr				FS-ONE MAX	C-BJ-1034
Max. 6" steel, cast iron, copper, conduit, or max. 4" EMT pipe (Sleeve Optional) - Hebel Aerated Concrete (AS=15/16")	4 Hr				FS-ONE MAX	C-BJ-1037
Max. 6" steel, cast iron, copper, conduit, or max. 4" EMT pipe (hollow core) (AS=0" to 7/8")	2 Hr				CP 618	C-BJ-1045
Max. 4" steel, cast iron, copper, conduit, or max. 4" EMT pipe (hollow core) (AS=0" to 1-7/8")	2 Hr				FS-ONE MAX	C-BJ-1046
Max. 8" steel or cast iron (6" concrete) (AS=0" to 1-3/8")	2 Hr	■			Fire Foam	C-BJ-1047
Max. 4" steel, cast iron, steel conduit, or EMT (one or more) (8" concrete) (AS=1/2" to 12")	2 Hr				CP 637	C-BJ-1049
Max. 2" steel pipe or cast iron (AS=0" to 1-5/8")	2 Hr	■			FS-ONE MAX	C-BJ-1055
Multiple max 1" flexible steel conduits or gas piping (hollow core) (AS=0" 1-1/2")	3-Hr	■			FS-ONE MAX	C-BJ-1059
Max. 12" steel, 6" copper, conduit or 4" EMT pipe (AS=0" to 1-7/8")	2 Hr				FS-ONE MAX	F-A-1014
Max. 6" steel, cast iron, copper, conduit, or max. 4" EMT pipe (2-1/2" concrete)	2 Hr		■	■	CP 680-M CP 680-P CP 680-PX	F-A-1016

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	Concrete Floors/Walls
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	Framed (Gypsum) Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables	
Cable Trays	Framed (Gypsum) Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	
Mixed Penetrating Items*	Framed (Gypsum) Walls
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Wood-Framed Floors
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	Wood-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	Wood-Framed Floors
Mixed Penetrating Items*	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Steel-Framed Floors
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	Steel-Framed Floors
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	Joints
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	Joints
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
METALLIC PENETRANTS IN CONCRETE FLOORS/WALLS (CONTINUED)						
Max. 6" steel, cast iron, copper, conduit, or max. 4" EMT pipe	3 Hr		■	■	CP 680-M CP 680-P CP 680-PX	F-A-1017
Max. 1" flexible steel conduit (2-1/2" Concrete) (AS=1/2" to 1-1/4")	2 Hr				FS-ONE MAX	F-A-1018
Max. 1" steel, copper, cast iron steel conduit, or EMT (Max. Qty 5)	3 Hr	■			CP 680-M CP 680-P CP 680-PX	F-A-1022
Max. 2" and 3" Steel conduit or EMT	3 Hr	■			CP 680-M CP 680-P CP 680-PX	F-A-1023
Max. 30" steel, cast iron, 6" copper, conduit or 4" EMT (Sleeve Optional) (2-1/2" Concrete) (AS=0" to 1-7/8")	2 Hr				FS-ONE MAX	F-A-1028
Max. 24" steel, cast iron, max. 6" copper, conduit, or max. 4" EMT (2-1/2" Concrete) (AS=0" to 2")	2 Hr		■		CP 606	C-AJ-1517
Max. 8" steel, cast iron, max. steel conduit, max. 4" copper, EMT (bottom side access) (AS=0" to 1-7/8")	2-Hr				FS-ONE MAX	C-AJ-1534
Max. 2" steel, cast iron, steel conduit or EMT (bottom side access) (AS = 3/16" to 7/16")	2-Hr				CP 648S	C-AJ-1572
Max. 30" steel, cast iron, max. 6" steel conduit, max. 4" EMT or copper (sleeve optional) (min. 2-1/2" concrete) (bottom or top access) (with and without backer)	2 Hr or 3Hr			■	FS-ONE MAX	C-AJ-1575
Max. 8" steel, cast iron, max. 6" steel conduit, 4" EMT or copper (AS=0" to 2")	3 Hr	■	■		FS-ONE MAX CP 604 CFS-S SIL GG CFS-S SIL SL	C-AJ-1597
Max. 4" steel, cast iron, steel conduit, EMT, or 3" copper (PVC sleeve) (AS = 0" to 2-7/8")	2 Hr		■	■	FS-ONE MAX CP 606	C-AJ-1609
Multiple max. 4" steel, cast iron, steel conduit or EMT (AS=0" to 7")	2 Hr				CFS-SP WB	C-AJ-1606
Max. 4" steel, cast iron, or steel conduit (glass fiber duct insulation above floor) (AS=0" to 1-1/2")	2 Hr	■	■	■	FS-ONE MAX CP 606 CFS-S SIL GG CFS-S SIL SL	C-AJ-1610
Max. 30" steel, cast iron, max. 6" steel conduit, max. 4" copper or EMT (optional sleeve) (AS = 0" to 2-1/8" for 3 Hr) (AS = 0" to 1-7/8" for 4 Hr)	3 or 4 Hr		■	■	CFS-S SIL GG CFS-S SIL SL	C-AJ-1630
Max. 4" steel, conduit or EMT pipe (5-1/2" concrete) (AS=3/4" to 3")	4 Hr				FS-ONE MAX	C-BJ-1034
Max. 6" steel, cast iron, copper, conduit, or max. 4" EMT pipe (Sleeve Optional) - Hebel Aerated Concrete (AS=15/16")	4 Hr				FS-ONE MAX	C-BJ-1037
Max. 6" steel, cast iron, copper, conduit, or max. 4" EMT pipe (hollow core) (AS=0" to 7/8")	2 Hr				CP 618	C-BJ-1045
Max. 4" steel, cast iron, copper, conduit, or max. 4" EMT pipe (hollow core) (AS=0" to 1-7/8")	2 Hr				FS-ONE MAX	C-BJ-1046
Max. 8" steel or cast iron (6" concrete) (AS=0" to 1-3/8")	2 Hr	■			Fire Foam	C-BJ-1047
Max. 4" steel, cast iron, steel conduit, or EMT (one or more) (8" concrete) (AS=1/2" to 12")	2 Hr				CP 637	C-BJ-1049
Max. 2" steel pipe or cast iron (AS=0" to 1-5/8")	2 Hr	■			FS-ONE MAX	C-BJ-1055
Multiple max 1" flexible steel conduits or gas piping (hollow core) (AS=0" 1-1/2")	3-Hr	■			FS-ONE MAX	C-BJ-1059
Max. 12" steel, 6" copper, conduit or 4" EMT pipe (AS=0" to 1-7/8")	2 Hr				FS-ONE MAX	F-A-1014
Max. 6" steel, cast iron, copper, conduit, or max. 4" EMT pipe (2-1/2" concrete)	2 Hr		■	■	CP 680-M CP 680-P CP 680-PX	F-A-1016
Max. 6" steel, cast iron, copper, conduit, or max. 4" EMT pipe	3 Hr		■	■	CP 680-M CP 680-P CP 680-PX	F-A-1017
Max. 1" flexible steel conduit (2-1/2" Concrete) (AS=1/2" to 1-1/4")	2 Hr				FS-ONE MAX	F-A-1018

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Duct Penetrations	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
METALLIC PENETRANTS IN CONCRETE FLOORS/WALLS (CONTINUED)						
Max. 1" steel, copper, cast iron steel conduit, or EMT (Max. Qty 5)	3 Hr	■			CP 680-M CP 680-P CP 680-PX	F-A-1022
Max. 2" and 3" Steel conduit or EMT	3 Hr	■			CP 680-M CP 680-P CP 680-PX	F-A-1023
Max. 30" steel, cast iron, 6" copper, conduit or 4" EMT (Sleeve Optional) (2-1/2" Concrete) (AS=0" to 1-7/8")	2 Hr				FS-ONE MAX	F-A-1028
Max. 30" steel, cast iron, max. 6" copper, conduit or max. 4" EMT pipe (2-1/2" concrete) (AS=0" to 7/8")	2 Hr				FS-ONE MAX	F-A-1029
Tub Box with max. 1-1/2" brass waste/overflow fittings	3 Hr			■	CP 681	F-A-1037
Tub Box with max. 1-1/2" brass waste/overflow fittings	3 Hr				CP 681	F-A-1038
Max. 2" Copper, brass, or cast iron waste/overflow fittings (2-1/2" concrete over metal deck) (AS=0" to 1-7/8")	2 Hr				CP 637	F-A-1051
Max. 1-1/2" steel, EMT, or steel conduit; max. 1" copper (Max. Qty 4)	3 Hr				CP 680-M CP 680-P CP 680-PX	F-A-1066
Max. 6" steel, cast iron, steel conduit, max. 4" EMT or max. 2" copper	4 Hr		■	■	CP 680-P CP 680-PX	F-A-1091
Max. 10" steel, cast iron, max. 6" steel conduit, or max. 4" EMT	2 Hr	■	■	■	FS-ONE MAX CFS-S SIL GG CFS-S SIL SL	FA-1105
Max. 6" steel, cast iron, steel conduit, or max. 4" EMT (Unifrax or Thermal Ceramics insulation)	2 Hr	■	■	■	CP 680-P CP 680-PX	F-A-1106
Max. 3" steel or cast iron with closet flange (AS=min 3/8")	2 Hr	■			FS-ONE MAX	F-A-1108
Max. 8" steel, cast iron, max. 6" steel conduit, max. 4" copper or EMT (optional sleeve) (2-1/2" concrete) (AS=0" to 2")	2 Hr		■		CFS-S SIL GG CFS-S SIL SL	F-A-1119
Max. 4" steel, cast iron, steel conduit, EMT, or 1" flexible steel conduit (one or more)	2 Hr	■			FS-ONE MAX	F-A-1127
Max. 6" steel, cast iron, steel conduit, copper or 4" EMT (2-1/2" to 8" Concrete)	3 Hr		■	■	CFS-DID MD	F-A-1128
Max. 4" steel, cast iron, steel conduit, or EMT	2 Hr	■	■		FS-ONE MAX	F-A-1134
Max. 12" x 12" x 10" deep cast iron floor sink with 4" cast iron drain (2-1/2" concrete) (Thermal Ceramics insulation)	2 Hr	■	■		FS-ONE MAX	F-A-1135
Max 8" steel, cast iron, max 4" copper, steel conduit, or EMT (AS = 1/4" to 1-5/8")	3 Hr		■	■	CFS-S SIL GG CFS-S SIL SL	F-A-1136
Max. 12" x 12" x 10" deep cast iron floor sink with 4" cast iron drain (2-1/2" concrete over metal deck) Utilizes Thermal Ceramics	2 Hr	■	■		FS-ONE MAX	F-A-1137
Multiple Max. 4" steel, cast iron, steel conduit, EMT, or 1" flexible steel conduit (one or more & multiple rows) (2 Hour rating T-rating w/ Thermal Ceramics or Unifrax Duct Wrap)	2 Hr	■	■		FS-ONE MAX	F-A-1168
Max. 2" Steel, Cast Iron, Copper, Steel Conduit or EMT through Concrete Floor or Concrete Hollow-Core Floor	3 Hr	■			CFS-DID C	F-A-1170
NEW Max 4" Steel, Cast-Iron, Ductile Iron, Copper, Conduit, or EMT	2 or 3 Hr		■	■	CFS-CID MD P, PX, or M	F-A-1192
NEW One or more max 3" Steel, Cast-Iron, Ductile Iron, Copper, Conduit, or EMT (AS reference table in system)	2 or 3 Hr	■			CFS-CID MD P, PX, or M	F-A-1193
NEW Max 4" Steel, Cast-Iron, Ductile Iron, Copper, Conduit, or EMT	2 Hr	■	■		CFS-CID MD P, PX	F-A-1194
NEW Max. 10" Steel, 10" Iron, 6" Conduit, 4" Copper	2 Hr	■	■	■	CFS-CID M 8", 10"	F-A-1202
Nom. 3" or 4" steel or cast iron with aerator fitting (Solvent) (5" or 6-1/2" concrete)	3 Hr				CP 680-M CP 680-P, or CP 680-PX w/ aerator adaptor	F-B-1009

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Duct Penetrations	Steel-Framed Floors
Mixed Penetrating Items*	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Joints
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
METALLIC PENETRANTS IN CONCRETE FLOORS/WALLS (CONTINUED)						
Max. 6" steel or cast iron (with mineral fiber pipe insulation) (6" concrete floor)	2 Hr	■			CP 680-M CP 680-P CP 680-PX	F--B1010
Max. 6" steel, cast iron, steel conduit, copper or 4" EMT (6" to 12" Concrete)	3 Hr		■	■	CFS-DID C	F-B-1026
Max. 4" steel, cast iron, steel conduit, copper or EMT (6" to 12-1/2" Hollow Core)	3 Hr		■	■	CFS-DID C/HC8/HC10/ HC12	F-B-1029
Tub Box with nom. 1-1/2" or 2" steel pipe with waste/overflow fittings	3 Hr				CP 681 w/ mineral wool	F-B-1032
Nom. 3" or 4" steel or cast iron (with mineral fiber pipe insulation) (6" concrete floor)	2 Hr	■			CP 680-M CP 680-P CP 680-PX	F-B-1033
Max. 10" steel or cast iron pipe (6" concrete floor)	2 Hr	■	■	■	CFS-CID M CFS-CID P	F-B-1034
Max. 4" steel, cast iron, copper, steel conduit, or EMT (through Concrete Floor or Hollow -Core Floor) inside Optional Gypsum Chase Wall	2 Hr	■			FS-ONE MAX	F-B-1035
Max. 4" steel, cast iron, steel conduit or EMT (7" concrete) (AS=0" to 1-1/2")	2 Hr	■			FS-ONE MAX	HI/PHV-120
Max. 2" copper pipe or tubing (7" concrete) (AS=0" to 1-1/2")	2 Hr	■			FS-ONE MAX	HI/PHV-120
Max. 4" copper pipe or tubing (6" concrete) (AS=0" to 1-7/8")	2 Hr	■			FS-ONE MAX	HI/PHV-120
Max. 1" copper, steel, cast iron, steel conduit or EMT (6" concrete) (AS=0" to 2-7/8")	2 Hr	■			FS-ONE MAX	HI/PHV-120
Max. 4" steel, copper, conduit or EMT pipe (AS=3/4" to 3-1/2")	2 Hr		■		FS-ONE MAX	W-J-1020
Max. 18" steel or max. 4" copper pipe (AS=0" to 2-3/4")	2 Hr		■		FS-ONE MAX	W-J-1021
Max. 10" steel, max. 4" copper, conduit or EMT pipe (AS=1/2" to 7/8")	1 or 2 Hr				FS-ONE MAX CP 601s CFS-S SIL GG	W-J-1028
Max. 12" steel, cast iron, max. 6" copper, conduit or max. 4" EMT in sleeve (AS=7/8" to 1")	4 Hr				FS-ONE MAX	W-J-1041
Max. 12" steel, max. 6" copper, conduit or max. 4" EMT (AS=3/8" to 1/2")	4 Hr				FS-ONE MAX	W-J-1042
Max. 8" steel or cast iron pipe or max. 4" conduit or EMT (AS=0" to 3/8")	1 or 2 Hr				FS-ONE MAX	W-J-1058
Max. 30" steel, cast iron, max. 6" copper, conduit or max. 4" EMT (AS=0" to 2-1/4") (Pipe may be at 45° angle)	1 or 2 Hr		■		FS-ONE MAX	W-J-1067
Max. 6" steel, copper, conduit or max. 4" EMT pipe in sleeve (AS=1/2" to 1-1/4")	4Hr				FS-ONE MAX	W-J-1068
Max. 8" steel, cast iron, max. 6" conduit, max. 4" copper, EMT or max. 2" flexible steel conduit (shaft wall) (AS=1/4" to 1-5/8")	1 or 2 Hr				FS-ONE MAX	W-J-1088
Max. 8" steel, cast iron, max. 6" conduit, max. 4" copper, EMT or max. 2" flexible steel conduit (shaft wall) (AS=0" to 1-7/8")	1 or 2 Hr				FS-ONE MAX	W-J-1089
Max. 1" flexible steel conduit (AS=0" to 3/4")	1 Hr				FS-ONE MAX	W-J-1095
Max. 2" steel conduit or EMT (one or more) (AS=0" to 3-3/8")	1 or 2 Hr				Fire Foam	W-J-1116
Max. 8" steel, cast iron, 6" steel conduit, or 4" copper in sheet meta sleeve (AS=0" to 1-7/8")	2 Hr				FS-ONE MAX CP 606	W-J-1222
Max. 4" steel, cast iron, copper, conduit or EMT (AS=0" to 7-7/8")	1 or 2 Hr		■		Fire Foam	W-J-1123
Max. 4" steel, cast iron, copper, conduit, or EMT (AS=0" to 1/2")	1 or 2 Hr		■		CP 606	W-J-1124
Max. 30" steel, cast iron, max. 6" copper, conduit, or max. 4" EMT (AS=0" to 1-7/8")	2 Hr		■		CP 606	W-J-1128
Max. 24" steel, cast iron, 6" copper, steel conduit, or 4" EMT (AS= 0" to 7/8") (AS=0" to 1-1/2")	1 or 2 Hr				CP601s CFS-S SIL GG	W-J-1168
Max. 4" cast iron with stainless steel "no-hub" coupling (AS=0" to 1")	2 Hr				FS-ONE MAX	W-J-1174
Max. 8" steel, cast iron, max. 6" steel conduit, max. 4" copper or EMT (AS=0" to 7-7/8")	2 Hr		■		CP 675T	W-J-1175

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	Concrete Floors/Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	Concrete Floors/Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	Framed (Gypsum) Walls
Non-Metallic Pipes*	
Cables	
Cable Trays	Framed (Gypsum) Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Framed (Gypsum) Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	Wood-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Wood-Framed Floors
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	Wood-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Wood-Framed Floors
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	Steel-Framed Floors
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	Steel-Framed Floors
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	Joints
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	Joints



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
METALLIC PENETRANTS IN CONCRETE FLOORS/WALLS (CONTINUED)						
Multiple max. 2" steel, steel conduit, EMT (AS varies)	1 or 2 Hr				FS-ONE MAX CP 606 (1 hr only)	W-J-1191
Max. 12" steel, cast iron, 6" copper, EMT or steel conduit (sleeved) (AS=0" to 3-7/8")	2 Hr		■		FS-ONE MAX	W-J-1193
Multiple max. 4" steel, steel conduit, or EMT (AS varies)	2 Hr				FS-ONE MAX	W-J-1202
Max. 30" steel, cast iron, 6" steel conduit, copper or 4" EMT (optional sleeve) (AS=0" to 1-7/8")	1 or 2 Hr				FS-ONE MAX	W-J-1210
Max. 1" steel conduit or EMT with steel junction box (AS=0" to 1-1/8")	2 Hr				FS-ONE MAX	W-J-1214
Max. 3" steel, cast iron, steel conduit or EMT	2 Hr				Speed Sleeve	W-J-1215
Multiple Max. 1" Flexible steel conduits (AS=0" to 3")	2 Hr				FS-ONE MAX	W-J-1221
Max. 4" Aluminum tube (c) (AS=min 3")	2 Hr	■	■		Firestop Block	W-J-1245
Max. 3/4" steel, cast iron, conduit, or EMT pipe, or max. 1/2" copper pipe (AS=min 0") Max 1-1/8" diameter opening	2 Hr	■	■		CFS-D 1"	W-J-1248
NEW 8" Aluminum Tubing (0.060 in. Wall thickness) Optional Steel Sleeve (AS 1/2" to 1-1/2") Canada Only	2 Hr		■		FS-ONE MAX	W-J-1299
NEW Max. 4" Cast m EMT, or Steel pipe Intertek Listing	2 Hr	■			FS-ONE MAX	HI/PF 120-01
NEW Max. 2" Copper pipe Intertek Listing	2 Hr	■			FS-ONE MAX	HI/PF 120-02
NEW Max. 4" Copper pipe Intertek Listing	2 Hr	■			FS-ONE MAX	HI/PF 120-03
NEW Max. 1" Cast m EMT, Copper, or Steel pipe Intertek Listing	2 Hr	■			FS-ONE MAX	HI/PF 120-04
NEW Max. 2-3/8" Steel conduit	3 Hr				FS-ONE MAX	FM 214
NEW Max. 10" steel pipe (AS=0" to 3-1/4") Similar to CAJ 1184	3 Hr				FS-ONE MAX	FM 215
NEW Max. 10" Steel pipe	2 Hr				FS-ONE MAX	FM 263
NEW Max. 2" Copper	1/2 or 1 Hr				CP 680	FM 331
NEW Max. 4" copper (AS=0" to 5-7/8")	1/2 Hr				CP 620	FM 425
NEW Max. 4" copper (Max. qty. 6) (AS=0" to 2-1/2")	1/2 Hr				CP 620	FM 429
NEW Max. 2-3/8" Steel EMT centered in opening	1/2, 3/4, 1, or 2 Hr				CP 680 FS-ONE-MAX	FM 522
NEW Max. 4" Steel pipe	1/2 Hr				CP 618	FM 591
NEW Max. 4" Steel pipe centered in opening	1/2 HR				CP 618	FM 594
NEW Max. 6" copper	2 Hr				CFS-DID	FM 645
NEW Max. 2" Steel pipe, rigid steel conduit or EMT (Max Qty. 5)	1/2 or 2 Hr				CFS-S SIL GG	FM 680
NEW Max. 6" copper pipe (AS=0" to 1-7/8")	2 Hr				FS-ONE MAX	FM 684
NEW Max. 6" copper pipe (AS=0" to 1-7/8") with 8" steel sleeve	2 Hr				FS-ONE MAX	FM 691
NEW Max. 6" copper pipe (AS=0" to 7/8")	2 Hr				FS-ONE MAX	FM 692
NEW Max. 6" copper pipe (AS=0" to 1-7/8")	4 Hr				FS-ONE MAX	FM 698
NEW Max. 2" steel pipe	2 Hr	■			CP 660	FM 726
NEW Max. 2" copper pipe	2 Hr				CP 660	FM 728

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	Framed (Gypsum) Walls
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	Wood-Framed Floors
Metallic Penetrants	
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Steel-Framed Floors
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	
Non-Metallic Pipes*	Joints
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	Bottom of Wall (BW-S Series)
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307
Wall-to-Wall (WW-S Series)	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
NON-METALLIC PIPES IN CONCRETE FLOORS/WALLS*						
NEW Max. 2" PP, Aquatherm Greenpipe PP-R (SDR 7.4 or 11), Bluepipe PP-RCT (SDR 9 or 11) Niron PP-RCT (by Nupi Americas (SDR 7.3, 9, or 11), Aquatechnik PP-RCT (SDR 7.4 or 11) and Uponor PP-RCT (SDR 9 or 11), PVC (c, v) (AS 0" to 1/2") Canada only 50 Pa	2 or 3 Hr	■			CP 648E/1-3/4" w/ Ret Collar	C-AJ-2054
NEW Max. 2" PP, CPVC, Aquatherm Greenpipe PP-R (SDR 7.4 or 11), Bluepipe PP-RCT (SDR 9 or 11) Niron PP-RCT (by Nupi Americas (SDR 7.3, 9, or 11), Aquatechnik PP-RCT (SDR 7.4 or 11) and Uponor PP-RCT (SDR 9 or 11) with 1" thick AB/PVC insulation (AS = 0" to 5/8") 50 Pa Canada only	2 Hr	■			CP 648E/1-3/4" w/ Ret Collar	C-AJ-2055
Max. 4" PVC or CPVC (c,v) (AS=0" to 1/2")	3 Hr				FS-ONE MAX w/ Ret. Collar	C-AJ-2095
Max. 2" ENT (c) (AS=5/16")	3 Hr	■	■		FS-ONE MAX	C-AJ-2098
Max. 10" PVC, CPVC, max. 6" FRPP or ABS (c,v) (optional sleeve) (AS= 0" to 1/2" on pipes 6" and smaller, 0" to 1-1/4" on pipes larger than 6")	2 or 3 Hr	■	■	■	CP 643N CP644	C-AJ-2109
Max. 6" PVC, CPVC, FRPP or ABS (optional steel sleeve)(inc. hollow core) (c,v) (AS=1/4" to 1-1/4")	3 Hr			■	CP 643N	C-AJ-2110
Max. 6" glass pipe (c,v) (AS=1/4" to 3-1/2")	3 Hr		■		FS-ONE MAX	C-AJ-2118
Max. 3" PVC or CPVC (c) (AS=1/2" to 2")	3 Hr	■	■		FS-ONE MAX	C-AJ-2141
Max. 1-1/2" PVC or CPVC (c,v) (AS=9/16")	2 Hr				FS-ONE MAX	C-AJ-2164
Max. 2" PVC or CPVC (c,v) (AS=0" to 5/8")	2 Hr				FS-ONE MAX	C-AJ-2167
Max. 3" PVC (c,v) (AS=1/2" to 1")	3 Hr				FS-ONE MAX	C-AJ-2168
Max. 2" PVC or CPVC (c,v) (Sleeve Optional) (AS 1/2" to 1-3/8")	2 Hr				FS-ONE MAX	C-AJ-2169
Max. 1" Polyethylene (PEX) SDR 9 Tubing (c,v) (AS=1/4" to 3/4")	2 Hr				FS-ONE MAX	C-AJ-2170
Max. 6" PVDF or 4" PP (c,v) (AS=0" to 3/8")	2 Hr				CP 643N	C-AJ-2217
Max. 3" PVC or CPVC (c,v) (AS=1/2" to 1")	2 Hr				FS-ONE MAX	C-AJ-2218
Max. 2" PVC, CPVC, FRPP or ABS (c,v) (AS=1/2" to 1-1/8")	3 Hr				FS-ONE MAX	C-AJ-2220
Nom 6" PVC and max. 2" PVDF plastic pipe (Qty. 1) and max. 1" PVDF plastic pipe (Qty. 3) (AS=0" to 1/2")	2 Hr	■		■	CP 643N	C-AJ-2234
Max. 6" PVC and max. 4" PVDF plastic pipe (AS=0" to 1/2")	3 Hr	■			CP 643N	C-AJ-2243
Max. 6" PVC, ABS, FRPP, or CPVC (c,v) (2-1/2" concrete) (AS=0" to 1/2")	2 Hr			■	CP 643N	C-AJ-2271
Nom. 6" Fiberglass reinforced pipe (c,v) (AS=0" to 1/2")	2 Hr			■	CP 643N	C-AJ-2272
Max. 8" PVC and max. 4" PVDF plastic pipe (c,v) (AS=0" to 1-3/8")	2 Hr	■			CP 644	C-AJ-2283
Max. 10" PVC and max. 2" PVDF plastic pipe (c) (AS=0" to 1-3/8")	2 Hr	■			CP 644	C-AJ-2284
Max. 8" PP and max. 4" PP plastic pipe (c) (AS=0" to 1-3/8")	2 Hr	■			CP 644	C-AJ-2285
Max. 8" PVC or CPVC (c,v) (AS=0" to 1-3/8")	3 Hr				CP 648E/1-3/4" w/ Ret Collar	C-AJ-2305
Max. 3" PVC or CPVC (c) (AS=1/4" to 1-1/4")	3 Hr	■			FS-ONE MAX	C-AJ-2335
Max. 4" PVC, CPVC, ABS, or FRPP with coupler (c,v) (AS=0" to 1/2")	3 Hr	■			CP 648E/1" or 1-3/4" w/ Ret Collar	C-AJ-2336
Max. 4" ABS (c,v) (AS=3/16" to 5/16")	3 Hr			■	CP 648E/1-3/4"	C-AJ-2337
Max. 4" PVC, ABS, FRPP or CPVC plastic pipe (c,v) (2-1/2" concrete) (AS varies)	3 Hr		■	■	CP 648E/ 1" or 1-3/4", or CP648S	C-AJ-2342
Max. 4" PVC, CPVC, ABS, or FRPP (c,v) (AS=0" to 1/2")	3 Hr				CP 648E/1-3/4" w/ Ret Collar	C-AJ-2343
Max. 6" PVC, CPVC, ABS, or FRPP (c,v) (AS varies)	3 Hr	■			CP 648E/1", 1-3/4", or CP648S w/ Ret Collar	C-AJ-2371

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
NON-METALLIC PIPES IN CONCRETE FLOORS/WALLS* (CONTINUED)						
Max. 3" PVC or CPVC (c,v) (AS=3/16" to 5/16")	3 Hr			■	CP 648E/ 1" or 1-3/4", or CP648S	C-AJ-2372
Max. 4" PVC or CPVC (c,v) (AS=3/16" to 5-5/16")	2 Hr				CP 648E/1-3/4" Fire Foam	C-AJ-2392
Max. 4" PVC or CPVC (c,v) (AS=3/16 to 5/16")	2 Hr	■			CP 648E/1-3/4"	C-AJ-2393
Multiple 2" and 1" ENT's (max. qty 6) (inc. Hollow Core) (AS varies)	3 Hr	■			CP 648E/1-3/4" w/ Ret Collar	C-AJ-2402
Multiple 2" PVC, CPVC, RNC, ENT, max. 1" OFR, PEX (c) (sleeve optional) (AS varies)	2 Hr				FS-ONE MAX	C-AJ-2407
Maximum 10" FRPP (c,v) (AS=0" to 3-3/8")	3 Hr	■			CP 648E/1-3/4" w/ Ret Collar w/ CP 620	C-AJ-2409
Maximum 4" ABS, PVC, or CPVC (c,v) (AS=3/4")	3 Hr				CP 648E/1-3/4"	C-AJ-2419
Nominal 10" or 12" PVC or CPVC (c,v) (AS=1/4" to 1")	3 Hr	■			CP 648E/1-3/4"	C-AJ-2420
Max. 4" ABS, PVC, or CPVC (c,v) nonsymmetrical installation (AS=0" to 1/2")	3 Hr	■			CP 648E/1-3/4" w/Ret Collar	C-AJ-2434
Max. 4" ABS, PVC, or CPVC (c,v) (AS=0" to 1/2")	2 Hr	■			CP 648E/ 1" w/ Ret Collar	C-AJ-2435
Max. 2" FlowGuard Gold or max. 3" Blazemaster CPVC (c) (AS=1/4" to 1-1/4")	3 Hr	■			FS-ONE MAX	C-AJ-2451
Max. 4" dia bundle beverage lines (PE) with AB/PVC Insulation (AS=3/16" to 1-13/16")	2 Hr				CP 648E/1-3/4"	C-AJ-2468
Max. 6" CPVC (Sch 80) (c) (AS=0" to 3/8")	2 Hr			■	CP 643N	C-AJ-2469
Max. 4" ABS, PVC, or CPVC (c,v) (AS=varies)	2 Hr		■	■	CP 648S	C-AJ-2488
Max. 4" PVC, ABC, CPVC, FRPP, or RNC (closed or vented) (AS=varies)	2 Hr			■	CP648S CP620	C-AJ2-565
Max. 4" PVC, ABC, CPVC, FRPP, or RNC (closed or vented) (AS=varies)	2 Hr			■	CP648S CP620	C-AJ-2566
Max. 2" PVC, CPVC (c, v), RNC, Aquatherm Greenpipe PP-R (SDR 7.4 or 11), Bluepipe PP-RCT (SDR 9, 11 or 17.6) Niron PP-RCT (by Nupi Americas (SDR 7.3, 11, or 17), Aquatechnik PP-RCT (SDR 7.4, 11 or 17.6) and Uponor PP-RCT (SDR 9 or 11) (closed) (sleeve optional) (AS w/sleeve = 1/4" to 1-3/8") (AS w/o sleeve = 0" to 1-5/8")	2-Hr	■	■	■	FS-ONE MAX (Add CFS-S SIL GG or CFS-S SIL SL for W-rating)	C-AJ-2567
Max. 4" PVC, CPVC, or ABS (closed or vented) (sleeve optional on pipes 3" and smaller) (AS varies) (bottom side access)	2 Hr				CP 648S	C-AJ-2569
Nom. 6" PVC, CPVC, or RNC (closed or vented) (AS=1/2" to 1")	2-Hr			■	CP 648S	C-AJ-2570
Max. 5" Fusiotherm (c,v) or 4" Orion Polystar PP plastic pipe (c) (AS=0" to 1")	2-Hr	■			CP 648E/1-3/4" w/ Ret Collar	C-AJ-2599
Max. 2" Fusiotherm PP (c,v) or Orion Polystar PP plastic pipe (c) (AS=0" to 5/8")	2-Hr	■			CP643N	C-AJ-2600
Max. 2" Fusiotherm, Climatherm (c,v) or Orion Polystar PP plastic pipe (c) (AS=0" to 5/16")	2-Hr	■			CP 648E/1-3/4" w/ Ret Collar	C-AJ-2613
Max. 4" PVC, ABS, CPVC, or FRPP (c,v) (2-1/2" concrete) (AS=0" to 3-1/2")	2 Hr				CP 637 CP 643N	C-AJ-2630
Max. 4" PVC, ABS, CPVC, FRPP (c,v) (2-1/2" concrete) (AS=0" to 3-1/2")	2 Hr				CP 643N (28ga cover plate)	C-AJ-2631
Max. 2" PVC/CPVC with 1" glass fiber pipe insulation (c) (AS=3/16" to 1-1/8")	2 Hr	■			FS-ONE MAX	C-AJ-2632
Max. 2" FRPP or PVDF (c,v) (AS=5/16")	2 Hr	■			CP 648E/1-3/4"	C-A-J2639
Max. 2" PVC, CPVC, RNC, ENT and 1" PEX (2-1/2" concrete) (AS=0" to 1-5/8")	2 Hr	■	■		FS-ONE MAX	C-AJ-2647
Cable bundle (various cables) in flexible nylon raceway (PVC sleeve optional) (AS = 0" to 3")	3 Hr				CP 618	C-AJ-2659
Cable bundle (various cables) in flexible nylon raceway (steel sleeve optional) (AS = 0" to 3")	2 Hr				Firestop Plug	C-AJ-2660
Max. 4" PEX mfg by Uponor with 1/2" glass fiber Insulation removed through firestop (AS=0" to 7/8")	2 Hr	■			CP 648E/1-3/4" w/ Ret Collar	C-AJ-2674

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number (Similar FM Approved System)
NON-METALLIC PIPES IN CONCRETE FLOORS/WALLS* (CONTINUED)						
Max. 2" Glass pipe (AS = 0" to 1-3/4")	2 Hr				CFS-S SIL GG	C-AJ-2675
Max 2" CPVC (closed) (includes hollow core) (AS = 1/2" to 1-1/8")	3 Hr	2-1/2 Hr	■	■	CFS-S SIL GG CFS-S SIL SL	C-AJ-2676
NEW Max. 2" Aquatherm Greenpipe PP-R (SDR 7.4), Bluepipe PP-RCT (SDR 9), Niron PP-RCT (by Nupi Americas (SDR 7.3), Aquatechnik PP-RCT (SDR 7.4) and Uponor PP (SDR 9), (AS=5/16") UL only	2 Hr	■			CP 648E/1-3/4"	C-AJ-2677
NEW Max. 2" Aquatherm Greenpipe PP-R (SDR 7.4), Bluepipe PP-RCT (SDR 9), Niron PP-RCT (by Nupi Americas (SDR 7.3), Aquatechnik PP-RCT (SDR 7.4) and Uponor PP (SDR 9), (AS=5/16") 50 Pa Canada only	2 Hr	■			CP 648E/1-3/4"	C-AJ-2677
Max. 1-1/4" Orion Polystar PP, max.1-1/4" Cosmoplast PP-R, max. 1-1/4" Coprax PP-R plastic pipe (c) (AS = 0" to 2")	2 Hr	■			FS-ONE MAX	C-AJ-2700
Max. 2" (63mm) PP (SDR 11) Fusiotherm or Polystar CT-White (c) (AS=3/16" to 13/16")	2 Hr		■		CP 648E-1-3/4"	C-AJ-2712
Max. 6" Cosmoplast PP-R, HPDE or max. 4" Coprax PP-R plastic pipe (c) (AS varies)	2 Hr	■			CP 648E-1-3/4"	C-AJ-2770
NEW 3" Nominal Pex Tubing (SDR 9) (AS 3/8" to 1-1/8")	2 Hr	■	■	■	FS-ONE MAX	C-AJ-2827
NEW Max. 3" Aquatherm Greenpipe PP-R (SDR 7.4 or 11), Bluepipe PP-RCT (SDR 9 or 11) Niron PP-RCT (by Nupi Americas (SDR 7.3, 9, or 11), Aquatechnik PP-RCT (SDR 7.4 or 11) and Uponor PP-RCT (SDR 9 or 11), CPVC. (AS 0" to 1/2") 50 Pa	2 Hr	■	■		CP 648E/1-3/4", FS-ONE MAX	C-AJ-2830
NEW Max. 6" Aquatherm Greenpipe PP-R (SDR 7.4 or 11), Bluepipe PP-RCT (SDR 9 or 11) Niron PP-RCT (by Nupi Americas (SDR 7.3, 9, or 11), Aquatechnik PP-RCT (SDR 7.4 or 11) and Uponor PP-RCT (SDR 9 or 11), PVC. Optional Steel Sleeve (AS 0" to 3/4") See system for AS requirements 50 Pa	2 or 3 Hr	■	■		CP 648E/1-3/4", FS-ONE MAX	C-AJ-2831
NEW Max 18" PVC, XFR PVC, CPVC, Corazan CPVC (AS 1/4" to 1-1/2") Canada Only	2 or 3 Hr	■	■		CP 648E/1-3/4" CP 648E/1"	C-AJ-2836
NEW Max. 6" PVC, CPVC (SDR 13.5), Rigid Nonmetallic Conduit (AS Min. 2") (MSO 900 sq. in.)	2 Hr				CFS-COS CP 643N	C-AJ-2885
NEW Max. 4" HDPE (SDR 11) and optional 6" Steel Sleeve (AS varies)	2 Hr	■			648E/1-3/4"	C-AJ-2887
NEW Max. 4" Polybutylene (PB) (AS 0" to 5/8") US only	3 Hr	■	■		648E/1-3/4"	C-AJ-2897
NEW Max. 8" Polybutylene (PB) (AS 0" to 1-1/4")	3 Hr	■	■		648E/1-3/4"	C-AJ-2898
NEW Max 2" PVC, 2" XFR-PVC, 2" Napsys-HR PVC (AS 0" to 1-1/4") Canada only 50 Pa	2 Hr				FS-ONE MAX	C-AJ-2900
NEW Max. 2" PP, CPVC, Aquatherm Greenpipe PP-R (SDR 7.4 or 11), Bluepipe PP-RCT (SDR 9 or 11) Niron PP-RCT (by Nupi Americas (SDR 7.3, 9, or 11), Aquatechnik PP-RCT (SDR 7.4 or 11) and Uponor PP-RCT (SDR 9 or 11) with 1-1/2" thick Glass Fiber Insulation (AS = 0" to 5/8") 50 Pa Canada only	2 Hr	■			CP 648E/1-3/4" CP 648S	C-AJ-2924
Max. 3" PVC or CPVC (c,v) (hollow core) (AS=1/4")	2 Hr			■	CP 648E/1-3/4" CP 648S	C-BJ-2011
Max. 4" PVC or CPVC (c,v) (hollow core) (AS=1/4")	2 Hr	■			CP 648E/1-3/4"	C-BJ-2012
Max. 2" PVC or CPVC (c,v) (hollow core) (AS=5/16")	2 Hr	■		■	CP 648E/1" CP648S	C-BJ-2013
Max. 2" PVC, CPVC, or Rigid Nonmetallic Conduit (c) (hollow core)(AS=0" to 1-5/8)	2 Hr	■			FS-ONE MAX	C-BJ-2014
Max. 2" PVDF (c,v) (sleeved) (6" concrete) (AS=0" to 5/8")	4 Hr	■			CP 648E/1-3/4" w/ Ret Collar	C-BJ-2016
Max. 4" PVC or CPVC (c,v) (6" concrete) (includes hollow core) (AS=0" to 1/2")	4 Hr	■			CP 648E/1-3/4" w/ Ret Collar	C-BJ-2017
Max. 6" PVC, CPVC or ABS (c,v) (hollow-core) (AS=0" to 1/2")	2 Hr	■			CP 643N	C-BJ-2021
Bundle of Max. 1" PVC, RNC, ENT, or PEX (c) (max qty = 6) (hollow core) (AS=0" to 1-1/2")	3-Hr	■			FS-ONE MAX	C-BJ-2028
Max. 2" PVC, CPVC or PEX (c) (hollow core) (AS=1/8" to 1/2")	3 Hr	■			FS-ONE MAX	C-BJ-2040

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	Concrete Floors/Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	Concrete Floors/Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	Framed (Gypsum) Walls
Non-Metallic Pipes*	
Cables	
Cable Trays	Framed (Gypsum) Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Framed (Gypsum) Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	Wood-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Wood-Framed Floors
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	Steel-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Steel-Framed Floors
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	Steel-Framed Floors
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	Steel-Framed Floors
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	Steel-Framed Floors
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	Steel-Framed Floors



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number (Similar FM Approved System)
NON-METALLIC PIPES IN CONCRETE FLOORS/WALLS* (CONTINUED)						
Bundle of Max. 1" Pex (c) (max qty = 6) (hollow core) (AS=1/8" to 1/2")	3 Hr	■			FS-ONE MAX	C-BJ-2041
Max. 6" PVC, CPVC, FRPP or ABS (c,v) (2-1/2" concrete over metal deck) (AS=0" to 1-1/2")	2 Hr	■			CP 643N	F-A-2025
Max. 2" Optical Fiber Raceway (c) (2-1/2" concrete over metal deck) (AS=1/2" to 1")	2 Hr				FS-ONE MAX	F-A-2046
Max. 6" PVC or CPVC (c,v) (2-1/2" concrete)	2 Hr		■	■	CP 680-P CP 680-PX	F-A-2053
Max. 6" PVC or CPVC (c,v)	3 Hr	■	■	■	CP 680-P CP 680-PX	F-A-2054
Max. 2" PVC or CPVC (c,v) (2-1/2" concrete) (AS=3/8" to 1")	2 Hr				FS-ONE MAX	F-A-2058
Max. 4" ABS or Nom. 6" FRPP (c,v) (2-1/2" concrete)	2 Hr			■	CP 680-P CP 680-PX	F-A-2065
Max. 4" ABS or Nom. 6" FRPP (c,v)	3 Hr		■	■	CP 680-P CP 680-PX	F-A-2066
Max. 4" ABS, PVC, or CPVC (c,v) (2-1/2" concrete over metal deck) (AS varies)	2 Hr				CP 648E/1-3/4"	F-A-2067
Max. 3" ABS, PVC, or CPVC (c,v) (2-1/2" concrete over metal deck) (AS varies)	2 Hr				CP 648E/1-3/4"	F-A-2068
Nom. 4" PVC or ABS closet flange (v)	3 Hr		■		CP 680-P 4"	F-A-2071
Nom. 3" or 4" PVC or ABS closet flange (v)	3 Hr		■		CP 680-P 3" or 4" CP 680-PX 3"	F-A-2072
Nom. 4" ABS closet flange (v) (2-1/2" concrete) (AS=1/4")	2 Hr				CP 643N	F-A-2074
Nom. 4" PVC closet flange (v) (2-1/2" concrete) (AS=1/4")	2 Hr				CP 643N	F-A-2075
Max. 3" ABS, PVC, or CPVC (c,v) (2-1/2" concrete) (AS varies)	3 Hr			■	CP 648E/1-3/4"	F-A-2089
Max. 6" PVC and CPVC (c,v)	2 Hr	■	■	■	CP 680-P CP 680-PX	F-A-2092
Max. 2" PVC with Shower Drain (v)	2 Hr				CP 680-P CP 680-PX	F-A-2093
Tub Box with max. 1-1/2" PVC waste/overflow fittings	3 Hr			■	CP 681	F-A-2094
Tub Box with max. 1-1/2" PVC waste/overflow fittings	3 Hr				CP 681	F-A-2095
Multiple max. 2" PVC, CPVC or max. 1" ENT (c)	2 Hr				CP 680-P CP 680-PX	F-A-2103
Max. 6" FRPP, max. 4" PVDF, ABS, or PP (c,v)	2 Hr		■	■	CP 680-P CP 680-PX	F-A-2141
Max. 4" diam bundle of PEX tubing (max. 1/2" diameter)	2 Hr				CP 680-P CP 680-PX	F-A-2142
Max. 4" ABS, PVC, CPVC with pipe coupling (2-1/2" concrete over metal deck) (AS=0" to 1-1/2")	2 Hr				CP 648E/1-3/4 w/ Ret Collar	F-A-2143
Max. 2" Flowguard Gold or Max. 3" Blazemaster (c)	2 or 3 hr			■	CP680-P CP 680-PX	F-A-2145
Max. 4" ABS, CPVC, or PVC transitioning to cast iron/steel through floor (AS= 0" to 1-1/2")	2-Hr	■	■		CP648E/Ret Collar w/ FS-ONE MAX	F-A-2154
Nominal 2" diameter PVC drain (shower)	3 Hr		■	■	Firestop Drain Flange CP 681 SD-FD	F-A-2156
Max. 6" PVC, CPVC, or RNC (c,v)	4 Hr		■	■	CP 680-P CP 680-PX	F-A-2166
Nom 1-1/2" or 2" PVC waster/averflow fittings with tub box (6" concrete)	2 Hr	■			CP 681 CP 680-P 3" CP 680-PX 3"	F-A-2177
Max. 2" PVC, CPVC, or Greenpipe PP-R (c,v) with 1" or 2" glass fiber (4-1/2" concrete)	2 Hr	■			CP 680-P CP 680-PX	F-A-2205
Max. 6" PVC, ABS, CPVC or FRPP (2-1/2" to 8" concrete) (optional steel sleeve)	3 Hr		■	■	CFS-DID MD	F-A-2213
Max. 2" PVC with shower/floor drain (4-1/2" to 8" concrete) (optional steel sleeve)	2 Hr				CFS-DID 3" C/HC8/ HC10/HC12	F-A-2230
Max. 4" PP-R pipe © Auquatherm Greenpipe (4-1/2" concrete)	3 Hr	■			CP 680-P CP-680-PX	F-A-2270

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	Concrete Floors/Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	Concrete Floors/Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	Framed (Gypsum) Walls
Non-Metallic Pipes*	
Cables	
Cable Trays	Framed (Gypsum) Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Framed (Gypsum) Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	Wood-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Wood-Framed Floors
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	Steel-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Steel-Framed Floors
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	Joints
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	Joints
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	Joints
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	Joints



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
NON-METALLIC PIPES IN CONCRETE FLOORS/WALLS* (CONTINUED)						
Max. 4" Aquatherm Greenpipe PP (c)	2 Hr	■			CFS-DID	F-A-2271
Max.4" Upon Aquapex or Wirsbo Hepex	2 Hr	■			CFS-DID	F-A-2284
Max. 2" PVC , ABS, CPVC or FRPP through Concrete Floor or Concrete Hollow-Core Floor	3 Hr	■			CFS-DID	F-A-2285
NEW Max. 4" PVC, CPVC (SDR 11 or 13.5), Rigid Nonmetallic Conduit, Pex (SDR 9), ABS, FRPP, PVDF (SDR 32.5), PP	2 or 3 Hr		■	■	CFS-CID MD (P or PX)	F-A-2310
NEW Max. 2" Flowguard Gold CPVC (SDR 11), 3" Blazemaster CPVC (SDR 13.5)	2 or 3 Hr			■	CFS-CID MD (P or PX)	F-A-2311
NEW Nominal 3 or 4" PVC or ABS, Closet Flange	3 Hr		■		CFS-CID MD (P or PX)	F-A-2312
NEW Max. 4" PVC, CPVC (SDR 13.5)	2 Hr	■	■	■	CFS-CID MD (P or PX)	F-A-2313
NEW Max. 2" PVC with shower drain	2 Hr				CFS-CID MD (P or PX)	F-A-2314
NEW Nonmetallic pipe or conduit bundle consisting of max. 2" PVC, Max. 2" CPVC (SDR 13.5), Max. 1" ENT	2 Hr				CFS-CID MD (P or PX)	F-A-2315
NEW Max. 4" diameter bundle of 1/2" pex tubing (SDR 9)	2 Hr	■			CFS-CID MD (P or PX)	F-A-2316
NEW Max. 4" PVC, CPVC (SDR 11, 13.5, or 17), Aquarise CPVC (SDR 11), ABS, IPEX 15 PVC, XFR-PVC, Max. 2" Pex (SDR 9) Canada Only (50 Pa)	1, 2, or 3 Hr	■	■		CFS-CID MD (P or PX)	F-A-2317
NEW Max. 12" Aquatherm Bluepipe PP-R (SDR 11), 12" Niron PP-RTC (SDR 7.3). (AS 1/2" to 5")	2 Hr	■			CFS-BL	F-A-2322
NEW PVC drain with Nom. 2" PVC drain piping	2 Hr	■			CFS-CID MD (P or PX)	F-A-2347
Nom. 1 1/2" or 2" PVC, Nom. 1 1/2" PVC waste/overflow, and PVC Tub Box (v) (6" concrete)	3 Hr	■			CP 680-P 2" CP 680-PX 2"	F-B-2007
Nominal 4" PVC (Aerator Fitting) (v) (6-1/2" concrete)	3 Hr				CP 680-P 4"	F-B-2013
Max. 4" PVC, ABS, CPVC, RNC (hollow core) (AS varies)	3 Hr	■		■	CP648S	F-B-2029
Max. 2" PVC drain piped with snap in strainer (hollow core) (AS=1" to 2-5/8")	3 Hr				Firestop Block	F-B-2031
Nominal 3" or 4" PVC or CPVC and toilet flange through CFS-CID-CS	3 Hr				Hilti Closet Stub	F-B-2032
Max. 4" PVC or CPVC transitioning to steel or cast iron	2 Hr	■			CP 680-P CP 680-PX	F-B-2033
Max. 1-1/2" PP or 40mm Fusiotherm PP plastic pipe (c,v) or Orion Polystar PP Pipe (c)	2 Hr	■			CP 680-P CP 680-PX	F-B-2034
Max. 2" PEX (max qty = 4) (6" concrete)	2 Hr				CP 680-P CP 680-PX	F-B-2040
Max. 2" Fusiotherm PP plastic pipe or 2" PEX (max qty = 2) (6" concrete)	2 Hr				CP 680-P CP 680-PX	F-B-2041
Max. 3" or 4" PVC or CPVC and toilet flange through CFS-CID-CS connecting to cast iron below floor (6" concrete)	2 Hr	■			Hilti Closet Stub w/ CP 643N	F-B-2045
Max. 6" PVC, ABS, CPVC or FRPP (6" to 12" concrete and hollow core) (optional steel sleeve)	3 Hr		■	■	CFS-DID C	F-B-2048
Max. 4" PVC, ABS, CPVC or FRPP (6" to 12-1/2" hollow core) (optional steel sleeve)	3 Hr		■	■	CFS-DID C/HC8/HC10/ HC12	F-B-2050
Max. 2" PVC with shower/floor drain (6" to 12" concrete) (optional steel sleeve)	2 Hr				CFS-DID 3" C/HC8/ HC10/HC12	F-B-2056
Nominal 8" or 10" PVC or CPVC (c, v) (6" concrete)	2 Hr	■	■	■	CFS-CID P	F-B-2061
Max. 4" PVC,CPVC, or ABS (Concrete Floor or Hollow-Core Floor) inside optional gypsum chase wall	2 Hr	■			FS-ONE MAX CP 643 N	F-B-2063
Max. 4" PEX (Uponor Aquapex or Wirsbo Hepex) (closed)(Hollow-Core Floor) through CFS-DID Firestop Drop-In Device C or HC	2 Hr	■			CFS-DID	F-B-2064

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
NON-METALLIC PIPES IN CONCRETE FLOORS/WALLS* (CONTINUED)						
NEW Max. 1-1/2" PP (SDR 7.4 or 11), Aquatherm Greenpipe PP-R (SDR 7.4 or 11), Bluepipe PP-RCT (SDR 9 or 11) Niron PP-RCT (by Nupi Americas (SDR 7.3, 9, or 11), Aquatechnik PP-RCT (SDR 7.4 or 11) and Uponor PP-RCT (SDR 9 or 11) (c, v) 50 Pa	2 Hr	■			CP 680-P CP 680-PX	F-B-2075
Max. 2" PVC or CPVC (c) (AS=3/4" to 1-1/4")	1 or 2 Hr	■			FS-ONE MAX	W-J-2019
Max. 2" PVC or CPVC (c) (sleeved) (AS=1/2" to 1")	4 Hr				FS-ONE MAX	W-J-2057
Max. 2" PVC, CPVC (SDR 13.5) (AS=9/16")	2 Hr	■			CP648E/1"	W-J-2069
Max. 2" PVC or CPVC (SDR 13.5) (AS=5/8)	2 Hr	■			CP648E/1"	W-J-2070
Max. 2" ABS, PVC, CPVC, FRPP, or max. 1" PEX (c,v) (AS=5/16")	2 Hr				CP 648E/1"	W-J-2071
Max. 2" PVC, CPVC, PEX, RNC (c,v) (AS=0" to 5/8")	2 Hr	■	■		FS-ONE	W-J-2072
Max. 6" PVC or CPVC (c,v) (AS=0" to 1/2" for pipe 4" and smaller) (AS=0" to 3/4" for 6" pipes)	4 Hr	■			CP 643N	W-J-2091
Max. 3" PVC or CPVC (c,v) (AS=1/4")	1 Hr	■			CP 648E/1-3/4"	W-J-2101
Max. 9" PVDF (c,v) (sleeved) (AS=0" to 1/2")	2 Hr	■			CP 648E/1-3/4"	W-J-2107
Max. 2" PVC or CPVC (c,v) (Optional sleeve) (AS=1/4" to 11/16")	1 or 2 Hr				FS-ONE MAX	W-J-2108
Max. 12" FRP pipe (c,v) (sleeved) (AS=0" to 1/2")	2 Hr	■			CP 648E/1-3/4"	W-J-2115
Max. 4" PVC, CPVC, or ABS (c,v) (angled pipe) (AS=0" to 3/4")	2 Hr				CP 648E/1-3/4"	W-J-2120
Max. 12" PVC or CPVC (c,v) (AS=0" to 1/2")	2 Hr	■			CP 648E/1-3/4" w/ FS-ONE MAX	W-J-2121
Max. 2" ENT (c) (AS=1/4" to 3/4")	3 or 4 Hr	■			CP 618	W-J-2190
Max. 2" ENT (c) (AS=3/16" to 5/16")	3 or 4 Hr	■			CP 648E FS-ONE MAX	W-J-2191
Max. 6" PVC, CPVC, or max. 4" ABS (c,v) (AS varies) Option: PEX and 2" insulation	1 or 2 Hr		■		CP648S	W-J-2205
Max. 1-1/2" PVC, CPVC, RNC, or 1" PEX (closed) (one or more) (AS = 0" to 1")	1 or 2 hr				FS-ONE MAX	W-J-2206
Max. 4" diameter bundle of max. 1" PEX (closed) (AS = 0" to 1")	1 or 2 hr				FS-ONE MAX	W-J-2207
NEW Max. 4" PP (SDR 11), Max. 8" Aquatherm Greenpipe (SDR 7.4 or 11), Max. 8" Aquatherm Bluepipe (SDR 9 or 11), Max. 4" PP Polystar CT-White, or max 125mm Fusiotherm (c), Max. 4" PEX, Max. 4" Niron PP-RCT (SDR 7.3, 9, or 17) (c, v), Max. 8" Niron PP-RCT (SDR 7.3 or 11) ©, Max. 8" Aquatechnik PP-RCT (SDR 7.4 or 11), Max. 8" Uponor PP-RCT (SDR 7.3 or 11) (AS=0" to 1/2") UL only	2 Hr	■			CP 648E/1-3/4" w/ Ret Collar	W-J-2218
Max. 1" PEX (bundled) (c,v) through CP 653 Speed Sleeve	2 Hr				Speed Sleeve	W-J-2229
Max. 2" ENT (one or more) through CP 653 Speed Sleeve	2 Hr				Speed Sleeve	W-J-2230
Max. 3/8" Single or bundled pneumatic tube (AS = 0" to 1")	2 Hr				FS-ONE MAX	W-J-2236
Max 1/2" Single or bundled Dura-line Microduct (AS=0" to 1")	2 Hr	■			FS-ONE MAX	W-J-2237
Max 1/2" Single or bundled Dura-line Microduct (AS=0" to 1")	2 Hr	■			CP 643N with CP 618	W-J-2238
Cable bundle (various cables) in flexible nylon raceway (PVC sleeve optional) (AS = 0" to 3")	3 Hr				CP 618	W-J-2241
Cable bundle (various cables) in flexible nylon raceway (steel sleeve optional) (AS = 0" to 3")	2 Hr				Firestop Plug	W-J-2242
NEW Max. 2" PP, Aquatherm Greenpipe (SDR 7.4 or 11), Aquatherm Bluepipe (SDR-9 or 11), Napsys PVC, (c, v) (AS = 0" to 5/8") 50 Pa Canada only	2 Hr	■			CP 643N	W-J-2247

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	Concrete Floors/Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	Concrete Floors/Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	Framed (Gypsum) Walls
Non-Metallic Pipes*	
Cables	
Cable Trays	Framed (Gypsum) Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Framed (Gypsum) Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	Wood-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Wood-Framed Floors
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	Wood-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Steel-Framed Floors
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	Steel-Framed Floors
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	Steel-Framed Floors
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	Joints
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	Joints



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number (Similar FM Approved System)
NON-METALLIC PIPES IN CONCRETE FLOORS/WALLS* (CONTINUED)						
Max. 8" HDPE (Sch 40) (c) (AS=min 1-1/4")	2 Hr	■			CP648E/1-3/4" w/ Firestop Block	W-J-2255
Max 1/2" Single Dura-line Microduct or max. 3/4" PEX tubing (AS=0" to 1/2")	2 Hr	■	■		CFS-D 1"	W-J-2267
Max. 2" ENT (50 Pa) (AS=0" to 1/2")	2 Hr	■			CP 643N	W-J-2331
Max. 2" ENT (50 Pa) (AS=3/16" to 3/4")	2 Hr	■			CP 648E	W-J-2332
Max. 6" Polypropylene (PP) Aquatherm Greenpipe (closed)	2 Hr	■			FS-ONE MAX CP 648 E	W-J-2336
Max. 10" PVC, CPVC, max 6" ABS, FRPP or max. 4" PVDF, PEX (Uponor AquaPEX OR Wisbo hePex)	2 Hr	■	■		CP 643N CP644 FS-ONE MAX	W-J-2337
NEW Max. 6" PVC	1/2 and 1-1/2 Hr				FS-ONE MAX in Collar	FM 211
NEW Max. 6" ABS and FRPP (AS 0" to 1")	1/2 and 2 Hr				CP 643N	FM 238
NEW Max. 6" ABS	1/2 Hr				CP 643N	FM 241
NEW Max. 6" Glass pipe (AS=1/4" to 3-1/2") Similar to CAJ 2118	1-1/2 Hr				FS-ONE MAX	FM 267
NEW Max. 6" ABS, 2" ENT, 6" PVC, 6" FRPP, and 2-1/2" ENT	1/2, 1, 1-1/2, and 3 Hr				CP 680	FM 310
NEW Max. 6" FRPP, 4" PVC, 2" ABS, and 2-1/2" ABS	1 or 2 Hr				CP 680	FM 330
NEW Max. 6" ABS (AS 0" to 1/2") Similar to C-AJ-2336	2 Hr				CP 648 E	FM 518
NEW Max 2" ABS (AS 5/16" to 15/16")	1/2 Hr				CP 648 E FS-ONE-MAX	FM 520
NEW Max. 4" PVC or ABS (Closet flange) (AS Nom. 1/4") Similar to F-A-2074	2 Hr				CP 648 E FS-ONE-MAX	FM 521
NEW Max. 6" PVC	2 Hr				CFS-DID	FM 645
NEW Max. 2-1/2" PP pipe (AS=3/16" to 13/16")	2 Hr				CP 648E FS-ONE MAX	FM 694
NEW Max. 3" PVC (AS=1/4" to 1-1/4")	3 Hr	■			FS-ONE MAX	FM 699
NEW Max. 3" PVC (AS=1/2" to 1")	3 Hr	■			FS-ONE MAX	FM 700
NEW Nom. 8" or 10" PVC pipe	2 Hr	■			CFS-CID 8" or CFS-CID-10"	FM 716
NEW Nom. 10" PVC pipe	2 Hr	■			CFS-CID 8" or CFS-CID-10"	FM 718
CABLES/CABLE TRAYS IN CONCRETE FLOORS/WALLS						
Cables (telephone cables) individually spaced	3 Hr		■	■	FS-ONE MAX CP 606 CFS-S SIL GG CFS-S SIL SL	C-AJ-3070
Cable bundle (telephone cables) (PVC sleeve) (AS=1/4" to 1-1/4")	3 Hr	■			FS-ONE MAX	C-AJ-3084
Cable bundle (various cables) (Steel sleeve optional) (2-1/2" concrete)	3 Hr				FS-ONE MAX	C-AJ-3095
Cable bundle (various cables) (Steel sleeve optional)	3 Hr				CP 643N	C-AJ-3096
Single cable (telephone cable) (AS=1/4" to 1/2")	3 Hr	■			CP 618	C-AJ-3138
Cable bundle (various cables) (Steel sleeve) (AS=0" to 1-1/2" outside sleeve, and 1" inside sleeve)	2 Hr				Firestop Block FS-ONE MAX	C-AJ-3152
Cable bundle (various cables) (Steel sleeve optional)	3 Hr				FS-ONE MAX	C-AJ-3180
Cable bundle (various cables) (Steel sleeve optional) (AS=0" to 1-7/8")	3 Hr				CP 606	C-AJ-3181
Cable bundle (various cables) (Steel sleeve optional) (AS=1")	3 Hr				CFS-S SIL GG CFS-S SIL SL	C-AJ-3193

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number (Similar FM Approved System)
CABLES/CABLE TRAYS IN CONCRETE FLOORS/WALLS (CONTINUED)						
Cable bundle (various cables) (PVC sleeve) (AS=0" to 2-3/4")	3 Hr				Firestop Block	C-AJ-3198
Cable bundle (various cables) (PVC or steel sleeve) (AS=0" to 1")	3 Hr				CP 618	C-AJ-3208
Cable bundle (various cables) (sleeve w/ welded flange) (AS=1/4" to 1-1/8" outside sleeve, 1/4" to 1-3/4" inside sleeve)	3 Hr				FS-ONE MAX	C-AJ-3209
Cable bundle (various cables) (Steel sleeve optional) (AS=0" to 1")	3 Hr				CP 618	C-AJ-3210
Cable bundle (various cables) (Steel or PVC sleeve) (AS=0" to 3")	2 Hr				Firestop Plug	C-AJ-3216
Cable bundle (various cables) (PW Sleeve) (AS=0" to 1" outside sleeve, 0" to 5" inside sleeve)	2 Hr				Firestop Block	C-AJ-3232
Single Cable (4/C 750 kcmil TEK) (AS=0" to 3")	2 Hr				FS-ONE MAX	C-AJ-3236
Cable bundle (various cables) (Steel sleeve optional) (bottom side access) (AS=0" to 2-1/2")	3 Hr				FS-ONE MAX	C-AJ-3239
Cable bundle (various cables) in PVC sleeve (2-1/2" concrete)	2 Hr				CP 643N	C-AJ-3279
Cable bundle (various cables) through CP 653 Speed Sleeve (access both sides)	2 Hr		■		Speed Sleeve	C-AJ-3281
Cable bundle (various cables) through CP 653 Speed Sleeve (top side access)	2 Hr				Speed Sleeve w/ CP 637	C-AJ-3282
Cable bundle (various cables) through CP 653 Speed Sleeve (top side access)	2 Hr		■		Speed Sleeve	C-AJ-3283
Cable bundle (various cables) through CP 653 Speed Sleeve (bottom side access)	2 Hr		■		Speed Sleeve	C-AJ-3284
Cable bundle (various cables) through CP 653 Speed Sleeve (top side access)	3 Hr		■		Speed Sleeve w/ FS-ONE MAX, CP 606, CFS-S SIL GG or CFS-S SIL SL	C-AJ-3285
Cable bundle (various cables) through CP 653 Speed Sleeve (top side access) (Unifrax Insulation)	2 Hr	■	■		Speed Sleeve w/ m.w.	C-AJ-3298
Cables (various cables) through CFS-T Firestop Cable Transit	2 Hr				CFS-T	C-AJ-3318
Cables (various cables) through CFS-T Firestop Cable Transit	2 Hr				CFS-T RR	C-AJ-3319
Cables (various cables) (0 to 100% fill)	2 Hr		■		Cable Collar	C-AJ-3320
Cable bundles (various cables) through CP 653 Speed Sleeve	2 Hr				CFS-COS w/ multiple Speed Sleeves	C-AJ-3345
Multiple Steel or Aluminum Cable Tray (24" x 4")	3 Hr				CP 637	C-AJ-4017
Multiple Steel or Aluminum Cable Tray (24" x 4") (AS=1-1/2" to 13-1/2")	3 Hr		■		Firestop Block	C-AJ-4034
Steel or Aluminum Cable Tray (24" x 4") (AS=1" to 4")	3 Hr				Firestop Block	C-AJ-4035
Aluminum Cable Tray (24" x 4") (AS=0" to 5")	2 Hr				Fire Foam	C-AJ-4054
Steel or Aluminum Cable Tray (24" x 6") (AS=0" to 6")	2 Hr				FS-ONE MAX	C-AJ-4071
Cable Rack (20" x 2") (AS=0" to 28")	2 Hr				CP 675T w/ Firestop Block	C-AJ-4077
Steel or Aluminum Cable Tray (36" x 6") (AS=0" to 2-1/4")	2 Hr	■			Firestop Block	C-AJ-4083
Multiple Steel or Aluminum Cable Tray (24" x 4") (AS=1-1/2" to 13-1/2")	3 Hr		■		Firestop Block	C-AJ-4093
Steel or Aluminum Cable Tray (36" x 6") (AS=0" to 2-1/4")	2 Hr	■			Firestop Block	C-AJ-4094
Steel or Aluminum Cable Tray (36" x 6") (top side install or install both sides)	2, 3, or 4 Hr				CFS-COS	C-AJ-4107
Cable bundle (various cables) (hollow core)	2 Hr				FS-ONE MAX	C-BJ-3024
Cables (various cables) through CFS-T Firestop Cable Transit	4 Hr				CFS-T	C-BJ-3031

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	Concrete Floors/Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	Concrete Floors/Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	Framed (Gypsum) Walls
Non-Metallic Pipes*	
Cables	
Cable Trays	Framed (Gypsum) Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Framed (Gypsum) Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Wood-Framed Floors
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	Wood-Framed Floors
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	Steel-Framed Floors
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	Joints
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	Joints
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	Joints
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
CABLES/CABLE TRAYS IN CONCRETE FLOORS/WALLS (CONTINUED)						
Cables (various cables) through CFS-T Firestop Cable Transit	4 Hr				CFS-T RR	C-BJ-3032
Cables (various cables) through CFS-T Firestop Cable Transit	2 Hr	■	■		CFS-T RR	C-BJ-3039
Cables (various cables) through CFS-T Firestop Cable Transit	2 Hr	■	■		CFS-T RR	C-BJ-3040
NEW Cables (various cables) through Speed Sleeve housed in composite sheet (AS Min. 1-7/8") (MSO 30" x 30")	2 Hr	■	■		CFS-COS CP 653 (BA)	C-BJ-3042
NEW Cables (various cables) through Speed Sleeve (AS Min. 0")	2 Hr	■	■		CP 653 (BA)	C-BJ-3043
Cable Rack (Telecom) (8" concrete) (AS min. of 1")	2 Hr				Firestop Block	C-BJ-4025
Cable Rack (Telecom) (8" concrete) (AS min. of 1")	2 Hr				Firestop Block	C-BJ-4026
Cable bundle (various cables)	3 Hr				CP 680-M or CP 680-P CP 680-PX	F-A-3007
Cable bundle (various cables) (sleeve optional) (2-1/2" concrete over metal deck)	3 Hr				FS-ONE MAX	F-A-3012
Cable bundle (various cables) (Unique Sleeve)	3 Hr				CP 618	F-A-3019
Cable bundle (various cables) (PW Sleeve) (AS varies)	2 Hr				Firestop Block	F-A-3022
Cable bundle (various cables) (2-1/2" concrete floor)	3 Hr	■			CP 680-M CP 680-P CP 680-PX	F-A-3033
Nom. 4/C No 500 kcmil TEK Cable	3 Hr				CP 680-M 2" CP 680-P 2" CP 680-PX 2"	F-A-3034
Cable bundle (various cables) (2-1/2" concrete floor)	2 Hr	■	■		CP 653 with CP 680-M, CP 680-P or CP 680-PX	F-A-3060
NEW Cable bundle (various cables)	3 Hr	■			CFS-CID MA M, P, or PX and CP 618	F-A-3071
NEW Nom. 4/C No 500 kcmil TEK Cable	3 Hr	■			CFS-CID MA M, P, or PX	F-A-3072
NEW Cable bundle (various cables) Canada only	3 Hr	■			CFS-CID MA M, P, or PX	F-A-3073
NEW Nom. 4/C No 500 kcmil TEK Cable Canada only	3 Hr	■			CFS-CID MA M, P, or PX	F-A-3074
Steel or Aluminum Cable Tray (24" x 6") (AS=0" to 6")	2 Hr				CFS-S SIL GG CFS-S SIL SL	F-A-4003
Cable bundle (various cables) (Telecom) (8" concrete)	2 Hr				CP 675T/ Firestop Block	F-B4006
One or more 4/C 500 kcmil power cables (6" concrete)	2 Hr	■			FS-ONE MAX	HI/PHV-120
Cable bundle (various cables) (sleeve optional)	2Hr				CP 618	W-J-3036
Cable bundle (various cables) (sleeved) (AS=0" to 1")	4 Hr				FS-ONE MAX	W-J-3050
Cable bundle (various cables) (sleeved) (AS=0" to 1")	2 Hr		■		FS-ONE MAX CP 606 CP 618 CP 601s CFS-S SIL GG	W-J-3060
Cable bundle (various cables) (block shaft wall) (AS=1/4" to 3/4")	1 or 2 Hr				FS-ONE MAX	W-J-3061
Cable Bundle Cable Rack (Telecom) (various cables) (AS=0" to 8")	2 Hr				Firestop Block	W-J-3074
Cable bundle (various cables) (PVC sleeve) (AS=0" to 1-3/8")	2 Hr				CP 618	W-J-3092
Cable bundle (various cables) (sleeve optional) (AS=0" to 1")	2 Hr				Firestop Plug	W-J-3143
Cable bundle (various cables)	2, 3 or 4 Hr	■	■		Speed Sleeve	W-J-3167
Cable bundle (various cables)	2, 3, or 4-Hr	■	■		Speed Sleeve	W-J-3168
Cable Bundle Cable Rack (Telecom) (various cables) (AS=0" to 12")	2 Hr	■			Firestop Block	W-J-3188

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	Concrete Floors/Walls
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	Framed (Gypsum) Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables	
Cable Trays	Framed (Gypsum) Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	
Mixed Penetrating Items*	Wood-Framed Floors
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Wood-Framed Floors
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	Steel-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	Steel-Framed Floors
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	Joints
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number (Similar FM Approved System)
CABLES/CABLE TRAYS IN CONCRETE FLOORS/WALLS (CONTINUED)						
Cable Bundle (various cables)	2 Hr		■		Speed Sleeve (multiple)	W-J-3189
Cables (various cables) through CFS-T Firestop Cable Transit	2 Hr				CFS-T	W-J-3196
Cables (various cables) through CFS-T Firestop Cable Transit	2 Hr				CFS-T RR	W-J-3197
Cable bundle (various cables)	2 Hr	■	■		CFS-SL RK	W-J-3198
Cable bundle (various cables)	1 or 2 Hr	■	■		CFS-SL SK	W-J-3199
Cable bundle (various cables) through Firestop Gang Plate	2 Hr	■	■		CFS-SL GP CP 653 CFS-SL RK CFS-SL SK	W-J-3200
Cable bundle (various cables) (AS=min 0")	2 Hr	■	■		CFS-D 1"	W-J-3215
NEW Max 1" Steel Conduit Sleeve, Single Cable or Cable bundle (0-100% visual Fill) CFS -D 1" Firestop Cable Disc (AS 0" to 1/8")	1 or 2 Hr		■		CFS -D 1" Firestop Cable Disc	W-J-3260
NEW Max 1" Steel Conduit Sleeve, Single Cable or Cable bundle (0-100% visual Fill) CFS -D 1" Firestop Cable Disc (AS 0" to 1/8")	1 or 2 Hr		■		CFS -D 1" Firestop Cable Disc	W-J-3261
Aluminum Spine Cable Tray (18" x 6") (AS=1" to 4-1/2")	2 Hr				Firestop Block	W-J-4016
Steel or Aluminum Cable Tray (24" x 4") (AS=0" to 4")	2 Hr		■		Firestop Block	W-J-4027
Steel or Aluminum Cable Tray (24" x 4") (AS=0" to 6")	2 Hr				Firestop Block	W-J-4029
Aluminum Cable Tray (24" x 4") (AS=0" to 5")	1 or 2 Hr				Fire Foam	W-J-4030
Max. 20" x 2" cable rack (Telecom) (various cables)	2 Hr				CP 675T	W-J-4048
Max. 25" x 2" cable rack (max.qty 3) (Telecom) (various cables) (AS varies)	2 Hr				CP 675T and Fire Blocks w/ Z frame	W-J-4049
Max. 25" x 2" cable rack (max.qty 6) (Telecom) (various cables) (AS varies)	1 or 2 Hr				CP 675T and Fire Blocks w/ Z frame	W-J-4050
Max. 24" x 6" cable tray (various cables) (AS=0" to 3")	2 Hr				FS-ONE MAX	W-J-4059
Max. 36" x 6" cable tray (various cables) (AS=1" to 4")	4 Hr				Firestop Block	W-J-4060
Steel or Aluminum Cable Tray (24" x 4") (AS=0" to 6")	2 Hr				Firestop Block	W-J-4072
Cable bundle (various cables) through two CP 653 Speed Sleeves (min 10" thick wall)	4 Hr	■	■		Speed Sleeve	W-K-3002
NEW One or more 4/C 500 kcmil PVC metal clad cables Intertek Listing	2 Hr	■			FS-ONE MAX	HI/PF 120-05
NEW Max. six 24 AWG telephone cables with plastic pipe sleeve	4 Hr				FS-ONE MAX	FM 212
NEW Various Cables with steel pipe sleeve (20% to 33% fill)	1 Hr				FS-ONE MAX	FM 264
NEW Various Cables with steel pipe sleeve (Max. 40% fill)	2 Hr				CP 643N FS-ONE MAX	FM 264
NEW Max. 18" x 5" cable tray (various cables) (Max. qty. of trays 2) (AS=3" to 16")	3 Hr				CFS-BL	FM 294
NEW Various Cables with Max. 4-1/2" Bundle	1/2 Hr				CP 680	FM 333
NEW Various cables 0-100% visual fill	1 or 2 Hr	■			CP 653 Speed sleeve	FM 577
NEW Various cables 0-100% visual fill	1 or 2 Hr	■			CP 653 Speed sleeve	FM 578
NEW Various cables 0-100% visual fill	1 or 2 Hr	■			CP 653 Speed sleeve	FM 579
NEW Various cables 0-100% visual fill	1 or 2 Hr	■			CP 653 Speed sleeve	FM 580
NEW Various cables Maximum 60% fill	1 Hr				CP 618	FM 592

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
CABLES/CABLE TRAYS IN CONCRETE FLOORS/WALLS (CONTINUED)						
NEW Various cables Maximum 60% fill	1 Hr				CP 618	FM 595
NEW Various cables Maximum 60% fill	2 Hr	■			Pillow and CP 618	FM 660
NEW Various cables through cable transit system	2 Hr	■			Cable Transit	FM 668
NEW Various cables through cable transit system	2 Hr	■			Cable Transit	FM 669
NEW Various cables through cable transit system	2 Hr	■			Cable Transit	FM 670
NEW Various cables through cable transit system	2 Hr	■			Cable Transit	FM 674
NEW Max. 2" diameter cable bundle	2 Hr	■			CP 660	FM 727
INSULATED PIPES IN CONCRETE FLOOR/WALLS						
Multiple insulated steel and copper pipes (max. 3") (AS varies)	3 Hr		■		FS-ONE MAX	C-AJ-5044
Max. 2" steel pipe with max. 1" glass fiber insulation (AS=11/16" to 3-1/16")	2 Hr	■	■	■	FS-ONE MAX CP 606 CFS-S SIL GG CFS-S SIL SL	C-AJ-5048
Max. 20" steel, cast iron, max. 6" copper with max. 3" glass fiber and mineral fiber insulation (steel sleeve optional) (AS=1" to 2-1/4" no sleeve) (AS=1" to 2-1/4" with sleeve)	3 Hr	■			FS-ONE MAX	C-AJ-5061
Max. 12" steel, max. 6" copper with max. 3" FOAMGLASS insulation (steel sleeve optional) (AS=3/4" to 3")	2 Hr				FS-ONE MAX	C-AJ-5069
Max. 4" steel or copper with max. 3/4" AB/PVC insulation; max 1" AB/PVC on 3" pipes and smaller (AS=1/2" to 1-1/2" for 3 hour, AS=1/2" to 12" for 2 hour)	2 or 3 Hr		■		FS-ONE MAX	C-AJ-5090
Max. 12" steel, cast iron or max. 6" copper pipe with max. 2" glass fiber or max. 2" thick calcium silicate insulation (steel sleeve optional) (AS=1/2" to 12")	2 Hr	■	■		FS-ONE MAX	C-AJ-5091
Max. 12" steel, max. 6" copper with max. 1-1/2" glass fiber insulation (steel sleeve optional) (2-1/2" concrete) (AS=1/2" to 1-7/8")	2 Hr		■		FS-ONE MAX	C-AJ-5096
Max. 6" steel or max. 4" copper pipe with max. 3" thick glass fiber insulation (steel sleeve optional) (AS=1/2")	2 Hr				FS-ONE MAX	C-AJ-5098
Max. 6" steel or copper pipe with max. 3" thick mineral fiber insulation (AS=1/2" to 1-1/2")	3 Hr	■			FS-ONE MAX	C-AJ-5184
Max. 24" steel, cast iron, max. 4" copper or EMT, max. 6" conduit pipe with max. 3" thick mineral fiber insulation butted up to firestop assembly (AS=0" to 1-7/8")	3 Hr	■			FS-ONE MAX	C-AJ-5185
Max. 4" steel or copper pipe with max. 3/4" AB/PVC insulation (2-1/2" concrete) (AS=0" to 1-3/8")	2 Hr				FS-ONE MAX	C-AJ-5198
Max. 4" steel, cast iron, or copper pipe (sleeve w/ welded flange) (AS varies)	2 Hr				FS-ONE MAX	C-AJ-5230
Max. 6" copper, steel, or cast iron with max. 2" glass fiber (AS=1/4" to 1-5/8")	2 Hr				CP 606	C-AJ-5265
Max. 12" steel or cast iron with 1-1/2" or 3" thick Foamglass pipe insulation (2-1/2" concrete) (AS varies)	2 Hr				FS-ONE MAX	C-AJ-5277
Max. 2" steel, copper, or cast iron with 1/2" to 1" thick AB/PVC pipe insulation (steel sleeve optional) (bottom side access) (AS=3/16" to 3/4")	3 Hr				FS-ONE MAX	C-AJ-5289
Max. 3" steel, cast iron or copper with 2" thick polyisocyanurate foamed insulation (AS=1/4" to 5/8")	2 Hr				FS-ONE MAX	C-AJ-5295
Max. 6" steel, cast iron or copper with 2" thick glass fiber (AS = 0" to 1-7/8")	2 Hr				FS-ONE MAX	C-AJ-5301
Max. 4" PVC or CPVC with max. 1" glass fiber or 3/4" AB/PVC on pipes 1" or smaller (AS=0" to 3/16" or 1/2")	2 Hr	■			CP 648E/1-3/4" w/ Ret Collar	C-AJ-5320

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	Concrete Floors/Walls
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	Framed (Gypsum) Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables	
Cable Trays	Framed (Gypsum) Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	
Mixed Penetrating Items*	Wood-Framed Floors
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Wood-Framed Floors
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	Steel-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	Steel-Framed Floors
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	Joints
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	Joints
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number (Similar FM Approved System)
INSULATED PIPES IN CONCRETE FLOOR/WALLS (CONTINUED)						
Max. 10" steel or cast iron with 1" to 3" glass fiber (AS=1/2" to 2-1/8")	2 Hr				CP 648E/1-3/4" FS-ONE MAX	C-AJ-5341
Max. 4" steel, cast iron or copper with 1" to 2" glass fiber (bottom side access) (AS=1/2" to 1-1/2")	2 Hr				CP 648E/1-3/4" FS-ONE MAX	C-AJ-5342
Max. 4" steel, cast iron or Max. 2" copper with 1" to 2" glass fiber and optional steel sleeve (2-1/2" concrete) (AS=1/4" to 1-1/8")	2 Hr		■		FS-ONE MAX	C-AJ-5343
Max. 2" (63mm) PP (SDR 11) Fusiotherm or Polystar CT-White (c) w/ 1/2" to 1-1/2" thick glass fiber (AS=3/8" to 1-1/8")	2 Hr		■		CP 648E/1-3/4"	C-AJ-5352
Max. 3" Cosmoplast PP-R or Coprax PP-R plastic pipe (c) with nominal 1" polyolefin or AB/PVC (AS=0" to 1")	2 Hr	■			CP 648E/1-3/4" w/ Ret Collar	C-AJ-5385
Nom. 12" Aquatherm Bluepipe MF PP-R (SDR 9 or 11), Nom 12" Niron Multi Cima PP-RTC (SDR 7.3) (AS 1/2" to 1-1/8")	2 Hr	■			CFS-BL	C-AJ-5432
Max. 20" steel pipe with max. 3" glass-fiber insulation (5-1/2" concrete) (AS=1" to 2-1/4")	4 Hr				FS-ONE MAX	C-BJ-5006
Max. 4" steel or copper with max. 1" glass fiber insulation (hollow core) (AS=0" to 7/8")	2 Hr				FS-ONE MAX	C-BJ-5013
Max. 2" steel, cast iron, or copper with 1" glass fiber insulation (bottom side access) (AS=0" to 1-7/8")	2 hr				FS-ONE MAX	C-BJ-5015
Max. 10" steel pipe with 2" glass fiber insulation (AS=1/4" to 1/2")	2 Hr				Ret. Collar w/ FS-ONE MAX	F-A-5009
Max. 4" steel or copper pipe with nominal 3/4" AB/PVC insulation (2-1/2" concrete)	2 Hr				CP 680-M CP 680-P CP 680-PX	F-A-5015
Max. 4" steel or copper pipe with nominal 3/4" AB/PVC insulation	3 Hr	■			CP 680-M CP 680-P CP 680-PX	F-A-5016
Max. 4" steel or copper pipe with max. 2" thickness glass-fiber insulation (2-1/2" concrete)	2 Hr				CP 680-M CP 680-P CP 680-PX	F-A-5017
Max. 4" steel or copper pipe with max. 2" thickness glass fiber	3 Hr	■			CP 680-M CP 680-P CP 680-PX	F-A-5018
Max. 4" steel or copper pipe with max. 3/4" thickness AB/PVC insulation (2-1/2" concrete) (AS=0" to 1-3/8")	2 Hr				FS-ONE MAX	F-A-5019
Max. 12" steel or max. 6" copper pipe with max. 1-1/2" thickness glass-fiber insulation (optional sleeve) (2-1/2" concrete) (AS=1/2" to 1-7/8")	2 Hr		■		FS-ONE MAX	F-A-5021
Max. 3" copper, steel, or cast iron with max. 1" thick glass fiber or AB/PVC insulation (max qty 3) (AS=1/4" to 2")	2 Hr				CFS-S SIL GG CFS-S SIL SL	F-A-5032
Max. 1-1/2" copper, steel, or cast iron with 1" thick glass fiber or 3/4" AB/PVC insulation (max qty 5) (2-1/2" concrete floor) (AS 1/4" or 1/2" to 2") (fan coil)	2 Hr				CFS-S SIL GG CFS-S SIL SL	F-A-5036
Max. 8" steel, cast iron or max. 4" copper with max. 1-1/2" glass fiber insulation (AS for steel/iron = 1/2" to 2", AS for copper = 1/4" to 2-5/8")	2 Hr	■		■	CFS-S SIL GG CFS-S SIL SL	F-A-5042
Max. 4" steel, cast iron or copper with 3/4" or 1" ABPVC/ 1", 1-1/2" or 2" of glass fiber (2-1/2" to 8" concrete)	3 Hr				CFS-DID MD	F-A-5046
Max. 8" steel, cast iron, 4" copper with 1" glass fiber (AS=1/4" to 5/8")	3-Hr	■			CFS-S SIL GG CFS-S SIL SL	F-A-5047
Insulated Aquatherm Greenpipe PP-R through CFS-DID 6" MD (3" PP-R with 1" Glass Fiber or 2" PP-R with 2" Glass Fiber)	2 Hr	■			CFS-DID	F-A-5055
Max. 2" PEX (Uponor Aquapex or Wirsbo Hepex) (closed) with Nom. 1" Glass Fiber	2 Hr	■			CFS-DID	F-A-5061
Max. 2" steel pipe or copper pipe with nom. 1-1/2" thickness cellular glass (foamglass) insulation (4-1/2" concrete)	2 Hr	■			CP 680-P	F-A-5062
Max. 2" Steel or Copper pipe with 3/4" or 1" AB/PVC insulation	2 or 3 Hr	■			CFS-CID MD M, P, or PX	F-A-5069

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	Concrete Floors/Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	Concrete Floors/Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	Framed (Gypsum) Walls
Non-Metallic Pipes*	
Cables	
Cable Trays	Framed (Gypsum) Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Framed (Gypsum) Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	Wood-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Wood-Framed Floors
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	Wood-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Steel-Framed Floors
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	Steel-Framed Floors
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	Steel-Framed Floors
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	Joints
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	Joints



	Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
INSULATED PIPES IN CONCRETE FLOOR/WALLS (CONTINUED)							
NEW	Max. 2" Steel or Copper pipe with 1" or 1-1/2" glass fiber insulation	2 or 3 Hr	■			CFS-CID MD M, P, or PX	F-A-5070
NEW	Max. 1" Steel or Copper pipe with nominal 1-1/2" cellular glass (Foamglass)	2 Hr	■			CFS-CID MD P or PX	F-A-5071
NEW	Nom. 6" or 8" Steel with Nom. 1" Glass Fiber Insulation, Nom. 6" or 8" Cast-Iron with Nom. 1" Glass Fiber Insulation, Nom. 6" or 8" Ductile Iron with Nom. 1" Glass Fiber Insulation	2 Hr	■			CFS-CID MD 8", 10"	F-A-5076
NEW	Nom. 6" or 8" Steel with Nom. 1" or 2" Glass Fiber Insulation, Nom. 6" or 8" Cast-Iron with Nom. 1" or 2" Glass Fiber Insulation, Nom. 6" or 8" Ductile Iron with Nom. 1" or 2" Glass Fiber Insulation Canada only	2 Hr	■			CFS-CID MD 8", 10"	F-A-5077
	Multiple 3" copper, steel, cast iron (mq=5) with 1" glass fiber or ab/pvc (6" concrete) (AS = 1/4" to 6")	2 Hr				FS-ONE MAX CFS-S SIL GG CFS-S SIL SL	F-B-5003
	Max. 4" steel, cast iron or copper with 3/4" or 1" ABPVC/ 1", 1-1/2" or 2" of glass fiber (6" to 12" concrete)	3 Hr	■			CFS-DID C	F-B-5004
	Max. 2" steel or copper with 3/4" or 1" ABPVC/ 1", 1-1/2" or 2" of glass fiber (6" to 12-1/2" hollow core)	3 Hr	■			CFS-DID C/HC8/HC10/HC12	F-B-5005
	Max. 8" steel, cast iron, or copper with 1" or 2" glass fiber (6" concrete)	2 Hr	■			CFS-CID P	F-B-5009
	Max. 2" PEX (Uponor Aquapex or Wirsbo Hepex) (closed) with Nom.1" Glass Fiber through CFS-DID or HC (hollow-core)	2 Hr	■			CFS-DID	F-B-5010
	Max. 10" steel or max. 4" copper with 2" thick glass-fiber insulation (AS=1" to 1-1/8")	2 Hr				Ret. Collar w/FS-ONE MAX	W-J-5003
	Max. 12" steel or max. 6" copper pipe with 1-1/2" glass fiber insulation (sleeved) (AS=1-1/4" to 1-1/2")	4 Hr				FS-ONE MAX	W-J-5028
	Max. 4" steel or max. 2" copper with 1/2" to 1" AB/PVC insulation (AS=0" to 1-1/2")	1 or 2 Hr		■		FS-ONE MAX	W-J-5041
	Max. 12" steel or max 6" copper with 1", 1-1/2" or 2" glass-fiber insulation (AS=0" to 1-1/2")	1,2 or 3 Hr		■		FS-ONE MAX	W-J-5042
	Max. 10" steel pipe with max. 3" thick glass-fiber insulation (AS=1/2" to 3/4")	2 Hr				CP 648E/1-3/4"	W-J-5057
	Max. 10" steel, cast iron or 4" copper pipe with max. 3" thick glass-fiber insulation (AS=1/2" to 3/4")	2 Hr				CP 648E/1-3/4"	W-J-5058
	Max. 1" copper with max. 3/4" thick AB/PVC insulation (Shaft Wall) (AS=1/4" to 1-1/8")	1 or 2 Hr				FS-ONE MAX	W-J-5066
	Max. 1" copper with max. 2" thick glass-fiber insulation (Shaft Wall) (AS=1/4" to 1-1/8")	1 Hr	■			FS-ONE MAX	W-J-5067
	Beverage line set. Multiple 1/2" dia PEX or PE Tubing with AB/PVC Insulation (AS=0" to 1")	2 Hr				CP 648E/1-3/4" w/ Ret Collar	W-J-5122
	Max. 4" steel, cast iron or copper pipe w/ 1" to 1-1/2" glass fiber (AS=0" to 7/8")	2 Hr		■		FS-ONE MAX CP 606 CP 601s CFS-S SIL GG	W-J-5134
	Max. 4" steel, cast iron, 2" copper or 1/2" to 3/4" AB/PVC (AS = 0" to 7/8")	2 Hr		■		FS-ONE MAX CP 606	W-J-5136
	Max. 12" steel or 6" copper with max. 2" glass fiber (optional sleeve) (AS=0 to 1/2" for steel, 0" to 1-7/8" for copper)	1 or 2 Hr				FS-ONE MAX	W-J-5140
	Max. 4" PVC or CPVC with 1-1/2" glass fiber or 1" AB/PVC (AS = 0" to 1")	2 Hr	■			CP 648E w/ Ret Collar	W-J-5145
	Max. 1-1/2" CPVC (c) with 1" glass fiber (AS=1/4" to 7/8")	2 Hr	■			FS-ONE MAX	W-J-5151
	Max. 2" CPVC (c) with 1" glass fiber or AB/PVC (AS=1/4" to 7/8")	2 Hr	■			CP648E/1-3/4" FS-ONE MAX	W-J-5152
	Max. 1/2" PEX with 3/4" AB/PVC (AS=1/4" to 7/8")	2 Hr	■			FS-ONE MAX	W-J-5190
	Max. 6" steel or cast iron pipe 3" glass fiber (AS=1/4" to 1-3/4")	2 Hr	■			FS-ONE MAX	W-J-5191
	Max. 4" PEX with 1-1/2" glass fiber (AS=0" to 1/8")	2 Hr	■			CP 648E	W-J-5192
	Max. 7/8" Streamline ACR-Type L Copper Tubing with Nom.1/2" Polyethylene Insulation	2 Hr	■			CP 648-E FS-ONE MAX	W-J-5193

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	Concrete Floors/Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	Concrete Floors/Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	Framed (Gypsum) Walls
Non-Metallic Pipes*	
Cables	
Cable Trays	Framed (Gypsum) Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Framed (Gypsum) Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	Wood-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Wood-Framed Floors
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	Steel-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Steel-Framed Floors
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	Steel-Framed Floors
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	Steel-Framed Floors
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	Joints
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	Joints



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
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INSULATED PIPES IN CONCRETE FLOOR/WALLS (CONTINUED)

One or more Max. 7/8" Streamline ACR-TYPE L Copper Tubing with Nom. 1/2" Polyethylene Insulation (Max QTY.=4)	2 Hr	■			CP 648- E FS-ONE MAX	W-J-5194
Max. 8" Polypropylene (PP) Aquatherm Bluepipe with Nom. 2" Cellular Glass Insulation or Nom. 1" Glass Fiber Insulation	2 Hr	■			CP 648-E FS-ONE MAX	W-J-5195
NEW Max. 20" steel pipe with 3" thick 8 PCF mineral wool insulation extending above and below floor assembly 6"	1 and 1-1/2 Hr				FS-ONE MAX	FM 209
NEW Max. 4" copper with 1" thick glass fiber insulation or 3/4" thick AB/PVC insulation	2 or 3 Hr				CP 680	FM 309
NEW Max 4" Copper with 1" thick glass fiber insulation or 3/4" thick AB/PVC insulation	1/2 , 1, 1-1/2, or 2 Hr				CP 680	FM 348
NEW Max 2" copper with 2" Glass fiber insulation or 3/4" thick AB/PVC insulation	3 Hr				CP 680	FM 514
NEW Max. 2-1/2" PP pipe with 1-1/2" thick glass fiber insulation (AS =3/8" to 1-1/8")	2 Hr	■			CP 648E FS-ONE MAX	FM 693
NEW Nom. 6" copper pipe with 1" thick glass fiber insulation or Nom. 4" copper pipe with 2" thick glass fiber insulation	2 Hr	■			CFS-CID-8"	FM 717

MISCELLANEOUS ELECTRICAL (BUSWAY) IN CONCRETE FLOORS/WALLS

Electrical busway (23" x 4-1/2") (2-1/2" concrete)	3 Hr				CP 637	C-AJ-6006
Electrical busway (26" x 6")	3 Hr				FS-ONE MAX	C-AJ-6017
Electrical busway (23" x 4-1/2", qty 1) or (11-1/4" x 4-1/2", qty 2) (AS=1/4" to 5-3/4")	2 Hr				Fire Foam	C-AJ-6036
Electrical busway (23" x 4-1/2", qty 1) or (11-1/4" x 4-1/2", qty 2) (AS=1/4" to 5-3/4")	2 Hr				Firestop Block	C-AJ-6042
Electrical busway (23 x 4-1/2") (AS=1/2" to 6-1/2")	2 Hr				CFS-S SIL GG CFS-S SIL SL	F-A-6002
ABS fiber optic cable tray (12" x 4") (AS=0" to 4")	2 Hr	■			Firestop Block	W-J-6003

Size of Blank Opening	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
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MISCELLANEOUS MECHANICAL/DUCTS IN CONCRETE FLOORS/WALLS

Max. 36" grease duct manufactured by Metal-Fab (AS = 1")	3 Hr	■	■		FS-ONE MAX	C-A-J7006
Max. 32" x 32" sheet metal duct w/o damper (AS=1/4" to 1-1/2")	3 Hr			■	CFS-S SIL GG CFS-S SIL SL	C-AJ-7046
Max. 30" x 30" sheet metal duct w/o damper (AS=1/4" to 1-3/4") Optional: Flamebar duct coating	3 Hr				CP 606	C-AJ-7051
Max. 20" spiral wound or 12" sheet metal duct w/o damper (AS=0" to 1-1/2")	2 Hr				FS-ONE MAX CP 601s CP606 CP 604 CFS-S SIL GG CFS-S SIL SL	C-AJ-7084
Max. 6" sheet metal duct w/o damper (bottom side access)(hollow core) (AS=0" to 2")	2 Hr				FS-ONE MAX	C-AJ-7103
Max. 24" x 12" sheet metal duct w/o damper (bottom side access) (AS=0" to 2", point of contact on maximum two adjacent sides)	2 Hr				FS-ONE MAX	C-AJ-7104
Max. 30" x 30" sheet metal duct w/o damper (AS=1/4" to 1-3/4")	2 Hr				FS-ONE MAX	C-AJ-7111
Max. 60" x 36" sheet metal duct with 2" glass fiber duct insulation (AS varies)	2 Hr				FS-ONE MAX	C-AJ-7145
Max. 8" sheet metal duct (min 26 Ga) (AS = 1/4" to 1-3/4")	2 Hr				CFS-S SIL GG CFS-S SIL SL	C-AJ-7149
Max. 8" dia sheet metal duct w/o damper (AS= 0 to 1") (8" precast concrete)	3 Hr	■			FS-ONE MAX	C-BJ-7005

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	Concrete Floors/Walls
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	Framed (Gypsum) Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables	
Cable Trays	Framed (Gypsum) Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	
Mixed Penetrating Items*	Wood-Framed Floors
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Wood-Framed Floors
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	Steel-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	Steel-Framed Floors
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	Joints
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	Joints
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Size of Blank Opening	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number (Similar FM Approved System)
MISCELLANEOUS MECHANICAL/DUCTS IN CONCRETE FLOORS/WALLS (CONTINUED)						
Max. 100" x 100" sheet metal duct (w/o damper) (AS=0" to 2") Optional: Flamebar duct coating	2 Hr				CFS-S SIL GG CFS-S SIL SL	C-AJ-7154
CFS-COS Firestop Composite Sheet (rigid foil-faced intumescent sheet with stainless steel backing) and Max 24"x18" min 24 Ga steel duct with steel angles fastened to duct and composite sheet	2 Hr				CP 619 T Composite Sheet	C-AJ-7195
Max. 36" ID Grease Duct (AS 1/2" to 1-1/2")	2 Hr	■			FS-ONE MAX	C-AJ-7199
Nom. 36" ID Grease Duct (AS 1/2" to 1-1/2")	2 Hr	■			FS-ONE MAX	C-AJ-7207
Max. 6" dia sheet metal duct w/o damper	3 Hr				CP 680-P 6"	F-A-7018
Max. 48" x 24" sheet metal duct w/o damper (AS=0" to 2")	1 or 2 Hr		■		FS-ONE MAX CP 606 CFS-S SIL GG	W-J-7021
Max. 20" spiral wound duct w/o damper, or 12" sheet metal duct (AS=0" to 1-1/2")	1 or 2 Hr				FS-ONE MAX CP 606 CFS-S SIL GG	W-J-7022
Max. 6" sheet metal duct w/o damper (Shaft Wall) (AS=1/2" to 3/4")	1 or 2 Hr				FS-ONE MAX	W-J-7038
Max. 7" x 7" sheet metal duct w/o damper (Shaft Wall) (No angles) (AS=1/4" to 3/4")	1 or 2 Hr				FS-ONE MAX	W-J-7039
Max. 24" x 24" sheet metal duct (no angles) (AS= 0" or 1/2" to 1")	2 Hr				CP 606	W-J-7085
Max. 100" x 100" sheet metal duct (w/o damper) (AS=0" to 2") Optional: Flamebar duct coating	1 or 2 Hr		■		FS-ONE MAX CP 606	W-J-7109
Max. W14 x 90 Steel I beam service support (AS=1/2" to 3")	2 Hr		■		FS-ONE MAX	W-J-7110
Mechanical Support member Steel strut, steel cable, steel rod, steel angle (AS=1/8" to 7/8")	2 Hr				FS-ONE MAX CP 606	W-J-7123
Max. 30" x 30" sheet metal duct w/o damper (AS=1/4" to 1-1/8") Optional: Flamebar duct coating	2 Hr	■	■		FS-ONE MAX	W-J-7152
Steel air duct with 1-1/2" thick FireMaster FireWrap+ manufactured by Thermal Ceramics (AS=3")	2 Hr	■			FS-ONE MAX	C-AJ-7095
Max. 49" x 49" steel grease duct with 1-1/2" thick FireMaster® Fast Wrap manufactured by Thermal Ceramics (AS = 1/2" to 4-3/4")	2 Hr	■			FS-ONE MAX	C-AJ-7098
Max. 24" x 12" steel air or grease duct with Duct Wrap by Unifrax (AS = 1-1/4" to 1-3/4")	1 or 2 Hr	■			FS-ONE MAX	C-AJ-7122
Max. 24" x 24" steel air or grease duct with Duct Wrap by Unifrax (AS = 1")	2 Hr	■			FS-ONE MAX	C-AJ-7123
Max. 38" Insulated sheet metal duct through concrete floor or wall with coverplate.	2 Hr	■			FS-ONE MAX	C-AJ-7140
Carbon steel air duct with 1-1/2" thick FireMaster FireWrap XL, FireMaster FastWrap+, or Pyrostate Duct Wrap XL	2 Hr	■			CFS-S SIL GG CFS-S SIL SL	C-AJ-7150
Carbon steel air or grease duct with two layers 1-1/2" thick FireMaster FireWrap XL, FireMaster FastWrap+, or Pyrostate Duct Wrap XL	3 Hr	■			CFS-S SIL GG CFS-S SIL SL	C-AJ-7151
Carbon steel air duct with 1-1/2" thick FireMaster FireWrap XL, FireMaster FastWrap+, or Pyrostate Duct Wrap XL	1 or 2 Hr	■			CFS-S SIL GG CFS-S SIL SL	C-AJ-7152
Max. 49" x 24" steel sheet metal air duct with 1-1/2" thick FireMaster FireWrap XL, FireMaster FastWrap+, or Pyrostate Duct Wrap XL	2 Hr	■			CFS-S SIL GG CFS-S SIL SL	C-AJ-7153
Max. 30" x 30" sheet metal duct (w/ no angles) (AS=1/2" to 1-1/2") Optional: Flamebar duct coating	2 or 3 Hr	■			CP 606 CFS-S SIL GG CFS-S SIL SL	C-AJ-7192
Max. 24" x 12" sheet metal duct w/o damper with max. 1 1/2" thickness foil scrim glass fiber duct insulation (AS=1/4" to 1")	1 or 2 Hr				FS-ONE MAX	W-J-7029
Max. 60" x 36" sheet metal duct w/o damper with max. 2" thickness foil scrim glass fiber duct insulation (w/ angles) (AS=1/4" to 2-1/4")	2 Hr				FS-ONE MAX	W-J-7091
Max. 100" x 100" sheet metal with 1-1/2" or 2" thick glass fiber duct insulation (AS =1/2" to 2")	2 Hr				FS-ONE MAX	W-J-7112

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Size of Blank Opening	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
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MISCELLANEOUS MECHANICAL/DUCTS IN CONCRETE FLOORS/WALLS (CONTINUED)

Max. 20" spiral w/ damper or 12" sheet metal duct (w/o damper) with 1-1/2" thick glass fiber duct insulation (AS=1/4" to 1")	1 or 2 Hr				FS-ONE MAX	W-J-7124
Max. 12" x 10" sheet metal duct (AS = 0" to 1")	1 Hr				FS-ONE MAX CP 606	F-E-7008

Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
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MIXED PENETRATING ITEMS IN CONCRETE FLOORS/WALLS*

Multiple insulated and non-insulated copper pipes (max. 3") (AS=1" to 2-1/4")	3 Hr				FS-ONE MAX	C-AJ-8038
Multiple insulated and non-insulated steel and copper pipes (max. 3" steel/copper) (AS varies)	3 Hr		■		FS-ONE MAX	C-AJ-8041
Insulated and non-insulated steel and copper pipe (max. 1" steel/copper) (AS=3/8" to 2")	3 Hr				FS-ONE MAX	C-AJ-8044
Insulated or non-insulated steel, cast iron, copper, conduit or EMT pipes, cable tray or cables (single or bundled) (AS varies)	3 Hr		■		Firestop Block	C-AJ-8056
Multiple insulated and non-insulated copper pipe, max. 1-1/2" PVC (open or closed) and cables	2 Hr				FS-ONE MAX w/ Ret Collar	C-AJ-8058
Max. 6" steel tube and cables (AS varies)	2 Hr				FS-ONE MAX	C-AJ-8081
Max. 6" steel, cast iron, copper, conduit, or max. 4" EMT pipe	4 Hr		■		CP 637	C-AJ-8095
Insulated or non-insulated steel, cast iron, copper, conduit or EMT pipes, flexible metal conduit or cables (single or bundled) (AS varies)	2 Hr	■			Fire Foam	C-AJ-8096
Insulated or non-insulated copper or steel, cables (single or bundled), or flexible steel conduit (included Hollow Core) (AS varies)	3 Hr	■			FS-ONE MAX	C-AJ-8099
Insulated or non-insulated copper or cables (single or bundled) (AS varies)	3 Hr				Firestop Block	C-AJ-8100
Max. 2" EMT or conduit, single or bundled cables, max. 2" PVC Innerduct (AS varies)	3 Hr	■			Firestop Block	C-AJ-8107
Max. 8" steel, cast iron, 6" copper, steel conduit, or max. 4" EMT, Max. 2" Innerduct, Cable Tray, Large cables, (various cables) (AS varies)	3 Hr	■			Firestop Block	C-AJ-8110
Insulated or non-insulated metallic pipes; cable bundles; steel conduits (max. 48" x 30" opening) (AS varies)	2 Hr				FS-ONE MAX	C-AJ-8143
HVAC line set (sleeve optional) (bottom side access) (AS varies)	3 Hr				FS-ONE MAX	C-AJ-8148
Insulated or non-insulated metallic pipes; cables, PVC, or CPVC, sheet metal ducts (AS varies)	2 Hr	■			CP 637	C-AJ-8166
HVAC line set w/ PVC drain (AS varies)	2 Hr				CP643N	C-AJ-8177
Insulated or non-insulated copper or steel, cables (single or bundled), or flexible steel conduit (AS varies)	2 Hr				Fire Foam	C-AJ-8178
Insulated or non-insulated steel, cast iron, copper, conduit or EMT pipes, cable tray or cables (single or bundled) (AS varies)	3 Hr		■		Firestop Block	C-AJ-8180
Insulated or non-insulated copper or cables (single or bundled) (AS varies)	3 Hr				Firestop Block	C-AJ-8207
Max. 2" EMT or conduit, single or bundled cables, max. 2" PVC Innerduct (AS varies)	3 Hr	■			Firestop Block	C-AJ-8208
Max. 8" steel, cast iron, 6" copper, steel conduit, or max. 4" EMT, Max. 2" Innerduct, Cable Tray, Large cables, (various cables) (AS varies)	3 Hr				Firestop Block	C-AJ-8209
Insulated or non-insulated steel, cast iron, copper, max. 2" PVC/CPVC, cables (AS varies)	2 Hr				Firestop Block	C-AJ-8210
Insulated or non-insulated steel, cast iron, copper (AS varies)	3 Hr				CFS-BL	C-AJ-8211

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Joints
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number (Similar FM Approved System)
MIXED PENETRATING ITEMS IN CONCRETE FLOORS/WALLS* (CONTINUED)						
Cable bundles (various cables), non-insulated steel, cast iron, conduit, or EMT (one or more) (AS=min. 1")	2 or 4 Hr	■			CFS-COS	C-AJ-8218
Cable bundles (various cables), non-insulated steel, cast iron, conduit, or EMT (one or more) (AS=min. 1")	2 Hr				CFS-COS	C-AJ-8250
Max. 6" steel, cast iron, copper, steel conduit, or max. 4" EMT, optional glass fiber insulation, Max. 4" cable bundle (AS varies)	3 Hr				Firestop Block	C-AJ-8252
NEW Max. 2" Steel, Cast-Iron, Copper, Conduit, or EMT. Max. 6" PVC, CPVC (SDR 13.5), Rigid Nonmetallic Conduit. (AS Min. 2") (MSO 900 sq. in.) Canada Only	2 Hr				CFS-COS CP 643N	C-AJ-8310
NEW Max. 6" PVC or Rigid Nonmetallic Conduit. Various cables (AS Min. 3") (MSO 32" x 32")	2 Hr				CFS-COS CP 643N CFS-CC CP 653 (BA)	C-AJ-8313
NEW One or more Max. 4" Cable bundles, One or more Max. 6" Steel, 6" Cast-Iron, 6" Ductile Iron, 4" EMT, 6" Rigid Nonmetallic Conduit, 2" Copper. (AS Min. 1") (MSO 1024 sq. in.)	3 Hr				CFS-COS CFS-CC	C-AJ-8316
NEW One or more Max. 4" Cable bundles, One or more Max. 8" Steel, 8" Cast-Iron, 8" Ductile Iron, 4" EMT, 6" Rigid Nonmetallic Conduit, 2" Copper. (AS Min. 1") (MSO 1024 sq. in.)	3 Hr				CFS-COS CFS-CC	C-AJ-8317
Cable Rack (Telecom) (AS=min. 1")	2 Hr	■			Firestop Block	C-BJ-8010
Cable Rack (Telecom) (AS=min. 0")	2 Hr	■			Firestop Block	C-BJ-8013
Bundle consisting of multiple metallic and cables (AS=0" to 2")	2 Hr	■			FS-ONE MAX	C-BJ-8014
One or more HVAC line sets in 32" x 8" opening (6" concrete) (AS=1/2" to 12")	2 Hr				FS-ONE MAX	C--BJ8020
Single HVAC Line set (8" hollow core) (AS=0" to 1-1/2")	3 Hr				FS-ONE MAX	C-BJ-8024
Max. 6" steel tube and cables (AS varies)	2 Hr				FS-ONE MAX	C-BJ-8027
Max. 1" steel conduit and Cables (various cables) through CFS-T Firestop Cable Transit	2 Hr	■	■		CFS-T	C-BJ-8037
Max. 1" steel conduit and Cables (various cables) through CFS-T Firestop Cable Transit	2 Hr	■	■		CFS-T	C-BJ-8038
Insulated or non-insulated metallic pipes; cable bundles; steel conduits (max. 48" x 8" opening) (AS varies)	2 Hr				CFS-S SIL GG CFS-S SIL SL	F-A-8004
Insulated or non-insulated metallic pipes; cable bundles; steel conduits (max. 48" x 30" opening) (AS varies)	2 Hr				CFS-S SIL GG CFS-S SIL SL	F-A-8012
Multiple HVAC Line Sets	3 Hr				CP 680-M CP 680-P CP 680-PX	F-A-8027
Max. 2" steel, ENT, or cable bundle bundled together (AS between bundle and device = 1/2" to 2")	3 Hr				CP 680-P"	F-A-8016
Max 3" EMT, max. 2" PVC (c), and cables (AS varies)	2 Hr	■	■		FS-ONE MAX	F-A-8023
Single HVAC Line Set through CFS-DID Firestop Drop In Device 3" MD or C	2 Hr	■			CFS-DID	F-A-8047
NEW One or more Max. 1" Steel, Cast-Iron, Ductile Iron, or Copper. With Nom. 3/4" AB/PVC insulation. Max 1-1/4" PVC or CPVC (SDR 13.5). Max 4 Pair No. 8 AWG thermostat wire (Max. qty. 2) (AS 0" to 3/4")	3 Hr	■			CFS-CID MD M, P, or PX	F-A-8055
Single HVAC Line Set through CFS-DID Firestop Drop-In Device 3" C or HC (hollow core)	2 Hr	■			CFS-DID	F-B-8010
Insulated or non-insulated steel, cast iron, copper, conduit or EMT pipes, cable tray or cables (single or bundled) (AS varies)	4 Hr				Firestop Block	W-J-8004
Insulated or non-insulated steel, cast iron, copper conduit or EMT pipes (AS varies)	4-Hr				Firestop Block	W-J-8007
Max. 6" steel, cast iron, copper, conduit or max. 4" EMT or max. 4" cable bundle (AS=0" to 4")	4 Hr				Fire Block	W-J-8008

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	Concrete Floors/Walls
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	Framed (Gypsum) Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables	
Cable Trays	Framed (Gypsum) Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	
Mixed Penetrating Items*	Wood-Framed Floors
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Wood-Framed Floors
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	Steel-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	Steel-Framed Floors
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	Joints
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	Joints
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	W-Rating	Product	System Number [Similar FM Approved System]
MIXED PENETRATING ITEMS IN CONCRETE FLOORS/WALLS* (CONTINUED)						
ABS fiber optic cable tray (12" x 4"), cable bundles (various cables), 2" fiber optic raceway (AS varies)	2 Hr	■			Firestop Block	W-J-8009
Insulated or non-insulated steel, cast iron, copper, conduit or EMT pipes, flexible metal conduit or cables (single or bundled) (AS varies)	1 or 2 Hr	■			Fire Foam	W-J-8016
Cable bundle Cable Rack (Telecom) (various cables) (AS min. 0")	2 Hr				Firestop Block	W-J-8017
HVAC Line Set (AS varies)	2 Hr				FS-ONE MAX	W-J-8018
Multiple 4" steel pipes, steel conduit, EMT and/or cable bundle (AS=0" to 1")	2 Hr				CP 675T	W-J-8022
Insulated or non-insulated metallic, non metallic pipes, and cable bundle (AS varies)	2 Hr				FS-ONE MAX	W-J-8034
Insulated or non-insulated metallic, non metallic pipes, and cable bundle (AS varies)	2 Hr	■			FS-ONE MAX	W-J-8035
Multiple HVAC Line Sete (max qty 3) bundled together (AS=0" to 1-1/2")	2 Hr				CP 648-1/3/4" w/ Ret Collar	W-J-8043
Misc. bundle consisting of cables, metal pipe, ENT (AS=0" to 1")	2 Hr				CP 648-1/3/4" w/ Ret Collar	W-J-8044
Insulated or non-insulated metallic, non-metallic, cable bundles (AS varies)	2 Hr				Firestop Block	W-J-8045
Insulated or non-insulated steel, cast iron, copper, conduit or EMT pipes, cable tray or cables (single or bundled) (AS varies)	4 Hr				Firestop Block	W-J-8047
Insulated or non-insulated steel, cast iron, copper conduit or EMT pipes (AS varies)	4-Hr				Firestop Block	W-J-8048
ABS fiber optic cable tray (12" x 4"), cable bundles (various cables), 2" fiber optic raceway (AS varies)	2 Hr	■			Firestop Block	W-J-8049
Insulated or non-insulated metallic, non-metallic, cable bundles (AS varies)	2 Hr		■		Firestop Block	W-J-8050
Fiberglass, aluminum or steel cable tray (18" x 4"), cable bundle (various cables), non-insulated steel, cast iron, EMT, conduit, or copper pipe, non-metallic pipe (install both sides) (AS varies)	2 Hr				CFS-COS	W-J-8051
HVAC Line Set (AS varies)	2 Hr				CFS-SL SK	W-J-8056
Max. 24" x 4" Open aluminum cable ladder, One or more Max. 4" cable bundles (AS varies)	2 Hr				CFS-COS CFS-BL CP 653 (BA) CFS-CC	W-J-8078
Max. 3" steel or copper with 1" thick glass fiber insulation	2 Hr				FS-ONE MAX	FM 210
Max. 18" x 6" steel cable tray, various cables to be a Max. 30% of the cross-sectional area of the cable tray, Max. 4" copper with 1-1/2" glass fiber insulation, Max. 6" steel pipe	3 Hr	■			CFS-BL (Firestop Block)	FM 663
Max. 18" x 6" steel cable tray, various cables to be a Max. 30% of the cross-sectional area of the cable tray, Max. 4" copper with 1-1/2" glass fiber insulation, Max. 6" steel pipe	2 Hr	■			CFS-BL (Firestop Block)	FM 664
Max. 1" copper with optional Various types of cable	1/2 or 2 Hr				CFS-S SIL GG	FM 679
Max. 2" EMT, Max. 2" copper with 1" thick AB/PVC, Max. 12" Steel pipe, Max. 4" Steel pipe with 1-1/2" glass fiber insulation, Various cables/bundles, Max. 6" Copper pipe (AS = varies)	2 Hr	■			FS-ONE MAX	FM 701

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	Concrete Floors/Walls
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	Framed (Gypsum) Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables	
Cable Trays	Framed (Gypsum) Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	
Mixed Penetrating Items*	Wood-Framed Floors
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Wood-Framed Floors
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	Steel-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	Steel-Framed Floors
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	Joints
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	Joints
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



FRAMED (GYPSUM) WALLS

Hilti Firestop Selection Chart – U.S.

CLICK
CATEGORY
INFO BELOW:

Size of Blank Opening	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
BLANK OPENINGS IN FRAMED (GYPSUM) WALLS					
Max 30" x 15" blank opening	1 or 2 Hr	■		Fire Foam	W-L-0012
Max. 4" blank steel sleeve	1 or 2 Hr		■	Firestop Plug	W-L-0013
Max. 24" x 36" blank opening	1 or 2 Hr	■	■	CP 675T	W-L-0014
Max. 24" x 36" blank opening	1 or 2 Hr			CP 675T w/ Z frame	W-L-0015
Max. 4" blank steel sleeve (AS=0" to 1")	1 or 2 Hr		■	Firestop Plug	W-L-0018
Max. 4" blank steel sleeve (AS=0" to 1")	1 or 2 Hr		■	Firestop Plug	W-L-0019
Max. 4" blank steel sleeve	1 or 2 Hr		■	Firestop Plug	W-L-0023
Max. 240 sq in blank opening with max dimension of 20" (unframed opening)	1 or 2 Hr	■		FS-ONE MAX	W-L-0030
Max. 2-1/2" dia or 2" x 2" blank	1 or 2 Hr			FS-ONE MAX	W-L-0040
Max. 22-3/4" x 12" blank opening	1 or 2 Hr			Firestop Block	W-L-0042
Max. 24" x 12" blank opening (framed with Z-frame)	1 or 2 Hr			Firestop Block	W-L-0043
NEW Max. 2" blank opening	1-1/2 Hr			CFS-PL	FM 527
NEW Max. 24" x 9" blank opening	2 Hr	■		CFS-BL (Firestop Block)	FM 662
Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
METALLIC PENETRANTS IN FRAMED (GYPSUM) WALLS					
Max. 30" steel, cast iron, max. 6" copper, conduit or max. 4" EMT pipe (AS=0" to 2-1/4")	1 or 2 Hr		■	FS-ONE MAX	W-L-1054
Max. 12" steel, cast iron, max. 4" copper, conduit or EMT pipe in steel sleeve (AS=3/4" to 4-1/2")	2 Hr		■	FS-ONE MAX	W-L-1056
Max. 16" steel, max. 4" copper, in wire mesh sleeve (AS=1/2" to 2-3/4" or 3")	2 Hr			FS-ONE MAX	W-L-1058
Max. 1" steel, conduit or EMT pipes (one or more) (AS=0" to 1")	1 or 2 Hr	■	■	FS-ONE MAX	W-L-1095
Max. 12" steel, cast iron, max. 6" copper, conduit or max. 4" EMT in sleeve (AS=7/8" to 1")	4 Hr			FS-ONE MAX	W-L-1110
Max. 12" steel, max. 6" copper, conduit or max. 4" EMT (AS=3/8" to 1/2")	4 Hr			FS-ONE MAX	W-L-1111
Max. 8" steel or cast iron pipe or max. 4" conduit or EMT (AS=0" to 3/8")	1 or 2 Hr			FS-ONE MAX	W-L-1148
Max. 6" steel, copper, conduit or max. 4" EMT pipe in steel pipe sleeve (AS=0" to 1-7/8")	1 or 2 Hr			FS-ONE MAX	W-L-1164
Max. 6" steel, copper, conduit or max. 4" EMT pipe in steel pipe sleeve (AS=1/2" to 1-1/4")	4 Hr			FS-ONE MAX	W-L-1165
Max. 6" copper, (sleeved) (AS=0" to 1-3/8")	1 or 2 Hr			CP 606 CP 601s CFS-S SIL GG	W-L-1170
Max. 4" EMT or steel conduit (AS=0" to 1")	1 or 2 Hr		■	CP 618	W-L-1175

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	Framed (Gypsum) Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	
Cables	
Cable Trays	Wood-Framed Floors
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	Steel-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	Joints
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) – ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
METALLIC PENETRANTS IN FRAMED (GYPSUM) WALLS (CONTINUED)					
Max. 2" EMT or steel conduits (one or more) (AS varies)	1 or 2 Hr	■		FS-ONE MAX	W-L-1176
Max. 8" steel, cast iron, max. 6" conduit, max. 4" copper, EMT or max. 2" flexible steel conduit (sleeved) (shaft wall) (AS=1/4" to 1-5/8")	1 or 2 Hr			FS-ONE MAX	W-L-1205
Max. 8" steel, cast iron, max. 6" conduit, max. 4" copper, EMT or max. 2" flexible steel conduit (sleeved) (shaft wall) (AS=0" to 1-7/8")	1 or 2 Hr			FS-ONE MAX	W-L-1206
Max. 1" flexible steel conduit (AS=0" to 3/4")	1 Hr			FS-ONE MAX	W-L-1214
Max. 2" aluminum or steel flexible conduit (AS=0" to 1")	1 or 2 Hr			FS-ONE MAX	W-L-1243
Max. 6" steel, cast iron, steel conduit or max. 3" copper, or max. 4" EMT pipe (one or more) (AS varies)	2 Hr			CP 637	W-L-1247
Max. 6" steel, cast iron, steel conduit or max. 3" copper, or max. 4" EMT pipe (one or more) (AS varies)	1 Hr			CP 637	W-L-1248
Max. 2" Steel Conduit or EMT (Multiple in 30"x12" opening) (AS varies)	1 or 2 Hr			Fire Foam	W-L-1249
Max. 4" steel, cast iron, copper, conduit, or EMT (AS=0" to 7/8")	1,2,3, or 4 Hr		■	FS-ONE MAX CP 606 (1,2, or 3 hr only)	W-L-1252
Max. 4" steel, cast iron, copper, conduit or EMT pipe (AS=0" to 7-7/8")	1 or 2 Hr		■	Fire Foam	W-L-1289
Max. 4" steel, cast iron, copper, conduit, or EMT (AS=0" to 1/2")	1 or 2 Hr		■	CP 606	W-L-1290
Max. 30" steel, cast iron, max. 6" copper, conduit or max. 4" EMT pipe (AS= 0" to 1" or 2")	1 or 2 Hr		■	CP 606	W-L-1297
Max. 4" steel, cast iron, conduit, or EMT (AS=0" to 1/2")	1 or 2 Hr		■	FS-ONE MAX CP 606	W-L-1304
Max. 4" cast iron with stainless steel "no-hub" coupling (AS=0" to 1")	1 or 2 Hr			FS-ONE MAX	W-L-1359
Max. 24" steel, cast iron, 6" copper, steel conduit, or 4" EMT (AS= 0" to 7/8") (AS=0" to 1-1/2")	1 or 2 Hr			CFS-S SIL GG	W-L-1360
Max. 8" steel, cast iron, max. 6" steel conduit, max. 4" copper or EMT (AS=0" to 7-7/8")	1 or 2 Hr		■	CP 675T	W-L-1367
Max. 8" steel, cast iron, 6" copper, 6" steel conduit, or EMT (shaft wall) (AS=0" to 7/8")	2 Hr			FS-ONE MAX	W-L-1380
Multiple max. 2" steel, steel conduit, or EMT (AS varies)	1 or 2 Hr			FS-ONE MAX CP 606 (1 Hr only)	W-L-1389
Max. 12" steel, cast iron , 6" copper, EMT or steel conduit (AS=0" to 3-7/8")	1 or 2 Hr		■	FS-ONE MAX	W-L-1392
Max. 8" steel, cast iron, max. 6" steel conduit, max. 4" copper or EMT (U336 or U366 wall) (AS = 0" to 1-7/8")	2 Hr		■	FS-ONE MAX	W-L-1406
Multiple max. 4" steel, steel conduit, or EMT (AS varies)	1 or 2 Hr			FS-ONE MAX	W-L-1408
Max. 3" steel, steel conduit, EMT; max. 1" copper or flexible steel conduit (membrane penetration) (AS varies)	1 or 2 Hr			FS-ONE MAX CP 606 CP 618 CFS-S SIL GG	W-L-1410
Max. 2" steel, cast iron, steel conduit, or EMT running vertically through plane of wall on one side (AS = 0" to 3/4")	1 Hour			FS-ONE MAX	W-L-1412
Max. 1" steel conduit or EMT with steel junction box (AS=0" to 1-1/8")	1 or 2 Hr			FS-ONE MAX	W-L-1440
Max. 3" steel, cast iron, steel conduit, or EMT	1 or 2 Hr			Speed Sleeve	W-L-1441
Medical Gas station Outlet	1 or 2 Hr	■		CP 617	W-L-1462
Max. 1" single or bundled flexible steel conduits (AS=0" to 3")	1 or 2 Hr			FS-ONE MAX	W-L-1464
Max. 8" steel, cast iron, 6" steel conduit, 4" copper or EMT w/ sheet metal sleeve (AS=0" to 1-7/8")	1 or 2 Hr		■	FS-ONE MAX CP 606	W-L-1465
Max. 4" Aluminum tube (c) (AS=min 3")	1 or 2 Hr	■	■	Firestop Block	W-L-1497

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	Framed (Gypsum) Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	
Cables	
Cable Trays	Wood-Framed Floors
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	Steel-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	Joints
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
METALLIC PENETRANTS IN FRAMED (GYPSUM) WALLS (CONTINUED)					
Max. 3/4" steel, cast iron, conduit, or EMT pipe, or max. 1/2" copper pipe (AS=min 0")	1 or 2 Hr	■	■	CFS-D 1"	W-L-1506
NEW 8" Aluminum Tubing (0.060 in. Wall thickness) (AS 1/2" to 1-1/2") Canada Only	2 Hr			FS-ONE MAX	W-L-1550
NEW Max 2" Steel, Cast-iron, steel conduit, EMT, or Copper. (AS 1/4"-5/8") V 497 wall type	1 Hr			FS-ONE MAX	W-L-1551
NEW Max. 12" steel pipe	1 Hr			FS-ONE MAX	FM 286
NEW Max 12" steel pipe with max 18" steel sleeve (AS 3/4" to 4-1/2")	2 Hr			FS-ONE MAX	FM 290
NEW Max. 12" Steel pipe (AS 0" to 1/4")	1/2 Hr			FS-ONE MAX	FM 291
NEW Max. 1" EMT (Max. qty. 8) (AS 1/2" to 1")	1 Hr			FS-ONE MAX	FM 293
NEW Max. 2" EMT (Max. qty. 15)	1-1/2 Hr			FS-ONE MAX	FM 328
NEW Max. 4" Copper (AS 1/4" to 1-5/8")	1/2 Hr			FS-ONE MAX	FM 339
NEW Max 4" Copper with steel sleeve (AS 0" to 1-1/2")	1/2 Hr			FS-ONE MAX	FM 343
NEW Max. one or more 1" or 2"EMT (AS 0" to 4-1/2")	1/2 or 1-1/2 Hr			CP 620	FM 423
NEW Max. 4" Steel conduit	3/4 Hr			CP 618	FM 597
NEW Max. 2" Steel pipe, rigid steel conduit or EMT (Max Qty. 5)	1/2 or 2 Hr			CFS-S SIL GG	FM 678
NEW Max. 6" Copper pipe (AS=0" to 2-1/4")	1 or 2 Hr			FS-ONE MAX	FM 689
NEW Max 6" Copper pipe with steel sleeve (AS=1/2" to 1-1/4")	4 Hr			FS-ONE MAX	FM 695
NON-METALLIC PIPES IN FRAMED (GYPSUM) WALLS*					
Max. 2" PP (Sch 80) (c,v) w/ 1" AB/PVC or 1-1/2" glass or mineral fiber pipe insulation (c,v) (AS=0" to 1/4")	1 or 2 Hr	■		CP 648E w/ Retaining Collar	W-L-2043
Max. 2" PP (Sch 80) (c,v) (AS=3/16" to 5/16")	1 or 2 Hr			CP 648S	W-L-2044
NEW Max. 2" PP (Sch 80), Aquatherm Greenpipe (SDR 7.4 or 11), Aquatherm Greenpipe (SDR 9 or 11), Napsys PVC (c,v) (AS=0" to 5/8")	1 or 2 Hr	■		CP 643N	W-L-2045
NEW Max. 125 mm Fusiotherm (SDR 11 or SDR 7.4 with Fraser) PP manufactured by Aquatherm (AS=0" to 1/2") (Canada Only)	1 or 2 Hr	■		CP 648E/1-3/4"	W-L-2048
Max. 2" ENT (c) (AS=3/4")	1 or 2 Hr	■	■	FS-ONE MAX	W-L-2075
Max. 10" PVC, CPVC, max. 6" ABS,FRPP or max. 4" PVDF (c,v) (AS=0" to 1/2") Max 4' PEX	1 or 2 Hr	■		CP 643N CP644	W-L-2078
Max. 6" PVC, CPVC, ABS or FRPP (c,v) (sleeve optional) (AS=1/4" to 1-1/4")	1 or 2 Hr			CP 643N	W-L-2084
Max. 2" PVC or CPVC (c) (AS=3/4" to 1-1/4")	1 or 2 Hr	■	■	FS-ONE MAX	W-L-2098
Max. 2" PVC or CPVC (c,v) (sleeve Optional) (AS=1/4" to 11/16") (angled penetrant allowed)	1 or 2 Hr			FS-ONE MAX	W-L-2128
Max. 2" Fiber Optic Raceway (Innerduct) or ENT pipe (AS=1/4" to 7/8")	1 or 2 Hr	■	■	FS-ONE MAX	W-L-2165
Max. 2" PVC or CPVC (c) (sleeved) (AS=1/2" to 1")	4 Hr			FS-ONE MAX	W-L-2184
Max. 1" PEX (c)(sleeved) (AS=1/2" to 1-3/8") (angled penetrant allowed)	1 or 2 Hr		■	FS-ONE MAX	W-L-2186
Max. 1-1/2" ABS (c,v) (AS=3/8" to 3/4")	1 Hr			FS-ONE MAX	W-L-2196
Max. 1" Fiber Optic Raceway (Innerduct) (AS=1/4" to 3/8")	1 Hr			FS-ONE MAX	W-L-2197
Max. 4" PVC or CPVC (c,v) (shaft wall) (AS=0" to 1/4")	2 Hr			CP 643N	W-L-2217
Max. 2" PVC (c,v) (AS=9/16")	2 Hr	■		CP 648E/1"	W-L-2232
Max. 2" ABS (c,v) (AS=9/16")	2 Hr			CP 648E/1"	W-L-2234

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
NON-METALLIC PIPES IN FRAMED (GYPSUM) WALLS* (CONTINUED)					
Max. 2" ABS, PVC, CPVC, FRPP or 1" PEX (c,v) (AS=5/16")	1 or 2 Hr			CP 648E/1" or CP648S	W-L-2235
Max. 8" PVC or CPVC (c,v) (AS=0" to 1-3/8")	1 or 2 Hr	■		CP 648E/1-3/4"	W-L-2236
Max. 2" PVC or CPVC (c) (AS=0" to 5/8")	1 or 2 Hr	■	■	FS-ONE MAX	W-L-2244
Max. 6" PVC, CPVC, ABS or FRPP (c,v) (AS varies)	4 Hr	■		CP 643N	W-L-2245
Max. 4" PVC or CPVC (c,v) (AS=0" to 1/2")	1 or 2 Hr			Ret. Collar w/ FS-ONE MAX	W-L-2251
Max. 3" PVC or CPVC (c,v) (AS=3/16" to 1/4")	1 Hr	■		CP 648E/1" or 1-3/4", or CP648S	W-L-2284
Max. 4" PVC connecting to 4" Cast Iron (w/No Hub Coupling) (Shaft Wall) (sleeved) (c,v) (AS varies)	2 Hr			FS-ONE MAX w/CP 643N	W-L-2292
Max. 9" PVDF (c,v) (sleeved) (AS=0" to 1/2")	1 or 2 Hr	■		CP 648E/1-3/4"	W-L-2295
Max. 12" FRP pipe (c,v) (sleeved) (AS=0" to 1/2")	1 or 2 Hr	■		CP 648E/1-3/4"	W-L-2315
Max. 6" Glass Pipe (c,v) (AS=0" to 1-1/4")	1 or 2 Hr			FSONE MAX	W-L-2330
Max. 4" ABS, PVC or CPVC (c,v) (AS=0" to 1/2")	1 or 2 Hr	■		CP 648E/1" w/ Ret Collar	W-L-2335
Max. 4" PVC, CPVC, or ABS (c,v) (angled pipe) (AS=0" to 3/4")	1 or 2 Hr			CP 648E/1-3/4"	W-L-2340
Max. 12" PVC or CPVC (c,v) (AS=0" to 1/2")	1 or 2 Hr	■		CP 648E/1-3/4"	W-L-2341
Max. 4" ABS, PVC, or CPVC (c,v) (AS=nom 3/8" to 1/2")	2 Hr	■		CP 648E/1-3/4"	W-L-2344
Max. 2" FlowGuard Gold or Blazemaster CPVC (c) (AS=0" to 1-1/4")	1 or 2 Hr	■	■	FS-ONE MAX	W-L-2377
Max. 6" PVC, ABS or CPVC (c,v) (AS varies)	1 or 2 Hr		■	CP 648S	W-L-2406
Max. 4" PVC, ABS, FRPP or CPVC with optional coupling (c,v) (AS=0" to 1/2")	1 or 2 Hr			CP648E/1" or 1-3/4"	W-L-2411
Max. 2" ENT (c) (AS=1/4" to 3/4")	3 or 4 Hr	■		CP 618	W-L-2443
Max. 2" ENT (c) (AS=3/16" to 5/16")	3 or 4 Hr	■		CP 648E FS-ONE MAX	W-L-2444
Max. 3" PVC, ABS, or CPVC branch lines coming off of 6" cast iron soil stack within wall (AS=3/16" to 5/16")	1 or 2 Hr			CP648S FS-ONE MAX	W-L-2445
Max. 6" PVC, CPVC, or ABS (c,v) (AS=0" to 1/2")	1,2,3 or 4 hr		■	CP648E/1-3/4" w/ Ret Collar	W-L-2447
Max. 2" PVC or PP (c,v) (AS=0" to 1/4")	1 or 2 hr			CP648E/1" w/ Ret Collar	W-L-2453
Max. 1-1/2" PVC, CPVC, RNC, or 1" PEX (closed) (one or more) (AS = 0" to 1")	1 or 2 hr			FS-ONE MAX	W-L-2466
Max. 4" diameter bundle of max. 1" PEX (closed) (AS = 0" to 1")	1 or 2 hr			FS-ONE MAX	W-L-2467
Max. 3" PVC, ABS, CPVC or RNC (c,v) (U336 or U366 wall) (AS = 3/16" to 5/16")	2 Hr		■	CP 648S FS-ONE MAX	W-L-2471
Max. 2" PVC, CPVC, or RNC (c,v) (U336 or U366 wall) (AS = 0" to 5/8")	2 Hr	■		FS-ONE MAX	W-L-2472
Max. 4" PP (c,v) (AS = 0" to 1/2")	1 or 2 Hr	■	■	CP 643N	W-L-2473
Max. 2" PVC, CPVC, PEX, RNC (c,v) (AS = 0" to 1/2")	1 or 2 Hr		■	FS-ONE MAX	W-L-2474
Max. 1" PEX (mq 6) (c) (AS= 1/2" to 1")	1 or 2 Hr			FS-ONE MAX	W-L-2480
Max. 2" PVC (c,v) with optional coupling (AS=0" to 1/2")	1 Hr		■	FS-ONE MAX	W-L-2482
Max. 2" PP, 50mm Fusiother (c,v), or Polystar CT-White (c) (AS=0" to 5/8")	1 or 2 Hr			CP 643N	W-L-2509
Max. 4" PP (SDR 11), Max 8" Aquatherm Greenpipe PP (SDR 7.4 or 11), 8" Aquatherm Bluepipe PP (SDR 9 or 11), 4" PP Orion Polystar Whiter (SDR 11, 9, or 7.4), 4" Niron PP-RCT (SDR 7.3, 11 or 17) (c, v), 8" Niron PP-RCT (SDR 7.3 or 11) (c), 8" Aquatechnik PP-RCT (SDR 7.4 or 11) (c), 8" Uponor PP-RCT (SDR 9 or 11) (c) AS=0" to 1/2") UL only	1 or 2 Hr			CP 648E/1-3/4" w/ Ret Collar	W-L-2510
Max. 1" PEX (bundled) through CP 653 Speed Sleeve	1 or 2 Hr			Speed Sleeve	W-L-2537

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



NEW

Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
NON-METALLIC PIPES IN FRAMED (GYPSUM) WALLS* (CONTINUED)					
Max. 2" ENT (one or more) through CP 653 Speed Sleeve	1 or 2 Hr			Speed Sleeve	W-L-2538
Max. 3" PVC or CPVC (c,v) through CP 653 Speed Sleeve	1 or 2 Hr			Speed Sleeve	W-L-2541
Max. 3/8" Single or bundled pneumatic tube (AS = 0" to 1")	1 or 2 Hr			FS-ONE MAX	W-L-2557
Max. 1/2" Single or bundled Dura-line Microduct (AS=0" to 1")	1 or 2 Hr	■		FS-ONE MAX	W-L-2558
Max. 1/2" Single or bundled Dura-line Microduct (AS=0" to 1")	1 or 2 Hr	■		CP 643N w/ CP 618	W-L-2559
Cable bundle (various cables) in flexible nylon fiber optic cable routing system (sleeved) (AS=0" to 1" outside sleeve) (AS=0" to 3" inside sleeve)	1 or 2 Hr			CP 618	W-L-2567
Cable bundle (various cables) in flexible nylon fiber optic cable routing system (sleeved) (AS=0" to 1" outside sleeve) (AS=0" to 3" inside sleeve)	1 or 2 Hr			Firestop Plug	W-L-2568
Max. 2" PVDF (c,v), max 1" PP (c) (AS varies)	1 or 2 Hr		■	CP 648E/1" or CP 648S	W-L-2583
Max. 8" HDPE (Sch 40) (c) (AS=min 1-1/4")	1 or 2 Hr			CP 648E/1-3/4" w/ Firestop Block	W-L-2584
Max. 3" PEX (Uponor or Wirsbo) (AS=0" to 3/8")	1 or 2 Hr			CP 648E/1-3/4" CP 643N	W-L-2593
Max. 1" PP (Sch 80) (c) (sleeved) (AS=3/16" to 1/2")	1 or 2 Hr		■	CP 648E/1"	W-L-2602
Max. 1-1/4" PP pipe polystar (SDR 11) (c), Max. 1" PP pipe polystar (SDR 9), Max. 1-1/4" Cosmoplast PP-R (SDR 6), Max. 1-1/4" Coprax PP-R (SDR 6), Max. 2" Aquatherm Greenpipe (SDR 7.3, 7.4 or 9), Max. 2" Aquatherm Bluepipe (SDR 9), Max. 2" Nupi Niron PP-RCT (SDR 7.3 or 9), Max. 2" Aquatechnik PP-RCT (SDR 7.4), Max. 2" Uponor (SDR 9 or 11) (AS=0" to 1") UL only	1 or 2 Hr	■		FS-ONE MAX	W-L-2603
Max. 1-1/2" PP Fusiotherm and Polystar CT-White (AS=0" to 1")	1 or 2 Hr	■		CP 648E/1-3/4"	W-L-2604
Max 1/2" Single Dura-line Microduct or max. 3/4" PEX tubing (AS=0" to 1/2")	1 or 2 Hr	■	■	CFS-D 1"	W-L-2605
Max. 6" Cosmoplast PP-R pipe (SDR 6), Max. 6" Coprax (SDR 6), Aquatherm Greenpipe PP-R (SDR 7.4 or 11), Aquatherm Bluepipe (SDR 9 or 11), Max. 6" HPDE (SDR 11), Max. 6" Nupi Niron (SDR 7.3 11 or 17), Aquatechnik PP-RCT (SDR 7.4 or 11), Max. 6" Uponor (SDR 9 or 11) (AS varies) UL only	1 or 2 Hr	■	■	CP 648-E FS-ONE MAX	W-L-2649
Max. 2" ENT (50 Pa) (AS=0" to 1/2")	1 or 2 Hr	■		CP 643N	W-L-2676
Max. 2" ENT (50 Pa) (AS=3/16" to 3/4")	1 or 2 Hr	■		CP 648E	W-L-2677
Max. 6" Polypropylene (PP) Aquatherm Greenpipe (closed) (steel sleeve)	2 Hr	■		FS-ONE MAX CP 648-E	W-L-2683
Max. 4" PVC, CPVC, Rigid nonmetallic conduit (AS 3/8" to 5/8") V497 Wall type	1 Hr			CP 648E/1-3/4" CP 643N	W-L-2694
Max. 14" PVC, CPVC (AS 1/2" to 1-1/2")	1 or 2 Hr			CP 648E/1-3/4" CP 648E/1"	W-L-2741
Max. 4" Aquatherm Bluepipe PP-R (SDR 9, 11, or 17.6), Aquatherm Greepipe, PP-R (SDR 7.4 or 11), Aquatechnik (SDR 7.4 or 11), Nupi Niron PP-RCT (SDR 7.3, 9 or 11), Uponor (SDR 9 or 11), Napsys PVC (AS varies) 50 Pa Canada only	1 or 2 Hr	■		CP 648E/1-3/4"	W-L-2744
Max. 4" PVC or CPVC (Sch. 40) (AS 0" to 1/2") Canada only 50 Pa	2 Hr	■		CP 643N	W-L-2766
Max. 3" PVC Clean out	1 Hr	■	■	CP 648E/1" CP 617	W-L-2768
Max. 2" XFR-PVC with XFR-PVC Tee fitting, 2" PVC with PVC Tee fitting, 3/4" PEX (SDR 9) with brass or copper Tees. (AS 1/4" to 7/8") Canada only 50 Pa	1 Hr	■	■	FS-ONE MAX	W-L-2770
Max. 2" XFR-PVC with XFR-PVC elbow, PVC with PVC elbow, 3/4" PEX (SDR 9 with brass or copper elbow (AS 1/4" to 7/8") Canada only 50 Pa	1 Hr		■	FS-ONE-MAX	W-L-2771
Max. 2" PVC, RNC, or ABS pipe penetrating one side of wall assembly (AS=0" to 1")	1 Hr	■		FS-ONE MAX	HI/PF 60-01
Max. 6" ABS, 1-1/2" PVC, and 6" FRPP	2 Hr			CP 643N	FM 239
Max. 4" PVC (AS=0" to 1/2")	2 Hr			CP 643N	FM 278

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
NON-METALLIC PIPES IN FRAMED (GYPSUM) WALLS* (CONTINUED)					

NEW	Max. 4" ABS with steel sleeve	2 Hr			FS-ONE MAX	FM 287
NEW	Max. 1-1/2" ABS or 2" ABS	1/2 Hr			FS-ONE MAX	FM 312
NEW	Max. 1-1/2" ENT with steel sleeve	1/2 Hr			FS-ONE MAX	FM 313
NEW	Max 2" ABS (AS 1/2" to 1")	1-1/2 Hr			FS-ONE MAX	FM 338
NEW	Max 4" PVC	1 Hr			CP 643N	FM 342
NEW	Max. 2" PVC (AS 0" to 1/2") Similar to W-L-2474	2 Hr			FS-ONE MAX	FM 349
NEW	Max 6" FRPP (AS 0" to 1/2") 50 Pa	1 or 1-1/2 Hr			CP 643N	FM 515
NEW	Max. 2" ABS (AS Nom. 3/16") 50 Pa	1-1/2 Hr			CP 648E	FM 516
NEW	Max. 4" ABS (AS 0" to 1/2") 50 Pa	1 or 2 Hr			CP 643N	FM 517
NEW	Max. 6" FRPP or 4" ABS	1/2, 1, and 1-1/2 Hr			CP 648S FS-ONE MAX	FM 523
NEW	Max. 6" PVC with steel sleeve (AS 9/16" to 13/16")	2 Hr			CP 648S FS-ONE MAX	FM 524
NEW	Max 4" ABS with coupler (AS 0" to 1/2") Similar to WL 2411	2 Hr			CP 648E FS-ONE MAX	FM 525
NEW	Max. 6" Glass pipe (AS=0" to 1-1/4")	1 or 2 Hr			FS-ONE MAX	FM 689
NEW	Max. 2" ENT (AS =1/4" to 7/8")	1 Hr			FS-ONE MAX	FM 690
NEW	Max 2" PP pipe	2 Hr	■		CP 648E FS-ONE MAX	FM 696

CABLES IN FRAMED (GYPSUM) WALLS

Cable bundle (power cables) (sleeved)	1 Hr				FS-ONE MAX	W-L-3046
Cable bundle (power cables)	2 Hr				FS-ONE MAX	W-L-3047
Cable (telephone cable)	2 Hr		■		FS-ONE MAX	W-L-3058
Cable bundle (various cables) (Steel sleeve optional) (sleeve may be continuous on one side of wall)(cables may be at 45° angle) (AS=0" to 1")	1 or 2 Hr		■		FS-ONE MAX CP 606 CP 618	W-L-3065
Cable bundle (SER power cables) (AS=1/2" to 1-1/2")	1 or 2 Hr		■		FS-ONE MAX	W-L-3071
Cable bundle (various cables)(sleeve optional) (AS=0" to 2")	1 or 2 Hr		■		Firestop Block	W-L-3079
Cable bundle (various cables) (sleeve optional)	1 or 2 Hr				CP 618	W-L-3111
Cable bundle (various cables)(sleeved) (AS around sleeve=0" to 1")	1 or 2 Hr				CP 618	W-L-3112
Cable bundle (various cables)(Unique Firestop Sleeve)	1 or 2 Hr		■		CP 618	W-L-3122
Cable bundle (various cables)(sleeved) (AS=1/4" to 1")	4 Hr				FS-ONE MAX	W-L-3139
Cable bundle (various cables)(sleeved)(shaft wall) (AS=1/4" to 3/4")	1 or 2 Hr				FS-ONE MAX	W-L-3161
Cable bundle Cable Rack (Telecom) (various Cables) (AS=0" to 8")	1 or 2 Hr	■			Firestop Block	W-L-3185
Cable bundle (various cables) (PVC Sleeve) (AS=0" to 1-3/8")	1 or 2 Hr				CP 618 FS-ONE MAX	W-L-3213
Cable bundle (various cables) (Unique Firestop Sleeve)	1 Hr				CP 618	W-L-3220
Cable bundle (various cables) (AS varies)	1 or 2 Hr				Firestop Plug	W-L-3224
Cable bundle (various cables) (P-W-Steel Sleeve) (AS varies)	1 or 2 Hr				Firestop Block	W-L-3226
Cable bundle (various cables) (AS=0" to 1")	1 or 2 Hr				Firestop Plug	W-L-3272

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
CABLES IN FRAMED (GYPSUM) WALLS (CONTINUED)					
Cable bundle (various cables) (Unique Firestop Sleeve) (AS=1/4" to 1-1/4")	3 or 4 Hr	■	■	CP 618	W-L-3273
Cable bundle (various cables) (sleeved) (AS=0" to 1-5/8")	3 or 4 Hr			Firestop Plug	W-L-3277
Cable bundle (various cables) (shaft wall) (AS=0" to 1")	2 Hr			FS-ONE MAX	W-L-3278
Cable bundle (various cables) (Unique Firestop Sleeve) (AS=0" to 3")	1 or 2 Hr		■	Firestop Plug	W-L-3282
Cable bundle (various cables)	1 or 2 Hr			Firestop Block w/ Z-frame	W-L-3296
Cable bundle (various cables) (U336 or U366 wall) (AS = 0" to 1")	2 Hr			FS-ONE MAX	W-L-3307
Max. 3/C No 8 AWG metal clad cables (max qty = 3) (membrane penetration) (AS = 0" to 1" with CP 606), or 0" to 1-1/2" with FS-ONE)	1 or 2 Hr			FS-ONE MAX	W-L-3310
Cable bundle (various cables) (Unique Dual or Triple Split Sleeve)	1 or 2Hr			CP 618	W-L-3316
Max. 3" steel conduit sleeve with various cables existing sleeve (membrane penetration) (AS varies)	1 or 2 Hr			FS-ONE MAX CP 606 CP 618 CFS-S SIL GG	W-L-3320
Cable bundle (various cables) through CP 653 Speed Sleeve	1, 2, 3, or 4 Hr	■	■	Speed Sleeve	W-L-3334
Cable bundle (various cables) through CP 653 Speed Sleeve	1 or 2 Hr	■	■	Speed Sleeve	W-L-3335
Cable bundle Cable Rack (Telecom) (various cables) (AS=0" to 12")	1 or 2 Hr	■		Firestop Block	W-L-3382
Cable bundle (various cables) through CP 653 Speed Sleeve	1 or 2 Hr	■	■	Speed Sleeve (multiple)	W-L-3384
Cable bundle (various cables)	1, 2 or 3 Hr			FS-ONE MAX CP 606	W-L-3385
Cables (various cables) through CFS-T Firestop Cable Transit	1 or 2 Hr			CFS-T	W-L-3391
Cables (various cables) through CFS-T Firestop Cable Transit	1 or 2 Hr			CFS-T RR	W-L-3392
Cable bundle (various cables)	1 or 2 Hr	■	■	CFS-SL RK	W-L-3393
Cable bundle (various cables)	1 or 2 Hr	■		CFS-SL SK	W-L-3394
Cables (various cables) through Firestop Gang Plate	1 or 2 Hr		■	CFS-SL GP CP 653 CFS-SL SK CFS-SL RK	W-L-3395
Cable bundle (various cables) (0 to 100% fill)	1 or 2 Hr		■	Cable Collar	W-L-3396
Cable bundle (various cables) (Steel sleeve optional) (sleeve may be continuous on one side of wall)(cables may be at 45° angle) (AS=0" to 1")	1 or 2 Hr		■	CFS-S SIL GG	W-L-3413
Cable bundle (various cables) (AS=min 0")	1 or 2 Hr	■	■	CFS-D 1"	W-L-3414
Cable bundle (various cables) (AS=min 0")	1 or 2 Hr	■	■	CFS-D 1"	W-L-3415
Cable bundle through Max. 3/4" Steel Conduit Sleeve extended Max. 12"; VF=0-100%; AS=Min.0"(CFS -D 1" Firestop Cable Disc)	2 Hr	■		CFS-D 1" FS-ONE MAX CP 606	W-L3441
NEW Max 1" Steel Conduit Sleeve, Single Cable or Cable bundle (0-100% visual Fill) CFS -D 1" Firestop Cable Disc (AS 0" to 1/8") Membrane	1 or 2 Hr		■	CFS -D 1" Firestop Cable Disc	W-L-3446
NEW Max 1" Steel Conduit Sleeve, Single Cable or Cable bundle (0-100% visual Fill) CFS -D 1" Firestop Cable Disc (AS 0" to 1/8")	1 or 2 Hr		■	CFS -D 1" Firestop Cable Disc	W-L-3447
NEW Max 7/C 12 AWG copper conductor cable tightly bundled filled 33%	2 Hr			FS-ONE MAX	FM 285
NEW Various Cables bundled to fill 33%	1 Hr			FS-ONE MAX	FM 292
NEW Max. 2-1/4" Cable bundle (AS 1/4" to 3/4")	1/2 or 1 Hr			FS-ONE MAX	FM 340
NEW Various cables 0-100% visual fill	1 or 2 Hr			CP 653 Speed sleeve	FM 575

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
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CABLES IN FRAMED (GYPSUM) WALLS (CONTINUED)

NEW Various cables 0-100% visual fill	1 or 2 Hr	■		CP 653 Speed sleeve	FM 575
NEW Various cables Maximum 36% fill	1 Hr			CP 618	FM 596
NEW Various cables through cable transit system	2 Hr	■		Cable Transit	FM 666
NEW Various cables through cable transit system	2 Hr	■		Cable Transit	FM 667

CABLE TRAYS IN FRAMED (GYPSUM) WALLS

Aluminum or Cable Tray (24" x 6") (AS=0" to 4")	1 or 2 Hr		■	Firestop Block	W-L-4011
Aluminum or Steel Spine Cable Tray (18" x 6") (AS=1" to 4-1/2")	1 or 2 Hr			Firestop Block	W-L-4019
Aluminum Cable Tray (24" x 4") (AS=0" to 5")	1 or 2 Hr			Fire Foam	W-L-4034
Aluminum or Steel Cable Tray (24" x 4") (AS=0" to 26")	1 or 2 Hr			Firestop Block	W-L-4038
Max. 20" x 2" cable rack (Telecom) (various cables) (AS=0" to 3/4")	1 or 2 Hr			CP 675T	W-L-4048
Max. 25" x 2" cable rack (max.qty 3)(Telecom)(various cables) (AS varies)	1 or 2 Hr			CP 675T Firestop Blocks w/ Z frame	W-L-4049
Max. 25" x 2" cable rack (max.qty 6) (Telecom)(various cables) (AS varies)	1 or 2 Hr			CP 675T Firestop Blocks w/ Z frame	W-L-4050
Aluminum or Steel Cable Tray (24" x 6") (AS=0" to 3")	1 or 2 Hr			FS-ONE MAX	W-L-4060
Aluminum or Steel Cable Tray (24" x 4") (AS=0" to 26")	1 or 2 Hr			Firestop Block	W-L-4081
NEW Max. 20" x 2" wide open ladder steel cable tray, Max. 5" cable height installed.	1 Hr			CFS-BL CP 675T Firestop board CP 617	FM 519
NEW Max. 18" x 6" aluminum cable tray, Max. 6" cable height installed.	2 Hr			CFS-BL	FM 661

INSULATED PIPES IN FRAMED (GYPSUM) WALLS

Max. 10" steel pipe with max. 2" glass fiber insulation (Steel sleeve optional) (AS=1-1/8")	1 or 2 Hr		■	FS-ONE MAX w/Ret Collar	W-L-5025
Max 2" steel or copper with max. 3/4" AB/PVC insulation (sleeved) (AS=1-3/16" to 1-5/8")	2 Hr		■	FS-ONE MAX	W-L-5027
Max. 4" steel or max. 2" copper with max. 1/2" to 1" AB/PVC insulation (AS=0" to 1-1/2")	1 or 2 Hr		■	FS-ONE MAX	W-L-5028
Max. 12" steel, cast iron, max. 6" copper with 1", 1-1/2", or 2" glass fiber or max. 2" thick calcium silicate insulation (AS=0" to 1-7/8")	1, 2 or 3 Hr	■	■	FS-ONE MAX	W-L-5029
Max. 12" steel or max. 6" copper pipe with max. 3" FOAMGLAS insulation with optional metal jacket	1 or 2 Hr			FS-ONE MAX	W-L-5046
Max. 20" steel, max. 6" copper pipe with max. 3" glass fiber and mineral fiber insulation (Steel sleeve optional)	1 or 2 Hr			FS-ONE MAX	W-L-5047
Max. 6" steel, copper, conduit or EMT pipe with max. 1-1/2" glass fiber insulation in a sleeve (AS=1-1/4" to 1-1/2")	4 hr			FS-ONE MAX	W-L-5073
Max. 12" steel or max. 6" copper pipe with max. 2" glass fiber insulation (steel sleeve optional) (AS=0" to 1-7/8")	1 or 2 Hr			FS-ONE MAX	W-L-5096
Max. 10" steel, cast iron or max. 4" copper pipe with max. 3" glass fiber insulation (AS=1/2" to 3/4")	2 Hr			CP 648E/1-3/4"	W-L-5125
Max. 10" steel pipe with max. 3" glass fiber insulation (AS=1/2" to 3/4")	2 Hr			CP 648E/1-3/4"	W-L-5126

Blank Openings
Metallic Penetrants
Non-Metallic Pipes*
Cables/Cable Trays
Insulated Pipes
Miscellaneous Electrical (Busway)
Miscellaneous Mechanical/Ducts
Mixed Penetrating Items*
Blank Openings
Metallic Penetrants
Non-Metallic Pipes*
Cables
Cable Trays
Insulated Pipes
Miscellaneous Electrical (Busway)
Miscellaneous Mechanical/Ducts*
Mixed Penetrating Items*
Blank Openings
Metallic Penetrations
Non-Metallic Pipes*
Cables
Insulated Pipes
Miscellaneous Mechanical/Duct Penetrations
Mixed Penetrating Items*
Metallic Penetrations
Non-Metallic Pipes*
Cables
Insulated Pipes
Miscellaneous Mechanical/Duct Penetrations
Mixed Penetrating Items*
Bottom of Wall (BW-S Series)
Continuity Head-of-Wall (CJ-D Series)
Floor-to-Floor (FF-D Series)
Floor-to-Wall (FW-D Series)
Intertek Series (ASTM E 1966)
Head-of-Wall (HW-D Series)
Head-of-Wall (HW-S Series)
Wall-to-Wall (WW-D Series)
Wall-to-Wall (WW-S Series)
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307

Concrete Floors/Walls

Framed (Gypsum) Walls

Wood-Framed Floors

Steel-Framed Floors

Joints



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
INSULATED PIPES IN FRAMED (GYPSUM) WALLS (CONTINUED)					
Max. 1" copper with max. 3/4" thick AB/PVC (Shaft Wall) (sleeved) (AS=1/4" to 1-1/8")	1 or 2 Hr			FS-ONE MAX	W-L-5143
Max. 1" copper with max. 2" thick glass fiber (Shaft Wall) (sleeved) (AS=1/4" to 1-1/8")	1 Hr	■		FS-ONE MAX	W-L-5144
Max. 12" steel, 6" copper with 1-1/2" or 3" thick Foam glass insulation, optional metal jacket (AS=0" to 1-1/4")	1 or 2 Hr			FS-ONE MAX	W-L-5223
Beverage line set. Multiple 1/2" dia PEX or PE Tubing with AB/PVC Insulation (AS=0" to 1")	1 or 2 Hr			CP 648E/1-3/4" w/ Ret Collar	W-L-5224
Max. 4" PVC or CPVC plastic pipe with nom. 1-1/2" Glass Fiber pipe insulation (AS=0" to 1")	1 or 2 Hr	■		CP 648E/1-3/4" w/ Ret Collar	W-L-5225
Max. 8" steel, cast iron, 4" copper with 1" or 1-1/2" Glass fiber pipe insulation (shaft wall) (AS=1/4" to 1-1/8")	2 Hr			FS-ONE MAX	W-L-5240
Max. 2" steel, cast iron or copper with max. 2" glass fiber pipe insulation (shaft wall) (AS=3/16" to 13/64")	2 Hr			CP 648E FS-ONE MAX	W-L-5244
Max. 4" steel, cast iron, or copper pipe w/ 1" to 1-1/2" glass fiber pipe insulation (AS= 0" to 7/8")	1 or 2 Hr		■	FS-ONE MAX CP 606 CP 601s CFS-S SIL GG	W-L-5257
Max. 2" steel, cast iron, or copper w/ nom 1-1/2" glass fiber (U336 or U366 wall) (AS = 0" to 7/8")	2 Hr	■	■	FS-ONE MAX	W-L-5259
Max. 2" steel, cast iron, or copper w/ nom 3/4" AB/PVC (U336 or U366 wall) (AS = 0" to 7/8")	2 Hr		■	FS-ONE MAX	W-L-5260
Max. 12" steel, cast iron or 6" copper with 2" foam glass (shaft wall) (AS=1/4" to 1-1/4")	2 Hr			FS-ONE MAX	W-L-5261
Max. 4" steel, cast iron, max. 2" copper with 1/2" to 3/4" AB/PVC (AS=0" to 7/8")	1 or 2 Hr		■	FS-ONE MAX CP 606	W-L-5263
Max. 2" steel, cast iron, or copper with 1-1/2" glass fiber (pipe may penetrate at 45° angle) (AS = 0", cont. pt contact)	1 or 2 Hr		■	FS-ONE MAX	W-L-5274
Max. 12" steel or cast iron pipe with max. 4" Calcium silicate pipe insulation (AS=0" to 1-1/4")	1 or 2 Hr	■		FS-ONE MAX w/ steel jacket	W-L-5292
Max. 1-1/2" CPVC (c) with 1" glass fiber (AS=1/4" to 7/8")	1 or 2 Hr	■		FS-ONE MAX	W-L-5293
Max. 2" CPVC (c) with 1" glass fiber or AB/PVC (AS=1/4" to 7/8")	1 or 2 Hr	■		CP 648E/1-3/4" w/ FS-ONE MAX	W-L-5294
Max. 2" (63mm) PP Fusiotherm or Polystar CT-White w/ 1/2" to 1-1/2" glass fiber (AS=3/8" to 1-1/8")	1 or 2 Hr	■		CP 648E/1-3/4"	W-L-5303
Max. 3" Cosmoplast Polypropylene (PP-R) with Nom. 1" AB/PVC or Polyolefin Insulation (optional steel sleeve)	2 Hr	■		FS-ONE MAX CP 648-E	W-L-5335
Max. 1/2" PEX with 3/4" AB/PVC (AS=1/4" to 7/8")	1 or 2 Hr	■		FS-ONE MAX	W-L-5342
Max. 6" steel or cast iron pipe 3" glass fiber (AS=1/4" to 1-3/4")	1 or 2 Hr	■		FS-ONE MAX	W-L-5343
Max. 4" PEX with 1-1/2" glass fiber (AS=0" to 1/8")	1 or 2 Hr	■		CP 648E	W-L-5344
Max. 7/8" Streamline ACR-Type L Copper Tubing with Nom. 1/2" (Duraguard) Polyethylene Insulation	1 or 2 Hr	■		CP 648-E FS-ONE MAX	W-L-5345
One or more Max. 7/8" Streamline ACR-Type L Copper Tubing with Nom. 1/2" (Duraguard) Polyethylene Insulation (Max QTY. = 4)	1 or 2 Hr	■		CP 648-E FS-ONE MAX	W-L-5346
Max. 8" Polypropylene (PP) Aquatherm Bluepipe with Nom. 2" Cellular Glass Insulation or Nom. 1" Glass Fiber Insulation	2 Hr	■		FS-ONE MAX CP 648 E	W-L-5347
Max. 10" steel pipe with nom. 2" thick glass fiber insulation, Max. 6" copper pipe with nom. 2" thick glass fiber insulation.	2 Hr			FS-ONE MAX	FM 277

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
INSULATED PIPES IN FRAMED (GYPSUM) WALLS (CONTINUED)					
Max 4" Copper with max 1-1/2" thick glass fiber insulation	1-1/2 Hour			FS-ONE MAX	FM 289
Max 4" Copper with 2" glass fiber insulation with steel sleeve	1-1/2 Hr			FS-ONE MAX	FM 341
Max 2" PP pipe with Nom. 1-1/2" thick glass fiber insulation	2	■		FS-ONE MAX CP 648 E	FM 697
MISCELLANEOUS ELECTRICAL (BUSWAY) IN FRAMED (GYPSUM) WALLS					
Max. 12" x 4" Fiber Optic Cable Tray (ABS) (AS=0" to 4")	1 or 2 Hr	■		Firestop Block	W-L-6017
Max. 11-1/4" x 4-1/4" Electrical Busway (AS=1/4" to 1-1/4")	1 or 2 Hr			FS-ONE MAX	W-L-6019
MISCELLANEOUS MECAHNCIAL/DUCTS IN FRAMED (GYPSUM) WALLS*					
Max. 6" diameter sheet metal duct w/o damper (AS=1/2" to 1-1/2")	1 Hr			FS-ONE MAX	W-L-7017
Max. 48" x 24" sheet metal duct w/o damper (AS=0" to 2")	1 or 2 Hr		■	FS-ONE MAX CP 606	W-L-7040
Max. 20" spiral wound duct w/o damper, or 12" sheet metal duct (AS=0" to 1-1/2")	1 or 2 Hr			FS-ONE MAX CP 601s CP 606	
Max. 6" sheet metal duct w/o damper (sleeved) (Shaft Wall) (AS=1-4" to 3/4")	1 or 2 Hr			FS-ONE MAX	W-L-7068
Max. 7" x 7" sheet metal duct w/o damper (No angles) (sleeved) (Shaft Wall) (AS=1/4" to 3/4")	1 or 2 Hr			FS-ONE MAX	W-L-7069
Max. 13" x 12" sheet metal duct w/o damper (no angles) (AS=1/4" to 3/4")	1 Hr			FS-ONE MAX	W-L-7096
Max. 32" Metal Fab Grease Duct (AS varies)	1 or 2 Hr	■		FS-ONE MAX	W-L-7124
Mechanical Support member Steel strut, steel cable, steel rod, steel angle (AS=1/8" to 7/8")	1 or 2 Hr			FS-ONE MAX CP 606	W-L-7130
Max. 24" x 24" sheet metal duct w/o damper (no angles) (AS=0" or 1/2" to 1")	1 or 2 Hr			CP 606	W-L-7143
Mechanical Support Member (Steel strut, steel angle, steel channel) (shaft wall) (membrane penetration) (AS=0" to 7/8")	1 or 2 Hr			FS-ONE MAX	W-L-7154
Max. 100" x 100" sheet metal duct (w/o damper) (AS=0" to 2") Optional: Flamebar duct coating	1 or 2 Hr		■	FS-ONE MAX CP 606 CFS-S SIL	W-L-7155
Max. 10" x 10" sheet metal duct (w/o damper) (AS= 1/4" to 1") (no angles)	1 Hr			CP 606	W-L-7159
Max. W14 x 90 Steel I-beam Service Support (AS=1/2" to 3")	1 or 2 Hr			FS-ONE MAX	W-L-7188
Max. 4" sheet metal duct (30 Ga) (membrane) (AS=0" to 1-1/2")	2 Hr	■		FS-ONE MAX	W-L-7198
Max. 48" x 24" sheet metal duct w/o damper (AS=0" to 2")	1 or 2 Hr		X	CFS-S SIL GG	W-L-7213
Max. 20" spiral wound duct w/o damper, or 12" sheet metal duct (AS=0" to 1-1/2")	1 or 2 Hr			CFS-S SIL GG	W-L-7214
Max. 30" x 30" sheet metal duct w/o damper (AS=1/4" to 1-1/8") Optional: Flamebar duct coating	1 or 2 Hr	X	X	FS-ONE MAX	W-L-7250
Shower Valve Assembly with Min. 7" escutcheon plate and Min. 1/2" Copper or Iron Supply Pipe (Max. AS=1-7/8", Max. 5" diameter opening)	1 Hr	X		CP 648-E CFS-S SIL GG	W-L-7271
Shower Valve Assembly with Min. 7" escutcheon plate and Min. 1/2" Copper or Iron Supply Pipe (Max. AS=1-7/8" Max. 5" diameter opening)	1 Hr	X		CFS-S SIL GG	W-L-7272
Max. 6" diameter sheet metal duct with max. 1" thick glass fiber insulation (w/o damper) (AS=0" to 1")	2 Hr			FS-ONE MAX	W-L-7018
Max. 24" x 12" sheet metal duct w/o damper with max. 1-1/2" thickness foil scrim glass fiber duct insulation	1 or 2 Hr			FS-ONE MAX	W-L-7059

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	Framed (Gypsum) Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	Wood-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	Steel-Framed Floors
Non-Metallic Pipes*	
Cables	
Cable Trays	Joints
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Joints
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	Joints
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Joints
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	Joints
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	Joints
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	Joints
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	Joints



**MISCELLANEOUS MECAHNICAL/DUCTS IN FRAMED (GYPSUM) WALLS*
(CONTINUED)**

Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
Max. 30" x 24" steel air or grease duct with 1-1/2" thick FireMaster® Fast Wrap manufactured by Thermal Ceramics (AS=0" to 2")	1 or 2 Hr			FS-ONE MAX	W-L-7121
Max. 60" x 36" sheet metal duct (w/o damper) with max 2" thick glass fiber duct insulation (angles fastened through insulation) (AS=1/4" to 2-1/4")	1 or 2 Hr			FS-ONE MAX	W-L-7151
Max. 20" spiral would duct or 12" sheet metal duct (w/o damper) with 2" thick glass fiber duct insulation (AS=1/4" to 1")	1 or 2 Hr			FS-ONE MAX	W-L-7153
Max. 100" x 100" sheet metal duct (w/o damper) with 1-1/2" or 2" thick glass fiber duct insulation (insulation split for angles) (AS=1/2" to 2")	1 or 2 Hr			FS-ONE MAX	W-L-7156
Max. 24" x 24" steel grease duct w/ 1-1/2" FyreWrap Duct Wrap manufactured by Unifrax	1 or 2 Hr	■		FS-ONE MAX	W-L-7157
Max. 24" x 12" steel air or grease duct w/ 1-1/2" duct wrap manufactured by Unifrax	1 or 2 Hr	■		FS-ONE MAX	W-L-7158
NEW Max 20-1/8" x 42" x 5-3/4" Steel Electrical Box Membrane through gypsum wall	1 or 2 Hr	■		CFS-PA CP 617 FS-ONE MAX	W-L-7277
NEW Max. 24" x 48" duct (AS 1/4" to 1-1/4")	1 or 1-1/2 Hr			FS-ONE MAX	FM 308
NEW Max. 12" (28 Ga) Sheet metal duct (AS 0" to 1-1/2")	1 Hr			FS-ONE MAX	FM 311
NEW Max. 20" galvanized steel duct (AS 0" to 1-1/2")	1 Hr			CP 606	FM 332
NEW Max. 20" galvanized steel duct (AS 0" to 1-1/2")	1 Hr			CP 606	FM 337
NEW Max. 12" x 24" Sheet steel metal duct with 1-1/2" glass fiber insulation (AS 1/4" to 1-1/2")	1 Hr			FS-ONE MAX	FM 346
NEW Misc. small electrical boxes	3/4 Hr			CP 617 Firestop Putty	FM 598
NEW Misc. small electrical boxes	2 Hr			CP 617 Firestop Putty	FM 599
NEW Misc. small electrical boxes	2 Hr			CP 617 Firestop Putty	FM 600
NEW Nom. 20" spiral wound steel duct (min. 24 Ga.) (AS 0" to 1-1/2")	1 Hr			FS-ONE MAX	FM 685
Misc. small electrical boxes	2 Hr	■		Box insert	FM 762

MIXED PENETRATING ITEMS IN FRAMED (GYPSUM) WALLS*

Max 3" EMT, max. 2" PVC (c), and cables (AS varies)	2 Hr	■		FS-ONE MAX	W-L-8004
Insulated or non-insulated steel, copper, conduit or EMT pipes, plastic pipe, cable tray or cables (single or bundled) (AS varies)	1 or 2 Hr		■	Firestop Block	W-L-8013
Insulated or non-insulated steel, cast iron, copper, conduit or EMT pipes, plastic pipe, cable tray or cables (single or bundled) (AS varies)	1, 2, 3 or 4 Hr			Firestop Block	W-L-8014
Insulated or non-insulated metallic (AS varies)	1, 2, 3, or 4 Hr			Firestop Block	W-L-8015
Insulated or non-insulated steel, cast iron, copper, conduit or EMT pipes, flexible metal conduit or cables (single or bundled) (AS varies)	1 or 2 Hr	■		Fire Foam	W-L-8019
Max. 6" steel tube (16 Ga) and cables (Translogic) (AS varies)	1 or 2 Hr			FS-ONE MAX	W-L-8023
ABS fiber optic cable tray (12" x 4"), cable bundle (various cables), max. 2" fiber optic raceway (PVC) (AS varies)	1 or 2 Hr	■		Firestop Block	W-L-8035
HVAC Line Set (AS varies)	2 Hr			FS-ONE MAX	W-L-8047
Insulated or non-insulated metallic, cable bundle (AS varies)	1 or 2 hr			Firestop Block w/ Z-frame	W-L-8058
Multiple 4" steel pipes, steel conduit, EMT and/or cable bundle (AS=0" to 1")	1 or 2 hr			CP 675T	W-L-8059

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	Framed (Gypsum) Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	Wood-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	Steel-Framed Floors
Non-Metallic Pipes*	
Cables	
Cable Trays	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	Bottom of Wall (BW-S Series)
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Continuity Head-of-Wall (CJ-D Series)
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	Floor-to-Floor (FF-D Series)
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Bottom of Wall (BW-S Series)	Floor-to-Wall (FW-D Series)
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Bottom of Wall (BW-S Series)	Intertek Series (ASTM E 1966)
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Bottom of Wall (BW-S Series)	Head-of-Wall (HW-D Series)
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Bottom of Wall (BW-S Series)	Head-of-Wall (HW-S Series)
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Bottom of Wall (BW-S Series)	Wall-to-Wall (WW-D Series)
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Bottom of Wall (BW-S Series)	Wall-to-Wall (WW-S Series)
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Bottom of Wall (BW-S Series)	Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
MIXED PENETRATING ITEMS IN FRAMED (GYPSUM) WALLS* (CONTINUED)					
Insulated or non-insulated metallic, non metallic pipes, and cable bundle (AS varies)	1 or 2 hr			FS-ONE MAX	W-L-8065
Max. 2" steel, cast iron, conduit, EMT, flexible gas piping, or ENT, max. 4" cable bundle	1 or 2 Hr			FS-ONE MAX	W-L-8071
Insulated or non-insulated metallic, non metallic pipes, and cable bundle (AS varies) (unframed or framed opening)	1 or 2 Hr	■		FS-ONE MAX	W-L-8079
Multiple HVAC Line Sets (max qty 3) bundled together (AS=0" to 1-1/2")	1 or 2 Hr			CP648E/1-3/4" w/ Ret Collar	W-L-8081
Misc. bundle consisting of cables, metal pipe, ENT (AS=0" to 1")	1 or 2 Hr			CP 648E/1-3/4" w/ Ret Collar	W-L-8082
Cable Bundle and Metallic Pipe through CP 653 Speed Sleeve	1 or 2 Hr			Speed Sleeve	W-L-8086
Insulated or non-insulated metallic, non-metallic, cable bundles (AS varies)	1 or 2 Hr		■	Firestop Block	W-L-8087
Insulated or non-insulated steel, cast iron, copper, conduit or EMT pipes, plastic pipe, cable tray or cables (single or bundled) (AS varies)	1,2,3 or 4 Hr			Firestop Block	W-L-8093
ABS fiber optic cable tray (12" x 4"), cable bundle (various cables), Max. 2" fiber optic raceway (PVC) (AS varies)	1 or 2 Hr	■		Firestop Block	W-L-8094
Insulated or non-insulated metallic, non-metallic, cable bundles (AS varies)	1 or 2 Hr		■	Firestop Block	W-L-8095
Fiberglass, aluminum or steel cable tray (18" x 4"), cable bundle (various cables), non-insulated steel, cast iron, EMT, conduit, or copper pipe, non-metallic pipe (install both sides) (AS varies)	2 Hr			CFS-COS	W-L-8105
HVAC Line Set (AS varies)	1 or 2 Hr			CFS-SL SK	W-L-8110
Max. 24" x 4" Open aluminum cable ladder, One or more Max. 4" cable bundles (AS varies)	1 or 2 Hr			CFS-COS CFS-BL CP 653 (BA) CFS-CC	W-L-8125
Max. 3" EMT, Max. 2" Copper, Various cables	2 Hr			FS-ONE-MAX	FM 288
Max. 6" Steel tube (Min. 16 Ga) with Max. three low voltage plenum cables (AS varies)	1/2 Hr			FS-ONE MAX	FM 347
Max. 1" copper with optional Various types of cable	1/2 or 2 Hr			CFS-S SIL GG	FM 677

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	Concrete Floors/Walls
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	Framed (Gypsum) Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	Framed (Gypsum) Walls
Non-Metallic Pipes*	
Cables	
Cable Trays	Wood-Framed Floors
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Wood-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	Wood-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Steel-Framed Floors
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	Steel-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	Steel-Framed Floors
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	Joints
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	Joints
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	Joints
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	Joints



WOOD-FRAMED FLOORS

Hilti Firestop Selection Chart – U.S.

CLICK CATEGORY INFO BELOW:

Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
BLANK OPENINGS IN WOOD-FRAMED FLOORS					
Max. 2" dia blank opening	1 or 2 Hr	■		FS-ONE MAX CP 606	F-C-0002
METALLIC PENETRATIONS IN WOOD-FRAMED FLOORS					
Max. 4" steel, cast iron, copper, conduit or EMT pipe (AS=0" to 1")	1 or 2 Hr	■	■	FS-ONE MAX CP 606 CFS-S SIL GG	F-C-1009
Max. 6" steel, cast iron, conduit, max. 4" EMT, or max. 2" flexible steel conduit (AS=1/4" to 3/4")	1 or 2 Hr			FS-ONE MAX	F-C-1059
Max. 4" steel, cast iron, copper, conduit, or EMT (AS=0" to 7/8")	1 Hr			CP 606 FS-ONE MAX	F-C-1106
Max. 4" cast iron toilet flange with fittings (AS=1/4")	1 Hr			FS-ONE MAX CP 606	F-C-1134
Max. 1-1/2" cast iron bathtub drain with PVC, ABS or brass waste/overflow fittings (AS=1/4")	1 Hr			FS-ONE MAX CP 606	F-C-1135
Max. 1" copper, steel, cast iron, steel conduit or EMT (membrane penetration) (AS = 0" to 7/8")	1 Hr	■		FS-ONE MAX	F-C-1142
Max. 1" flexible steel conduit or gas piping (mq = 3) (AS=0" to 1-1/4")	1Hr	■		FS-ONE MAX CP 606	F-C-1147
Max. 3/4" steel, cast iron, conduit or EMT pipe, or max 1/2" copper pipe (AS=min. 0")	1 Hr	■	■	CFS-D 1"	F-C-1168
Max. 4" Copper (AS=0" to 1/2")	1 Hr	■		FS-ONE MAX	FM 687
NON-METALLIC PIPES IN WOOD FRAMED FLOORS*					
Max. 4" PVC or CPVC (c,v) (AS=0" to 1/2")	2 Hr	■		Ret. Collar w/ FS-ONE MAX	F-C-2029
Max. 4" PVC, CPVC, ABS or FRPP(c,v) (AS=0" to 1/2")	1 or 2 Hr	■		CP 643N	F-C-2030
Max. 2" PVC or CPVC (c,v) (AS=1/4" to 3/8")	1 or 2 Hr			FS-ONE MAX	F-C-2071
Max. 1" Polyethylene (PEX) SDR 9 Tubing (c,v) (AS=0" to 1/2")	1 or 2 Hr	■		FS-ONE MAX	F-C-2081
Max. 2" ABS, PVC or CPVC (c,v) (AS=0" to 5/8")	1 or 2 Hr	■		CP 643N	F-C-2128
Max. 2" ABS, PVC or CPVC (c,v) (AS=0" to 5/8")	1 Hr	■		FS-ONE MAX	F-C-2142
Max. 2" PVC or CPVC (c,v) (AS=1/2" to 1-1/8")	1 or 2 Hr	■		FS-ONE MAX	F-C-2160
Max. 2" ABS or PVC tub drain	1 Hr	■		CP 648E/1"	F-C-2189
Max. 4" ABS or PVC pipe with toilet flange (AS=0" to 1/2")	1 Hr	■		FS-ONE MAX	F-C-2203
Max. 1-1/2" PVC or ABS plastic pipe and Tub Drain Fittings	1 Hr			FS-ONE MAX	F-C-2204
Max. 1-1/2" PVC or ABS plastic pipe and Tub Drain Fittings	1 Hr	■		CP 648E/1"	F-C-2205
Max. 1" PEX (c,v) (AS=1/4")	1 Hr			CP 648E/1"	F-C-2230
Max. 2" PVC, CPVC or ABS (c,v) (AS=0" to 1/4")	1 Hr	■		CP 648E/1-3/4" w/ Ret Collar	F-C-2231

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Cables	
Cable Trays	
Insulated Pipes	Wood-Framed Floors
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	Steel-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	Joints
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	Joints
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) – ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
NON-METALLIC PIPES IN WOOD FRAMED FLOORS* (CONTINUED)					
Max. 4" ABS, PVC or CPVC (c,v) w/optional pipe coupling (AS=0" to 1/2")	1 Hr	■		CP 648E/1-3/4" w/ Ret Collar or CP 643N	F-C-2232
Max. 1-1/2" PVC or ABS plastic pipe and Tub Drain Fittings (AS=0" to 1")	1 Hr	■		CP 606	F-C-2262
Max. 4" ABS or PVC toilet flange	1 Hr	■		CP 606	F-C-2263
Max. 2" FlowGuard Gold or Blazemaster CPVC (c) (AS=0" to 5/8")	1 Hr			FS-ONE MAX	F-C-2270
Multiple 1" PEX (max qty 3)	1 or 2 Hr	■		FS-ONE MAX	F-C-2310
Max. 1" Polyethylene (PEX) SDR 9 Tubing (c,v) (AS = 0' to 7/8")	1 Hr	■		FS-ONE MAX	F-C-2334
Max. 3" ABS, PVC, CPVC, or RNC (c,v) (AS=3/16" to 5/16")	1 Hr			CP648S	F-C-2335
Max. 4" PVC or ABS w/ branch line (c,v) (AS=0" to 1/2")	1 Hr	■		CP 643N	F-C-2382
Max. 3" ABS, PVC, CPVC (c,v), or 2" ENT (AS=0" to 5/8")	1 Hr			FS-ONE MAX	F-C-2389
Max. 4" PVC (c,v) against stud (AS=1/16")	1 Hr	■		CP 648E/1-3/4" w/ Ret Collar (U-shaped)	F-C-2401
Max. 1" ENT (one or more) (AS=0" to 1")	1 Hr	■		FS-ONE MAX	F-C-2403
Max. 4" PVC or CPVC (c,v) (AS=1/16")(collar on top of top plate)	1 Hr			CP 643N	F-C-2404
Max. 1-1/2" (40mm) PP (SDR 11) Fusiotherm or Polystar CT-White (c) (AS=0" to 15/16")	1 Hr	■		FS-ONE MAX	F-C-2429
Max 1/2" Single Dura-line Microduct (AS=min 0")	1 Hr	■	■	CFS-D 1"	F-C-2432
NEW Max. 2" Aquatherm Greenpipe PP-R (SDR 7.4 or 11), Bluepipe PP-RCT (SDR 9 or 11 or 17.6) Niron PP-RCT (by Nupi Americas (SDR 7.3, 9, 11 or 17), Aquatechnik PP-RCT (SDR 7.4, 11 or 17.6) and Uponor PP-RCT (SDR 9 or 11), (AS 0" to 1")	1 Hr	■		FS-ONE MAX	F-C-2508
NEW Max. 6" PVC, CPVC (SDR 13.5), PVC Conduit (AS 0" to 1/2")	1 Hr	■		CP 643N	F-C-2515
NEW Max. 4" PVC, CPVC (SDR 13.5), PVC Conduit (AS varies)	1 Hr	■		CP 648E/1-3/4" CP 648S	F-C-2516
NEW Max. 2" Aquatherm Greenpipe PP-R (SDR 7.4), Niron PP-RCT (by Nupi Americas (SDR 7.3), Aquatechnik PP-RCT (SDR 7.4), XFR-PVC (c, v) (AS 0" to 1") Canada only 50 Pa	1 Hr	■		FS-ONE MAX	F-C-2517
NEW Max. 4" Aquatherm Greenpipe PP-R (SDR 7.4 or 11), Bluepipe PP-RCT (SDR 9 or 11) Niron PP-RCT (by Nupi Americas (SDR 7.3, 9, or 11), Aquatechnik PP-RCT (SDR 7.4 or 11) and Uponor PP-RCT (SDR 9 or 11) (AS 0" to 1-5/8") Canada only 50 Pa	1 Hr	■		FS-ONE MAX, CP 648E/1-3/4" w/ Ret Collar	F-C-2850
NEW Max. 1-1/2" PVC	2 Hr			CP 643N	FM 240
NEW Max. 2" PVC, Max. 1" cross linked polyethylene (XLPE)	1 Hr			FS-ONE MAX	FM 273
NEW Max 4" PVC (AS=0" to 1/4")	1 Hr			CP 643N	FM 274
NEW Max. 2" PVC, Max. 1" cross linked polyethylene (XLPE)	2 Hr			FS-ONE MAX	FM 275
NEW Max 4" PVC (AS=0" to 1/4")	2 Hr			CP 643N	FM 276
NEW Max. 3" ABS (AS=0" to 1/2")	1 Hr	■		FS-ONE MAX	FM 686
NEW Max. 2" ABS (AS =0" to 15/16")	1 or 2 Hr			FS-ONE MAX	FM 688

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
CABLES IN WOOD-FRAMED FLOORS					
Cable bundle (various cables)	1 or 2 Hr	■		FS-ONE MAX	F-C-3012
Cable bundle (various cables) (AS=3/4")	1 Hr	■		FS-ONE MAX	F-C-3044
Cable bundle (various cables) (AS=0" to 1")	1 Hr	■		CP 606	F-C-3071
Cable bundle (various cables) (AS=0" to 1")	1 Hr	■		CP 606	F-C-3074
Multiple SER cables in slotted opening (AS varies)	1 Hr	■		FS-ONE MAX	F-C-3094
Cable bundle (various cables) (AS=min 0")	1 Hr	■	■	CFS-D 1"	F-C-3110
INSULATED PIPES IN WOOD-FRAMED FLOORS					
Max. 2" steel or copper pipes with max. 1/2" glass fiber or max. 3/4" AB/PVC insulation (AS varies)	1 or 2 Hr	■	■	FS-ONE MAX	F-C-5004
Max. 2" copper, or steel pipe with max. 1-1/2" glass fiber (AS=1/2" to 1")	1 Hr	■		FS-ONE MAX	F-C-5036
Max. 2" copper, or steel pipe with max. 3/4" AB/PVC insulation (AS=3/8" to 1")	1 or 2 Hr			FS-ONE MAX	F-C-5037
Max. 4" copper, steel, or cast-iron pipe with 3/4" AB/PVC insulation (AS=0" to 7/8")	1 Hr			CP 606	F-C-5065
Max. 4" copper, steel, or cast-iron pipe with 1-1/2" glass fiber insulation (AS=0" to 7/8")	1 Hr	■		CP 606	F-C-5066
Max 2" CPVC pipe (c) with 1" Glass fiber insulation (AS=1/8" to 1")	1 Hr	■		FS-ONE MAX	F-C-5086
Max 4" steel, cast iron, or copper with 1" glass fiber insulation (AS=0" to 1/2")	1 or 2 Hr	■		FS-ONE MAX	F-C-5088
MISCELLANEOUS MECHANICAL/DUCT PENETRATIONS IN WOOD-FRAMED FLOORS					
Max. 4" (28 Ga) diameter sheet metal duct w/o damper (AS=1/4" to 3/4")	1 Hr			FS-ONE MAX	F-C-7013
Max. 10" (28Ga) or 4" (30 Ga) diameter sheet metal duct w/o damper (AS=0" to 1")	1 Hr			CP606	F-C-7025
Steel Grease or Air Duct with Firemaster DuctWrap by Thermal Ceramics	1 or 2 Hr	■		FS-ONE MAX	F-C-7036
Steel strut, steel cable, steel rod, steel angle (AS=1/8" to 7/8")	1 Hr			FS-ONE MAX CP 606	F-C-7042
Max. 12" x 10" sheet metal duct (AS=0" to 1")	1 Hr			FS-ONE MAX CP 606	F-C-7043
Max. 7" diameter or max. 10" x 4" sheet metal duct with Firemaster DuctWrap by Thermal Ceramics	1 Hr	■		FS-ONE MAX	F-C-7055
Max. 7" diameter or max. 10" x 4" sheet metal duct with Firemaster DuctWrap by Thermal Ceramics	1 Hr	■		CFS-S SIL GG CFS-S SIL SL	F-C-7056
Max. 7" diameter or max. 10" x 4" sheet metal duct with Fyrewrap DuctWrap by Unifrax	1 Hr	■		FS-ONE MAX	F-C-7057
Max. 7" diameter sheet metal duct with Fyrewrap DuctWrap by Unifrax	1 Hr	■		FS-ONE MAX	F-C-7058
Max. 7" diameter sheet metal duct with Firemaster DuctWrap by Thermal Ceramics	1 Hr	■		FS-ONE MAX	F-C-7059

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	Framed (Gypsum) Walls
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	Wood-Framed Floors
Metallic Penetrants	
Non-Metallic Pipes*	
Cables	
Cable Trays	Steel-Framed Floors
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	
Mixed Penetrating Items*	Joints
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Bottom of Wall (BW-S Series)
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	Continuity Head-of-Wall (CJ-D Series)
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
MIXED PENETRATING ITEMS IN WOOD-FRAMED FLOORS*					
Single HVAC Line Set (AS=1/4" to 3/4")	1 Hr	■		FS-ONE MAX	F-C-8014
Double HVAC Line Set (w/ PVC drain) (AS=0" to 1")	1 Hr	■		FS-ONE MAX	F-C-8026
Double HVAC Line Set (w/o PVC drain) (AS=0" to 1")	1 Hr			CP 606	F-C-8032
Multiple penetrating items (metal, insulated, PEX, cables) through 14" x 5-1/2" block out (AS=0" to 1-1/2")	1 Hr	■		FS-ONE MAX	F-C-8038
Multiple penetrating items (metal, insulated, PEX, cables) through 14" x 5-1/2" block out (AS=0" to 1-1/2")	1 Hr	■		CFS-S SIL SL	F-C-8044
Multiple penetrating items (Metallic, Insulated, Duct, PVC, CPVC (SDR 13.5), Cables) (AS 1" to 8") (MSO 464 sq. In.)	1 Hr			CFS-BL	F-C-8059
Multiple penetrating items (Metallic, Insulated, Duct, PVC, CPVC (SDR 13.5), Cables) (AS 1" to 8") (MSO 464 sq. In.)	1 Hr			CFS-BL	F-C-8060

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	Framed (Gypsum) Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	
Cables	
Cable Trays	Wood-Framed Floors
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	Steel-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	Joints
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



STEEL-FRAMED FLOORS

Hilti Firestop Selection Chart – U.S.

CLICK CATEGORY INFO BELOW:

Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
METALLIC PENETRATIONS IN STEEL-FRAMED FLOORS					
Max. 6" steel, cast iron, steel conduit or max. 4" EMT or copper (AS=1/4" to 3/4")	1 Hr			FS-ONE MAX	F-E-1004
Max. 1" flexible steel conduit or gas piping (max q = 3) (AS=0" to 1-1/4")	1 Hr	■		FS-ONE MAX CP 606	F-E-1018
Max. 4" steel, cast iron, steel conduit, EMT, copper, or steel vent pipe (AS=1/4" to 3/4")	1 Hr	■		FS-ONE MAX	F-E-1035
NON-METALLIC PIPES IN STEEL-FRAMED FLOORS*					
Max. 2" PVC or CPVC plastic pipe (c,v) (AS=1/2" to 1-1/8")	1 Hr	■		FS-ONE MAX	F-E-2005
Max. 4" ABS or PVC toilet flange (AS=1/4")	1 Hr			FS-ONE MAX	F-E-2026
Max. 4" PVC or CPVC plastic pipe (c,v) (AS=0" to 1/4" for pipes 2" and smaller) (AS=0" to 1/2" for pipes larger than 2")	1 Hr	■		CP 648E/1-3/4" w/ Ret Collar	F-E-2027
Max. 1-1/2" PVC or ABS bathtub drain with waste/overflow fittings (AS between piping and patch=0" to 1")	1 Hr			FS-ONE MAX	F-E-2028
Max. 3" ABS, PVC, CPVC, or RNC (c,v)	1 Hr			CP648S	F-E-2029
Max. 4" PVC or ABS w/ branch line (c,v) (AS=0" to 1/2")	1 Hr			CP 643N	F-E-2033
Max. 2" PVC, CPVC, ABS or RNC (c, v) (AS=1/4" to 7/8")	1 Hr	■		FS-ONE MAX	F-E-2047
Max. 6" PVC, CPVC, RNC or 4" ABS (c, v) (AS=0" to 1/2")	1 Hr	■		FS-ONE MAX	F-E-2048
Max. 1-1/2" PVC bathtub drain with waste/overflow fittings (AS between piping and patch=0" to 1")	1 Hr	■		FS-ONE MAX	F-E-2050
Max. 3/4" PEX (c) (AS=0" to 1/8")	1 Hr	■		CFS-D 1"	F-E-2051
Max. 3" PVC or CPVC (c,v) (AS=1/8" to 3/8")	1 Hr	■		FS-ONE MAX	F-E-2052
Max 2" (PP-R), (PP-RCT), and XFR (c, v) (AS = 1/4" to 1/2") cUL only (50 Pa)	1 Hr	■		FS-ONE MAX	F-E-2062
CABLES IN STEEL-FRAMED FLOORS					
Cable bundle (various) (AS = 3/4")	1 Hr	■		FS-ONE MAX	F-E-3005
Multiple SER cables in slotted opening (AS varies)	1 Hr	■		FS-ONE MAX	F-E-3012
Cable bundle (various) (AS = 1/8" to 7/8")	1 Hr	■		FS-ONE MAX	F-E-3021
INSULATED PIPES IN STEEL-FRAMED FLOORS					
Max. 2" steel or copper pipe with max. 3/4" AB/PVC (AS=1/2" to 1")	1 Hr	■		FS-ONE MAX	F-E-5004
Max. 2" steel or copper pipe with max. 1-1/2" glass fiber (AS=1/2" to 1")	1 Hr	■		FS-ONE MAX	F-E-5013

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	Framed (Gypsum) Walls
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	
Cables	
Cable Trays	Wood-Framed Floors
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	Steel-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	Joints
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) – ASTM E2307	



CLICK
CATEGORY
INFO BELOW:

Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
MISCELLANEOUS MECHANICAL/DUCT PENETRATIONS IN STEEL-FRAMED FLOORS					
Max. 12"x10" Sheet Metal Duct (AS=0" to 1")	1 Hr	X		FS-ONE MAX CP 606	F-E-7008
MIXED PENETRATING ITEMS IN STEEL-FRAMED FLOORS*					
HVAC Line Set (AS=0" to 1")	1 Hr	X		FS-ONE MAX	F-E-8008

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Concrete Floors/Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Framed (Gypsum) Walls
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	
Non-Metallic Pipes*	Steel-Framed Floors
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	
Bottom of Wall (BW-S Series)	Joints
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
JOINTS — BOTTOM OF WALL (BW-S SERIES)					
Gypsum wall to concrete floor (bottom of wall)	1 or 2 Hr	■		FS-ONE MAX CP 606 CFS-S SIL GG	BW-S-0001
Gypsum wall to concrete floor (bottom of wall)	1 or 2 Hr	■		FS-ONE MAX CP 605 CP 606 CFS-S SIL GG	BW-S-0002
Gypsum shaft wall to concrete floor (bottom of wall)	1 or 2 Hr			CP 605 CP 606	BW-S-0023
Gypsum wall to concrete floor (bottom of wall)	1 or 2 Hr	■		CFS-TTS	BW-S-0039
Gypsum chase wall to concrete floor (bottom of wall)	1 or 2 Hr	■		CFS-TTS	BW-S-0040
Gypsum wall to concrete floor (bottom of wall)	1 or 2 Hr	■		CP 606 CFS-SIL GG	BW-S-0059

Penetrating Item(s)	F-Rating	T-Rating	Movement	Product	System Number
JOINTS — CONTINUITY HEAD-OF-WALL (CJ-D SERIES)					
Gypsum wall to non-rated roof deck (top-of-wall continuity joint) (Max JW=1-1/2")	2 Hr		50%	CFS-SP WB	CJ-D-0004a
Gypsum wall to non-rated insulated roof deck (top-of-wall continuity joint) (Max JW=2")	1 Hr		100%	FS-ONE MAX CP 606 CP 601s CFS-S SIL GG	CJ-D-0008
Gypsum wall to non-rated insulated roof deck (top-of-wall continuity joint) (Max JW=2")	1 Hr		100%	FS-ONE MAX CP 606 CP 601s CFS-S SIL GG	CJ-D-0009
Gypsum wall to non-rated insulated roof deck (top-of-wall continuity joint) (Max JW=2")	1 Hr		100%	FS-ONE MAX CP 606 CP 601s CFS-S SIL GG	CJ-D-0010

Penetrating Item(s)	F-Rating	T-Rating	Movement	Product	System Number
JOINTS — FLOOR-TO-FLOOR (FF-D SERIES)					
Concrete floor to floor joint (no mineral wool) (Max JW=1/2")	2 Hr		12.5%	CP 606	FF-D-0052
Concrete floor to floor joint (Max JW=2")	3 Hr	■	6%	CP 606	FF-D-0055
Concrete floor to floor joint (Max JW = 2")	3 Hr		18%	CFS-S SIL GG CFS-S SIL SL	FF-D-0096
Concrete floor to floor joint (Max JW = 1")	2 Hr	■	25%	CFS-S SIL GG CFS-S SIL SL	FF-D-0097
Concrete floor to floor joint (Max JW=3-1/2")	2 Hr		14%	CFS-S SIL GG CFS-S SIL SL	FF-D-1011
Concrete floor to floor joint (Max JW=3-3/4")	2 Hr	■	7%	CP 606	FF-D-1012
Concrete floor to floor joint (Max JW=3-1/2")	2 Hr		14%	CFS-SP WB	FF-D-1013
Concrete floor to floor joint (Max JW=3")	3 Hr		25%	CFS-SP WB	FF-D-1026
Concrete floor to floor joint (Max JW=6")	2 Hr		10%	CFS-S SIL GG CFS-S SIL SL	FF-D-1039
Concrete floor to floor joint (Max JW=2")	4 Hr		12.5%	CFS-S SIL GG CFS-S SIL SL	FF-D-1047

- Blank Openings
- Metallic Penetrants
- Non-Metallic Pipes*
- Cables/Cable Trays
- Insulated Pipes
- Miscellaneous Electrical (Busway)
- Miscellaneous Mechanical/Ducts
- Mixed Penetrating Items*
- Blank Openings
- Metallic Penetrants
- Non-Metallic Pipes*
- Cables
- Cable Trays
- Insulated Pipes
- Miscellaneous Electrical (Busway)
- Miscellaneous Mechanical/Ducts*
- Mixed Penetrating Items*
- Blank Openings
- Metallic Penetrations
- Non-Metallic Pipes*
- Cables
- Insulated Pipes
- Miscellaneous Mechanical/Duct Penetrations
- Mixed Penetrating Items*
- Metallic Penetrations
- Non-Metallic Pipes*
- Cables
- Insulated Pipes
- Miscellaneous Mechanical/Duct Penetrations
- Mixed Penetrating Items*
- Bottom of Wall (BW-S Series)
- Continuity Head-of-Wall (CJ-D Series)
- Floor-to-Floor (FF-D Series)
- Floor-to-Wall (FW-D Series)
- Intertek Series (ASTM E 1966)
- Head-of-Wall (HW-D Series)
- Head-of-Wall (HW-S Series)
- Wall-to-Wall (WW-D Series)
- Wall-to-Wall (WW-S Series)
- Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307

Concrete Floors/Walls

Framed (Gypsum) Walls

Wood-Framed Floors

Steel-Framed Floors

Joints



Penetrating Item(s)	F-Rating	T-Rating	Movement	Product	System Number
JOINTS — FLOOR-TO-FLOOR (FF-D SERIES) (CONTINUED)					

Concrete floor to floor joint (Max JW=3")	2 Hr	■	17%	CP 606	FF-D-1087
Concrete floor to floor joint (Max JW = 3")	4 Hr	■	12.5%	CFS-S SIL GG CFS-S SIL SL	FF-D-1125
Concrete floor to floor joint (Max JW = 3")	2 Hr	■	33%	CFS-S SIL GG CFS-S SIL SL	FF-D-1126
Concrete floor to floor joint (Max JW = 3-1/2")	2 Hr		42%	CFS-SP WB	FM 633

JOINTS — FLOOR-TO-WALL (FW-D SERIES)					
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Concrete floor to wall joint (Max JW=1/2")	2 Hr	■	12.5%	CP 606	FW-D-0041
Concrete floor to wall joint (Max JW=2")	3 Hr		6%	CP 606	FW-D-0042
Concrete concrete staircase to concrete wall (Max JW = 2")	2 Hr	■	33%	CFS-S SIL GG CFS-S SIL SL	FW-D-0066
Concrete floor to wall joint (Max JW = 1")	2 Hr	■	25%	CFS-S SIL GG CFS-S SIL SL	FW-D-0067
Concrete floor to wall joint (Max JW=3-1/2")	3 Hr		14%	CP 601s CFS-S SIL GG CFS-S SIL SL	FW-D-1011
Concrete floor to wall joint (Max JW=3-3/4")	2 Hr	■	7%	CP 606	FW-D-1012
Concrete floor to wall joint (Max JW=3-1/2")	2 Hr		14%	CFS-SP WB	FW-D-1013
Concrete floor to wall joint (Max JW=3")	3 Hr		25%	CFS-SP WB	FW-D-1021
Concrete floor to wall joint (Max JW=6")	2 Hr		10%	CFS-S SIL GG CFS-S SIL SL	FW-D-1037
Concrete wall to concrete staircase (JW=1/4" to 3-3/4")	2 Hr		7%	CP 606	FW-D-1043
Concrete wall to concrete staircase (JW=1/4" to 3-3/4")	2 Hr		14%	CP 601S CFS-S SIL GG	FW-D-1046
Concrete floor to wall joint (Max. JW=2")	4 Hr		12.5%	CP 601s CFS-S SIL GG CFS-S SIL SL	FW-D-1047
Concrete floor to wall joint (Max JW=3")	2 Hr	■	17%	CP 606	FW-D-1071
Concrete floor to wall joint (Max JW = 3")	4-Hr	■	12.5%	CFS-S SIL GG CFS-S SIL SL	FW-D-1092
Concrete floor to wall joint (Max JW = 3")	2-Hr	■	33%	CFS-S SIL GG CFS-S SIL SL	FW-D-1093

JOINTS — INTERTEK SERIES (ASTM E 1966)					
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Gypsum wall to Fireproofed colum	1 or 2 Hr		-	CFS-SP WB	HI/JF 120-01
Gypsum wall to Fireproofed colum	1 or 2 Hr		-	CFS-SP WB	HI/JF 120-02
Gypsum shaft wall to Fireproofed colum	2 Hr		-	CFS-SP WB	HI/JF 120-03

JOINTS — HEAD-OF-WALL (HW-D SERIES)					
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Gypsum wall to concrete over fluted metal deck w/ optional use of spray-on fireproofing (top-of-wall) (MAX JW=1")	1 or 2 Hr	■	50%	CFS-SP WB	HW-D-0042
Gypsum wall to concrete over fluted metal deck (top-of-wall) (Max JW=3/4")	1 or 2 Hr		33%	CP 606	HW-D-0045
Gypsum wall to concrete over fluted metal deck (top-of-wall) (Max JW=3/4")	1 or 2 Hr		33%	CFS-S SIL GG	HW-D-0046
Gypsum wall to concrete over metal deck w/ optional use of spray-on fireproofing (top-of-wall) (Max JW=1")	1 or 2 Hr	■	50%	CFS-SP WB	HW-D-0049
Gypsum wall to concrete or concrete over metal deck (Max JW=1") (FireTrak)	1, 2, or 3 Hr		100%	FS-ONE MAX	HW-D-0060

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	Movement	Product	System Number
JOINTS — HEAD-OF-WALL (HW-D SERIES) (CONTINUED)					
Gypsum wall to concrete or concrete over metal deck (Max JW=1") (FireTrak)	1, 2, or 3 Hr		100%	FS-ONE MAX	HW-D-0061
Gypsum wall to concrete over fluted metal deck (top-of-wall)	1 or 2 Hr		17%	CFS-S SIL GG	HW-D-0076
Gypsum wall to concrete over fluted metal deck (top-of-wall)	1 or 2 Hr		17%	CP 606	HW-D-0077
Concrete or block wall to concrete over fluted metal deck (top-of-wall)	2 Hr		33%	CFS-S SIL GG	HW-D-0080
Concrete or block wall to concrete over fluted metal deck (top-of-wall)	2 Hr		33%	CP 606	HW-D-0081
Gypsum wall to concrete floor (top-of-wall)	1 or 2 Hr		33%	CFS-S SIL GG	HW-D-0082
Gypsum wall to concrete floor or hollowcore (top-of-wall)	1 or 2 Hr		17%	CP 606	HW-D-0083
Gypsum wall to concrete over metal deck (top-of-wall)	1 or 2 Hr		33%	CFS-S SIL GG	HW-D-0084
Gypsum wall to concrete over metal deck w/ optional use of spray-on fireproofing (top-of-wall) (top-of-wall)	1 or 2 Hr	■	17%	CP 606	HW-D-0085
Gypsum wall to concrete over metal deck w/ optional use of spray-on fireproofing (top-of-wall) (Max JW=2")	1 or 2 Hr	■	20%	CFS-SP WB	HW-D-0087
Gypsum wall to concrete over metal deck w/ optional use of spray-on fireproofing (top-of-wall) (Max JW=2")	1 or 2 Hr	■	20%	CFS-SP WB	HW-D-0089
Concrete or block wall to concrete floor joint (top-of-wall) (Max JW=2")	2 Hr		14%	CFS-SP WB	HW-D-0097
Concrete or block wall to concrete over fluted metal deck (top-of-wall) (penetrations in flutes) (Max JW= 1")	1 or 2 Hr	■	12.5%	CFS-SP WB	HW-D-0098
Gypsum wall to concrete floor or hollow core (top-of-wall)	1 or 2 Hr	■	20%	CFS-SP WB	HW-D-0106
Gypsum wall to concrete over metal deck (Max JW=1") (FireTrak)	1 or 2 Hr		100%	CFS-SP WB CP601s CFS-S SIL GG	HW-D-0118
Gypsum wall to concrete or concrete over metal deck (Max JW=1") (FireTrak)	1, 2, or 3 Hr		100%	CP 601s CFS-S SIL GG FS-ONE MAX	HW-D-0119
Gypsum wall to concrete or concrete over metal deck (Max JW=1") (FireTrak)	1,2, or 3 Hr		100%	CP 601s CFS-S SIL GG FS-ONE MAX	HW-D-0120
Gypsum wall to concrete over fluted metal deck (top-of-wall)	1 or 2 Hr		17%	CP 606	HW-D-0154
Concrete or block wall to concrete over fluted metal deck (top-of-wall)	2 Hr		17%	CP 606	HW-D-0155
Concrete or block wall to concrete over fluted metal deck (top-of-wall)	2 Hr		12.5%	CFS-SP WB	HW-D-0181
Gypsum wall to concrete over fluted metal deck (top-of-wall)	1 or 2 Hr	■	17%	CP 606 CFS-S SIL GG	HW-D-0184
Gypsum wall to concrete over metal deck w/ spray-on fireproofing completely filling flutes (top-of-wall)	1 or 2 Hr		12.5%	CFS-SP WB	HW-D-0190
Gypsum wall to concrete floor or hollow core (top-of-wall) (Max JW=1")	1 or 2 Hr	■	17%	CP 606 CFS-S SIL GG	HW-D-0209
Gypsum wall to concrete over fluted metal deck with structural steel beams or bar joists penetrating wall (top-of-wall) (Max JW = 1-1/2")	1 or 2 Hr	■	25%	CFS-SP WB	HW-D-0218
Concrete or block wall to concrete over fluted metal deck (top-of-wall)	2 Hr		11%	CP 606	HW-D-0225
Concrete or block wall to concrete over fluted metal deck with structural steel beams or bar joists penetrating wall (top-of-wall) (Max JW=1")	2 Hr		25%	CFS-SP WB	HW-D-0258
Gypsum wall to bottom of fire-proofed steel I-beam to concrete over metal deck (Max JW = 1-1/2")	1 or 2 Hr	■	50%	CFS-SP WB	HW-D-0259
Gypsum wall to concrete over fluted metal deck (top-of-wall) (offset flutes) (Max JW=1-1/2")	1 or 2 Hr	■	50%	CFS-SP WB	HW-D-0264
Concrete or block wall to concrete floor joint (top-of-wall) (Max JW=1") (no mineral wool) (backer rod optional)	3 Hr		12.5%	CP 606	HW-D-0268
Concrete or block wall to concrete over fluted metal deck (top-of-wall) (stuff/spray/stuff/spray) (Max JW=2")	2 Hr		12.5%	CFS-SP WB	HW-D-0285
Concrete or block wall to concrete over fluted metal deck (top-of-wall) (stuff/spray/stuff/spray) (Max JW=2")	2 Hr		12.5%	CFS-SP WB	HW-D-0286

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	Movement	Product	System Number
JOINTS — HEAD-OF-WALL (HW-D SERIES) (CONTINUED)					
Gypsum wall to concrete over fluted metal deck (top-of-wall) (perpendicular) (Max JW=1")	1, 2, 3 or 4 Hr		12.5%	CFS-SP WB	HW-D-0292
Concrete or block wall to concrete over fluted metal deck (top-of-wall) (perpendicular) (Max JW=1")	4 Hr		12.5%	CFS-SP WB	HW-D-0294
Gypsum wall to concrete over fluted metal deck (top-of-wall) (parallel) (Max JW=1")	1, 2, 3 or 4 Hr		12.5%	CFS-SP WB	HW-D-0295
Concrete or block wall to concrete over fluted metal deck (top-of-wall) (parallel) (Max JW=1")	4 Hr		12.5%	CFS-SP WB	HW-D-0296
Gypsum wall to concrete over metal deck w/ spray-on fireproofing completely filling flutes and joint (top-of-wall)	2 Hr		33%	CFS-SP WB	HW-D-0313
Gypsum wall to concrete over fluted metal deck (top-of-wall) (perpendicular - cut to profile) (Max JW=3/4")	1 or 2 Hr	■	17%	CP 606	HW-D-0324
Gypsum shaft wall to concrete floor (Max JW = 1")	2 Hr		8%	CP 606	HW-D-0342
Gypsum wall to concrete over metal deck (parallel or perpendicular) with one side inaccessible due to structural member (Max JW=1-1/2")	1 or 2 Hr	■	50%	CFS-SP WB	HW-D-0388
Concrete or block wall to concrete over metal deck (parallel or perpendicular) with one side inaccessible due to structural member	2 Hr	■	12.5%	CFS-SP WB	HW-D-0389
Gypsum Wall to concrete over metal deck (offset to flute) (Max JW=3/4")	1 or 2 Hr	■	17%	CFS-SP WB and CP 606	HW-D-0396
Concrete or block wall to concrete floor joint (top-of-wall) (Max JW = 2")	3 Hr	■	6%	CP 606	HW-D-0403
Concrete or block wall to bottom of fire-proofed steel I-beam to concrete over metal deck	2 Hr		12.5%	CFS-SP WB	HW-D-0440
Gypsum wall to concrete over metal deck (top-of-wall) (perpendicular) (Max JW = 3/4") (The Steel Network)	1 or 2 Hr		100% comp/ 50% ext	CFS-SP WB	HW-D-0460
Gypsum wall to concrete floor joint (top-of-wall) (Max JW = 3/4") (The Steel Network)	1 or 2 Hr		100% comp/ 50% ext	CFS-SP WB	HW-D-0466
Concrete or block wall to concrete floor joint (top-of-wall) (Max JW=1")	2 Hr		17%	CP 606	HW-D-0516
NEW Gypsum wall to concrete over fluted metal deck Perpendicular (Nom. JW= 1/4", 3/8", 1/2", 3/4", 1", 1-1/2")	1, 2, or 3 Hr	■	80%, 30%, 100%	CFS-SP WB	HW-D-0518
NEW Gypsum wall to concrete over fluted metal deck Parallel (Nom. JW= 1/4", 3/8", 1/2", 3/4", 1", 1-1/2")	1 or 2 Hr	■	80%, 30%, 100%	CFS-SP WB	HW-D-0524
Gypsum wall to insulated roof deck (top-of-wall)	1 Hr		100%	CP 601s CP 606 FS-ONE MAX CFS-S SIL GG	HW-D-0528
Gypsum wall to insulated roof deck (top-of-wall)	1 Hr		100%	CP 601s CP 606 FS-ONE MAX CFS-S SIL GG	HW-D-0529
Gypsum wall to insulated roof deck (top-of-wall)	1 Hr		100%	CP 601s CP 606 FS-ONE MAX CFS-S SIL GG	HW-D-0530
Gypsum wall to concrete over metal deck (top-of-wall) (perpendicular) (Max JW=1-1/2")	1 or 2 Hr	■	50%	CFS-SP WB	HW-D-0538
Gypsum wall to concrete floor (top-of-wall) (Max JW=1-1/2")	1 or 2 Hr	■	50%	CFS-SP WB	HW-D-0539
Gypsum wall to concrete over metal deck (top-of-wall) (perpendicular) (Max JW=1-1/2")	1 or 2 Hr	■	50%	CFS-SP WB	HW-D-0540
Gypsum shaft wall to concrete over metal deck (top-of-wall) (perpendicular) (Max JW=3/4")	2 Hr		16%	CFS-SP WB	HW-D-0541
Gypsum shaft wall to concrete over metal deck (top-of-wall) (parallel) (Max JW=3/4")	2 Hr		16%	CFS-SP WB	HW-D-0542
Gypsum wall to concrete over metal deck (top-of-wall) (perpendicular) (Max JW = 3/4")	1 or 2 Hr		17%	CFS-SP WB and CP 606	HW-D-0545

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



	Penetrating Item(s)	F-Rating	T-Rating	Movement	Product	System Number
JOINTS — HEAD-OF-WALL (HW-D SERIES) (CONTINUED)						
NEW	Gypsum wall to Fireproofed Steel I beam and concrete over fluted metal deck Perpendicular (Nom. JW= 1/4", 3/8", 1/2", 3/4", 1", 1-1/2")	1 or 2 Hr	■	80%, 30%, 100%, 75%, 25%	CFS-SP WB	HW-D-0551
NEW	Gypsum wall to concrete over fluted metal deck Perpendicular (Nom. JW= 1/4", 3/8", 1/2", 3/4", 1", 1-1/2")	1 or 2 Hr	■	80%, 30%, 100%	CFS-SP WB	HW-D-0553
	Gypsum wall to concrete over metal deck (top-of-wall) (perpendicular) (Penetrations through flutes) (Max JW=2")	1 Hr		20%	CFS-SP WB	HW-D-0564
	Gypsum shaft wall to concrete over metal deck (top-of-wall) (perpendicular) (Max JW=1-1/2")	1 or 2 Hr	■	50%	CFS-SP WB	HW-D-0569
	Gypsum shaft wall to concrete over metal deck (top-of-wall) (parallel) (Max JW=1-1/2")	1 or 2 Hr	■	50%	CFS-SP WB	HW-D-0570
	Gypsum shaft wall to bottom of fireproofed steel beam to concrete over metal deck (top-of-wall) (parallel) (Max JW=1-1/2")	1 or 2 Hr	■	50%	CFS-SP WB	HW-D-0571
	Gypsum shaft wall to flat concrete (top-of-wall) (Max JW=1-1/2")	1 or 2 Hr		50%	CFS-SP WB	HW-D-0572
NEW	Gypsum wall to Fireproofed Steel I beam and concrete over fluted metal deck Perpendicular (Nom. JW= 3/4")	1 or 2 Hr	■	80%, 30%	CFS-SP WB	HW-D-0579
NEW	Gypsum wall to concrete over fluted metal deck Perpendicular (Nom. JW= 3/4")	1 or 2 Hr	■	80%, 30%	CFS-SP WB	HW-D-0580
NEW	Gypsum wall to Fireproofed Steel I beam and concrete over fluted metal deck Perpendicular (Nom. JW= 3/4")	1 or 2 Hr	■	80%, 30%	CFS-SP WB	HW-D-0582
NEW	Gypsum wall to concrete over fluted metal deck with structural steel beams or bar joists penetrating wall (top-of-wall) (Nom. JW=1/2", 3/4")	1 or 2 Hr	■	80%, 30%	CFS-SP WB	HW-D-0583
	Gypsum Wall to flat concrete or hollow core (top-of-wall) (includes max. 2" CPVC piping through joint) (Max JW=1")	1 or 2 Hr		19%	CP 606/ CP 648E	HW-D-0605
NEW	Gypsum wall to concrete over fluted metal deck Parallel (Nom. JW= 1/4", 3/8", 1/2", 5/8", 3/4", 1")	1 or 2 Hr	■	80%, 30%, 100%	CFS-SP WB	HW-D-0620
NEW	Gypsum wall to flat concrete (Nom. JW=3/8" 1/2", 3/4")	1 or 2 Hr	■	80%, 33%, 75%, 25%, 50%	CFS-SP WB	HW-D-0624
	Gypsum wall to concrete over metal deck (top-of-wall) (perpendicular and parallel) (Max JW = 3/4")	1 or 2 Hr	■	25%	CFS-SP WB	HW-D-0633
	Gypsum Wall to bottom of offset I beam with Z-bar extentions (Max JW=1-1/2")	1 or 2 Hr	■	50%	CFS-SP WB	HW-D-0634
	Gypsum Wall to bottom of offset I beam with Z-bar extentions w/ additional gypsum (Max JW=1-1/2")	1 or 2 Hr	■	50%	CFS-SP WB	HW-D-0635
	Gypsum Shaft Wall to bottom of offset I beam with Z-bar extentions (Max JW=1-1/2")	1 or 2 Hr	■	50%	CFS-SP WB	HW-D-0636
	Gypsum wall to concrete over metal deck with one side inaccessible due to structural member (Max JW=1-1/2")	1 or 2 Hr		50%	CFS-SP WB	HW-D-0639
	Gypsum shaft wall to concrete over metal deck with one side inaccessible due to structural member (Max JW=1-1/2")	1 or 2 Hr		50%	CFS-SP WB	HW-D-0640
	Gypsum wall to flat concrete or hollow core (top-of-wall) (requires backer rod) (Max JW=1")	1 or 2 Hr		19%	CP 606	HW-D-0654
	Gypsum wall parallel to fluted metal deck (cantilevered runner) (Max JW = 1")	1 or 2 Hr	■	50%	CFS-SP WB	HW-D-0687
	Gypsum wall to flat concrete or hollow core (top-of-wall) (Max JW = 1")	1 or 2 Hr		25%	CFS-S SIL GG	HW-D-0702
	Concrete or block wall to concrete floor joint (top-of-wall) (Max JW = 1")	2 Hr		25%	CFS-S SIL GG	HW-D-0703
	Concrete or block wall to concrete floor joint (top-of-wall) (Max JW = 1")	2 Hr	■	25%	CFS-S SIL GG	HW-D-0704
	Gypsum Shaft Wall to concrete over metal deck (perpendicular/ parallel) or concrete floor/hollow core (Max JW=1-1/2") (one sided install)	1 or 2 Hr	■	25%	CFS-SP WB	HW-D-0750
	Gypsum wall to flat concrete or hollow core (top-of-wall) (Max JW=1/2" or 3/4")	1 or 2 Hr	■	50% or 66%	CFS-TTS	HW-D-0757
	Gypsum chase wall to flat concrete or hollow core (top-of-wall) (Max JW=1/2" or 3/4")	1 or 2 Hr	■	50% or 66%	CFS-TTS	HW-D-0758

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



	Penetrating Item(s)	F-Rating	T-Rating	Movement	Product	System Number
JOINTS — HEAD-OF-WALL (HW-D SERIES) (CONTINUED)						
NEW	Concrete or CMU wall to Flat Concrete (One Side Access) (Max. JW=2") Optional max 1"	2 Hr		12.5%	CP-606	HW-D-0825
NEW	Gypsum wall to concrete over fluted metal deck perpendicular (top-of-wall) (Max JW = 1-1/2")	1 or 2 Hr	■	50% or 66%	CFS-TTS MD	HW-D-0871
NEW	Gypsum wall to concrete over fluted metal deck parallel (top-of-wall) (Max JW = 1-1/2")	1 or 2 Hr	■	50% or 66%	CFS-TTS MD	HW-D-0872
NEW	Gypsum wall to concrete over fluted metal deck parallel (top-of-wall) (Max JW = 1-1/2")	1 or 2 Hr	■	50% or 66%	CFS-TTS MD	HW-D-0873
NEW	Gypsum wall to flat concrete (top-of-wall) (Max JW = 1-1/2")	1 or 2 Hr	■	50% or 66%	CFS-TTS MD	HW-D-0880
NEW	Gypsum shaft wall to concrete over fluted metal deck perpendicular (top-of-wall) (Max JW = 1/2")	1 or 2 Hr	■	50%	CFS-TTS MD	HW-D-0881
NEW	Gypsum shaft wall to concrete over fluted metal deck parallel (top-of-wall) (Max JW = 1/2")	1 or 2 Hr	■	50%	CFS-TTS MD	HW-D-0882
NEW	Gypsum shaft wall to concrete over fluted metal deck with structural steel beam parallel to wall (top-of-wall) (Max JW = 1/2")	1 or 2 Hr	■	50%	CFS-TTS MD	HW-D-0883
NEW	Gypsum wall to concrete over fluted metal deck parallel and perpendicular (top-of-wall) (Max JW = 1/2")	1 or 2 Hr	■	50%	CFS-TTS MD	HW-D-0884
NEW	Gypsum wall to flat concrete (top-of-wall) (Max JW = 15/16") Post install of TTS	2 or 3 Hr	■	50% or 66%	CFS-TTS	HW-D-0905
NEW	Gypsum wall to concrete over metal deck (top-of-wall) (by Epic Metals) (Max JW = 3/4")	1 or 2 Hr	■	33%	CFS-SP WB, CP 620	HW-D-0906
NEW	Gypsum wall to concrete over fluted metal deck angled (top-of-wall) (Max JW = 1-1/2")	1 or 2 Hr	■	50% or 66%	CFS-TTS MD	HW-D-0907
NEW	Gypsum shaft wall to flat concrete (top-of-wall) (Nom. JW = 1/2" or 3/4")	1 or 2 Hr		50% or 66%	CFS-TTS	HW-D-0920
NEW	Gypsum wall assembly to concrete over fluted metal deck parallel and perpendicular flutes filled with fire proofing (top-of-wall) (Max JW = 1-1/2")	1 or 2 Hr	■	50% or 66%	CFS-TTS MD	HW-D-0923
NEW	Gypsum wall assembly to concrete over fluted metal deck parallel and parallel (top-of-wall) (Max JW = 1-1/2")	1 or 2 Hr	■	50% or 66%	CFS-TTS MD	HW-D-0925
	Concrete or block wall to concrete floor joint (top-of-wall) (Max JW=3-1/2")	3 Hr		14%	CFS-S SIL GG	HW-D-1008
	Concrete or block wall to concrete floor joint (top-of-wall) (Max JW=3-3/4")	2 Hr	■	7%	CP 606	HW-D-1009
	Gypsum wall to concrete or concrete over metal deck (Max JW=3") (FireTrak)	1,2 or 3 Hr		100%	CP 601s CFS-S SIL GG FS-ONE MAX	HW-D-1011
	Gypsum wall to concrete or concrete over metal deck (Max JW=3") (FireTrak)	1, 2 or 3 Hr		100%	CP 601s CFS-S SIL GG FS-ONE MAX	HW-D-1012
	Gypsum wall to concrete or concrete over metal deck (Max JW=3") (FireTrak)	1, 2 or 3 Hr		100%	CFS-SP WB FS-ONE MAX	HW-D-1020
	Concrete or block wall to concrete over fluted metal deck (top-of-wall) (Max JW = 3-1/2")	2 Hr		14%	CFS-SP WB	HW-D-1037
	Concrete wall to concrete over metal deck w/ spray-on fireproofing completely filling flutes (top-of-wall) (Max JW = 3-1/2")	2 Hr		7% or 14%	CFS-SP WB	HW-D-1041
	Concrete or block wall to concrete floor joint (top-of-wall) (Max JW=2")	4 Hr		12.5%	CFS-S SIL GG	HW-D-1042
	Concrete or block wall to concrete over fluted metal deck w/ steel bracing (top-of-wall) (Max JW=3-1/2")	2 Hr		14%	CFS-SP WB	HW-D-1044
	Concrete or block wall to concrete floor w/ steel bracing (top-of-wall) (Max JW=3-1/2")	2 Hr		14%	CFS-SP WB	HW-D-1045
	Concrete or block wall to concrete floor (Max JW=3-1/4")	3 Hr		25%	CFS-SP WB	HW-D-1058
	Gypsum wall perpendicular to fluted metal deck (Max JW = 2-1/2")	1 or 2 Hr		40%	CFS-SP WB	HW-D-1066
	Gypsum wall parallel to fluted metal deck (Max JW = 2-1/2")	1 or 2 Hr		40%	CFS-SP WB	HW-D-1067
	Gypsum wall to underside of flat concrete (Max JW = 2-1/2")	1 or 2 Hr		40%	CFS-SP WB	HW-D-1068
	Block wall perpendicular/parallel to fluted metal deck (Max JW = 2-1/2" or 1-1/2")	1 or 2 Hr		40% or 50%	CFS-SP WB	HW-D-1069
	Block wall to underside of flat concrete (Max JW = 2-1/2")	1 or 2 Hr		40%	CFS-SP WB	HW-D-1070

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Steel-Framed Floors
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	
Bottom of Wall (BW-S Series)	Joints
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	Joints
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	Joints
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	Movement	Product	System Number
JOINTS — HEAD-OF-WALL (HW-D SERIES) (CONTINUED)					

Block wall to underside of flat concrete (Max. JW= 3")	2 Hr	■	17%	CP 606	HW-D-1078
Block wall to underside of flat concrete or hollow core (Max JW = 3")	4-Hr	■	12.5%	CFS-S SIL GG	HW-D-1103
Block wall to underside of flat concrete or hollow core (Max JW = 3")	2-Hr	■	33%	CFS-S SIL GG	HW-D-1104
NEW Gypsum wall to concrete over metal decking (Max JW = 2")	1-1/2 Hr		22%	CFS-SP WB	FM 420
NEW Gypsum wall to concrete over metal decking (Max JW = 2")	2 Hr		25%	CP 606	FM 421
NEW Gypsum wall to concrete over metal decking (Max JW = 1")	1-1/2 Hr		50%	CFS-SP WB	FM 513
NEW Gypsum wall to concrete over metal decking (Max JW = 2-1/2")	2 Hr		40%	CFS-SP WB	FM 634
NEW Gypsum wall to flat concrete (Max JW = 1/2") Similar to HW-D-0757	1-1/2 Hr		50%	CFS-TTS	FM 708
NEW Gypsum shaft wall to flat concrete (Max JW = 1/2") Similar to HW-D-0824	1 or 2 Hr		50%	CFS TTS	FM 709
NEW Gypsum wall to flat concrete (Max JW = 1") Similar to HW-D-0871	2 Hr		50%	CFS-TTS MD	FM 763
NEW Gypsum wall to flat concrete (Max JW = 1") Similar to HW-D-0873	2 Hr		50%	CFS-TTS MD	FM 764

JOINTS — HEAD-OF-WALL (HW-S SERIES)					
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Gypsum wall to concrete over fluted metal deck (top-of-wall)	1 or 2 Hr	■		FS-ONE MAX	HW-S-0036
Gypsum wall to concrete over fluted metal deck (top-of-wall)	1 or 2 Hr	■		FS-ONE MAX	HW-S-0037
Concrete or block wall to concrete over fluted metal deck (top-of-wall)	2 Hr			FS-ONE MAX	HW-S-0038
Gypsum wall to concrete floor joint (top-of-wall)	1 or 2 Hr			FS-ONE MAX	HW-S-0039
Gypsum wall to concrete floor joint or fluted metal floor/roof deck (top-of-wall)	1 or 2 Hr	■		CFS-SP WB	HW-S-0053
Gypsum wall to concrete floor or fluted metal floor/roof deck (top-of-wall)	1 or 2 Hr	■		CP 606	HW-S-0054
Concrete or block wall to concrete floor hollow core concrete (top-of-wall) (Max Joint Height=0")	2 Hr	■		CP 606	HW-S-0055
Gypsum Wall to bottom of offset I beam with Z-bar extensions (Max JW=1")	1 or 2Hr			CFS-SP WB	HW-S-0069
Gypsum Wall to gypsum ceiling (Max JW = 1/2")	1 Hr			CP 606 FS-ONE MAX	HW-S-0090
NEW Gypsum wall to flat concrete (head-of-wall) (Max JW = 3/4")	2 Hr	■		CFS-TTS	HW-S-0133
NEW Gypsum wall to offset fireproofed I beam to concrete over metal deck (top-of-wall) (Max JW 1-1/2")	1 or 2 Hr	■		CFS-TTS MD	HW-S-0134
NEW Gypsum Wall to gypsum ceiling (Max JW = 1/2")	1 Hr			CP 605 bottom of wall sealant	HW-S-0145
NEW Gypsum Wall to concrete over metal decking (Max JW = 3/4")	1 Hr			FS-ONE MAX	FM 243

JOINTS — WALL-TO-WALL (WW-D SERIES)					
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Concrete wall to wall joint (Max JW=2")	2 Hr		12.5%	CFS-SP WB	WW-D-0017
Concrete wall to wall joint (Max JW=1") (backer rod optional)	3 Hr		12.5%	CP 606	WW-D-0032
Gypsum wall to concrete/block wall joint (Max JW=3/4")	1 or 2 Hr	■	17%	CP 606 CFS-S SIL GG	WW-D-0040
Concrete wall to wall joint (Max JW=2")	3 Hr	■	6%	CP 606	WW-D-0064
Gypsum wall to wall joint (Max JW = 2")	1 or 2 Hr		12.5%	CP 606	WW-D-0067
Gypsum wall to concrete wall joint (Max JW = 2")	1 or 2 Hr		12.5%	CP 606	WW-D-0068
Concrete wall to wall joint (Max JW=3/4")	2 Hr		17%	CP 606	WW-D-0082

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	Framed (Gypsum) Walls
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	Wood-Framed Floors
Metallic Penetrants	
Non-Metallic Pipes*	
Cables	
Cable Trays	Steel-Framed Floors
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts*	Joints
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	Joints
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	Joints
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	Movement	Product	System Number
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JOINTS — WALL-TO-WALL (WW-D SERIES) (CONTINUED)

Gypsum wall to concrete wall joint (requires backer rod) (Max JW=1")	1 or 2 Hr		19%	CP 606	WW-D-0105
Concrete wall to wall joint (Max JW = 2")	3 Hr		18%	CFS-S SIL GG	WW-D-0140
Concrete wall to wall joint (Max JW = 1")	2 Hr	■	25%	CFS-S SIL GG	WW-D-0141
Concrete wall to wall joint (Max JW= 2") optional max 1" conduits	2 Hr		12.5%	CP-606	WW-D-0220
Concrete wall to wall joint (Max JW=3-1/2")	3 Hr		14%	CFS-S SIL GG	WW-D-1011
Concrete wall to wall joint (Max JW=3-3/4")	2 Hr	■	7%	CP 606	WW-D-1012
Concrete wall to wall joint (Max JW=2")	4 Hr		12.5%	CFS-S SIL GG	WW-D-1047
Concrete wall to wall joint (Max JW=3")	2 Hr	■	17%	CP 606	WW-D-1080
Concrete wall to wall joint (Max JW=3-1/2")	2 Hr		14%	CFS-SP WB	WW-D-1084
Concrete wall to wall joint (Max JW = 3")	4 Hr	■	12.5%	CFS-S SIL GG	WW-D-1128
Concrete wall to wall joint (Max JW = 3")	2 Hr	■	33%	CFS-S SIL GG	WW-D-1129

JOINTS — WALL-TO-WALL (WW-S SERIES)

Concrete wall to wall joint (Max JW=1")	2 Hr	■		CP 606 CFS-S SIL GG	WW-S-0042
Concrete wall to gypsum wall (gyp sitting on top of concrete) (Max JW=3/4")	1 or 2 Hr			CP606 CFS-S SIL GG	WW-S-0048
Gypsum shaft wall to concrete wall (Max JW = 1")	1 or 2 Hr			CP 606	WW-S-0059
Gypsum wall to concrete or block wall (Max JW = 3/4")	1 or 2 Hr	■		CFS-TTS	WW-S-0074
Gypsum chase wall to concrete or block wall (Max JW = 3/4")	1 or 2 Hr	■		CFS-TTS	WW-S-0075

Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
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PERIMETER FIRE BARRIER JOINTS (CURTAIN WALL) — ASTM E2307

Tilt-Up Concrete Panel Curtain Wall (Max JW=6")	2 Hr	1/4 Hr		CFS-SP WB CFS-SP SIL	CWD 1001
Tilt-Up Concrete Panel Curtain Wall (Max JW=6")	2 Hr	1/4 Hr		CFS-S SIL SL	CWD 1003
Glass, Aluminum, or Granite Spandrel with Aluminum Framing (Max JW=4")	2 Hr	1/2 Hr	■	CFS-SP WB CFS-SP SIL	CWD 1015
Tilt-Up Concrete Panel Curtain Wall (Max JW=3")	3 Hr	1/4 Hr		CFS-SP WB CFS-SP SIL	CWD 1018
Insulated Tilt-up Concrete Panel Curtain Wall (Max JW=6")	2 Hr	1/4 Hr		CFS-SP WB CFS-SP SIL	CWD 1019
Facemounted steel back pan aluminum framed glass spandrel (Max. JW 4")	2 Hr	112 Min		CFS-SP WB CFS-SP SIL	CWD 1052
Insulated Tilt-up Panel Curtain Wall (Max JW=8")	2 Hr	1/4 Hr		CFS-SP WB CFS-SP SIL	CWD 2025
Glass, Aluminum, or Granite Spandrel with Aluminum Framing (Max JW=8")	2 Hr	1/4 Hr		CFS-S SIL SL	CWD 2026
Glass, Aluminum, or Granite Spandrel with Aluminum Framing (Max JW=8")	2 Hr	1/4 Hr		CFS-SP WB CFS-SP SIL	CWD 2027
Glass, Aluminum, or Granite Spandrel with Aluminum Framing (Max JW=4")	2 Hr	1/4 Hr		CFS-SP WB CFS-SP SIL	CWD 2046
Tilt-Up Concrete Panel Curtain Wall (Max JW=6")	2 Hr	1/4 Hr		CFS-SP WB CFS-SP SIL	CWS 1007
Glass Spandrel Panel and Aluminum Framing (Max JW=8")	2 Hr	1/4 Hr		CFS-S SIL SL	CWS 2027
Glass Spandrel Panel and Aluminum Framing (Max JW=8")	2 Hr	1/4 Hr		CFS-SP WB CFS-SP SIL	CWS 2028

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	Framed (Gypsum) Walls
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	
Metallic Penetrants	
Non-Metallic Pipes*	Wood-Framed Floors
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	Steel-Framed Floors
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	Joints
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
PERIMETER FIRE BARRIER JOINTS (CURTAIN WALL) — ASTM E2307 (CONTINUED)					
Aluminum Spandrel Panel and Aluminum Framing (Max JW=8")	2 Hr	1/4 Hr		CFS-S SIL SL	CWS 2029
Aluminum Spandrel Panel and Aluminum Framing (Max JW=8")	2 Hr	1/4 Hr		CFS-SP WB CFS-SP SIL	CWS 2030
Granite Spandrel Panel and Aluminum Framing (Max JW=8")	2 Hr	1/4 Hr		CFS-S SIL SL	CWS 2031
Granite Spandrel Panel and Aluminum Framing (Max JW=8")	2 Hr	1/4 Hr		CFS-SP WB CFS-SP SIL	CWS 2032
Insulated Tilt-up Panel Curtain Wall (Max JW=6")	2 Hr	1/4 Hr		CFS-SP WB CFS-SP SIL	CWS 2053
Concrete Panels with Steel Framing (Max JW=8")	2 Hr	1 Hr	■	CFS-SP WB CFS-SP SIL	CEJ 244P
Glass Spandrel Panel and Aluminum Framing (Max JW=8")	2 Hr	1 or 1-1/2 Hr	■	CFS-SP WB CFS-SP SIL	CEJ 246P
Gypsum with EIFS Finish and Steel Framing (Max JW=8")	2 Hr	1 Hr	■	CFS-SP WB CFS-SP SIL	CEJ 259P
Gypsum with Stucco Finish and Steel Framing (Max JW=8")	2 Hr	1 Hr	■	CFS-SP WB CFS-SP SIL	CEJ 260P
Gypsum with Stone Finish and Steel Framing (Max JW=8")	2 Hr	1 Hr	■	CFS-SP WB CFS-SP SIL	CEJ 261P
Gypsum with Brick Finish and Steel Framing (Max JW=8")	2 Hr	1 Hr	■	CFS-SP WB CFS-SP SIL	CEJ 262P
Gypsum with Aluminum or Steel Siding and Steel Framing (Max JW=8")	2 Hr	1 Hr	■	CFS-SP WB CFS-SP SIL	CEJ 263P
Gypsum with EIFS Finish and Steel Framing (Max JW=8")	2 Hr	1 Hr	■	CFS-SP WB CFS-SP SIL	CEJ 264P
Gypsum with Aluminum or Steel Siding and Steel Framing (Max JW=8")	2 Hr	1 Hr	■	CFS-SP WB CFS-SP SIL	CEJ 265P
Glass, Aluminum Spandrel with Aluminum Framing (Max JW=8")	3 Hr	1-3/4 Hr	■	CFS-SP WB CFS-SP SIL	CEJ 307P
Glass Spandrel with I-shaped Aluminum Framing (Max JW=8")	3 Hr	1-3/4 Hr	■	CFS-SP WB CFS-SP SIL	CEJ 308P
Glass Spandrel with Aluminum Framing (Max JW=8")	1-3/4 Hr	1-1/4 Hr	■	CFS-SP WB CFS-SP SIL	CEJ 309P
Glass Spandrel with I-shaped Aluminum Framing (Max JW=8")	1-3/4 Hr	1-1/4 Hr	■	CFS-SP WB CFS-SP SIL	CEJ 310P
Gypsum with Brick Finish and Steel Framing (Max JW=6")	2-3/4 Hr	1 Hr	■	CFS-SP WB CFS-SP SIL	CEJ 314P
Gypsum with Cementitious Finish and Steel Framing (Max JW=6")	2-3/4 Hr	1 Hr	■	CFS-SP WB CFS-SP SIL	CEJ 315P
Gypsum with Plaster Finish and Steel Framing (Max JW=6")	2-3/4 Hr	1 Hr	■	CFS-SP WB CFS-SP SIL	CEJ 316P
GFRC Panels with steel framing (Max JW = 8")	2 Hr	0 or 1 Hr	■	CFS-SP WB CFS-SP SIL	CEJ 400P
Gypsum with various facades (Max JW = 9", including studs)	2 Hr	1 Hr	■	CFS-SP WB CFS-SP SIL	CEJ 421P
Glas Spandrel with Aluminum Framing (vision glass at floor) (Max JW = 6")	1 Hr	54min	■	CFS-SP WB CFS-SP SIL	HI/BP 60-01
Gypsum wall with various facades. Steel framing starts and stops above and below floor (Max JW = 0")	2 Hr	1 Hr	■	CFS-SP WB CFS-SP SIL	HI/BP 120-04
Gypsum with various facades (cantilevered studs) (100% vertical shear)	2 Hr	3/4 Hr or 1-1/2 Hr	■	CFS-SP WB CFS-SP SIL	HI/BP 120-05
Concrete Panels with Steel Framing (Max JW=8")	2 Hr	1 or 2 Hr	■	CFS-SP WB CFS-SP SIL	HI/BP 135-01
Glass Spandrel with Aluminum Framing (vision glass at floor) (Max JW = 8")	2-1/2 Hr	1 Hr	■	CFS-SP WB CFS-SP SIL	HI/BP 150-01
Glass Spandrel Panel and Aluminum Framing (Max JW=6")	2 Hr	1 or 1-1/2 Hr	■	CFS-SP WB CFS-SP SIL	HI/BPF 120-06
Steel Back Pan w/ Glass Spandrel with Aluminum Framing (Max JW = 6")	2 Hr	1 Hr	■	CFS-SP WB CFS-SP SIL	HI/BPF 120-09
Galvanized Sheet Metal Pan w/ Glass Spandrel with Aluminum Framing (100% vision glass) (Max JW = 4")	2 Hr	3/4 Hr	■	CFS-SP WB CFS-SP SIL	HI/BPF 120-10
Galvanized Sheet Metal Pan w/ Glass Spandrel with Aluminum Framing (100% vision glass) (Max JW = 4") (12.5 % vertical and horizontal movement)	2 Hr	3/4 Hr	■	CFS-SP WB CFS-SP SIL	HI/BPF 120-11

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	Framed (Gypsum) Walls
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	Wood-Framed Floors
Metallic Penetrants	
Non-Metallic Pipes*	
Cables	
Cable Trays	Steel-Framed Floors
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Metallic Penetrations	Joints
Non-Metallic Pipes*	
Cables	
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	Joints
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	Joints
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	Joints
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



	Penetrating Item(s)	F-Rating	T-Rating	L-Rating	Product	System Number [Similar FM Approved System]
PERIMETER FIRE BARRIER JOINTS (CURTAIN WALL) — ASTM E2307 (CONTINUED)						
	Steel Back Pan w/ Glass Spandrel with Aluminum Framing (No Back Pan Stiffener) (Max JW = 4") (12.5% vertical and horizontal movement)	2 Hr	1 Hr	■	CFS-SP WB CFS-SP SIL	HI/BPF 120-12
NEW	Glass Spandrel Panel with Aluminum Framing Spandrel Insulation (6.25 % vertical and horizontal movement) (Max JW=6")	2 Hr	1 Hr	■	CFS-SP WB CFS-SP SIL	HI/BPF 120-13
NEW	Galvanized Sheet Metal Pan w/ Glass Spandrel with Aluminum Framing Insulation below (Max JW = 4") (12.5 % vertical and horizontal movement)	2 Hr	45 Min	■	CFS-SP WB CFS-SP SIL	HI/BPF 120-14
NEW	Galvanized Sheet Metal Pan w/ Glass Spandrel with Aluminum Framing Insulation below (Specified Thermafiber) (Max JW = 4") (12.5 % vertical and horizontal movement)	2 Hr	45 Min	■	CFS-SP WB CFS-SP SIL	HI/BPF 120-15
NEW	Galvanized Sheet Metal Pan w/ Glass Spandrel with Aluminum Framing (Specified Thermafiber) (Max JW = 4") (12.5 % vertical and horizontal movement)	2 Hr	45 Min	■	CFS-SP WB CFS-SP SIL	HI/BPF 120-16
NEW	Glass Spandrel Panel with Aluminum Framing Spandrel Insulation (Max JW=4")	2 Hr	1 Hr	■	CFS-SP WB CFS-SP SIL	HI/BPF 120-17
NEW	Glass Spandrel Panel with Aluminum Framing Spandrel Insulation (-8 % vertical movement) (Max JW=5")	2 Hr	33 Min	■	CFS-EOS QS	HI/BPF 120-18
NEW	Glass Spandrel Panel with Aluminum Framing Spandrel Insulation (-8 % vertical movement 11% horizontal movement) (Max JW=4.5")	2 Hr	33 Min	■	CFS-EOS QS	HI/BPF 120-19
NEW	Glass Spandrel Panel with Aluminum Framing Steel back pan (-8 % vertical movement 11% horizontal movement) (Max JW=4.5")	2 Hr	77 Min	■	CFS-EOS QS	HI/BPF 120-20
NEW	Glass Spandrel Panel with Aluminum Framing Steel back pan (-8 % vertical movement) (Max JW=5")	2 Hr	77 Min	■	CFS-EOS QS	HI/BPF 120-21
NEW	Glass Spandrel Panel with Aluminum Framing Steel back pan (-7.5 % vertical movement) (Max JW=5")	2 Hr	52 Min	■	CFS-EOS QS	HI/BPF 120-22
NEW	Glass Spandrel Panel with Aluminum Framing Steel back pan (-8 % vertical movement 11% horizontal movement) (Max JW=4.5")	2 Hr	52 Min	■	CFS-EOS QS	HI/BPF 120-23
NEW	Tilt-Up Concrete Panel Curtain Wall (Max JW=3")	2 Hr	112 Min	■	CFS-EOS QS	HI/BPF 120-24
NEW	Tilt-Up Concrete Panel Curtain Wall (Max JW=3")	2 Hr	2 Hr	■	CFS-EOS QS	HI/BPF 120-25
NEW	Galvanized Sheet Metal Pan w/ Glass Spandrel with Aluminum Framing (100% vision glass) (Max JW = 4")	2 Hr	43 Min	■	CFS-EOS QS	HI/BPF 120-27
NEW	Glass Spandrel Panel with Aluminum Framing Steel shadow box (Max JW=3")	2 Hr	86 Min	■	CFS-SP WB CFS-SP SIL	HI/BPF 120-28
NEW	Glass Spandrel Panel with Aluminum Framing Steel shadow box (Max JW=3")	2 Hr	86 Min	■	CFS-SP WB CFS-SP SIL	HI/BPF 120-29
NEW	Tilt-Up Concrete Panel Curtain Wall (Max JW=3-1/4")	4 Hr	4 Hr	■	CFS-SP WB CFS-SP SIL	HI/BPF 240-01
	Glass Spandrel Panel with Aluminum Framing (Max JW = 2") (25% vertical movement)	2 Hr	1-1/2 Hr	■	CFS-SP WB CFS-SP SIL	HI/JS 120-04
	Glass Spandrel Panel with Aluminum Framing (Max JW = 6")	2 Hr	2 Hr	■	CFS-SP WB CFS-SP SIL	HI/JS 120-05

Blank Openings	Concrete Floors/Walls
Metallic Penetrants	
Non-Metallic Pipes*	
Cables/Cable Trays	
Insulated Pipes	Framed (Gypsum) Walls
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Ducts	
Mixed Penetrating Items*	
Blank Openings	Wood-Framed Floors
Metallic Penetrants	
Non-Metallic Pipes*	
Cables	
Cable Trays	Steel-Framed Floors
Cable Trays	
Insulated Pipes	
Miscellaneous Electrical (Busway)	
Miscellaneous Mechanical/Duct Penetrations	Joints
Mixed Penetrating Items*	
Metallic Penetrations	
Non-Metallic Pipes*	
Cables	Joints
Insulated Pipes	
Miscellaneous Mechanical/Duct Penetrations	
Mixed Penetrating Items*	
Bottom of Wall (BW-S Series)	Joints
Continuity Head-of-Wall (CJ-D Series)	
Floor-to-Floor (FF-D Series)	
Floor-to-Wall (FW-D Series)	
Intertek Series (ASTM E 1966)	Joints
Head-of-Wall (HW-D Series)	
Head-of-Wall (HW-S Series)	
Wall-to-Wall (WW-D Series)	
Wall-to-Wall (WW-S Series)	Joints
Perimeter Fire Barrier Joints (Curtain Wall) - ASTM E2307	



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INFO BELOW:

Blank Openings	Concrete Floors/Walls	
Metallic Penetrants		
Non-Metallic Pipes*		
Cables/Cable Trays		
Insulated Pipes		
Miscellaneous Electrical (Busway)		
Miscellaneous Mechanical/Ducts		
Mixed Penetrating Items*		
Blank Openings	Framed (Gypsum) Walls	
Metallic Penetrants		
Non-Metallic Pipes*		
Cables		
Cable Trays		
Insulated Pipes		
Miscellaneous Electrical (Busway)		
Miscellaneous Mechanical/Ducts*		
Mixed Penetrating Items*	Wood-Framed Floors	
Blank Openings		
Metallic Penetrations		
Non-Metallic Pipes*		
Cables		
Insulated Pipes		
Miscellaneous Mechanical/Duct Penetrations		
Mixed Penetrating Items*		
Metallic Penetrations	Steel-Framed Floors	
Non-Metallic Pipes*		
Cables		
Insulated Pipes		
Miscellaneous Mechanical/Duct Penetrations		
Mixed Penetrating Items*		
Bottom of Wall (BW-S Series)		Joints
Continuity Head-of-Wall (CJ-D Series)		
Floor-to-Floor (FF-D Series)		
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Wall-to-Wall (WW-D Series)		
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