

BLANK OPENINGS

<u>DWG #</u>	<u>DESCRIPTION</u>	<u>F RATING</u>	<u>PRODUCT</u>	<u>PAGE #</u>
<u>CONCRETE AND BLOCK WALLS</u>				
CAJ0012-W	Max. 15 in. diameter opening (Optional Steel Sleeve)	3 hr.	FS 900+	0-001
CAJ0041-W	Max. 432 sq. in. opening w/ max. 27 in. dimension	2 hr.	FSM 22	0-003
CAJ0102-W	Min. 4-1/4 in. diameter opening	3 hr.	FSPIL	0-005
CAJ0125-W	Max. 6 in. blank opening with optional steel or PVC sleeve (W Rating)	3 hr.	FS 4000	0-007
CBJ0009-W	Max. 1280 sq. in. opening w/ max. 40 in. dimension	2 & 4 hr.	FSB or KBS	0-101
<u>CONCRETE FLOORS</u>				
CAJ0012-F	Max. 15 in. diameter opening (Optional Steel Sleeve)	3 hr.	FS 900+	0-002
CAJ0041-F	Max. 432 sq. in. opening w/ max. 27 in. dimension	2 hr.	FSM 22	0-004
CAJ0102-F	Max. 4-1/4 in. diameter opening (Optional Pre-Cast Hollow Core Concrete Units)	3 hr.	FSPIL	0-006
CAJ0125-F	Max. 6 in. blank opening with optional steel or PVC sleeve (W Rating)	3 hr.	FS 4000	0-008
CBJ0009-F	Max. 1280 sq. in. opening w/ max. 40 in. dimension	2 & 4 hr.	FSB or KBS	0-102
<u>GYPSUM WALLS</u>				
WL0002	Max. 22-5/8 in. wide by 20-1/2 in. high opening	1 & 2 hr.	FSB or KBS	0-401

METALLIC PENETRANTS

<u>CONCRETE AND BLOCK WALLS</u>				
CAJ1088-W	Up to 4, max. 4 in. steel or copper pipe, or EMT w/ max. 15 in. diameter opening	2 hr.	FS 900	1-005
CAJ1109-W	Max. 4 in. steel or copper pipe, or EMT w/ max. 10 in. diameter opening	2 hr.	FSM 22	1-007
CAJ1212-W	Up to 4, max. 4 in. steel or copper pipe, or EMT w/ max. 36 x 36 in. opening	2 hr.	FSM 22	1-009
CAJ1235-W	Max. 24 in. steel, max. 6 in. copper, or max. 4 in. EMT w/ max. 26 in. diameter opening	2 & 3 hr.	FS 1900 or 900+	1-011
CAJ1236-W	Max. 12 in. steel or iron, max. 6 in. copper, or max. 4 in. EMT w/ max. 16 in. diameter opening	3 hr.	FS 3000	1-013
CAJ1242-W	Up to 6, max. 1 in. flexible steel conduit w/ max. 6 in. diameter opening	3 hr.	FSP 1000	1-015
CAJ1379-W	Max. 24 in. steel or iron, or max. 4 in. EMT w/ max. 26-1/2 in. diameter opening	3 hr.	FS 900+	1-017
CAJ1387-W	Max. 10 in. steel, max. 6 in. conduit, or max. 4 in. EMT w/ max. 14 in. diameter opening	2 hr.	FS 1900	1-019
CAJ1402-W	Max. 8 in. steel or iron, max. 4 in. copper or EMT w/ max. 10-3/4 in. diameter opening	2 hr.	FS 1900	1-021
CAJ1403-W	Max. 8 in. steel or iron, max. 4 in. copper or EMT w/ max. 9-5/8 in. dia. opening (One sided)	2 or 3 hr.	FS 1900 or 900+	1-023
CAJ1404-W	Max. 24 in. steel, max. 6 in. copper or EMT w/ max. 24-7/8 in. diameter opening	2 hr.	FS 1900 or 900+	1-025
CAJ1406-W	Up to 8, max. 6 in. steel or 4 in. copper, or max. 2 in. EMT w/ max. 15-1/4 in. opening	2 hr.	FS 900+	1-027
CAJ1426-W	Up to 24, max. 4 in. steel, iron, or EMT or 1-1/2 in. copper w/ max. 48 x 18 in. opening	2 hr.	FS 3000	1-029
CAJ1465-W	Max. 8 in. steel or iron, max. 4 in. copper or EMT w/ max. 9-5/8 in. dia. opening (One sided)	2 hr.	FS 1900	1-033
CAJ1466-W	Max. 12 in. steel pipe, max. 6 in. steel conduit or max. 4 in. EMT w/ max. 18 in. diameter opening	3 hr.	FlameSafe Silicone	1-035
CAJ1467-W	Max. 4 in. steel, iron, copper or EMT w/ max. 6 in. diameter opening	2 hr.	FlameSafe Silicone	1-037
CAJ1468-W	Up to 3, max. 2 in. steel pipe or conduit or EMT w/ max. 6 in. diameter opening	2 hr.	FlameSafe Silicone	1-039
CAJ1469-W	Max. 12 in. steel pipe, max. 6 in. steel conduit or max. 4 in. EMT w/ max. 16 in. diameter opening	2 hr.	FlameSafe Silicone	1-041
CAJ1470-W	Max. 24 in. steel or iron pipe, max. 6 in. steel conduit or max. 4 in. EMT w/ max. 26 in. dia. Opening	2 hr.	FlameSafe Silicone	1-043
CAJ1502-W	Multiple max. 1-1/2 in. flexible metallic conduit w/ max. 6 in. diameter opening.	2 or 3 hr.	FS 900+ or FS 1900	1-045
CAJ1528-W	Max. 12 in. steel, iron or max. 4 in. copper w/ max. 14 in. diameter opening. T Rating - 2 HOUR	3 hr.	FS 900+	1-047
CAJ1535-W	Max. 8 in. steel or iron, max. 4 in. copper or EMT w/ max. 9-5/8 in. dia. Opening (One Sided)	3 hr.	FS 1900	1-049
CAJ1565-W	Max. 4 in. metallic penetrant in max. 6 in. opening (Hollow Core Floor and W Rating)	1 or 2 hr.	FS 4000	1-051
CAJ1566-W	Max. 4 in. metallic penetrant in max. 6 in. opening with optional steel or PVC sleeve (W Rating)	3 hr.	FS 4000	1-053
CAJ1567-W	Max. 8 in. metallic penetrant in max. 10-1/2 in. opening with optional sleeve (W Rating)	2 or 3 hr.	FS 4000	1-055
CAJ1568-W	Multiple max. 4 in. metallic penetrants in max. 216 square in. opening (W Rating)	2 hr.	FS 4000	1-057
CAJ1569-W	Max. 8 in. metallic penetrant in max. 10-1/2 in. opening through thin walls/floors (W Rating)	2 hr.	FS 4000	1-059
CAJ1570-W	Max. 10 in. metallic penetrants in max. 12 in. opening (T Rating 2 hr. & W Rating)	2 hr.	FS 4000	1-061
CAJ1577-W	Max. 4 in. metallic penetrant through max. 6 in. PVC sleeve	3 hr.	FS 900+ or FS 1900	1-063
CAJ1578-W	Max. 4 in. metallic penetrant through max. 6 in. PVC sleeve w/ point of contact	3 hr.	FS 1900	1-065
CAJ1584-W	Multiple max. 1-1/4 in. flexible steel gas piping in a 6 in. diameter opening	3 hr.	FS 1900 or 900+	1-067
CBJ1035-W	Max. 24 in. steel, max. 6 in. conduit, or max. 4 in. EMT w/ max. 26 in. diameter opening	3 hr.	FS 1900	1-101
WJ1065	Max. 24 in. steel, max. 6 in. conduit, or max. 4 in. EMT w/ max. 26 in. diameter opening	2 hr.	FS 1900/900/900+	1-302
WJ1066	Multi pene., max. 2 in. steel, iron, or EMT w/ max. 33 sq. in. opening	2 hr.	FS 1900	1-303
WJ1069	Max. 4 in. steel, iron, or copper pipe, or EMT w/ max. 6-1/8 in. diameter opening	2 hr.	FS 1900	1-304
WJ1087	Up to 4, max. 1 in. flexible aluminum conduits w/ max. 4 in. diameter opening	2 hr.	FS 1900	1-305
WJ1090	Multi. Pene., max. 3 in. steel, iron, or EMT w/ max. 91 sq. in. opening	2 hr.	FS 900+	1-306
WJ1137	Max. 4 in. steel pipe, steel conduit or EMT w/ max. 5 in. diameter opening	2 hr.	FlameSafe Silicone	1-307
WJ1158	Multiple max. 1-1/2 in. flexible steel conduit w/ max. 6 in. diameter opening.	2 hr.	FS 900+	1-308
WJ1206	Multiple max. 1-1/4 in. flexible steel gas piping in a 6 in. diameter opening	1 & 2 hr.	FS 900+ or FS 1900	1-309
WJ1207	Multiple max. 1 in. metal pipes or conduits in a 6x6 in. rectangular opening	1 & 2 hr.	FSPIL Pillows	1-310

METALLIC PENETRANTS

<u>DWG #</u>	<u>DESCRIPTION</u>	<u>F RATING</u>	<u>PRODUCT</u>	<u>PAGE #</u>
<u>CONCRETE FLOORS</u>				
CAJ1088-F	Up to 4, max. 4 in. steel or copper pipe, or EMT w/ max. 15 in. diameter opening	2 hr.	FS 900	1-006
CAJ1109-F	Max. 4 in. steel or copper pipe, or EMT w/ max. 10 in. diameter opening	2 hr.	FSM 22	1-008
CAJ1212-F	Up to 4, max. 4 in. steel or copper pipe, or EMT w/ max. 36 x 36 in. opening	2 hr.	FSM 22	1-010
CAJ1235-F	Max. 24 in. steel, max. 6 in. copper, or max. 4 in. EMT w/ max. 26 in. diameter opening	2 & 3 hr.	FS 1900 or 900+	1-012
CAJ1236-F	Max. 12 in. steel or iron, max. 6 in. copper, or max. 4 in. EMT w/ max. 16 in. diameter opening	3 hr.	FS 3000	1-014
CAJ1242-F	Up to 6, max. 1 in. flexible steel conduit w/ max. 6 in. diameter opening	3 hr.	FSP 1000	1-016
CAJ1379-F	Max. 24 in. steel or iron, or max. 4 in. EMT w/ max. 26.5 in. diameter opening	3 hr.	FS 900+	1-018
CAJ1387-F	Max. 10 in. steel, max. 6 in. conduit, or max. 4 in. EMT w/ max. 14 in. dia. opening (2-1/2 in. slab)	2 hr.	FS 1900	1-020
CAJ1402-F	Max. 8 in. steel or iron, max. 4 in. copper or EMT w/ max. 10-3/4 in. dia. opening (2-1/2 in. slab)	2 hr.	FS 1900	1-022
CAJ1403-F	Max. 8 in. steel or iron, max. 4 in. copper or EMT w/ max. 9-5/8 in. dia. opening (Bottom install)	2 or 3 hr.	FS 1900 or 900+	1-024
CAJ1404-F	Max. 24 in. steel, max. 6 in. copper or EMT w/ max. 24-7/8 in. diameter opening (2-1/2 in. slab)	2 hr.	FS 1900 or 900+	1-026
CAJ1406-F	Up to 8, max. 6 in. steel or 4 in. copper, or max. 2 in. EMT w/ max. 15-1/4 in. opg. (2-1/2 in. slab)	2 hr.	FS 900+	1-028
CAJ1426-F	Up to 24, max. 4 in. steel, iron, or EMT or 1-1/2 in. copper w/ max. 48 x 18 in. opening	2 hr.	FS 3000	1-030
CAJ1465-F	Max. 8 in. steel or iron, max. 4 in. copper or EMT w/ max. 9-5/8 in. dia. opening (Bottom install)	2 hr.	FS 1900	1-034
CAJ1466-F	Max. 12 in. steel pipe, max. 6 in. steel conduit or max. 4 in. EMT w/ max. 18 in. diameter opening	3 hr.	FlameSafe Silicone	1-036
CAJ1467-F	Max. 4 in. steel, iron, copper or EMT w/ max. 6 in. diameter opening	2 hr.	FlameSafe Silicone	1-038
CAJ1468-F	Up to 3, max. 2 in. steel pipe or conduit or EMT w/ max. 6 in. diameter opening	2 hr.	FlameSafe Silicone	1-040
CAJ1469-F	Max. 12 in. steel pipe, max. 6 in. steel conduit or max. 4 in. EMT w/ max. 16 in. diameter opening	2 hr.	FlameSafe Silicone	1-042
CAJ1470-F	Max. 24 in. steel or iron pipe, max. 6 in. steel conduit or max. 4 in. EMT w/ max. 26 in. dia. Opening	2 hr.	FlameSafe Silicone	1-044
CAJ1502-F	Multiple max. 1-1/2 in. flexible metallic conduit w/ max. 6 in. diameter opening.	2 or 3 hr.	FS 900+ or FS 1900	1-046
CAJ1528-F	Max. 12 in. steel, iron or max. 4 in. copper w/ max. 14 in. diameter opening. T Rating - 2 HOUR	3 hr.	FS 900+	1-048
CAJ1535-F	Max. 8 in. steel or iron, max. 4 in. copper or EMT w/ max. 9-5/8 in. dia. Opening (Bottom only)	3 hr.	FS 1900	1-050
CAJ1565-F	Max. 4 in. metallic penetrant in max. 6 in. opening (Hollow Core Floor and W Rating)	1 or 2 hr.	FS 4000	1-052
CAJ1566-F	Max. 4 in. metallic penetrant in max. 6 in. opening with optional steel or PVC sleeve (W Rating)	3 hr.	FS 4000	1-054
CAJ1567-F	Max. 8 in. metallic penetrant in max. 10-1/2 in. opening with optional sleeve (W Rating)	2 or 3 hr.	FS 4000	1-056
CAJ1568-F	Multiple max. 4 in. metallic penetrants in max. 216 square in. opening (W Rating)	2 hr.	FS 4000	1-058
CAJ1569-F	Max. 8 in. metallic penetrant in max. 10-1/2 in. opening through thin walls/floors (W Rating)	2 hr.	FS 4000	1-060
CAJ1570-F	Max. 10 in. metallic penetrants in max. 12 in. opening (T Rating 2 hr. & W Rating)	2 hr.	FS 4000	1-062
CAJ1577-F	Max. 4 in. metallic penetrant through max. 6 in. PVC sleeve	3 hr.	FS 900+ or FS 1900	1-064
CAJ1578-F	Max. 4 in. metallic penetrant through max. 6 in. PVC sleeve w/ point of contact	3 hr.	FS 1900	1-066
CAJ1584-F	Multiple max. 1-1/4 in. flexible steel gas piping in a 6 in. diameter opening	3 hr.	FS 1900 or 900+	1-068
CBJ1035-F	Max. 24 in. steel, max. 6 in. conduit, or max. 4 in. EMT w/ max. 26 in. diameter opening	3 hr.	FS 1900	1-102
FA1095	Max. 8 in. metallic penetrant in max. 10-1/2 in. opening, min. 2-1/2 in. thick concrete floor (W Rating)	2 hr.	FS 4000	1-104
<u>WOOD FRAMED CHASE WALLS AND FLOORS</u>				
FC1020	Max. 4 in. steel pipe or EMT, or max. 3 in. copper pipe w/ max. 5-1/2 in. diameter opening	1 & 2 hr.	FS 1900	1-201
FC1023	Max. 4 in. metallic pipe w/ max. 5 in. diameter opening	1 hr.	FS 1900 or 900+	1-204
FC1037	Up to 3, max. 1 in. flexible steel conduit w/ max. 2 in. diameter opening	1 & 2 hr.	FS 1900	1-202
FC1084	Max. 4 in. steel pipe or EMT, or max. 3 in. copper pipe w/ max. 5 in. diameter opening	1 & 2 hr.	FS 900+	1-203
FC1107	Max. 4 in. steel pipe, steel conduit, iron or EMT or max. 2 in. copper w/ max. 5 in. diameter opening	2 hr.	FlameSafe Silicone	1-205
FC1110	Max. 4 in. steel pipe, steel conduit, iron or EMT or max. 2 in. copper w/ max. 5 in. dia. opening (Chase)	1 & 2 hr.	FlameSafe Silicone	1-206
FC1125	Multiple max. 1-1/2 in. flexible metallic conduit w/ max. 4 in. diameter opening.	1 & 2 hr.	FS 900+	1-207
<u>STEEL FRAMED CONCRETE FLOORS</u>				
FE1005	Max. 4 in. steel pipe or EMT, or max. 3 in. copper pipe w/ max. 5 in. diameter opening	1 hr.	FS 900+	1-251
FE1006	Up to 3, max. 1 in. flexible steel conduit w/ max. 2 in. diameter opening	1 hr.	FS 1900	1-252
<u>GYPSUM WALLS</u>				
WL1046	Max. 1/2 in. flexible steel or aluminum conduit w/ max. 1-3/8 in. diameter opening	1 & 2 hr.	FS 1900 or 900+	1-402
WL1152	Max. 24 in. steel pipe, 6 in. copper pipe, or 4 in. EMT w/ max. 26+ in. diameter opening	1 & 2 hr.	FS 1900/900/900+	1-405
WL1153	Multi pene., max. 2 in. steel, iron, or EMT w/ max. 33 sq. in. opening	1 & 2 hr.	FS 1900	1-406
WL1204	Up to 4, max. 1 in. flexible aluminum conduits w/ max. 4 in. diameter opening	1 & 2 hr.	FS 1900	1-408
WL1207	Multi. Pene., max. 3 in. steel, iron, or EMT w/ max. 91 sq. in. opening	1 & 2 hr.	FS 900+	1-409
WL1312	Max. 4 in. steel pipe, steel conduit or EMT w/ max. 5 in. diameter opening	1 & 2 hr.	FlameSafe Silicone	1-410
WL1343	Multiple max. 1-1/2 in. flexible steel conduit w/ max. 6 in. diameter opening.	1 & 2 hr.	FS 900+	1-411
WL1404	Max. 24 in. steel pipe, 6 in. copper pipe, or 4 in. EMT w/ sheet metal or steel sleeve	1 & 2 hr.	FS 1900 or 900+	1-412
WL1427	Multiple max. 1-1/4 in. flexible steel gas piping in a 6 in. diameter opening	1 & 2 hr.	FS 1900 or 900+	1-413
WL1428	Multiple max. 1 in. metal pipes or conduits in a 6x6 in. rectangular opening	1 & 2 hr.	FSPIL Pillows	1-414

NONMETALLIC PENETRANTS

<u>DWG #</u>	<u>DESCRIPTION</u>	<u>F RATING</u>	<u>PRODUCT</u>	<u>PAGE #</u>
<u>CONCRETE AND BLOCK WALLS</u>				
CAJ2171-W	Max. 4 in. RNC, PVC or CPVC pipe w/ max. 8 in. diameter opening	2 hr.	FSIS/FS 900	2-001
CAJ2173-W	Max. 2 in. RNC, PVC, CPVC, ABS, FRPP or PP w/max. 3 in. dia. opening	3 hr.	FSIS/FS 1900	2-005
CAJ2174-W	Max. 4 in. PVC, ABS, RNC, CPVC or FRPP w/max. 6 in. dia. opening (Optional Steel Sleeve).	3 hr.	FSIS/FS 900+	2-007
CAJ2194-W	Up to 2, max. 1 in. crossed linked polyethylene (PEX) w/ max. 3 in. diameter opening	3 hr.	FS 1900 or 900+	2-011
CAJ2201-W	Max. 3 in. RNC, PVC, CPVC, ABS or FRPP pipe w/ max. 6 in. diameter opening	3 hr.	FSWS150/FS1900	2-013
CAJ2202-W	Max. 2 in. RNC, PVC, or CPVC pipe w/ max. 3 in. diameter opening	3 hr.	FSWS150/FS1900	2-015
CAJ2210-W	Max. 6 in. RNC or 8 in. PVC, CPVC pipe w/ max. 10 in. diameter opening	2 hr.	FSIS/FS 1900	2-017
CAJ2211-W	Max. 2 in. ABS pipe w/ max. 3 in. diameter opening	2 hr.	FSWS150/FS1900	2-019
CAJ2212-W	Max. 5 in. RNC, PVC, CPVC or 4 in. ABS pipe w/ 6 in. diameter opening	2 & 3 hr.	FSWS 150 Collar	2-021
CAJ2251-W	Max. 4 in. RNC, CPVC, PVC, ABS or FRPP pipe w/ 5 in. diameter opening	2 & 3 hr.	FSWS 100 Collar	2-023
CAJ2339-W	Max. 4 in. RNC, PVC, ABS or CPVC pipe w/ max. 6 in. opening (W Rating)	2 hr.	FSIS/FS 900+	2-025
CAJ2340-W	Max. 6 in. RNC, PVC, or CPVC w/ max. 7 in. diameter opening	1 hr.	FSWS 100 Collar	2-027
CAJ2341-W	Max. 3 in. RNC, CPVC or PVC w/ max. 5 in. diameter opening	1-1/2 hr.	FSWS150/FS1900	2-029
CAJ2351-W	Max. 3 in. PVC or ABS pipe w/ max. 5 in. opening (One sided)	2 hr.	FSWS150/FS1900	2-031
CAJ2375-W	Max. 4 in. RNC, PVC, CPVC or ABS pipe w/ max. 7 in. opening	2 hr.	FSWS150/FS1900	2-033
CAJ2376-W	Max. 6 in. RNC or 10 in. PVC, CPVC pipe w/ max. 11 in. diameter opening	2 hr.	FSD/FS1900	2-035
CAJ2379-W	Up to 3, max. 2 in. PVDF tubing within max. 4 in. PVC messenger pipe w/ max. 6-1/2 in. opening	3 hr.	FSIS/FS 900+	2-037
CAJ2401-W	Max. 2 in. RNC, CPVC or PVC (closed) w/ max. 4-1/4 in. diameter opening	2 hr.	FS 1900	2-039
CAJ2432-W	Max. 2 in. RNC, CPVC or PVC w/ max. 4 in. diameter opening	2 & 3 hr.	FS 1900	2-041
CAJ2509-W	Max. 8 in. RNC, CPVC or PVC w/ max. 11 in. diameter opening (W Rating)	3 hr.	FSIS/FS 900+	2-043
CAJ2511-W	Max. 2 in. RNC, ENT, CPVC or PVC (closed) w/ max. 4 in. diameter opening	3 hr.	FS 900+	2-045
CAJ2530-W	Max. 4 in. PVC, RNC or CPVC with coupling or elbow at wall surface w/max. 5 in. dia. Opening.	2 hr.	FSWS150/FS1900	2-047
CAJ2568-W	Max. 4 in. RNC, PVC, ABS, CPVC or FRPP pipe w/ max. 5 in. opening	1-1/2 & 3 hr.	FSWS150 Tuck-in	2-049
CAJ2589-W	Max. 3 in. glass pipe in max. 4 in. opening (W Rating)	2 hr.	FS 4000	2-051
CAJ2591-W	Max. 4 in. RNC, PVC, ABS or CPVC pipe w/ max. 6 in. opening w/ PVC sleeve	2 or 3 hr.	FSIS/FS 900+	2-053
CAJ2592-W	Max. 3 in. RNC, PVC, ABS pipe or 2 in. ENT (closed system) in max. 6 in. opening	2 & 3 hr.	FS 1900	2-055
CAJ2605-W	Multiple max. 1 in. PEX tubing w/ max. 6 in. opening	1-1/2 hr.	FS 1900	2-061
CBJ2005-W	Max. 2 in. RNC, PVC, CPVC or max. 1 in. ENT (smurf) w/ max. 5 in. diameter opening	3 hr.	FS 1900	2-101
WJ2048	Max. 3 in. RNC, CPVC or PVC w/ max. 5 in. diameter opening	2 hr.	FSWS150/FS1900	2-302
WJ2051	Max. 2 in. RNC or PVC, max. 1-1/2 in. ABS, ENT (smurf) or PEX w/ max. 4 in. dia. opening	2 hr.	FS 1900	2-303
WJ2052	Max. 4 in. RNC, PVC, CPVC or ABS w/ max. 5 in. diameter opening	2 hr.	FSWS 100 Collar	2-304
WJ2086	Max. 6 in. Glass w/ max. 8 in. opening	2 hr.	FS 1900 or 900+	2-306
WJ2087	Max. 2 in. RNC, PVC, CPVC or ABS w/ max. 4 in. diameter opening	2 hr.	FS 900+	2-307
WJ2102	Up to 3, max. 1 in. PEX tubing w/ max. 4 in. opening	2 hr.	FS 1900	2-308
WJ2129	Max. 6 in. RNC or 8 in. PVC or CPVC pipe w/ max. 10-1/2 in. diameter opening	2 hr.	FSIS/FS 900+	2-309
<u>CONCRETE FLOORS</u>				
CAJ2171-F	Max. 4 in. RNC, PVC or CPVC pipe w/ max. 8 in. diameter opening	2 hr.	FSIS/FS 900	2-002
CAJ2173-F	Max. 2 in. RNC, PVC, CPVC, ABS, FRPP or PP w/max. 3 in. dia. opening	3 hr.	FSIS/FS 1900	2-006
CAJ2174-F	Max. 4 in. PVC, ABS, RNC, CPVC or FRPP w/max. 6 in. dia. opening (Optional Hollow Core Floor).	3 hr.	FSIS/FS 900+	2-008
CAJ2194-F	Up to 2, max. 1 in. crossed linked polyethylene (PEX) w/ max. 3 in. diameter opening	3 hr.	FS 1900 or 900+	2-012
CAJ2201-F	Max. 3 in. RNC, PVC, CPVC, ABS or FRPP pipe w/ max. 6 in. diameter opening	3 hr.	FSWS150/FS1900	2-014
CAJ2202-F	Max. 2 in. RNC, PVC, or CPVC pipe w/ max. 3 in. diameter opening	3 hr.	FSWS150/FS1900	2-016
CAJ2210-F	Max. 6 in. RNC or 8 in. PVC, CPVC pipe w/ max. 10 in. diameter opening	2 hr.	FSIS/FS 1900	2-018
CAJ2211-F	Max. 2 in. ABS pipe w/ max. 3 in. diameter opening	2 hr.	FSWS150/FS1900	2-020
CAJ2212-F	Max. 5 in. RNC, PVC, CPVC or 4 in. ABS pipe w/ 6 in. diameter opening (Optional Hollow Core Floor)	2 & 3 hr.	FSWS 150 Collar	2-022
CAJ2251-F	Max. 4 in. RNC, CPVC, PVC, ABS or FRPP pipe w/ 5 in. diameter opening (2-1/2 in. Slab, Optional Hollow Cor	2 & 3 hr.	FSWS 100 Collar	2-024
CAJ2339-F	Max. 4 in. RNC, PVC, ABS or CPVC pipe w/ max. 6 in. opng. (2-1/2 in. slab, W Rating)	2 hr.	FSIS/FS 900+	2-026
CAJ2340-F	Max. 6 in. RNC, PVC or CPVC w/ max. 7 in. diameter opening (2-1/2 in. slab, Optional Hollow Core Floor)	1 hr.	FSWS 100 Collar	2-028
CAJ2341-F	Nominal 3 in. RNC, CPVC or PVC w/ max. 5 in. diameter opening (2-1/2 in. slab, Optional Hollow Core Floor)	1-1/2 hr.	FSWS150/FS1900	2-030
CAJ2351-F	Max. 3 in. PVC or ABS pipe w/ max. 5 in. opening (Bottom install)	2 hr.	FSWS150/FS1900	2-032
CAJ2375-F	Max. 4 in. RNC, PVC, CPVC or ABS pipe w/ max. 7 in. opening (optional Hollow Core Floor)	2 hr.	FSWS150/FS1900	2-034
CAJ2376-F	Max. 6 in. RNC or 10 in. PVC, CPVC pipe w/ max. 11 in. diameter opening (Optional Hollow Core Floor)	2 hr.	FSD/FS1900	2-036
CAJ2379-F	Up to 3, max. 2 in. PVDF tubing within max. 4 in. PVC messenger pipe w/ max. 6-1/2 in. opening	3 hr.	FSIS/FS 900+	2-038
CAJ2401-F	Max. 2 in. RNC, CPVC or PVC (closed) w/ max. 4-1/4 in. diameter opening (Optional Hollow Core Floor)	2 hr.	FS 1900	2-040
CAJ2432-F	Max. 2 in. RNC, CPVC or PVC w/ max. 4 in. diameter opening	2 & 3 hr.	FS 1900	2-042
CAJ2509-F	Max. 8 in. RNC, CPVC or PVC w/ max. 11 in. diameter opening (Hollow Core Floor, W Rating)	3 hr.	FSIS/FS 900+	2-044
CAJ2511-F	Max. 2 in. RNC, ENT, CPVC or PVC (closed) w/ max. 4 in. diameter opening (Optional Hollow Core Floor)	3 hr.	FS 900+	2-046

NONMETALLIC PENETRANTS

<u>DWG #</u>	<u>DESCRIPTION</u>	<u>F RATING</u>	<u>PRODUCT</u>	<u>PAGE #</u>
<u>CONCRETE FLOORS</u>				
CAJ2530-F	Max. 4 in. PVC, RNC or CPVC with coupling or elbow at ceiling w/max. 5 in. dia. Opening.	2 hr.	FSWS150/FS 1900	2-048
CAJ2568-F	Max. 4 in. RNC, PVC, ABS, CPVC or FRPP pipe w/ max. 5 in. opening	1-1/2 & 3 hr.	FSWS 150 Tuck-in	2-050
CAJ2589-F	Max. 3 in. glass pipe in max. 4 in. opening (W Rating)	2 hr.	FS 4000	2-052
CAJ2591-F	Max. 4 in. RNC, PVC, ABS or CPVC pipe w/ max. 6 in. opening w/ PVC sleeve	2 or 3 hr.	FSIS/FS 900+	2-054
CAJ2592-F	Max. 3 in. RNC, PVC, ABS pipe or 2 in. ENT (closed system) in max. 6 in. opening	2 & 3 hr.	FS 1900	2-056
CAJ2605-F	Multiple max. 1 in. PEX tubing w/ max. 6 in. opening	1-1/2 hr.	FS 1900	2-062
CBJ2005-F	Max. 2 in. RNC, PVC, CPVC or max. 1 in. ENT (smurf) w/ max. 5 in. diameter opening	3 hr.	FS 1900	2-102
FA2104	Max. 4 in. PVC or CPVC overlapping max. 4 in. metallic pipe w/ max. 6 in. opening	2 hr.	FSIS/FS 900+	2-103
FA2113	Max. 4 in. PVC or ABS water closet (toilet) drain pipe w/ max. 6 in. opening	2 hr.	FS 1900 or 900+	2-104
FA2134	Max. 4 in. RNC, CPVC, PVC or ABS pipe w/ max. 6 in. opening (Inside Chase Wall, Optional Hollow Core Floo	2 hr.	FS 1900 or 900+	2-105
FA2155	Max. 4 in. RNC, CPVC, PVC, ABS or FRPP pipe through fluted deck - Collar System w/ plate	2 hr.	FSWS 100 Collar	2-106

WOOD FRAMED CHASE WALLS AND FLOORS

FC2041	Max. 4 in. RNC, PVC, or CPVC pipe w/ max. 5 in. diameter opening	1 & 2 hr.	FSD/FS 1900/900+	2-201
FC2042	Max. 2 in. RNC, PVC, CPVC pipe or 1 in. ENT w/ max. 4 in. diameter opening	1 & 2 hr.	FS 1900 or 900+	2-202
FC2082	Max. 4 in. RNC, PVC, CPVC or ABS pipe w/ max. 5 in. dia. Opening	1 hr.	FS 1900 or 900+	2-204
FC2083	Max. 4 in. RNC, PVC, CPVC or ABS pipe w/ max. 5 in. diameter opening	1 & 2 hr.	FSWS 100 Collar	2-205
FC2084	Max. 2 in. RNC, ABS, PVC, or CPVC pipe w/ max. 3 in. diameter opening	1 & 2 hr.	FSWS100/FS1900	2-206
FC2086	Max. 4 in. ABS, FRPP, PVC or CPVC pipe w/ max. 5 in. diameter opening	1 hr.	FSWS 100 Collar	2-207
FC2087	Max. 4 in. PVC or ABS waste pipe & closet flange w/ max. 5 in. diameter opening	1 hr.	FS 1900 or 900+	2-208
FC2089	Max. 1-1/2 in. PVC bathtub waste & overflow w/ max. 8 x 12 in. opening	1 hr.	FS 1900 or 900+	2-210
FC2090	Max. 4 in. ABS pipe & p-trap drain pipe w/ max. 5 in. diameter opening	1 hr.	FSWS 100 Collar	2-211
FC2091	Max. 4 in. PVC, CPVC or ABS pipe & p-trap drain pipe w/ max. 5 in. opening	1 hr.	FS 1900 or 900+	2-212
FC2122	Max. 3 in. PVC, CPVC or ABS w/ max. 4 in. opening	1 hr.	FSWS 100 Collar	2-214
FC2164	Max. 4 in. RNC, PVC, CPVC or ABS w/ max. 5 in. opening	1 hr.	FS 1900 or 900+	2-215
FC2211	Up to 4, max. 1 in. ENT (smurf) tubing w/ max. 4 in. opening	1 hr.	FS 900+	2-216
FC2221	Up to 3, max. 1 in. PEX tubing or 3/4 in. PEX-AL-PEX tubing w/ max. 3 in. opening	1 & 2 hr.	FS 1900 or 900+	2-217
FC2384	Max. 4 in. RNC, PVC, CPVC or ABS w/ max. 5 in. opening (Collar sized to fit inside a chase wall)	1 & 2 hr.	FSWS 100 Collar	2-218
FC2385	Multiple max. 3/4 in. PEX tubing w/ max. 6 in. opening	1 & 2 hr.	FS 1900	2-219
FC2386	Max. 3 in. RNC, PVC, CPVC or ABS w/ max. 4 in. opening	1 & 2 hr.	FSWS 100 Tuck-in	2-220

STEEL FRAMED CONCRETE FLOORS

FE2007	Up to 3, max. 1 in. PEX tubing w/ max. 3 in. opening	1 hr.	FS 1900	2-251
FE2008	Max. 2 in. RNC, ABS, PVC, or CPVC pipe w/ max. 3 in. diameter opening	1 hr.	FSWS100/FS1900	2-252
FE2009	Max. 4 in. RNC, PVC, CPVC or ABS pipe w/ max. 5 in. diameter opening	1 hr.	FSWS 100 Collar	2-253

GYPSUM WALLS

WL2166	Max. 4 in. RNC, PVC, CPVC, ABS, FRPP, or Glass w/ 6 in. opening	1 & 2 hr.	FSIS/FS 900	2-403
WL2167	Max. 4 in. RNC, PVC, CPVC or ABS w/ max. 5 in. diam. opening - Optional sheet metal or steel sleeve	1 & 2 hr.	FSWS 100 Collar	2-404
WL2168	Max. 3 in. RNC, CPVC or PVC w/ max. 5 in. diameter opening - Optional sheet metal or steel sleeve	1 & 2 hr.	FSWS150/FS1900	2-405
WL2170	Max. 2 in. RNC or PVC, max. 1-1/2 in. ABS, PEX or ENT (smurf) w/ max. 4 in. dia. opening	1 & 2 hr.	FS 1900	2-406
WL2185	Max. 6 in. RNC or 8 in. PVC or CPVC pipe w/ max. 10-1/2 in. diameter opening - Optional Sleeve	1 & 2 hr.	FSIS/FS 900+	2-407
WL2258	Max. 6 in. Glass w/ max. 8 in. opening	1 & 2 hr.	FS 1900 or 900+	2-409
WL2259	Max. 2 in. RNC, PVC, CPVC or ABS w/ max. 4 in. diameter opening	1 & 2 hr.	FS 900+	2-410
WL2287	Up to 3, max. 1 in. PEX tubing w/ max. 4 in. opening	1 & 2 hr.	FS 1900 or 900+	2-411
WL2465	Max. 2 in. RNC, CPVC or PVC, max. 1 in. ENT (smurf) w/ max. 4-3/8 in. dia. opening - Optional Sleeve	1 & 2 hr.	FS 1900	2-412

CABLES

CONCRETE AND BLOCK WALLS

CAJ3016-W	Max. 11% fill of multiconductor and telecom cables w/ max. 8 in. diameter opening	2 hr.	FSP 1000	3-001
CAJ3035-W	Max. 11% fill of multiconductor and telecom cables w/ max. 15 in. diameter opening	2 hr.	FS 900	3-003
CAJ3153-W	Max. 38% fill of multiconductor and telecom cables w/ max. 5 in. diameter opening	2 hr.	FS 1900	3-007
CAJ3185-W	Max. 19% fill of multiconductor, coax and telecom cables w/ max. 5 in. dia. opening	2 hr.	FSPIL	3-009
CAJ3199-W	Max. 40% fill of telecom, SER, metal clad, and ROMEX® cables w/max. 4 in. Opening.	3 hr.	FS 1900	3-013
CAJ3220-W	Max. 30% fill of telecom cables w/ max. 6 in. diameter steel sleeve opening	2 hr.	FlameSafe Silicone	3-015
CAJ3234-W	Max. 3 in. diameter bundle of telecom, ROMEX®, SER, power and metal clad cables w/ 6 in. dia. opening.	2 hr.	FS 900+	3-017
CAJ3241-W	Max. 19% fill of telecom, coaxial, metal clad, and fiber optic cables w/max. 6 in. dia. Opening.	3 hr.	FS 900+	3-019
CAJ3278-W	Max. 3 in. diameter bundle of telecom, power and MI cables in max. 6 in. opening (W Rating)	3 hr.	FS 4000	3-021
CAJ3286-W	Max. 45% fill of telecom, SER, metal clad, and ROMEX® cables w/max. 6 in. PVC sleeve	3 hr.	FS 1900 or 900+	3-023

CABLES

<u>DWG #</u>	<u>DESCRIPTION</u>	<u>F RATING</u>	<u>PRODUCT</u>	<u>PAGE #</u>
<u>CONCRETE AND BLOCK WALLS</u>				
WJ3019	Max. 25% fill of telecom cables thru max. 4 in. diameter steel sleeve	2 hr.	FS 1900	3-301
WJ3038	Max. 19% fill of multiconductor and telecom cables thru max. 4 in. diameter steel sleeve	2 hr.	FSB or FSPIL	3-302
WJ3069	Max. 2-3/4 in. diam bundle of coaxial, SER, ROMEX®, metal clad cables w/max. 4 in. diam opening.	2 hr.	FS 1900	3-305
WJ3076	Max. 40% fill of ROMEX® and telecom cables w/ max. 3 in. diameter opening	2 hr.	FSP1000 or FS900	3-306
WJ3077	Max. 40% fill of ROMEX® and telecom cables w/ max. 3 in. diameter opening	2 hr.	FSB Bags	3-307
WJ3078	Max. 10% fill of coaxial, fiber optic, and telecom cables w/ max. 18 x 22-5/8 in. opening	2 hr.	FSB or FSPIL	3-308
WJ3083	Max. 38% fill of multiconductor and telecom cables thru optional 4 in. diameter sleeve	2 hr.	FSP1000	3-309
WJ3084	Max. 19% fill of multiconductor and telecom cables thru optional 4 in. diameter sleeve	2 hr.	FS 900+	3-310
WJ3102	Max. 56% fill of multiconductor and telecom cables thru max. 4 in. diameter EMT sleeve	2 hr.	FS 1900	3-311
WJ3107	Telecom cable w/ max. 1/2 in. diameter opening	2 hr.	FlameSafe Silicone	3-312
WJ3144	Max. 4 in. diam bundle of coaxial, SER, ROMEX® cables w/max. 5 in. diam opening	2 hr.	FS 900+	3-313

CONCRETE FLOORS

CAJ3016-F	Max. 11% fill of multiconductor and telecom cables w/ max. 8 in. diameter opening	2 hr.	FSP 1000	3-002
CAJ3035-F	Max. 11% fill of multiconductor and telecom cables w/ max. 15 in. diameter opening	2 hr.	FS 900	3-004
CAJ3153-F	Max. 38% fill of multiconductor and telecom cables w/ max. 5 in. diameter opening	2 hr.	FS 1900	3-008
CAJ3185-F	Max. 19% fill of multiconductor, coax and telecom cables w/ max. 5 in. dia. opng. (2-1/2 in. slab)	2 hr.	FSPIL	3-010
CAJ3199-F	Max. 40% fill of telecom, SER, metal clad, and ROMEX® cables w/max. 4 in. dia. Opening.	3 hr.	FS 1900	3-014
CAJ3220-F	Max. 30% fill of telecom cables w/ max. 6 in. diameter steel sleeve opening	2 hr.	FlameSafe Silicone	3-016
CAJ3234-F	Max. 3 in. diameter bundle of telecom, ROMEX®, SER, power and metal clad cables w/ 6 in. dia. opening.	2 hr.	FS 900+	3-018
CAJ3241-F	Max. 19% fill of telecom, coaxial, metal clad, and fiber optic cables w/max. 6 in. dia. Opening.	3 hr.	FS 900+	3-020
CAJ3278-F	Max. 3 in. diameter bundle of telecom, power and MI cables in max. 6 in. opening (W Rating)	3 hr.	FS 4000	3-022
CAJ3286-F	Max. 45% fill of telecom, SER, metal clad, and ROMEX® cables w/max. 6 in. PVC sleeve	3 hr.	FS 1900 or 900+	3-024
FA3039	Metal clad, power, telecom and MI cable bundle, min. 2-1/2 in. thick concrete floor (W Rating)	2 hr.	FS 4000	3-101

WOOD FRAMED CHASE WALLS AND FLOORS

FC3018	Telecom, ROMEX®, coaxial, and aluminum SER cables w/ max. 2 in. diameter opening	1 & 2 hr.	FS 1900	3-201
FC3060	Telecom, ROMEX®, coaxial, and metal clad cables w/ max. 4 in. diameter opening	1 & 2 hr.	FS 900+	3-203

STEEL FRAMED CONCRETE FLOORS

FE3006	Telecom, ROMEX®, coaxial, and metal clad cables w/ max. 4 in. diameter opening	1 hr.	FS 900+	3-251
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GYPSUM WALLS

WL3005	Max. 40% fill of ROMEX® and telecom cables thru max. 3 in. diameter sheet metal sleeve	1 & 2 hr.	FSP1000 or FS900	3-401
WL3006	Max. 40% fill of ROMEX® and telecom cables w/ max. 3 in. diameter opening	1 & 2 hr.	FSB Bags	3-402
WL3007	Max. 10% fill of coaxial, fiber optic, and telecom cables w/ max. 18 x 22-5/8 in. opening	1 & 2 hr.	FSB or FSPIL	3-403
WL3072	Max. 25% fill of telecom cables thru max. 4 in. diameter steel sleeve	1 & 2 hr.	FS 1900	3-406
WL3118	Max. 19% fill of multiconductor and telecom cables thru max. 4 in. diameter steel sleeve	1 & 2 hr.	FSB or FSPIL	3-408
WL3179	Max. 2-3/4 in. diam bundle of coaxial, SER, ROMEX®, metal clad cables w/max. 4 in. diam opening.	1 & 2 hr.	FS 1900	3-410
WL3198	Max. 38% fill of multiconductor and telecom cables thru max. 4 in. diameter EMT sleeve	1 & 2 hr.	FSP1000	3-411
WL3199	Max. 19% fill of multiconductor and telecom cables thru max. 4 in. diameter EMT sleeve	1 & 2 hr.	FS 900+	3-412
WL3223	Max. 56% fill of multiconductor and telecom cables thru max. 4 in. diameter EMT sleeve	1 & 2 hr.	FS 1900	3-413
WL3225	Telecom cable w/ max. 1/2 in. diameter opening	2 hr.	FlameSafe Silicone	3-414
WL3269	Max. 64% fill (4 in. bundle) of coaxial, telecom, metal clad and SER cables thru max. 5 in. diameter opening	1 & 2 hr.	FS 900+	3-415

CABLE TRAYS

CONCRETE AND BLOCK WALLS

CAJ4027-W	One cable tray max. 24 x 3-1/2 in. w/ max. 324 sq. in. opening	3 hr.	FSM 22	4-001
CAJ4038-W	One cable tray max. 36 x 5 in. w/ max. 280 sq. in. opening	3 hr.	FSB Bags	4-003
CAJ4053-W	Up to 2 cable trays, max. 24 x 4 in. w/ max. 413 sq. in. opening	3 hr.	FSPIL/FS 1900	4-005
CAJ4084-W	Up to two max. 36 in. by 3-1/2 in. cable trays in max. 413 square in. opening (W Rating)	2 hr.	FS 4000	4-007
CBJ4023-W	Up to 3 cable trays, max. 24 x 4 in. w/ max. 1280 sq. in. opening	3 hr.	FSB Bags	4-101
CBJ4024-W	Up to 3 cable trays, max. 24 x 4 in. w/ max. 1280 sq. in. opening	3 hr.	FSM 22	4-103
WJ4010	One cable tray max. 18 x 5 in. w/ max. 136-1/2 sq. in. opening	2 hr.	FS 1900	4-301
WJ4019	One cable tray (steel or aluminum) max. 24 x 6 in. w/ max. 240 sq. in. opening	2 hr.	FSB Bags	4-302
WJ4025	One cable tray (center spine) max. 24 x 6 in. w/ max. 28 x 10 in. opening	2 hr.	FSPIL/FS 1900	4-303

CONCRETE FLOORS

CAJ4027-F	One cable tray max. 24 x 3-1/2 in. w/ max. 324 sq. in. opening	3 hr.	FSM 22	4-002
CAJ4038-F	One cable tray max. 36 x 5 in. w/ max. 280 sq. in. opening	3 hr.	FSB Bags	4-004
CAJ4053-F	Up to 2 cable trays, max. 24 x 4 in. w/ max. 413 sq. in. opening	3 hr.	FSPIL/FS 1900	4-006
CAJ4084-F	Up to two max. 36 in. by 3-1/2 in. cable trays in max. 413 square in. opening (W Rating)	2 hr.	FS 4000	4-008
CBJ4023-F	Up to 3 cable trays, max. 24 x 4 in. w/ max. 1280 sq. in. opening	3 hr.	FSB Bags	4-102
CBJ4024-F	Up to 3 cable trays, max. 24 x 4 in. w/ max. 1280 sq. in. opening	3 hr.	FSM 22	4-104

GYPSUM WALLS

WL4001	One cable tray max. 12 x 6 in. w/ max. 19 x 10-1/4 in. opening	1 & 2 hr.	KBS Bags	4-401
WL4009	One cable tray max. 18 x 5 in. w/ max. 136-1/2 sq. in. opening	1 & 2 hr.	FS 1900	4-402
WL4025	One cable tray (steel or aluminum) max. 24 x 6 in. w/ max. 240 sq. in. opening	1 & 2 hr.	FSB Bags	4-403
WL4030	One cable tray (center spine) max. 24 x 6 in. w/ max. 28 x 10 in. opening	1 & 2 hr.	FSPIL/FS 1900	4-404

INSULATED PIPES

<u>DWG #</u>	<u>DESCRIPTION</u>	<u>F RATING</u>	<u>PRODUCT</u>	<u>PAGE #</u>
<u>CONCRETE AND BLOCK WALLS</u>				
CAJ5073-W	Max. 10 in. metallic pipe with max. 1 in. AB/PVC foam insul. w/ max. 15 in. diameter opening	1-1/2 hr.	FS 1900	5-001
CAJ5116-W	Max. 12 in. metallic pipe with max. 1 in. fiberglass insul. w/ max. 18 in. diameter opening	2 hr.	FS 1900	5-003
CAJ5117-W	Max. 6 in. metallic pipe with max. 1 in. AB/PVC foam insul. w/ max. 10 in. diameter opening	3 hr.	FSWS150/FS1900	5-005
CAJ5118-W	Max. 8 in. metallic pipe with max. 2 in. fiberglass insul. w/ max. 14 in. diameter opening	3 hr.	FSWS150/FS1900	5-007
CAJ5175-W	Max. 10 in. metallic pipe with max. 1 in. foamglass insul. w/ max. 18 in. diameter opening	3 hr.	FS 900+	5-009
CAJ5208-W	Max. 4 in. metallic pipe with max. 1 in. AB/PVC foam insul. w/ max. 8 in. dia. opening (2-1/2 in. slab)	2 hr.	FS 1900	5-011
CAJ5222-W	Max. 24 in. steel or 6 in. copper pipe with max. 2 in. fiberglass insul. w/ max. 30 in. dia. opening	2 hr.	FS 1900 or 900+	5-013
CAJ5223-W	Max. 8 in. steel or iron pipe with max. 3 in. foamglas insul. w/ max. 18 in. diameter opening	2 hr.	FS 900+	5-015
CAJ5238-W	Up to 6, max. 3 in. metallic pipes with max. 3/4 in. AB/PVC foam insul. w/ max. 24 x 6 in. opening	3 hr.	FS 1900	5-017
CAJ5243-W	Max. 10 in. steel pipe with max. 2 in. fiberglass insulation w/ max. 16 in. diameter opening	2 hr.	FlameSafe Silicone	5-019
CAJ5249-W	Max. 4 in. steel, iron or copper pipe with max. 1 in. fiberglass insulation w/ max. 7 in. diameter opening	1-1/2 hr.	FS 1900	5-021
CAJ5250-W	Max. 4 in. steel, iron or copper pipe with max. 1 in. fiberglass insulation w/ max. 8-1/2 in. diameter opening	1 hr.	FS 1900	5-023
CAJ5251-W	Max. 4 in. steel, iron or copper pipe with max. 2 in. fiberglass insulation w/ max. 10-5/8 in. diameter opening	1-1/2 hr.	FSWS150/FS1900	5-025
CAJ5283-W	Max. 24 in. steel, iron or 6 in. copper pipe with max. 2 in. fiberglass insulation w/ max. 30 in. diameter opening	3 hr.	FS900+/FS1900	5-027
CAJ5308-W	Max. 16 in. steel pipe with max. 1-1/2 in. mineral wool insulation and PVC jacket (W Rating)	2 hr.	FS 4000	5-029
CAJ5309-W	Max. 16 in. steel pipe with max. 3 in. foamglass insulation and aluminum jacket	2 hr.	FS 4000	5-031
CBJ5008-W	Max. 8 in. metallic pipe with max. 2 in. fiberglass insul. w/ max. 16 in. diameter opening	3 hr.	FS 1900	5-101
WJ5035	Max. 8 in. steel pipe with max. 1-1/2 in. calcium silicate insul. w/ max. 13 in. opening	2 hr.	FS 1900	5-302
WJ5036	Max. 10 in. steel or iron or 6 in. copper pipe with max. 3 in. foamglas insul. w/ max. 18 in. diameter opening	2 hr.	FS 1900 or 900+	5-303
WJ5043	Max. 12 in. metallic pipe with 3 in. fiberglass insul. w/ max. 20 in. diameter opening	2 hr.	FSWS100/FS1900	5-304
WJ5079	Max. 12 in. steel or iron, max. 6 in. copper w/ 2 in. fiberglass insul. w/max. 18-5/16 in. diam opening	2 hr.	FS 1900 or 900+	5-307
WJ5080	Max. 12 in. metallic pipe with 2 in. fiberglass insul. through optional max. 18-3/4 in. sleeve	2 hr.	FS 900+	5-308
WJ5081	Max. 12 in. steel or iron, max. 6 in. copper w/ 3/4 in. AB/PVC insul. w/max. 15-1/4 in. diam opening	2 hr.	FS 1900 or 900+	5-309
WJ5093	Max. 6 in. metallic pipe with 3 in. fiberglass insul. through max. 14 in. dia. sleeve	2 hr.	FS 1900	5-310
<u>CONCRETE FLOORS</u>				
CAJ5073-F	Max. 10 in. metallic pipe with max. 1 in. AB/PVC foam insul. w/ max. 15 in. diameter opening	1-1/2 hr.	FS 1900	5-002
CAJ5116-F	Max. 12 in. metallic pipe with max. 1 in. fiberglass insul. w/ max. 18 in. diameter opening	2 hr.	FS 1900	5-004
CAJ5117-F	Max. 6 in. metallic pipe with max. 1 in. AB/PVC foam insul. w/ max. 10 in. diameter opening	3 hr.	FSWS150/FS1900	5-006
CAJ5118-F	Max. 8 in. metallic pipe with max. 2 in. fiberglass insul. w/ max. 14 in. diameter opening	3 hr.	FSWS150/FS1900	5-008
CAJ5175-F	Max. 10 in. metallic pipe with max. 1 in. foamglas insul. w/ max. 18 in. diameter opening	3 hr.	FS 900+	5-010
CAJ5208-F	Max. 4 in. metallic pipe with max. 1 in. AB/PVC foam insul. w/ max. 8 in. dia. opening (2-1/2 in. slab)	2 hr.	FS 1900	5-012
CAJ5222-F	Max. 24 in. steel or 6 in. copper pipe with max. 2 in. fiberglass insul. w/ max. 30 in. dia. opening	2 hr.	FS 1900 or 900+	5-014
CAJ5223-F	Max. 8 in. steel or iron pipe with max. 3 in. foamglas insul. w/ max. 18 in. diameter opening	2 hr.	FS 900+	5-016
CAJ5238-F	Up to 6, max. 3 in. metallic pipes with max. 3/4 in. AB/PVC foam insul. w/ max. 24 x 6 in. opening	3 hr.	FS 1900	5-018
CAJ5243-F	Max. 10 in. steel pipe with max. 2 in. fiberglass insulation w/ max. 16 in. diameter opening	2 hr.	FlameSafe Silicone	5-020
CAJ5249-F	Max. 4 in. steel, iron or copper pipe with max. 1 in. fiberglass insulation w/ max. 7 in. diameter opening	1-1/2 hr.	FS 1900	5-022
CAJ5250-F	Max. 4 in. steel, iron or copper pipe with max. 1 in. fiberglass insul. w/ max. 8-1/2 in. dia. opening (2-1/2 in. slab)	1 hr.	FS 1900	5-024
CAJ5251-F	Max. 4 in. steel, iron or copper pipe with max. 2 in. fiberglass insul. w/ max. 10-5/8 in. dia. opening (2-1/2 in. slab)	1-1/2 hr.	FSWS150/FS1900	5-026
CAJ5283-F	Max. 24 in. steel, iron or 6 in. copper pipe with max. 2 in. fiberglass insulation w/ max. 30 in. diameter opening	3 hr.	FS900+/FS1900	5-028
CAJ5308-F	Max. 16 in. steel pipe with max. 1-1/2 in. mineral wool insulation and PVC jacket (W Rating)	2 hr.	FS 4000	5-030
CAJ5309-F	Max. 16 in. steel pipe with max. 3 in. foamglass insulation and aluminum jacket	2 hr.	FS 4000	5-032
CBJ5008-F	Max. 8 in. metallic pipe with max. 2 in. fiberglass insul. w/ max. 16 in. diameter opening	3 hr.	FS 1900	5-102
<u>WOOD FRAMED CHASE WALLS AND FLOORS</u>				
FC5010	Max. 1-1/2 in. metallic pipe with 1 in. fiberglass insul. w/ max. 4-3/4 in. diameter opening	2 hr.	FS 1900	5-201
FC5011	Max. 1-1/2 in. metallic pipe with 1 in. FG or 3/4 in. AB/PVC w/ max. 4-3/4 in. diameter opening	1 hr.	FS 1900	5-202
FC5025	Max. 2 in. metallic pipe with 1/2 in. AB/PVC foam insul. w/ max. 3-3/4 in. diameter opening	1 & 2 hr.	FSWS100/FS1900	5-205
FC5059	Max. 3 in. metallic pipe with 1 in. fiberglass or 3/4 in. AB/PVC insul. w/ max. 6 in. diameter opening	1 & 2 hr.	FS 900+	5-206
<u>STEEL FRAMED CONCRETE FLOORS</u>				
FE5003	Max. 1-1/2 in. metallic pipe with 1 in. FG or 3/4 in. AB/PVC w/ max. 4-3/4 in. diameter opening	1 hr.	FS 1900	5-251
<u>GYPSUM WALLS</u>				
WL5086	Max. 8 in. steel pipe with max. 1-1/2 in. calcium silicate insul. w/ max. 13 in. opening	1 & 2 hr.	FS 1900	5-403
WL5087	Max. 10 in. steel or iron or 6 in. copper pipe with max. 3 in. Foamglas insul. w/ max. 18 in. diameter opening	1 & 2 hr.	FS 1900 or 900+	5-404
WL5097	Max. 12 in. metallic pipe with 3 in. fiberglass insul. w/ max. 20 in. diameter opening	1 & 2 hr.	FSWS100/FS1900	5-405
WL5171	Max. 12 in. steel or iron, max. 6 in. copper w/ 2 in. fiberglass insul. w/max. 18-5/16 in. diam opening	1 & 2 hr.	FS 1900 or 900+	5-408
WL5172	Max. 12 in. metallic pipe with 2 in. fiberglass insul. through max. 18-3/4 in. dia. sleeve	1 & 2 hr.	FS 900+	5-409
WL5173	Max. 12 in. steel or iron, max. 6 in. copper w/ 3/4 in. AB/PVC insul. w/max. 15-1/4 in. diam opening	1 & 2 hr.	FS 1900 or 900+	5-410
WL5193	Max. 6 in. metallic pipe with 3 in. fiberglass insul. through max. 14 in. dia. sleeve	1 & 2 hr.	FS 1900	5-411

MISCELLANEOUS ELECTRICAL PENETRANTS

<u>DWG #</u>	<u>DESCRIPTION</u>	<u>F RATING</u>	<u>PRODUCT</u>	<u>PAGE #</u>
<u>CONCRETE AND BLOCK WALLS</u>				
CAJ6011-W	One busway max. 27 x 6 in. w/ max. 360 sq. in. opening	2 hr.	FS 900	6-001
CAJ6012-W	One busway max. 27 x 6 in. w/ max. 360 sq. in. opening	2 hr.	FSM 22/FSP 1077	6-003
CAJ6013-W	One busway max. 27 x 6 in. w/ max. 360 sq. in. opening	2 hr.	FS 1900	6-005
CAJ6027-W	One busway max. 19 x 6 in. w/ max. 345 sq. in. opening	3 hr.	FS 900+	6-010
CAJ6033-W	One busway max. 15 x 6 in. w/ max. 119 sq. in. opening	2 hr.	FlameSafe Silicone	6-012
CAJ6039-W	One busway max. 27 x 6 in. w/ max. 360 sq. in. opening	2 hr.	FS 4000	6-014
WJ6004	Up to 2, max. 12 x 4 in. ABS fiber optic raceways w/ max. 192 sq.in. opening	2 hr.	FS Bags	6-301
<u>CONCRETE FLOORS</u>				
CAJ6011-F	One busway max. 27 x 6 in. w/ max. 360 sq. in. opening	2 hr.	FS 900	6-002
CAJ6012-F	One busway max. 27 x 6 in. w/ max. 360 sq. in. opening	2 hr.	FSM 22/FSP 1077	6-004
CAJ6013-F	One busway max. 27 x 6 in. w/ max. 360 sq. in. opening	2 hr.	FS 1900	6-006
CAJ6027-F	One busway max. 19 x 6 in. w/ max. 345 sq. in. opening	3 hr.	FS 900+	6-011
CAJ6033-F	One busway max. 15 x 6 in. w/ max. 119 sq. in. opening	2 hr.	FlameSafe Silicone	6-013
CAJ6039-F	One busway max. 27 x 6 in. w/ max. 360 sq. in. opening	2 hr.	FS 4000	6-015
<u>GYPSUM WALLS</u>				
R11636-M	Max. 4 in. x 4 in. metallic outlet box	1 & 2 hr.	FSP 1077	6-000
R11636-N	Max. 4 in. x 4 in. nonmetallic outlet box	2 hr.	FSP 1077	6-007
WL6018	Up to 2, max. 12 x 4 in. ABS fiber optic raceways w/ max. 192 sq.in. opening	1 & 2 hr.	FS Bags	6-401

MISCELLANEOUS MECHANICAL PENETRANTS

<u>CONCRETE AND BLOCK WALLS</u>				
CAJ7008-W	Max. 24 x 12 in. steel duct, min No. 24 ga. w/ max. 364 sq. in. opening	2 hr.	FS 1900	7-001
CAJ7038-W	Max. 10 in. round steel duct, min. No. 28 ga. w/ max. 14 in. diameter opening	2 hr.	FS 1900	7-003
CAJ7067-W	Max. 24 x 12 in. steel duct, min No. 24 ga. w/ max. 364 sq. in. opening (One sided)	2 hr.	FS 900+	7-005
CAJ7074-W	Max. 36 x 20 in. oval steel duct, min No. 24 ga. w/ max. 781 sq. in. opening	2 hr.	FS 900+	7-007
CAJ7075-W	Max. 30 x 10 in. steel duct, min No. 24 ga. w/ max. 384 sq. in. opening	3 hr.	FS 900+	7-009
CAJ7082-W	Max. 24 in. round steel duct, min. No. 22 ga. w/ max. 28 in. diameter opening	3 hr.	FS 900+	7-011
CAJ7087-W	Max. 6 in. round steel duct, min. No. 28 ga. w/ max. 8-1/2 in. diameter opening (One sided)	2 hr.	FS 900+	7-013
CAJ7128-W	Max. 24 in. by 12 in. steel duct through a max. 325 square in. opening (W Rating)	2 hr.	FS 4000	7-015
WJ7002	Max. 12 x 12 in. steel duct, min No. 24 ga. w/ max. 196 sq. in. opening	2 hr.	FS 1900	7-301
WJ7003	Max. 20 x 40 in. steel duct, min No. 24 ga. w/ max. 989 sq. in. opening	2 hr.	FS 1900	7-302
WJ7028	Max. 20 in. round steel duct, min. No. 22 ga. w/ max. 22 in. diameter opening	2 hr.	FS 1900 or 900+	7-303
WJ7044	Max. 20 x 20 in. steel duct, min No. 24 ga., max. 498 sq. in. opening	2 hr.	FS 3000	7-304
WJ7045	Max. 67 x 18 in. steel duct, min No. 24 ga., max. 1470 sq. in. opening	2 hr.	FS 900+	7-305
WJ7046	Max. 30 x 24 in. insulated steel duct, min No. 24 ga., max. 1050 sq. in. opening	2 hr.	FS 900+	7-306
WJ7075	Max. 20 in. diameter steel duct w/ 1-1/2 in. fiberglass insulation, min. No. 28 ga., max. 22 in. diam opening	1 & 2 hr.	FSWS150/FS 900+	7-307
<u>CONCRETE FLOORS</u>				
CAJ7008-F	Max. 24 x 12 in. steel duct, min No. 24 ga. w/ max. 364 sq. in. opening	2 hr.	FS 1900	7-002
CAJ7038-F	Max. 10 in. round steel duct, min. No. 28 ga. w/ max. 14 in. diameter opening	2 hr.	FS 1900	7-004
CAJ7067-F	Max. 24 x 12 in. steel duct, min No. 24 ga. w/ max. 364 sq. in. opening (Bottom install)	2 hr.	FS 900+	7-006
CAJ7074-F	Max. 36 x 20 in. oval steel duct, min No. 24 ga. w/ max. 781 sq. in. opening	2 hr.	FS 900+	7-008
CAJ7075-F	Max. 30 x 10 in. steel duct, min No. 24 ga. w/ max. 384 sq. in. opening	3 hr.	FS 900+	7-010
CAJ7082-F	Max. 24 in. round steel duct, min. No. 22 ga. w/ max. 28 in. diameter opening	3 hr.	FS 900+	7-012
CAJ7087-F	Max. 6 in. round steel duct, min. No. 28 ga. w/ max. 8-1/2 in. diameter opening (Bottom install)	2 hr.	FS 900+	7-014
CAJ7128-F	Max. 24 in. by 12 in. steel duct through a max. 325 square in. opening (W Rating)	2 hr.	FS 4000	7-016
<u>WOOD FRAMED CHASE WALLS AND FLOORS</u>				
FC7004	Max. 4 in. round steel duct, min. No. 28 ga. w/ max. 4-1/2 in. diameter opening	1 & 2 hr.	FS 1900	7-201
FC7008	Max. 10 x 6 in. steel duct, min. No. 24 ga. w/ max. 12 x 8 in. opening	1 hr.	FS 1900	7-203
FC7019	Max. 6 in. round steel duct, min. No. 30 ga. w/ max. 6-1/2 in. diameter opening	1 & 2 hr.	FS 900+	7-204
FC7036	Steel air duct or grease duct with duct wrap blanket w/max 435 sq. in. opening	1 & 2 hr.	FS 1900 or FS 900+	7-205
<u>STEEL FRAMED CONCRETE FLOORS</u>				
FE7003	Max. 6 in. round steel duct, min. No. 30 ga. w/ max. 6-1/2 in. diameter opening	1 hr.	FS 900+	7-251
<u>GYPSUM WALLS</u>				
WL7006	Max. 12 x 12 in. steel duct, min No. 24 ga., max. 196 sq. in. opening	1 & 2 hr.	FS 1900	7-401
WL7027	Max. 20 x 40 in. steel duct, min No. 24 ga., max. 989 sq. in. opening	1 & 2 hr.	FS 1900	7-402
WL7046	Max. 20 in. diameter steel duct, min No. 22 ga., max. 22 in. diameter opening	1 & 2 hr.	FS 1900 or 900+	7-403
WL7080	Max. 20 x 20 in. steel duct, min No. 24 ga., max. 498 sq. in. opening	1 & 2 hr.	FS 3000	7-404
WL7081	Max. 67 x 18 in. steel duct, min No. 24 ga., max. 1470 sq. in. opening	1 & 2 hr.	FS 900+	7-405
WL7082	Max. 30 x 24 in. insulated steel duct, min No. 24 ga., max. 1050 sq. in. opening	1 & 2 hr.	FS 900+	7-406
WL7120	Max. 20 in. diameter steel duct w/ 1-1/2 in. fiberglass insulation, min No. 28 ga., max. 23 in. opening	1 & 2 hr.	FSWS150/FS 900+	7-407
WL7121	Steel air duct or grease duct with duct wrap blanket w/max 7 sq. ft. opening	1 & 2 hr.	FS 1900 or FS 900+	7-408

MIXED PENETRANTS

<u>DWG #</u>	<u>DESCRIPTION</u>	<u>F RATING</u>	<u>PRODUCT</u>	<u>PAGE #</u>
<u>CONCRETE AND BLOCK WALLS</u>				
CAJ8012-W	Max. 4 in. metallic pipes with one 24 x 3-1/2 cable tray w/ max. 1296 sq. in. opening	2 hr.	FSM 22	8-001
CAJ8042-W	Max. 4 in. metallic and insul. pipe with mixed ele. cable w/ max. 144 sq. in. opening	2 hr.	FS 1900	8-003
CAJ8101-W	Max. 4 in. metallic and insul. pipe with mixed ele. cable w/ max. 144 sq. in. opng. (2-1/2 in. slab)	2 hr.	FS 900+	8-005
CAJ8133-W	Metallic, nonmetallic & insulated pipes, cables, and HVAC with max. 3 x 6 ft opening	2 hr.	FSM 22	8-007
CAJ8161-W	Max. 1 in. metallic and insul. pipe with mixed ele. cable w/ max. 4 in. diam opening	2 hr.	FS 900+ or FS 1900	8-009
CAJ8170-W	Metallic, nonmetallic and cable bundle penetrants in max. 10 in. diam opening.	2 hr.	FSPIL Pillow	N/A
CAJ8171-W	Metallic, nonmetallic, insulated and cable bundle penetrants in max. 779 sq. in. opening.	2 hr.	FSPIL Pillow	N/A
CAJ8185-W	Multiple mixed metallic, insulated metallic, and cable tray penetrations (W Rating)	2 hr.	FS 4000	8-011
CAJ8186-W	Multiple mixed metallic and fiberglass insulated metallic penetrations (W Rating)	2 hr.	FS 4000	8-013
WJ8038	Multiple metallic pipes and cables w/max. 10 in. diam opening	2 hr.	FS 900+	8-301
<u>CONCRETE FLOORS</u>				
CAJ8012-F	Max. 4 in. metallic pipes with one 24 x 3 -1/2 cable tray w/ max. 1296 sq. in. opening	2 hr.	FSM 22	8-002
CAJ8042-F	Max. 4 in. metallic and insul. pipe with mixed ele. cable w/ max. 144 sq. in. opening	2 hr.	FS 1900	8-004
CAJ8101-F	Max. 4 in. metallic and insul. pipe with mixed ele. cable w/ max. 144 sq. in. opng. (2-1/2 in. slab)	2 hr.	FS 900+	8-006
CAJ8133-F	Metallic, nonmetallic & insulated pipes, cables, and HVAC with max. 3 x 6 ft opening	2 hr.	FSM 22	8-008
CAJ8161-F	Max. 1 in. metallic and insul. pipe with mixed ele. cable w/ max. 4 in. diam opening (Optional Hollow Core Floor)	2 hr.	FS 900+ or FS 1900	8-010
CAJ8170-F	Metallic, nonmetallic and cable bundle penetrants in max. 10 in. diam opening.	2 hr.	FSPIL Pillow	N/A
CAJ8171-F	Metallic, nonmetallic, insulated and cable bundle penetrants in max. 779 sq. in. opening.	2 hr.	FSPIL Pillow	N/A
CAJ8185-F	Multiple mixed metallic, insulated metallic, and cable tray penetrations (W Rating)	2 hr.	FS 4000	8-012
CAJ8186-F	Multiple mixed metallic and fiberglass insulated metallic penetrations (W Rating)	2 hr.	FS 4000	8-014
FA8021	Double line set in confined opening w/ 5 in. diam opening (Optional Hollow Core Floor)	1 hr.	FSWS 150 Collar	8-101
<u>WOOD FRAMED CHASE WALLS AND FLOORS</u>				
FC8002	Max. 2 in. metallic and insul. pipe with mixed ele. cable w/ max. 6 in. diameter opening	1 & 2 hr.	FS 1900	8-201
FC8019	Max. 3/4 in. multiple pipe penetrants w/ ele. cable, max. 4-1/2 in. diameter opening	1 hr.	FSWS100/FS1900	8-203
<u>STEEL FRAMED CONCRETE FLOORS</u>				
FE8004	Max. 3/4 in. multiple pipe penetrants w/ ele. cable, max. 4-1/2 in. diameter opening	1 hr.	FSWS100/FS1900	8-251
<u>GYPSUM WALLS</u>				
WL8007	Max. 4 in. metallic and insul. pipe with mixed ele. cable w/ max. 6 x 22-3/4 in. opening	1 & 2 hr.	FS 1900	8-401
WL8068	Multiple metallic pipes and cables w/max. 10 in. diam opening	1 & 2 hr.	FS 900+	8-402

PERIMETER BARRIERS (CURTAIN WALLS)

<u>DWG #</u>	<u>DESCRIPTION</u>	<u>F RATING</u>	<u>PRODUCT</u>	<u>PAGE #</u>
CEJ290P	Steel framed wall w/ steel panels (insulated stud cavity)	2 hr.	FS 3000/Silicone	9-015
CEJ152P	Steel stud wall w/ min. 1-1/2 in. thick concrete panels (vision glass min. 6 in. above floor)	2 hr.	FS 3000/Silicone	9-003
CEJ193P	Steel framed wall w/ max. 4 in. thick polystyrene (EIFS) exterior	1 hr.	FS 3000/Silicone	9-006
CEJ273P	Steel framed wall w/ max. 4 in. thick EIFS and cementitious coat (vision glass min. 6 in. above floor)	2 hr.	FS 3000/Silicone	9-011
CEJ274P	Steel framed wall w/ max. 4 in. thick EIFS and plaster coat (vision glass min. 6 in. above floor)	2 hr.	FS 3000/Silicone	9-012
CEJ275P	Steel framed wall w/ stone veneer exterior (vision glass min. 6 in. above floor)	2 hr.	FS 3000/Silicone	9-013
CEJ276P	Steel framed wall w/ brick veneer exterior (vision glass min. 6 in. above floor)	2 hr.	FS 3000/Silicone	9-014
CEJ150P	Steel framed wall w/ interior gypsum and brick veneer exterior (vision glass min. 6 in. above floor)	2 hr.	FS 3000/Silicone	9-001
CEJ151P	Min. 1-1/2 in. thick concrete tilt-up panels (vision glass min. 6 in. above floor)	2 hr.	FS 3000/Silicone	9-002
CEJ153P	Aluminum framed wall w/ min. 1-1/2 in. thick concrete panels (vision glass min. 6 in. above floor)	2 hr.	FS 3000/Silicone	9-004
CEJ154P	Aluminum framed wall w/ heat strengthened glass panels (min. 34 in. spandrel height)	2 hr.	FS 3000/Silicone	9-005
CEJ296P	Aluminum framed wall w/ heat strengthened glass panels (min. 34 in. spandrel height)	2 hr.	FS 3000/Silicone	9-016
CEJ297P	Aluminum framed wall w/ aluminum panels (min. 34 in. spandrel height)	2 hr.	FS 3000/Silicone	9-017
CEJ301P	I Shaped aluminum framed wall w/ heat strengthened glass panels (min. 34 in. spandrel height)	2 hr.	FS 3000/Silicone	9-018
CEJ302P	Aluminum framed wall w/ heat strengthened glass panels (min. 34 in. spandrel height)	2 hr.	FS 3000/Silicone	9-019
CEJ303P	Aluminum framed wall w/ aluminum panels (min. 34 in. spandrel height)	2 hr.	FS 3000/Silicone	9-020
CEJ318P	Aluminum framed wall w/ glass spandrel panels (vision glass at floor, min. 10 in. spandrel height)	2 hr.	FS 3000/Silicone	9-021
CEJ319P	Aluminum framed wall w/ aluminum spandrel panels (vision glass at floor, min. 10 in. spandrel height)	2 hr.	FS 3000/Silicone	9-022
CWD2053	Aluminum framed wall w/ aluminum, glass or granite spandrel panels (min. 72 in. spandrel height)	2 hr.	FS 4000	9-023
CWD2054	Aluminum framed wall w/ aluminum or glass spandrel panels and back pan (min. 72 in. spandrel height)	2 hr.	FS 4000	9-024
CEJ527P	Aluminum framed wall w/ glass spandrel panels (vision glass at floor, no mullion covers at floor)	2 hr.	FS 3000/Silicone	9-025
CEJ528P	Aluminum framed wall w/ aluminum spandrel panels (vision glass at floor, no mullion covers at floor)	2 hr.	FS 3000/Silicone	9-026
CEJ530P	Steel stud wall w/ glass, aluminum, brick, stone, EIFS, or GFRC exterior veneer (no mineral wool in stud)	2 hr.	FS 3000	9-027

JOINTS

<u>DWG #</u>	<u>DESCRIPTION</u>	<u>RATING</u>	<u>PRODUCT</u>	<u>PAGE #</u>
<u>FLOOR TO FLOOR</u>				
FFD0013	4-1/2 in. Concrete floor to concrete floor, max. 2 in. joint width	3 hr.	FS 1900	9-101
FFD0022	6 in. Concrete floor to concrete floor, max. 2 in. joint width	4 hr.	FS 3000	9-104
FFD0023	6 in. Concrete floor to concrete floor, max. 2 in. joint width	4 hr.	FS 900+	9-105
FFD0024	4-1/2 in. Concrete floor to concrete floor, max. 1 in. joint width	2 hr.	FS 900+	9-106
FFD0029	2-1/2 in. Concrete floor to concrete floor, max. 2 in. joint width	1 hr.	FS 3000	9-107
FFD1024	4-1/2 in. Concrete floor to concrete floor, max. 3-1/2 in. joint width	3 hr.	FS 3000	9-102
FFD1027	4-1/2 in. Concrete floor to concrete floor, max. 3-1/2 in. joint width	3 hr.	FS 900+	9-103
FFD1050	4-1/2 in. Concrete floor to concrete floor, max. 3-1/2 in. joint width	2 hr.	FlameSafe Silicone	9-108
FFD1077	4-1/2 in. Concrete floor to concrete floor, max. 4 in. joint width	3 hr.	FS 4000	9-109
FFS1037	4-1/2 in. Concrete floor to concrete floor, max. 6 in. joint width	2 hr.	FS 4000	9-110

JOINTS

<u>DWG #</u>	<u>DESCRIPTION</u>	<u>RATING</u>	<u>PRODUCT</u>	<u>PAGE #</u>
<u>FLOOR TO WALL</u>				
FWD0001	4-1/2 in. Concrete floor to 4-1/2 in. concrete or block wall, max. 2 in. joint width	3 hr.	FS 1900	9-201
FWD0017	6 in. Concrete floor to 6 in. concrete or block wall, max. 2 in. joint width	4 hr.	FS 3000	9-204
FWD0018	6 in. Concrete floor to 6 in. concrete or block wall, max. 2 in. joint width	4 hr.	FS 900+	9-205
FWD0019	4-1/2 in. Concrete floor to 4-1/2 in. concrete or block wall, max. 1 in. joint width	2 hr.	FS 900+	9-206
FWD0024	2-1/2 in. Concrete floor to 4-1/2 in. concrete or block wall, max. 2 in. joint width	1 hr.	FS 3000	9-207
FWD1020	4-1/2 in. Concrete floor to 4-1/2 in. concrete or block wall, max. 3-1/2 in. joint width	3 hr.	FS 3000	9-202
FWD1024	4-1/2 in. Concrete floor to 4-1/2 in. concrete or block wall, max. 3-1/2 in. joint width	3 hr.	FS 900+	9-203
FWD1050	4-1/2 in. Concrete floor to 4-1/2 in. concrete or block wall, max. 3-1/2 in. joint width	2 hr.	FlameSafe Silicone	9-208
FWD1065	4-1/2 in. Concrete stair to 4-1/2 in. concrete or block wall, max. 4 in. joint width	2 hr.	FS 4000	9-209
FWD1066	4-1/2 in. Concrete floor to 4-1/2 in. concrete or block wall, max. 4 in. joint width	3 hr.	FS 4000	9-210
<u>WALL TO WALL</u>				
WWD0016	Concrete or block wall to concrete or block wall, max. 2 in. joint width	3 hr.	FS 1900	9-401
WWD0027	Concrete or block wall to concrete or block wall, max. 1 in. joint width	2 hr.	FS 900+	9-404
WWD0063	Concrete or block wall to concrete or block wall, max. 2 in. joint width	4 hr.	FS 900+	9-405
WWD1028	Concrete or block wall to concrete or block wall, max. 3-1/2 in. joint width	3 hr.	FS 3000	9-402
WWD1029	Concrete or block wall to concrete or block wall, max. 3-1/2 in. joint width	3 hr.	FS 900+	9-403
WWD1066	Concrete or block wall to concrete or block wall, max. 4 in. joint width	3 hr.	FS 4000	9-406
<u>HEAD (TOP) OF WALL</u>				
HWD0108	Gypsum wall to concrete floor, max. 2 in. joint width	1, 2, 3 & 4 hr.	FS 3000	9-307
HWD0107	Gypsum wall parallel/perpendicular to fluted deck (with/without fireproofing), max. 2 in. joint width	1, 2, 3 & 4 hr.	FS 3000	9-306
HWD0327	Gypsum wall to fluted deck, max. 1 in. joint width (parallel between flutes)	1 & 2 hr.	FS 3000	9-334
HWD0267	Gypsum wall under I-Beam (with fireproofing) supporting fluted deck, max. 1 in. joint width	1, 2, & 3 hr.	FS 3000	9-330
HWD0299	Gypsum wall w/ penetrating I-Beam (with fireproofing) supporting fluted deck, max. 1 in. joint width	1, 2, & 3 hr.	FS 3000	9-332
HWD0390	Gypsum wall to fluted deck, max. 1 in. joint width, beam or joist adjacent & parallel to one side of wall	1 & 2 hr.	FS 3000	9-339
HWD0217	Gypsum wall to fluted deck (with fireproofing in flutes & joint), max. 3/4 in. joint width	2 hr.	FS 3000	9-326
HWD0536	Gypsum to parallel to fluted deck, wall offset between peak and valley of deck, max. 1 in. joint width	1 & 2 hr.	FS 3000	9-350
HWS0080	Gypsum wall with beam adjacent & parallel to one side of wall, Z-furrings extend from beam to wall	1 & 2 hr.	FS 3000 or 1900	9-343
HWD0401	Gypsum shaft wall to flat concrete deck, max. 1 in. joint width	1 & 2 hr.	FS 900+ or FS 1900	9-342
HWD0144	Gypsum wall to fluted deck "cookie cutter design", max. 1 in. joint width	1 & 2 hr.	FS 1900 or 900+	9-316
HWD0146	Gypsum wall parallel/perpendicular to fluted deck, max. 1 in. joint width	1 & 2 hr.	FS 900+	9-317
HWD0375	Gypsum wall to fluted deck protected with fireproofing "cookie cutter design", max. 1 in. joint width	1 & 2 hr.	FS 1900	9-337
HWD0537	Gypsum to parallel to fluted deck, wall offset between peak and valley of deck, max. 1 in. joint width	1 & 2 hr.	FS 900+	9-351
PSV1095	Static gypsum wall and fluted deck joint w/ max. 5/8 in. joint width	2 hr.	FS 1900	9-314
PSV1097	Static gypsum wall and fluted deck joint w/ max. 5/8 in. joint width	1 hr.	FS 1900	9-315
HWD0006	Concrete or block wall to concrete floor, max. 2 in. joint width	3 hr.	FS 1900	9-301
HWD0109	Concrete or block wall to concrete floor, max. 2 in. joint width	3 hr.	FS 3000	9-308
HWD0189	Concrete or block wall to concrete floor, max. 1 in. joint width	2 hr.	FS 1900 or 900+	9-322
HWD1021	Concrete or block wall to concrete floor, max. 3-1/2 in. joint width	3 hr.	FS 3000	9-311
HWD1024	Concrete or block wall to concrete floor, max. 3-1/2 in. joint width	3 hr.	FS 900+	9-312
HWD0395	Concrete or block wall to flat deck, max. 2 in. joint width	4 hr.	FS 900+	9-341
HWD0110	Concrete or block wall parallel/perpendicular to fluted deck (with/without fireproofing), max. 2 in. joint	3 hr.	FS 3000	9-309
HWD0328	Concrete or block wall to fluted deck, max. 2 in. joint width (installed from one side)	3 hr.	FS 3000	9-335
HWD0149	Concrete or block wall parallel/perpendicular to fluted deck, max. 1 in. joint width	2 hr.	FS 1900 or 900+	9-320
HWD0284	Concrete wall under I-Beam (with fireproofing) supporting fluted deck, max. 1 in. joint width	3 hr.	FS 3000	9-331
HWD0300	Concrete wall w/ penetrating I-Beam (with fireproofing) supporting fluted deck, max. 1 in. joint width	3 hr.	FS 3000	9-333
HWD0331	Concrete or block wall parallel to fluted deck, max. 2 in. joint width (installed from one side)	3 hr.	FS 3000	9-336
HWD0391	Concrete wall to fluted deck, max. 1 in. joint width, beam or joist adjacent & parallel to one side of wall	2 hr.	FS 3000	9-340
HWD0472	Concrete wall w/ penetrating I-Beam (with fireproofing) supporting fluted deck, max. 1 in. joint width	2 hr.	FS 4000	3-344
HWD0473	Gypsum wall w/ penetrating I-Beam (with fireproofing) supporting fluted deck, max. 1 in. joint width	1 & 2 hr.	FS 4000	3-345
HWD1064	Concrete or block wall to concrete floor, max. 4 in. joint width	3 hr.	FS 4000	3-346
HWS0084	Gypsum wall perpendicular to fluted deck, max. 0 in. joint width	1 & 2 hr.	FS 4000	3-347
HWS0085	Concrete or CMU wall perpendicular to fluted deck, max. 0 in. joint width	2 hr.	FS 4000	9-348
HWS0086	Gypsum wall perpendicular to fluted deck, max. 1 in. joint width	1 & 2 hr.	FS 4000	9-349
HWD0533	Gypsum to metal roof deck with roof purlin parallel to wall, max. 2 in. joint width	1 hr.	FS 1900 or 900+	N/A
HWD0534	Gypsum to metal roof deck with roof purlin perpendicular to (penetrating) wall, max. 2 in. joint width	1 hr.	FS 1900 or 900+	N/A
HWD0535	Gypsum to metal roof deck with lateral bracing perpendicular to (penetrating) wall, max. 2 in. joint width	1 hr.	FS 1900 or 900+	N/A
<u>BASE OF WALL</u>				
BWS0011	Gypsum wall to flat deck, max. 1 in. joint width at bottom of wall	1 & 2 hr.	FS 1900 or 900+	9-334