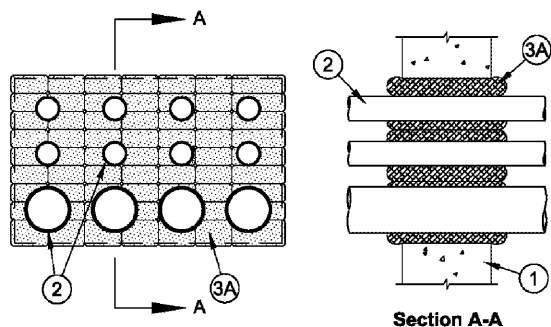


NOTE:
 1. THE RATING OF THE THROUGH PENETRATION FIRE SYSTEM SHOULD MATCH THE ADJACENT FIRE ASSEMBLY TYPE.
 2. PROVIDE A 3/16" STEEL PLATE AT ALL NEW ROOF PENETRATIONS IN COMPLIANCE WITH SYSTEM C-DM-8005

System No. W-J-1121



ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings - 3 and 4 Hr (See Item 1)	F Ratings - 3 and 4 Hr (See Item 1)
T Ratings - 0 Hr	FT Ratings - 0 Hr
L Rating At Ambient - Less than 1 CFM/sq ft	FH Ratings - 3 and 4 Hr
L Rating at 400 F - Less than 1 CFM/sq ft	FTH Ratings - 0 Hr
	L Rating At Ambient - Less than 1 CFM/sq ft
	L Rating at 400 F - Less than 1 CFM/sq ft



- Wall Assembly** - Min 7-5/8 in. (194 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete wall assembly. Wall may also be constructed of any UL Classified **Concrete Blocks***. For 3 hr F and FH Ratings, max area of opening is 312 sq in. (0.20 m²) with a max height of 12 in. (305 mm). For 4 hr F and FH Ratings, max area of opening is 240 sq in. (0.15 m²) with a max height of 10 in. (254 mm).
 See **Concrete Blocks (CAZT)** category in the Fire Resistance Directory for names of manufacturers.
- Through Penetrants** - One or more metallic pipes, conduits or tubing to be installed concentrically or eccentrically within the firestop system. For 1 hr, 2 hr and 3 hr fire rated walls the annular space between the metallic pipes, conduits or tubing and the periphery of the opening shall be min 0 in. (point contact) to max 6 in. (152 mm). For 4 hr fire rated walls the annular space between the metallic pipes, conduits or tubes and the periphery of the opening shall be min 1 in. (25 mm) to max 4 in. (102 mm). The annular space between the metallic pipes, conduits or tubing shall be min 1/2 in. (13 mm) to max 4 in. (102 mm). Metallic pipes, conduits or tubing to be rigidly supported on both sides of wall assembly. Any combination of the following types and sizes may be used:
 - Steel Pipe** - Nom 4 in. (102 mm) diam (or smaller) Schedule 5 (or heavier) steel pipes.
 - Iron Pipes** - Nom 4 in. (102 mm) diam (or smaller) cast or ductile iron pipe.
 - Conduit** - Nom 4 in. (102 mm) diam (or smaller) rigid steel conduit, steel electrical metallic tubing (EMT) or nom 2 in. (51 mm) diam (or smaller) flexible steel conduit.
- Firestop System** - The firestop system shall consist of the following:
 - Fill, Void or Cavity Material* - Pillows** - Max 9 in. (229 mm) long by 6 in. (152 mm) wide by 1 in. (25 mm) thick plastic covered intumescent pillows. Pillows to be installed lengthwise through the opening and positioned to extend equally in both directions from the approximate centerline of the wall. Pillows tightly packed (min 20 percent compression) into opening to fill the annular space between the through penetrants and between the through penetrants and the periphery of the opening.
SPECIFIED TECHNOLOGIES INC - SpecSeal Firestop Pillows
 - Fill, Void or Cavity Material* - Putty or Sealant** - (Not Shown) - At point contact locations between through penetrant and periphery of opening, min 1/2 in. diam bead of sealant applied at metallic penetrant/concrete wall interface on both sides of wall assembly. For 4 hr F and FH Ratings a nom 3/16 in. (5 mm) thick bead of sealant with a width equal to the thickness of the wall assembly shall be applied around each pipe, conduit or tube within the wall opening prior to installation of the pillows.
SPECIFIED TECHNOLOGIES INC - SpecSeal SSS Sealant, SpecSeal LCI Sealant, SpecSeal LC150 Sealant, SpecSeal LE600 Sealant or SpecSeal Putty
 - Wire Mesh** - (Not Shown) - For 4 hr F and FH Ratings, nom 1 in. (25 mm) hexagonal shaped wire mesh fabricated from min No. 20 SWG galv steel wire used to retain pillows in wall opening. Wire mesh cut to fit the contour of the opening with a min 2 in (51 mm) lap beyond the periphery of the opening. Wire mesh secured to steel framing, through the gypsum board, on both surfaces of wall assembly with min 3 in. (76 mm) long steel screws in conjunction with 1/4 in. (6 mm) by 1-1/4 in. (32 mm) diam steel center washers spaced max 6 in. (152 mm) OC. The joints within the wire mesh shall overlap a min of 2 in. (51 mm) and shall be secured together by means of No. 20 AWG steel wire ties spaced max 6 in. (152 mm) OC.
 *Bearing the UL Classification Mark

Specified Technologies Inc. 210 Evans Way Somerville, NJ 08876

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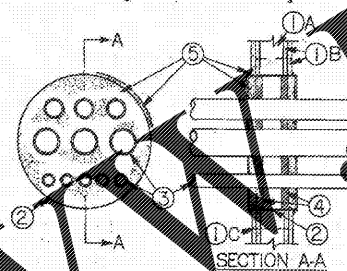
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W-J-1121
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System No. W-L-1016
 (Formerly System No. 322)

F Rating - 2 Hr
 T Ratings - 1, 1-1/2 and 2 Hr (See Item 3)
 L Rating At Ambient - 2 CFM/sq ft.
 L Rating At 400 F - 1 CFM/sq ft.



Wall Assembly - The fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction details:

- Stud** - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC with nom 2 by 4 in. lumber end plates and cross braces. Steel studs to be min 3-5/8 in. wide by 1-3/8 in. deep channels spaced max 24 in. OC.
- Gypsum Board** - Two layers of nom 5/8 in. thick gypsum wallboard as specified in the individual Wall or Partition Design. Max diam of through openings cut in wallboard layers is 12 in. Max dimensions for rectangular opening is 12 in. by 9 in.
- Fasteners** - When wood stud framing is employed, gypsum wallboard attached to studs with cement coated nails as specified in the individual U300-Series design. When steel channel stud framing is employed, gypsum wallboard attached to studs with Type S self-drilling, self-tapping bugle-head steel screws as specified in the individual U400-Series design.

- Steel Sleeve** - No. 28 galv steel formed into max 12 in. diam. Max depth by 9 in. depth with nom 2 in. overlap at seam. Length of sleeve to be approx 1/2 in. greater than overall thickness of wall assembly, such that, when installed, the ends of the sleeve will project a max 1/2 in. beyond the surface of the wall on both sides of the wall assembly. Max diam of circular through openings in gypsum wallboard layers on each side of wall assembly to be 12 in. Max dimensions for rectangular opening is 12 in. by 9 in. Sleeve installed by coiling the sheet steel to a diam smaller than the through opening, inserting the coil through the openings and releasing the coil to let it uncoil against the circular cutouts in the gypsum wallboard layers.
- Steel Pipe or Conduit** - Nom 3 in. diam (or smaller) Schedule 10 (or heavier) steel pipe, steel conduit or steel electrical metallic tubing. Multiple pipes and/or conduit permitted in sleeved opening provided a min separation of 1/4 in. is maintained between pipes or conduits. Pipes and/or conduits to be rigidly supported on both sides of the wall assembly. The T Rating of the firestop system is dependent upon the max diam of the pipes or conduits, as tabulated below:

Max Pipe or Conduit Diam in.	T Rating Hr
3	1
1	1-1/2
3/4	2

- Packing Material** - Min 1 in. thickness of rigid glass fiber insulation or mineral wool batt insulation firmly packed into steel sleeve on both sides of wall assembly as a permanent form. Packing material to be recessed min 5/8 in. from surface of wall on both sides of wall assembly.
- Fill, Void or Cavity Materials* - Caulk** - Applied to fill the steel sleeve to a min depth of 1 in. on both sides of wall assembly. A nom 1/4 in. diam continuous bead of caulk shall be applied around the circumference of the steel sleeve at its egress from the gypsum wallboard layers on both sides of the wall assembly.
MINNESOTA MINING & MFG CO - Type CP 25WB+.

*Bearing the UL Classification Mark

SBLM

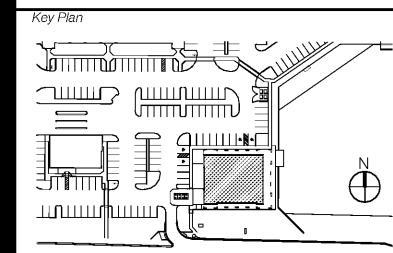
OVERSICURE PROPERTIES
 30 Fellowship Road, Suite 116
 Mount Laurel, NJ 08054
 Telephone (856) 780-4460
 Fax

Architect
SBLM Architects
 11430 N. Kendall Drive, Suite 310
 Miami, FL 33176
 Telephone 305 412 9187
 Fax 305 412 6731
 www.sblm.com

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James L. Cohen AR0015903
 Project Title
SOUTHERN PALM CROSSING
 BUILDING SHELL
 11001-11161 Southern Blvd.
 Royal Palm Beach, FL 33411

Job Number 017512.00
 Drawing
UL DETAILS
 Scale AS SHOWN
 Drawing Date 06/21/18

Drawing No.

A-512

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