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BINDING

System No.W-L-5001 May 19, 2005 F Ratings - 1 and 2 Hr (See Item 1) T Ratings - 3/4, 1 and 1-1/2 Hr (See Item 3) L Rating At Ambient - 2 CFM/sq ft L Rating At 400 F - less than 1 CFM/sq ft 1. Wall Assembly - The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300, U400 or V400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features: A. Studs - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 in. by 4 in. (25 mm by 102 mm) lumber spaced 16 in. (406 mm) OC with nom 2 by 4 in. lumber end plates and cross braces. Steel studs to be min 3-5/8 in. (92 mm) wide by 1-3/8 in. (35 mm) deep channels spaced max 24 in. (610 mm) OC. B. Gypsum Board* - Nom 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 14-1/2 in (368 mm) for wood stud walls and 18 in. (457 mm) for steel stud walls. The hourly F Rating of the firestop system is 1 hr when installed in a 1 hr fire rated wall and 2 hr when installed in a 2 hr fire rated wall. 2. Through Penetrants - One metallic pipe or tubing to be centered within the firestop system. Pipe or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or tubing may be used: A. Steel Pipe - Nom 12 in. (305 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe. B. Copper Tubing - Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing. C. Copper Pipe - Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe. 3. Pipe Covering* - Nom 1 in. or 2 in. (25 mm or 51 mm) thick hollow cylindrical heavy density glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints sealed with metal fasteners or with butt strip tape supplied with the product. When nom 1 in. (25 mm) thick pipe covering is used, the annular space between the pipe covering and the circular cutout in the gypsum wallboard layers on each side of the wall shall be min 1/4 in. to max 3/8 in. (6 mm to max 10 mm). When nom 2 in. (51 mm) thick pipe covering is used, the annular space between the pipe covering and the circular cutout in the gypsum wallboard layers on each side of the wall shall be min 1/2 in. to max 3/4 in. (13 mm to max 19 mm).

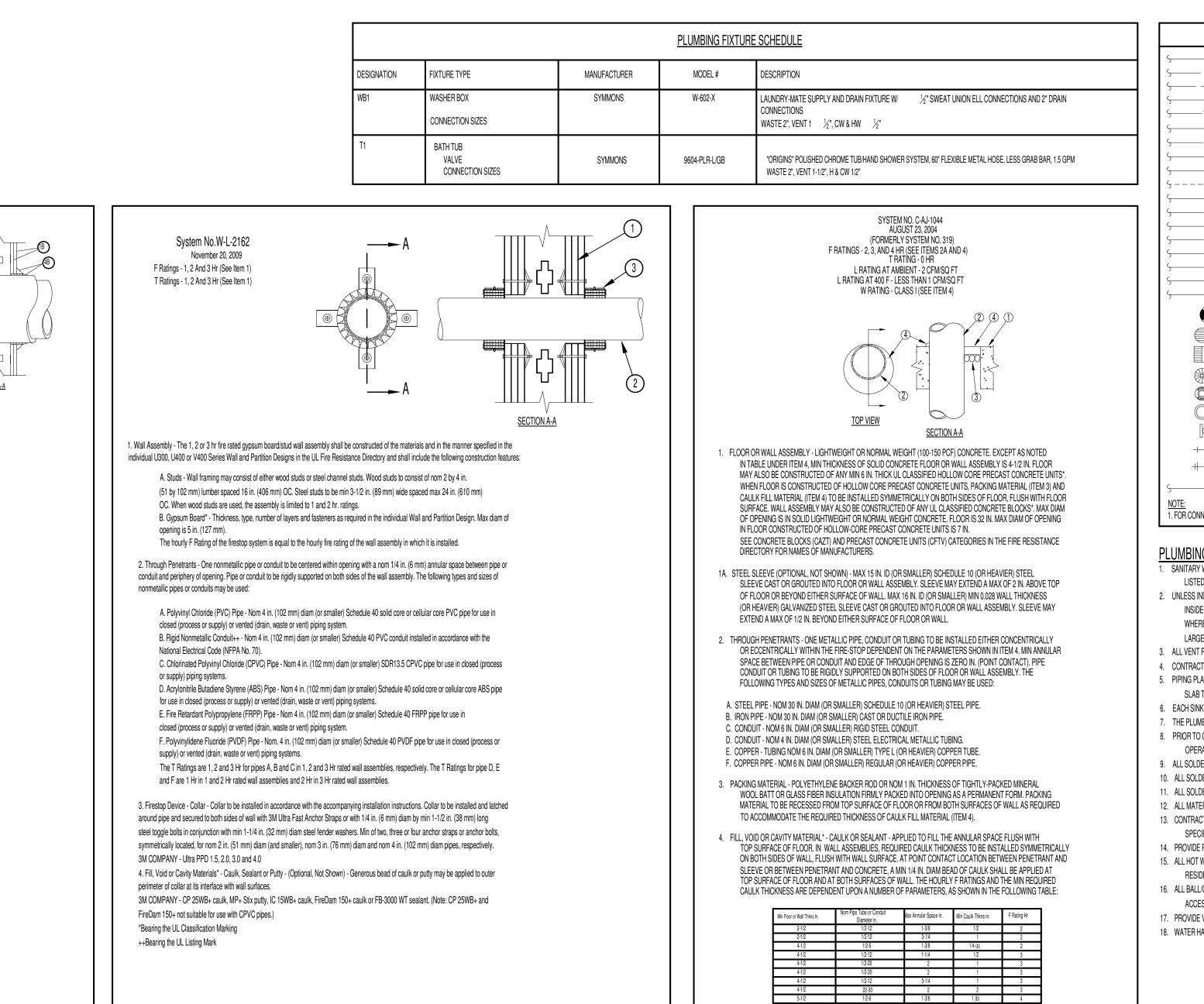
See Pipe and Equipment Covering - Materials (BRGU) category in Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

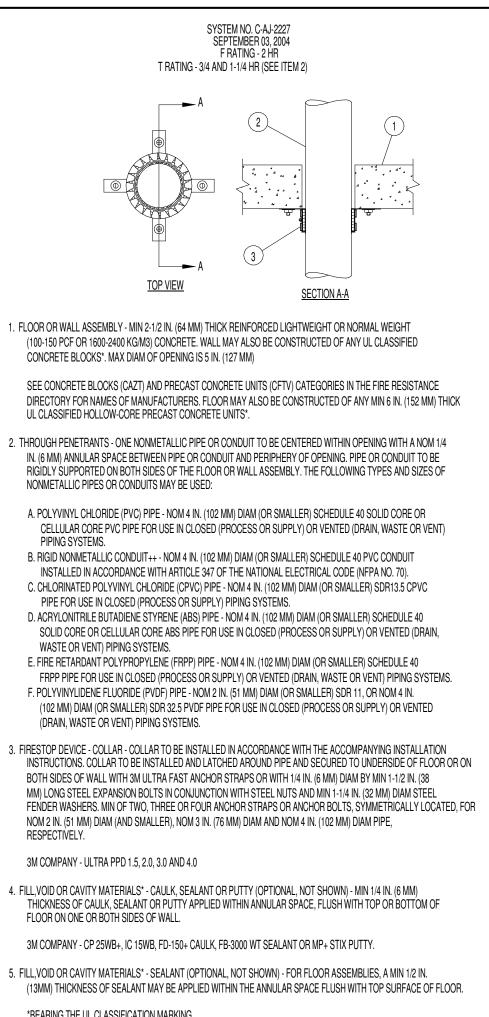
The hourly T Rating of the firestop system is 3/4 hr when nom 1 in. (25 mm) thick pipe covering is used. The hourly T Rating of the firestop system is 1 hr and 1-1/2 hr when nom 2 in. (51 mm) thick pipe covering is used with 1 hr and 2 hr fire rated walls, respectively. 4. Firestop System - Installed symmetrically on both sides of wall assembly. The details of the firestop system shall be as follows:

A. Fill, Void or Cavity Materials* - Wrap Strip - Nom 1/4 in. (6 mm) thick intumescent elastomeric material faced on one side with aluminum foil, supplied in 2 in. (51 mm) wide strips. Nom 2 in. (51 mm) wide strip tightly wrapped around pipe covering (foil side out) with seam butted. Wrap strip layer securely e or aluminum foil tape and slid into annular space approx 1-1/4 in. (32 mm) such that approx 3/4 in. (19 m protrudes from the wall surface. One layer of wrap strip is required when nom 1 in. (25 mm) thick pipe covering is used. Two layers of wrap strip are required when nom 2 in. (51 mm) thick pipe covering is used.

3M COMPANY - FS-195+

B. Fill.Void or Cavity Materials* - Caulk or Sealant - Min 1/4 in. (6 mm) diam continuous bead applied to the wrap strip/wall interface and to the exposed edge of the wrap strip layer approx 3/4 in. (19 mm) from the wall surface. 3M COMPANY - CP 25WB+, IC 15WB+, FireDam 150+ caulk or FB-3000 WT sealant *Bearing the UL Classification Marking





*BEARING THE UL CLASSIFICATION MARKING ++BEARING THE UL LISTING MARK

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ipace in.	Min Caulk Thkns in.	F Rating Hr		
8	1/2	2		
4	1	2		
В	1/4 (a)	2		
1	1/2	3		
2	1	3		
2	1	3		
4	1	3		
	2	3		
8	1 (b)	4		

PLUMBING LEGEND				
	<u> </u>	COLD WATER LINE		
	<u> </u>	HOT WATER SUPPLY		
	<u> </u>	HOT WATER RETURN		
140° ——	<u> </u>	HOT WATER - 140 °F		
140°R —	<u> </u>	HOT WATER RETURN - 140°F		
	<u> </u>	SANITARY SEWER LINE		
GW	<u> </u>	GREASE WASTE		
G —	<u> </u>	NATURAL GAS		
LP	<u> </u>	LIQUID PROPANE		
	5	VENT LINE		
C	<u> </u>	CONDENSATE		
RW	<u> </u>	RAINWATER PIPING		
N ——	<u> </u>	NITROGEN		
NO	<u> </u>	NITROUS OXIDE		
0	<u> </u>	OXYGEN		
V ——	<u> </u>	VACUUM		
Α ——	<u> </u>	AIR		
FW	<u> </u>	FILTERED WATER		
		POINT OF CONNECTION		
		TO EXISTING PLUMBING		
} ⊂	<u> </u>	FLOOR DRAIN		
	<u> </u>	FLOOR SINK		
<u>}</u>	<u> </u>	ROOF DRAIN		
)	<u> </u>	WATER CLOSET CONNECTION		
)	<u> </u>	FLOOR/GRADE CLEAN-OUT		
3	<u> </u>	WALL CLEAN-OUT		
0	<u> </u>	FIXTURE CONNECTION		
-C	<u> </u>	HOSE BIBB		
Α	C	WATER HAMMER ARRESTOR		

PIPING SYMBOLS			
	THREE WAY VALVE BALL VALVE BUTTERFLY VALVE GATE VALVE CHECK VALVE GAS COCK / PLUG VALVE GLOBE VALVE UNION CIRCUIT SETTER PRESSURE REGULATING VALVE PRESSURE RELIEF VALVE		
↓ c+	PIPE TURN DOWN PIPE TURN UP PIPE TEE DOWN PIPE TEE UP PIPE TRANSITION STRAINER CLEAN OUT		



VB VACUUM BREAKER

WH WATER HEATER

WS WASTE STACK

PLUMBING NOTES.

- 1. SANITARY WASTE AND VENT PIPING BOTH ABOVE AND BELOW GRADE SHALL BE SCHEDULE 40 PVC-DWV PLASTIC PIPE AND FITTINGS WITH SOLVENT WELD JOINTS. PLASTIC PIPING AND PIPING COMPONENTS SHALL BE LISTED AS CONFORMING WITH ANSI/NSF STD. 14 AND ASTM D-2665.
- UNLESS INDICATED OTHERWISE ON DRAWINGS, INTERNAL WATER PIPING IS TO BE ROUTED IN SOFFIT SPACES, ATTICS, CRAWL SPACES AND IN AND BETWEEN WALL STUDS, ETC. (AS AND WHERE APPLICABLE) AND ON INSIDE OF BUILDING ENVELOPE. THIS PIPING SHALL BE TYPE "A" AND/OR "B" PEX ONLY ON WATER LINES 2" AND SMALLER AND INSTALLED IN ACCORDANCE WITH 2012 INTERNATIONAL PLUMBING CODE. WHERE PEX IS USED COLD AND HOT WATER MAINS SHALL BE TYPE L COPPER WITH BRANCH PIPING BEING PEX. WHERE PEX IS USED AS MAINS IN LIEU OF COPPER, PIPING SHALL BE A PIPE SIZE LARGER THAN WHAT IS SHOWN ON PLANS.
- 3. ALL VENT PIPING TO PENETRATE ROOF A MINIMUM OF 12" ABOVE ROOF. FLASH AND SEAL TO ROOF WEATHERTIGHT. PAINT VENT PIPING ABOVE ROOF AND WITH 2 COATS EPOXY BASED PAINT. COLOR TO MATCH ROOF. 4. CONTRACTOR SHALL INSPECT SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS WHICH MAY AFFECT WORK, INCLUDING VERIFICATION OF LOCATIONS AND RELATIONSHIP BETWEEN FIXTURES AND CONNECTIONS. 5. PIPING PLACED IN TRENCHES SHALL BE EMBEDDED IN 6" OF LOOSE AGGREGATE FILL, TAMP FILL MATERIAL ON EACH SIDE IN 6" LAYERS. ALL PIPING UNDER SLAB SHALL HAVE A MINIMUM 1" COVER FROM BOTTOM OF SLAB TO TOP OF PIPE AT HIGH POINT. PROTECT PIPING FROM BEING CRUSHED OR OTHERWISE CONSTRICTED.
- 6. EACH SINK, WATER CLOSET, ETC. SHALL HAVE SHUT-OFF VALVES LOCATED AT THE FIXTURE.
- 7. THE PLUMBING SYSTEM IN ITS ENTIRETY SHALL NOT BE COVERED UNTIL IT HAS BEEN INSPECTED, TESTED, AND APPROVED BY AUTHORITY HAVING JURISDICTION. 8. PRIOR TO COVERING THE WATER SUPPLY SYSTEM, IT SHALL BE PRESSURE TESTED AND PROVED TIGHT UNDER A WATER PRESSURE NOT LESS THAN 25 P.S.I. ABOVE THE WORKING PRESSURE UNDER WHICH IT IS TO BE OPERATED. THIS TEST SHALL BE COMPLETED AND APPROVED IN THE PRESENCE OF THE AUTHORITY HAVING JURISDICTION.
- 9. ALL SOLDERED JOINTS SHALL BE CLEANED BRIGHT AND ALL BURRS SHALL BE REMOVED AND THE SHALL BE RETURNED TO FULL BORE.
- 10. ALL SOLDER AND FLUX USED IN THE INSTALLATION OR REPAIR OF THE WATER SUPPLY OR DISTRIBUTION SYSTEM SHALL BE LEAD FREE. 11. ALL SOLDERED JOINT MATERIAL SUCH AS FITTINGS, SOLDER, TUBING SHALL BE APPROVED BY THE AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION.
- 12. ALL MATERIALS, METHODS, AND PRACTICES SHALL BE IN ACCORDANCE WITH THE 2012 INTERNATIONAL PLUMBING CODE.
- 13. CONTRACTOR IS RESPONSIBLE FOR ALL REQUIRED FITTINGS TO CREATE A COMPLETE AND FUNCTIONAL PLUMBING SYSTEM. CONTRACTOR SHALL DETERMINE ANY FITTINGS REQUIRED FOR CONNECTION TO FIXTURES SPECIFIED.
- 14. PROVIDE REMOVABLE PVC COVERS ON ALL EXPOSED SUPPLY AND WASTE FITTINGS TO COMPLY WITH ANSI STD. A117.1 REQUIREMENTS.
- 15. ALL HOT WATER PIPE ABOVE GRADE SHALL BE INSULATED WITH 1 1/2" RESIDENTIAL FOAM. ALL COLD WATER PIPE ABOVE GRADE SHALL BE INSULATED WITH 1 1/2" RESIDENTIAL FOAM. ALL INSULATION SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- 16. ALL BALL/CONTROL/BALANCING VALVES WHICH ARE NOT READILY ACCESSIBLE VIA LAY-IN CEILING OR OPEN TO SPACE SHALL BE PROVIDED WITH AN ACCESSIBLE PANEL EQUAL TO MIFAB TYPE CAD-FL -ACCESS PANEL SHALL BE PAINTED TO MATCH CEILING OR WALL FINISH.
- 17. PROVIDE VACUUM BREAKERS WHERE ANY THREADED CONNECTIONS ARE PRESENT ON WATER SUPPLY LINE.
- 18. WATER HAMMER ARRESTORS TO BE INSTALLED ON EQUIPMENT PER MANUFACTURER RECOMMENDATIONS.

