

SECTION 10653
FOLDING PANEL PARTITIONS
(OPERABLE WALLS)

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Folding panel partitions, including operable partitions and pocket doors.
1. Types: Types of operable partitions include:
 - a. ANc 800 Series operable partitions.
 - b. ANc 600 Series operable partitions.
 - c. ANc 400 Series operable partitions.
 - d. ANc pocket doors.

Specifier Note: Revise paragraph below to suit project requirements. Add section numbers and titles per CSI MasterFormat and specifier's practice.

- B. Related Sections: Section(s) related to this section include:
1. Concrete: Division 3 Concrete Sections.
 2. Masonry: Division 4 Masonry Sections.
 3. Metal Framing: Division 5 Metal Framing Sections.
 4. Carpentry: Division 6 Rough & Finish Carpentry Sections.
 5. Sealants: Division 7 Joint Sealers Section.
 6. Gypsum Board: Division 9 Gypsum Board Assemblies Section.
 7. Ceilings: Division 9 Ceilings Sections.
 8. Carpet: Division 9 Carpet Sections.
 9. Paint: Division 9 Paint Section.
 10. Wallcoverings: Division 9 Wallcovering Section.
 11. Electrical: Division 16 Electrical Sections.

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standards referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This Article does not require compliance with standards, but is merely a listing of references used. Article below should list only those industry standards referenced in this section.

1.02 REFERENCES

- A. General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.
- B. American Society for Testing and Materials (ASTM):
1. ASTM C423 Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
 2. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
 3. ASTM E90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
 4. ASTM E557 Standard Practice for Architectural Application and Installation of Operable Partitions.
- C. Underwriters Laboratories, Inc. (UL):
1. UL File R11095 (R) Special Purpose Type Fire Doors (GSXZ).

1.03 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide operable partitions which have been manufactured, fabricated and installed to maintain

performance criteria stated by manufacturer without defects, damage or failure.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor either before, during or after construction. Coordinate this Article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.

1.04 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Product Data: Submit product data, including manufacturer's SPEC-DATA^a product sheet, for specified products. Include copies of properly identified manufacturer's literature with proposed catalog numbers identified.
- C. Shop Drawings: Submit shop drawings showing layout, profiles and product components, including anchorage, accessories, finish colors, patterns and textures.
 - 1. Indicate elevations, building locations, conditions at openings with wall thickness and materials, details of construction, location and installation requirements for hardware and operators, shape and thickness of materials, joints and connections, and material finishes.
- D. Samples: Submit selection and verification samples for finishes, colors and textures.
 - 1. Color Sample: Samples of each color material to be used.
- E. Quality Assurance Submittals: Submit the following:
 - 1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
 - 2. Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics, criteria and physical requirements.
 - 3. Manufacturer's Instructions: Manufacturer's installation instructions.

Specifier Note: Coordinate paragraph below with Part 3 Field Quality Requirements Article herein. Retain or delete as applicable.

- 4. Manufacturer's Field Reports: Manufacturer's field reports specified herein.
- F. Closeout Submittals: Submit the following:
 - 1. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.
 - 2. Warranty: Warranty documents specified herein.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.

Specifier Note: Add text on building codes and approval appropriate to project requirements. Consult with manufacturer for current data on building code requirements and product compliance. Installation must comply with requirements of applicable local, state and national code jurisdictions. For current information on approvals by specific agencies, contact ANc technical support specialists.

Specifier Note: Retain paragraph below for erected assemblies (either onsite or offsite) required for review of construction, coordination of work of several sections, testing or observation of operation. Mock-ups, when accepted or approved, establish standards by which work will be judged. Coordinate below with Division 1 Quality Control (Mock-Up Requirements) Section.

- B. Mock-Ups: Install at project site a job mock-up using acceptable products and manufacturer approved installation methods. Obtain Owner's and Architect's acceptance of finish color, texture, pattern and workmanship standards. Comply with Division 1 Quality Control (Mock-Up Requirements) Section.

Specifier Note: Edit paragraph below when specifying mock-up size.

- 1. Mock-Up Size: [Specify mock-up size.].
- 2. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
- 3. Incorporation: Mock-up may be incorporated into final construction upon Owner's approval.

1.06 DELIVERY, STORAGE & HANDLING

- A. General: Comply with Division 1 Product Requirements Sections.
- B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- C. Packing, Shipping, Handling and Unloading: [Specify applicable requirements.].

- D. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
 - 1. Deliver materials to jobsite and protect unsealed materials from abrasions.
 - 2. Identify each container with material name and identification number.
- E. Acceptance at Site: [Specify applicable requirements for product acceptance at site.].
- F. Storage and Protection: Store materials protected from exposure to harmful weather conditions, at temperature and humidity conditions recommended by manufacturer.
 - 1. Store materials under cover, protected from weather and construction activities. Provide safe and secure storage of materials prior to installation.
 - 2. Handling: Handle and store product according to ANc recommendations.

1.07 PROJECT CONDITIONS

- A. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

Specifier Note: Coordinate Article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty) Section.

1.08 WARRANTY

- A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.
- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

Specifier Note: Coordinate paragraph below with manufacturer's warranty requirements. ANc warrants each new ANc folding door, folding partition, operable wall, relocatable wall and accessory to be free from defects in material and workmanship under normal use and service. ANc assumes no obligation to correct defects caused by improper installation or unreasonable use including physical abuse or lack of maintenance. Panelfold's obligations under this warranty are limited to the repair, free of charge, of any defective part which, within 1 year of shipment from Panelfold, is returned prepaid to the factory. Obtain further information from the manufacturer.

- 1. Warranty Period: [Specify term.] years commencing on Date of Substantial Completion.

PART 2 PRODUCTS

Specifier Note: Retain Article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal," or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.01 FOLDING PANEL PARTITIONS

- A. Manufacturer: All Noise Control, Inc.

Specifier Note: Paragraph below is an addition to CSI SectionFormat and a supplement to MANU-SPEC. Retain or delete paragraph below per project requirements and specifier's practice.

- 1. Contact: 2731 Vista Parkway # D-8 WPB, Florida 33411 - 561-964-9360 (tel) -561-964-9359 (fax)

Specifier Note: Paragraph below is an addition to CSI SectionFormat and a supplement to MANU-SPEC. Retain or delete paragraph below per project requirements and specifier's practice.

- 2. Representative Contact: [Specify representative contact information.].

Specifier Note: Moduflex operable walls are offered in individual, paired and continuously hinged, manually or electrically operated panel models in 3 series. Moduflex Series 800, Series 600 and Series 400 operable walls feature Sheer Look panel edges without trim to minimize vertical panel joints. Panels have continuous vertical and horizontal acoustical seals that are carefully aligned and placed in a double row labyrinth for optimum acoustical performance. A full range of options, including expanding panels, single and double pass doors, self-illuminated exit signs and chalk, marker and tackable surfaces, may be specified. These walls feature a wide range of available construction, engineering, sound transmission and acoustical features. A family of track and carrier systems and remote storage requirements are available. Consult manufacturer for recommendations on required structural framing, operational suitability, and appropriate and compatible finish materials for the intended application.

- B. Proprietary Product(s): ANc operable partitions (walls).
 - 1. ANc Series 800 Operable Partitions.

Specifier Note: Moduflex Series 800 is available in various models: 810MD, 810PP, 820 and 840. Additionally, Series 800 includes Model 840GWE featuring a 3" (76 mm) thick panel.

- a. Model: [Specify model number. Select from Model 810MD, 810PP, 820, 840 and 840GWE].
2. ANc Series 600 Operable Partitions.

Specifier Note: Moduflex Series 600 is available in various models: 610MD, 610PP, 620 and 640.

- a. Model: [Specify model number.].
3. ANc Series 400 Operable Partitions.

Specifier Note: Moduflex Series 400 is available in various models: 410MD, 410PP and 420.

- a. Model: [Specify model number.].
4. ANc Pocket Doors.

Specifier Note: Pocket doors are available in various types: Bi-Fold Door, Double Door, 3 Section Door and Single Door.

- a. Door Type: [Specify pocket door type.].

Specifier Note: Pocket doors are available in various series models: 400, 600 and 800 Series.

- b. Series Model: [Specify series model.].

Specifier Note: Edit Article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Project Requirements (Product Substitutions Procedures) Section.

2.02 PRODUCT SUBSTITUTIONS

- A. Substitutions: No substitutions permitted.

Specifier Note: Add Articles below for allowances and unit prices if required for project. If added, state work covered. Coordinate with Part 1 General Summary Article, Division 1 Sections and other Bid and Contract Documents.

Specifier Note: Moduflex Series 800 Steel operable walls feature 4" (102 mm) thick panels and are designed for the most demanding aesthetic and performance criteria. Durable steel panel faces are welded to 14 gauge steel frames in a unique unitized construction. Series 800 is available to 44' (13 m) high.

Specifier Note: Moduflex Series 800 walls provide ratings of STC 55, STC 52, STC 49 and STC 47. An optional noise reduction coefficient of 0.9 is available using steel perforated faces rather than add-on unprotected absorbers.

2.03 ANC SERIES 800 OPERABLE WALLS

- A. Operation: Manually operated or electrically operated flat panels, top supported, with top and bottom seals as specified herein.
- B. Panel Configuration: As follows for areas indicated:
 1. Model 810MD: Comprised of a series of multidirectional, individual panels, side or remote stacking. Final closure shall be effected by an expandable panel.
 2. Model 810PP: Comprised of a series of preprogrammed, individual panels, side or remote stacking. Final closure shall be effected by [Specify: jamb hinged single or bi-fold panels; expandable or expandable fly-panels; or jamb hinged communicating panels.].
 3. Model 820: Comprised of panels hinged in pairs and center stacking. Final closure shall be effected by [Specify: single or bi-fold panels, expandable panels or jamb hinged communicating panels.].
 4. Model 840: Comprised of a series of continuously hinged panels, center stacking and electrically operated. Final closure shall be effected by [Specify: jamb hinged half panels, offset jambs or seal-through pocket doors.]. Two spring loaded, center off, key switches, wired in series shall be installed for safety viewing by 2 operators on station during entire operating sequence.
- C. Panels: 4" (102 mm) thick, 1 piece, all steel construction. Continuous steel panel faces shall be invisibly welded to minimum 14 gauge 1 piece steel frames. Horizontal or vertical spliced frames or faces shall not be permitted. Interlocking vertical panel edges shall be made of steel. Vertical edges of panels shall not require trim, thus minimizing appearance of vertical joining of Sheer Look panels.
 1. Panel Hinges: Hinged with manufacturer's standard butt-type hinges.
 2. Panel Hanging Weight: Shall not exceed 12 psf (59 kg/m²).
- D. Panel Acoustical Rating: Tested by an independent acoustical laboratory in accordance with ASTM E90 test procedures in a full scale 14' (4 m) by 9' 3" (3 m).
 1. STC Rating: [Specify: STC 55; STC 52; STC 49 or STC 47.].
 2. NRC Rating: Optional NRC rating of 0.9. STC 50 panels shall be provided where indicated.

E. Sound Seals: Shall be as follows:

1. General: Vertical seals between panels shall consist of deep nesting, universal interlocking ESP bronze steel astragals incorporating continuous vinyl acoustical seals. Vertical astragal vinyl seals shall be installed on outboard edges of panel skins in a double row with an acoustical labyrinth.
2. Models 810MD and 810PP:
 - a. Horizontal Top Seals: [Specify: Continuous contact extruded vinyl shapes; clearance type, manually actuated or clearance type, automatically actuated].
 - b. Horizontal Bottom Seals: [Specify: 1 1/2" (38 mm) clearance type, automatically actuated; or 2 1/2" (64 mm) or 5 1/2" (140 mm) manually actuated at waist height on panel edges.].
3. Model 820:
 - a. Horizontal Top Seals: [Specify: Continuous contact extruded vinyl shapes, clearance type, manually activated or clearance type, automatically actuated.].
 - b. Horizontal Bottom Seals: [Specify: 1 1/2" (38 mm) clearance type, automatically actuated or 2 1/2" (64 mm) manually actuated at waist height on panel edges.].
4. Model 840:
 - a. Horizontal Top Seals: Continuous contact extruded vinyl shapes.
 - b. Horizontal Bottom Seals: [Specify: 1 1/2" (38 mm) clearance type, automatically actuated or 2 1/2" (64 mm) automatic compensating and adjustable.].
5. Downward pressure of clearance type bottom seal mechanisms shall ensure an acoustical seal and resist panel movement.

F. Suspension System: Shall be:

1. Model 810MD: Manufacturer's heavy duty Type 1 or Type 9 aluminum track. Track shall be supported by adjustable steel hanger rods or by direct mount. Panels shall be supported by 2 multidirectional carrier assemblies of nylon capped steel discs or dual rotating, ball bearing, horizontal wheels installed on each panel. Carriers shall be attached to panels with adjustable steel pendant bolts.
2. Model 810PP:
 - a. Manufacturer's heavy duty Type 7/8 aluminum track. Track shall be supported by adjustable steel hanger rods or by direct mount. Panels shall be supported by preprogrammable trolley assemblies of radial-type steel, nylon tired, or carbon fiber fill tired, steel ball bearing wheels. Trolleys shall be attached to panels with adjustable steel pendant bolts with locks to prevent panel misalignment.

Specifier Note: Retain paragraph either above or below.

- b. Manufacturer's Type 5/7 gauge steel track. Track hanger brackets shall be supported by adjustable steel hanger rods. Panels shall be supported by 2 preprogrammable trolley assemblies of radial-type steel ball bearing wheels installed on each panel. Trolleys shall be attached to panels with adjustable steel pendant bolts with locks to prevent panel misalignment. Panels over 25' (8 m) high, equipped with 5 1/2" (140 mm) manually actuated bottom seals, shall have 1/8" (3.2 mm) galvanized steel safety cable installed on all carrier assemblies.
3. Model 820:
 - a. Manufacturer's heavy duty Type 7/8 aluminum track. Track shall be supported by adjustable steel hanger rods or by direct mount. Panels shall be supported by trolley assemblies of radial-type steel, nylon tired or carbon fiber fill tired, steel ball bearing wheels. Trolleys shall be attached to panels with adjustable steel pendant bolts with locks to prevent panel misalignment.

Specifier Note: Retain paragraph either above or below.

- b. Manufacturer's Type 5/7 gauge steel track. Track hanger brackets shall be supported by adjustable steel hanger rods. Panels shall be supported by trolley assemblies of radial-type steel ball bearing wheels. Trolleys shall be attached to panels having adjustable steel pendant bolts with locks to prevent panel misalignment.
 - c. Model 840: Manufacturer's Type 5/7 gauge steel track. Track hanger brackets shall be supported by adjustable steel hanger rods. Alternate panels shall be supported by trolley assemblies of steel radial-type ball bearing wheels. Trolleys shall be attached to panels having adjustable steel pendant bolts with locks to prevent panel misalignment.

Specifier Note: Series 800 offers optional UL 1 hour fire resistance rating to suit project requirements.

G. Flamespread: [Specify Class A flamespread rating to suit project requirements.].

Specifier Note: Series 800 offers Standard Class A flamespread rating.

- H. Fire Rating: UL 1 hour fire-rated FIRECOUSTIC walls, including pass doors, if any, shall be provided where indicated.
- I. Pocket Doors: Where indicated, shall be manufactured of same materials as panels. Hinges shall be standard butt type.

2.04 ANC SERIES 800 AND MODEL 840GWE (GYM WALL ELECTRIC)

- A. Operation: Consists of a series of electrically operated flat panels, top supported. Top and bottom seals as specified.
- B. Panel Configuration: Comprised of a series of continuously hinged panels, center stacking, electrically operated. Final closure shall be effected by offset jambs. Two spring loaded, center off, key switches, wired in series shall be installed for safety viewing by 2 operators on station during entire operating sequence.
- C. Panels: 3" (76 mm) thick, 1 piece, all steel construction with lightweight, impact resistant honeycomb core. Continuous steel panel faces shall be invisibly welded to minimum 16 gauge 1 piece steel frames. Horizontal or vertical spliced frames or faces shall not be permitted. Interlocking vertical panel edges shall be made of steel. Vertical panel edges do not require trim, minimizing appearance of vertical joining of Sheer Look panels.
 - 1. Panel Hanging Weight: Not to exceed 5.5 psf (27 kg/m²).
- D. Panel Acoustical Rating: STC 33, tested by an independent acoustical laboratory in accordance with ASTM E90.
- E. Sound Seals: As follows:
 - 1. Vertical seals between panels to consist of deep nesting, universal interlocking ESP bronze steel astragals incorporating continuous vinyl acoustical seals. Vertical astragal vinyl seals shall be installed on outboard edges of panel skins in a double row with an acoustical labyrinth.
 - 2. Horizontal top seals shall be continuous contact extruded vinyl shapes.
- F. Suspension System: Manufacturer's Type 5/7 gauge steel track. Track hanger brackets shall be supported by adjustable steel hanger rods. Alternate panels to be supported by trolley assemblies of steel radial-type ball bearing wheels. Trolleys shall be attached to panels with adjustable steel pendant bolts with locks to prevent panel misalignment.
 - 1. Panel Hinges: Hinged with manufacturer's standard butt-type hinges.
- G. Pocket Doors: Where indicated shall be manufactured of same materials as panels. Hinges shall be standard butt type.

Specifier Note: Moduflex Series 600 high performance operable walls feature 4" (102 mm) thick panels for general-purpose applications and have high density panel faces which are machine laminated to metal frames providing required strength, mass and stability. Series 600 is available to 24' (7 m) high.

2.05 ANC SERIES 600 OPERABLE WALLS

- A. Operation: Manually or electrically operated flat panels, top supported with top and bottom seals as specified herein.
- B. Panel Configuration: As follows for areas indicated:
 - 1. Model 610MD: Comprised of a series of multidirectional, individual panels, side or remote stacking. Final closure shall be effected by an expandable panel.
 - 2. Model 610PP: Comprised of a series of preprogrammed, individual panels, side or remote stacking. Final closure shall be effected by [Specify: jamb hinged single or bi-fold panels, expandable or expandable fly-panels, jamb hinged communicating panels.].
 - 3. Model 620: Comprised of panels hinged in pairs and center stacking. Final closure shall be effected by [Specify: single or bi-fold panels, expandable panels, jamb hinged communicating panels.].
 - 4. Model 640: Comprised of a series of continuously hinged panels, center stacking, electrically operated. Final closure shall be effected by [Specify: jamb hinged half panels, offset jambs, seal-through pocket doors.]. Two spring loaded, center off, key switches, wired in series shall be installed for safety viewing by 2 operators on station during entire operating sequence.
- C. Panels: 4" (102 mm) thick and nominally 49" (1245 mm) wide. Panel faces shall be laminated to metal frames. Panels shall have appropriate internal insulation to achieve specified STC. Tops of panels reinforced to support suspension components. Vertical edges of panels shall not require trim minimizing appearance of vertical joining of Sheer Look panels.
 - 1. Panel Hinges: Hinged with manufacturer's standard butt-type hinges.
 - 2. Hanging Weight: Shall not exceed 10 psf (49 kg/m²).
 - 3. Moduflex Series 600 walls provide ratings of STC 50, STC 47 and STC 45.
- D. Acoustical Rating: Tested by an independent acoustical laboratory in accordance with ASTM E90-85 test procedures in a full scale 14' x 9' 3" (4 x 3 m).
 - 1. STC Rating: Opening shall be [Specify: STC 50, STC 47 or STC 45.].
- E. Sound Seals: Shall be as follows:
 - 1. Vertical seals between panels shall consist of deep nesting, universal interlocking ESP bronze steel astragals incorporating continuous vinyl acoustical seals. Vertical astragal vinyl seals shall be installed on outboard edges of panel skins in a double row with an acoustical labyrinth.
 - 2. Model 610MD and Model 610PP:
 - a. Horizontal Top Seals: [Specify: continuous contact extruded vinyl shapes; clearance type, manually actuated or clearance type, automatically actuated.].

- b. Horizontal Bottom Seals: [Specify: 1 1/2" (38 mm) clearance type automatically actuated or 1 1/2" (38 mm) manually actuated at waist height on panel edges].
3. Model 620:
 - a. Horizontal Top Seals: [Specify: continuous contact extruded vinyl shapes, clearance type, manually activated or clearance type, automatically actuated.].
 - b. Horizontal Bottom Seals: [Specify: 1 1/2" (38 mm) clearance type automatically actuated or 1 1/2" (38 mm) manually actuated at waist height on panel edges.].
 4. Model 640:
 - a. Horizontal Top Seals: [Specify: continuous contact extruded vinyl shapes or clearance type, automatically actuated.].
 - b. Horizontal Bottom Seals: [Specify: 1 1/2" (38 mm) clearance type automatically actuated or continuous contact extruded vinyl shapes.].
 5. Downward pressure of clearance-type bottom seal mechanisms to ensure an acoustical seal and resist panel movement.
- F. Suspension System: Shall be:
1. Model 610MD: Manufacturer's heavy duty Type 1 or Type 9 aluminum track. Track shall be supported by adjustable steel hanger rods or by direct mount. Panels supported by 2 multidirectional carrier assemblies of nylon capped steel discs or dual rotating, ball bearing, horizontal wheels installed on each panel. Carriers shall be attached to panels with adjustable steel pendant bolts.
 2. Model 610PP: Manufacturer's heavy duty Type 7/8 aluminum track. Track shall be supported by adjustable steel hanger rods or by direct mount. Panels to be supported by preprogrammable trolley assemblies of radial-type steel, nylon tired or carbon fiber fill tired, steel ball bearing wheels. Two trolleys shall be attached to each panel having adjustable steel pendant bolts with locks to prevent panel misalignment.
 3. Model 620: Manufacturer's heavy duty Type 7/8 aluminum track. Track shall be supported by adjustable steel hanger rods or by direct mount. Panels to be supported by trolley assemblies of radial-type steel, nylon tired or carbon fiber fill tired, steel ball bearing wheels. Trolleys shall be attached to panels having adjustable steel pendant bolts with locks to prevent panel misalignment.
 4. Model 640: Manufacturer's Type 5/7 gauge steel track. Track hanger brackets shall be supported by adjustable steel hanger rods. Alternate panels to be supported by trolley assemblies of steel radial-type ball bearing wheels. Trolleys shall be attached to panels having adjustable steel pendant bolts with locks to prevent panel misalignment.

Specifier Note: Moduflex Series 600 offers Standard Class A flamespread rating.

- G. Flamespread: [Specify Class A flamespread rating to suit project requirements.].
- H. Pocket Doors: Where indicated, shall be manufactured of same materials as panels. Hinges shall be standard butt type.

Specifier Note: Moduflex Series 400 operable walls offer 3" (76 mm) thick panels for general-purpose applications with high density panel faces which are machine laminated to metal frames. Series 400 is available to 14' (4 m) high.

2.06 ANC SERIES 400 OPERABLE WALLS

- A. Operation: Manually operated flat panels, top supported with top and bottom seals as specified herein.
- B. Panel Configuration: Shall be as follows for areas indicated on drawings:
 1. Model 410MD: Comprised of a series of multidirectional, individual panels, side or remote stacking. Final closure shall be effected by [Specify: L-jamb, jamb hinged single or bi-fold panels, expandable or expandable fly panels, or jamb hinged communicating panels.].
 2. Model 410PP: Comprised of a series of preprogrammed, individual panels, side or remote stacking. Final closure shall be effected by [Specify: jamb hinged single or bi-fold panels; expandable or expandable fly panels, or jamb hinged communicating panels.].
 3. Model 420: Comprised of panels hinged in pairs and center stacking. Final closure shall be effected by [Specify: single or bi-fold panels, expandable panels or jamb hinged communicating panels.].
- C. Panels: Shall be 3" (76 mm) thick and nominally 49" (1245 mm) wide. Panel faces shall be laminated to metal frames. Panels shall have appropriate internal insulation to achieve specified STC. Tops of panels shall be reinforced to support suspension components. Vertical edges of panels shall not require trim, thus minimizing appearance of vertical joining of Sheer Look panels.
 1. Panel Hinges: Hinged with manufacturer's standard butt-type hinges.
 2. Panel Hanging Weight: Not to exceed 8 psf (39 kg/m²).
 3. Moduflex Series 400 operable walls provide acoustical ratings of STC 47, STC 44, STC 42 and STC 38.
- D. Panel Acoustical Rating: Tested by an independent acoustical laboratory in accordance with ASTM E90-85 test procedures in a full scale 14' x 9' 3" (4 x 3 m) opening.
 1. STC Rating: [Specify: STC 47, STC 44, STC 42 or STC 38.].

E. Sound Seals: Shall be as follows:

1. General: Vertical seals between panels shall consist of deep nesting, universal interlocking ESP bronze steel astragals incorporating continuous vinyl acoustical seals. Vertical astragal vinyl seals shall be installed on outboard edges of panel skins in a double row with an acoustical labyrinth.
2. Models 410MD and 410PP:
 - a. Horizontal Top Seals: [Specify: continuous contact extruded vinyl shapes; clearance type, manually actuated or clearance-type, automatically actuated.].
 - b. Horizontal Bottom Seals: [Specify: 1 1/2" (38 mm) clearance type, automatically actuated or 1 1/2" (38 mm) manually actuated at waist height on panel edges.].
3. Model 420:
 - a. Horizontal Top Seals: [Specify: continuous contact extruded vinyl shapes, clearance type, manually activated or clearance type, automatically actuated.].
 - b. Horizontal Bottom Seals: [Specify: 1 1/2" (38 mm) clearance type, automatically actuated or 1 1/2" (38 mm) manually actuated at waist height on panel edges.].
4. Downward pressure of clearance-type bottom seal mechanisms shall ensure an acoustical seal and resist panel movement.

F. Suspension System: Shall be:

1. Model 410MD: Manufacturer's heavy duty Type 1 or Type 9 aluminum track. Track shall be supported by adjustable steel hanger rods or by direct mount. Panels to be supported by 2 multidirectional carrier assemblies of nylon capped steel discs or dual rotating, ball bearing, horizontal wheels installed on each panel. Carriers shall be attached to panels having adjustable steel pendant bolts.
2. Model 410PP: Manufacturer's heavy duty Type 7/8 aluminum track. Track shall be supported by adjustable steel hanger rods or by direct mount. Panels to be supported by preprogrammable trolley assemblies of radial-type steel, nylon tired or carbon fiber fill tired, steel ball bearing wheels. Two trolleys shall be attached to each panel with adjustable steel pendant bolts with locks to prevent panel misalignment.
3. Model 420: Manufacturer's heavy duty Type 7/8 aluminum track. Track shall be supported by adjustable steel hanger rods or by direct mount. Panels to be supported by trolley assemblies of radial-type steel, nylon tired or carbon fiber fill tired, steel ball bearing wheels. Trolleys shall be attached to panels having adjustable steel pendant bolts with locks to prevent panel misalignment.

Specifier Note: Moduflex Series 400 offers standard Class A flamespread rating.

G. Flamespread: [Specify Class A flamespread rating to suit project requirements.].

H. Pocket Doors: Where indicated shall be manufactured of same materials as panels. Hinges shall be standard butt type.

2.07 PANEL ACCESSORIES

Specifier Note: ANc Series offers the following optional accessories. Retain optional accessories to suit project requirements.

A. Accessories:

1. Single Pass Doors: Where indicated shall be nominally [Specify: 3' or 2' 8" (914 or 813 mm) wide x 6' 8" or 7' (2032 or 2134 mm) high.] Doors to be manufactured of same materials and thickness as panels and equipped with butt-type hinges and positive latches with drop cup and ring pulls. Double doors have roller latches.
 - a. Deadbolts: Deadbolt locks, self-illuminated exit signs, hydraulic door closers and ADA (Americans with Disabilities Act) compliant friction roller latch with flush pulls.
2. Tack Boards: Where indicated shall be nominally [Specify: 48" (1219 mm) high or full panel height.] Tack boards shall consist of 1/4" (6.4 mm) cork surfaced with minimum 30 oz (850 gm)/lineal yard Type 2 Fabrictex vinyl fabric. Color to be selected from manufacturer's standards and bronze trimmed.
3. Chalkboards: Where indicated shall be nominally [Specify 48" (1219 mm) high or full panel height.] Chalkboards shall be chalkable porcelain enameled steel. Color to be selected from manufacturer's standards and bronze trimmed.
4. Marker Boards: Where indicated shall be nominally [Specify 48" (1219 mm) high or full panel height.] and be of suitable nonporous surfaced porcelain enameled steel for application of write-on, wipe-off marker pens. Color of marker boards to be selected from manufacturer's standards and bronze trimmed.
5. Recessed Tray: For storing chalk or marking pens and erasers; to be installed where indicated and shall be bronze in color.

2.08 ANC POCKET DOORS

- A. Operation: Consisting of a series of manually operated jamb hinged panels matching construction of operable wall panels.
- B. Pocket Door Type: To be as follows for areas indicated:
 1. Types: Bi-fold Door, Double Door, 3 Section Door and Single Door.
- C. Pocket Door Panel Construction: Constructed as follows:

1. Series 400 to be 3" (76 mm) thick and Series 600 to be 4" (102 mm) thick. Panel faces should be laminated to metal frames. Panels shall have appropriate internal insulation to achieve specified STC. Interlocking vertical panel edges to be made of steel and shall not require trim minimizing appearance of vertical joining of Sheer Look panels.
 2. Series 800 to be 4" (102 mm) thick, 1 piece, all steel construction. Continuous steel panel faces shall be invisibly welded to minimum 14 gauge 1 piece steel frames. Horizontal or vertical spliced frames or faces shall not be permitted. Interlocking vertical panel edges shall be made of steel and shall not require trim, thus minimizing appearance of vertical joining of Sheer Look panels.
 3. Hinge Panels: Hinged with manufacturer's standard butt-type hinges.
 4. Hanging Weight: Not to exceed 8 psf (39 kg/m²).
- D. Acoustical Rating: Tested by an independent acoustical laboratory in accordance with ASTM E90-85 [Specify: STC 49, STC 45 or STC 38].
- E. Sound Seals: Shall be as follows:
1. Vertical Seals Between Panels: Consists of deep nesting, universal interlocking ESP bronze steel astragals incorporating continuous, vinyl acoustical seals. Vertical astragal vinyl seals to be installed on outboard edges of panel skins in a double row with an acoustical labyrinth.
 2. Horizontal Top and Bottom Seals: Continuous contact extruded vinyl shapes.

2.09 PANEL AND POCKET DOOR FINISHES

Specifier Note: A wide range of surfacing materials is available. Series 800, 600 and 400 accept vinyl, wall carpet, panel fabric and customer's own material. Series 600 and 400 also accept plastic laminates and wood veneer. Materials include Ribtex vertical rib wall carpet, Startex solid color, Sandtex multi-color, Fabrictex fabric textured, Hightex highly textured, Ropetex rope textured vinyl, Woventex panel fabrics and Woodtex wood grain vinyls as well as virtually any regularly specified wallcovering. A wide variety of colors and textures is possible, depending on type and source of panel finishing material.

- A. Panel Finish: Factory surfaced with one of the following (colors to be selected from manufacturer's standards):
1. Manufacturer's standard vinyl, Class A flamespread [Specify: Types 1 or 2].
 2. Manufacturer's standard Ribtex vertical rib wall carpeting, Class A with latex backing.
 3. Manufacturer's Woventex panel fabric, Class A, acrylic backed.
 4. Maharam Tekwall 1000 panel fabric, Class A, acrylic backed.
 5. Genuine unfinished wood veneer shall be [Specify: White Ash, Red Oak, Natural Birch, American Walnut or other species as specified].
 6. High pressure plastic laminate, vertical grade.
 7. Customer's own material to be factory applied (subject to approval by manufacturer for suitability to standard manufacturing processes and equipment).
 8. Unsurfaced panel skins for field finishing by others.

2.10 SOURCE QUALITY

- B. Source Quality: Obtain operable partition products from a single manufacturer.

PART 3 EXECUTION

Specifier Note: Article below is an addition to the CSI SectionFormat and a supplement to MANU-SPEC. Revise Article below to suit project requirements and specifier's practice.

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product carton instructions for installation.

3.02 EXAMINATION

- A. Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.
1. Before installation, verify opening. Surfaces to be clean and dry. Concrete surfaces free of excess mortar and lumps. Wood surfaces are to be well nailed and/or glued, nailed heads driven flush and wood free of voids. Metal surfaces shall be free of grease, oil, dirt, rust, corrosion and welding slag, without sharp edges.

3.03 PREPARATION

- A. Surface Preparation: Open containers and verify that required parts are available and undamaged before disposing of containers. Arrange materials in proper sequence to conform to manufacturer's information and installation instructions.
1. Verify that rough opening is correct and has been prepared in conformance with ASTM E557 standard.

Specifier Note: Coordinate Article below with manufacturer's recommended installation details and requirements.

3.04 INSTALLATION

- A. Operable Partitions (Walls) Installation:
 - 1. Install operable partition (walls) units to achieve specified performance criteria for sound rating, fire rating and tolerances in accordance with manufacturer's instructions.
 - 2. Apply perimeter caulking and trim as indicated.
 - 3. Install locking hardware for accurate fit.
 - 4. Make electrical connections for electrically operated units.
- B. Interface with Other Work: [Specify applicable requirements for interface with other work].
- C. Site Tolerances: [Specify applicable site tolerances for specified product(s) installation.].
- D. Related Products Installation: Refer to other sections listed in Part 1 Related Sections for related products installation.

3.05 FIELD QUALITY REQUIREMENTS

Specifier Note: Edit paragraph below. Establish number and duration of periodic site visits with Owner and manufacturer, and specify below. Consult with manufacturer for services required. Coordinate paragraph below with Division 1 Quality Assurance Section and Part 1 Quality Assurance Submittals herein. Delete if manufacturer's field service not required.

- A. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.
 - 1. Site Visits: [Specify number and duration of periodic site visits.].

Specifier Note: Coordinate Article below with Division 1 Execution Requirements (Starting, Adjusting, Cleaning and Protecting Installed Construction) Section.

3.06 ADJUSTING

- A. Adjusting: [Specify applicable product adjusting requirements.].
 - 1. Lubrication: Lubricate moving parts of operable partitions (walls).
 - 2. Adjust locking hardware for operation.

Specifier Note: Coordinate Article below with Division 1 Execution Requirements (Cleaning) Section.

3.07 CLEANING

- A. Cleaning: Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance. Remove construction debris from project site and legally dispose of debris.
 - 1. Clean wood, vinyl, wall carpet, panel fabric and plastic laminate surfaces without using abrasive cleaners or solutions containing corrosive solvents.

Specifier Note: Coordinate Article below with Division 1 Facility Operation (Demonstration and Training) Section.

3.08 DEMONSTRATION

- A. Demonstration: After adjustments, lubrications and cleanup, demonstrate and instruct Owner's personnel on proper operation, function and maintenance procedures for operable partitions.
 - 1. Deliver keys, operation and maintenance manuals to Owner.

Specifier Note: ANc walls are designed to require little maintenance. Operate according to manufacturer recommendations. Clean and lubricate track annually. Surfacing material maintenance requirements vary. Vinyls should be cleaned with a damp cloth and mild household cleaner. Use of white chalk is recommended. Chalkboards should be broken in before use and washed no more than once weekly. An initial cleaning of marker boards must be performed to ensure proper erasure.

Specifier Note: Coordinate Article below with Division 1 Execution Requirements Section.

3.09 PROTECTION

- A. Protection: Protect installed product and finish surfaces from damage during construction.

END OF SECTION