

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. The Contractor, Subcontractors, and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.01A, entitled "Related Documents."

1.02 SUMMARY

- A. This Section includes gypsum board shaft-wall assemblies for the following:
 - 1. Shaft-wall enclosures.
 - 2. Horizontal enclosures.
- B. Related Sections include the following:
 - 1. Division 01 Section "Sustainable Design Requirements."
 - 2. Division 07 Section "Fire-Resistive Joint Systems" for head-of-wall assemblies that incorporate gypsum board shaft-wall assemblies.
 - 3. Division 09 Section "Gypsum Board Assemblies."

1.03 SUBMITTALS

- A. Product Data: For each gypsum board shaft-wall assembly indicated.
- B. CTHPB Documentation Submittals: Comply with Division 01 Section "Sustainable Design Requirements" and provide the following in addition to other action submittals:
 - 1. Product Data for Credit d8: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.
 - 2. Product Certificates for Credit d10: For products and materials required to comply with requirements for regional materials indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.
- C. Shop Drawings: Show layout, spacings, sizes, thicknesses, and types of non-load bearing metal framing; fabrication; and fastening and anchorage details, including mechanical fasteners. Show reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining work.
 - ~~1. For non-load bearing metal framing indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.~~
- ~~D. Qualification Data: For professional engineer licensed in the State of Connecticut.~~

1.04 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide cold-formed metal framing capable of withstanding design loads within limits and under conditions indicated.
1. Design Loads: As follows:
 - a. Lateral Design Load (Sustained Air Pressure): 5 psf.
 - b. Dead Loads: Weights of materials and construction for horizontal applications.
 2. Deflection Limits: Design framing systems to withstand design loads without deflections greater than the following:
 - a. Interior Non-Load-Bearing Wall Framing: Horizontal deflection of 1/360 of the wall height under a horizontal load of 5 lbf/sq. ft.
 - b. Horizontal Framing: Vertical deflection of 1/240 of the span, and twice the dead load weight.
 3. Design framing systems to provide for movement of framing members without damage or overstressing, sheathing failure, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change of 120 deg F.

1.05 QUALITY ASSURANCE

- ~~A. Engineering Responsibility: Preparation of Shop Drawings, design calculations, and other structural data by a qualified professional engineer.~~
- ~~B. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the State of Connecticut and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of non-load bearing metal framing that are similar to those indicated for this Project in material, design, and extent.~~
- C. Fire-Resistance Ratings: Provide materials and construction identical to those of assemblies with fire-resistance ratings determined according to ASTM E 119, designated in the UL Fire Resistance Directory or Warnock Hersey.
- D. STC-Rated Assemblies: Provide materials and construction identical to those of assemblies tested according to ASTM E 90 and classified according to ASTM E 413 by a testing and inspecting agency.
- E. Single Source Responsibility: Obtain gypsum liner panels and gypsum board products from a single manufacturer to maintain fire-resistance ratings of testing and inspecting agency for a complete gypsum board shaft-wall assembly.
- F. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures for installing gypsum board shaft-wall assemblies including, but not limited to, the following:
1. Fasteners proposed for anchoring nonstructural steel framing to building structure.
 2. Wiring devices in shaft-wall assemblies.

3. Doors and other items penetrating shaft-wall assemblies.
4. Items supported by shaft-wall-assembly framing.
5. Mechanical work enclosed within shaft-wall assemblies.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages, containers, and bundles bearing brand name and identification of manufacturer or supplier.
- B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes.
- C. Stack panels flat on leveled supports off floor or slab to prevent sagging.

1.07 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or with gypsum board manufacturer's written recommendations, whichever are more stringent.
- B. Do not install interior products until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, moisture damaged, or mold damaged.
 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, and irregular shape.
 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Certainteed.
 2. G-P Gypsum.
 3. National Gypsum Company.
 4. USG Corporation.

2.02 GYPSUM BOARD SHAFT-WALL ASSEMBLIES, GENERAL

- A. Provide materials and components complying with requirements of fire-resistance-rated assemblies indicated.
 1. Provide panels in maximum lengths available to eliminate or minimize end-to-end butt joints.

2. Provide auxiliary materials complying with gypsum board shaft-wall assembly manufacturer's written recommendations.

B. Recycled Content of Gypsum Panel Products:

1. Postconsumer recycled content not less than 5 percent.
2. Postindustrial recycled content not less than 94 percent.

2.03 PANEL PRODUCTS

A. Gypsum Liner Panels: Comply with ASTM C 1396.

1. Type X: Manufacturer's proprietary liner panels with moisture-resistant paper faces.
 - a. Core: 1 inch thick.
 - b. Long Edges: Double bevel.

B. Gypsum Board: As specified in Division 09 Section "Gypsum Board Assemblies."

2.04 NON-LOAD-BEARING STEEL FRAMING

A. Framing Members: Comply with ASTM C 754 for conditions indicated.

B. Steel Sheet Components: Comply with ASTM C 645 requirements for metal, unless otherwise indicated.

1. Protective Coating: ASTM A 653/A 653M, G40, hot-dip galvanized, unless otherwise indicated.

2.05 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced product standards and manufacturer's written recommendations.

B. Trim Accessories: Cornerbead, edge trim, and control joints of material and shapes specified in Division 09 Section "Gypsum Board Assemblies" that comply with gypsum board shaft-wall assembly manufacturer's written recommendations for application indicated.

C. Gypsum Board Joint-Treatment Materials: As specified in Division 09 Section "Gypsum Board Assemblies."

D. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

E. Track Fasteners: Power-driven fasteners of size and material required to withstand loading conditions imposed on shaft-wall assemblies without exceeding allowable design stress of track, fasteners, or structural substrates in which anchors are embedded.

1. Expansion Anchors: Fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 5 times design load, as determined by testing per ASTM E 488 conducted by a qualified testing agency.

- 2. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 10 times design load, as determined by testing per ASTM E 1190 conducted by a qualified testing agency.

- F. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing), produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool. Comply with requirements in Division 07 Section "Thermal Insulation."
 - 1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.

- G. Acoustical Sealant: As specified in Division 07 Section "Joint Sealants."

2.06 GYPSUM BOARD SHAFT-WALL ASSEMBLIES

- A. Fire-Resistance Rating: As indicated.

- B. STC Rating: 51, minimum.

- C. Studs: Manufacturer's standard, C-T profile for repetitive members, corner and end members, and fire-resistance-rated assembly indicated.
 - 1. Depth: 2-1/2 inches, 4 inches, or 6 inches as required to comply with structural performance requirements.
 - 2. Minimum Base-Metal Thickness: 25 gauge minimum, as required to comply with structural performance requirements.

- D. Runner Tracks: Manufacturer's standard J-profile track with long-leg length as standard with manufacturer, but at least 3 inches long and in depth matching studs.
 - 1. Minimum Base-Metal Thickness: Matching steel studs.

- E. Firestop Tracks: Top runner manufactured to allow partition heads to expand and contract with movement of structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.

- F. Jamb Struts: Manufacturer's standard J-profile strut with long-leg length of 3 inches, in depth matching studs, and not less than 20 gauge.

- G. Room-Side Finish: As indicated by wall type designation on Drawings.

- H. Shaft-Side Finish: As indicated by fire-resistance-rated assembly design designation.

- I. Insulation: Sound attenuation blankets.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates to which gypsum board shaft-wall assemblies attach or abut, with Installer present, including hollow-metal frames, *elevator hoistway door frames*, cast-in anchors, and structural framing. Examine for compliance with requirements for installation tolerances and other conditions affecting performance.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, or mold damaged.
- C. Notify Construction Manager and proceed with installation only after unsatisfactory conditions have been corrected. Commencement of work acknowledges acceptance of substrates.

3.02 INSTALLATION

- A. General: Install gypsum board shaft-wall assemblies to comply with requirements of fire-resistance-rated assemblies indicated, manufacturer's written installation instructions, and the following:
 - 1. ASTM C 754 for installing steel framing except comply with framing spacing indicated.
 - 2. Division 09 Section "Gypsum Board Assemblies" for applying and finishing panels.
- B. Do not bridge architectural or building expansion joints with shaft-wall assemblies; frame both sides of expansion joints with furring and other support.
- C. Install supplementary framing in gypsum board shaft-wall assemblies around openings and as required for blocking, bracing, and support of gravity and pullout loads of fixtures, equipment, services, heavy trim, furnishings, and similar items that cannot be supported directly by shaft-wall assembly framing.
- D. At penetrations in shaft wall, maintain fire-resistance rating of shaft-wall assembly by installing supplementary steel framing around perimeter of penetration and fire protection behind boxes containing wiring devices, elevator call buttons, elevator floor indicators, and similar items.
- E. Isolate perimeter of gypsum panels from building structure to prevent cracking of panels, while maintaining continuity of fire-rated construction.
- F. Firestop Tracks: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.
- G. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect, while maintaining fire-resistance rating of gypsum board shaft-wall assemblies.
- H. Seal gypsum board shaft walls with acoustical sealant at perimeter of each assembly where it abuts other work and at joints and penetrations within each assembly. Install acoustical sealant to withstand dislocation by air-pressure differential between shaft and external spaces; maintain an airtight and smoke-tight seal; and comply with ASTM C 919 requirements or with manufacturer's written instructions, whichever are more stringent.

- I. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

3.03 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. Remove and replace panels that are wet, moisture damaged, or mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, and irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION