AT&T Practices
AT&T Fire Rated Partitions for Power Rooms in Network Equipment Buildings

Contents

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Purpose

The intent of this document is to set standards for AT&T power room fire rated partition system assemblies.

About this Document

Overview

This document is organized in 8 sections listed below.

- Section 1 provides the purpose of this document.
- Section 2 describes the specifications for fire wall partitions.
- Section 3 provides sealant requirements.
- Section 4 describes the requirements for doors, frames, and hardware.
- Section 5 provides information pertaining to battery spill containment.
- Section 6 provides information referencing battery room ventilation documentation.
- Section 7 lists references.
- Section 8 details (attachments).

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1. General

1.01 This section provides the guidelines for compartmentation of AT&T power rooms relating to limiting the spread of building fires using non-combustible materials with a minimum fire resistance classification (rating) of one hour.

1.02 The construction standards provided herein are for a complete fire-rated wall assembly including the door and hardware, and with reference to spill containment intended for both new and future renovation work of AT&T power rooms.

1.03 For procurement of this work, refer to the current issue of AT&T Practice 760-630-401 Appendix 1 “AT&T Procurement Requirements for Power Room Fire-Rated Partition Systems”.

Scope

1.04 It is AT&T's intent to establish a power room fire-rated compartmentation standard, not an alternate means of compliance due to differences in building codes and/or standards pending the geographical location of the facility, and/or the on-site work force requirements. It shall be noted here

that the words “building codes” and “building standards” often are incorrectly used interchangeably. A code sets forth basic building design requirements, the parameters or guidelines, while a standard establishes how a particular system or device shall be designed and procedures for installation with accepted test results.

1.05 Compartmentalizing shall be utilized to reduce the spread of smoke and fire throughout the building by use of floor-to-floor vertical fire rated separation assemblies (partitions) and floor-by-floor horizontal fire separations. Refer to AT&T Practice 760-630-400, “Compartmentation”, and the National Fire Protection Association (NFPA) Standard 101, “Life Safety Code” for compartmentation of enclosed areas for smoke and fire control.

2. Partition

2.01 The materials, details and test designations as referenced herein are per the “Fire Resistance Design Manual”, 13th Edition, dated April 1992, published by the Gypsum Association (GA). Exercise caution to insure that each component and assembly procedure is of the designated Test Number for the system and is approved by the code authority holding jurisdiction. The standard interior partitions for non-combustible, non-load bearing power room compartmentation shall be constructed from floor slab to underside of floor slab above for the fire rating required.

2.02 Standard Partition (1 hour): One layer of 5/8” Type X gypsum wallboard or veneer base, (ASTM C 11 and C 36) applied at right angles or parallel to each side of 3, 5/8” minimum 25 gauge metal studs (ASTM C 645 and C 754) at 24" on-center (o.c.). 1" Type S drywall screws (ASTM C 1002) at 8" o.c. to vertical edges and 12" o.c. to top and bottom runners (which are fastened at 24" o.c. max. and 2" from ends) and intermediate studs. Stagger all vertical and horizontal joints at 24" o.c. from each other on opposite sides. The wall thickness is 4-7/8” per GA Test File No. WP 1200 (Figure A, G1, G2, G3), or due to dimensional limitations GA Test File No. WP 1340 (Figure B).

2.03 Shaft Wall Description (1 hour): This partition configuration can be used where there is need to abut a non-rated wall of an adjoining tenant. 1" x 24" proprietary Type X gypsum panels inserted between 2 1/2” floor and ceiling J runners with T section of 2 1/2” proprietary C-T metal studs at 24" o.c. between proprietary gypsum panels. 5/8” Type X gypsum wallboard applied vertically to the C side of C-T studs with 1" Type drywall screws 8" o.c. along edges and 12" o.c. at mid-width. The nominal wall thickness is 3-1/8” per GA Test File No. WP 7000 (Figure C).

2.04 Area Separation Type (2 hour): A “Party/Fire Wall” with a fire rating greater than one hour shall be used where multiple Use Groups are required to be separated (e.g., administrative and equipment area) per

the code authority holding jurisdiction. GA File No. WP 1711 (Figure D), ASW 1100 (Figure E), and/or ASW 1105 (Figure F).

2.05 Alternate Type: This partition configuration may only address component composition of a different material and thickness dimension when used in combination with the above standard partition system (paragraph 2.02), or as a stand alone system with respect to special office conditions. The partition construction height shall remain from floor to underfloor slab above. An example of this type would be fire rated glass panels or areas, or masonry. For approval of use, refer to the AT&T Environmental Systems Manager and the local code authority.

2.06 Maximum height of 18 feet (±) can be obtained per manufacturers technical publications as referenced by ASTM C 754 using a light steel curtain wall framing (20 gauge) on a 24" o.c. layout with an allowable deflection of L/120 at 5 lbf/square foot; where 25 gauge framing can reach a maximum height of 12'-5".

1. Applied diagonal seismic bracing at forty-five degrees shall be verified per local code requirements for non-loadbearing, full height partitions anchored to the floor slab and underside of the floor deck above.
2. If an increase of rigidity is required, stiffener channels may be placed within the screwed stud cutouts and/or decreasing the studs to a 16" o.c. layout (Figure Q).
3. Where structural movement may impose direct loads on this partition system, isolation details are required for perimeter relief (Figure H and H1). Continuous steel framing shall not bridge building expansion and control joints. Independently frame both sides of the joints (Figure J), and where long continuous partition runs are employed, control joints must be provided at a maximum of 30 feet (Figure J1).
4. Corrosion-resistant coating of metal framing shall be per the manufacturer's standard finish with members attached to and within 10 feet of exterior walls being G40 hot-dip galvanized coated framing per ASTM A 525.
5. Mineral fiber or glass fiber insulation of a thickness not greater than the stud depth may be added as an option in the wall cavity for sound proofing (ASTM C 665) though not specified in the test file number.
    a. Drywall joint treatment and accessories per GA-214 and ASTM C 475, and C 1047.
    b. Approved outlet boxes (metallic or nonmetallic) shall be allowed. Verify type, size and placement, and quantity per square foot area as allowed by the local code.

c. If the partition extends above a non-rated suspended ceiling, all drywall joints extending above need to be taped or covered with gypsum board strips not less than 6" wide.

2.07 For special partition connections to steel support beams and pre-formed concrete floor systems refer to the Architect of record and Figures K and L.

2.08 All partition types shall incorporate smoke barrier details within its construction at all points of penetrations and intersections with other building surfaces (Figures H and H1). For all through-wall penetration construction and other special details, refer to the Architectural Drawings of record, and the local code enforcement authority.

2.09 When planning the power room containment layout, consideration for maintenance, future expansion and emergency activities requiring a greater floor area shall be accounted for. The minimum clearance distance from the battery rack to the nearest wall at the ends is 3" and 2'-6" on both sides (per the Central Office Layout Designer - COLD).

2.10 No under partition or stand-alone concrete curbs shall be used for potential battery spill containment. Refer to paragraph 5.0 of this practice.

3. Sealants

3.01 Fire-stop and smoke barrier systems shall match the fire rating of the barrier in which they are to be installed.

3.02 All three (3) model building codes have specific requirements for penetrations requiring that all penetrations be fire-stopped sufficiently to restore the fire rating of the wall, floor or ceiling.

1. Section 915.6.1 and others of Building Officials and Code Administrators International's “National Building Code.”
2. Sections 1001.3.5 and 1001.3.6 of the Southern Standard Building Code Congress International's “Standard Building Code.”
3. International Conference of Building Officials' “Uniform Building Code” (UBC) Sections 4304 and 4308.

3.03 The Underwriters Laboratories (UL) classification program covers fire-stop materials only in context of detailing each material as one component of a system including application technique and the base materials of the wall, floor or ceiling. Six (6) groups of penetrates are considered in the Underwriters Laboratories (UL) directory: Metal pipe or conduit, non-metallic pipe or conduit, insulated pipe, cable or cable tray, miscellaneous electrical penetrates and pre-existing or abandoned openings.

3.04 The difference in penetrants high-lights the significance of the distinction between “active and passive” fire-stop systems. Passive materials are put in place around penetrating items and resist fire as an integral section of the construction. But where the penetrant is plastic pipe or another material that may fail in a fire, an active fire-stop is required. Intumescent materials/wrap strips, which expand in the presence of high temperatures, can be used to fill voids left as plastic pipe or cable(s) melt. The fire-stop materials' capacity to resist penetration by smoke-filled air while maintaining its integrity of flame blockage is a combined AT&T requirement.

3.05 ASTM E 814 outlines standard fire tests by which three (3) ratings have been determined for fire-stop systems reflecting flaming, transmission and leakage characteristics.

1. The F-rating, reflects the amount of time in hours that the system can withstand flame penetration, followed by a thirty pound per square inch hose stream.
2. The T-rating, reflects the amount of time in hours for the temperature to rise 325 degrees F above ambient as based on the penetrating materials' and the fire-stop systems' heat transmission characteristics.
3. The L-ratings are given in cubic feet per minute and reflect the amount of air leakage through a fire-stop system at a pressure of 0.3 inches of water column, the specific pressure expected to be created by a fire.

3.06 All materials shall restrict the transmission of temperature as well as the passage of flame, smoke and water. Materials shall be tested under ASTM E-814 (UL1479) and pass both Flame (F) and Temperature (T) tests. Materials shall be UL and/or state/city Fire Marshal approved.

3.07 All materials shall allow normal expansion and contraction movement of the penetrating item without failure of the penetration seal. A firestop sleeve, collar or boot shall be used around all plastic pipe, cable and other penetrations as required.

3.08 All firestop sealants shall be asbestos free, intumescent, endothermic sealant, caulk or mastic. These products shall emit no hazardous, combustible, or irritating by-products during installation or curing period.

3.09 Refer to Figure G3 for partition intersection with existing interior fire-rated wall, and Figure H2 for partition intersection with exterior walls. All penetrations of fire-rated assemblies shall be sealed with a qualified fire penetration and smoke seal. Refer to AT&T Practice 770-350-100, “Fire Stopping of Penetrations”.

3.10 Material listed herein listed are for suggestion only, and must be acceptable to the applicable code enforcement authority. Therefore, it is not only important to understand what the local building code requires but also how the authorities will interpret and enforce its provisions. Firestop information defined herein is based on the building having a Fire Resistive Rating of Type 1 construction.

1. Fire Stopping Sealant: Dow 3-6548 Silicone RTV foam, install per manufacturer's instructions or 3M Brand Fire Barrier CP25 caulk.
2. Fire Stopping Insulation Type: USG Mineral Fiber Firestop; install per manufacturer's installation instructions.
3. Fire Stopping Putty: 3M Brand Fire Barrier Moldable Putty; MPP-1 pads and MPS-2 moldable putty sticks.

4. Door, Frame, and Hardware

4.01 The standard door(s) shall be steel constructed with a fire classification of 1 hour (“C” Label), or 1-1/2 hour (“B” Label) rating as required for the partition type and area in which they are used or separating.

4.02 Hollow Metal Doors (HMD) and frames shall conform to all applicable SDI, UL, and NFPA Standards.

a. Doors shall be 18 gauge with 16 gauge frames all welded.
b. All doors “flush” fully welded with no seams, pretreated shop primed (verify primer compatibility with paint system as specified per job).
c. 3/16” steel plate hinge reinforcement (double 10 gauge) for hinges.
d. Exit doors shall be operable from the inside without the use of key, special effort, or knowledge.
e. Manufacturers’ (optional) standard vision frames and tempered wire glass (maximum 100 square inches).

4.03 Single Interior Door (3'-0” x 7'-0” x 1 3/4”): Hollow Metal Door with Press Steel Frame (HMD/PSF) and a Left Hand Reverse Bevelled (LHRB) setup equals an outward swing (Figure N, O and P) for any fire rated classification.

4.04 The following Hardware Options (A, B and C) offered, are based on the many agencies, associations and standards requirements which are recognized by the different geographical code enforcement authorities. Note must be taken to verify door hardware with each code enforcement agency.

- Option “A” is by manufacturer's numbers where “or equal” items may be substituted.
- Option “B” is by American National Standards Institute (ANSI) and U. S. Government numbers.
- Option “C” is by ANSI and Builder Hardware and Materials Association (BHMA) numbers.

NOTE:
Finishes listed for Options “A” and “C” are Builders Hardware and Material Association (BHMA) finish numbers, and finishes for Option “B” are U.S. Government finish symbols.

A. Option “A” (each door to have):

Quantity	Description	Part Number	Finish	Manufacturer
1.5 Pr.	Hinges	FBB179 - 4.5 x 4.5	-652	Stanley (1)
1.0 Ea.	Cylinder	Rim Type (master keyed - 7 pin), Interchangeable core, keyed alike.	-626	Best (2)
1.0 Ea.	Panic Device	98L-F-03	-630	Von Duprin (4)
1.0 Ea.	Closer	CLP8501-BF	-689	Norton (3)
1.0 Ea.	Kick Plate	.050 ga. 8” x 2” LDW. x B3E	-630	Burns (6)
1.0 Ea.	Threshold	2005AS-Pemkote x Dr. width	-Al.	Pemko (5)
1.0 Set	Smoke Seals	S88D x Head and Jambs	-S. R.	Pemko (5)

B. Option “B” (each door to have):

Quantity	Description	Part Number	Finish	Manufacturer
1.5 Pr.	Hinges	T2107 - 4.5 x 4.5	-US26D	(7)
1.0 Ea.	Cylinder	Rim Type (master keyed as required)	-US26D	(7)
1.0 Ea.	Panic Device	ANSI A156.13 Grade 1 Type 1. Function 08 Lever trim	-US32D	(7)
1.0 Ea.	Closer	ANSI 156.4 C02021 w/o PT4-DGH	-Alum.	(7)

Quantity	Description	Part Number	Finish	Manufacturer
1.0 Ea.	Kick Plate	ANSI J101 - 8” x 2” LDW.	-US32D	(7)
1.0 Ea.	Threshold	ANSI 36230 x Opening width	-Al.	(7)
1.0 Set	Smoke Seals	S88D x Head and Jambs	-S. R.	Pemko (6)

C. Option “C” (each door to have):

Quantity	Description	Part Number	Finish	Manufacturer
1.5 Pr.	Hinges	A8112 - 4.5 x 4.5	-652	(7)
1.0 Ea.	Cylinder	Rim Type (master keyed as required)	-626	(7)
1.0 Ea.	Panic Device	ANSI A156.13 Grade 1 Type 1. Function 08 Lever trim	-630	(7)
1.0 Ea.	Closer	ANSI 156.4 C02021 w/o PT4-DGH	-689	(7)
1.0 Ea.	Kick Plate	ANSI J101 - 8” x 2” LDW.	-630	(7)
1.0 Ea.	Threshold	ANSI 36230 x Opening width	-Al.	(7)
1.0 Set	Smoke Seals	S88D x Head and Jambs	-S. R.	Pemko (6)

4.05 Pair of Interior Doors ([2] 3'-0” x 7'-0” x 1 3/4”): Hollow Metal Door with Press Steel Frame (HMD/PSF) and a Right Hand Reverse Bevelled (RHRB) setup means that on the approach or when entering the room, the right door panel is the active leaf in an outward swing configuration for any fire classification (Figure M, O and P).

4.06 The following Hardware Options (D, E, and F) offered, are based on the numerous agencies, associations and/or standards requirements that are recognized by the different geographical code enforcement authorities. Note must be taken to verify door hardware with actual placement of the door, its intended use of, and with each code enforcement agency.

- Option “D” is by manufacturer's numbers where “or equal” items may be substituted.
- Option “E” is by American National Standards Institute (ANSI) and U. S. Government numbers.

- Option “F” is by ANSI and Builder Hardware and Materials Association (BHMA) numbers.

NOTE:
Finishes listed for Options “D” and “F” are Builders Hardware and Material Association (BHMA) finish numbers, and finishes for Option “E” are U.S. Government finish symbols.

D. Option “D” (each pair of doors to have):

Quantity	Description	Part Number	Finish	Manufacturer
3.0 Pr.	Hinges	FBB179 - 4.5 x 4.5	-652	Stanley (1)
1.0 Ea.	Cylinder	Rim Type (master keyed - 7 pin). Interchangeable core keyed alike.	-626	Best (2)
1.0 Ea.	Panic Device	9847L-F-03	-630	Von Duprin (4)
1.0 Ea.	Panic Device	9847EO	-630	Von Duprin (4)
2.0 Ea.	Closer	CLP8501-BF	-689	Norton (3)
2.0 Ea.	Kick Plate	.050 ga. 8” x 1” LDW.	-630	Burns (6)
1.0 Ea.	Threshold	2005AS-Pemkote x Dr. width	-Al.	Pemko (5)
1.0 Set	Smoke Seals	S88D x Head and Jambs	-S. R.	Pemko (5)
2.0 Pcs.	Astragals	305CN x Door Height	-Al.	Pemko (5)

E. Option “E” (each pair of doors to have):

Quantity	Description	Part Number	Finish	Manufacturer
3.0 Pr.	Hinges	T2107 - 4.5 x 4.5	-US26D	(7)
1.0 Ea.	Cylinder	Rim Type (master keyed as required)	-US26D	(7)
1.0 Ea.	Panic Device	ANSI A156.13 Grade 1 Type 8. Function 08, Lever trim.	-US32D	(7)
1.0 Ea.	Panic Device	ANSI A156.13, Grade 1, Type 8. Function 01.	-US32D	(7)
2.0 Ea.	Closers	ANSI 156.4 C02021 w/o PT4-DGH	-Alum.	(7)

Quantity	Description	Part Number	Finish	Manufacturer
2.0 Ea.	Kick Plates	ANSI J101 - 8” x 1” LDW.	-US32D	(7)
1.0 Ea.	Threshold	ANSI 36230 x Opening width	-Al.	(7)
1.0 Set	Smoke Seals	S88D x Head and Jambs	-S. R.	Pemko (5)
2.0 Pcs.	Astragals	305CN x Door Height	-Al.	Pemko (5)

F. Option “F” (each pair of doors to have):

Quantity	Description	Part Number	Finish	Manufacturer
3.0 Pr.	Hinges	A8112 - 4.5 x 4.5	-652	(7)
1.0 Ea.	Cylinder	Rim Type (master keyed as required)	-626	(7)
1.0 Ea.	Panic Device	ANSI A156.13 Grade 1 Type 8. Function 08, Lever Trim.	-630	(7)
1.0 Ea.	Panic Device	ANSI A156.13, Grade 1, Type 8. Function 01.	-630	(7)
2.0 Ea.	Closers	ANSI 156.4 C02021 w/o PT4-DGH	-689	(7)
2.0 Ea.	Kick Plates	ANSI J101 - 8” x 1” LDW.	-630	(7)
1.0 Ea.	Threshold	ANSI 36230 x Opening width	-Al.	(7)
1.0 Set	Smoke Seals	S88D x Head and Jambs	-S. R.	Pemko (5)
2.0 Pcs.	Astragals	305CN x Door Height	-Al.	Pemko (5)

4.07 The use of automatic flush bolts, dust proof strike and coordinators shall not be used with panic hardware.

4.08 AT&T Corporate security shall be consulted with for interior door alarm procedures and card readers.

4.09 The following list explains the abbreviations, finish symbols, and substitutions used in the preceding tables.

Abbreviations		Finish Symbols		Substitutions	
Code	**Meaning**	**Code**	**Meaning**	**Code**	**Meaning**
BF	Barrier Free	626	Dull Chrome Plated on Brass/Bronze	1	Hager, Stanley, Bommer
LDW	Less than door width	630	Satin Stainless Steel	2	Best, Falcon, Arrow
M.K.	Master Keyed	652	Dull Chrome Plated on Steel	3	Norton, L.C.N., Dorma
S.R.	Silicon Rubber	652	Dull Chrome Plated on Steel	3	Norton, L.C.N., Dorma
Pr.	Pair	689	Sprayed Aluminum paint finish	4	Von Duprin or equal
Ea.	Each	Alum	Sprayed Aluminum paint finish	5	Pemko, Reese, Ultra
Pcs.	Pieces	Al	Anodized Aluminum	6	Burns or equal
		US26 D	Dull Chrome Plated Steel/Brass/Bronze	7	As approved
		US32 D	Satin Stainless Steel		

4.10 Substitution of equal manufacturer's products shall be verified on a job basis for acceptability based on code (i.e., ADA, Barrier Free, Fire, Life Safety, and State and Local), product number and grade/type, availability, matching existing products, maintenance and warranty requirements.

5. Spill Containment

5.01 Spill containment pans shall be supplied by the battery manufacturer and installed per their recommendations for all new and renovation work.

5.02 Each pan shall be able to contain at a minimum the liquid contents of two (2) battery cells.

5.03 Room perimeter and/or area concrete or steel angle curb containment SHALL NOT BE USED. Refer to the Power and Infrastructure Development District's Environmental Design Standards Manager and/or Building Design Standards Manager, for any or all battery spill containment design and installation criteria.

6. Ventilation

6.01 The Power Engineers shall refer to the current issue of AT&T Practice 760-550-102 and Power Infrastructure Standard, Building Environment (BLDG ENVL 002) for calculation requirements for battery room ventilation.

7. References

7.01 For product procurement, installation, allowances and warranty issues, etc., refer to the Architect of record specifications for: Division No. 1 “General Requirements”, Division No. 9 “Finishes” per the Construction Specification Institute (CSI) format, AT&T Practice 760-630-401, Appendix 1 “AT&T Procurement Requirements for Power Room Fire-Rated Partition Systems”.

7.02 Fire Resistance Design Manual: 13th Edition dated April 1992, published by the Gypsum Association (GA), 810 First Street NE, #510, Washington, D.C. 20002, USA. Phone 202-289-5440, FAX: 202-289-3707.

- GA-214 Recommended Specification: Levels of Gypsum Board Finish for Level 1, One-hour Fire Resistance.
- GA-216 Recommended Specification for the Application and Finishing of Gypsum Board.
- Partition Test File Numbers as referenced herein.

7.03 The Gypsum Association documentation is referenced by:

- BOCA National Building Code, Article 9 Commentary.
- Uniform Building Code, footnote a, Tables No. 43-A, B, C, Appendix Section 3502.
- Standard Building Code, Section 1003.1.2, Appendix E.
- Major United States municipal jurisdictions.
- Underwriters Laboratories, Factory Mutual, Manufacturers, and numerous testing agencies.
- The American Institute of Architects (AIA), CSI and the Technical Studies Committee of Construction Specifications of Canada (CSC).
- U. S. Government, Canada and others.

7.04 American Society for Testing and Materials (ASTM) Standards:

A 525 Specification for General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.

C 11 Terminology Relating to Gypsum and Related Building Materials and Systems.

C 36 Specification for Gypsum Wallboard.

C 475 Specification for Joint Compound and Joint Tap for Finishing Gypsum Board.

C 645 Specification for Non-Load (Axial) Bearing Steel Studs, Runners (Track), and Rigid Furring Channels for Screw Application of Gypsum Board.

C 665 Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction.

C 719 Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement.

C 745 Specification for Installation of Steel Framing Members to receive Screw-Attached Gypsum.

C 919 Standard Practice for Use of Sealants in Acoustical Applications.

C 920 Standard Specification for Elastomeric Joint Sealants.

C 1002 Specification for Steel Drill Screws for Application of Gypsum Board or Metal Plaster Bases.

C 1047 Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.

C 1193 Guide for Use of Joint Sealants.

E 84-91 Test Method for Surface Burning Characteristics of Building Materials.

E 119 Test Methods for Fire Tests of Building Construction and Materials.

E 413 Classification for Rating Sound Insulation.

E 814 Test Methods for Fire Tests of Through-Penetration Fire Stops (UL-1479).

7.05 Studs and runners are channel-type sections, roll-formed, and designed in accordance with the American Iron and Steel Institute (AISI) CFSD-ASD-86 “Specifications for the Design of Cold-Formed Steel Structural Members”, with the 1989 Addendum.

7.06 AT&T Practice 770-350-100 “AT&T Fire Safety - Fire Stopping of Penetrations”.

7.07 Underwriters Laboratories: Building Materials Directory, Fire Resistance Directory, and 10B “Fire Tests of Door Assemblies”.

7.08 National Fire and Protection Association (NFPA) Tests:

80 Fire Doors and Windows Standards.
101 Life Safety Code.
105 Smoke-and-Draft-Control Door Assemblies.
220 Standards on Types of Building Construction.
251 Standard Methods of Fire Tests of Building Construction and Materials.
252 Fire Test for Door Assemblies.

7.09 Door, Frame and Hardware Standards:

ANSI/BHMA American National Standards Institute/Builder Hardware and Materials Association Standards.

A156.1 Butts and Hinges.
A156.3 Exit Devices.
A156.4 Door Controls (Closers).
A156.13 Locks and Latches, Mortise.
A156.15 Closer Holder Release Devices.
A156.16 Auxiliary Hardware.
A156.17 Hinges and Self-Closing.
A156.18 Hardware - Materials and Finishes.
A156.21 Thresholds.

A115 (ANSI) Steel Door Preparation Standards.

DHI Door and Hardware Institute Publication on “Hardware for Labeled Fire Doors,” and ANSI/DHI A115 series which covers the preparation of doors and frames for bolts, closers, latches, locks, pivots, and strikes.
NAAMM National Association of Architectural Metal Manufacturers.
SDI Steel Door Institute Fact Files (ANSI/SDI).
100 Steel Doors and Frames.
119 Steel Door Frames and Frame Anchors, Performance Test Procedures.
A123.1 Nomenclature for Steel Doors and Steel Door Frames.
A151.1 Physical Endurance for Steel Doors and Hardware Reinforcing, Test Procedure and Acceptance Criteria.

8. Details

See following attachments.

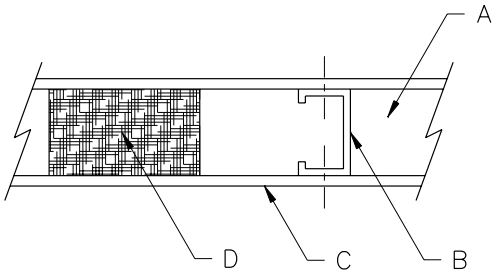

FIGURE A
TYPICAL PLAN SECTION

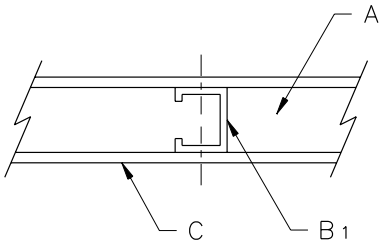

FIGURE B
TYPICAL PLAN SECTION

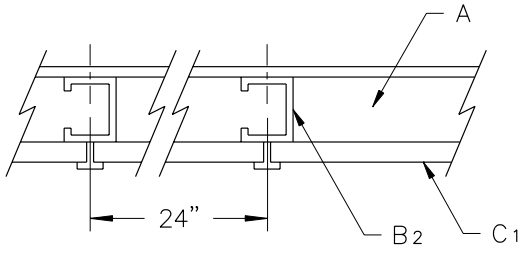

FIGURE C
TYPICAL PLAN SECTION

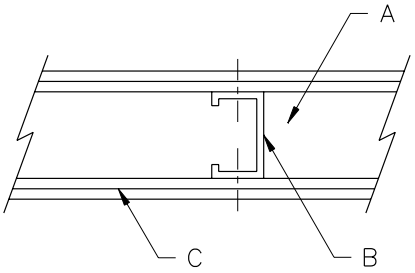

FIGURE D
TYPICAL PLAN SECTION

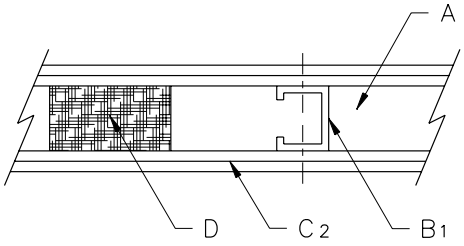

FIGURE E
TYPICAL PLAN SECTION

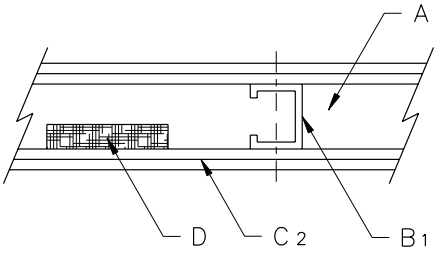

FIGURE F
TYPICAL PLAN SECTION

A. TOP & BOTTOM STEEL RUNNER (TRACK)
B. 3–5/8 MTL. STUD @ 24" O.C.
B1. 1–5/8 MTL. STUD @ 24" O.C.
B2. 2–1/2 MTL. STUD @ 24" O.C.
C. 5/8" TYPE "X" GYPSUM BOARD
C1. 1" X 24" TYPE "X" GYPSUM BOARD
C2. 1/2" TYPE "X" GYPSUM BOARD
D. OPTIONAL SOUND PROOF INSULATION

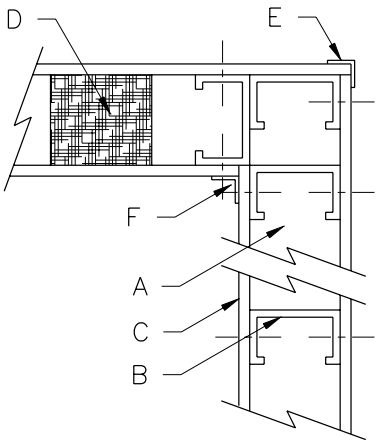

FIGURE G
TYPICAL
CORNER DETAIL

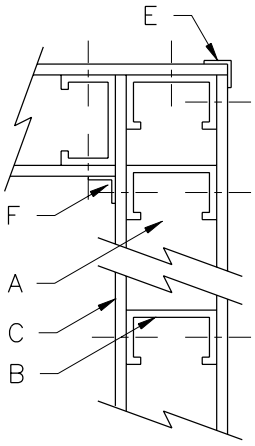

FIGURE G1
OPTIONAL
CORNER DETAIL

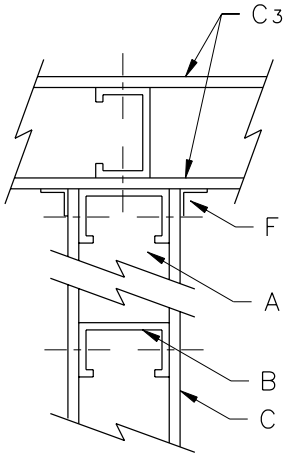

FIGURE G2
PARTITION
INTERSECTION

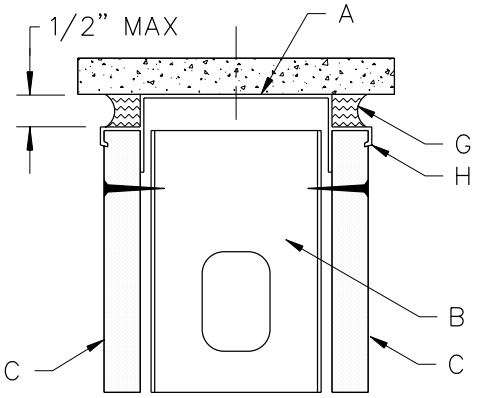

FIGURE H
ANCHORAGE TO CONCRETE
CEILINGS, WALLS OR COLUMNS
BASE SIMILAR

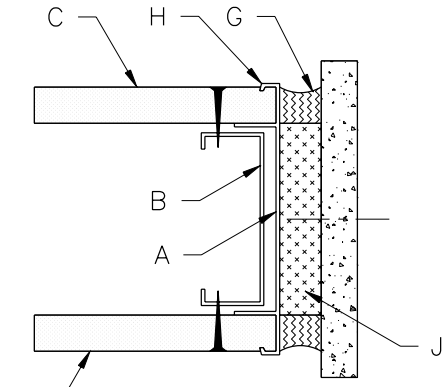

FIGURE H1
PERIMETER
RELIEF DETAIL

A. TOP & BOTTOM STEEL RUNNER
B. MTL. STUD @ 24": O.C.
C. 5/8" TYPE "X" GYPSU BOARD
C3. EXISTING FIRE RATED PARTITION
D. OPTIONAL SOUND PROOF INSULATION
E. DRYWALL CORNER BEAD
F. TAPE AND JOINT COMPOUND
G. SEALANT
H. DRYWALL TRIM
J. GLASS/MINERAL INSULATION

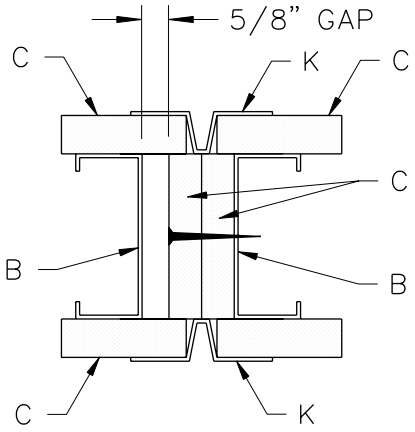

FIGURE J
TYPICAL CONTROL JOINT
@ BLDG. EXPANSION
JOINT

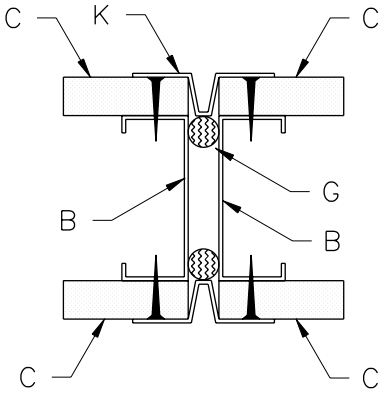

FIGURE J 1
TYPICAL WALL CONTROL UNIT

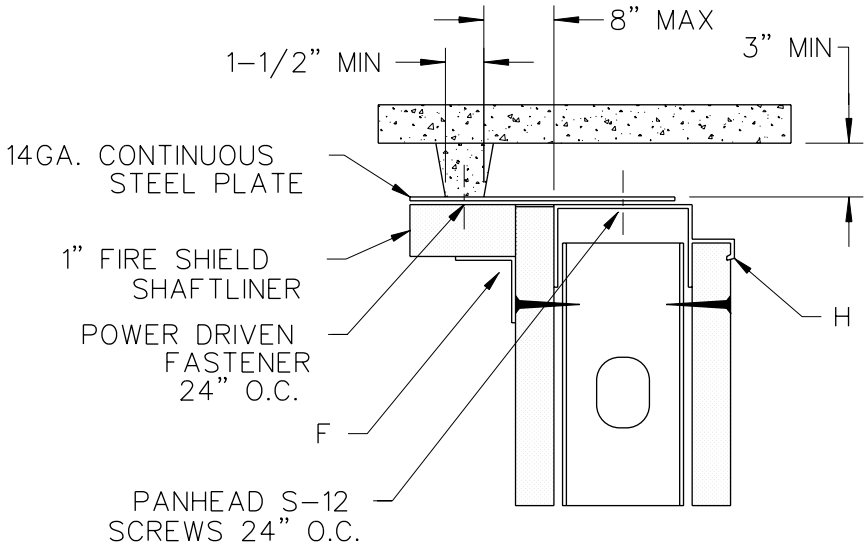

FIGURE K
STUD CAVITY WALL
PARALLEL TO
DECK VALLEYS

B. MTL. STUD @ 24": O.C.
C. 5/8" TYPE "X" GYPSU BOARD
F. TAPE AND JOINT COMPOUND
G. SEALANT
H. DRYWALL TRIM
K. VINYL/METAL CONTROL JOINT

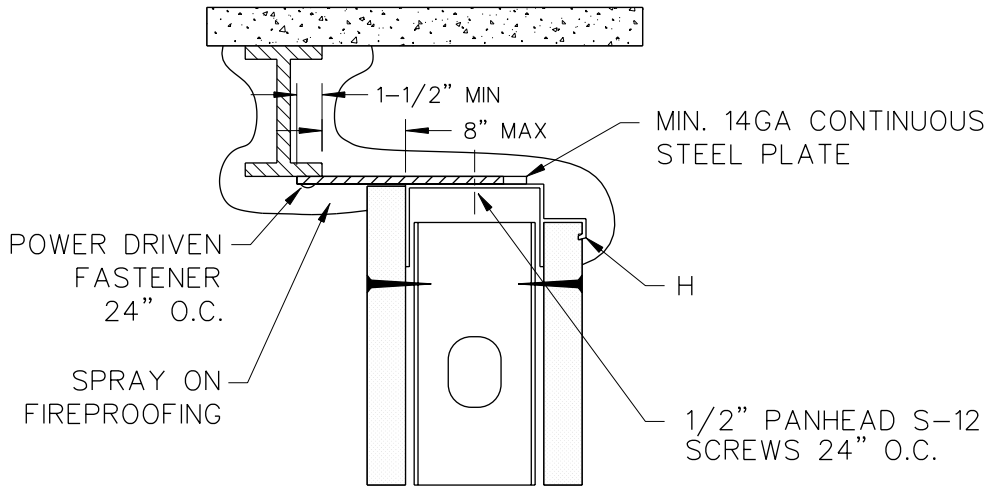

FIGURE L
PARTITION OFFSET
FROM STEEL BEAM

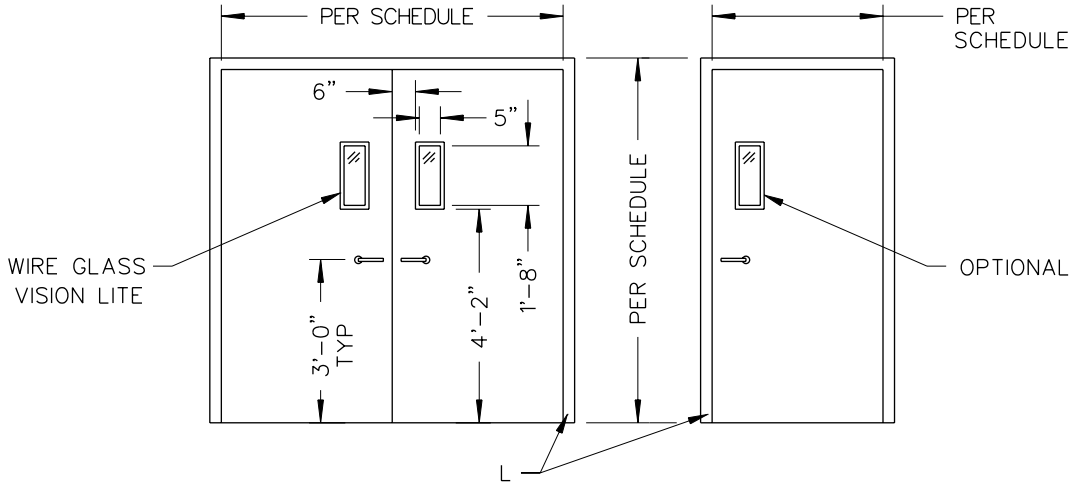

FIGURE M
DOUBLE DOOR

FIGURE N
SINGLE DOOR

H. DRYWALL TRIM
L. METAL DOOR FRAME

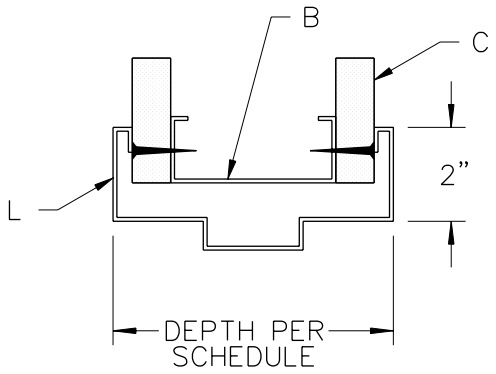

FIGURE O
DOOR JAMB: HEAD DETAIL

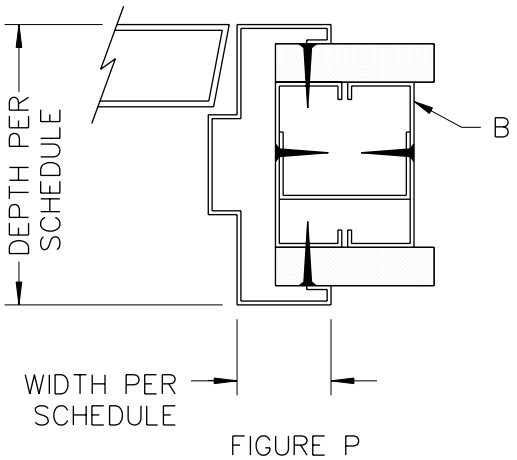

FIGURE P
DOOR JAMB

B. MTL. STUD
C. 5/8" TYPE "X" GYPSUM BOARD
L. METAL DOOR FRAME

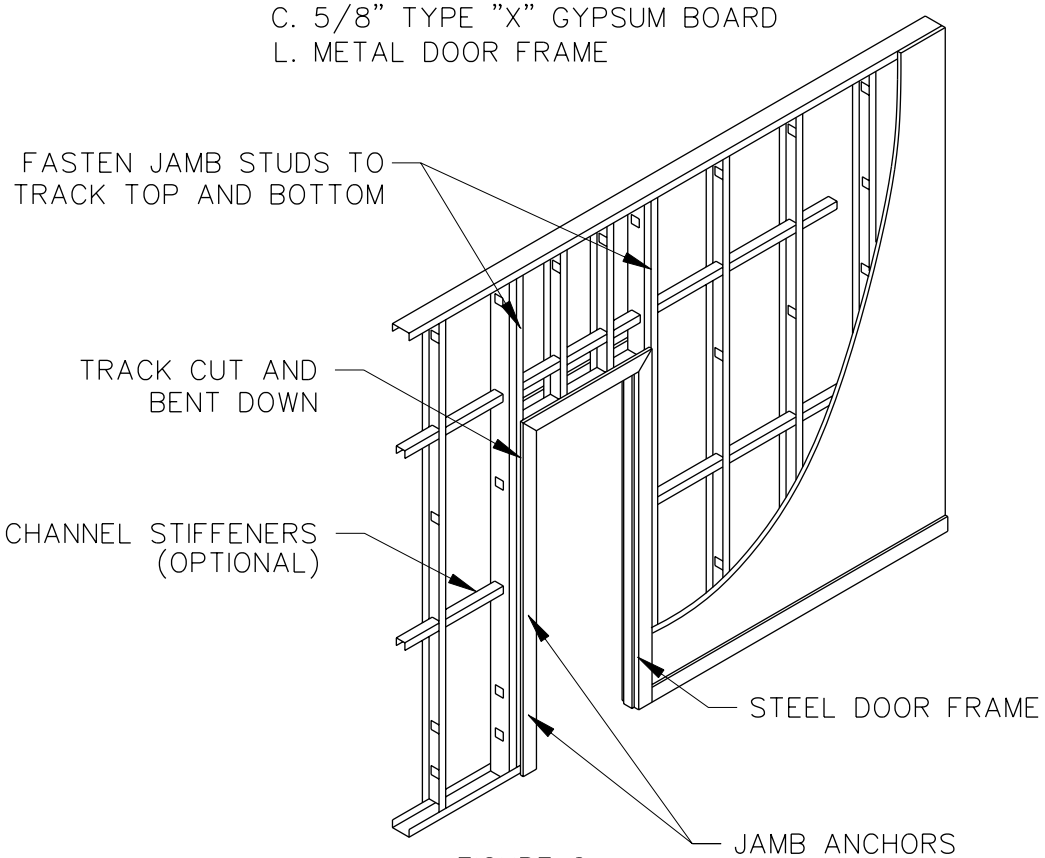

FIGURE Q
TYPICAL ELEVATION

How Are We Doing ?

Document Title:

_____

_____

Document No.: _____ Issue No. _____ Date: _____

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