SECTION 10 22 39

VERTICALLY FOLDING OPERABLE PARTITIONS

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\*\* NOTE TO SPECIFIER \*\* Skyfold; operable acoustic partitions, vertically folding operable partitions, interior operable glass partitions, automatic vertically retractable acoustic walls, automatic vertically retractable acoustic interior glass walls.  
This section is based on the products of Skyfold, which is located at:  
325 Lee Ave.  
Baie d'Urfe, PQ, Canada H9X 3S3  
Toll Free Tel: 877-759-3653  
Tel: 514-457-4767  
Fax: 514-457-7111  
Email: [request info (skyfold@skyfold.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Skyfold&coid=35534&rep=&fax=514-457-7111&message=RE:%20Spec%20Question%20(10650ski):%20%20&mf=)  
Web: <http://www.skyfold.com>   
 [ [Click Here](https://www.arcat.com/arcatcos/cos35/arc35534.html) ] for additional information.  
Skyfold is the acoustic leader in vertically folding retractable walls. Our walls are more than just space dividers. They are innovative, custom, and electric flexible space solutions that allow architects, contractors, and end-users to redefine how they use a space. With over 7000 walls installed worldwide, Skyfold is the premium choice for architects, contractors, and interior designers. The easy-to-use, self-retracting system and vertical motion of the wall allow for rooms to be quickly divided or expanded. Our solutions are equal parts soundproofing barriers and design pieces. A wide selection of finish options can be mix-and-matched, so you can customize your Skyfold wall to complement, and even enhance, your space's design and functionality; like whiteboard writing surfaces.  
Our mission is to provide architects and general contractors with innovative vertically folding retractable walls that unite acoustics, flexibility, design, and safety for their design plans and clients. Our ambition to be industry leaders expands beyond providing state-of-the-art operable flexible space solutions. We are manufacturers, innovators, and leaders in the movable wall industry. Our team is dedicated to setting industry standards not only with the solutions we provide, but also with the way we work. At Skyfold, we strive to drive continuous improvement and to inspire collaboration at all levels.  
We are committed to offering quality customer support, service, and design collaboration through our internal team of estimators, engineers, drafters, quality accessors, and administrators as well as through our exclusive international distributor network. All Skyfold walls are expertly made in the ISO9001 certified production plant at the Skyfold Headquarters in Montreal, Canada.  
Since 2017, Skyfold Inc. has been part of the dormakaba Group. The dormakaba Group provides innovative and reliable access and security solutions and partition systems for hotels, shops, sports facilities, airports, in the home and in the office. dormakaba is one of three leading companies for access control and security solutions on the global market and one of the world's two leading companies in the field of partition systems. With over 150 years' experience, locations in over 130 countries and more than 16,000 employees, dormakaba provides you with a forward-looking range of products, solutions and services that give you a long-lasting sense of security.

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Operable Partitions: Automatic, vertically retractable acoustic walls.
       1. Model: Skyfold Zenith Premium 51.
       2. Model: Skyfold Zenith Premium 55.
       3. Model: Skyfold Zenith Premium 60.
       4. Model: Skyfold Zenith Premium NRC.
       5. Model: Skyfold Zenith 48.
       6. Model: Skyfold Zenith 51.
       7. Model: Skyfold Zenith 55.
       8. Model: Skyfold Zenith 60.
       9. Model: Skyfold Zenith NRC.
       10. Model: Skyfold Classic 51.
       11. Model: Skyfold Classic 55.
       12. Model: Skyfold Classic 60.
       13. Model: Skyfold Classic NRC.
       14. Model: Skyfold Prisma
    2. Operable Partitions: Automatic, vertically retractable, acoustic interior glass walls.
       1. Model: Skyfold Mirage.
  1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 03 30 00 - Cast-in-Place Concrete.
    2. Section 04 20 00 - Unit Masonry.
    3. Section 05 10 00 - Structural Metal Framing.
    4. Section 05 50 00 - Metal Fabrications.
    5. Section 06 10 00 - Rough Carpentry.
    6. Section 09 25 23 - Lime Based Plastering.
    7. Section 09 28 13 - Cementitious Backing Boards.
    8. Section 09 90 00 - Painting and Coating.
    9. Division 16 - Electrical.
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM International (ASTM):
       1. ASTM C423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
       2. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
       3. ASTM E413 - Classification for Rating Sound Insulation.
       4. ASTM E557 - Standard Guide for Architectural Design and Installation Practices for Sound Isolation between Spaces Separated by Operable Partitions.
    2. International Organization for Standardization (ISO):
       1. ISO 140-3 - Acoustics - Measurement of Sound Insulation in Buildings and of Building Elements; Part 3 - Laboratory Measurement of Airborne Sound Insulation of Building Elements.
       2. ISO 354 - Acoustics - Measurement of Sound Absorption in a Reverberation Room.
       3. ISO 9001 - Quality Management Systems - Requirements.
    3. National Electrical Manufacturers Association (NEMA).
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. Product Data:
        1. Manufacturer's data sheets on each product to be used.
        2. Preparation instructions and recommendations.
        3. Storage and handling requirements and recommendations.
        4. Typical installation methods.
     3. Maintenance Program: Provide Owner with manufacturer's written recommendations and instructions for scheduled maintenance of operable wall parts subject to wear and tear.
     4. Shop Drawings: Showing complete layout of operable wall system based on field verified dimensions with details including but not limited to dimensional relationship to adjoining work, materials, finishes, and tolerances, methods of attachment to building steel and electrical requirements.
     5. Test Reports: Certified test reports that demonstrate compliance to acoustical performance requirements for each product and assembly as specified herein.
  2. QUALITY ASSURANCE
     1. Manufacturer Qualifications:
        1. Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
        2. Company is certified by ISO 9001 or an equivalent quality control system.
     2. Installer Qualifications:
        1. Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.

\*\* NOTE TO SPECIFIER \*\* Delete requirement for a manufacturer authorized and licensed installer if not required. This requirement only applies to Skyfold Mirage operable glass partitions.

* + - 1. Company authorized and licensed by the operable wall manufacturer.
    1. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.
  1. DELIVERY, STORAGE, AND HANDLING
     1. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
     2. Protect from damage due to weather, excessive temperature, and construction operations.
  2. PRE-INSTALLATION CONFERENCE
     1. Convene a conference approximately two weeks before scheduled commencement of Work.
     2. Attendees to include Architect, Contractor and trades involved; agenda covering schedule, responsibilities, critical path items and approvals.
  3. PROJECT CONDITIONS
     1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results.
     2. Do not install products under environmental conditions outside manufacturer's recommended limits.
  4. WARRANTY
     1. Manufacturer's Limited Warranties: Manufacturer reserves the right to void the warranty if ambient conditions are not met at time of delivery, or if manufacturer's recommended maintenance program for operable wall parts subject to normal wear and tear is not followed.
        1. Acoustical Performance Warranty: Operable walls retain acoustical properties for 10 years from date of shipment; contingent upon proper maintenance.

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two options for warranty type; basic or extended.

* + - 1. Basic Warranty: Against defects in material and workmanship for a period of 2 years or 5000 cycles, whichever occurs first from date of shipment. Does not cover parts and labor required to maintain operable wall parts subject to normal wear and tear.
      2. Extended Parts Warranty: Against defects in material and workmanship on parts, excluding touch screen operator stations, for a period of 10 years or 5000 cycles, whichever occurs first from date of shipment. Does not cover parts and labor required to maintain operable wall parts subject to normal wear and tear.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Skyfold, which is located at: 325 Lee Ave.; Baie d'Urfe, PQ, Canada H9X 3S3; Toll Free Tel: 877-759-3653; Tel: 514-457-4767; Fax: 514-457-7111; Email: [request info (skyfold@skyfold.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Skyfold&coid=35534&rep=&fax=514-457-7111&message=RE:%20Spec%20Question%20(10650ski):%20%20&mf=); Web: <http://www.skyfold.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Delete article for Skyfold Zenith Premium automatic vertically retractable acoustic interior glass walls if not required.

* 1. VERTICALLY FOLDING OPERABLE PARTITIONS
     1. Operable Partitions: Automatic, vertically retractable acoustic walls. (Zenith Premium)

\*\* NOTE TO SPECIFIER \*\* Delete basis of design options not required.

* + - 1. Basis of Design: Zenith Premium 51 as manufactured by Skyfold, Inc.
         1. Sound Transmission (ASTM E90, ISO 140-3): Installed systems.

STC Rating: 51.

Rw Value: 51.

* + - * 1. Sound Transmission (ASTM E90, ISO 140-3): Panel construction.

STC Rating: 61.

Rw Value: 60.

* + - * 1. Maximum Weight: 6.2 psf (30.4 kg per sq m); based on design of (LxH) 288 x 144 inches (7315 x 3658 mm).
      1. Basis of Design: Zenith Premium 55 as manufactured by Skyfold, Inc.
         1. Sound Transmission (ASTM E90, ISO 140-3): Installed systems.

STC Rating: 55.

Rw Value: 54.

* + - * 1. Sound Transmission (ASTM E90, ISO 140-3): Panel construction.

STC Rating: 61.

Rw Value: 60.

* + - * 1. Maximum Weight: 6.8 psf (33.3 kg per sq m); based on design of (LxH) 288 x 144 inches (7315 x 3658 mm).
      1. Basis of Design: Zenith Premium 60 as manufactured by Skyfold, Inc.
         1. Sound Transmission (ASTM E90, ISO 140-3): Installed systems.

STC Rating: 60.

Rw Value: 59.

* + - * 1. Sound Transmission (ASTM E90, ISO 140-3): Panel construction.

STC Rating: 66.

Rw Value: 64.

* + - * 1. Maximum Weight: 8.6 psf (42 kg per sq m); based on design of (LxH) 288 x 144 inches (7315 x 3658 mm).
      1. Basis of Design: Zenith Premium NRC as manufactured by Skyfold, Inc.
         1. Sound Absorption (ASTM C423, ISO 354): Up to 0.65 NRC rating.
         2. Sound Transmission (ASTM E90, ISO 140-3): Installed systems.

STC Rating: 50.

Rw Value: 49.

* + - * 1. Sound Transmission (ASTM E90, ISO 140-3): Panel construction.

STC Rating: 60.

Rw Value: 58.

* + - * 1. Maximum Weight: 6.5 psf (32.8 kg per sq m); based on design of (LxH) 288 x 144 inches (7315 x 3658 mm).
      1. Basis of Design: Zenith Premium Series as manufactured by Skyfold, Inc.; model as scheduled and indicated on Drawings.
      2. Factory Assembly: Largest possible assemblies shipped to minimize work on site.
      3. Speed: Average 5 to 10 vertical ft (1.5 to 3 m) per min. to open, close.
      4. Minimum Wall Length: 108 inches (2743 mm).
      5. Maximum Ceiling Height: 144 inches (3658 mm) finished ceiling heights.
      6. Stacking:
         1. Stacks in up or open position into width less than 71.25 inches (1810 mm).
         2. Stacking height ratio from 1 to 5 through 1 to 10, depending on wall height.
      7. Durability: Design life of over 10,000 complete closed to opened to closed cycles.
      8. Concealed Hardware: No exposed hinges, brackets, screws; no part of mechanical system visible when operable wall is in the down or closed position.
      9. Vertical, Horizontal Joints Between Panels: Maximum 1/2 inch (12.7 mm) width.
      10. Sound Seals: Black.
          1. Maximum Joint Widths:

Between Panels and Floor or Panels and Ceiling: 2 inches (51 mm).

Between Panels and End Walls: 1 inch (25 mm).

* + - * 1. At Floors, Ceilings and End Walls: Automatically and acoustically seals without need for manual intervention.
        2. Deployment of End Seals: Touch screen button and directional symbol do not need to be held during the deployment of the end seals.
        3. End Seals: Do not come into contact with end walls while operable wall is in motion; seals that rub or brush against the end walls are not acceptable.
      1. Removability of Panels:
         1. Each acoustical panel is individually removable using only a screw driver; no special tools or equipment required.
         2. Removal of single acoustical panel does not affect, dislocate, or cause the removal of adjacent panels or other acoustical panels.
      2. Panel Edges: Right angles, 1/16 inch (1.6 mm) radius.
      3. Panel Facing Under Finish: Steel; no bowing, oil canning, warping, waviness, surface deformation or discontinuity.
      4. Application of Finish: Railroaded onto panels, applied horizontally along panel length.
      5. Finishes: General.
         1. Materials: Non-combustible or fire-treated materials.
         2. Maximum Weight: 0.111 psf (0.542 kg per sq m).
         3. Maximum Thickness: 1/8 inch (3 mm).

\*\* NOTE TO SPECIFIER \*\* Delete finish options not required. Manufacturer must approve finish selected by Architect. Contact manufacturer for details. No brittle materials. Steel face of panels is compatible with wide variety of architectural finishes including but not limited to paint, wood veneer, fabric, specialty metal and vinyl. Skyfold Zenith Premium NRC only available with acoustically transparent fabric finish; fill in blank with fabric designation or delete. Pricing will vary depending on finish selection.

* + - 1. Finish Type: Acoustically transparent fabric finish, \_\_\_\_\_\_\_\_.
      2. Finish Type: As selected by Architect and approved by manufacturer of operable wall.
      3. Finish Type: As scheduled and indicated on Drawings.
      4. Operation:
         1. Folds and unfolds sequentially in an accordion style without manual labor.
         2. Comes automatically to rest once the fully down or fully up position is reached.
         3. Touch screen button and directional symbol do not need to be held during the deployment of the end seals.
         4. Can partially open or close the wall, stop it, and then reverse the operation.
         5. The operable walls stop in a quick and positive fashion without coasting.
         6. Open and Close: Two touch screen operator stations and 2 switches per operable wall, located on opposite sides of wall at opposite ends of wall, wired in series; when pressure is removed from either touch screen or switch, wall immediately stops.
         7. Touch Screen Controls: Pressing and holding the up or down directional arrow symbol on one touch screen while simultaneously pressing and holding the button symbol on the second screen causes the wall to move in the selected direction.
         8. When Down or Closed:

Hard, rigid, flat, plumb wall made of grid of rectangular acoustical panels.

Two vertical planes of acoustical panels separated by air space.

\*\* NOTE TO SPECIFIER \*\* Delete ' when lifted or open' options not required.

* + - * 1. When Lifted or Open: Wall panels retract into a pocket in the ceiling.
        2. When Lifted or Open: Wall panels retract between roof joists.
        3. When Lifted or Open: Wall panels retract between built in bulkheads.
        4. When Lifted or Open: As indicated on Drawings.
      1. Safety Features:
         1. Brakes: Drive system with a manual override and a brake release lever.

Electromagnetic Brake: Activates when power is lost to the system; minimum retarding torque rating equal to 200 percent of motor drive's full load torque.

\*\* NOTE TO SPECIFIER \*\* Delete emergency brake options not required.

Emergency Brake: Dynamic brake distinct, separate from electromagnetic brake; lowers wall at a controlled speed of no more than 150 percent of normal down speed in case of a catastrophic failure in motor drive's power train.

Emergency Brake: Distinct, separate from electromagnetic brake, completely halts downward motion of wall in case of catastrophic failure in power train.

Emergency Brake: As indicated on Drawings.

* + - * 1. Switches: Electrical or other limit switches to stop wall at its up and down travel limits.
        2. Over Torque Detector: Uses motor's torque arm in its over torque detection.

Senses a jam in system and acts as an over travel limit in the up direction should the primary limit switch fail to act.

* + - * 1. Bottom Edge: Continuous pressure sensing strip along entire length; if sensing edge comes in firm contact with an object, before operable wall is in the full down or closed position, then power is cut to the motor drive and electromagnetic brake is activated.
        2. Obstruction Removal: Automatically reverses direction and ascends for 3 seconds; power remains cut to motor drive until switches have been released.
      1. Folding Mechanism:
         1. Construction: Hanging, folding and extension mechanism made from structural grade aluminum extrusions and structural shapes to the greatest extent possible.
         2. Hangers: Designed to fasten lifting mechanism to support steel.

Materials: Steel.

Attachment: Welded or bolted to support steel.

* + - * 1. Wear Surfaces: Including but not limited to bushings, spacers, pins, discs, bearings, sleeves; designed to function quietly, with minimal wear over 10,000 cycle design life.
      1. Motor Drive:
         1. Design: Ball bearings used to the greatest extent possible instead of bushings and wear surfaces; chain or belt drive systems not acceptable.
         2. Mounting: Motor drive assembly mounted directly above center line of operable wall; support steel only required at one location per wall system.
         3. Safety Features: Including but not limited to thermal protection, overload protection and quick acting fuses.
         4. Cables: 6 x 31 construction aircraft cable, galvanized steel; 1 per folding mechanism.
         5. Drum Assembly: Cable wraps on yoyo drums; 2 safety wraps, multiple cable layers.
         6. Flange Bearings: Located immediately on either side of drum assembly.
         7. Line Shaft: Sized to minimize deflection and withstand required torque; supports and rotates cable drums.
      2. Electrical: Three phase power supply to electrical control box.

\*\* NOTE TO SPECIFIER \*\* Delete electrical control boxes options not required.

* + - * 1. Electrical Control Box Rating: Standard, NEMA 1.
        2. Electrical Control Box Rating: NEMA 4.
        3. Electrical Control Boxes: As scheduled and indicated on Drawings.
        4. Wiring:

From Switches to Control Boxes: 18 gauge.

Low Voltage Wiring: Comply with requirements in electrical specifications.

\*\* NOTE TO SPECIFIER \*\* Delete touch screen operator stations options not required.

* + - * 1. Touch Screen Operator Stations: None, standard.
        2. Touch Screen Operator Stations: Wired in series; comply with requirements in electrical specifications.

Alert Function: Fault warning displayed in case of failure of electrical system.

Touch Screens: Two 4.3 inch (109 mm) resistive LCD screens per system.

Multilingual Capabilities: Required.

User Pin: 4-digits, adjustable.

* + - * 1. Touch Screen Operator Stations: As indicated on Drawings.
    1. Operable Partitions: Automatic, vertically retractable acoustic walls. (Zenith)

\*\* NOTE TO SPECIFIER \*\* Delete basis of design options not required.

* + - 1. Basis of Design: Zenith 48 as manufactured by Skyfold, Inc.
         1. Sound Transmission (ASTM E90, ISO 140-3): Installed systems.

STC Rating: 48.

Rw Value: 47.

* + - * 1. Sound Transmission (ASTM E90, ISO 140-3): Panel construction.

STC Rating: 57.

Rw Value: 56.

* + - * 1. Maximum Weight: 6.0 psf (29.3 kg per sq m); based on design of (LxH) 288 x 144 inches (7315 x 3658 mm).
      1. Basis of Design: Zenith 51 as manufactured by Skyfold, Inc.
         1. Sound Transmission (ASTM E90, ISO 140-3): Installed systems.

STC Rating: 51.

Rw Value: 51.

* + - * 1. Sound Transmission (ASTM E90, ISO 140-3): Panel construction.

STC Rating: 61.

Rw Value: 60.

* + - * 1. Maximum Weight: 6.2 psf (30.4 kg per sq m); based on design of (LxH) 288 x 144 inches (7315 x 3658 mm).
      1. Basis of Design: Zenith 55 as manufactured by Skyfold, Inc.
         1. Sound Transmission (ASTM E90, ISO 140-3): Installed systems.

STC Rating: 55.

Rw Value: 54.

* + - * 1. Sound Transmission (ASTM E90, ISO 140-3): Panel construction.

STC Rating: 61.

Rw Value: 60.

* + - * 1. Maximum Weight: 6.8 psf (33.3 kg per sq m); based on design of (LxH) 288 x 144 inches (7315 x 3658 mm).
      1. Basis of Design: Zenith 60 as manufactured by Skyfold, Inc.
         1. Sound Transmission (ASTM E90, ISO 140-3): Installed systems.

STC Rating: 60.

Rw Value: 59.

* + - * 1. Sound Transmission (ASTM E90, ISO 140-3): Panel construction.

STC Rating: 66.

Rw Value: 64.

* + - * 1. Maximum Weight: 8.6 psf (42 kg per sq m); based on design of (LxH) 288 inches x 144 inches (7315 x 3658 mm high).
      1. Basis of Design: Zenith NRC as manufactured by Skyfold, Inc.
         1. Sound Absorption (ASTM C423, ISO 354): Up to 0.65 NRC rating.
         2. Sound Transmission (ASTM E90, ISO 140-3): Installed systems.

STC Rating: 50.

Rw Value: 49.

* + - * 1. Sound Transmission (ASTM E90, ISO 140-3): Panel construction.

STC Rating: 60.

Rw Value: 58.

* + - * 1. Maximum Weight: 6.5 psf (32.8 kg per sq m); based on design of (LxH) 288 x 144 inches (7315 x 3658 mm).
      1. Basis of Design: Zenith Series as manufactured by Skyfold, Inc.; model as scheduled and indicated on Drawings.
      2. Factory Assembly: Largest possible assemblies shipped to minimize work on site.
      3. Operation: Folds and unfolds sequentially in an accordion style without manual labor.
         1. Down or Closed:

Hard, rigid, flat, plumb wall made of grid of rectangular acoustical panels.

Two vertical planes of acoustical panels separated by acoustical air space.

\*\* NOTE TO SPECIFIER \*\* Delete 'lifted or open' options not required.

* + - * 1. Lifted or Open: Wall panels retract into a pocket in the ceiling.
        2. Lifted or Open: Wall panels retract between roof joists.
        3. Lifted or Open: Wall panels retract between built in bulkheads.
        4. Lifted or Open: As indicated on Drawings.
      1. Factory Assembly: Largest possible assemblies shipped to minimize work on site.
      2. Speed: Average 5 to 10 vertical ft (1.5 to 3 m) per min. to open, close.
      3. Stacking:
         1. Stacks in up or open position into width less than 71.25 inches (1810 mm).
         2. Stacking height ratio from 1 to 5 through 1 to 10, depending on wall height.
      4. Minimum Wall Length: 108 inches (2743 mm).
      5. Maximum Ceiling Height: 144 inches (3658 mm) finished ceiling heights.
      6. Durability: Design life of over 10,000 complete closed to opened to closed cycles.
      7. Concealed Hardware: No exposed hinges, brackets, screws; no part of mechanical system visible when operable wall is in the down or closed position.
      8. Vertical, Horizontal Joints Between Panels: Maximum 1/2 inch (13 mm) width.
      9. Sound Seals: Black.
         1. Maximum Joint Widths:

Between Panels and Floor or Panels and Ceiling: 2 inches (51 mm).

Between Panels and End Walls: 1 inch (25 mm).

* + - * 1. At Floors, Ceilings and End Walls: Automatically and acoustically seals without need for manual intervention.
        2. Deployment of End Seals: Touch screen button and directional symbol do not need to be held during the deployment of the end seals.
        3. End Seals: Do not come into contact end walls while operable wall is in motion; seals that rub or brush against the end walls are not acceptable.
      1. Removability of Panels:
         1. Each acoustical panel is individually removable using only a screw driver; no special tools or equipment required.
         2. Removal of single acoustical panel does not affect, dislocate, or cause the removal of adjacent panels or other acoustical panels.
      2. Panel Edges: Right angles, 1/16 inch (1.6 mm) radius.
      3. Panel Facing Under Finish: Steel; no bowing, oil canning, warping, waviness, surface deformation or discontinuity.
      4. Application of Finish: Railroaded onto panels, applied horizontally along panel length.
      5. Finishes: General.
         1. Materials: Non-combustible or fire-treated materials.
         2. Maximum Weight: 0.111 psf (0.542 kg per sq m).
         3. Maximum Thickness: 1/8 inch (3 mm).

\*\* NOTE TO SPECIFIER \*\* Delete finish options not required. Manufacturer must approve finish selected by Architect. Contact manufacturer for details. No brittle materials. Steel face of panels is compatible with wide variety of architectural finishes including but not limited to paint, wood veneer, fabric, specialty metal and vinyl. Skyfold Zenith NRC only available with acoustically transparent fabric finish; fill in blank with fabric designation or delete. Pricing will vary depending on finish selection.

* + - 1. Finish Type: Acoustically transparent fabric finish, \_\_\_\_\_\_\_\_\_\_.
      2. Finish Type: As selected by Architect and approved by manufacturer of operable wall.
      3. Finish Type: As scheduled and indicated on Drawings.
      4. Operation:
         1. Folds and unfolds sequentially in an accordion style without manual labor.
         2. Comes automatically to rest once the fully down or fully up position is reached.
         3. The operable walls stop in a quick and positive fashion without coasting.

\*\* NOTE TO SPECIFIER \*\* Delete touch screen controls if not selected at the end of this article.

* + - * 1. Touch Screen Controls:

Touch screen button and directional symbol do not need to be held during the deployment of the end seals.

It is possible to partially open or close wall, stop it and then reverse operation.

Touch Screen Controls: Pressing and holding the up or down directional arrow symbol on one touch screen while simultaneously pressing and holding the button symbol on the second screen causes wall to move in selected direction.

* + - * 1. Open and Close: Two touch screen operator stations and 2 switches per operable wall, located on opposite sides of wall at opposite ends of wall, wired in series; when pressure is removed from either touch screen or switch, wall immediately stops.
        2. When Down or Closed:

Hard, rigid, flat, plumb wall made of grid of rectangular acoustical panels.

Two vertical planes of acoustical panels separated by acoustical air space.

\*\* NOTE TO SPECIFIER \*\* Delete ' when lifted or open' options not required.

* + - * 1. When Lifted or Open: Wall panels retract into a pocket in the ceiling.
        2. When Lifted or Open: Wall panels retract between roof joists.
        3. When Lifted or Open: Wall panels retract between built in bulkheads.
        4. When Lifted or Open: As indicated on Drawings.
      1. Safety Features:
         1. Brakes: Drive system equipped with a manual override and a brake release lever.

Electromagnetic Brake: Activates when power is lost to system; minimum retarding torque rating equal to 200 percent of motor drive's full load torque.

\*\* NOTE TO SPECIFIER \*\* Delete emergency brake options not required.

Emergency Brake: Dynamic brake distinct, separate from electromagnetic brake; lowers wall at a controlled speed of no more than 150 percent of normal down speed in case of a catastrophic failure in motor drive's power train.

Emergency Brake: Distinct, separate from electromagnetic brake, completely halts downward motion of wall in case of catastrophic failure in power train.

Emergency Brake: As indicated on Drawings.

* + - * 1. Switches: Electrical or other limit switches to stop wall at its up and down travel limits.
        2. Over Torque Detector:

Mechanical, uses the motor's torque arm in its over torque detection.

Senses a jam in the system and acts as an over travel limit in the up direction should the primary limit switch fail to act.

* + - * 1. Bottom Edge: Continuous pressure sensing strip along entire length; if sensing edge comes in firm contact with an object, before operable wall is in the full down or closed position, then power is cut to the motor drive and electromagnetic brake is activated.
        2. Obstruction Removal: Automatically reverses direction and ascends for 3 seconds; power remains cut to motor drive until switches have been released.
      1. Folding Mechanism:
         1. Construction: Hanging, folding and extension mechanism made from structural grade aluminum extrusions and structural shapes to the greatest extent possible.
         2. Hangers: Designed to fasten lifting mechanism to support steel.

Materials: Steel.

Attachment: Welded or bolted to support steel.

* + - * 1. Wear Surfaces: Including but not limited to bushings, spacers, pins, discs, bearings, sleeves; designed to function quietly, with minimal wear over 10,000 cycle design life.
      1. Motor Drive:
         1. Design: Ball bearings used to the greatest extent possible instead of bushings and wear surfaces; chain or belt drive systems not acceptable.
         2. Mounting: Motor drive assembly mounted directly above center line of operable wall; support steel only required at one location per wall system.
         3. Safety Features: Including but not limited to thermal protection, overload protection and quick acting fuses.
         4. Cables: 6 x 31 construction aircraft cable, galvanized steel; 1 per folding mechanism.
         5. Drum Assembly: Cable wraps on yoyo drums; 2 safety wraps, multiple cable layers.
         6. Flange Bearings: Located immediately on either side of drum assembly.
         7. Line Shaft: Sized to minimize deflection and withstand required torque; supports and rotates cable drums.
      2. Electrical: Three phase power supply to electrical control box.

\*\* NOTE TO SPECIFIER \*\* Delete electrical control boxes options not required.

* + - * 1. Electrical Control Box Rating: Standard, NEMA 1.
        2. Electrical Control Box Rating: NEMA 4.
        3. Electrical Control Boxes: As scheduled and indicated on Drawings.
        4. Wiring:

From Switches to Control Boxes: 18 gauge.

Low Voltage Wiring: Comply with requirements in electrical specifications.

\*\* NOTE TO SPECIFIER \*\* Delete controls options not required.

* + - * 1. Controls: Switches, standard; installation and wiring by others.

Description: Two push button switches wired in series with power controlled by a single, three position key switch.

Alert Function: One push button equipped with LED that flashes fault codes in case of an electrical system failure.

* + - * 1. Controls: Two touch screen operator stations.

Alert Function: Fault warning displayed in case of failure of electrical system.

Touch Screens: Two 4.3 inch (109 mm) resistive LCD screens per system.

Multilingual Capabilities: Required.

User Pin: 4-digits, adjustable.

Wiring: Wired in series; comply with requirements in electrical specifications.

* + - * 1. Controls: As indicated on Drawings.
    1. Operable Partitions: Automatic, vertically retractable acoustic walls. (Skyfold Classic)

\*\* NOTE TO SPECIFIER \*\* Delete basis of design options not required.

* + - 1. Basis of Design: Classic 51 as manufactured by Skyfold, Inc.
         1. Sound Transmission (ASTM E90, ISO 140-3): Installed systems.

STC Rating: 51.

Rw Value: 51.

* + - * 1. Sound Transmission (ASTM E90, ISO 140-3): Panel construction.

STC Rating: 61.

Rw Value: 60.

* + - * 1. Maximum Weight: 7.0 psf (34.2 kg per sq m); based on design of (LxH) 288 x 169 inches (7315 x 4293 high).
        2. Maximum Ceiling Height: 432 inches (10973 mm) finished ceiling heights.
      1. Basis of Design: Classic 55 as manufactured by Skyfold, Inc.
         1. Sound Transmission (ASTM E90, ISO 140-3): Installed systems.

STC Rating: 55.

Rw Value: 54.

* + - * 1. Sound Transmission (ASTM E90, ISO 140-3): Panel construction.

STC Rating: 61.

Rw Value: 60.

* + - * 1. Maximum Weight: 7.6 psf (37.1 kg per sq m); based on design of (LxH) 288 x 169 inches (7315 x 4293 mm).
        2. Maximum Ceiling Height: 432 inches (10973 mm) finished ceiling heights.
      1. Basis of Design: Classic 60 as manufactured by Skyfold, Inc.
         1. Sound Transmission (ASTM E90, ISO 140-3): Installed systems.

STC Rating: 60.

Rw Value: 59.

* + - * 1. Sound Transmission (ASTM E90, ISO 140-3): Panel construction.

STC Rating: 66.

Rw Value: 64.

* + - * 1. Maximum Weight: 9.4 psf (46 kg per sq m); based on design of (LxH) 288 x 169 inches (7315 x 4293 mm).
        2. Maximum Ceiling Height: 338 inches (8585 mm) finished ceiling heights.
      1. Basis of Design: Classic NRC as manufactured by Skyfold, Inc.
         1. Sound Absorption (ASTM C423, ISO 354): Up to 0.65 NRC rating.
         2. Sound Transmission (ASTM E90, ISO 140-3): Installed systems.

STC Rating: 50.

Rw Value: 49.

* + - * 1. Sound Transmission (ASTM E90, ISO 140-3): Panel construction.

STC Rating: 60.

Rw Value: 58.

* + - * 1. Maximum Weight: 7.5 psf (37 kg per sq m); based on design of (LxH) 288 x 169 inches (7315 x 4293 mm).
        2. Maximum Ceiling Height: 432 inches (10973 mm) finished ceiling heights.
      1. Basis of Design: Classic Series as manufactured by Skyfold, Inc.; model as scheduled and indicated on Drawings.
      2. Factory Assembly: Largest possible assemblies shipped to minimize work on site.
      3. Speed: Average 5 to 10 vertical ft (1.5 to 3 m) per min. to open, close.
      4. Stacking Height Ratio: From 1 to 5 through 1 to 10, depending on wall height.
      5. Durability: Design life of over 10,000 complete closed to opened to closed cycles.
      6. Concealed Hardware: No exposed hinges, brackets, screws; no part of mechanical system visible when operable wall is in the down or closed position.
      7. Vertical, Horizontal Joints Between Panels: Maximum 1/2 inch (13 mm) width.
      8. Sound Seals: Black.
         1. Maximum Joint Widths:

Between Panels and Floor or Panels and Ceiling: 2 inches (51 mm).

Between Panels and End Walls: 1 inches (25 mm).

* + - * 1. At Floors, Ceilings and End Walls: Automatically and acoustically seals without need for manual intervention.
        2. Deployment of End Seals: Touch screen button and directional symbol do not need to be held during the deployment of the end seals.
        3. End Seals: Do not come into contact end walls while operable wall is in motion; seals that rub or brush against the end walls are not acceptable.
      1. Removability of Panels:
         1. Each acoustical panel is individually removable using only a screw driver; no special tools or equipment required.
         2. Removal of single acoustical panel does not affect, dislocate, or cause the removal of adjacent panels or other acoustical panels.
      2. Panel Edges: Right angles, 1/16 inch (1.6 mm) radius.
      3. Panel Facing Under Finish: Steel; no bowing, oil canning, warping, waviness, surface deformation or discontinuity.
      4. Application of Finish: Railroaded onto panels, applied horizontally along panel length.
      5. Finishes: General.
         1. Materials: Non-combustible or fire-treated materials.
         2. Maximum Weight: 0.111 psf (0.542 kg per sq m).
         3. Maximum Thickness: 1/8 inch (3.2 mm).

\*\* NOTE TO SPECIFIER \*\* Delete finish options not required. Manufacturer must approve finish selected by Architect. Contact manufacturer for details. No brittle materials. Steel face of panels is compatible with wide variety of architectural finishes including but not limited to paint, wood veneer, fabric, specialty metal and vinyl. Skyfold Classic NRC only available with acoustically transparent fabric finish; fill in blank with fabric designation or delete. Pricing will vary depending on finish selection.

* + - 1. Finish Type: Acoustically transparent fabric finish, \_\_\_\_\_\_\_\_\_\_.
      2. Finish Type: As selected by Architect and approved by manufacturer of operable wall.
      3. Finish Type: As scheduled and indicated on Drawings.
      4. Operation:
         1. Folds and unfolds in an accordion style, with each panel moving at the same time and same rate; without manual labor.
         2. Comes automatically to rest once the fully down or fully up position is reached.
         3. The operable walls stop in a quick and positive fashion without coasting.

\*\* NOTE TO SPECIFIER \*\* Delete touch screen controls if not selected at the end of this article.

* + - * 1. Touch Screen Controls:

Touch screen button and directional symbol do not need to be held during the deployment of the end seals.

It is possible to partially open or close wall, stop it and then reverse operation.

Touch Screen Controls: Pressing and holding the up or down directional arrow symbol on one touch screen while simultaneously pressing and holding the button symbol on the second screen causes wall to move in selected direction.

* + - * 1. Open and Close: Two touch screen operator stations and 2 switches per operable wall, located on opposite sides of wall at opposite ends of wall, wired in series; when pressure is removed from either touch screen or switch, wall immediately stops.
        2. When Down or Closed:

Hard, rigid, flat, plumb wall made of grid of rectangular acoustical panels.

Two vertical planes of acoustical panels separated by acoustical air space.

\*\* NOTE TO SPECIFIER \*\* Delete ' when lifted or open' options not required.

* + - * 1. When Lifted or Open: Wall panels retract into a pocket in the ceiling.
        2. When Lifted or Open: Wall panels retract between roof joists.
        3. When Lifted or Open: Wall panels retract between built in bulkheads.
        4. When Lifted or Open: As indicated on Drawings.
      1. Safety Features:
         1. Brakes: Drive system equipped with a manual override and a brake release lever.

Electromagnetic Brake: Activates when power is lost to the system; minimum retarding torque rating equal to 200 percent of motor drive's full load torque.

\*\* NOTE TO SPECIFIER \*\* Delete emergency brake options not required.

Emergency Brake: Dynamic brake distinct, separate from electromagnetic brake; lowers wall at a controlled speed of no more than 150 percent of normal down speed in case of a catastrophic failure in motor drive's power train.

Emergency Brake: Distinct, separate from electromagnetic brake, completely halts downward motion of wall in case of catastrophic failure in power train.

Emergency Brake: As indicated on Drawings.

* + - * 1. Switches: Electrical or other limit switches to stop wall at its up and down travel limits.
        2. Over Torque Detector:

Mechanical, uses the motor's torque arm in its over torque detection.

Senses a jam in the system and acts as an over travel limit in the up direction should the primary limit switch fail to act.

* + - * 1. Bottom Edge: Continuous pressure sensing strip along entire length; if sensing edge comes in firm contact with an object, before operable wall is in the full down or closed position, then power is cut to the motor drive and electromagnetic brake is activated.
        2. Obstruction Removal: Automatically reverses direction and ascends for 3 seconds; power remains cut to motor drive until switches have been released.
      1. Folding Mechanism:
         1. Construction: Hanging, folding and extension mechanism made from structural grade aluminum extrusions and structural shapes to the greatest extent possible.
         2. Hangers: Designed to fasten lifting mechanism to support steel.

Materials: Steel.

Attachment: Welded or bolted to support steel.

* + - * 1. Wear Surfaces: Including but not limited to bushings, spacers, pins, discs, bearings, sleeves; designed to function quietly, with minimal wear over 10,000 cycle design life.
      1. Motor Drive:

\*\* NOTE TO SPECIFIER \*\* Delete options for system type not required.

* + - * 1. System: Standard motor drive.

Stacks in up or open position into width less than 65 inches (1651 mm).

Minimum Wall Length: 124 inches (3658 mm).

Design: Ball bearings used to the greatest extent possible instead of bushings and wear surfaces; chain or belt drive systems not acceptable.

Cables: 6 x 31 construction aircraft cable, galvanized steel; 1 per folding mechanism.

Drum Assembly: Cable wraps on yoyo drums; 2 safety wraps, multiple cable layers.

Flange Bearings: Located immediately on either side of drum assembly.

Line Shaft: Sized to minimize deflection and withstand required torque; supports and rotates cable drums.

* + - * 1. System: Micro drive system.

Stacks in up or open position into width less than 69 inches (1753 mm).

Minimum Wall Length: 132 inches (3353 mm).

Maximum Wall Length: 432 inches (10973 mm) long.

Maximum Wall Height: 108 inches (2743 mm).

* + - * 1. System: As scheduled and indicated on Drawings.
        2. Mounting: Motor drive assembly mounted directly above center line of operable wall; support steel only required at one location per wall system.
        3. Safety Features: Including but not limited to thermal protection, overload protection and quick acting fuses.
      1. Electrical: Three phase power supply to electrical control box.

\*\* NOTE TO SPECIFIER \*\* Delete electrical control boxes options not required.

* + - * 1. Electrical Control Box Rating: Standard, NEMA 1.
        2. Electrical Control Box Rating: NEMA 4.
        3. Electrical Control Boxes: As scheduled and indicated on Drawings.
        4. Wiring:

From Switches to Control Boxes: 18 gauge.

Low Voltage Wiring: Comply with requirements in electrical specifications.

\*\* NOTE TO SPECIFIER \*\* Delete controls options not required.

* + - * 1. Controls: Switches, standard; installation and wiring by others.

Description: Two push button switches wired in series with power controlled by a single, three position key switch.

Alert Function: One push button equipped with LED that flashes fault codes in case of an electrical system failure.

* + - * 1. Controls: Two touch screen operator stations.

Alert Function: Fault warning displayed in case of failure of electrical system.

Touch Screens: Two 4.3 inch (109 mm) resistive LCD screens per system.

Multilingual Capabilities: Required.

User Pin: 4-digits, adjustable.

Wiring: Wired in series; comply with requirements in electrical specifications.

* + - * 1. Controls: As indicated on Drawings.
    1. Operable Glass Partitions: Automatic, vertically retractable, acoustic, interior glass walls. (Skyfold Mirage)
       1. Basis of Design: Mirage as manufactured by Skyfold, Inc.
       2. Sound Transmission (ASTM E90, ISO 140-3): Panel construction.
          1. STC Rating: 33.
          2. Rw Value: 33.
       3. Factory Assembly: Largest possible assemblies shipped to minimize work on site.
       4. Framework: Manufacturer's standard silver metallic finish.
       5. Panels: Single glazed laminated glass, nominal 7/16 inch (11 mm) thickness.
       6. Maximum Weight: 7.5 psf (36.6 kg per sq m), not including the lifting equipment.
       7. Speed: Average 5 to 10 vertical ft (1.5 to 3 m) per min to open, close.
       8. Stacking Height Ratio: From 1 to 5 through 1 to 10, depending on wall height.
       9. Durability: Design life of over 10,000 complete closed to opened to closed cycles.
       10. Concealed Hardware: No exposed hinges, brackets, screws; no part of mechanical system visible when operable wall is in the down or closed position.
       11. Horizontal Joints Between Panels: Maximum 1/2 inch (13 mm) width.
       12. Sound Seals: Black.
           1. Maximum Joint Widths:

Between Panels and Floor or Panels and Ceiling: 2 inches (51 mm).

Between Panels and Wall Tracks: 3/4 inches (19 mm).

* + - * 1. At Floors, Ceilings and End Walls: Automatically and acoustically seals without need for manual intervention.
        2. Deployment of End Seals: Touch screen button and directional symbol do not need to be held during the deployment of the end seals.
        3. End Seals: Do not come into contact end walls while operable wall is in motion; seals that rub or brush against the end walls are not acceptable.
      1. Panel Edges: Right angles, 1/16 inch (1.6 mm) radius.
      2. Operation:
         1. Folds and unfolds in an accordion style without manual labor.
         2. Comes automatically to rest once the fully down or fully up position is reached.
         3. The operable walls stop in a quick and positive fashion without coasting.

\*\* NOTE TO SPECIFIER \*\* Delete touch screen controls if not selected at the end of this article.

* + - * 1. Touch Screen Controls:

Touch screen button and directional symbol do not need to be held during the deployment of the end seals.

It is possible to partially open or close wall, stop it and then reverse operation.

Touch Screen Controls: Pressing and holding the up or down directional arrow symbol on one touch screen while simultaneously pressing and holding the button symbol on the second screen causes wall to move in selected direction.

* + - * 1. Open and Close: Two touch screen operator stations and 2 switches per operable wall, located on opposite sides of wall at opposite ends of wall, wired in series; when pressure is removed from either touch screen or switch, wall immediately stops.
        2. When Down or Closed: Hard, rigid, flat, plumb wall.

\*\* NOTE TO SPECIFIER \*\* Delete ' when lifted or open' options not required.

* + - * 1. When Lifted or Open: Wall panels retract into a pocket in the ceiling.
        2. When Lifted or Open: Wall panels retract between roof joists.
        3. When Lifted or Open: Wall panels retract between built in bulkheads.
        4. When Lifted or Open: As indicated on Drawings.
      1. Safety Features:
         1. Brakes: Drive system equipped with a manual override and a brake release lever.

Electromagnetic Brake: Activates when power is lost to the system; minimum retarding torque rating equal to 200 percent of motor drive's full load torque.

\*\* NOTE TO SPECIFIER \*\* Delete emergency brake option not required.

Emergency Brake: Dynamic brake distinct, separate from electromagnetic brake; lowers wall at a controlled speed of no more than 150 percent of normal down speed in case of a catastrophic failure in motor drive's power train.

Emergency Brake: Distinct, separate from electromagnetic brake, completely halts downward motion of wall in case of catastrophic failure in power train.

* + - * 1. Switches: Electrical or other limit switches to stop wall at its up and down travel limits.
        2. Over Torque Detector:

Mechanical, uses the motor's torque arm in its over torque detection.

Senses a jam in the system and acts as an over travel limit in the up direction should the primary limit switch fail to act.

* + - * 1. Bottom Edge: Continuous pressure sensing strip along entire length; if sensing edge comes in firm contact with an object, before operable wall is in the full down or closed position, then power is cut to the motor drive and electromagnetic brake is activated.
        2. Obstruction Removal: Automatically reverses direction and ascends for 3 seconds; power remains cut to motor drive until switches have been released.
      1. Folding Mechanism:
         1. Construction: Hanging, folding and extension mechanism made from structural grade aluminum extrusions and structural shapes to the greatest extent possible.
         2. Hangers: Designed to fasten lifting mechanism to support steel.

Materials: Steel.

Attachment: Welded or bolted to support steel.

* + - * 1. Wear Surfaces: Including but not limited to bushings, spacers, pins, discs, bearings, sleeves; designed to function quietly, with minimal wear over 10,000 cycle design life.
      1. Motor Drive:
         1. Mounting: Directly above center line of operable wall; support steel only required at one location per wall system.
         2. Design: Ball bearings used to greatest extent possible instead of bushings and wear surfaces; chain or belt drive systems not acceptable.
         3. Safety Features: Including but not limited to thermal protection, overload protection and quick acting fuses.
         4. Cables: 6 x 31 construction aircraft cable, galvanized steel; 1 per folding mechanism.
      2. Electrical: Three phase power supply to electrical control box.

\*\* NOTE TO SPECIFIER \*\* Delete electrical control boxes options not required.

* + - * 1. Electrical Control Box Rating: Standard, NEMA 1.
        2. Electrical Control Box Rating: NEMA 4.
        3. Electrical Control Boxes: As scheduled and indicated on Drawings.
        4. Wiring:

From Switches to Control Boxes: 18 gauge.

Low Voltage Wiring: Comply with requirements in electrical specifications.

\*\* NOTE TO SPECIFIER \*\* Delete controls options not required.

* + - * 1. Controls: Installation and wiring by others.

Two push button switches wired in series with power controlled by a single, three position key switch.

Alert Function: One push button equipped with LED that flashes fault codes in case of an electrical system failure.

* + - * 1. Controls: Two touch screen operator stations.

Alert Function: Fault warning displayed in case of failure of electrical system.

Touch Screens: Two 4.3 inch (109 mm) resistive LCD screens per system.

Multilingual Capabilities: Required.

User Pin: 4-digits, adjustable.

Wiring: Wired in series; comply with requirements in electrical specifications.

* + - * 1. Controls: As indicated on Drawings.
    1. Operable Glass Partitions: Automatic, vertically retractable, acoustic, interior glass walls.
       1. Basis of Design: Prisma as manufactured by Skyfold, Inc.
       2. Performance and Design Requirements:
          1. Minimum Wall Length Without Modification: 11 ft 3 inches (3430 mm).
          2. Used for walls up to the following finished ceiling height: 12 ft (3660 mm).
          3. From a Fully Open Position: Wall must be able to go through its entire cycle of closing and opening without manual intervention.
          4. When Wall is Being Lowered (Closed): Must come to rest once it reaches the fully down position.
          5. When Wall is being Lifted (Opened): Must come to rest once it reaches the fully up position.
          6. The Operable Wall:

Acoustically seal against floor, end walls, and ceiling without manual intervention.

Floor Seals: Will leave a joint between the floor and the bottom acoustical panels no more than 1.5 inches (39 mm).

End Seals: Will not make contact with the end walls while wall is in motion and leave a joint between the panels and end walls no more than 0.75 inches (19 mm). Once wall is in the full down position, the end seals activate to establish seal.

Top Seals: Leave a joint between top acoustical panels and ceiling of the pocket.

Average Operational Speed: of 5 to 10 vertical ft per minute (1.5 to 3 meters per minute).

When Being Lowered (Closed):

Wall is to stop if bottom edge comes into firm contact with any object between it and the floor.

Wall will then reverse direction and ascend for 3 seconds to clear the object.

Regular operation of operable wall can resume once obstruction is removed.

* + - * 1. No exposed hinges, brackets, or screws. Minimal parts of mechanical system are to be visible when wall is in the down position.
        2. Acoustical Wall Panels: Nominally the same size, unless requested otherwise by the Architect.

Panel Edges: Right angled. Radius: 1/16 inch (1.6 mm) or less.

Shape: Rectangular.

Individually removable using only a screwdriver. No special tools or equipment is to be required.

Removal of a single acoustical panel will not affect, dislocate, or cause removal of any adjacent panels or other acoustical panels.

Weight: 14.0 lbs per sq ft (68.4 kg per sq m) not including motor drive.

Based on a 24 ft (7315 mm) long x 12 ft (3660 mm) high operable wall.

* + - * 1. Sound Transmission Class (STC) rating (Rw value): 51 (Rw 51)

Based on functioning operable wall, tested in full accordance and compliance with ASTM E90 (ISO 140-3).

* + - * 1. Design Life: 10,000 complete closed to opened to closed cycles.
      1. Operable Wall Operation:
         1. Closed: In the down position. Walls are hard, rigid, vertically stepped grid of rectangular panels.
         2. Opened: In the up position in a ceiling pocket, between roof joists, or up between built in bulkheads.
         3. Motion: Moves vertically upward or downward without the use of any manual labor.
      2. Operable Wall Controls:

\*\* NOTE TO SPECIFIER \*\* Delete scenario option not required. Scenario 1 is standard.

* + - * 1. Scenario 1: Uses two touch screen operator stations.

Pressing and holding the up or down directional arrow symbol on one touch screen while simultaneously pressing and holding the button symbol on the second screen causes wall to move in selected direction.

When Hand Pressure is Removed: Wall makes an immediate positive stop without coasting.

The wall may be partially opened or closed, stopped, and then reverse the operation.

Operator Stations: 2 per operable wall, located on opposite sides of wall, at opposite ends of wall; wired in series.

Fault Conditions: Screens will display faults in case of a failure with electrical system.

* + - * 1. Scenario 2: Uses two push button switches wired in series. Power is controlled by a single, three position key switch.

Turning key from "off" position will cause the wall to move in the designated direction "up" or "down" once both push buttons are depressed.

When Hand Pressure is Removed: Wall makes an immediate positive stop without coasting.

The wall may be partially opened or closed, stopped, and then reverse the operation.

Operator Stations: 2 per operable wall, located on opposite sides of wall, at opposite ends of wall; wired in series.

Fault Conditions: One switch to be equipped with an LED that flashes fault codes in case of a failure with electrical system.

\*\* NOTE TO SPECIFIER \*\* Delete motor assembly mounting options not required.

* + - 1. Motor Assembly Mounting: Perpendicular to wall, directly above centre line of operable wall. Support steel is required at the partition and the drive location.
      2. Motor Assembly Mounting: Offset to the side of the wall.
      3. Motor Assembly Mounting: End mounted.
      4. Electrical:
         1. Three-phase power supply to electrical control box.

\*\* NOTE TO SPECIFIER \*\* Delete control box not required.

* + - * 1. Standard Electrical Control Box: NEMA 1.
        2. Standard Electrical Control Box: NEMA 4.
        3. Low Voltage Wiring: 18 gauge wiring from switches to control box.
        4. Touch Screen Operator Stations: 2, 4.3 inch ( mm) resistive LCD touch screens, wired in series. Multilingual capable. 4-digit adjustable user pin.

Screens display faults in case of a failure with electrical system.

* + - * 1. Switch Operator Station: 2, push button switches wired in series with power controlled by a single, three position key switch.

One switch to be equipped with an LED that flashes fault codes in case of a failure with electrical system.

* + - 1. Safety Equipment:
         1. Electromagnetic Brake: Activates, with no hesitation, when system loses power.

Retarding Torque Rating: 200 percent of power drive full load torque.

* + - * 1. Drive System: Equipped with manual override and brake release lever.
        2. Dynamic Brake; Lowers wall at controlled speed, no more than 150 percent of normal down speed, in case of catastrophic power train failure.
        3. Limits Switches: Electrical or other. To stop the wall at the up and down travel limits.
        4. Over Torque Detector: To sense a system jam and act as an over travel limit in the up direction should limit switch fail to act.

Over Torque Sensor: Mechanical, using the motor's torque arm in its over torque detection.

* + - * 1. Meet the latest industry standards in thermal protection, overload protection, quick acting fuses, etc., to ensure system safety and reliability.
      1. Panel Construction: Operable wall with twin single laminated glass panels.
         1. Panels: Flat. No bowing, oil canning, warping, waviness or other surface deformation and discontinuity. See appropriate Division 8 sections for glazing requirements.
         2. Wall Panel Rows: Visibly flat and rigid in the down (closed) position.
      2. Hanging, Folding, and Extension Mechanism:
         1. Made primarily of structural grade aluminum extrusions and shapes minimizing system weight.
         2. Wear Surfaces: Design bushings, spacers, pins, discs, bearings, sleeves to function quietly with minimum wear, over 10,000 cycle design life of operable wall.
         3. Steel Hangers: Fasten lifting mechanism to support steel.

To be welded or bolted to support steel supplied by others.

* + - 1. Lifting Equipment: Sized to open and close wall over 10,000 cycles.
         1. Lifting Mechanism: Designed to function smoothly, quietly, and safely as possible.

Ball Bearings: Wherever possible. Minimize bushings and wear surfaces.

Chain or Belt Drive Systems: Not acceptable.

* + - * 1. Wire Rope Cable: For every lifting mechanism set.

Construction Aircraft Cable: 6 x 31 galvanized steel.

Cable Diameter: Sized to hold weight of wall, with appropriate safety factor.

* + - * 1. Power Drive: Sized to deliver enough torque to raise and lower the operable wall over its design life safely and effectively.
      1. Finishes:
         1. Acoustical Panels: Tempered, laminated glass. Thickness: 1/2 inch (12.5 mm)
         2. Framework: Painted. RAL Code Color: \_\_\_\_\_\_\_\_.
         3. Sound Seals: Black.

1. EXECUTION
   1. EXAMINATION AND PREPARATION
      1. Prepare openings and substrates using the methods recommended by the manufacturer for achieving best result for the substrates under project conditions.
      2. Do not proceed with installation until openings and substrates have been prepared using methods recommended by manufacturer and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.
      3. Site Conditions: Inspect relevant aspects of the site including but not limited to the evenness of the floor, walls, and structural steel; ensure that these are within tolerances stated below.
         1. Floor Underneath Operable Wall Along its Axis: Flat to within 1/4 inch (6 mm) over entire length of operable wall.
         2. Peak to Valley Undulation:
            1. Plus or minus 1/4 inch (6 mm), not closer together than 24 inches (610 mm).
            2. Plus or minus 1/8 inch (3 mm), not closer together than 12 inches (305 mm).
         3. Support Steel Above Operable Wall Along its Axis Parallel to Floor: Within 1/2 inch (13 mm) over entire length of operable wall; including loaded deflection.
         4. Beams Parallel to Center Line of Operable Wall: Within 1/8 inch (3 mm) left to right.
         5. Fixed Walls at Either End of Operable Wall: Within 1/4 inch (6 mm) from plumb vertical.
         6. Fixed Walls at Either End of Operable Wall: Flat to within 1/4 inch (6 mm).
      4. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
   2. INSTALLATION
      1. Install in accordance with manufacturer's written instructions, approved submittals and in proper relationship with adjacent construction; carry out field measurements before manufacturing components or assemblies.

\*\* NOTE TO SPECIFIER \*\* Delete ASTM E557 compliance option unless Skyfold Mirage automatic, vertically retractable, acoustic interior glass walls are specified in Part 2.

* + - 1. Compliance: Installation in accordance with ASTM E557 installation procedure.
  1. FIELD QUALITY CONTROL
     1. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.

\*\* NOTE TO SPECIFIER \*\* Delete manufacturer's services for all unless Skyfold Mirage automatic, vertically retractable, acoustic interior glass walls are specified in Part 2. The manufacturer, Skyfold, provides field quality control with onsite personnel for instruction or supervision of product installation, application, erection, and construction.

* + 1. Manufacturer's Services:
       1. Coordinate manufacturer's services in accordance with appropriate sections in Division 01.
       2. Installation by an authorized factory trained installer.
  1. TESTING AND ADJUSTING
     1. Adjust and fine-tune the operable walls to ensure that all seals are operating and sealing properly and that the operable walls are in correct and smooth operation.
  2. CLEANING AND PROTECTION
     1. Clean and protect products in accordance with the manufacturer's recommendations.
     2. Touch-up, repair or replace damaged products before Substantial Completion.
  3. MAINTENANCE
     1. Maintenance Program: Owner is responsible for providing parts and labor required to maintain operable wall parts subject to normal wear and tear, in accordance with manufacturer's recommended maintenance program.

END OF SECTION