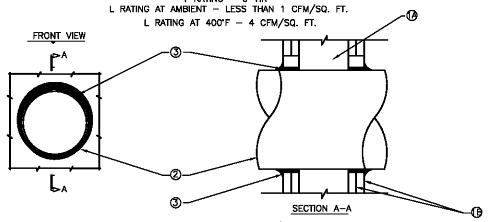
UPDATED 01.23.2015

U.L. SYSTEM NO. W-L-1085
F RATING – 1-HR OR 2-HR (SEE ITEM 1B)
T RATING – 0-HR
L RATING AT AMBIENT – LESS THAN 1 CFM/SQ. FT.
L RATING AT 400°F – 4 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 SPECIFIED U300 OR U400 SERIES WALL AND 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. STEEL STUDS TO BE MIN 2-1/2 IN. WIDE AND SPACED MAX 24 IN. OC.

B. GYPSUM BOARD* – 5/8 IN. THICK, 4 FT WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX DIA OF OPENING IS 13-1/4 IN.

DIA OF CIRCULAR OPENING CUT THROUGH GYPSUM WALLBOARD OF EACH SIDE OF WALL ASSEMBLY TO BE MIN 1/4 IN. TO MAX 1/2 IN. LARGER THAN OUTSIDE DIA OF THROUGH PENETRANT (ITEM 2).

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. THROUGH PENETRANTS – ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE ANNULAR SPACE BETWEEN THE THROUGH-PENETRANT AND THE PERIPHERY OF THE OPENING SHALL BE MIN 0 IN. TO MAX 1/4 IN. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:

A. STEEL PIPE – NOM 12 IN. DIA (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
B. IRON PIPE – NOM 12 IN. DIA (OR SMALLER) CAST OR DUCTILE IRON PIPE.
C. CONDUIT – NOM 6 IN. DIA (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR STEEL CONDUIT.
D. COPPER TUBING – NOM 6 IN. DIA (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
E. COPPER PIPE – NOM 6 IN. DIA (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

3. FILL, VOID, OR CAVITY MATERIAL* – SEALANT – FILL MATERIAL TO BE FORCED INTO THE ANNULUS TO MAXIMUM EXTENT POSSIBLE. ADDITIONAL FILL MATERIAL TO BE INSTALLED SUCH THAT A MIN 1/2 IN. CROWN IS FORMED AROUND THE PENETRATING ITEM AND LAPPING 1/4 IN. BEYOND THE PERIPHERY OF THE OPENING.

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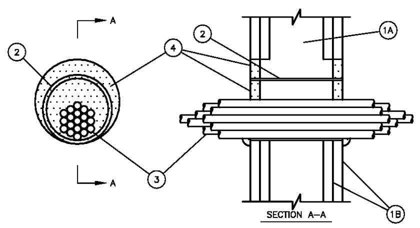
UPDATED 10.14.2015

SYSTEM NO. W-L-3065
F RATING = 1-HR. OR 2-HR. L RATING AT AMBIENT = 15 CFM/SQ. FT.
T RATING = 0 AND 3/4 HR L RATING AT 400°F = 8 CFM/SQ. FT.



1. WALL ASSEMBLY — THE 1 OR 2 FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400, V400 OR W400 SERIES WALL AND 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. (51 BY 102 MM) LUMBER SPACED 16 IN. (406 MM) OC. STEEL STUDS TO BE MIN 2-1/2 IN. (64 MM) WIDE AND SPACED MAX 24 IN. (610 MM) OC.
B. GYPSUM BOARD* — NOM 5/8 IN. (16 MM) THICK GYPSUM BOARD, WITH SQUARE OR TAPERED EDGES. THE GYPSUM BOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300, U400 OR V400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIA OF OPENING IS 5-1/2 IN. (138 MM) WHEN SLEEVE (ITEM 2) IS EMPLOYED. MAX DIA OF OPENING IS 4 IN. (102 MM) WHEN SLEEVE (ITEM 2) IS NOT EMPLOYED.

THE F, FH RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE FIRE RATING OF THE WALL ASSEMBLY.

2. METALLIC SLEEVE — (OPTIONAL) – NOM 4 IN. (102 MM) DIA (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING (EMT) OR SCHEDULE 5 (OR HEAVIER) STEEL PIPE OR MIN 0.016 IN. THICK (0.41 MM, NO. 28 GA) GALV STEEL SLEEVE INSTALLED FLUSH WITH WALL SURFACES. THE ANNULAR SPACE BETWEEN STEEL SLEEVE AND PERIPHERY OF OPENING SHALL BE MIN 0 IN. (0 MM, POINT CONTACT) TO MAX 1 IN. (25MM). WHEN SCHEDULE 5 STEEL PIPE OR EMT IS USED, SLEEVE MAY EXTEND UP TO 18 IN. (457 MM) BEYOND THE WALL SURFACES. AS AN OPTION WHEN SCHEDULE 5 STEEL PIPE OR EMT IS USED, SLEEVE MAY EXTEND CONTINUOUSLY BEYOND ONE WALL SURFACE. WHEN CABLE BUNDLE PENETRATES WALL ASSEMBLY AT AN ANGLE OF 45 DEGREES, NO METALLIC SLEEVE IS USED.
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. (0 MM, POINT CONTACT) TO MAX 1 IN. (25 MM). WHEN SLEEVE IS CONTINUOUS ON ONE SIDE OF WALL (SEE ITEM 2), THE CABLE FILL MAY BE 0 TO 45% AND THE MAX ANNULAR SPACE IS NOT LIMITED. CABLES TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE WALL ASSEMBLY. ANY COMBINATION OF THE FOLLOWING TYPES AND SIZES OF COPPER CONDUCTOR CABLES MAY BE USED:
A. MAX 7/C NO. 12 AWG WITH POLYVINYL CHLORIDE (PVC) INSULATION AND JACKET.
B. MAX 25 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC INSULATION AND JACKET.
B1. MAX 4 PR NO. 22 AWG CAT 5 OR CAT 6 COMPUTER CABLES.
C. TYPE RG/U COAXIAL CABLE WITH POLYETHYLENE (PE) INSULATION AND PVC JACKET HAVING A MAX OUTSIDE DIAMETER OF ½ IN. (13 MM).
C1. MAX RG 6/U COAXIAL CABLE WITH FLUORINATED ETHYLENE INSULATION AND JACKETING.
D. MULTIPLE FIBER OPTICAL COMMUNICATION CABLE JACKETED WITH PVC AND HAVING A MAX OD OF 5/8 IN. (16 MM).
E. THROUGH PENETRATING PRODUCTS*— MAX THREE COPPER CONDUCTOR NO. 8 AWG . METAL-CLAD CABLE+.
F. MAX 3/C (WITH GROUND)(OR SMALLER) NO. 8 AWG COPPER CONDUCTOR CABLE WITH PVC INSULATION AND JACKETING.
G. MAX 3/4 IN. (19 MM) DIA COPPER GROUND CABLE WITH OR WITHOUT A PVC JACKET.
H. FIRE RESISTIVE CABLES* – MAX 1-1/4 IN. (32 MM) DIA SINGLE CONDUCTOR OR MULTI CONDUCTOR TYPE MI CABLE. A MIN 1/8 IN. (3 MM) SEPARATION SHALL BE MAINTAINED BETWEEN MI CABLES AND ANY OTHER TYPES OF CABLE.
I. MAX 4/C WITH GROUND 300KCMIL (OR SMALLER) ALUMINUM SER CABLE WITH PVC INSULATION AND JACKET.
J. THROUGH PENETRATING PRODUCT* – ANY CABLES, METAL-CLAD CABLES, OR ARMORED CABLES, CURRENTLY CLASSIFIED UNDER THE THROUGH PENETRATING PRODUCTS CATEGORY.
SEE THROUGH PENETRATING PRODUCT (XHLY) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
4. FILL, VOID OR CAVITY MATERIAL*— SEALANT OR PUTTY — FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH EACH END OF THE STEEL SLEEVE OR WALL SURFACE. FILL MATERIAL INSTALLED SYMMETRICALLY ON BOTH SIDES OF THE WALL. A MIN 5/8 IN. (16 MM) THICKNESS OF SEALANT IS REQUIRED FOR THE 1 OR 2 HR F RATING. AN ADDITIONAL 1/2 IN. (13 MM) DIA BEAD OF FILL MATERIAL SHALL BE APPLIED AROUND THE PERIMETER OF SLEEVE ON BOTH SIDES OF THE WALL WHEN SLEEVE EXTENDS BEYOND SURFACE OF WALL.
*BEARING THE UL CLASSIFICATION MARK
+BEARING THE UL LISTING MARK

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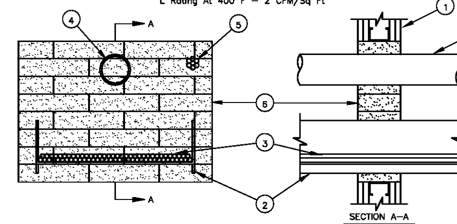
UPDATED 07.12.2016

System No. W-L-8013
F Ratings – 1 and 2 Hr (See Item 1)
T Rating – 0 Hr
L Rating At Ambient – 5 CFM/Sq Ft
L Rating At 400 F – 2 CFM/Sq Ft



1. WALL ASSEMBLY — THE 1 OR 2 HR FIRE-RATED GYPSUM BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400, V400 OR W400 SERIES WALL AND 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 IN. (51 MM) BY 4 IN. (102 MM) LUMBER SPACED 16 IN. (406 MM) OC. STEEL STUDS TO BE MIN 2-1/2 IN. (64 MM) WIDE AND SPACED MAX 24 IN. (610 MM) OC. ADDITIONAL STUDS INSTALLED TO COMPLETELY FRAME THE OPENING.
B. GYPSUM BOARD* — 5/8 IN. (16 MM) THICK, 4 FT (1219 MM) WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM BOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX AREA OF OPENING IS 352 SQ IN. (2271 SQ CM) WITH MAX DIMENSION OF 22 IN. (559 MM) WIDE.

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. CABLE TRAY* — MAX 18 IN. (457 MM) WIDE BY MAX 6 IN. (152 MM) DEEP OPEN-LADDER OR SOLID-BACK CABLE TRAY WITH CHANNEL-SHAPED SIDE RAILS FORMED OF 0.065 IN. (1.65 MM) THICK ALUMINUM OR 0.060 IN. (1.52 MM) THICK STEEL AND WITH 1-1/2 IN. (38 MM) WIDE BY 1 IN. (25 MM) CHANNEL SHAPE RUNGS SPACED 9 IN. (229 MM) OC OR A 0.029 IN. (0.74 MM) THICK STEEL SOLID BACK, RESPECTIVELY. ONE CABLE TRAY TO BE INSTALLED IN THE OPENING. THE MAX ANNULAR SPACE BETWEEN THE CABLE TRAY AND THE PERIPHERY OF THE OPENING SHALL BE MIN 1 IN. (25 MM) TO MAX 7 IN. (178 MM) CABLE TRAY TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
3. CABLES — AGGREGATE CROSS-SECTIONAL AREA OF CABLES IN CABLE TRAY TO BE MAX 30 PERCENT OF THE CROSS-SECTIONAL AREA OF THE CABLE TRAY. ANY COMBINATION OF THE FOLLOWING TYPES AND SIZES OF COPPER CONDUCTOR CABLES MAY BE USED:
A. 7/C NO. 12 AWG WITH POLYVINYL CHLORIDE (PVC) INSULATION AND PVC JACKET.
B. 100 PAIR – NO. 24 AWG CABLE WITH PVC INSULATION AND JACKET.
C. 1/C, 750 KCMIL (OR SMALLER) WITH PVC INSULATION AND JACKET.
4. THROUGH-PENETRANTS — ONE OR MORE PIPE OR TUBE TO BE INSTALLED WITHIN THE OPENING. THE TOTAL NUMBER OF THROUGH-PENETRANTS IS DEPENDENT ON THE SIZE OF THE OPENING AND TYPES AND SIZES OF THE PENETRANTS. ANY COMBINATION OF THE PENETRANTS DESCRIBED BELOW MAY BE USED PROVIDED THAT THE FOLLOWING PARAMETERS RELATIVE TO THE ANNULAR SPACES AND THE SPACING BETWEEN THE PIPES ARE MAINTAINED. THE SPACE BETWEEN THE PIPE OR TUBE AND THE PERIPHERY OF THE OPENING SHALL BE MIN 1-1/2 IN. (38 MM) TO MAX 9-1/4 IN. (235 MM). PIPE OR TUBE TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF NON-METALLIC OR METALLIC PIPES, OR TUBES MAY BE USED:
A. POLYVINYL CHLORIDE (PVC) PIPE — MAX 3 IN. (76 MM) DIA SCHEDULE 40 SOLID CORE PVC PIPE (OR SMALLER) FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM.
B. STEEL PIPE — NOM 6 IN. (152 MM) DIA (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE.
C. CONDUIT — NOM 4 IN. (102 MM) DIA (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR 6 IN. (152 MM) DIA STEEL CONDUIT.
D. COPPER PIPE — NOM 4 IN. (102 MM) DIA (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
E. COPPER TUBE — NOM 4 IN. (102 MM) DIA (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBE.
4A. PIPE COVERING — (NOT SHOWN) NOM 1-1/2 IN. (38 MM) THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN 3.5 PCF) (56KG/M3) 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 SECURED WITH METAL FASTENERS OR WITH BUTT TAPE SUPPLIED WITH THE PRODUCT.
SEE PIPE AND EQUIPMENT COVERING AND MATERIALS (BRGU) CATEGORY IN THE 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 MAY BE USED.
5. CABLES — MAX 1-1/2 IN. (38 MM) DIA TIGHT BUNDLE OF CABLES INSTALLED WITHIN THE OPENING AND RIGIDLY SUPPORTED ON BOTH SURFACES OF WALL. THE SPACE BETWEEN THE CABLES AND PERIPHERY OF THE OPENING SHALL RANGE FROM 1-3/16 IN. (30.2 MM) MIN TO A MAX OF 1-1/2 IN. (38 MM). ANY COMBINATION OF THE FOLLOWING TYPES AND SIZES OF CABLES MAY BE USED:
A. 7/C NO. 12 AWG WITH POLYVINYL CHLORIDE (PVC) INSULATION AND JACKET.
B. 25 PAIR — NO. 24 AWG CABLE WITH PVC INSULATION AND JACKET.
C. TYPE R GU/59 COAXIAL CABLE WITH PVC OUTER JACKET.
D. 24 FIBER OPTIC CABLE WITH PVC SUB UNIT AND OUTER JACKET.
6. FIRESTOP SYSTEM — THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
A. FILL, VOID OR CAVITY MATERIAL* — FIRE BLOCKS FOR WALLS INCORPORATING MAX 3-5/8 IN. (92 MM) STEEL STUDS OR MAX 2 (51 MM) BY 4 IN. (102 MM) WOOD STUDS, FIRE BLOCK INSTALLED WITH 5 IN. (127 MM) DIMENSION PROJECTING THROUGH AND CENTERED IN OPENING. FOR WALLS CONSTRUCTED OF LARGER STEEL OR WOOD STUDS, FIRE BLOCK INSTALLED WITH LONG DIMENSION PASSING THROUGH AND CENTERED IN OPENING. BLOCKS MAY OR MAY NOT BE CUT FLUSH WITH BOTH SURFACES OF WALL. WHEN MULTIPLE LAYERS OF GYPSUM BOARD ARE USED, BLOCKS MAY BE RECESSED 1/2 IN. (13 MM) FROM SURFACE OF WALL.
B. FILL, VOID OR CAVITY MATERIAL* — SEALANT OR PUTTY – FILL MATERIAL TO BE FORCED INTO INTERSTICES OF CABLES, BETWEEN CABLES AND CABLE TRAYS, AROUND EACH PENETRANT AND WHERE OBVIOUS VOIDS ARE OBSERVED TO MAX EXTENT POSSIBLE ON BOTH SURFACES OF THE PENETRATION.
*BEARING THE UL CLASSIFICATION MARK

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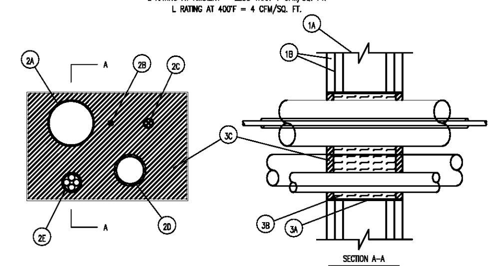
UPDATED 04.26.2017

System No. W-L-8004
F RATING = 2-HR.
T RATING = 1/4-HR.
L RATING AT AMBIENT = LESS THAN 1 CFM/SQ. FT.
L RATING AT 400°F = 4 CFM/SQ. FT.



1. WALL ASSEMBLY THE FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400, V400 OR W400 SERIES WALL AND 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. STEEL STUDS TO BE MIN 2-1/2 IN. WIDE AND SPACED MAX 24 IN. OC. ADDITIONAL FRAMING (NOT SHOWN) MAY BE INSTALLED AROUND THE PERIMETER OF THE OPENING IN LIEU OF THE STEEL WIRE MESH (ITEM NO. 3A).
B. GYPSUM BOARD* TWO LAYERS OF NOM 5/8 IN. THICK GYPSUM WALLBOARD, AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX AREA OF OPENING IS 96 SQ IN. WITH MAX DIMENSION OF 12 IN. MAX WIDTH OF OPENING IN WOOD STUD WALLS IS LIMITED TO 12 IN.

2. THROUGH PENETRANTS THE FOLLOWING TYPES AND SIZES OF PIPES, CONDUITS, TUBING OR CABLES MAY BE USED:
A. NOM 3 IN. DIA (OR SMALLER) ELECTRICAL METALLIC TUBING (EMT).
B. MAX 25 PAIR -- NO. 24 AWG (OR SMALLER) TELEPHONE CABLE WITH POLYVINYL CHLORIDE (PVC) INSULATION AND JACKET.
C. MAX 3/C WITH GROUND -- NO. 10 AWG (OR SMALLER) TYPE NM CABLE WITH PVC INSULATION AND JACKET.
D. NOM 2 IN. DIA (OR SMALLER) SCHEDULE 40 PVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS ONLY.
E. MAX 300 KCMIL (OR SMALLER) POWER CABLE WITH PVC INSULATION AND NYLON JACKET. THE THROUGH PENETRATING ITEMS TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY AND LOCATED AS SHOWN IN THE TABLE BELOW:

ITEM NO.	MAX DISTANCE BETWEEN ADJACENT PEN. ITEM IN.	MIN DISTANCE BETWEEN ADJACENT PEN. ITEM IN.	MAX DISTANCE FROM THROUGH OPENING IN.	MIN DISTANCE FROM THROUGH OPENING IN.
2A	7-7/16	1-11/16	14-1/2	1/2
2B	7-7/16	1-11/16	14-1/2	1/2
2C	7-7/16	1-11/16	14-1/2	1/2
2D	7-7/16	1-11/16	14-1/2	1/2
2E	7-7/16	1-11/16	14-1/2	1-1/2

3. FIRESTOP SYSTEM THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
A. STEEL WIRE MESH NO. 8 STEEL WIRE MESH HAVING A MIN 1 IN. LAP ALONG THE LONGITUDINAL SEAM. LENGTH OF STEEL WIRE MESH TO BE 4-3/4 IN., CENTERED AND FORMED TO FIT PERIPHERY OF THROUGH OPENING. STEEL WIRE MESH IS NOT REQUIRED WHEN ADDITIONAL FRAMING MEMBERS (ITEM NO. 1A) ARE USED.
B. PACKING MATERIAL MIN 4.0 IN. THICKNESS OF MIN 3.5 PCF MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
C. FILL, VOID OR CAVITY MATERIAL* – SEALANT MIN 1/2 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL.
*BEARING THE UL CLASSIFICATION MARK

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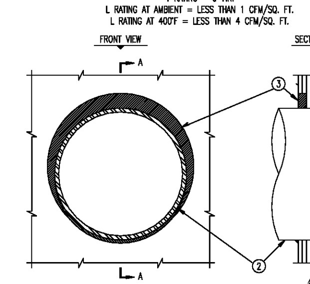
UPDATED 10.24.2015

U.L. SYSTEM NO. WL1054
METAL PIPE THROUGH GYPSUM WALL ASSEMBLY
F RATING = 1-HR. OR 2-HR.
T RATING = 0-HR.
L RATING AT AMBIENT = LESS THAN 1 CFM/SQ. FT.
L RATING AT 400°F = LESS THAN 4 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 SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND 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. (51 BY 102 MM) LUMBER SPACED 16 IN. (406 MM) OC. STEEL STUDS TO BE MIN 2-1/2 IN. (64 MM) WIDE AND SPACED MAX 24 IN. (610 MM) OC. WHEN STEEL STUDS ARE USED AND THE DIAM OF OPENING EXCEEDS THE WIDTH OF STUD CAVITY, THE OPENING SHALL BE FRAMED ON ALL SIDES USING LENGTHS OF STEEL STUD INSTALLED BETWEEN THE VERTICAL STUDS AND SCREW-ATTACHED TO THE STEEL STUDS AT EACH END. THE FRAMED OPENING IN THE WALL SHALL BE 4 TO 6 IN. (102 TO 152 MM) WIDER AND 4 TO 6 IN. (102 TO 152 MM) HIGHER THAN THE DIAM OF THE PENETRATING ITEM SUCH THAT, WHEN THE PENETRATING ITEM IS INSTALLED IN THE OPENING, A 2 TO 3 IN. (51 TO 76 MM) CLEARANCE IS PRESENT BETWEEN THE PENETRATING ITEM AND THE FRAMING ON ALL FOUR SIDES.
B. GYPSUM BOARD*– 5/8 IN. (16 MM) THICK, 4 FT (122 CM) WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM BOARD 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 32-1/4 IN. (819 MM) FOR STEEL STUD WALLS. MAX DIAM OF OPENING IS 14-1/2 IN. (368 MM) FOR WOOD STUD WALLS.
THE F AND FH RATINGS OF THE FIRESTOP SYSTEM ARE EQUAL TO THE FIRE RATING OF THE WALL ASSEMBLY.

2. THROUGH-PENETRANTS – ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE SHALL BE MIN 0 IN. TO MAX 2-1/4 IN. (57 MM). PIPE MAY BE INSTALLED WITH CONTINUOUS POINT CONTACT. 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 30 IN. (762 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
B. IRON PIPE – NOM 30 IN. (762 MM) DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
C. CONDUIT – NOM 4 IN. (102 MM) DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR 6 IN. (152 MM) . DIAM STEEL CONDUIT.
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.
3. FILL, VOID OR CAVITY MATERIAL* – SEALANT – MIN 5/8 IN. (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. AT THE POINT OR CONTINUOUS CONTACT LOCATIONS BETWEEN PIPE AND WALL, A MIN 1/2 IN. (13 MM) DIAM BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE PIPE WALL INTERFACE ON BOTH SURFACES OF WALL.

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SCO #16-15889-02A

RICHMOND COMMUNITY COLLEGE

LEE BUILDING
STUDENT SERVICES &
CAREER CENTER
VOL.2

BID DOCUMENTS

ELECTRICAL PENETRATION DETAILS

DATE 4-5-2019
PROJECT NO 16063

REVISIONS

NO	DATE	DESCRIPTION:

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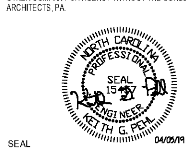

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