

1, Floor Assembly— The 1 hr fire rated wood truss or combination constructed of the materials and in the manner described in the Directory, as summarized below: Flooring System Lumber or plywood subfloor with finish floor of lumber, plywood or Floor Topping Mixture\* as cified in the individual Floor-Ceiling Design. Diam of opening shall be equal to or max 1 in. (25 mm) larger than the out of nonmetallic pipe (Items 3 and 4).

Joists- Nom 10 in. (254 mm) deep (or deeper) lumber, steel or combination lumber and steel joists, trusses or uctural Wood Members\*th bridging as required and ends firestopped.

Gypsum Board\*- Nom 4 ft (122 cm) wide by 5/8 in. (16 mm) thick, attached as described in the individual Floor-Ceiling ign. wood and steel truss Floor-Ceiling assembly shall be individual L500 Series Design in the UL Fire Resistance

A. Studs- Nom 2 by 6 in. (51 by 152 mm) or double nom 2 by 4 in. (51 by 102 mm) lumber studs. B. Sole Plate Nom 2 (51 mm) by 6 in. (51 by 152 mm) or parallel 2 by 4 in. (51 by 102 mm) lumber utted. C. Top Plate The double tan ninterescond. II- The through penetrant (Item No. 3) shall be routed through a 1 hr fire-rated single, double or staggered 'gypsum wallboard chase wall constructed of the materials and in the manner specified in the individual U300 and Partition Designs in the UL Fire Resistance Directory and shall include the following construction feature: The double top plate shall consist of two nom 2 by 6 in. (51 by 152 mm) or two sets of parallel 2 by 4 in. )er plates, tightly butted. Diam of opening shall be equal to or max 1 in. (25 mm) larger than the outside allic pipe or conduit (Item 3).

1. Thickness, type, number of layers and fasteners shall be as specified in individual Wall and Partition

. Through Penetrant□ne nonmetallic pipe to be installed within the firestop system. Pipe to be rigidly supported on both Ides of floor-ceiling assembly. The annular space between pipe and periphery of opening shall be min 0 in. (point contact) to ax 1/2 in. (0 to max 13 mm).Pipe may be installed with continuous point contact. The following types and sizes of

L Chloride (PVC) Pipe Nom 4 in. (102 mm) diam (or smaller) Schedule 40 solid core PVC pipe for use in closed supply) or vented (drain, waste or vent) piping system.

Core Polyvinyl Chloride (ccPVC)-Pippem 4 in. (102 mm) diam (or smaller) Schedule 40 cellular core PVC in closed (process or supply) or vented (drain, waste or vent) piping system.

Trile Butadiene Styrene (ABS)-Pippem 4 in. (102 mm) diam (or smaller) Schedule 40 solid core ABS pipe closed (process or supply) or vented (drain, waste or vent) piping system.

Core Acrylonitrile Butadiene Styrene (ccABS)NBippe4 in. (102 mm) diam (or smaller) Schedule 40 e ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system. e nonmetallic pipe to be connected to through penetrant (Item 3) and installed within max 13 mm) Pipe may be installed with continuous point contact. The following types and sised:

A. Polyvinyl Chloride (PVC) Pipe Nom 3 in. (76 mm) diam (or smaller) Schedule 40 solid core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.

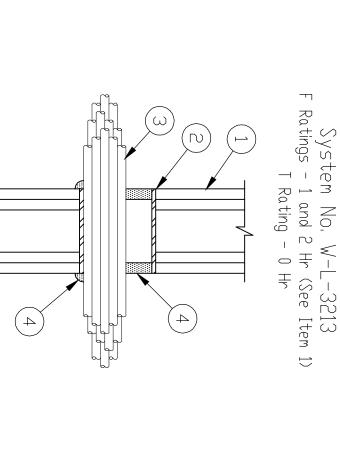
B. Cellular Core Polyvinyl Chloride (ccPVC)-Pippem 3 in. (76 mm) diam (or smaller) Schedule 40 cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.

C. Acrylonitrile Butadiene Styrene (ABS) Pippem 3 in. (76 mm) diam (or smaller) Schedule 40 solid core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

D. Cellular Core Acrylonitrile Butadiene Styrene (ccABS)NBipe3 in. (76 mm) diam (or smaller) Schedule 40 cellular core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.

ials\* – Caulk or Se**ttlia**n3/4 in. (19 mm) thickness of caulk applied within annular space ygh penetrant (Item 3), flush with top surface of floor or sole plate and flush with bottom sym) thickness of caulk applied within annular space around perimeter of branch piping (Item 4), floor. Min 1/2 in. (13 mm) diam bead applied at the pipe/floor interface and the pipe/wallboard

## $\mathcal{B}$ FLOOR/CEILING



ent of the cross—sectional area of opening to be min 0 in. (point assembly. Any combination of the

ickness of fill material applied within sen cables/sleeve, a min ½ in. diam annulus, flush with I of fill material sh

CABLES/

eve interface. \_S, DIV OF

1. Wall Assembly — The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the malerials and in the manner specified if the individual U300 or U400 Series Wall and Partition Designs in the Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing shall consist of either wood studs or channel shaped steel studs. Wood studs to consist of 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide, fabricated from min 25 MSG galvanized steel, spaced may 24 in. OC.

B. Gypsum Board\* — Nom 5/8 in. thick with square or tapered edges. The gypsum board type, number of layers and sheet orientation shall be as specified in the individual Wall and Partition Design Number. Max diameter of opening is 4 in.

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

2. Non-Metallic Sleeve — Nom 4 in. diam (or smaller) Schedule 40 solid or cellular core polyvinyl chloride (PVC) pipe friction fit into wall flush with both surfaces of wall.

3. Cables — Aggregate cross-sectional area of cable in opening to be max 45 percent of the cross-sectional area of the opening. The annular space between the cable bundle and the periphery of the opening to be min 0 in. (point contact) to max 1-3/8 in. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types and sizes of capper conductor cables may be used:

A. Max 500 kcmil power cable.

B. Max 100 pair No. 24 AWG telephone cable with PVC insulation and packet.

C. Type RC /U coaxial cable with polyethylene (PE) insulation and packet.

E. Max 3/C No. 8 AWG (with ground) with PVC insulation and jacket.

E. Max 3/C No. 8 AWG (with ground) with PVC insulation and jacket.

E. Max 100 kall polyethylene (PE) insulation and jacket.

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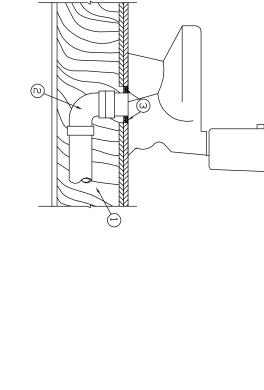
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DENETRATION & WAL

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5 2 HOUR FIRE RATED UL DES. NO. WL8003, I OR APPROVED EQUA δ DES. NO. WL 8001

System n No.F-C-2349 y 30, 2009 atings - 1 Hr atings - 1 Hr



-rated solid or trussed lumber joist floor-ceilin specified in the individual L500 Series Floor-Ceilin details of the floor-ceiling assembly are wood subfloor with finish floor of lumber, plywo

Mixture\* as specified in the individual in. (25 mm) larger than diam of pipe. Max diam of c. 3. Wood Joists — Nom 10 in. (254 mm) umber and steel joists, trusses or Structural Wood Pirestopped.

Gypsum Board\* — Nom 4 ft (1.2 maximum) and maximum of control in the individual individual in the individual in the individual indin opening is 5-1/2 in. (140 mm). mm) deep (or deeper) lumber, steel or cor idual Floor-Ceiling Design. Diam of opening shall be

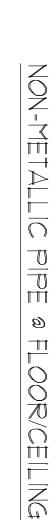
dMembers\* with bridging as required and with ends m) wide by 5/8 in. (16 mm) thick as specified in the

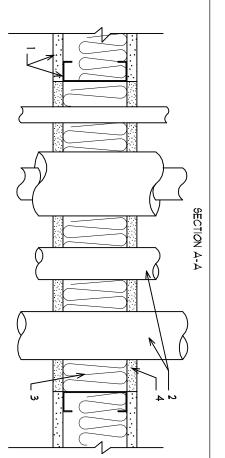
Floor-Ceiling Design.

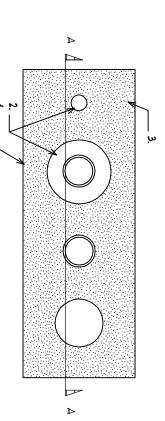
Nonmetallic Pipe — One of the property of t onmetallic drain pipe with max 4 in. (102 mm) diam toilet flange nular space between drain pipe and periphery of opening contact) to o be rigidly supported on lower side of floor assembly. Pipe on lower The following types and sizes of nonmetallic pipes, fittings die of Nom 4 in. (102 mm) diam (or smaller) Schedule 40 solid e in vented (drain, waste or vent) piping system. | Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedul

BS pipe for use in vented (drain, waste or vent)

Sealant — Min 1/2 in. (13 mm) thickness of caulk appl of pipe (Item 2), flush with top surface of floor, FB-3000WT reous china water closet.







MALL

WALL ASSEMBLY
FIRE RESISTANT GYPSUM PANEL WALL INDIVIDUAL U300 DR U400
DESIGNS IN UL FIRE RESISTANCE I \_ WALL ASSEMBLY AS SPECIFIED 400 SERIES WALL AND PARTITIONS CE DIRECTORY.

THROUGH PENETRANTS:

- STEEL PIPES, COPPER PIPES, PANNULAR SPACE BETWEEN PIPES AIDF OPENING SHALL BE AS REQUIRE FIRESTOPPING SYSTEM. POLYVINYL CHLORIDE (PVC) PIPES. AND PIPES AND PIPES AND PERIPHERY ED BY UL THROUGH-PENETRATION

FORMING MATERIAL: - UL CLASSIFIED INSULATION APPLY AMOUNT RECOMMENDED BY MAUNFACTURER AROUND PENETRANTS AS REQUIRED BY UL THROUGH-PENETRATION FIRESTOPPING SYSTEM.

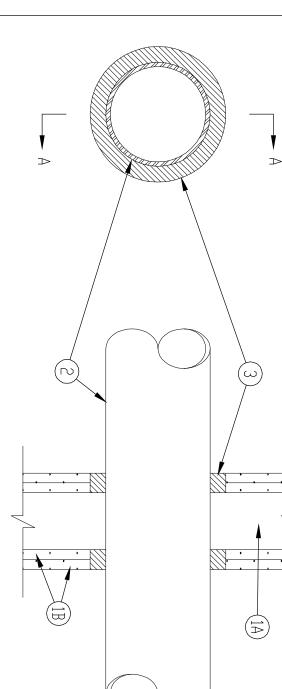
FILL, VOID OR CAVITY MATERIAL:

- UL CLASSIFIED FIRESTOPPING;
APPLY AMOUNT RECOMMENDED BY M
PERIPHERY OF OPENING AS REQUIR SEALANT COMPOUND. MAUNFACTURER AROUN! IRED.

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APPROVED EQUAL

System No. W-L-1054
F Ratings - 1 and 2 Hr (See Items 1 and 3)
I Rating - 0 Hr
L Rating At Ambient - Less Than 1 CFM/Sq Ft
L Rating At 400 F - 4 CFM/Sq Ft



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**System No.W-L-2088**May 23, 2005

F Ratings - 1 and 2 Hr (See Item 1)
T Ratings - 0, 1 and 2 Hr (See Item 2)

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CONSTRUCTION CHEMICALS, DIV OF INC —— FS—One Sealant the UL Classification Mark

I HOUR FIRE RATED

UL DES. NO. WLI062, UL DES. NO. WLI039,

UL DES. WL 1052 OR APPROVED EQUAL

2 HOUR FIRE RATED

UL DES. NO. WLI040 OR APPROVED EQUAL 

3. FIII, Void or Cavity Materials\* - Caulk, Sealant or Putty - Min thickness of 5.8 in. and 1-1/4 in. (16 mm and 32 mm) of caulk or putty for 1 and 2 hr rated wall assemblies, respectively applied within annulus between pipe or conduit and periphery of the opening, flush with both surfaces of wall assembly. At the point contact location between pipe or conduit and gypsum wallboard, a min 1/2 in. (13 mm) diam bead of caulk or putty shall be applied at the pipe or conduit/wallboard interface on both surfaces of wall assembly.

The hourly T Rating is dependent on the hourly rating of the wall assembly, the pipe or conduit size and whether the pipe is intended for use as a closed or vented system, as shown in the following table.

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In. (mm)

1/2 to 3 (13 to 76)

1/2 to 1-1/4 (13 to 32)

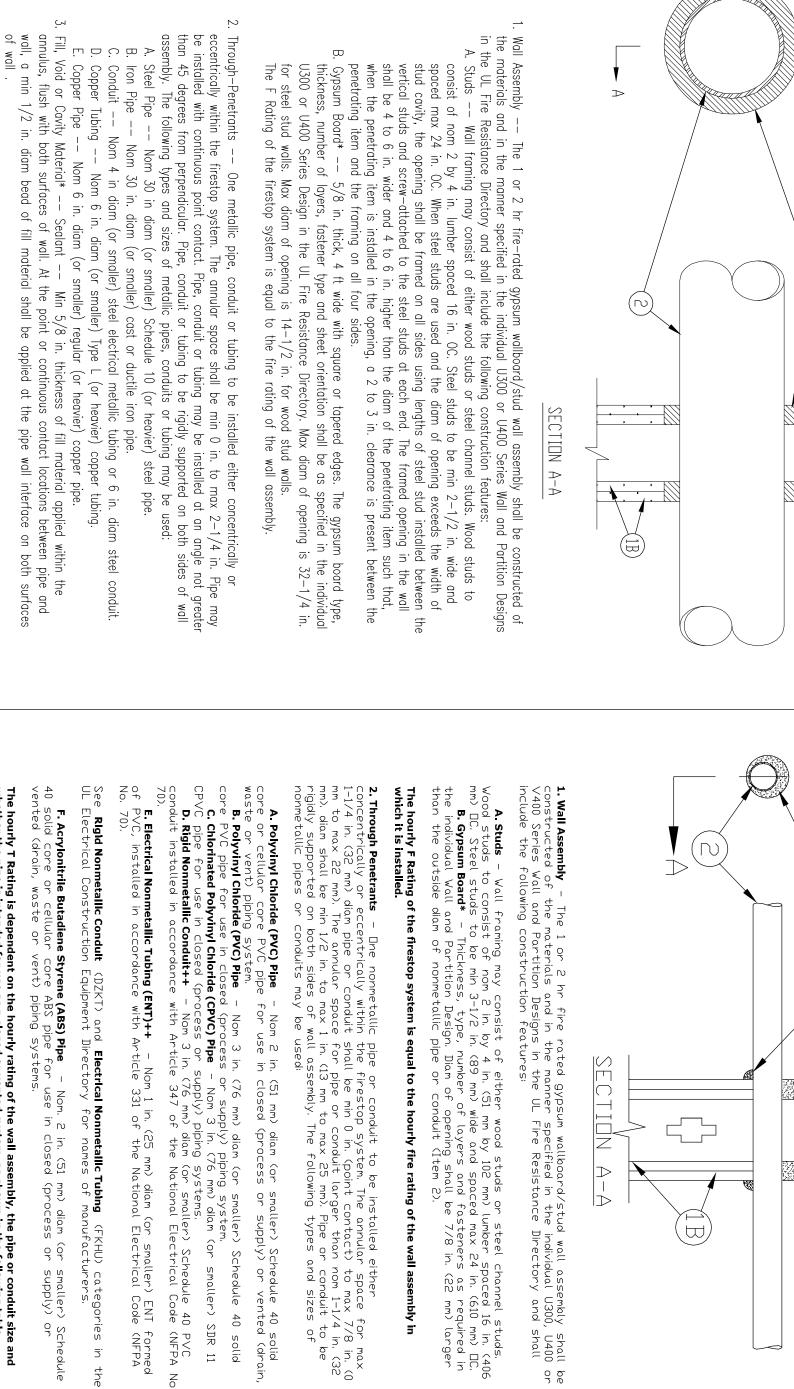
2 (51)

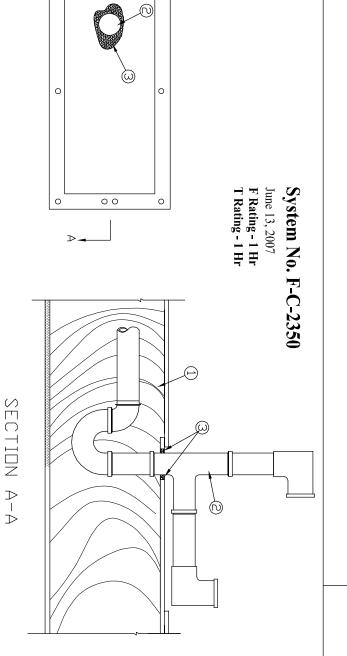
Materials\*

**3M COMPANY** – CP (Note: CP 25WB+ r

25WB+, IC 15WB+ caulk, FB-3000 WT sealant not suitable for use with CPVC pipes.)

\*Bearing the UL Listing Mark.





Floor-Ceiling Assembly - The 1 hr fire-rated solid or trussed lumber joist floor-ceiling asse the manner specified in the individual L500 Series Floor-Ceiling Designs in the UL Fire Resist of the floor-ceiling assembly are summarized below:

A. Flooring System - Lumber or plywood subfloor with finish floor of lumber, plywood or Floor Topping Mixture\* as specified in the individual Floor-Ceiling Design. Rectangular cutout in flooring to accommodate the bathtub drain piping (Item 2) to be max 8 by 12 in. (203 by 305 mm). Cutout to be patched using one layer of min 3/4 in. (19 mm) thick plywood or min 5/8 in. (16 mm) thick gypsum board (Item 1C). One piece of plywood or gypsum board, min 2 in. (51 mm) longer and wider than the cutout in the flooring, cut in half in short dimension at opening hole-sawed for bathtub drain piping (Item 2). Two halves positioned below flooring, concentric with cutout, with cut edges tightly butted with no visible openings, and screw attached by means of 1-1/2 in. (38 mm) long laminate screw spaced max 4-1/2 in. (114 mm) OC. Diam of opening hole-sawed through patch to be 3/8 in. (10 mm) larger than outside diam of bathtul drain piping. Max diameter opening is 2-1/2 in. (63.5 mm) B. Wood Joists - Nom 10 in. (254 mm) deep (or deeper) lumber, steel or Wood Members\* with bridging as required and with ends firestopped.

2. **Drain Piping -** Nom 1-1/2 in. (38 mm) diam (or smaller) Schedule 40 polyvinyl chloride (PVC) pipe and drain fittings cemented and provided with PVC bathtub waste/overflow fittings. The annular space shall be min 0 in. (point contact) to max 1 in. (25 mm). 3. Fill, Void or Cavity Materials\* - Caulk or Sealant - Min 5/8 in. (16 mm) perimeter of Drain Piping, flush with top surface of plywood or gypsum wallb C. Gypsum Board\* - Nom 4 ft (1.2 m) wide by 5/8 in. (16 mm) thick as specified in the individual Floor-Ceiling Des

3M COMPANY
3M FIRE PROTECTION PRODUCTS - IC 15WB+ Sealant, CP 25WB+ Caulk, or FB-3000 WT

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NON-METALLIC *(B)* 

OOR/CEILING

Sept 5, 2014

13010

W Mane Street

AWN BY:

CHECKED BY:

SHEET NUMBER

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