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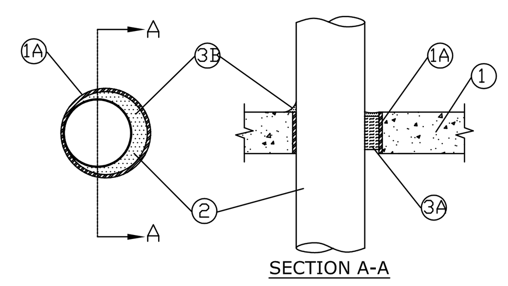
* NOTE
THIS MATERIAL WAS EXTRACTED BY 3M FIRE PROTECTION PRODUCTS FROM THE 2004 EDITION OF THE UL FIRE RESISTANCE DIRECTORY.

System No. C-AJ-1427
May 18, 2005
F Rating - 3 Hr
T Rating - 0 Hr
W Rating - Class I (See Item 3)



1. FLOOR OR WALL ASSEMBLY – MIN 2–1/2 IN. (64 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100–150 PCF OR 1600–2400 KG/M3) CONCRETE FLOORS OR MIN 3 IN. (76 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALLS. FLOOR ASSEMBLY MAY ALSO BE CONSTRUCTED OF ANY MIN 6 IN. (152 MM) THICK UL CLASSIFIED HOLLOW–CORE PRECAST CONCRETE UNITS*. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING 12–3/4 IN. (324 MM) MAX DIAM OF OPENING IN FLOORS CONSTRUCTED OF HOLLOW–CORE CONCRETE IS 7 IN. (78 MM).
SEE CONCRETE BLOCKS (CAZT) AND PRECAST CONCRETE UNITS (CFTV) CATEGORIES IN FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

1A. STEEL SLEEVE (OPTIONAL) – NOM 12 IN. (305 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY. STEEL SLEEVE MAY BE INSTALLED FLUSH OR MAY PROJECT MAX 2 IN. (51 MM) BEYOND THE FLOOR OR WALL SURFACES.

2. THROUGH PENETRANT – ONE METALLIC PIPE, CONDUIT, TUBING OR FLEXIBLE METAL PIPING INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN OPENING. ANNULAR SPACE BETWEEN PENETRANT AND PERIPHERY OF OPENING OR SLEEVE SHALL BE MIN OF 0 IN. (POINT CONTACT) TO MAX 2 IN. (0 MM TO MAX 51 MM). PENETRANT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF PENETRANTS MAY BE USED:
A. STEEL PIPE – NOM 10 IN. (254 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
B. IRON PIPE – NOM 10 IN. (254 MM) DIAM (OR SMALLER) CAST OR DUCTILE IRON 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 4 IN. (102 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
E. COPPER PIPE – NOM 4 IN. (102 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 BEREMOVED 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.
4. FIRESTOP SYSTEM – THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:
A. PACKING MATERIAL – MIN 2 IN. (51 MM) THICKNESS OF MIN 4 PCF (64 KG/M3) MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR TO EDGE OF SLEEVE OR FROM BOTH SURFACES OF WALL OR BOTH ENDS OF SLEEVE AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL. IN FLOORS CONSTRUCTED OF HOLLOW–CORE CONCRETE, PACKING MATERIAL TO BE RECESSED FROM TOP AND BOTTOM SURFACES OF FLOOR OR SLEEVE AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
B. FILL,VOID OR CAVITY MATERIALS* – CAULK OR SEALANT – MIN 1/2 IN. (13 MM) THICKNESS OF CAULK APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR TOP EDGE OF SLEEVE OR WITH BOTH SURFACES OF WALL OR BOTH ENDS OF SLEEVES. IN FLOORS CONSTRUCTED OF HOLLOW–CORE CONCRETE, MIN 1/2 IN. (13 MM) THICKNESS OF CAULK APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP AND BOTTOM SURFACES OF FLOOR OR SLEEVE. MIN 1/4 IN. (6MM) DIAM BEAD OF CAULK APPLIED TO THE PENETRANT/CONCRETE OR PENETRANT/SLEEVE INTERFACE AT THE POINT CONTACT LOCATION ON THE TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL OR HOLLOW–CORE CONCRETE.

3M COMPANY – IC 15WB+, CP 25WB+ CAULK OR FB–3000 WT SEALANT.
(NOTE: W RATING APPLIES ONLY WHEN FB–3000 WT IS USED.)

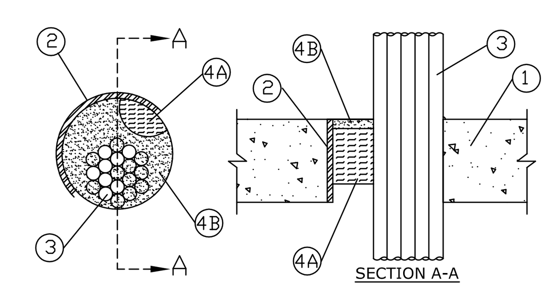
*BEARING THE UL CLASSIFICATION MARK

CONSULT CURRENT INDEPENDENT LABORATORIES (UL) FOR SYSTEMS OR DESIGN DETAILS.

PROJECT		SHT 1 of 1 / C-AJ-1427.DWG	SIGNATURE DATE
SYSTEM/DESIGN NO. C-AJ-1427	DATE 05-18-2005	NOT FOR USE AS CONSTRUCTION DOCUMENT. DRAWING NOT TO SCALE.	ALL STATEMENTS, TECHNICAL INFORMATION RECOMENDATIONS CONTAINED HEREIN ARE BASED ON TESTS WE BELIEVE TO BE RELIABLE. HOWEVER SINCE THE CONDITIONS OF USE AND APPLICATION ARE BEYOND OUR CONTROL, 3M SHALL NOT BE LIABLE FOR ANY DAMAGE DIRECT OR CONSEQUENTIAL RESULTING FROM THE USE OF THIS MATERIAL OR DESIGN. 3M'S ONLY WARRANTY SHALL BE TO REPLACE OUR PRODUCTS PROVED TO BE DEFECTIVE.
3M Fire Protection Products			

* NOTE
THIS MATERIAL WAS EXTRACTED BY 3M FIRE PROTECTION PRODUCTS FROM THE 2004 EDITION OF THE UL FIRE RESISTANCE DIRECTORY.

System No. C-AJ-3200
May 19, 2005
F Rating - 2 Hr
T Rating - 1/4 Hr



1. FLOOR OR WALL ASSEMBLY – MIN 4–1/2 IN. (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100–150 PCF OR 1600–2400 KG/M3) CONCRETE. FLOOR ASSEMBLY MAY ALSO BE CONSTRUCTED OF ANY MIN 6 IN. (152 MM) THICK UL CLASSIFIED HOLLOW–CORE **PRECAST CONCRETE UNITS***. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED **CONCRETE BLOCKS***. MAX DIAM OF OPENING 6 IN. (152 MM).

SEE **CONCRETE BLOCKS** (CAZT) AND **PRECAST CONCRETE UNITS** (CFTV) CATEGORIES IN FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

2. STEEL SLEEVE (OPTIONAL) – NOM 6 IN. (152 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY. STEEL SLEEVE MAY BE INSTALLED FLUSH OR MAY PROJECT MAX 2 IN. (51 MM) BEYOND THE FLOOR OR WALL SURFACES.

3. CABLES – AGGREGATE CROSS–SECTIONAL AREA OF CABLES IN OPENING TO BE MAX 49 PERCENT OF THE CROSS–SECTIONAL AREA INSIDE THE SLEEVE OROPENING. ANNULAR SPACE BETWEEN CABLES AND PERIPHERY OF OPENING OR SLEEVE SHALL BE MIN OF 0 IN. (POINT CONTACT) TO MAX 2 IN. (0 MM TO MAX 51 MM) CABLES TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. ANY COMBINATION OF THE FOLLOWING TYPES AND SIZES OF CABLE MAY BE USED;

A. MAX 200 PAIR NO. 22 AWG (OR SMALLER) COPPER CONDUCTOR WITH POLYVINYL CHLORIDE (PVC) INSULATION AND JACKETING MATERIAL.
B. MAX 1/C NO. 750 KCMIL (OR SMALLER) COPPER CONDUCTOR CABLE WITH CROSS–LINKED POLYETHYLENE (XLPE) JACKET.
C. MAX 7/C NO. 12 AWG (OR SMALLER) COPPER CONDUCTOR POWER AND CONTROL CABLES WITH XLPE OR PVC INSULATION WITH XLPE OR PVC JACKET.
D. MAX 3/C NO. 3/0 AWG (OR SMALLER) COPPER OR ALUMINUM CONDUCTOR SER CABLES WITH PVC INSULATION AND JACKET.
E. MAX 3/C NO. 2/0 AWG (OR SMALLER) COPPER CONDUCTOR PVC JACKETED ALUMINUM CLAD OR STEEL CLAD TECK 90 CABLE.
F. MAX 110/125 FIBER OPTIC (F.O.) CABLE WITH PVC INSULATION AND JACKET.
G. MAX 3/C WITH GROUND NO. 8 AWG (OR SMALLER) COPPER CONDUCTOR NM CABLE WITH PVC INSULATION AND JACKET.
H. RG/U COAXIAL CABLE WITH FLUORINATED ETHYLENE (FE) OR PVC INSULATION AND JACKET.
I. MAX 4 PAIR NO. 24 AWG (OR SMALLER) COPPER CONDUCTOR DATA CABLE WITH HYLAR JACKET AND INSULATION.
J. MAX THREE CONDUCTOR NO. 12 AWG (OR SMALLER) MC (BX) COPPER CABLE WITH POLYVINYL CHLORIDE INSULATION AND JACKET MATERIALS.
K. **THROUGH PENETRATING PRODUCT*** – **ANY CABLES, ARMORED CABLE+ OR METAL CLAD CABLE+** CURRENTLY CLASSIFIED UNDER THE THROUGH PENETRATING PRODUCT CATEGORY.

SEE **THROUGH PENETRATING PRODUCT** (XHLY) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS

4. FIRESTOP SYSTEM – THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:

A. PACKING MATERIAL – MIN 3 IN. (76 MM) THICKNESS OF MIN 4 PCF (64 KG/M3)MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR TOP EDGE OF SLEEVE OR FROM BOTH SURFACES OF WALL OR BOTH ENDS OF SLEEVE AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL. IN FLOORS CONSTRUCTED OF HOLLOW–CORE CONCRETE, PACKING MATERIAL TO BE RECESSED FROM TOP AND BOTTOM SURFACES OF FLOOR OR SLEEVE AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
B. FILL,VOID OR CAVITY MATERIALS* - CAULK OR SEALANT – MIN 1/2 IN. (13 MM) THICKNESS OF CAULK APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR TOP EDGE OF SLEEVE OR WITH BOTH SURFACES OF WALL OR BOTH ENDS OF SLEEVES. IN FLOORS CONSTRUCTED OF HOLLOW–CORE CONCRETE, MIN 1/2 IN. (13 MM) THICKNESS OF CAULK APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP AND BOTTOM SURFACES OF FLOOR OR SLEEVES. MIN 1/4 IN. (6 MM) DIAM BEAD OF CAULK APPLIED TO THE PENETRANT/CONCRETE OR PENETRANT/SLEEVE INTERFACE AT THE POINT CONTACT LOCATION ON THE TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL OR HOLLOW–CORE CONCRETE.

3M COMPANY – CP 25WB+, IC 15WB+ CAULK OR FB–3000 WT SEALANT.

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

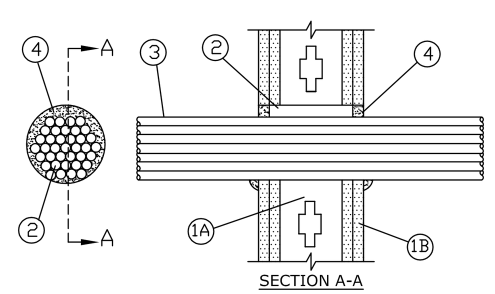
CONSULT CURRENT INDEPENDENT LABORATORIES (UL) FOR SYSTEMS OR DESIGN DETAILS.

PROJECT		SHT 1 of 1 / C-AJ-3200.DWG	SIGNATURE DATE
SYSTEM/DESIGN NO. C-AJ-3200	DATE 05-19-2005	NOT FOR USE AS CONSTRUCTION DOCUMENT. DRAWING NOT TO SCALE.	ALL STATEMENTS, TECHNICAL INFORMATION RECOMENDATIONS CONTAINED HEREIN ARE BASED ON TESTS WE BELIEVE TO BE RELIABLE. HOWEVER SINCE THE CONDITIONS OF USE AND APPLICATION ARE BEYOND OUR CONTROL, 3M SHALL NOT BE LIABLE FOR ANY DAMAGE DIRECT OR CONSEQUENTIAL RESULTING FROM THE USE OF THIS MATERIAL OR DESIGN. 3M'S ONLY WARRANTY SHALL BE TO REPLACE OUR PRODUCTS PROVED TO BE DEFECTIVE.
3M Fire Protection Products			

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

* NOTE
THIS MATERIAL WAS EXTRACTED BY 3M FIRE PROTECTION PRODUCTS FROM THE 2004 EDITION OF THE UL FIRE RESISTANCE DIRECTORY.

System No.W-L-3195
May 19, 2005
F Ratings - 1 & 2 Hr (See Item 1)
T Ratings - 0 & 1/2 Hr (See Item 1)



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 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. (51 MM BY 102 MM) LUMBER SPACED 16 IN. (406 MM) OC. STEEL STUDS TO BE MIN 3–1/2 IN. (89 MM) WIDE SPACED MAX 24 IN. (610 MM) OC.
B. GYPSUM BOARD* – 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 5 IN. (127 MM).

THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.
THE HOURLY T RATING IS 0 AND 1/2 HR FOR 1 AND 2 HR RATED ASSEMBLIES, RESPECTIVELY.

2. STEEL SLEEVE (OPTIONAL) – CYLINDRICAL SLEEVE FABRICATED FROM MIN 0.018 IN. (0.46 MM) THICK (NO. 28 GAUGE) GALV SHEET STEEL AND HAVING A MIN 1 IN. (25 MM) LAP ALONG THE LONGITUDINAL SEAM. LENGTH OF SLEEVE TO BE EQUAL TO OR MAX 2 IN. (51 MM) GREATER THAN THE THICKNESS OF WALL. ENDS OF SLEEVE TO BE FLUSH WITH OR EXTEND A MAX 1 IN. (25 MM) BEYOND EACH SURFACE OF WALL.

3. CABLES – MAX 4 IN. (102 MM) DIAM CABLE BUNDLE INSTALLED ECCENTRICALLY OR CONCENTRICALLY WITHIN OPENING. ANNULAR SPACE BETWEEN CABLE BUNDLE AND PERIPHERY OF OPENING OR SLEEVE TO BE MIN 0 IN. (POINT CONTACT) TO MAX 1 IN. (0 MM TO MAX 25 MM). CABLE BUNDLE TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL. THE FOLLOWING TYPES AND SIZES OF CABLES MAY BE USED:

A. MAX 200 PAIR NO. 22 AWG (OR SMALLER) COPPER CONDUCTOR WITH POLYVINYL CHLORIDE (PVC) INSULATION AND JACKETING MATERIAL.
B. MAX 1/C NO. 350 KCMIL (OR SMALLER) COPPER CONDUCTOR CABLE WITH CROSS–LINKED POLYETHYLENE (XLPE) OR PVC JACKET.
C. MAX 7/C NO. 12 AWG (OR SMALLER) COPPER CONDUCTOR POWER AND CONTROL CABLES WITH XLPE OR PVC INSULATION WITH XLPE OR PVC JACKET.
D. MAX 3/C NO. 2/0 AWG (OR SMALLER) COPPER OR ALUMINUM CONDUCTOR SER CABLES WITH XLPE OR PVC INSULATION AND JACKET.
E. MAX 4/C NO. 2/0 AWG (OR SMALLER) COPPER CONDUCTOR, ALUMINUM CLAD OR STEEL CLAD TECK 90 CABLE WITH OR WITHOUT PVC JACKETED.
F. MAX 110/125 FIBER OPTIC (F.O.) CABLE WITH PVC INSULATION AND JACKET.
G. MAX 3/C WITH GROUND NO. 8 AWG (OR SMALLER) COPPER CONDUCTOR NM CABLE WITH PVC INSULATION AND JACKET.
H. MAX RG/U COAXIAL CABLE WITH FLUORINATED ETHYLENE INSULATION AND JACKET.
I. MAX 4 PAIR NO. 24 AWG (OR SMALLER) COPPER CONDUCTOR DATA CABLE WITH HYLAR JACKET AND INSULATION.
J. **THROUGH PENETRATING PRODUCT*** – ANY CABLES, **ARMORED CABLE+** OR **METAL CLAD CABLE+** CURRENTLY CLASSIFIED UNDER THE **THROUGH PENETRATING PRODUCT** CATEGORY.
SEE **THROUGH PENETRATING PRODUCT** (XHLY) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS

4. FILL,VOID OR CAVITY MATERIAL* - CAULK OR SEALANT – MIN 5/8 IN. (16 MM) THICKNESS OF CAULK APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. MIN 1/4 IN. (6 MM) DIAM BEAD OF CAULK APPLIED TO GYPSUM BOARD/CABLE BUNDLE INTERFACE AT POINT CONTACT LOCATION ON BOTH SIDES OF WALL.

3M COMPANY – IC 15WB+, CP 25WB+ CAULK OR FB–3000 WT SEALANT

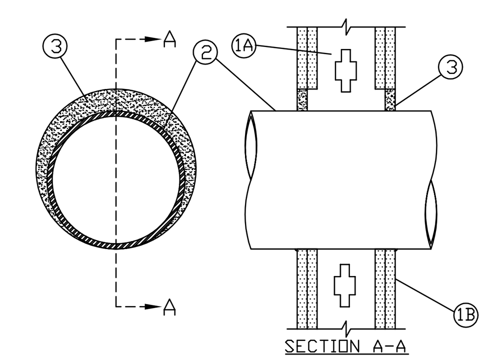
*BEARING THE UL CLASSIFICATION MARKING

CONSULT CURRENT INDEPENDENT LABORATORIES (UL) FOR SYSTEMS OR DESIGN DETAILS.

PROJECT		SHT 1 of 1 / W-L-3195.DWG	SIGNATURE DATE
SYSTEM/DESIGN NO. W-L-3195	DATE 05-18-2005	NOT FOR USE AS CONSTRUCTION DOCUMENT. DRAWING NOT TO SCALE.	ALL STATEMENTS, TECHNICAL INFORMATION RECOMENDATIONS CONTAINED HEREIN ARE BASED ON TESTS WE BELIEVE TO BE RELIABLE. HOWEVER SINCE THE CONDITIONS OF USE AND APPLICATION ARE BEYOND OUR CONTROL, 3M SHALL NOT BE LIABLE FOR ANY DAMAGE DIRECT OR CONSEQUENTIAL RESULTING FROM THE USE OF THIS MATERIAL OR DESIGN. 3M'S ONLY WARRANTY SHALL BE TO REPLACE OUR PRODUCTS PROVED TO BE DEFECTIVE.
3M Fire Protection Products			

* NOTE
THIS MATERIAL WAS EXTRACTED BY 3M FIRE PROTECTION PRODUCTS FROM THE 2004 EDITION OF THE UL FIRE RESISTANCE DIRECTORY.

System No.W-L-1296
May 23, 2005
F Ratings - 1 & 2 Hr (See Item 1)
T Ratings - 0 & 1/4 Hr (See Item 1)



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 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. (51 MM BY 102 MM) LUMBER SPACED 16 IN. (406 MM) OC. STEEL STUDS TO BE MIN 3–1/2 IN. (89 MM) WIDE SPACED MAX 24 IN. (610 MM) OC.
B. GYPSUM BOARD* – 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 10–5/8 IN. (270 MM).

THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.
THE HOURLY T RATING IS 0 AND 1/4 HR FOR 1 AND 2 HR RATED ASSEMBLIES, RESPECTIVELY.

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

A. STEEL PIPE – NOM 8 IN. (203 MM) DIAM (OR SMALLER) SCHEDULE 5 (OR HEAVIER) STEEL PIPE.
B. IRON PIPE – NOM 8 IN. (203 MM) DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
C. CONDUIT – NOM 4 IN. (102 MM) DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING (EMT) OR NOM 6 IN. (152 MM) RIGID STEEL CONDUIT.
D. COPPER TUBING – NOM 4 IN. (102 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
E. COPPER PIPE – NOM 4 IN. (102 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 IN. (16 MM) THICKNESS OF CAULK 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.

3M COMPANY – IC 15WB+, CP 25WB+ CAULK OR FB–3000 WT SEALANT.

*BEARING THE UL CLASSIFICATION MARK

CONSULT CURRENT INDEPENDENT LABORATORIES (UL) FOR SYSTEMS OR DESIGN DETAILS.

PROJECT		SHT 1 of 1 / W-L-3195.DWG	SIGNATURE DATE
SYSTEM/DESIGN NO. W-L-1296	DATE 05-23-2005	NOT FOR USE AS CONSTRUCTION DOCUMENT. DRAWING NOT TO SCALE.	ALL STATEMENTS, TECHNICAL INFORMATION RECOMENDATIONS CONTAINED HEREIN ARE BASED ON TESTS WE BELIEVE TO BE RELIABLE. HOWEVER SINCE THE CONDITIONS OF USE AND APPLICATION ARE BEYOND OUR CONTROL, 3M SHALL NOT BE LIABLE FOR ANY DAMAGE DIRECT OR CONSEQUENTIAL RESULTING FROM THE USE OF THIS MATERIAL OR DESIGN. 3M'S ONLY WARRANTY SHALL BE TO REPLACE OUR PRODUCTS PROVED TO BE DEFECTIVE.
3M Fire Protection Products			

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MOUNTING	LAMP	MANUFACTURER	CATALOG NO.	REMARKS
A	2'X4' PRIS TROFFER	RECESSED	4–F032(120V)	COLUMBIA	J24–432G–JLFSA12.125–4EB8–GLR	
A1	2'X4' PRIS TROFFER	RECESSED	4–F032(120V)	COLUMBIA	J24–432G–JLFSA12.125–4EB8–GLR	W/BATTERY PACK.
B	2'X4' PRIS TROFFER	RECESSED	3–F032(120V)	COLUMBIA	J24–332G–FSA12.125–3EB8–GLR	
B1	2'X4' PRIS TROFFER	RECESSED	3–F032(120V)	COLUMBIA	J24–332G–FSA12.125–3EB8–GLR	W/BATTERY PACK.
C	DOWN LIGHT	RECESSED	1–100W MAX	DUALITE	TO BE SELECTED BY OWNER	100W MAXIMUN
D	DOWN LIGHT	RECESSED	1–150W MAX	DUALITE	TO BE SELECTED BY OWNER	150W MAXIMUN
E	2'X2' PRIS TROFFER	RECESSED	2–F032(120V)	DUALITE	J24–332G–FSA12.125–3EB8–GLR	
E1	2'X2' PRIS TROFFER	RECESSED	2–F032(120V)	DUALITE	J24–332G–FSA12.125–3EB8–GLR	W/BATTERY PACK.
F	WALL MTD TROFFER	SURFACE	1–100W	DUALITE		
G	DOWN LIGHT	HUNG FROM CEILING	1–100W EA LAMP	DUALITE		
H	WALL SCONCE	SURFACE	1–100W	DUALITE		
I	DOWN LIGHT	RECESSED	1–100W	DUALITE		
X	EXIT LIGHT	UNIVERSAL	L.E.D.(120V)	DUALITE	LXURWE	
Y	EMERGENCY LIGHT	SURFACE	INCLUDED(120V)	DUALITE	LZ2D	

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DESIGN — INSPECTIONS

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NEW YORK 11 ERIE STREET JERSEY CITY, NJ 07302
TELEPHONE: 305-548-3006
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First Haitian Free Curch of Nazarene by Faith
IN
ORLANDO FLORIDA

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ORLANDO, FLORIDA

REVISIONS:
1 BLDG DEPT COMM 03-26-09

COMM. NO. 08-103
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