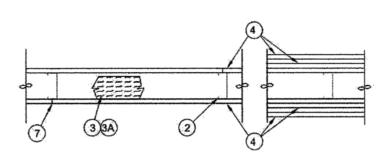
U.L. #U419

NOVEMBER 12, 2009
NONBEARING WALL RATINGS — 1, 2, 3 OR 4 HR (SEE ITEMS 4 & 5)



1. FLOOR AND CEILING RUNNERS – (NOT SHOWN) – CHANNEL SHAPED, FABRICATED FROM MIN 25 MSG CORROSION-PROTECTED STEEL, MIN WIDTH TO ACCOMMODATE STUD SIZE, WITH MIN 1 IN. LONG LEGS, ATTACHED TO FLOOR AND CEILING WITH FASTENERS 24 IN. OC MAX.

2. STEEL STUDS – CHANNEL SHAPED, FABRICATED FROM MIN 25 MSG CORROSION-PROTECTED STEEL, MIN WIDTH AS INDICATED UNDER ITEM 4, MIN 1-1/4 IN. FLANGES AND 1/4 IN. RETURN, SPACED A MAX OF 24 IN. OC. STUDS TO BE CUT 3/8 TO 3/4 IN. LESS THAN ASSEMBLY HEIGHT.

3. BATTS AND BLANKETS* – (REQUIRED AS INDICATED UNDER ITEM 4) – MINERAL WOOL BATTS, FRICTION FITTED BETWEEN STUDS AND RUNNERS. MIN NOM THICKNESS AS INDICATED UNDER ITEM 4. SEE BATTS AND BLANKETS (BKNV OR BZJZ) CATEGORIES FOR NAMES OF CLASSIFIED COMPANIES.

3A. BATTS AND BLANKETS* – (OPTIONAL) – PLACED IN STUD CAVITIES, ANY GLASS FIBER OR MINERAL WOOL INSULATION BEARING THE UL CLASSIFICATION MARKING AS TO SURFACE BURNING CHARACTERISTICS AND/OR FIRE RESISTANCE. SEE BATTS AND BLANKETS (BKNV OR BZJZ) CATEGORIES FOR NAMES OF CLASSIFIED COMPANIES.

4. GYPSUM BOARD* – GYPSUM PANELS WITH BEVELED, SQUARE OR TAPERED EDGES, APPLIED VERTICALLY OR HORIZONTALLY. VERTICAL JOINTS CENTERED OVER STUDS AND STAGGERED ONE STUD CAVITY ON OPPOSITE SIDES OF STUDS. VERTICAL JOINTS IN ADJACENT LAYERS (MULTILAYER SYSTEMS) STAGGERED ONE STUD CAVITY. HORIZONTAL JOINTS NEED NOT BE BACKED BY STEEL FRAMING. HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT JOINTS ON OPPOSITE SIDES OF STUDS NEED NOT BE STAGGERED. HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT JOINTS IN ADJACENT LAYERS (MULTILAYER SYSTEMS) STAGGERED A MIN OF 12 IN. THE THICKNESS AND NUMBER OF LAYERS FOR THE 1 HR, 2 HR, 3 HR AND 4 HR RATINGS ARE AS FOLLOWS:
WALLBOARD PROTECTION ON EACH SIDE OF WALL

RATING	MIN. STUD DEPTH	NO. OF LAYERS AND THICKNESS OF PANELS	MIN. THICKNESS OF INSULATION (ITEM 3)
1	3-1/2	1 LAYER, 5/8 IN. THICK	OPTIONAL
1	2-1/2	1 LAYER, 1/2 IN. THICK	1-1/2 IN.
1	1-5/8	1 LAYER, 3/4 IN. THICK	OPTIONAL
2	1-5/8	2 LAYER, 1/2 IN. THICK	OPTIONAL
2	1-5/8	2 LAYER, 5/8 IN. THICK	OPTIONAL
2	3-1/2	1 LAYER, 3/4 IN. THICK	3 IN.
3	1-5/8	3 LAYER, 1/2 IN. THICK	OPTIONAL
3	1-5/8	2 LAYER, 3/4 IN. THICK	OPTIONAL
3	1-5/8	3 LAYER, 5/8 IN. THICK	OPTIONAL
4	1-5/8	4 LAYER, 5/8 IN. THICK	OPTIONAL
4	1-5/8	4 LAYER, 1/2 IN. THICK	OPTIONAL
4	2-1/2	2 LAYER, 3/4 IN. THICK	2 IN.

CANADIAN GYPSUM COMPANY – 1/2 IN. THICK TYPE C, IP-X2 OR IPC-AR; WRC, 5/8 IN. THICK TYPE AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRX OR WRC; 3/4 IN. THICK TYPE IP-X3, ULTRACODE, ULTRACODE SHC OR ULTRACODE WRC.

UNITED STATES GYPSUM CO – 1/2 IN. THICK TYPE C, IP-X2, IPC-AR OR WRC; 5/8 IN. THICK TYPE SCX, SHX, WRX, IP-X1, AR, C, WRC, FRX-G, IP-AR, IP-X2, IPC-AR ; 3/4 IN. THICK TYPE IP-X3, ULTRACODE, ULTRACODE SHC OR ULTRACODE WRC.

USG MEXICO S A DE C V – 1/2 IN. THICK TYPE C, IP-X2, IPC-AR OR WRC; 5/8 IN. THICK TYPE AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRX, WRC OR; 3/4 IN. THICK TYPE IP-X3, ULTRACODE, ULTRACODE SHC OR ULTRACODE WRC.

4A. GYPSUM BOARD* – (AS AN ALTERNATE TO ITEM 4) – 5/8 IN. THICK, 2 FT. WIDE, TONGUE AND GROOVE EDGE, APPLIED HORIZONTALLY AS THE OUTER LAYER TO ONE SIDE OF THE ASSEMBLY, SECURED AS DESCRIBED IN ITEM 5. JOINT COVERING (ITEM 7) NOT REQUIRED.

CANADIAN GYPSUM COMPANY – TYPE SHX.

UNITED STATES GYPSUM CO – TYPE SHX.

USG MEXICO S A DE C V – TYPE SHX.

5. FASTENERS – (NOT SHOWN) – TYPE S OR S-12 STEEL SCREWS USEDYER- 1-5/ TO ATTACH PANELS TO STUDS (ITEM 2) OR FURRING CHANNELS (ITEM 6). SINGLE LAYER SYSTEMS: 1 IN. LONG FOR 1/2 AND 5/8 IN. THICK PANELS OR 1-1/4 IN. LONG FOR 3/4 IN. THICK PANELS, SPACED 8 IN. OC WHEN PANELS ARE APPLIED HORIZONTALLY, OR 8 IN. OC ALONG VERTICAL AND BOTTOM EDGES AND 12 IN. OC IN THE FIELD WHEN PANELS ARE APPLIED VERTICALLY. TWO LAYER SYSTEMS: FIRST LAYER- 1 IN. LONG FOR 1/2 AND 5/8 IN. THICK PANELS OR 1-1/4 IN. LONG FOR 3/4 IN. THICK PANELS, SPACED 16 IN. OC. SECOND LAYER- 1-5/8 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS OR 2-1/4 IN. LONG FOR 3/4 IN. THICK PANELS, SPACED 16 IN. OC WITH SCREWS OFFSET 8 IN. FROM FIRST LAYER. THREE-LAYER SYSTEMS: FIRST LAYER- 1 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS, SPACED 24 IN. OC. SECOND LAYER- 1-5/8 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS, SPACED 24 IN. OC. THIRD LAYER- 2-1/4 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS OR 2-5/8 IN. LONG FOR 5/8 IN. THICK PANELS, SPACED 12 IN. OC. SCREWS OFFSET MIN 6 IN. FROM LAYER BELOW. FOUR-LAYER SYSTEMS: FIRST LAYER- 1 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS, SPACED 24 IN. OC. SECOND LAYER- 1-5/8 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS, SPACED 24 IN. OC. THIRD LAYER- 2-1/4 IN. LONG FOR 1/2 IN. THICK PANELS OR 2-5/8 IN. LONG FOR 5/8 IN. THICK PANELS, SPACED 24 IN. OC. FOURTH LAYER- 2-5/8 IN. LONG FOR 1/2 IN. THICK PANELS OR 3 IN. LONG FOR 5/8 IN. THICK PANELS, SPACED 12 IN. OC. SCREWS OFFSET MIN 6 IN. FROM LAYER BELOW.

6. FURRING CHANNELS – (OPTIONAL, NOT SHOWN, FOR SINGLE OR DOUBLE LAYER SYSTEMS) – RESILIENT FURRING CHANNELS FABRICATED FROM MIN 25 MSG CORROSION-PROTECTED STEEL, SPACED VERTICALLY A MAX OF 24 IN. OC. FLANGE PORTION ATTACHED TO EACH INTERSECTING STUD WITH 1/2 IN. LONG TYPE S-12 STEEL SCREWS. NOT FOR USE WITH ITEM 4A.

6A. STEEL FRAMING MEMBERS (NOT SHOWN)* – (OPTIONAL ON ONE OR BOTH SIDES, NOT SHOWN, FOR SINGLE OR DOUBLE LAYER SYSTEMS) – AS AN ALTERNATE TO ITEM 6, FURRING CHANNELS AND STEEL FRAMING MEMBERS AS DESCRIBED BELOW:
A. FURRING CHANNELS – FORMED OF NO. 25 MSG GALV STEEL. 2-3/8 IN. WIDE BY 7/8 IN. DEEP, SPACED MAX. 24 IN. OC PERPENDICULAR TO STUDS. CHANNELS SECURED TO STUDS AS DESCRIBED IN ITEM B. GYPSUM BOARD ATTACHED TO FURRING CHANNELS AS DESCRIBED IN ITEM 5. NOT FOR USE WITH ITEM 4A.
B. STEEL FRAMING MEMBERS* – USED TO ATTACH FURRING CHANNELS (ITEM 6A) TO STUDS (ITEM 2). CLIPS SPACED MAX. 48 IN. OC., AND SECURED TO STUDS WITH NO. 8 X 1-1/2 IN. MINIMUM SELF-DRILLING, S-12 STEEL SCREW THROUGH THE CENTER GROMMET. FURRING CHANNELS ARE FRICTION FITTED INTO CLIPS.

PAC INTERNATIONAL INC – TYPE RSIC-1.

7. JOINT TAPE AND COMPOUND – VINYL OR CASEIN, DRY OR PREMIXED JOINT COMPOUND APPLIED IN TWO COATS TO JOINTS AND SCREW HEADS OF OUTER LAYERS. PAPER TAPE, NOM 2 IN. WIDE, EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS OF OUTER LAYER PANELS. PAPER TAPE AND JOINT COMPOUND MAY BE OMITTED WHEN GYPSUM PANELS ARE SUPPLIED WITH A SQUARE EDGE.

8. SIDING, BRICK OR STUCCO – (OPTIONAL, NOT SHOWN) – ALUMINUM, VINYL OR STEEL SIDING, BRICK VENEER OR STUCCO, MEETING THE REQUIREMENTS OF LOCAL CODE AGENCIES, INSTALLED OVER GYPSUM PANELS. BRICK VENEER ATTACHED TO STUDS WITH CORRUGATED METAL WALL TIES ATTACHED TO EACH STUD WITH STEEL SCREWS, NOT MORE THAN EACH SIXTH COURSE OF BRICK.

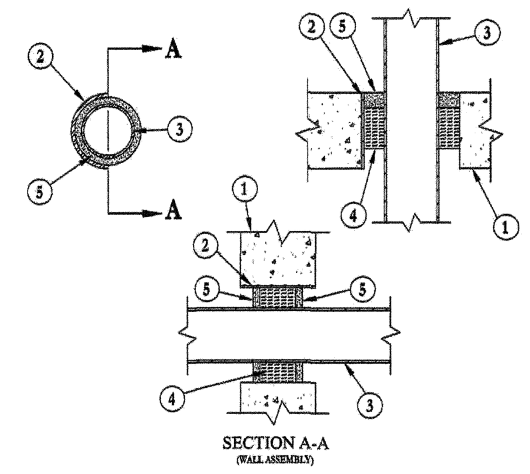
9. CAULKING AND SEALANTS* – (OPTIONAL, NOT SHOWN) – A BEAD OF ACOUSTICAL SEALANT APPLIED AROUND THE PARTITION PERIMETER FOR SOUND CONTROL.

UNITED STATES GYPSUM CO – TYPE AS

*BEARING THE UL CLASSIFICATION MARK

System No. C-AJ-1009

December 07, 1999
(Formerly System No. 122)
F Rating – 2 Hr
T Rating – 0 Hr
L Rating At Ambient – Less Than 1 CFM/sq ft (See Item 5)
L Rating At 400 F – Less Than 1 CFM/sq ft (See Item 5)

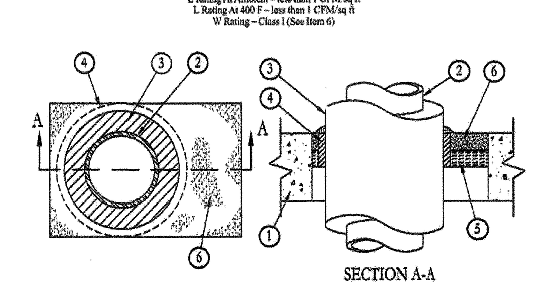


1. **Floor or Wall Assembly** – Min 5 in. thick reinforced normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening is 6 in.
   See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. **Metallic Sleeve** (Optional) – Nom 6 in. diam (or smaller) electrical metallic tubing, steel conduit or cast iron pipe cast or grouted into floor or wall assembly, flush with floor or wall surfaces.
3. **Through Penetrants** – One metallic pipe or conduit to be centered within the firestop system. A nom annular space of 3/4 in. is required within the firestop system. Pipe or conduit to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes or conduits may be used:
   A. **Steel Pipe** – Nom 4 in. diam (or smaller) Schedule 5 (or heavier) steel pipe.
   B. **Conduit** – Nom 4 in. (or smaller) diam steel electrical metallic tubing or steel conduit.
4. **Packing Material** – Min 3 in. thickness of min 4 pcf mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor as required to accommodate the required thickness of fill material. Packing material to be centered in walls mid depth and recessed to allow for installation of fill material.
5. **Fill, Void or Cavity Material*** – **Sealant** – Min 1/2 in. thickness of fill material applied within the annulus, flush with top surface of floor. In walls, fill material to be applied on each side of packing material.
   3M COMPANY – FB-2000 or FB-2000+ (floors only).
   (Note: L Ratings apply only when FB-2000+ is used.)

*Bearing the UL Classification Marking

System No. C-AJ-5017

August 23, 2004
(Formerly System No. 395)
F Rating – 3 Hr
T Ratings – 1/2 and 1 Hr (See Item 3)
L Rating At Ambient – less than 1 CFM/sq ft
L Rating At 400 F – less than 1 CFM/sq ft
W Rating – Class 1 (See Item 6)

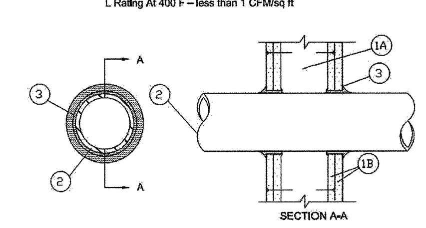


1. **Floor or Wall Assembly** – Min 4-1/2 in. thick lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks*** Max area of square, rectangular or circular opening is 45 sq in. with max dimension of 9 in.
   See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. **Pipe** – Nom 3 in. diam (or smaller) Type L (or heavier) copper pipe or nom 2-1/2 in. diam (or smaller) Schedule 10 (or heavier) steel pipe. One or more insulated pipes may be installed with a min clearance of 1/2 in. maintained between insulated pipes and with a min clearance of 1/4 in. maintained between insulated pipe and sides of through opening. Pipes to be rigidly supported on both sides of floor or wall assembly.
3. **Pipe Insulation – Plastics#** – Nom 3/4 in. thick acrylonitrile butadiene/polyvinyl chloride (AB/PVC) flexible foam furnished in the form of tubing with skin. **When nom 2-1/2 or 3 in. diam insulated steel or copper pipe is used, T Rating is 1/2 hr. When max 2 in. diam insulated steel or copper pipe is used, T rating is 1 hr.**
   See **Plastics#** (QMFZ2) category in the Recognized Component Directory for names of manufacturers. Any Recognized Component tube insulation material meeting the above specifications and having a UL94 Flammability Classification of 94-5VA may be used.
4. **Fill, Void or Cavity Materials* – Wrap Strip** – Nom 1/4 in. thick intumescent elastomeric material faced on one side with aluminum foil, supplied in 2 in. wide strips. One nom 2 in. wide strip tightly-wrapped around pipe insulation (Item 3) with the foil side exposed and slid into through opening such that the top edge is flush with top surface of floor. When a single insulated pipe is installed in a circular through opening and when the max annular space between the insulated pipe and the sides of the through opening is 3/8 in., the wrap strip layer may be secured in place with pressure-sensitive tape. In all other situations, the wrap strip layer shall be secured in place with min No. 18 gauge galv steel tie wire. In wall assemblies, the wrap strip layer is to be installed on the insulated pipe in the same manner used for floor assemblies but shall be installed symmetrically on both sides of the wall.
   3M COMPANY – Type FS-195+
5. **Packing Material** – Min 1 in. thick mineral wool batt insulation firmly packed into opening with its top surface recessed min 1 in. from top surface of the floor. In wall assemblies, packing material to be firmly packed into opening on both sides of wall and recessed min 1 in. from wall surface. When a single insulated pipe (with wrap strip layer) is installed in a circular through opening and when the max annular space between the wrap strip layer and the sides of the through opening is 1/8 in., no forming material is required.
6. **Fill, Void or Cavity Materials* – Caulk, Sealant or Sealant** – Applied to fill through opening to a min depth of 1 in. In floor assemblies, fill material to be installed flush with top surface of floor. In wall assemblies, fill material to be installed flush with wall surface on both sides of wall.
   3M COMPANY – CP 25WB+ caulk or FB-3000 WT sealant.
   (Note: W Rating applies only when FB-3000 WT sealant is used.)

*Bearing the UL Classification Marking

U.L. #W-L-1001

June 15, 2005
F Ratings – 1, 2, 3 and 4 Hr (See Items 2 and 3)
T Ratings – 0, 1, 2, 3, and 4 Hr (See Item 3)
L Rating At Ambient – less than 1 CFM/sq ft
L Rating At 400 F – less than 1 CFM/sq ft



1. WALL ASSEMBLY – THE 1, 2, 3 OR 4 HR 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 DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. STUDS – WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS (MAX 2 HR FIRE RATED ASSEMBLIES) OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM. 2 BY 4 IN. (51 BY 102 MM) LUMBER SPACED 16 IN. (406 MM) OC WITH NOM. 2 BY 4 IN. (51 BY 102 MM) 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. 1/2 OR 5/8 IN. (13 OR 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 26 IN. (660 MM).

2. THROUGH PENETRANT – ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN OF 0 IN. (0 MM) (POINT CONTACT) TO MAX 2 IN. (51 MM). PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:

A. STEEL PIPE – NOM 24 IN. (610 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

B. IRON PIPE – NOM 24 IN. (610 MM) DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 12 IN. (305 MM) DIAM (OR SMALLER) OR CLASS 50 (OR HEAVIER) DUCTILE IRON PRESSURE PIPE.

C. CONDUIT – NOM 6 IN. (152 MM) DIAM (OR SMALLER) STEEL CONDUIT OR NOM 4 IN. (102 MM) DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING

D. COPPER TUBING – NOM 6 IN. (152 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING

E. COPPER PIPE – NOM 6 IN. (152 MM) DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

F. THROUGH PENETRATING PRODUCT* – FLEXIBLE METAL PIPING – THE FOLLOWING TYPES OF STEEL FLEXIBLE METAL GAS PIPING MAY BE USED:

1. NOM 2 IN. (51 MM) DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
OMEGA FLEX INC

2. NOM 1 IN. (25 MM) DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
TITEFLEX CORP
A BUNDY CO

3. NOM 1 IN. (25 MM) DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
WARD MFG INC

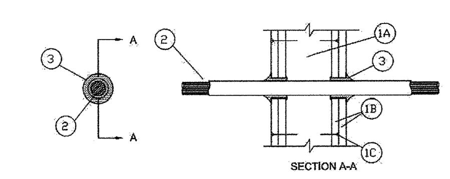
3. FILL, VOID OR CAVITY MATERIAL* – CAULK OR SEALANT – MIN 5/8, 1-1/4,1-7/8 AND 2-1/2 IN. (16, 32, 48 AND 64 MM) THICKNESS OF CAULK FOR 1, 2, 3 AND 4 HR RATED ASSEMBLIES, RESPECTIVELY, APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. MIN 1/4 IN. (6 MM) DIAM BEAD OF CAULK APPLIED TO GYPSUM BOARD/PENETRANT INTERFACE AT POINT CONTACT LOCATION ON BOTH SIDES OF WALL. THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS SHOWN IN THE FOLLOWING TABLE. THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE TYPE OR SIZE OF THE PIPE OR CONDUIT AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS TABULATED BELOW:

MAX PIPE OR CONDUIT DIAM, IN (mm).	F RATING, HR.	T RATING, HR.
1 (25)	1 OR 2	0+, 1 OR 2
1 (25)	3 OR 4	3 OR 4
4 (102)	1 OR 2	0
6 (152)	3 OR 4	0
12 (305)	1 OR 2	0

+WHEN COPPER PIPE IS USED, T RATING IS 0 HR.
3M COMPANY – CP 25WB+ CAULK OR FB-3000 WT SEALANT.
*BEARING THE UL CLASSIFICATION MARKING

U.L. #W-L-3001

SEPTEMBER 07, 2004
(FORMERLY SYSTEM NO. 149)
F RATINGS – 1 AND 2 HR (SEE ITEM 1)
T RATINGS – 3/4, 1, 1-1/2 AND 2 HR (SEE ITEM 2)
L RATING AT AMBIENT – 15 CFM/SQ FT (SEE ITEM 3)
L RATING AT 400 F – LESS THAN 1 CFM/SQ FT (SEE ITEM 3)



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 OR U400 SERIES WALL OR PARTITION DESIGNS 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 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.

B. GYPSUM BOARD* – NOM 1/2 OR 5/8 IN. THICK, 4 FT WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL OR PARTITION DESIGN. DIAM OF CIRCULAR THROUGH OPENING TO BE 3/8 IN. TO 5/8 IN. LARGER THAN OUTSIDE DIAM OF CABLE OR CABLE BUNDLE.

C. FASTENERS – WHEN WOOD STUD FRAMING IS EMPLOYED GYPSUM WALLBOARD LAYERS ATTACHED TO STUDS WITH CEMENT COATED NAILS AS SPECIFIED IN THE INDIVIDUAL WALL OR PARTITION 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 WALL OR PARTITION DESIGN. 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. CABLES – INDIVIDUAL CABLE OR MAX 1 IN. DIAM CABLE BUNDLE INSTALLED IN THROUGH OPENING WITH AN ANNULAR SPACE OF MIN 0 IN. (POINT CONTACT) TO MAX 3/4 IN. CABLE TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF CABLES MAY BE USED:

A. MAX 150 PAIR NO. 24 AWG COPPER CONDUCTOR TELEPHONE CABLE WITH POLYVINYL CHLORIDE (PVC) INSULATION AND JACKET MATERIALS. WHEN MAX 25 PAIR TELEPHONE CABLE IS USED, T RATING IS 2 HR. WHEN 50 TO 150 PAIR TELEPHONE CABLE IS USED IN 1 HR FIRE RATED WALL, T RATING IS 3/4 HR. WHEN 50 TO 150 PAIR TELEPHONE CABLE IS USED IN 2 HR FIRE RATED WALL, T RATING IS 1 HR.

B. MAX NO. 10 AWG MULTIPLE COPPER CONDUCTOR TYPE NM ("ROMEX") NONMETALLIC SHEATHED CABLE WITH PVC INSULATION AND JACKET MATERIALS. WHEN TYPE NM CABLE IS USED, MAX T RATING IS 1-1/2 HR.

C. MULTIPLE FIBER OPTICAL COMMUNICATION CABLE JACKETED WITH PVC AND HAVING A MAX OUTSIDE DIAM OF 5/8 IN. WHEN FIBER OPTIC CABLE IS USED, MAX T RATING IS 2 HR.

D. MAX 12 AWG MULTI CONDUCTOR (MAX SEVEN CONDUCTORS) POWER/CONTROL CABLE WITH CROSS-LINKED POLYETHYLENE (XLPE) INSULATION AND XLPE OR PVC JACKET MATERIALS. WHEN MULTI CONDUCTOR POWER/CONTROL CABLE IS USED, MAX T RATING IS 2 HR.

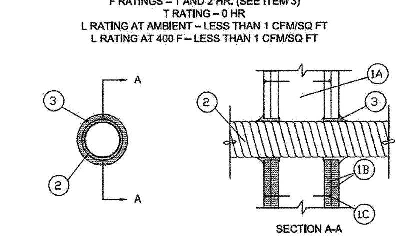
E. MAX FOUR CONDUCTOR WITH GROUND NO. 2 AWG (OR SMALLER) ALUMINUM SER CABLES WITH POLYVINYL CHLORIDE INSULATION AND JACKET MATERIALS.

3. FILL, VOID OR CAVITY MATERIALS* – CAULK, SEALANT OR PUTTY – CAULK OR PUTTY FILL MATERIAL INSTALLED TO COMPLETELY FILL ANNULAR SPACE BETWEEN CABLE AND GYPSUM WALLBOARD ON BOTH SIDES OF WALL AND WITH A MIN 1/4 IN. DIAM BEAD OF CAULK OR PUTTY APPLIED TO PERIMETER OF CABLE(S) AT ITS EGRESS FROM EACH SIDE OF THE WALL.
3M COMPANY – MP+ STIX PUTTY, CP 25WB+ CAULK, FB-3000 WT SEALANT OR CABLE WRAP PUTTY
(NOTE: L RATINGS APPLY ONLY WHEN CP 25WB+ CAULK OR FB-3000 WT IS USED.)

*BEARING THE UL CLASSIFICATION MARK

U.L. #W-L-1017

APRIL 30, 1998
(FORMERLY SYSTEM NO. 328)
F RATINGS – 1 AND 2 HR. (SEE ITEM 3)
T RATING – 0 HR
L RATING AT AMBIENT – LESS THAN 1 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 OR U400 SERIES WALL OR PARTITION DESIGNS 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 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.

B. GYPSUM BOARD* – NOM 5/8 IN. THICK, 4 FT. WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, NUMBER OF LAYERS AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. DIAM OF CIRCULAR THROUGH OPENING CUT THROUGH GYPSUM WALLBOARD ON EACH SIDE OF WALL ASSEMBLY TO BE MIN 0 IN. (POINT CONTACT) TO MAX 1 IN. LARGER THAN OUTSIDE DIAM OF FLEXIBLE METAL CONDUIT (ITEM 2) INSTALLED IN THROUGH OPENING. SIDE EDGE OF CIRCULAR OPENING TO BE MIN 3 IN. FROM NEAREST STUD IN WALL CAVITY.

C. FASTENERS – WHEN WOOD STUD FRAMING IS EMPLOYED, GYPSUM WALLBOARD ATTACHED TO STUDS WITH CEMENT COATED NAILS AS SPECIFIED IN THE INDIVIDUAL WALL OR PARTITION 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 WALL OR PARTITION DESIGN.

2. THROUGH PENETRATING PRODUCT* – FLEXIBLE METAL CONDUIT – NOM 4 IN. DIAM (OR SMALLER) ALUMINUM OR STEEL FLEXIBLE METAL CONDUIT+. MAX ONE FLEXIBLE METAL CONDUIT TO BE INSTALLED NEAR CENTER OF CIRCULAR OPENING IN GYPSUM WALLBOARD. FLEXIBLE METAL CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY.
AFC CABLE SYSTEMS INC

3. FILL, VOID OR CAVITY MATERIAL* – CAULK – CAULK FILL MATERIAL FORCED INTO ANNULAR SPACE AROUND ENTIRE CIRCUMFERENCE OF THROUGH PENETRATING PRODUCT TO COMPLETELY FILL OPENING IN GYPSUM WALLBOARD LAYERS ON EACH SIDE OF THE WALL ASSEMBLY. A MIN 5/8 IN. THICKNESS OF CAULK IS REQUIRED FOR THE 1 HR F RATING. A MIN 1-1/4 IN. THICKNESS OF CAULK IS REQUIRED FOR THE 2 HR F RATING.
3M COMPANY – CP 25WB+

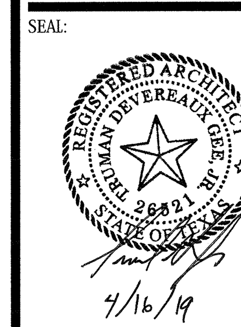
*BEARING THE UL CLASSIFICATION MARKING

INTERPLAN LLC
ARCHITECTURE
ENGINEERING
INTERIOR DESIGN
PROJECT MANAGEMENT

F-3219

6815 MANHATTAN BOULEVARD
SUITE 115
FORT WORTH, TEXAS 76120
PH 682.747.5054

SEAL:



NO DATE REMARKS
REVISIONS

THE WOODHOUSE
day spa®

WOODHOUSE DAY SPA
RENOVATION

MARKET STREET
9595 SIX PINES DRIVE
THE WOODLANDS, TEXAS 77680

PROJECT NO: 2019.0172
DATE: 04-08-2019

A0.11

CHECKED: TG DRAWN: KW

P:\W\WoodhouseDaySpa\2019.0172 - 9595 Six Pines Drive, Suite 1270, The Woodlands, TX\3 CAD & Drawings\2 Construction Documents\0.3 series.dwg, A0.11, 4/15/2019 10:07:23 AM, davsir, DWG To PDF.pc3, ARCH expand E1 (30.00 x 42.00 Inches), 1:1