

The Genuine. The Original.



SECTION 08360

SECTIONAL OVERHEAD DOORS

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Insulated Sectional Overhead Doors.
- B. Steel Sectional Overhead Doors.
- C. Glazed Aluminum Sectional Overhead Doors
- D. Electric Operators and Controls.
- E. Operating Hardware, tracks, and support.

1.2 RELATED SECTIONS

- A. Section 03300 - Cast-In-Place Concrete: Prepared opening in concrete. Execution requirements for placement of anchors in concrete wall construction.
- B. Section 04810 - Unit Masonry Assemblies: Prepared opening in masonry. Execution requirements for placement of anchors in masonry wall construction.
- C. Section 05500 - Metal Fabrications: Steel frame and supports.
- D. Section 06114 - Wood Blocking and Curbing: Rough wood framing and blocking for door opening.
- E. Section 07900 - Joint Sealers: Perimeter sealant and backup materials.
- F. Section 08710 - Door Hardware: Cylinder locks.
- G. Section 09900 - Paints and Coatings: Field painting.
- H. Section 11150 - Parking Control Equipment: Remote door control.
- I. Section 16130 - Raceway and Boxes: Empty conduit from control station to door operator.
- J. Section 16150 - Wiring Connections: Electrical service to door operator.

1.3 REFERENCES

- A. ANSI/DASMA 102 - American National Standard Specifications for Sectional Overhead Type Doors.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

- A. Wiring Connections: Requirements for electrical characteristics.
 - 1. 115 volts, single phase, 60 Hz.
 - 2. 230 volts, single phase, 60 Hz.
 - 3. 230 volts, three phase, 60 Hz.
 - 4. 460 volts, three phase, 60 Hz.
- B. Single-Source Responsibility: Provide doors, tracks, motors, and accessories from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Indicate plans and elevations including opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.
- D. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- E. Operation and Maintenance Data.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum five years documented experience.
- B. Installer Qualifications: Authorized representative of the manufacturer with minimum five years documented experience.
- C. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc. acceptable to authority having jurisdiction as suitable for purpose specified.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened labeled packaging until ready for installation.
- B. Protect materials from exposure to moisture until ready for installation.
- C. Store materials in a dry, ventilated weathertight location.

1.8 PROJECT CONDITIONS

- A. Pre-Installation Conference: Convene a pre-installation conference just prior to commencement of field operations, to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.

1.9 WARRANTY

- A. Warranty: Manufacturer's limited door and operators System warranty for 10 year against delamination of polyurethane foam from steel face and all other components for 3 years or 20,000 cycles, whichever comes first.
- B. Warranty: Manufacturer's limited door and operators System warranty for 8 year against delamination of polyurethane foam from steel face and all other components for 3 years or 20,000 cycles, whichever comes first.
- C. Warranty: Manufacturer's limited door and operators System warranty for 10 years against delamination of polystyrene foam from steel face.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Overhead Door Corporation, 2501 S. State Hwy. 121, Suite 200, Lewisville, TX 75067. ASD. Tel. Toll Free: (800) 275-3290. Phone: (469) 549-7100. Fax: (972) 906-1499. Web Site: www.overheaddoor.com. E-mail: arcat@overheaddoor.com.
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 INSULATED SECTIONAL OVERHEAD DOORS

- A. Insulated Steel Sectional Overhead Doors: Thermacore AP Model 850 Insulated Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:
 - 1. Door Assembly: Metal/foam/metal sandwich panel construction, with 1-3/4 inch wide PVC thermal break and patents pending weather-tight Dual Barrier tongue-in-groove meeting joints.
 - a. Panel Thickness: 3 inches (76.2 mm).
 - b. Exterior Surface: Microgroove, textured.
 - c. Exterior Steel: .015 inch (.38 mm), hot-dipped galvanized.
 - d. End Stiles: 18 gauge single end stiles provided on doors up to and including 16 feet 2 inches wide; 16 gauge double end stiles provided on doors greater than 16 feet 2 inches wide up to and including 26 feet 2 inches; 14 gauge double end stiles provided on doors greater than 26 feet 2 inches wide. Provide with thermal break to prevent heat/cold transfer.
 - e. Spring Counterbalance: Sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of diecast aluminum with high strength galvanized aircraft cable. Sized with a minimum 7 to 1 safety factor.

- 1) Standard cycle spring: 10,000 cycles.
- 2) High cycle spring: 50,000 cycles.
- 3) High cycle spring: 100,000 cycles.
- f. Insulation: CFC-free and HCFC-free polyurethane, fully encapsulated.
- g. Thermal Values: Calculated R-value of 26; U-value of 0.038.
- h. Installed U-factor: 0.14 Btu/hr/SF degrees F.
- i. Air Infiltration: .09 cfm at 15 mph.
- j. Sound Transmission Rating: STC 22
- k. High-Usage Package: Provide with optional high-usage package.
- l. Partial Glazing of Steel Panels:
 - 1) Standard with black frame:
 - (a) 1/2 inch (12.5 mm) Insulated.
 - (b) 1/2 inch Tempered Insulated.
 - (c) 5/8 inch (15.87 mm) Triple-Wall Polycarbonate (clear, bronze, white).
 - 2) Color matched frame: white, brown, almond, taupe.
 - (a) 1/2 inch (12.7 mm) Tempered Insulated
 - (b) 1/2 inch (12.7 mm) Insulated.
2. Finish and Color:
 - a. Two coat baked-on polyester:
 - 1) Interior color, white.
 - 2) Exterior color, white.
 - 3) Exterior color, brown.
 - 4) Exterior color, almond
 - 5) Exterior color, taupe
3. Wind Loads: Design and size components to withstand loads caused by pressure and suction of wind acting normal to plane of wall as calculated in accordance with applicable code as follows:
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.
 - d. Keyed lock with interlock switch for automatic operator.
6. Weatherstripping:
 - a. PVC retainer with dual durometer PVC bulb seal.
 - b. Factory installed Flexible Header seal.
 - c. Optional EPDM bulb seal. Recommended for extreme weather conditions.
 - d. Optional Exclusive Advanced Performance Jamb seals recommended for extreme weather conditions.
7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
 - a. Size:
 - 1) 2 inch (51 mm).
 - 2) 3 inch (76 mm).
 - b. Type:
 - 1) Standard lift.
 - 2) Vertical lift.
 - 3) High lift.
 - 4) Low headroom.
 - 5) Follow roof slope.
8. Manual Operation: Pull rope.
9. Manual Operation: Chain hoist.

10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
 - a. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
 - c. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.
 - 7) Commercial light package.
 - 8) Explosion and dust ignition proof control wiring.

- B. Insulated Steel Sectional Overhead Doors: 592 Series Thermacore Insulated Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:
 1. Door Assembly: Metal/foam/metal sandwich panel construction, with PVC thermal break and weather-tight ship-lap design meeting joints.
 - a. Panel Thickness: 2 inches (51 mm).
 - b. Exterior Surface: Ribbed, textured.
 - c. Exterior Steel: .015 inch (.38 mm), hot-dipped galvanized.
 - d. End Stiles: 16 gauge with thermal break.
 - e. Spring Counterbalance: Sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of diecast aluminum with high strength galvanized aircraft cable. Sized with a minimum 7 to 1 safety factor.
 - 1) Standard cycle spring: 10,000 cycles.
 - 2) High cycle spring: 25,000 cycles.
 - 3) High cycle spring: 50,000 cycles.
 - 4) High cycle spring: 75,000 cycles.
 - 5) High cycle spring: 100,000 cycles.
 - f. Insulation: CFC-free and HCFC-free polyurethane, fully encapsulated.
 - g. Thermal Values: R-value of 17.50; U-value of 0.057.
 - h. Air Infiltration: 0.08 cfm at 15 mph; 0.08 cfm at 25 mph.
 - i. Pass-Door:
 - 1) Provide with optional pass door.
 - j. High-Usage Package: Provide with optional high-usage package.
 - k. Partial Glazing of Steel Panels:
 - 1) 1/8 inch (3 mm) Acrylic glazing.

- 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Clear Lexan glazing.
 - 4) 1/4 inch (6 mm) Clear Lexan glazing.
 - 5) 1/2 inch (12.5 mm) Clear Lexan Insulated glazing.
 - 6) 1/8 inch (3 mm) Tempered glass.
 - 7) 1/4 inch (6 mm) Tempered glass.
 - 8) 1/2 inch (12.5 mm) Tempered Insulating glass.
 - 9) 1/4 inch (6 mm) Wire glass.
 - 10) 1/8 inch (3 mm) Double Strength glass.
 - 11) 1/2 inch (12.5 mm) Double Strength Insulating glass.
 - 12) 1/8 inch (3 mm) Low E glazing.
 - 13) 1/4 inch (6 mm) Low E glazing.
 - 14) 1/2 inch (12.5 mm) Low E Insulated glazing.
 - 15) 1/8 inch (3 mm) Solar Bronze glazing.
 - 16) 1/4 inch (6 mm) Solar Bronze glazing.
 - 17) 1/2 inch (12.5 mm) Solar Bronze Insulated glazing.
 - 18) 1/8 inch (3 mm) Obscure glazing.
 - 19) 1/4 inch (6 mm) Obscure glazing.
 - 20) 1/2 inch (12.5 mm) Obscure Insulated glazing.
 - 21) 1/4 inch (6 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 22) 3/8 inch (9.5 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 23) 5/8 inch (15.87 mm) Triple-Wall Polycarbonate (clear, bronze, white).
- i. Full Glazed Aluminum Sash Panels:
- 1) 1/8 inch (3 mm) Acrylic glazing.
 - 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Clear Lexan glazing.
 - 4) 1/4 inch (6 mm) Clear Lexan glazing.
 - 5) 1/2 inch (12.5 mm) Clear Lexan Insulated glazing.
 - 6) 1/8 inch (3 mm) Tempered glass.
 - 7) 1/4 inch (6 mm) Tempered glass.
 - 8) 1/2 inch (12.5 mm) Tempered Insulating Glass.
 - 9) 1/4 inch (6 mm) Wire glass.
 - 10) 1/8 inch (3 mm) Double Strength glass.
 - 11) 1/2 inch (12.5 mm) Double Strength Insulating Glass.
 - 12) 1/8 inch (3 mm) Low E glazing.
 - 13) 1/4 inch (6 mm) Low E glazing.
 - 14) 1/2 inch (12.5 mm) Low E Insulated glazing.
 - 15) 1/8 inch (3 mm) Solar Bronze glazing.
 - 16) 1/4 inch (6 mm) Solar Bronze glazing.
 - 17) 1/2 inch (12.5 mm) Solar Bronze Insulated glazing.
 - 18) 1/8 inch (3 mm) Obscure glazing.
 - 19) 1/4 inch (6 mm) Obscure glazing.
 - 20) 1/2 inch (12.5 mm) Obscure Insulated glazing.
 - 21) 1/4 inch (6 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 22) 3/8 inch (9.5 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 23) 5/8 inch (15.87 mm) Triple-Wall Polycarbonate (clear, bronze, white).
2. Finish and Color:
- a. Two coat baked-on polyester:
 - 1) Interior color, white.
 - 2) Exterior color, white.
 - 3) Exterior color, brown.
 - 4) Exterior color, tan.

- 5) Exterior color, gray.
- b. Baked-on Trinar polyvinylidene fluoride high performance coating:
 - 1) Exterior color, white.
 - 2) Exterior color, brown.
 - 3) Exterior color, beige.
3. Wind Loads: Design and size components to withstand loads caused by pressure and suction of wind acting normal to plane of wall as calculated in accordance with applicable code as follows:
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.
 - d. Keyed lock with interlock switch for automatic operator.
 - e. Locking mechanism designed to maintain security for exterior while permitting break out when impacted from the inside.
6. Weatherstripping:
 - a. EPDM bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
 - a. Size:
 - 1) 2 inch (51 mm).
 - 2) 3 inch (76 mm).
 - b. Type:
 - 1) Standard lift.
 - 2) Vertical lift.
 - 3) High lift.
 - 4) Low headroom.
 - 5) Follow roof slope.
8. Manual Operation: Pull rope.
9. Manual Operation: Chain hoist.
10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
 - a. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.

- c. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.
 - 7) Commercial light package.
 - 8) Explosion and dust ignition proof control wiring.
- C. Insulated Steel Sectional Overhead Doors: 599 Series Thermacore Insulated Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:
- 1. Door Assembly: Metal/foam/metal sandwich panel construction, with PVC thermal break and weather-tight ship-lap design meeting joints.
 - a. Panel Thickness: 2 inches (51 mm).
 - b. Exterior Surface: Flush, textured.
 - c. Exterior Steel: .015 inch (.38 mm), hot-dipped galvanized.
 - d. End Stiles: 16 gauge with thermal break.
 - e. Spring Counterbalance: Sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of diecast aluminum with high strength galvanized aircraft cable. Sized with a minimum 7 to 1 safety factor.
 - 1) Standard cycle spring: 10,000 cycles.
 - 2) High cycle spring: 25,000 cycles.
 - 3) High cycle spring: 50,000 cycles.
 - 4) High cycle spring: 75,000 cycles.
 - 5) High cycle spring: 100,000 cycles.
 - f. Insulation: CFC-free and HCFC-free polyurethane, fully encapsulated.
 - g. Thermal Values: R-value of 17.50; U-value of 0.057.
 - h. Air Infiltration: 0.08 cfm at 15 mph; 0.08 cfm at 25 mph.
 - i. Pass-Door:
 - 1) Provide with optional pass door.
 - j. High-Usage Package: Provide with optional high-usage package.
 - a. Partial Glazing of Steel Panels:
 - 1) 1/8 inch (3 mm) Acrylic glazing.
 - 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Clear Lexan glazing.
 - 4) 1/4 inch (6 mm) Clear Lexan glazing.
 - 5) 1/2 inch (12.5 mm) Clear Lexan Insulated glazing.
 - 6) 1/8 inch (3 mm) Tempered glass.
 - 7) 1/4 inch (6 mm) Tempered glass.
 - 8) 1/2 inch (12.5 mm) Tempered Insulating Glass.
 - 9) 1/4 inch (6 mm) Wire glass.
 - 10) 1/8 inch (3 mm) Double Strength glass.
 - 11) 1/2 inch (12.5 mm) Double Strength Insulating Glass.
 - 12) 1/8 inch (3 mm) Low E glazing.
 - 13) 1/4 inch (6 mm) Low E glazing.
 - 14) 1/2 inch (12.5 mm) Low E Insulated glazing.
 - 15) 1/8 inch (3 mm) Solar Bronze glazing.
 - 16) 1/4 inch (6 mm) Solar Bronze glazing.
 - 17) 1/2 inch (12.5 mm) Solar Bronze Insulated glazing.
 - 18) 1/8 inch (3 mm) Obscure glazing.
 - 19) 1/4 inch (6 mm) Obscure glazing.
 - 20) 1/2 inch (12.5 mm) Obscure Insulated glazing.
 - 21) 1/4 inch (6 mm) Twin-Wall Polycarbonate (clear, bronze, white).

- 22) 3/8 inch (9.5 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 23) 5/8 inch (15.87 mm) Triple-Wall Polycarbonate (clear, bronze, white).
- b. Full Glazed Aluminum Sash Panels:
- 1) 1/8 inch (3 mm) Acrylic glazing.
 - 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Clear Lexan glazing.
 - 4) 1/4 inch (6 mm) Clear Lexan glazing.
 - 5) 1/2 inch (12.5 mm) Clear Lexan Insulated glazing.
 - 6) 1/8 inch (3 mm) Tempered glass.
 - 7) 1/4 inch (6 mm) Tempered glass.
 - 8) 1/2 inch (12.5 mm) Tempered Insulating Glass.
 - 9) 1/4 inch (6 mm) Wire glass.
 - 10) 1/8 inch (3 mm) Double Strength glass.
 - 11) 1/2 inch (12.5 mm) Double Strength Insulating Glass.
 - 12) 1/8 inch (3 mm) Low E glazing.
 - 13) 1/4 inch (6 mm) Low E glazing.
 - 14) 1/2 inch (12.5 mm) Low E Insulated glazing.
 - 15) 1/8 inch (3 mm) Solar Bronze glazing.
 - 16) 1/4 inch (6 mm) Solar Bronze glazing.
 - 17) 1/2 inch (12.5 mm) Solar Bronze Insulated glazing.
 - 18) 1/8 inch (3 mm) Obscure glazing.
 - 19) 1/4 inch (6 mm) Obscure glazing.
 - 20) 1/2 inch (12.5 mm) Obscure Insulated glazing.
 - 21) 1/4 inch (6 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 22) 3/8 inch (9.5 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 23) 5/8 inch (15.87 mm) Triple-Wall Polycarbonate (clear, bronze, white).
2. Finish and Color: Two coat baked-on polyester.
 - a. Interior color, white.
 - b. Exterior color, white.
 3. Wind Loads: Design and size components to withstand loads caused by pressure and suction of wind acting normal to plane of wall as calculated in accordance with applicable code as follows:
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
 4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
 5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.
 - d. Keyed lock with interlock switch for automatic operator.
 - e. Locking mechanism designed to maintain security for exterior while permitting break out when impacted from the inside.
 6. Weatherstripping:
 - a. EPDM bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
 7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
 - a. Size:
 - 1) 2 inch (51 mm).
 - 2) 3 inch (76 mm).
 - b. Type:

- 1) Standard lift.
 - 2) Vertical lift.
 - 3) High lift.
 - 4) Low headroom.
 - 5) Follow roof slope.
8. Manual Operation: Pull rope.
 9. Manual Operation: Chain hoist.
 10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
 - a. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
 - c. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.
 - 7) Commercial light package.
 - 8) Explosion and dust ignition proof control wiring.
- D. Insulated Steel Sectional Overhead Doors: 591 Series Thermacore Insulated Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:
1. Door Assembly: Metal/foam/metal sandwich panel construction, with PVC thermal break and weather-tight ship-lap design meeting joints.
 - a. Panel Thickness: 1-5/8 inches (41 mm).
 - b. Exterior Surface: Ribbed, textured.
 - c. Exterior Steel: .015 inch (.38 mm), hot-dipped galvanized.
 - d. End Stiles: 16 gauge.
 - e. Spring Counterbalance: Sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of diecast aluminum with high strength galvanized aircraft cable. Sized with a minimum 7 to 1 safety factor.
 - 1) Standard cycle spring: 10,000 cycles.
 - 2) High cycle spring: 25,000 cycles.
 - 3) High cycle spring: 50,000 cycles.
 - 4) High cycle spring: 75,000 cycles.
 - 5) High cycle spring: 100,000 cycles.
 - f. Insulation: CFC-free and HCFC-free polyurethane, fully encapsulated.

- g. Thermal Values: R-value of 14.86; U-value of 0.067.
- h. Air Infiltration: 0.08 cfm at 15 mph; 0.08 cfm at 25 mph.
- i. Pass-Door:
 - 1) Provide with optional pass door.
- j. High-Usage Package: Provide with optional high-usage package.
- a. Partial Glazing of Steel Panels:
 - 1) 1/8 inch (3 mm) Acrylic glazing.
 - 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Clear Lexan glazing.
 - 4) 1/4 inch (6 mm) Clear Lexan glazing.
 - 5) 1/2 inch (12.5 mm) Clear Lexan Insulated glazing.
 - 6) 1/8 inch (3 mm) Tempered glass.
 - 7) 1/4 inch (6 mm) Tempered glass.
 - 8) 1/2 inch (12.5 mm) Tempered Insulating Glass.
 - 9) 1/4 inch (6 mm) Wire glass.
 - 10) 1/8 inch (3 mm) Double Strength glass.
 - 11) 1/2 inch (12.5 mm) Double Strength Insulating Glass.
 - 12) 1/8 inch (3 mm) Low E glazing.
 - 13) 1/4 inch (6 mm) Low E glazing.
 - 14) 1/2 inch (12.5 mm) Low E Insulated glazing.
 - 15) 1/8 inch (3 mm) Solar Bronze glazing.
 - 16) 1/4 inch (6 mm) Solar Bronze glazing.
 - 17) 1/2 inch (12.5 mm) Solar Bronze Insulated glazing.
 - 18) 1/8 inch (3 mm) Obscure glazing.
 - 19) 1/4 inch (6 mm) Obscure glazing.
 - 20) 1/2 inch (12.5 mm) Obscure Insulated glazing.
 - 21) 1/4 inch (6 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 22) 3/8 inch (9.5 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 23) 5/8 inch (15.87 mm) Triple-Wall Polycarbonate (clear, bronze, white).
- b. Full Glazed Aluminum Sash Panels:
 - 1) 1/8 inch (3 mm) Acrylic glazing.
 - 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Clear Lexan glazing.
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 - 5) 1/2 inch (12.5 mm) Clear Lexan Insulated glazing.
 - 6) 1/8 inch (3 mm) Tempered glass.
 - 7) 1/4 inch (6 mm) Tempered glass.
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 - 9) 1/4 inch (6 mm) Wire glass.
 - 10) 1/8 inch (3 mm) Double Strength glass.
 - 11) 1/2 inch (12.5 mm) Double Strength Insulating Glass.
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 - 14) 1/2 inch (12.5 mm) Low E Insulated glazing.
 - 15) 1/8 inch (3 mm) Solar Bronze glazing.
 - 16) 1/4 inch (6 mm) Solar Bronze glazing.
 - 17) 1/2 inch (12.5 mm) Solar Bronze Insulated glazing.
 - 18) 1/8 inch (3 mm) Obscure glazing.
 - 19) 1/4 inch (6 mm) Obscure glazing.
 - 20) 1/2 inch (12.5 mm) Obscure Insulated glazing.
 - 21) 1/4 inch (6 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 22) 3/8 inch (9.5 mm) Twin-Wall Polycarbonate (clear, bronze, white).

- 23) 5/8 inch (15.87 mm) Triple-Wall Polycarbonate (clear, bronze, white).
2. Finish and Color:
 - a. Two coat baked-on polyester:
 - 1) Interior color, white.
 - 2) Exterior color, white.
 - 3) Exterior color, brown.
 - 4) Exterior color, tan.
 - 5) Exterior color, gray.
 - b. Baked-on Trinar polyvinylidene fluoride high performance coating:
 - 1) Exterior color, white.
 - 2) Exterior color, brown.
 - 3) Exterior color, beige.
3. Wind Loads: Design and size components to withstand loads caused by pressure and suction of wind acting normal to plane of wall as calculated in accordance with applicable code as follows:
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.
 - d. Keyed lock with interlock switch for automatic operator.
 - e. Locking mechanism designed to maintain security for exterior while permitting break out when impacted from the inside.
6. Weatherstripping:
 - a. EPDM bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
 - a. Size:
 - 1) 2 inch (51 mm).
 - 2) 3 inch (76 mm).
 - b. Type:
 - 1) Standard lift.
 - 2) Vertical lift.
 - 3) High lift.
 - 4) Low headroom.
 - 5) Follow roof slope.
8. Manual Operation: Pull rope.
9. Manual Operation: Chain hoist.
10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
 - a. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.

- 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
- c. Special Operation:
- 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.
 - 7) Commercial light package.
 - 8) Explosion and dust ignition proof control wiring.
- E. Insulated Steel Sectional Overhead Doors: 596 Series Thermacore Insulated Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:
1. Door Assembly: Metal/foam/metal sandwich panel construction, with PVC thermal break and weather-tight ship-lap design meeting joints.
 - a. Panel Thickness: 2 inches (51 mm).
 - b. Exterior Surface: Flush, textured.
 - c. Exterior Steel: 20 gauge, galvanized.
 - d. End Stiles: 16 gauge with thermal break.
 - e. Spring Counterbalance: Sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of diecast aluminum with high strength galvanized aircraft cable. Sized with a minimum 7 to 1 safety factor.
 - 1) Standard cycle spring: 10,000 cycles.
 - 2) High cycle spring: 25,000 cycles.
 - 3) High cycle spring: 50,000 cycles.
 - 4) High cycle spring: 75,000 cycles.
 - 5) High cycle spring: 100,000 cycles.
 - f. Insulation: CFC-free and HCFC-free polyurethane, fully encapsulated.
 - g. Thermal Values: R-value of 17.40; U-value of 0.057.
 - h. Air Infiltration: 0.08 cfm at 15 mph; 0.08 cfm at 25 mph.
 - i. Sound Transmission: Class 26.
 - j. Pass-Door:
 - 1) Provide with optional pass door.
 - k. High-Usage Package: Provide with optional high-usage package.
 - a. Partial Glazing of Steel Panels:
 - 1) 1/8 inch (3 mm) Acrylic glazing.
 - 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Clear Lexan glazing.
 - 4) 1/4 inch (6 mm) Clear Lexan glazing.
 - 5) 1/2 inch (12.5 mm) Clear Lexan Insulated glazing.
 - 6) 1/8 inch (3 mm) Tempered glass.
 - 7) 1/4 inch (6 mm) Tempered glass.
 - 8) 1/2 inch (12.5 mm) Tempered Insulating Glass.
 - 9) 1/4 inch (6 mm) Wire glass.
 - 10) 1/8 inch (3 mm) Double Strength glass.
 - 11) 1/2 inch (12.5 mm) Double Strength Insulating Glass.
 - 12) 1/8 inch (3 mm) Low E glazing.
 - 13) 1/4 inch (6 mm) Low E glazing.

- 14) 1/2 inch (12.5 mm) Low E Insulated glazing.
 - 15) 1/8 inch (3 mm) Solar Bronze glazing.
 - 16) 1/4 inch (6 mm) Solar Bronze glazing.
 - 17) 1/2 inch (12.5 mm) Solar Bronze Insulated glazing.
 - 18) 1/8 inch (3 mm) Obscure glazing.
 - 19) 1/4 inch (6 mm) Obscure glazing.
 - 20) 1/2 inch (12.5 mm) Obscure Insulated glazing.
 - 21) 1/4 inch (6 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 22) 3/8 inch (9.5 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 23) 5/8 inch (15.87 mm) Triple-Wall Polycarbonate (clear, bronze, white).
- b. Full Glazed Aluminum Sash Panels:
- 1) 1/8 inch (3 mm) Acrylic glazing.
 - 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Clear Lexan glazing.
 - 4) 1/4 inch (6 mm) Clear Lexan glazing.
 - 5) 1/2 inch (12.5 mm) Clear Lexan Insulated glazing.
 - 6) 1/8 inch (3 mm) Tempered glass.
 - 7) 1/4 inch (6 mm) Tempered glass.
 - 8) 1/2 inch (12.5 mm) Tempered Insulating Glass.
 - 9) 1/4 inch (6 mm) Wire glass.
 - 10) 1/8 inch (3 mm) Double Strength glass.
 - 11) 1/2 inch (12.5 mm) Double Strength Insulating Glass.
 - 12) 1/8 inch (3 mm) Low E glazing.
 - 13) 1/4 inch (6 mm) Low E glazing.
 - 14) 1/2 inch (12.5 mm) Low E Insulated glazing.
 - 15) 1/8 inch (3 mm) Solar Bronze glazing.
 - 16) 1/4 inch (6 mm) Solar Bronze glazing.
 - 17) 1/2 inch (12.5 mm) Solar Bronze Insulated glazing.
 - 18) 1/8 inch (3 mm) Obscure glazing.
 - 19) 1/4 inch (6 mm) Obscure glazing.
 - 20) 1/2 inch (12.5 mm) Obscure Insulated glazing.
 - 21) 1/4 inch (6 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 22) 3/8 inch (9.5 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 23) 5/8 inch (15.87 mm) Triple-Wall Polycarbonate (clear, bronze, white).
2. Finish and Color:
- a. Two coat baked-on polyester:
 - 1) Interior color, white.
 - 2) Exterior color, white.
 - 3) Exterior color, brown.
 - 4) Exterior color, tan.
 - 5) Exterior color, gray.
3. Wind Loads: Design and size components to withstand loads caused by pressure and suction of wind acting normal to plane of wall as calculated in accordance with applicable code as follows:
- a. Design pressure of _____ lb/sq ft (_____ kPa).
4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
5. Lock:
- a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.
 - d. Keyed lock with interlock switch for automatic operator.

- e. Locking mechanism designed to maintain security for exterior while permitting break out when impacted from the inside.
- 6. Weatherstripping:
 - a. EPDM bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
- 7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
 - a. Size:
 - 1) 2 inch (51 mm).
 - 2) 3 inch (76 mm).
 - b. Type:
 - 1) Standard lift.
 - 2) Vertical lift.
 - 3) High lift.
 - 4) Low headroom.
 - 5) Follow roof slope.
- 8. Manual Operation: Pull rope.
- 9. Manual Operation: Chain hoist.
- 10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
 - a. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
 - c. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.
 - 7) Commercial light package.
 - 8) Explosion and dust ignition proof control wiring.

- F. Insulated Steel Sectional Overhead Doors: 594 Series Thermacore Insulated Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:
 - 1. Door Assembly: Metal/foam/metal sandwich panel construction, with hot melt thermal break and weather-tight ship-lap design meeting joints.
 - a. Panel Thickness: 1-3/8 inches (35 mm).
 - b. Exterior Surface: Raised panel, textured woodgrain surface.

- c. Exterior Steel: .012 inch (.30 mm), hot-dip galvanized.
- d. End Stiles: 20 gauge.
- e. Spring Counterbalance: Sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of diecast aluminum with high strength galvanized aircraft cable. Sized with a minimum 7 to 1 safety factor.
 - 1) Standard cycle spring: 10,000 cycles.
 - 2) High cycle spring: 25,000 cycles.
 - 3) High cycle spring: 50,000 cycles.
 - 4) High cycle spring: 75,000 cycles.
 - 5) High cycle spring: 100,000 cycles.
- f. Insulation: CFC-free and HCFC-free polyurethane, fully encapsulated.
- g. Thermal Values: R-value of 12.76; U-value of 0.078.
- h. Air Infiltration: 0.08 cfm at 15 mph; 0.15 cfm at 25 mph.
- i. High-Usage Package: Provide with optional high-usage package.
- a. Partial Glazing of Steel Panels:
 - 1) 1/8 inch (3 mm) Acrylic glazing.
 - 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Clear Lexan glazing.
 - 4) 1/4 inch (6 mm) Clear Lexan glazing.
 - 5) 1/2 inch (12.5 mm) Clear Lexan Insulated glazing.
 - 6) 1/8 inch (3 mm) Tempered glass.
 - 7) 1/4 inch (6 mm) Tempered glass.
 - 8) 1/2 inch (12.5 mm) Tempered Insulating Glass.
 - 9) 1/4 inch (6 mm) Wire glass.
 - 10) 1/8 inch (3 mm) Double Strength glass.
 - 11) 1/2 inch (12.5 mm) Double Strength Insulating Glass.
 - 12) 1/8 inch (3 mm) Low E glazing.
 - 13) 1/4 inch (6 mm) Low E glazing.
 - 14) 1/2 inch (12.5 mm) Low E Insulated glazing.
 - 15) 1/8 inch (3 mm) Solar Bronze glazing.
 - 16) 1/4 inch (6 mm) Solar Bronze glazing.
 - 17) 1/2 inch (12.5 mm) Solar Bronze Insulated glazing.
 - 18) 1/8 inch (3 mm) Obscure glazing.
 - 19) 1/4 inch (6 mm) Obscure glazing.
 - 20) 1/2 inch (12.5 mm) Obscure Insulated glazing.
 - 21) 1/4 inch (6 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 22) 3/8 inch (9.5 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 23) 5/8 inch (15.87 mm) Triple-Wall Polycarbonate (clear, bronze, white).
- b. Full Glazed Aluminum Sash Panels:
 - 1) 1/8 inch (3 mm) Acrylic glazing.
 - 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Clear Lexan glazing.
 - 4) 1/4 inch (6 mm) Clear Lexan glazing.
 - 5) 1/2 inch (12.5 mm) Clear Lexan Insulated glazing.
 - 6) 1/8 inch (3 mm) Tempered glass.
 - 7) 1/4 inch (6 mm) Tempered glass.
 - 8) 1/2 inch (12.5 mm) Tempered Insulating Glass.
 - 9) 1/4 inch (6 mm) Wire glass.
 - 10) 1/8 inch (3 mm) Double Strength glass.
 - 11) 1/2 inch (12.5 mm) Double Strength Insulating Glass.
 - 12) 1/8 inch (3 mm) Low E glazing.
 - 13) 1/4 inch (6 mm) Low E glazing.
 - 14) 1/2 inch (12.5 mm) Low E Insulated glazing.

- 15) 1/8 inch (3 mm) Solar Bronze glazing.
 - 16) 1/4 inch (6 mm) Solar Bronze glazing.
 - 17) 1/2 inch (12.5 mm) Solar Bronze Insulated glazing.
 - 18) 1/8 inch (3 mm) Obscure glazing.
 - 19) 1/4 inch (6 mm) Obscure glazing.
 - 20) 1/2 inch (12.5 mm) Obscure Insulated glazing.
 - 21) 1/4 inch (6 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 22) 3/8 inch (9.5 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 23) 5/8 inch (15.87 mm) Triple-Wall Polycarbonate (clear, bronze, white).
2. Finish and Color:
 - a. Two coat baked-on polyester:
 - 1) Interior color, white.
 - 2) Exterior color, white.
 - 3) Exterior color, brown.
 - 4) Exterior color, Desert Tan.
 - 5) Exterior color, Sandstone.
 - 6) Exterior color, Almond.
 - 7) Exterior color, Hunter Green.
 - 8) Exterior color, Terra Bronze.
 - b. Baked-on Trinar polyvinylidene fluoride high performance coating:
 - 1) Exterior color, white.
 - 2) Exterior color, brown.
 - 3) Exterior color, beige.
 3. Wind Loads: Design and size components to withstand loads caused by pressure and suction of wind acting normal to plane of wall as calculated in accordance with applicable code as follows:
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
 4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
 5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.
 - d. Keyed lock with interlock switch for automatic operator.
 6. Weatherstripping:
 - a. EPDM bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
 7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
 - a. Size:
 - 1) 2 inch (51 mm).
 - 2) 3 inch (76 mm).
 - b. Type:
 - 1) Standard lift.
 - 2) Vertical lift.
 - 3) High lift.
 - 4) Low headroom.
 - 5) Follow roof slope.
 8. Manual Operation: Pull rope.
 9. Manual Operation: Chain hoist.
 10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less

than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.

- a. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
 - c. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.
 - 7) Commercial light package.
 - 8) Explosion and dust ignition proof control wiring.
- G. Insulated Steel Sectional Overhead Doors: 593 Series Thermacore Insulated Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:
1. Door Assembly: Metal/foam/metal sandwich panel construction, with hot melt thermal break and weather-tight ship-lap design meeting joints.
 - a. Panel Thickness: 1-3/8 inches (35 mm).
 - b. Exterior Surface: Ribbed, textured.
 - c. Exterior Steel: .015 inch (.38 mm), hot-dip galvanized.
 - d. End Stiles: 20 gauge.
 - e. Spring Counterbalance: Sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of diecast aluminum with high strength galvanized aircraft cable. Sized with a minimum 7 to 1 safety factor.
 - 1) Standard cycle spring: 10,000 cycles.
 - 2) High cycle spring: 25,000 cycles.
 - 3) High cycle spring: 50,000 cycles.
 - 4) High cycle spring: 75,000 cycles.
 - 5) High cycle spring: 100,000 cycles.
 - f. Insulation: CFC-free and HCFC-free polyurethane, fully encapsulated.
 - g. Thermal Values: R-value of 12.76; U-value of 0.078.
 - h. Air Infiltration: 0.08 cfm at 15 mph; 0.15 cfm at 25 mph.
 - i. High-Usage Package: Provide with optional high-usage package.
 - a. Partial Glazing of Steel Panels:
 - 1) 1/8 inch (3 mm) Acrylic glazing.
 - 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Clear Lexan glazing.
 - 4) 1/4 inch (6 mm) Clear Lexan glazing.
 - 5) 1/2 inch (12.5 mm) Clear Lexan Insulated glazing.

- 6) 1/8 inch (3 mm) Tempered glass.
 - 7) 1/4 inch (6 mm) Tempered glass.
 - 8) 1/2 inch (12.5 mm) Tempered Insulating glass.
 - 9) 1/4 inch (6 mm) Wire glass.
 - 10) 1/8 inch (3 mm) Double Strength glass.
 - 11) 1/2 inch (12.5 mm) Double Strength Insulating glass.
 - 12) 1/8 inch (3 mm) Low E glazing.
 - 13) 1/4 inch (6 mm) Low E glazing.
 - 14) 1/2 inch (12.5 mm) Low E Insulated glazing.
 - 15) 1/8 inch (3 mm) Solar Bronze glazing.
 - 16) 1/4 inch (6 mm) Solar Bronze glazing.
 - 17) 1/2 inch (12.5 mm) Solar Bronze Insulated glazing.
 - 18) 1/8 inch (3 mm) Obscure glazing.
 - 19) 1/4 inch (6 mm) Obscure glazing.
 - 20) 1/2 inch (12.5 mm) Obscure Insulated glazing.
 - 21) 1/4 inch (6 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 22) 3/8 inch (9.5 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 23) 5/8 inch (15.87 mm) Triple-Wall Polycarbonate (clear, bronze, white).
- b. Full Glazed Aluminum Sash Panels:
- 1) 1/8 inch (3 mm) Acrylic glazing.
 - 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Clear Lexan glazing.
 - 4) 1/4 inch (6 mm) Clear Lexan glazing.
 - 5) 1/2 inch (12.5 mm) Clear Lexan Insulated glazing.
 - 6) 1/8 inch (3 mm) Tempered glass.
 - 7) 1/4 inch (6 mm) Tempered glass.
 - 8) 1/2 inch (12.5 mm) Tempered Insulating glass.
 - 9) 1/4 inch (6 mm) Wire glass.
 - 10) 1/8 inch (3 mm) Double Strength glass.
 - 11) 1/2 inch (12.5 mm) Double Strength Insulating glass.
 - 12) 1/8 inch (3 mm) Low E glazing.
 - 13) 1/4 inch (6 mm) Low E glazing.
 - 14) 1/2 inch (12.5 mm) Low E Insulated glazing.
 - 15) 1/8 inch (3 mm) Solar Bronze glazing.
 - 16) 1/4 inch (6 mm) Solar Bronze glazing.
 - 17) 1/2 inch (12.5 mm) Solar Bronze Insulated glazing.
 - 18) 1/8 inch (3 mm) Obscure glazing.
 - 19) 1/4 inch (6 mm) Obscure glazing.
 - 20) 1/2 inch (12.5 mm) Obscure Insulated glazing.
 - 21) 1/4 inch (6 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 22) 3/8 inch (9.5 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 23) 5/8 inch (15.87 mm) Triple-Wall Polycarbonate (clear, bronze, white).
2. Finish and Color:
- a. Two coat baked-on polyester:
 - 1) Interior color, white.
 - 2) Exterior color, white.
 - 3) Exterior color, brown.
 - 4) Exterior color, tan.
 - 5) Exterior color, gray.
 - b. Baked-on Trinar polyvinylidene fluoride high performance coating:
 - 1) Exterior color, white.
 - 2) Exterior color, brown.

- 3) Exterior color, beige.
3. Wind Loads: Design and size components to withstand loads caused by pressure and suction of wind acting normal to plane of wall as calculated in accordance with applicable code as follows:
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.
 - d. Keyed lock with interlock switch for automatic operator.
6. Weatherstripping:
 - a. EPDM bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
 - a. Size:
 - 1) 2 inch (51 mm).
 - 2) 3 inch (76 mm).
 - b. Type:
 - 1) Standard lift.
 - 2) Vertical lift.
 - 3) High lift.
 - 4) Low headroom.
 - 5) Follow roof slope.
8. Manual Operation: Pull rope.
9. Manual Operation: Chain hoist.
10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
 - a. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
 - c. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.

- 6) Door timer operation.
- 7) Commercial light package.
- 8) Explosion and dust ignition proof control wiring.

H. Insulated Steel Sectional Overhead Doors: 598 Series Thermacore Insulated Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:

- 1. Door Assembly: Metal/foam/metal sandwich panel construction, with hot melt thermal break and weather-tight ship-lap design meeting joints.
 - a. Panel Thickness: 1 inch (25.4 mm).
 - b. Exterior Surface: Ribbed, textured.
 - c. Exterior Steel: .012 inch (.30 mm), hot-dip galvanized.
 - d. End Stiles: 20 gauge.
 - e. Spring Counterbalance: Sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of diecast aluminum with high strength galvanized aircraft cable. Sized with a minimum 7 to 1 safety factor.
 - 1) Standard cycle spring: 10,000 cycles.
 - 2) High cycle spring: 25,000 cycles.
 - 3) High cycle spring: 50,000 cycles.
 - 4) High cycle spring: 75,000 cycles.
 - 5) High cycle spring: 100,000 cycles.
 - f. Insulation: CFC-free and HCFC-free polyurethane, fully encapsulated.
 - g. Thermal Values: R-value of 9.31; U-value of 0.107.
 - h. Air Infiltration: 0.24 cfm at 15 mph; 0.46 cfm at 25 mph.
 - i. High-Usage Package: Provide with optional high-usage package.
 - a. Partial Glazing of Steel Panels:
 - 1) 1/8 inch (3 mm) Acrylic glazing.
 - 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Clear Lexan glazing.
 - 4) 1/4 inch (6 mm) Clear Lexan glazing.
 - 5) 1/2 inch (12.5 mm) Clear Lexan Insulated glazing.
 - 6) 1/8 inch (3 mm) Tempered glass.
 - 7) 1/4 inch (6 mm) Tempered glass.
 - 8) 1/2 inch (12.5 mm) Tempered Insulating glass.
 - 9) 1/4 inch (6 mm) Wire glass.
 - 10) 1/8 inch (3 mm) Double Strength glass.
 - 11) 1/2 inch (12.5 mm) Double Strength Insulating glass.
 - 12) 1/8 inch (3 mm) Low E glazing.
 - 13) 1/4 inch (6 mm) Low E glazing.
 - 14) 1/2 inch (12.5 mm) Low E Insulated glazing.
 - 15) 1/8 inch (3 mm) Solar Bronze glazing.
 - 16) 1/4 inch (6 mm) Solar Bronze glazing.
 - 17) 1/2 inch (12.5 mm) Solar Bronze Insulated glazing.
 - 18) 1/8 inch (3 mm) Obscure glazing.
 - 19) 1/4 inch (6 mm) Obscure glazing.
 - 20) 1/2 inch (12.5 mm) Obscure Insulated glazing.
 - 21) 1/4 inch (6 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 22) 3/8 inch (9.5 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 23) 5/8 inch (15.87 mm) Triple-Wall Polycarbonate (clear, bronze, white).
 - b. Full Glazed Aluminum Sash Panels:
 - 1) 1/8 inch (3 mm) Acrylic glazing.
 - 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Clear Lexan glazing.
 - 4) 1/4 inch (6 mm) Clear Lexan glazing.

- 5) 1/2 inch (12.5 mm) Clear Lexan Insulated glazing.
 - 6) 1/8 inch (3 mm) Tempered glass.
 - 7) 1/4 inch (6 mm) Tempered glass.
 - 8) 1/2 inch (12.5 mm) Tempered Insulating glass.
 - 9) 1/4 inch (6 mm) Wire glass.
 - 10) 1/8 inch (3 mm) Double Strength glass.
 - 11) 1/2 inch (12.5 mm) Double Strength Insulating glass.
 - 12) 1/8 inch (3 mm) Low E glazing.
 - 13) 1/4 inch (6 mm) Low E glazing.
 - 14) 1/2 inch (12.5 mm) Low E Insulated glazing.
 - 15) 1/8 inch (3 mm) Solar Bronze glazing.
 - 16) 1/4 inch (6 mm) Solar Bronze glazing.
 - 17) 1/2 inch (12.5 mm) Solar Bronze Insulated glazing.
 - 18) 1/8 inch (3 mm) Obscure glazing.
 - 19) 1/4 inch (6 mm) Obscure glazing.
 - 20) 1/2 inch (12.5 mm) Obscure Insulated glazing.
 - 21) 1/4 inch (6 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 22) 3/8 inch (9.5 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 23) 5/8 inch (15.87 mm) Triple-Wall Polycarbonate (clear, bronze, white).
2. Finish and Color: Two coat baked-on polyester with white exterior and white interior color.
 3. Wind Loads: Design and size components to withstand loads caused by pressure and suction of wind acting normal to plane of wall as calculated in accordance with applicable code as follows:
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
 4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
 5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.
 - d. Keyed lock with interlock switch for automatic operator.
 6. Weatherstripping:
 - a. EPDM bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
 7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
 - a. Size:
 - 1) 2 inch (51 mm).
 - 2) 3 inch (76 mm).
 - b. Type:
 - 1) Standard lift.
 - 2) Vertical lift.
 - 3) High lift.
 - 4) Low headroom.
 - 5) Follow roof slope.
 8. Manual Operation: Pull rope.
 9. Manual Operation: Chain hoist.
 10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.

- a. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
 - c. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.
 - 7) Commercial light package.
 - 8) Explosion and dust ignition proof control wiring.
- I. Insulated Steel Sectional Overhead Doors: 515 Series Thermacore Wind Load Insulated Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:
- 1. Door Assembly: Metal/foam/metal sandwich panel construction, with hot melt thermal break.
 - a. Panel Thickness: 1-3/8 inches (34.92 mm).
 - b. Exterior Surface:
 - 1) Microgroove, textured.
 - 2) Flush with non-repeating wood grain texture.
 - 3) Raised panel with non-repeating wood grain texture.
 - c. Exterior Steel: .015 inch (0.38 mm), hot-dipped galvanized.
 - d. Ends: Hot-dipped galvanized steel, full height with end caps.
 - 1) 18 gauge.
 - 2) 16 gauge.
 - e. Spring Counterbalance: Sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of die cast aluminum with high strength galvanized aircraft cable. Sized with a minimum 5 to 1 safety factor.
 - 1) High cycle spring: 25,000 cycles.
 - 2) High cycle spring: 50,000 cycles.
 - 3) High cycle spring: 100,000 cycles.
 - f. Thermal Values: R-value of 12.12; U-value of 0.0825.
 - g. Air Infiltration: 0.23 cfm at 15 mph.
 - h. Sound transmission class 20 when tested in accordance with ASTM E 413.
 - i. Outdoor-indoor transmission class 20 when tested in accordance with ASTM E 1332.
 - j. Insulation: CFC-free and HCFC-free polyurethane, fully encapsulated.

- 1) Insulated sections tested in accordance with ASTM E 84 and achieve a Flame spread Index of 10 or less, and a Smoke Developed Index of 210 or less.
- 2) Insulation material tested in accordance with ASTM D 1929 and achieve a minimum Flash Ignition temperature of 734 degrees F, and a minimum Self Ignition temperature of 950 degrees F.
- 3) Insulated sections shall meet all requirements of the UBC 17-5 corner burn.
- k. Partial Glazing of Steel Panels:
 - 1) Thermolite double insulated SSB set in 2-piece high-impact polymer frame.
 - 2) Tempered Thermolite.
 - 3) StyleLine Lite Colonial SSB.
- l. Single Panel Lite:
 - 1) 1/4 inch (6 mm) Tempered glass.
 - 2) 1/4 inch (6 mm) Acrylic (Plexiglass) glazing.
 - 3) 1/4 inch (6 mm) Polycarbonate (Lexan) glazing.
 - 4) 1/4 inch (6 mm) Polished wire glass.
- m. Colonial Style SSB with High Impact Polymer Frame:
2. Finish and Color:
 - a. Two coat baked-on polyester:
 - 1) Interior color, white.
 - 2) Exterior color, white.
 - 3) Exterior color, taupe.
 - 4) Exterior color, almond.
 - 5) Exterior color, brown.
 - 6) Exterior color, black
 - b. Exterior Bi-Directional Woodgrain Pattern:
 - 1) Exterior color, Oak.
 - 2) Exterior color, Dark brown.
3. Wind Load Design: Use the applicable building code to determine the actual loading required and edit the following paragraph accordingly. Coordinate with the manufacturer for the selection of doors to meet the required criteria.
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
 - b. Provide to meet Florida Building Code Product Approval #FL 16798 Large Missile-Impact.
 - c. Provide to meet Florida Building Code Product Approval #FL 16798 Non-Impact.
 - d. Provide to meet Texas Department of Insurance Product Evaluation TDI GDR-98 Large Missile-Impact.
 - e. Provide to meet Texas Department of Insurance Product Evaluation TDI GDR-98 Non-Impact.
 - f. Provide to meet Miami-Dade NOA 14-0204.08 Large Missile-Impact.
 - g. Provide to meet Miami-Dade NOA 14-0204.07 Large Missile-Impact.
4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.
 - d. Keyed lock with interlock switch for automatic operator.
 - e. Locking mechanism designed to maintain security for exterior while permitting break out when impacted from the inside.
6. Weatherstripping:
 - a. Flexible bulb-type strip at bottom section.
 - b. Flexible Jamb seals.

- c. Flexible Header seal.
- 7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
 - a. Size:
 - 1) 2 inch (51 mm).
 - 2) 3 inch (76 mm).
 - b. Type:
 - 1) Standard lift.
 - 2) Vertical lift.
 - 3) High lift.
 - 4) Low headroom.
 - 5) Follow roof slope.
 - c. Horizontal track shall be reinforced with continuous angle of adequate length and gauge to minimize deflection.
 - d. Vertical track shall be graduated to provide wedge type weathertight closing with continuous angle mounting for steel or wood jambs, and shall be fully adjustable to seal door at jambs.
- 8. Manual Operation: Push-up.
- 9. Manual Operation: Chain hoist.
- 10. Electric Motor Operation: Provide UL listed electric operator, equal to Genie Commercial Operators, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second.
 - a. Medium Duty
 - 1) Model MH – hoist
 - 2) Model MT – trolley
 - 3) Model MJ - jackshaft
 - b. Standard Duty
 - 1) Model H – hoist
 - 2) Model T – trolley
 - 3) Model J – jackshaft
 - c. Heavy Duty
 - 1) Model GH – hoist
 - 2) Model GT - trolley
 - d. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010 equal to Miller Edge.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - e. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
 - f. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.

- 4) Card reader control.
- 5) Photocell operation.
- 6) Door timer operation.
- 7) Commercial light package.
- 8) Explosion and dust ignition proof control wiring.

J. Insulated Steel Sectional Overhead Doors: 525 Series Thermacore Wind Load Insulated Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:

1. Door Assembly: Metal/foam/metal sandwich panel construction, with hot melt thermal break.
 - a. Panel Thickness: 1-7/8 inches (47.63 mm).
 - b. Exterior Surface:
 - 1) Microgroove, textured.
 - 2) Flush with non-repeating wood grain texture.
 - 3) Raised panel with non-repeating wood grain texture.
 - c. Exterior Steel: .015 inch (0.38 mm), hot-dipped galvanized.
 - d. Ends: Hot-dipped galvanized steel, full height with end caps.
 - 1) 18 gauge.
 - 2) 16 gauge.
 - e. Spring Counterbalance: Sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of die cast aluminum with high strength galvanized aircraft cable. Sized with a minimum 5 to 1 safety factor.
 - 1) High cycle spring: 25,000 cycles.
 - 2) High cycle spring: 50,000 cycles.
 - 3) High cycle spring: 100,000 cycles.
 - f. Thermal Values: R-value of 16.22; U-value of 0.0616.
 - g. Air Infiltration: 0.07 cfm at 15 mph.
 - h. Sound transmission class 20 when tested in accordance with ASTM E 413.
 - i. Outdoor-indoor transmission class 20 when tested in accordance with ASTM E 1332.
 - j. Insulation: CFC-free and HCFC-free polyurethane, fully encapsulated.
 - 1) Insulated sections tested in accordance with ASTM E 84 and achieve a Flame spread Index of 10 or less, and a Smoke Developed Index of 210 or less.
 - 2) Insulation material tested in accordance with ASTM D 1929 and achieve a minimum Flash Ignition temperature of 734 degrees F, and a minimum Self Ignition temperature of 950 degrees F.
 - 3) Insulated sections shall meet all requirements of the UBC 17-5 corner burn.
 - k. Partial Glazing of Steel Panels:
 - 1) Thermolite double insulated SSB set in 2-piece high-impact polymer frame.
 - 2) Tempered Thermolite.
 - 3) StyleLine Lite Colonial SSB.
 - l. Single Panel Lite:
 - 1) 1/4 inch (6 mm) Tempered glass.
 - 2) 1/4 inch (6 mm) Acrylic (Plexiglass) glazing.
 - 3) 1/4 inch (6 mm) Polycarbonate (Lexan) glazing.
 - 4) 1/4 inch (6 mm) Polished wire glass.
 - m. Colonial Style SSB with High Impact Polymer Frame:
2. Finish and Color:
 - a. Two coat baked-on polyester:
 - 1) Interior color, white.

- 2) Exterior color, white.
 - 3) Exterior color, taupe.
 - 4) Exterior color, almond.
 - 5) Exterior color, brown.
3. Wind Load Design: Use the applicable building code to determine the actual loading required and edit the following paragraph accordingly. Coordinate with the manufacturer for the selection of doors to meet the required criteria.
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
 - b. Provide to meet Florida Building Code Product Approval #FL 16798 Large Missile-Impact.
 - c. Provide to meet Florida Building Code Product Approval #FL 16798 Non-Impact.
 - d. Provide to meet Texas Department of Insurance Product Evaluation TDI GDR-98 Large Missile-Impact.
 - e. Provide to meet Texas Department of Insurance Product Evaluation TDI GDR-98 Non-Impact.
 - f. Provide to meet Miami-Dade NOA 14-0204.08 Large Missile-Impact.
 - g. Provide to meet Miami-Dade NOA 14-0204.07 Large Missile-Impact.
 4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
 5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.
 - d. Keyed lock with interlock switch for automatic operator.
 - e. Locking mechanism designed to maintain security for exterior while permitting break out when impacted from the inside.
 6. Weatherstripping:
 - a. Flexible bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
 7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
 - a. Size:
 - 1) 2 inch (51 mm).
 - 2) 3 inch (76 mm).
 - b. Type:
 - 1) Standard lift.
 - 2) Vertical lift.
 - 3) High lift.
 - 4) Low headroom.
 - 5) Follow roof slope.
 - c. Horizontal track shall be reinforced with continuous angle of adequate length and gauge to minimize deflection.
 - d. Vertical track shall be graduated to provide wedge type weathertight closing with continuous angle mounting for steel or wood jambs, and shall be fully adjustable to seal door at jambs.
 8. Manual Operation: Push-up.
 9. Manual Operation: Chain hoist.
 10. Electric Motor Operation: Provide UL listed electric operator, equal to Genie Commercial Operators, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second.
 - a. Medium Duty
 - 1) Model MH – hoist
 - 2) Model MT – trolley

- 3) Model MJ - jackshaft
- b. Standard Duty
 - 1) Model H – hoist
 - 2) Model T – trolley
 - 3) Model J – jackshaft
- c. Heavy Duty
 - 1) Model GH – hoist
 - 2) Model GT - trolley
- d. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010 equal to Miller Edge.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
- e. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
- f. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.
 - 7) Commercial light package.
 - 8) Explosion and dust ignition proof control wiring.

- K. Insulated Steel Sectional Overhead Doors: 418 Series Insulated Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:
- 1. Door Assembly: Insulated steel door assembly with rabbeted meeting rails to provide full-width interlocking structural rigidity.
 - a. Panel Thickness: 2 inches (51 mm).
 - b. Exterior Surface: Flush.
 - c. Exterior Steel: 16 gauge, hot-dip galvanized.
 - d. Back Cover:
 - 1) 26 gauge steel.
 - 2) Poly-Backed.
 - 3) High Impact Polystyrene Backcover.
 - e. Center and End Stiles: 16 gauge steel.
 - f. Spring Counterbalance: Sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of diecast aluminum with high strength galvanized aircraft cable. Sized with a minimum 7 to 1 safety factor.
 - 1) Standard cycle spring: 10,000 cycles.
 - 2) High cycle spring: 25,000 cycles.
 - 3) High cycle spring: 50,000 cycles.
 - 4) High cycle spring: 75,000 cycles.

- 5) High cycle spring: 100,000 cycles.
- g. Insulation: Polystyrene.
- h. Thermal Values:
 - 1) Polystyrene - R-value of 7.35; U-Value of 0.136.
- i. Partial Glazing of Steel Panels:
 - 1) Insulated double strength glass, 24 inch by 7 inch (610 mm by 178 mm) window.
 - 2) Insulated tempered glass, 24 inch by 7 inch (610 mm by 178 mm) window.
- j. Full Glazed Aluminum Sash Panels:
 - 1) 1/8 inch (3 mm) Acrylic glazing.
 - 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Polycarbonate glazing.
 - 4) 1/4 inch (6 mm) Polycarbonate glazing.
 - 5) 1/2 inch (12.5 mm) Polycarbonate glazing.
 - 6) 1/8 inch (3 mm) Tempered Glass.
 - 7) 1/4 inch (6 mm) Tempered Glass.
 - 8) 1/2 inch (12.5 mm) Tempered Glass.
 - 9) 1/4 inch (6 mm) Wire Glass.
 - 10) 1/2 inch (12.5 mm) Insulating Glass.
 - 11) 1/8 inch (3 mm) Double strength glass.
- 2. Finish and Color: Two coat baked-on polyester with white exterior and white interior color.
- 3. Wind Load Design: Use the applicable building code to determine the actual loading required and edit the following paragraph accordingly. Coordinate with the manufacturer for the selection of doors to meet the required criteria.
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
 - b. Provide to meet Florida Building Code Product Approval #FL 11734 Non-Impact.
- 4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
- 5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.
 - d. Keyed lock with interlock switch for automatic operator.
 - e. Locking mechanism designed to maintain security for exterior while permitting break out when impacted from the inside.
- 6. Weatherstripping:
 - a. Flexible bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
- 7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
 - a. Size:
 - 1) 2 inch (51 mm).
 - 2) 3 inch (76 mm).
 - b. Type:
 - 1) Standard lift.
 - 2) Vertical lift.
 - 3) High lift.
 - 4) Low headroom.
 - 5) Follow roof slope.
- 8. Manual Operation: Pull rope.
- 9. Manual Operation: Chain hoist.

10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
 - a. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
 - c. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.
 - 7) Commercial light package.
 - 8) Explosion and dust ignition proof control wiring.

- L. Insulated Steel Sectional Overhead Doors: 422 Series Insulated Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:
 1. Door Assembly: Insulated steel door assembly with rabbeted meeting rails to provide full-width interlocking structural rigidity.
 - a. Panel Thickness: 2 inches (51 mm).
 - b. Exterior Surface: Ribbed.
 - c. Exterior Steel: 20 gauge, hot-dip galvanized.
 - d. Back Cover:
 - 1) 26 gauge steel.
 - 2) Poly-Backed.
 - 3) High Impact Polystyrene Backcover.
 - e. Center and End Stiles: 16 gauge steel.
 - f. Spring Counterbalance: Sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of diecast aluminum with high strength galvanized aircraft cable. Sized with a minimum 7 to 1 safety factor.
 - 1) Standard cycle spring: 10,000 cycles.
 - 2) High cycle spring: 25,000 cycles.
 - 3) High cycle spring: 50,000 cycles.
 - 4) High cycle spring: 75,000 cycles.
 - 5) High cycle spring: 100,000 cycles.
 - g. Insulation: Polystyrene.
 - h. Thermal Values:
 - 1) Polystyrene - R-value of 7.35; U-value of 0.136.
 - i. Partial Glazing of Steel Panels:

- 1) Insulated double strength glass, 24 inch by 7 inch (610 mm by 178 mm) window.
- 2) Insulated tempered glass, 24 inch by 7 inch (610 mm by 178 mm) window.
- j. Full Glazed Aluminum Sash Panels:
 - 1) 1/8 inch (3 mm) Acrylic glazing.
 - 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Polycarbonate glazing.
 - 4) 1/4 inch (6 mm) Polycarbonate glazing.
 - 5) 1/2 inch (12.5 mm) Polycarbonate glazing.
 - 6) 1/8 inch (3 mm) Tempered Glass.
 - 7) 1/4 inch (6 mm) Tempered Glass.
 - 8) 1/2 inch (12.5 mm) Tempered Glass.
 - 9) 1/4 inch (6 mm) Wire Glass.
 - 10) 1/2 inch (12.5 mm) Insulating Glass.
 - 11) 1/8 inch (3 mm) Double strength glass.
2. Finish and Color: Two coat baked-on polyester with white exterior and white interior color.
3. Wind Load Design: Use the applicable building code to determine the actual loading required and edit the following paragraph accordingly. Coordinate with the manufacturer for the selection of doors to meet the required criteria.
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
 - b. Provide to meet Florida Building Code Product Approval #FL 11734 Non-Impact.
4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.
 - d. Keyed lock with interlock switch for automatic operator.
 - e. Locking mechanism designed to maintain security for exterior while permitting break out when impacted from the inside.
6. Weatherstripping:
 - a. Flexible bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
 - a. Size:
 - 1) 2 inch (51 mm).
 - 2) 3 inch (76 mm).
 - b. Type:
 - 1) Standard lift.
 - 2) Vertical lift.
 - 3) High lift.
 - 4) Low headroom.
 - 5) Follow roof slope.
8. Manual Operation: Pull rope.
9. Manual Operation: Chain hoist.
10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
 - a. Entrapment Protection: Required for momentary contact, includes radio control operation.

- 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
 - c. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.
 - 7) Commercial light package.
 - 8) Explosion and dust ignition proof control wiring.
- M. Insulated Steel Sectional Overhead Doors: 426 Series Insulated Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:
1. Door Assembly: Insulated steel door assembly with rabbeted meeting rails to provide full-width interlocking structural rigidity.
 - a. Panel Thickness: 2 inches (51 mm).
 - b. Exterior Surface: Ribbed.
 - c. Exterior Steel: 24 gauge, hot-dip galvanized.
 - d. Back Cover:
 - 1) 26 gauge steel.
 - 2) Poly-Backed.
 - 3) High Impact Polystyrene Backcover.
 - e. Center and End Stiles: 16 gauge steel.
 - f. Spring Counterbalance: Sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of diecast aluminum with high strength galvanized aircraft cable. Sized with a minimum 7 to 1 safety factor.
 - 1) Standard cycle spring: 10,000 cycles.
 - 2) High cycle spring: 25,000 cycles.
 - 3) High cycle spring: 50,000 cycles.
 - 4) High cycle spring: 75,000 cycles.
 - 5) High cycle spring: 100,000 cycles.
 - g. Insulation: Polystyrene.
 - h. Thermal Values:
 - 1) Polystyrene - R-value of 7.35; U-value of 0.136.
 - i. Partial Glazing of Steel Panels:
 - 1) Insulated double strength glass, 24 inch by 7 inch (610 mm by 178 mm) window.
 - j. Full Glazed Aluminum Sash Panels:
 - 1) 1/8 inch (3 mm) Acrylic glazing.
 - 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Polycarbonate glazing.

- 4) 1/4 inch (6 mm) Polycarbonate glazing.
 - 5) 1/2 inch (12.5 mm) Polycarbonate glazing.
 - 6) 1/8 inch (3 mm) Tempered Glass.
 - 7) 1/4 inch (6 mm) Tempered Glass.
 - 8) 1/2 inch (12.5 mm) Tempered Glass.
 - 9) 1/4 inch (6 mm) Wire Glass.
 - 10) 1/2 inch (12.5 mm) Insulating Glass.
 - 11) 1/8 inch (3 mm) Double strength glass.
2. Finish and Color: Two coat baked-on polyester with white exterior and white interior color.
 3. Wind Loads: Design and size components to withstand loads caused by pressure and suction of wind acting normal to plane of wall as calculated in accordance with applicable code as follows:
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
 4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
 5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.
 - d. Keyed lock with interlock switch for automatic operator.
 - e. Locking mechanism designed to maintain security for exterior while permitting break out when impacted from the inside.
 6. Weatherstripping:
 - a. Flexible bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
 7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
 - a. Size:
 - 1) 2 inch (51 mm).
 - 2) 3 inch (76 mm).
 - b. Type:
 - 1) Standard lift.
 - 2) Vertical lift.
 - 3) High lift.
 - 4) Low headroom.
 - 5) Follow roof slope.
 8. Manual Operation: Pull rope.
 9. Manual Operation: Chain hoist.
 10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
 - a. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.

- 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
 - c. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.
 - 7) Commercial light package.
 - 8) Explosion and dust ignition proof control wiring.
- N. Insulated Steel Sectional Overhead Doors: 432 Series Insulated Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:
1. Door Assembly: Insulated steel door assembly with rabbeted meeting rails to provide full-width interlocking structural rigidity.
 - a. Panel Thickness: 2 inches (51 mm).
 - b. Exterior Surface: Ribbed.
 - c. Exterior Steel: Nominal 24 gauge, hot-dip galvanized.
 - d. Back Cover:
 - 1) 26 gauge steel.
 - 2) Poly-Backed.
 - 3) High Impact Polystyrene Backcover.
 - e. Center and End Stiles: 16 gauge steel.
 - f. Spring Counterbalance: Sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of diecast aluminum with high strength galvanized aircraft cable. Sized with a minimum 7 to 1 safety factor.
 - 1) Standard cycle spring: 10,000 cycles.
 - 2) High cycle spring: 25,000 cycles.
 - 3) High cycle spring: 50,000 cycles.
 - 4) High cycle spring: 75,000 cycles.
 - 5) High cycle spring: 100,000 cycles.
 - g. Insulation: Polystyrene.
 - h. Thermal Values:
 - 1) Polystyrene - R-value of 7.35; U-value of 0.136.
 - i. Partial Glazing of Steel Panels:
 - 1) Insulated double strength glass, 24 inch by 7 inch (610 mm by 178 mm) window.
 - j. Full Glazed Aluminum Sash Panels:
 - 1) 1/8 inch (3 mm) Acrylic glazing.
 - 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Polycarbonate glazing.
 - 4) 1/4 inch (6 mm) Polycarbonate glazing.
 - 5) 1/2 inch (12.5 mm) Polycarbonate glazing.
 - 6) 1/8 inch (3 mm) Tempered Glass.
 - 7) 1/4 inch (6 mm) Tempered Glass.
 - 8) 1/2 inch (12.5 mm) Tempered Glass.
 - 9) 1/4 inch (6 mm) Wire Glass.
 - 10) 1/2 inch (12.5 mm) Insulating Glass.
 - 11) 1/8 inch (3 mm) Double strength glass.
 2. Finish and Color: Two coat baked-on polyester with white exterior and white interior color.

3. Wind Load Design: Use the applicable building code to determine the actual loading required and edit the following paragraph accordingly. Coordinate with the manufacturer for the selection of doors to meet the required criteria.
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
 - b. Provide to meet Florida Building Code Product Approval #FL 11734 Non-Impact.
4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.
 - d. Keyed lock with interlock switch for automatic operator.
 - e. Locking mechanism designed to maintain security for exterior while permitting break out when impacted from the inside.
6. Weatherstripping:
 - a. Flexible bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
 - a. Size:
 - 1) 2 inch (51 mm).
 - 2) 3 inch (76 mm).
 - b. Type:
 - 1) Standard lift.
 - 2) Vertical lift.
 - 3) High lift.
 - 4) Low headroom.
 - 5) Follow roof slope.
8. Manual Operation: Pull rope.
9. Manual Operation: Chain hoist.
10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
 - a. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
 - c. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.

- 3) Radio control operation.
- 4) Card reader control.
- 5) Photocell operation.
- 6) Door timer operation.
- 7) Commercial light package.
- 8) Explosion and dust ignition proof control wiring.

- O. Insulated Steel Sectional Overhead Doors: 470 Series Insulated Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:
1. Door Assembly: Rigid steel construction; fully insulated on the inside face with continuous steel backing on the inside face. Fabricated with steel end stiles and tongue and groove sections.
 - a. Panel Thickness: 2 inches (51 mm).
 - b. Exterior Surface: Ribbed.
 - c. Exterior Steel: 26 gauge, hot-dipped galvanized with an embossed simulated wood grain texture.
 - d. Interior Steel: 29 gauge, hot-dipped galvanized
 - e. Springs:
 - 1) 10,000 cycles.
 - 2) 25,000 cycles.
 - 3) 50,000 cycles.
 - 4) 75,000 cycles.
 - 5) 100,000 cycles.
 - f. Insulation: Polystyrene.
 - g. Thermal Values:
 - 1) Polystyrene - R-value of 9.83; U-value of 0.102.
 - h. Partial Glazing of Steel Panels:
 - 1) 19 inch by 12 inch window.
 - (a) DSB
 - (b) Tempered Glass
 - (c) Clear Lexan
 - (d) Solar Bronze
 - (e) Obscure
 - 2) 42 inch by 13 inch window.
 - (a) DSB
 2. Finish and Color: Two coat baked-on polyester. Color as follows:
 - a. White
 - b. Almond
 - c. Brown
 - d. Sandstone
 - e. Desert Tan
 3. Windload Design: Provide to meet the Design/Performance requirements specified.
 4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
 5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.
 - d. Keyed lock with interlock switch for automatic operator.
 - e. Locking mechanism designed to maintain security for exterior while permitting break out when impacted from the inside.
 6. Weatherstripping:
 - a. Flexible bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.

7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
8. Manual Operation: Pull rope.
9. Manual Operation: Chain hoist.
10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
 - a. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
 - c. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.
 - 7) Commercial light package.
 - 8) Explosion and dust ignition proof control wiring.

2.3 STEEL SECTIONAL OVERHEAD DOORS

- A. Sectional Overhead Steel Doors: 416 Series Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:
 1. Door Assembly: Steel door assembly with rabbeted meeting rails to provide full-width interlocking structural rigidity.
 - a. Panel Thickness: 2 inches (51 mm).
 - b. Exterior Surface: Flush.
 - c. Section Material: 16 gauge, galvanized steel.
 - d. Center and End Stiles: 16 gauge steel.
 - e. Springs:
 - 1) 10,000 cycles.
 - 2) 25,000 cycles.
 - 3) 50,000 cycles.
 - 4) 75,000 cycles.
 - 5) 100,000 cycles.
 - f. Partial Glazing of Steel Panels:
 - 1) Non-Insulated double strength glass, 24 inch by 7 inch (610 mm by 178 mm) window.
 - g. Full Glazed Aluminum Sash Panels:
 - 1) Acrylic glazing.

- 2) 1/8 inch (3 mm) double strength glass.
2. Finish and Color: Two coat baked-on polyester, white color.
3. Wind Load Design: Use the applicable building code to determine the actual loading required and edit the following paragraph accordingly. Coordinate with the manufacturer for the selection of doors to meet the required criteria.
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
 - b. Provide to meet Florida Building Code Product Approval #FL 11734 Non-Impact.
4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.
 - d. Keyed lock with interlock switch for automatic operator.
 - e. Locking mechanism designed to maintain security for exterior while permitting break out when impacted from the inside.
6. Weatherstripping:
 - a. Flexible bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
8. Manual Operation: Pull rope.
9. Manual Operation: Chain hoist.
10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
 - a. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
 - c. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.
 - 7) Commercial light package.
 - 8) Explosion and dust ignition proof control wiring.

- B. Sectional Overhead Steel Doors: 420 Series Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:
1. Door Assembly: Steel door assembly with rabbeted meeting rails to provide full-width interlocking structural rigidity.
 - a. Panel Thickness: 2 inches (51 mm).
 - b. Exterior Surface: Ribbed.
 - c. Section Material: 20 gauge, galvanized steel.
 - d. Center and End Stiles: 16 gauge steel.
 - e. Springs:
 - 1) 10,000 cycles.
 - 2) 25,000 cycles.
 - 3) 50,000 cycles.
 - 4) 75,000 cycles.
 - 5) 100,000 cycles.
 - f. Partial Glazing of Steel Panels:
 - 1) Non-Insulated double strength glass, 24 inch by 7 inch (610 mm by 178 mm) window.
 - g. Full Glazed Aluminum Sash Panels:
 - 1) Acrylic glazing.
 - 2) 1/8 inch (3 mm) double strength glass.
 2. Finish and Color: Two coat baked-on polyester, white color.
 3. Wind Load Design: Use the applicable building code to determine the actual loading required and edit the following paragraph accordingly. Coordinate with the manufacturer for the selection of doors to meet the required criteria.
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
 - b. Provide to meet Florida Building Code Product Approval #FL 11734 Non-Impact.
 4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
 5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.
 - d. Keyed lock with interlock switch for automatic operator.
 - e. Locking mechanism designed to maintain security for exterior while permitting break out when impacted from the inside.
 6. Weatherstripping:
 - a. Flexible bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
 7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
 8. Manual Operation: Pull rope.
 9. Manual Operation: Chain hoist.
 10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
 - a. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:

- 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
- c. Special Operation:
- 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.
 - 7) Commercial light package.
 - 8) Explosion and dust ignition proof control wiring.

C. Sectional Overhead Steel Doors: 424 Series Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:

1. Door Assembly: Steel door assembly with rabbeted meeting rails to provide full-width interlocking structural rigidity.
 - a. Panel Thickness: 2 inches (51 mm).
 - b. Exterior Surface: Ribbed.
 - c. Section Material: 24 gauge, galvanized steel.
 - d. Center and End Stiles: 16 gauge steel.
 - e. Springs:
 - 1) 10,000 cycles.
 - 2) 25,000 cycles.
 - 3) 50,000 cycles.
 - 4) 75,000 cycles.
 - 5) 100,000 cycles.
 - f. Partial Glazing of Steel Panels:
 - 1) Non-Insulated double strength glass, 24 inch by 7 inch (610 mm by 178 mm) window.
 - g. Full Glazed Aluminum Sash Panels:
 - 1) Acrylic glazing.
 - 2) 1/8 inch (3 mm) double strength glass.
2. Finish and Color: Two coat baked-on polyester, white color.
3. Wind Load Design: Use the applicable building code to determine the actual loading required and edit the following paragraph accordingly. Coordinate with the manufacturer for the selection of doors to meet the required criteria.
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
 - b. Provide to meet Florida Building Code Product Approval #FL 11734 Non-Impact.
 - c. Provide to meet Miami-Dade NOA 11-0912.06 Large Missile-Impact.
 - d. Provide to meet Miami-Dade NOA 11-0330.05 Large Missile-Impact.
 - e. Provide to meet Miami-Dade NOA 11-1222.02 Large Missile-Impact.
4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.

- d. Keyed lock with interlock switch for automatic operator.
 - e. Locking mechanism designed to maintain security for exterior while permitting break out when impacted from the inside.
6. Weatherstripping:
- a. Flexible bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
8. Manual Operation: Pull rope.
9. Manual Operation: Chain hoist.
10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
- a. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
 - c. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.
 - 7) Commercial light package.
 - 8) Explosion and dust ignition proof control wiring.
- D. Sectional Overhead Steel Doors: 430 Series Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:
- 1. Door Assembly: Steel door assembly with rabbeted meeting rails to provide full-width interlocking structural rigidity.
 - a. Panel Thickness: 2 inches (51 mm).
 - b. Exterior Surface: Ribbed.
 - c. Section Material: Nominal 24 gauge, galvanized steel.
 - d. Center and End Stiles: 16 gauge steel.
 - e. Springs:
 - 1) 10,000 cycles.
 - 2) 25,000 cycles.
 - 3) 50,000 cycles.
 - 4) 75,000 cycles.
 - 5) 100,000 cycles.

- f. Partial Glazing of Steel Panels:
 - 1) Non-Insulated double strength glass, 24 inch by 7 inch (610 mm by 178 mm) window.
- g. Full Glazed Aluminum Sash Panels:
 - 1) Acrylic glazing.
 - 2) 1/8 inch (3 mm) double strength glass.
- 2. Finish and Color: Two coat baked-on polyester, white color.
- 3. Wind Loads: Design and size components to withstand loads caused by pressure and suction of wind acting normal to plane of wall as calculated in accordance with applicable code as follows:
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
- 4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
- 5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
 - c. Keyed lock.
 - d. Keyed lock with interlock switch for automatic operator.
 - e. Locking mechanism designed to maintain security for exterior while permitting break out when impacted from the inside.
- 6. Weatherstripping:
 - a. Flexible bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
- 7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
- 8. Manual Operation: Pull rope.
- 9. Manual Operation: Chain hoist.
- 10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
 - a. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
 - c. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.

- 7) Commercial light package.
- 8) Explosion and dust ignition proof control wiring.

2.4 GLAZED ALUMINUM SECTIONAL OVERHEAD DOORS

A. Glazed Sectional Overhead Doors: 511 Series Aluminum Doors by Overhead Door Corporation. Units shall have the following characteristics:

1. Door Assembly: Stile and rail assembly secured with 1/4 inch (6 mm) diameter through rods.
 - a. Panel Thickness: 1-3/4 inches (44 mm).
 - b. Center Stile Width: 21/32 inch (17 mm).
 - c. End Stile Width: 2-3/4 inches (70 mm).
 - d. Intermediate Rail Pair Width: 1-3/8 inches (35 mm).
 - e. Top Rail Width:
 - 1) 2-3/8 inches (60 mm).
 - 2) 3-3/4 inches (95 mm).
 - f. Bottom Rail Width:
 - 1) 2-3/8 inches (60 mm).
 - 2) 3-3/4 inches (95 mm).
 - 3) 4-1/2 inches (114 mm).
 - g. Aluminum Panels: 0.050 inch (1.3 mm) thick, aluminum.
 - h. Stiles and Rails: 6063 - T6 aluminum.
 - i. Springs:
 - 1) 10,000 cycles.
 - 2) 25,000 cycles.
 - 3) 50,000 cycles.
 - 4) 75,000 cycles.
 - 5) 100,000 cycles.
 - j. Glazing:
 - 1) 1/8 inch (3 mm) Acrylic glazing.
 - 2) 1/4 inch (6 mm) Acrylic glazing.
 - 3) 1/8 inch (3 mm) Clear Lexan glazing.
 - 4) 1/4 inch (6 mm) Clear Lexan glazing.
 - 5) 1/2 inch (12.5 mm) Clear Lexan Insulated glazing.
 - 6) 1/8 inch (3 mm) Tempered glass.
 - 7) 1/4 inch (6 mm) Tempered glass.
 - 8) 1/2 inch (12.5 mm) Tempered Insulating glass.
 - 9) 1/4 inch (6 mm) Wire glass.
 - 10) 1/8 inch (3 mm) Double Strength glass.
 - 11) 1/2 inch (12.5 mm) Double Strength Insulating glass.
 - 12) 1/8 inch (3 mm) Low E glazing.
 - 13) 1/4 inch (6 mm) Low E glazing.
 - 14) 1/2 inch (12.5 mm) Low E Insulated glazing.
 - 15) 1/8 inch (3 mm) Solar Bronze glazing.
 - 16) 1/4 inch (6 mm) Solar Bronze glazing.
 - 17) 1/2 inch (12.5 mm) Solar Bronze Insulated glazing.
 - 18) 1/8 inch (3 mm) Obscure glazing.
 - 19) 1/4 inch (6 mm) Obscure glazing.
 - 20) 1/2 inch (12.5 mm) Obscure Insulated glazing.
 - 21) 1/4 inch (6 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 22) 3/8 inch (9.5 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - 23) 5/8 inch (15.87 mm) Triple-Wall Polycarbonate (clear, bronze, white).
2. Finish and Color:
 - a. Anodized Finish: Clear anodized.

- b. Anodized Finish: Bronze anodized.
 - c. Powder coat finish bronze light.
 - d. Powder coat finish bronze medium.
 - e. Powder coat finish bronze dark.
 - f. Powder Coating Finish: Color as selected by Architect from manufacturer's standard colors.
3. Wind Loads: Design and size components to withstand loads caused by pressure and suction of wind acting normal to plane of wall as calculated in accordance with applicable code as follows:
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
 4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
 5. Lock: Interior galvanized single unit.
 6. Weatherstripping:
 - a. Flexible bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
 7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
 8. Manual Operation: Pull rope.
 9. Manual Operation: Chain hoist.
 10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
 - a. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
 - c. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.
 - 7) Commercial light package.
 - 8) Explosion and dust ignition proof control wiring.
- B. Glazed Sectional Overhead Doors: 521 Series Aluminum Doors by Overhead Door Corporation.
1. Door Assembly: Stile and rail assembly secured with 1/4 inch (6 mm) diameter through rods.

- a. Panel Thickness: 1-3/4 inches (44 mm).
 - b. Center Stile Width: 2-11/16 inches (68 mm)
 - c. End Stile Width: 3-5/16 inches (84 mm)
 - d. Intermediate Rail Pair Width: 3-11/16 inches (94 mm).
 - e. Top Rail Width:
 - 1) 2-3/8 inches (60 mm).
 - 2) 3-3/4 inches (95 mm).
 - f. Bottom Rail Width:
 - 1) 3-3/4 inches (95 mm).
 - 2) 4-1/2 inches (114 mm).
 - g. Aluminum Panels: 0.050 inch (1.3 mm) thick, aluminum.
 - h. Stiles and Rails: 6063 - T6 aluminum.
 - i. Springs:
 - 1) 10,000 cycles.
 - 2) 25,000 cycles.
 - 3) 50,000 cycles.
 - 4) 75,000 cycles.
 - 5) 100,000 cycles.
 - j. Glazing:
 - 1) Impact:
 - (a) .250 inch (6.35 mm) Clear UV Resistant Polycarbonate.
 - (b) .250 inch (6.35 mm) Matte White Obscure UV Resistant Polycarbonate.
 - 2) Non-Impact:
 - (a) 1/8 inch (3 mm) Acrylic glazing.
 - (b) 1/4 inch (6 mm) Acrylic glazing.
 - (c) 1/8 inch (3 mm) Clear Lexan glazing.
 - (d) 1/4 inch (6 mm) Clear Lexan glazing.
 - (e) 1/2 inch (12.5 mm) Clear Lexan Insulated glazing.
 - (f) 1/8 inch (3 mm) Tempered glass.
 - (g) 1/4 inch (6 mm) Tempered glass.
 - (h) 1/2 inch (12.5 mm) Tempered Insulating glass.
 - (i) 1/4 inch (6 mm) Wire glass.
 - (j) 1/8 inch (3 mm) Double Strength glass.
 - (k) 1/2 inch (12.5 mm) Double Strength Insulating glass.
 - (l) 1/8 inch (3 mm) Low E glazing.
 - (m) 1/4 inch (6 mm) Low E glazing.
 - (n) 1/2 inch (12.5 mm) Low E Insulated glazing.
 - (o) 1/8 inch (3 mm) Solar Bronze glazing.
 - (p) 1/4 inch (6 mm) Solar Bronze glazing.
 - (q) 1/2 inch (12.5 mm) Solar Bronze Insulated glazing.
 - (r) 1/8 inch (3 mm) Obscure glazing.
 - (s) 1/4 inch (6 mm) Obscure glazing.
 - (t) 1/2 inch (12.5 mm) Obscure Insulated glazing.
 - (u) 1/4 inch (6 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - (v) 3/8 inch (9.5 mm) Twin-Wall Polycarbonate (clear, bronze, white).
 - (w) 5/8 inch (15.87 mm) Triple-Wall Polycarbonate (clear, bronze, white).
2. Finish and Color:
- a. Anodized Finish: Clear anodized.
 - b. Anodized Finish: Bronze anodized.
 - c. Powder coat finish bronze light.
 - d. Powder coat finish bronze medium.
 - e. Powder coat finish bronze dark.

- f. Powder Coating Finish: Color as selected by Architect from manufacturer's standard colors.
 - 3. Wind Load Design: Use the applicable building code to determine the actual loading required and edit the following paragraph accordingly. Coordinate with the manufacturer for the selection of doors to meet the required criteria.
 - a. Design pressure of _____ lb/sq ft (_____ kPa).
 - b. Provide to meet Florida Building Code Product Approval #FL 17629 Large Missile-Impact.
 - c. Provide to meet Florida Building Code Product Approval #FL 11734 Non-Impact.
 - 4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
 - 5. Lock: Interior galvanized single unit.
 - 6. Weatherstripping:
 - a. Flexible bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
 - 7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
 - 8. Manual Operation: Pull rope.
 - 9. Manual Operation: Chain hoist.
 - 10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
 - a. Entrapment Protection: Required for momentary contact, includes radio control operation.
 - 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
 - c. Special Operation:
 - 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.
 - 7) Commercial light package.
 - 8) Explosion and dust ignition proof control wiring.
- C. Glazed Sectional Overhead Doors: 522 Series Aluminum Doors by Overhead Door Corporation.
- 1. Door Assembly: Stile and rail assembly of aluminum alloy 6063-T6, 1-3/8 inch thick stiles and rails, 1/4" tempered glass

2. Rails: Top and bottom rails with 3-1/2 inches wide, lower intermediate rail 1-3/8 inches, upper rail 1-5/8 inches, minimum wall thickness 0.062 inch, bottom and lower intermediate rails with glass ledge
 - a. Stiles: Top, bottom, and end stiles are 3-1/2 inches wide, center stile 3 inches wide, minimum wall thickness 0.062 inch.
 - b. Springs:
 - 1) Standard cycle spring: 10,000 cycles.
 - 2) High cycle spring: 25,000 cycles.
 - 3) High cycle spring: 50,000 cycles.
 - 4) High cycle spring: 75,000 cycles.
 - 5) High cycle spring: 100,000 cycles.
 - c. Glazing:
 - 1) 1/4 inch (6 mm) White Opaque Tempered glass
 - 2) 1/4 inch (6 mm) Black Opaque Tempered glass
 - 3) 1/4 inch (6 mm) Mirrored Gray Tempered glass
 - 4) 1/4 inch (6 mm) Mirrored Bronze Tempered glass
 - 5) 1/4 inch (6 mm) Translucent Black Tempered glass
3. Finish and Color:
 - a. Anodized Finish: Black anodized
 - b. Anodized Finish: Bronze anodized
 - c. Powder Coating Finish: White powder coat
 - d. Powder Coating Finish: Black powder coat
 - e. Powder Coating Finish: Bronze powder coat
4. Hardware: Black and white powder coated steel hinges and fixtures. Ball bearing rollers with hardened steel races.
5. Lock:
 - a. Interior mounted slide lock.
 - b. Interior mounted slide lock with interlock switch for automatic operator.
6. Weatherstripping:
 - a. Flexible bulb-type strip at bottom section.
 - b. Flexible Jamb seals.
 - c. Flexible Header seal.
7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
 - a. Size:
 - 1) 2 inch (51 mm).
 - 2) 3 inch (76 mm).
 - b. Type:
 - 1) Standard lift.
 - 2) Vertical lift.
 - 3) High lift.
 - 4) Low headroom.
 - 5) Follow roof slope.
 - c. Horizontal track shall be reinforced with continuous angle of adequate length and gauge to minimize deflection.
 - d. Vertical track shall be graduated to provide wedge type weathertight closing with continuous angle mounting for steel or wood jambs, and shall be fully adjustable to seal door at jambs.
8. Manual Operation: Pull rope.
9. Manual Operation: Chain hoist.
10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
 - a. Entrapment Protection: Required for momentary contact, includes radio control operation.

- 1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
 - 2) Electric sensing edge monitored to meet UL 325/2010.
 - 3) Photoelectric sensors monitored to meet UL 325/2010.
- b. Operator Controls:
- 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operated control stations with open, close, and stop buttons.
 - 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Flush mounting.
 - 5) Surface mounting.
 - 6) Interior location.
 - 7) Exterior location.
 - 8) Both interior and exterior location.
- c. Special Operation:
- 1) Pull switch.
 - 2) Vehicle detector operation.
 - 3) Radio control operation.
 - 4) Card reader control.
 - 5) Photocell operation.
 - 6) Door timer operation.
 - 7) Commercial light package.
 - 8) Explosion and dust ignition proof control wiring.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until openings have been properly prepared.
- B. Verify wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.
- C. Verify electric power is available and of correct characteristics.
- D. If preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean adjacent surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install overhead doors and track in accordance with approved shop drawings and the manufacturer's printed instructions.
- B. Coordinate installation with adjacent work to ensure proper clearances and allow for maintenance.

- C. Anchor assembly to wall construction and building framing without distortion or stress.
- D. Securely brace door tracks suspended from structure. Secure tracks to structural members only.
- E. Fit and align door assembly including hardware.
- F. Coordinate installation of electrical service. Complete power and control wiring from disconnect to unit components.

3.4 CLEANING AND ADJUSTING

- A. Adjust door assembly to smooth operation and in full contact with weatherstripping.
- B. Clean doors, frames, glass and polycarbonate according to manufacturer's instructions.
- C. Remove temporary labels and visible markings. Do not remove polycarbonate care and maintenance label required to maintain warranty.

3.5 PROTECTION

- A. Do not permit construction traffic through overhead door openings after adjustment and cleaning.
- B. Protect installed products until completion of project.
- C. Touch-up, damaged coatings and finishes and repair minor damage before Substantial Completion.

END OF SECTION