

SECTION 08330

COILING DOORS AND GRILLES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Overhead coiling service doors.
- B. Overhead coiling insulated service doors.
- C. Overhead coiling fire doors.
- D. Overhead coiling counter fire shutters.
- E. Overhead coiling counter smoke shutters.
- F. Overhead coiling counter fire shutters with integral frame.
- G. Overhead coiling counter shutters with integral frame.
- H. Overhead coiling counter shutters.
- I. Overhead coiling grilles.
- J. Side coiling doors.
- K. Side coiling grilles.
- L. Motor operators.
- M. Accessories.

1.2 RELATED SECTIONS

- A. Section 03300 - Cast-In-Place Concrete: Recess (pit) in floor slab for track and coil box of side coiling units.
- B. Section 05120 - Structural Steel.
- C. Section 08710 - Finish Hardware: Padlocks and lock cylinders.
- D. Section 08310 - Access Doors and Panels.
- E. Section 09900 - Paints and Coatings.

- F. Section 16150 - Wiring Connections: Electrical wiring, conduit, and disconnects.

### 1.3 REFERENCES

- A. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- B. NFPA 70 - National Electrical Code.
- C. NFPA 80 - Fire Doors and Windows.

### 1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide manufacturer's standard details and catalog data. Provide installation instructions.
- C. Shop Drawings: Submit for approval the following:
  - 1. Shop drawings for the fabrication and installation of curtains and frames. Include details of each frame type, elevations, conditions at openings, details of construction, location, installation requirements of finished hardware and reinforcements, and details of joints and connections.
  - 2. Schedule openings using same reference numbers for details and openings as those on the drawings.
- D. Advise the Architect in writing should any doors be ineligible for standard fire resistance labels due to door size, hardware, vision openings, or other features required by the Contract Documents.
- E. Submit manufacturer's recommended operation, cleaning, and maintenance instructions.

### 1.5 QUALITY ASSURANCE

- A. Fire Rated Assemblies: Tested by one of the following and bearing label indicating conditions of use:
  - 1. Underwriters Laboratories, Inc.
  - 2. Factory Mutual.
  - 3. California State Fire Marshal.
  - 4. Underwriters Laboratories of Canada.
  - 5. Warnock-Hersey.
- B. Smoke Doors: Comply with requirements of the following:
  - 1. ICBO Uniform Building Code.

2. BOCA National Building Code.
3. SBCCI Standard Building Code.
4. Underwriters Laboratories, Inc.
5. Factory Mutual.
6. California State Fire Marshal.
7. Underwriters Laboratories of Canada.
8. Warnock-Hersey.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products indoors and protect from moisture, construction traffic, and damage.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURER

- A. Provide Atlas Door(tm) brand products manufactured by Clopay Building Products Company, 10407 Rocket Blvd., Orlando, FL 32824-8512. ASD. Tel: (407) 857-0680 or (800) 959-9559, Fax: (407) 859-9770.

#### 2.2 OVERHEAD COILING SERVICE DOORS

- A. Provide Model "S" Series Rolling Service Doors.
  1. Operation: Manual push-up.
  2. Operation: Chain hoist.
  3. Operation: Waist high crank hoist.
  4. Operation: Awning crank.
  5. Operation: Motor operator.
  6. Mounting: Interior face mounted on prepared opening.
  7. Mounting: Interior mounted between jambs and under lintel in a prepared opening.
  8. Mounting: Exterior mounted.
- B. Curtain and Bottom Bar:
  1. Slat material: Galvanized steel, cold roll formed in continuous lengths to form curtains; zinc coated, ASTM A 653/A 653M.
  2. Slat material: Stainless steel, cold roll formed in continuous lengths to form curtains.
  3. Slat material: Aluminum, cold roll formed in continuous lengths to form curtains.
    - a. Perforations: 1/16 inch diameter holes located on 3/32 inch staggered centers.
  4. Slat material: Aluminum, extruded in continuous lengths to form curtains; flat shape.

5. Slat finish: Powder coat colored finish on both sides of slat. Color: \_\_\_\_\_.
  6. Slat finish: Primed, gray or tan.
  7. Slat finish: Mill finish.
  8. Slat finish: Clear anodized finish.
  9. Slat finish: Bronze anodized (duranodic) finish.
  10. Slat shape: Flat slat.
  11. Slat shape: Curved slat.
  12. Slat gage: As required by width of opening and wind loading of 20 PSF or 87 MPH in the fully closed position.
  13. Slat gage: Not less than 22 gage.
  14. Slat gage: Not less than 20 gage.
  15. Slat gage: Not less than 18 gage.
  16. Slat gage: Not less than 16 gage.
  17. Endlocks:
    - a. Each end of alternate slats to be fitted with endlocks to act as a wearing surface in the guides and to maintain slat alignment.
    - b. Continuous endlocks.
    - c. Material: Stamped steel.
    - d. Material: Malleable iron.
    - e. Material: Brass.
  18. Bottom bar: Reinforce curtain bottom with angles, material to match curtain material.
    - a. Provide astragal weather seal.
    - b. Slope bottom bar to match contour in finished floor.
    - c. Notch bottom bar to match obstructions in finished floor.
  19. Vision lights: Clear acrylic plastic sections over individual slat cutouts, each 5 inches by 3/4 inch, in sets of 15 cutouts, five slats high, three cutouts wide.
  20. Fenestrated slats: Individual slat cutouts each 5 inches by 3/4 inch high.
- C. Hood:
1. Material: 24 gage galvanized steel.
  2. Material: 22 gage galvanized steel.
  3. Material: 20 gage galvanized steel.
  4. Material: Stainless steel.
  5. Material: Aluminum.
  6. Shape: Round.
  7. Shape: Square.
  8. Finish: Same as for curtain.
  9. Finish: Powder coat colored finish. Color: \_\_\_\_\_.
  10. Finish: Primed, gray or tan.

11. Finish: Mill finish.
  12. Finish: Clear anodized finish.
  13. Finish: Bronze anodized (duranodic) finish.
- D. Provide the following, as specified in COMPONENTS article:
1. Stop lock bearing.
  2. Pass door.
  3. Transom panel.
  4. Removable mullion.
  5. Motorized mullion.
- E. Locking:
1. Manual push-up doors: Slide bolts on bottom bar, suitable for padlocks.
  2. Chain hoist doors: Locking bracket mounted on guide angle, suitable for padlock.
  3. Waist high crank hoist doors: Locking disc on crank box, suitable for padlock.
  4. Awning crank operated doors: Mechanical locking by removal of crank arm and integral gearing of crank.
  5. Motor operated doors: Integral gearing of motor operator to provide locking for door.
  6. Cylinder lock on bottom bar.
- F. Weatherstripping:
1. "All Weather" fully weatherstripped sill, hood, and guides.
  2. Neoprene hood baffle in hood to minimize air infiltration.
  3. Guide weatherstripping on both sides of curtain.

### 2.3 OVERHEAD COILING INSULATED SERVICE DOORS

- A. Provide Model "T" Series Thermal Doors.
1. Operation: Chain hoist.
  2. Operation: Waist high crank hoist.
  3. Operation: Awning crank.
  4. Operation: Motor operator.
  5. Mounting: Interior face mounted on prepared opening.
  6. Mounting: Interior mounted between jambs and under lintel in a prepared opening.
  7. Mounting: Exterior mounted.
- B. Curtain and Bottom Bar:
1. Slats: Type "T3" insulated slats; 2-5/8 inches high x 7/8 inch thick; U-value 0.16; cold roll formed

interlocking front and back slats, assembled in continuous lengths to form curtains.

2. Slat material: Galvanized steel; zinc coated, ASTM A 653/A 653M.
3. Slat material: Stainless steel, both front and back slats.
4. Slat material: Aluminum, both front and back slats.
5. Slat finish: Powder coat colored finish on both sides of slat. Color: \_\_\_\_\_.
6. Slat finish: Primed, gray or tan.
7. Slat finish: Mill finish.
8. Slat finish: Clear anodized finish.
9. Slat finish: Bronze anodized (duranodic) finish.
10. Slat gage: As required by width of opening and wind loading of 20 PSF or 87 MPH in the fully closed position.
11. Slat gage: Opposite coil side face not less than 22 gage.
12. Slat gage: Opposite coil side face not less than 20 gage.
13. Slat gage: Opposite coil side face not less than 18 gage.
14. Insulation: Environmentally safe CFC-free polyurethane foam injected to fill all voids and to provide continuous insulation protection the full height of the slat, including slat interlocks. Self bonding to interior slat surfaces. R-value, 6.25.
15. Endlocks:
  - a. Each end of alternate slats to be fitted with endlocks to act as a wearing surface in the guides and to maintain slat alignment.
  - b. Continuous endlocks.
  - c. Material: Stamped steel.
  - d. Material: Malleable iron.
  - e. Material: Brass.
16. Bottom bar: Reinforce curtain bottom with angles, material to match curtain material.
  - a. Provide astragal weather seal.
  - b. Slope bottom bar to match contour in finished floor.
  - c. Notch bottom bar to match obstructions in finished floor.
17. Vision lights: Insulated, clear double acrylic plastic sections over individual slat cutouts, each 5 inches by 3/4 inch, in sets of 3 cutouts wide.
18. Guide weatherstripping on both sides.

C. Hood:

1. Material: 24 gage galvanized steel.
2. Material: 22 gage galvanized steel.
3. Material: 20 gage galvanized steel.
4. Material: Stainless steel.
5. Material: Aluminum.
6. Shape: Round.
7. Shape: Square.
8. Finish: Same as for curtain.
9. Finish: Powder coat colored finish. Color: \_\_\_\_\_.
10. Finish: Primed, gray or tan.
11. Finish: Mill finish.
12. Finish: Clear anodized finish.
13. Finish: Bronze anodized (duranodic) finish.
14. Neoprene hood baffle in hood to minimize air infiltration.

D. Provide the following, as specified in COMPONENTS article:

1. Stop lock bearing.
2. Transom panel.
3. Removable mullion.
4. Motorized mullion.
5. Pass door.

E. Locking:

1. Chain hoist doors: Locking bracket mounted on guide angle, suitable for padlock.
2. Waist high crank hoist doors: Locking disc on crank box, suitable for padlock.
3. Awning crank operated doors: Mechanical locking by removal of crank arm and integral gearing of crank.
4. Motor operated doors: Integral gearing of motor operator to provide locking for door.
5. Cylinder lock on bottom bar.

## 2.4 OVERHEAD COILING FIRE DOORS

A. Provide Model "F" Series Rolling Fire Doors.

1. Ratings as indicated on the drawings and schedules.
2. Operation: Manual push-up.
3. Operation: Chain hoist.
4. Operation: Waist high crank hoist.
5. Operation: Awning crank.
6. Operation: Motor operator.
7. Mounting: Interior face mounted on prepared opening.
8. Mounting: Interior mounted between jambs and under lintel in a prepared opening.

- B. Curtain and Bottom Bar:
1. Slat material: Galvanized steel, cold roll formed in continuous lengths to form curtains; zinc coated, ASTM A 653/A 653M.
  2. Slat material: Stainless steel, cold roll formed in continuous lengths to form curtains.
  3. Slat finish: Powder coat colored finish on both sides of slat. Color: \_\_\_\_\_.
  4. Slat finish: Primed, gray or tan.
  5. Slat shape: Flat slat.
  6. Slat shape: Curved slat.
  7. Slat gage: As required by testing laboratory requirements.
  8. Slat gage: Not less than 22 gage.
  9. Slat gage: Not less than 20 gage.
  10. Slat gage: Not less than 18 gage.
  11. Slat gage: Not less than 16 gage.
  12. Endlocks:
    - a. Each end of alternate slats to be fitted with endlocks to act as a wearing surface in the guides and to maintain slat alignment.
    - b. Continuous endlocks.
    - c. Material: Stamped steel.
    - d. Material: Malleable iron.
  13. Bottom bar: Reinforce curtain bottom with angles, material to match curtain material. Lift handles on both sides of curtain.
    - a. Provide astragal.
- C. Governor: Oscillating type as required to control speed of descent.
- D. Governor: Viscous speed governor.
- E. Hood:
1. Material: 24 gage galvanized steel.
  2. Material: 22 gage galvanized steel.
  3. Material: 20 gage galvanized steel.
  4. Material: Stainless steel.
  5. Shape: Round.
  6. Shape: Square.
  7. Finish: Same as for curtain.
  8. Finish: Powder coat colored finish. Color: \_\_\_\_\_.
  9. Finish: Primed, gray or tan.
  10. Provide through-the-wall fuse link.
  11. Provide flame baffle in hood to prevent passage of smoke and flame.



- F. Provide the following, as specified in COMPONENTS article:
1. Transom panel.
- G. Locking:
1. Manual push-up doors: Slide bolts on bottom bar, suitable for padlocks.
  2. Chain hoist doors: Locking bracket mounted on guide angle, suitable for padlock.
  3. Waist high crank hoist doors: Locking disc on crank box, suitable for padlock.
  4. Awning crank operated doors: Mechanical locking by removal of crank arm and integral gearing of crank.
  5. Motor operated doors: Integral gearing of motor operator to provide locking for door.
  6. Cylinder lock on bottom bar.
- H. Control/Release Devices:
1. Electrical thermal links.
  2. "McCabe Fuse" links.
    - a. Model: \_\_\_\_\_.
    - b. Voltage: \_\_\_\_\_.
  3. Ionization type smoke detectors located where indicated.
  4. Ionization type smoke detectors on both sides of wall.
  5. Photoelectric type smoke detectors located where indicated.
  6. Photoelectric type smoke detectors on both sides of wall.
  7. "Fire Scout" Release Device: Continuously energized fail safe unit to release door when power is interrupted; release when current is applied on signal from detector or alarm system; adjustable time delay.
    - a. 110 VAC.
    - b. 24 VAC.
    - c. 24 VDC.
    - d. 12 VDC.
  8. Type "AR" magnetic holder: Release when current is applied on signal from detector or alarm system; adjustable time delay. 110 VAC.
  9. "Firepower" test system.
  10. "Firepower II" test system.

## 2.5 OVERHEAD COILING COUNTER FIRE SHUTTERS

- A. Provide Model "L" Series Counter Fire Shutters.

1. Ratings as indicated on the drawings and schedules.
  2. Operation: Manual push-up.
  3. Operation: Awning crank.
  4. Operation: Motor operator.
  5. Mounting: Interior face mounted on prepared opening.
  6. Mounting: Interior mounted between jambs and under lintel in a prepared opening.
- B. Curtain and Bottom Bar:
1. Slat material: Galvanized steel, cold roll formed in continuous lengths to form curtains; zinc coated, ASTM A 653/A 653M; primed, gray or tan.
  2. Slat material: Stainless steel, cold roll formed in continuous lengths to form curtains.
  3. Slat finish: Powder coat colored finish on both sides of slat. Color: \_\_\_\_\_.
  4. Endlocks: Each end of alternate slats to be fitted with endlocks to act as a wearing surface in the guides and to maintain slat alignment.
  5. Bottom bar: Reinforce curtain bottom with material to match curtain material. Lift handles on both sides of curtain. Provide astragal.
- C. Governor: Oscillating type as required to control speed of descent.
- D. Governor: Viscous speed governor.
- E. Guides: Steel, constructed in accordance with tested assembly.
1. Material: Galvanized steel, primed gray or tan.
  2. Material: Stainless steel.
- F. Hood:
1. Material: Galvanized steel, primed gray or tan.
  2. Material: Stainless steel.
  3. Finish: Same as for curtain.
  4. Finish: Powder coat colored finish. Color: \_\_\_\_\_.
  5. Provide through-the-wall fuse link.
  6. Provide flame baffle in hood to prevent passage of smoke and flame.
- G. Sill/Countertop: Fire-rated construction, same rating as shutter.
1. Material: Galvanized steel.
  2. Material: Stainless steel.
  3. Material: Plastic laminate.
  4. Construction as indicated.

- H. Locking:
1. Manual push-up shutters: Slide bolts on bottom bar, suitable for padlocks.
  2. Awning crank operated shutters: Mechanical locking by removal of crank arm and integral gearing of crank.
  3. Motor operated shutters: Integral gearing of motor operator to provide locking for shutter.
  4. Cylinder lock on bottom bar.

- I. Control/Release Devices:
1. Electrical thermal links.
  2. "McCabe Fuse" links.
  3. Ionization type smoke detectors located where indicated.
  4. Ionization type smoke detectors on both sides of wall.
  5. Photoelectric type smoke detectors located where indicated.
  6. Photoelectric type smoke detectors on both sides of wall.
  7. "Firescout" release device. Continuously energized fail safe unit to release door when power is interrupted; release when current is applied on signal from detector or alarm system; adjustable time delay.
    - a. 110 VAC.
    - b. 24 VAC.
    - c. 24 VDC.
    - d. 12 VDC.
  8. Type "AR" magnetic holder: Release when current is applied on signal from detector or alarm system; adjustable time delay. 110 VAC.
  9. "Firepower" test system.
  10. "Firepower II" test system.

## 2.6 OVERHEAD COILING COUNTER SMOKE SHUTTERS

- A. Provide Model "J" Series Labeled Counter Smoke Shutters.
1. Ratings as indicated on the drawings and schedules.
  2. Operation: Manual push-up.
  3. Operation: Awning crank.
  4. Operation: Motor operator.
  5. Mounting: Interior face mounted on prepared opening.
  6. Mounting: Interior mounted between jambs and under lintel in a prepared opening.

- B. Curtain and Bottom Bar:

1. Slat material: Galvanized steel, cold roll formed in continuous lengths to form curtains; zinc coated, ASTM A 653/A 653M; primed, gray or tan.
  2. Slat material: Stainless steel, cold roll formed in continuous lengths to form curtains.
  3. Slat finish: Powder coat colored finish on both sides of slat. Color: \_\_\_\_\_.
  4. Vision Light: 1/2 inch wire glass in one slat cutout 5 inches wide x 5/8 inch high.
  5. Endlocks: Each end of alternate slats to be fitted with endlocks to act as a wearing surface in the guides and to maintain slat alignment.
  6. Bottom bar: Reinforce curtain bottom with material to match curtain material. Lift handles on both sides of curtain. Provide astragal smoke seal in accordance with tested assembly.
- C. Governor: Oscillating type as required to control speed of descent.
- D. Guides: Constructed in accordance with tested assembly.
1. Material: Galvanized steel, primed gray or tan.
  2. Material: Stainless steel.
- E. Hood: Provide smoke seal in accordance with tested assembly.
1. Material: Galvanized steel, primed gray or tan.
  2. Material: Stainless steel.
  3. Finish: Same as for curtain.
  4. Finish: Powder coat colored finish. Color: \_\_\_\_\_.
  5. Provide through-the-wall fuse link.
  6. Provide flame baffle in hood to prevent passage of smoke and flame.
- F. Sill/Countertop: Smoke-rated construction, same rating as shutter.
1. Material: Galvanized steel.
  2. Material: Stainless steel.
  3. Material: Plastic laminate.
  4. Construction as indicated.
- G. Locking:
1. Manual push-up shutters: Slide bolts on bottom bar, suitable for padlocks.
  2. Awning crank operated shutters: Mechanical locking by removal of crank arm and integral gearing of crank.
  3. Motor operated shutters: Integral gearing of motor operator to provide locking for shutter.

4. Cylinder lock on bottom bar.

H. Control/Release Devices:

1. Electrical thermal links.
2. "McCabe Fuse" links.
  - a. Model: \_\_\_\_\_.
  - b. Voltage: \_\_\_\_\_.
3. Ionization type smoke detectors located where indicated.
4. Ionization type smoke detectors on both sides of wall.
5. Photoelectric type smoke detectors located where indicated.
6. Photoelectric type smoke detectors on both sides of wall.
7. "Firescout" release device. Continuously energized fail safe unit to release door when power is interrupted; release when current is applied on signal from detector or alarm system; adjustable time delay.
  - a. 110 VAC.
  - b. 24 VAC.
  - c. 24 VDC.
  - d. 12 VDC.
8. Type "AR" magnetic holder: Release when current is applied on signal from detector or alarm system; adjustable time delay. 110 VAC.
9. "Firepower" test system.
10. "Firepower II" test system.

2.7 OVERHEAD COILING COUNTER FIRE SHUTTERS WITH INTEGRAL FRAME

A. Provide Model "R" Series Integral Frame Shutters, fully factory-assembled.

1. Rating: As indicated on drawings.
2. Operation: Manual push-up.
3. Mounting: Set in pass-through wall opening during wall construction.

B. Curtain and Bottom Bar:

1. Slat material: Galvanized steel, cold roll formed in continuous lengths to form curtains; zinc coated, ASTM A 653/A 653M; primed gray or tan.
2. Slat material: Stainless steel, cold roll formed in continuous lengths to form curtains.
3. Slat finish: Powder coat colored finish on both sides of slat. Color: \_\_\_\_\_.

4. Endlocks: Each end of alternate slats to be fitted with endlocks to act as a wearing surface in the guides and to maintain slat alignment.
  5. Bottom bar: Reinforce curtain bottom with material to match curtain material. Lift handles on both sides of curtain. Provide astragal.
- C. Hood, Frame, and Fascia: Guides integral with frame construction.
1. Material: Galvanized steel, primed gray.
  2. Material: Stainless steel.
  3. Hood and Frame: Not less than 16 gage.
  4. Integral anchors suitable for wall construction (masonry, steel, wood).
  5. Provide through-the-wall fuse link.
- D. Sill: Integral with frame construction; not less than 14 gage; filled with 2-1/2 lb spintex insulation.
1. Material: Galvanized steel, primed gray.
  2. Material: Stainless steel.
- E. Locking:
1. Slide bolts on bottom bar, suitable for padlocks.
  2. Cylinder lock on bottom bar.
- F. Control/Release Devices:
1. Electrical thermal links.
  2. "McCabe Fuse" links.
    - a. Model: \_\_\_\_\_.
    - b. Voltage: \_\_\_\_\_.
  3. Ionization type smoke detectors located where indicated.
  4. Ionization type smoke detectors on both sides of wall.
  5. Photoelectric type smoke detectors located where indicated.
  6. Photoelectric type smoke detectors on both sides of wall.
  7. "Firescout" release device. Continuously energized fail safe unit to release door when power is interrupted; release when current is applied on signal from detector or alarm system; adjustable time delay.
    - a. 110 VAC.
    - b. 24 VAC.
    - c. 24 VDC.
    - d. 12 VDC.

8. Type "AR" magnetic holder: Release when current is applied on signal from detector or alarm system; adjustable time delay. 110 VAC.

## 2.8 OVERHEAD COILING COUNTER SHUTTERS WITH INTEGRAL FRAME

- A. Provide Model "P" Series Integral Frame Shutters.
  1. Operation: Manual push-up.
  2. Mounting: Set in pass-through wall opening during wall construction without additional field assembly.
  3. Mounting: Split-frame, for existing wall opening; no other field assembly.
  
- B. Curtain and Bottom Bar:
  1. Slat material: Galvanized steel, cold roll formed in continuous lengths to form curtains; zinc coated, ASTM A 653/A 653M; primed gray or tan.
  2. Slat material: Stainless steel, cold roll formed in continuous lengths to form curtains.
  3. Slat material: Aluminum, 6063 alloy, extruded in continuous lengths to form curtains.
  4. Slat finish: Powder coat colored finish on both sides of slat. Color: \_\_\_\_\_.
  5. Slat finish: Clear anodized finish.
  6. Slat finish: Bronze anodized (duranodic) finish.
  7. Slat finish: Bronze painted finish.
  8. Endlocks: Each end of alternate slats to be fitted with endlocks to act as a wearing surface in the guides and to maintain slat alignment.
  9. Bottom bar: Reinforce curtain bottom with material to match curtain material; provide astragal.
  
- C. Hood, Frame, and Fascia: Guides integral with frame construction.
  1. Material: Galvanized steel, primed gray.
  2. Material: Stainless steel.
  3. Hood and Frame: Not less than 16 gage.
  4. Integral anchors suitable for wall construction (masonry, steel, wood).
  5. Split Frame: Two-piece frame fabricated to be installed in existing opening.
  
- D. Sill: Integral with frame construction; not less than 14 gage.
  1. Material: Galvanized steel, primed gray.
  2. Material: Stainless steel.
  
- E. Locking:

1. Slide bolts on bottom bar, suitable for padlocks.
2. Cylinder lock on bottom bar.

## 2.9 OVERHEAD COILING COUNTER SHUTTERS

- A. Provide Model "C" Series Rolling Counter Shutters.
1. Operation: Manual push-up.
  2. Operation: Awning crank.
  3. Operation: Motor operator.
  4. Mounting: Interior face mounted on prepared opening.
  5. Mounting: Interior mounted between jambs and under lintel in a prepared opening.
- B. Curtain and Bottom Bar:
1. Slat material: Galvanized steel, cold roll formed in continuous lengths to form curtains; zinc coated, ASTM A 653/A 653M; primed gray or tan.
  2. Slat material: Stainless steel, cold roll formed in continuous lengths to form curtains.
  3. Slat material: Aluminum, 6063 alloy, extruded in continuous lengths to form curtains.
  4. Slat finish: Powder coat colored finish on both sides of slat. Color: \_\_\_\_\_.
  5. Slat finish: Clear anodized finish.
  6. Slat finish: Bronze anodized (duranodic) finish.
  7. Endlocks: Each end of alternate slats to be fitted with endlocks to act as a wearing surface in the guides and to maintain slat alignment.
  8. Bottom bar: Reinforce curtain bottom with material to match curtain material; provide astragal.
  9. Vision lights: Clear acrylic plastic sections over individual slat cutouts, each 5 inches by 3/4 inch, in sets of 15 cutouts, five slats high, three cutouts wide.
  10. Fenestrated slats: Individual slat cutouts each 5 inches by 3/4 inch high.
- C. Guide Assembly:
1. Guides: Extruded aluminum, 6063 alloy, with integral wear strips for contact with slats.
  2. Retainer: Integral curtain retainer.
  3. Trim: Same extruded material as guides to cover fasteners.
  4. Finish: Clear anodized.
  5. Finish: Bronze anodized (duranodic).
- D. Hood: Square-shaped.



1. Material: Galvanized steel, primed gray or tan.
2. Material: Aluminum.
3. Finish: Same as for curtain.
4. Finish: Powder coat colored finish. Color: \_\_\_\_\_.
5. Finish: Mill finish.
6. Finish: Clear anodized finish.
7. Finish: Bronze anodized (duranodic) finish.

E. Provide the following, as specified in COMPONENTS article:

1. Removable mullion.
2. Fixed mullion.

F. Locking:

1. Manual push-up shutters: Slide bolts on bottom bar, suitable for padlocks.
2. Awning crank operated shutters: Mechanical locking by removal of crank arm and integral gearing of crank.
3. Motor operated shutters: Integral gearing of motor operator to provide locking for shutter.
4. Cylinder lock on bottom bar.

## 2.10 OVERHEAD COILING GRILLES

A. Provide Model "G" Series Rolling Grilles.

1. Operation: Manual push-up.
2. Operation: Chain hoist.
3. Operation: Waist high crank hoist.
4. Operation: Awning crank.
5. Operation: Motor operator.
6. Mounting: Interior face mounted on prepared opening.
7. Mounting: Interior mounted between jambs and under lintel in a prepared opening.
8. Mounting: Free standing on structural tubes by grille manufacturer.

B. Curtain and Bottom Bar:

1. Continuous roll formed galvanized steel horizontal tubes spaced 2 inches on center, covered with aluminum spacer tubes and connected by aluminum vertical links.
2. Continuous roll formed galvanized steel horizontal tubes spaced 2 inches on center, covered with stainless steel spacer tubes and connected by stainless steel vertical links.

3. Continuous roll formed galvanized steel horizontal tubes spaced 2-1/2 inches on center, covered with plastic inserts and connected by aluminum vertical links.
  4. Continuous roll-formed galvanized steel horizontal tubes spaced 1-1/2 inches on center, covered with aluminum spacer tubes and connected by heavy duty grille links, 0.118 x 2.328 x 0.750 inch.
  5. 9 inch brick pattern.
  6. 2 inch straight pattern.
  7. 3 inch straight pattern.
  8. 4 inch straight pattern.
  9. 6 inch straight pattern.
  10. 9 inch straight pattern.
  11. Plastic inserts: Clear.
  12. Plastic inserts: Bronze tinted.
  13. Tube and link finish: Mill finish.
  14. Tube and link finish: No.4 finish.
  15. Tube and link finish: Clear anodized finish.
  16. Tube and link finish: Bronze anodized (duranodic) finish.
  17. Endlinks: Designed to retain curtain in side guides, plated or galvanized steel.
  18. Bottom bar: Reinforce curtain bottom with extruded aluminum tube; reinforced for wider openings.
    - a. Provide astragal weather seal.
    - b. Slope bottom bar to match contour in finished floor.
    - c. Notch bottom bar to match obstructions in finished floor.
- C. Guide and Wall Angle Assembly:
1. Guides: Extruded aluminum fitted with plastic insert for sound deadening and ease of operation.
  2. Wall angles: Galvanized structural steel angles; 3/16 inch minimum thickness.
  3. Wall angles: Stainless steel structural angles; 3/16 inch minimum thickness.
  4. Wall angles: Aluminum angles; 1/4 inch minimum thickness.
- D. Hood:
1. Material: 24 gage galvanized steel.
  2. Material: Stainless steel.
  3. Material: Aluminum.
  4. Shape: Round.
  5. Shape: Square.
  6. Finish: Same as for curtain.

7. Finish: Powder coat colored finish. Color: \_\_\_\_\_.
8. Finish: Primed, gray or tan.
9. Finish: Mill finish.
10. Finish: Clear anodized finish.
11. Finish: Bronze anodized (duranodic) finish.

E. Provide the following, as specified in COMPONENTS article:

1. Stop lock bearing.
2. Transom panel.
3. Pass door.
4. Removable mullion.

F. Locking:

1. Manual push-up grilles: Slide bolts on bottom bar, suitable for padlocks.
2. Chain hoist grilles: Locking bracket mounted on guide angle, suitable for padlock.
3. Awning crank hoist grilles: Mechanical locking by removal of crank arm and integral gearing of crank.
4. Motor operated grilles: Integral gearing of motor operator to provide locking for grille.
5. Cylinder lock on bottom bar.
6. Center throw cylinder lock on bottom bar.

## 2.11 SIDE COILING DOORS

A. Provide Model "H" Series Side Coiling Doors.

1. Operation: Waist high crank hoist.
2. Operation: Motor operator.
3. Mounting: Top hung from structural steel (specified elsewhere).

B. Curtain:

1. Slat material: Galvanized steel, cold roll formed in continuous lengths to form curtains; zinc coated, ASTM A 653/A 653M.
2. Slat material: Stainless steel, cold roll formed in continuous lengths to form curtains.
3. Slat material: Aluminum, cold roll formed in continuous lengths to form curtains.
4. Slat material: Aluminum, extruded in continuous lengths to form curtains; flat shape.
5. Slat material: Type "T3" insulated slats; 2-5/8 inches high x 7/8 inch thick; U-value 0.16; cold roll formed interlocking front and back slats, assembled in continuous lengths to form curtains.

6. Slat finish: Powder coat colored finish on both sides of slat. Color: \_\_\_\_\_.
7. Slat finish: Primed, gray or tan.
8. Slat finish: Mill finish.
9. Slat finish: Clear anodized finish.
10. Slat finish: Bronze anodized (duranodic) finish.
11. Slat shape: Flat slat.
12. Slat gage: As required by height and width of opening.
13. Slat gage: Not less than 22 gage.
14. Slat gage: Not less than 20 gage.
15. Slat gage: Not less than 18 gage.
16. Slat gage: Not less than 16 gage.
17. Lead stile: Curtain reinforced with a lead stile at the leading edge.
18. Top and bottom bands: Include stainless steel drive bands top and bottom. Top band to contain double ball bearing roller carriers designed to travel in top track. Bottom band to travel in bottom track. Band to engage positive drive type shaft forming rack and pinion drive system. No top or bottom cables required.
19. Vision lights: Clear acrylic plastic sections over individual slat cutouts, each 5 inches by 3/4 inch, in sets of 15 cutouts, five slats wide, three cutouts high.
20. Fenestrated slats: Individual slat cutouts each 5 inches by 3/4 inch wide.

C. Locking:

1. Integral gearing of operator to provide locking for door.
2. Cylinder lock on lead stile.

2.12 SIDE COILING GRILLES

A. Provide Model "K" Series Side Coiling Grilles.

1. Operation: Waist high crank hoist.
2. Operation: Motor operator.
3. Mounting: Top hung from structural steel (specified elsewhere).

B. Curtain:

1. Curtain: Continuous vertical cores spaced 2-1/2 inches on center, covered with aluminum spacer tubes and connected by aluminum horizontal links.

2. Curtain: Continuous vertical cores spaced 2-1/2 inches on center, covered with stainless steel spacer tubes and connected by stainless steel horizontal links.
3. Curtain: Continuous vertical cores spaced 2-1/2 inches on center, covered with plastic inserts and connected by aluminum horizontal links.
4. Plastic inserts: Clear.
5. Plastic inserts: Bronze.
6. Pattern: Brick pattern.
7. Pattern: Straight pattern.
8. Tube and link finish: Mill finish.
9. Tube and link finish: No.4 finish.
10. Tube and link finish: Clear anodized finish.
11. Tube and link finish: Bronze anodized (duranodic) finish.
12. Endlinks: Each end to be fitted with endlinks to maintain curtain alignment and to allow connection to top and bottom drive bands.
13. Lead stile: Curtain reinforced with a lead stile at the leading edge.
14. Top and bottom bands: Include stainless steel drive bands top and bottom. Top band to contain double ball bearing roller carriers designed to travel in top track. Bottom band to travel in bottom track. Band to engage positive drive type shaft forming rack and pinion drive system. No top or bottom cables required.

C. Locking:

1. Integral gearing of operator to provide locking for door.
2. Cylinder lock on lead stile.

2.13 COMPONENTS

A. Overhead Coiling Door/Counter Shutter/Grille

Counterbalances:

1. Counterbalance: Housed in a steel pipe of diameter and wall thickness to restrict maximum deflection to 0.03 inch per foot of width.
2. Springs: Helical torsion springs designed to include an overload factor of 25 percent and for optimum ease of operation; grease packed and mounted on a cold rolled steel inner shaft.
3. Spring tension: Adjustable from outside of end bracket plate, except on integral frame construction and smaller shutters.

4. Ball bearings: Sealed to minimize wear of pipe shaft rotation around inner shaft.
  5. Motorized Doors: High cycle springs to satisfy 50,000 to 100,000 cycles.
  6. Motorized Doors: Very high cycle springs to satisfy in excess of 100,000 cycles.
- B. Overhead Coiling Door/Grille Bracket Plates:
1. Bracket plates carrying pipe counterbalancing shaft: Not less than 1/4 inch thickness, square in shape; house ends of door coil.
  2. Drive end bracket plate: Fitted with a sealed ball bearing.
  3. Material: Galvanized steel.
  4. Material: Stainless steel.
- C. Counter Shutter Bracket Plates:
1. Material: Galvanized steel.
  2. Material: Stainless steel.
- D. Overhead Coiling Door Guide and Wall Angle Assemblies, unless otherwise indicated:
1. Structural steel angles; 3/16 inch minimum thickness.
  2. Depth to provide adequate slat penetration to satisfy specified windloading or fire rating, as applicable.
  3. Material: Galvanized steel.
  4. Material: Stainless steel.
  5. Material: Aluminum.
- E. Stop Lock Bearings: Prevent door/grille from falling completely to floor in event of damage to spring counterbalance or pipe shaft.
- F. Pass Door: 3'-0" x 7'-0" hollow metal pedestrian door within rolling door. Hollow metal door frame hinged to rolling door guide so that frame and metal door will swing clear of opening. Provide heavy duty hinges and lock set with cylinder lock outside and night latch inside.
- G. Transom Panel: 4-sided frame with slat material to match door.
- H. Removable Mullions: Removable guide assembly, below lintel, between adjacent doors.
- I. Motorized Mullions: Motorized guide assembly, below lintel, between adjacent doors/grilles.

- J. Fixed Mullions: Fixed guide assembly, below lintel, between adjacent doors/grilles.
- K. Overhead Coiling Door/Grille Hoods:
  - 1. Laterally reinforced to prevent sag.
  - 2. Intermediate hood supports: Furnish where door width exceeds 16 feet.
- L. Side Coiling Door/Grille Counterbalances:
  - 1. Counterbalance: Housed in a steel pipe.
  - 2. Springs: Helical torsion springs designed to include an overload factor of 25 percent and for optimum ease of operation; grease packed and mounted on a cold rolled steel inner shaft.
  - 3. Spring tension: Calibrated and preset at factory.
  - 4. Ball bearings: Sealed to minimize wear.
- M. Side Coiling Door/Grille Coil Boxes: Constructed of structural steel angles and containing spring counterbalance shaft and positive engagement type drive shaft.
  - 1. Structural steel bracket plates top and bottom forming ends of coil box.
  - 2. Bottom plate with leveling bolt in each corner.
  - 3. Material: Galvanized steel.
  - 4. Material: Stainless steel.
- N. Side Coiling Door/Grille Tracks:
  - 1. Top track constructed of steel shapes with extruded bronze angles to be used as combination carrier guides and band wear surface.
  - 2. Bottom track to be constructed of structural angles, leveler bars, and full length removable wear plates.
  - 3. Floor guides: Removable, spaced approximately 8 feet on center.
- O. Finish for Ferrous Surfaces, Except Galvanized and Bearing Surfaces: Shop coat of rust inhibiting metallic primer on exposed ferrous surfaces except bearings.
- P. Primer for Galvanized Surfaces: Baked epoxy modified polyester primer; gray or tan.

#### 2.14 MOTOR OPERATED UNIT COMPONENTS

- A. Motor Operators: Model \_\_\_\_\_.
- B. Sensor Edge:
  - 1. Pneumatic edge: Neoprene astragal with air hose.

2. Electric edge: Foam rubber astragal with vinyl-coated nylon cover, continuous foil tape electrical contacts.
  3. Fail safe control: Upon loss of continuity in circuit, open door and prevent motor operation until circuit or edge is repaired.
- C. Back-Up Power Supply: Continuous monitoring of power line. Provide emergency power to motor operator.
- D. Panic Release Device: Allow emergency egress for motor operated units; comply with ADA requirements.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that dimensions are correct and project conditions are suitable for installation. Do not proceed with installation until unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Install units in accordance with manufacturer's instructions.
- B. Ensure that units are installed plumb and true, free of warp or twist, and within tolerances specified by manufacturer for smooth operation.
- C. Install electrical components in accordance with NFPA 70.

### 3.3 RATED DOORS

- A. Install doors in accordance with requirements of tested assembly.
- B. Drop test doors after installation. Notify the Architect prior to testing.
- C. Fire Rated Doors/Shutters: Install in accordance with NFPA 80.

### 3.4 DEMONSTRATION

- A. Instruct the Owner's personnel in proper operation and maintenance of units.



### 3.5 ADJUST AND CLEAN

- A. Clean units in accordance with manufacturer's instructions.
- B. Restore slight blemishes in finishes in accordance with manufacturer's instructions to match original finish. Remove and provide new units where repairs are not acceptable to the Architect.

END OF SECTION