SECTION 07 42 00

INSULATING METAL FACED WALL AND ROOF PANELS - HORIZONTAL AND VERTICAL INSULATED SLIDING DOORS

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\*\* NOTE TO SPECIFIER \*\* Advanced Insulation Concepts Inc.; insulating panel and door systems.
This section is based on the products of Advanced Insulation Concepts Inc., which is located at:8055 Production Ave.Florence, KY 41042-3094Toll Free Tel: 800-826-3100Tel: 859-342-8550Fax: 859-342-5445Email: [request info (mlloyd@aicinsulate.com)](https://arcat.com/rfi?action=email&company=Advanced%252BInsulation%252BConcepts%252BInc.&message=RE%253A%2520Spec%2520Question%2520(07432cia)%253A%2520&coid=30171&spec=07432cia&rep=&fax=859-342-5445)
Web: <http://www.aicinsulate.com>
 [ [Click Here](https://arcat.com/company/advanced-insulation-concepts-inc-30171) ] for additional information.
Advance Insulation Concepts, Inc. began manufacturing and selling ISOWALL Brand Insulating Panels in March 1977. We are members of a worldwide group of manufacturers who use continuous line panel laminating technology and market stressed skin sandwich panels under the trademark, ISOWALL®. Through the years we have continued to improve the product by developing Tongue and Groove Edge Treatment (TAGET), online core sizing, and high strength, thermally efficient connection systems. ISOWALL® users enjoy the benefits of the most up-to-date technology and the comfort of knowing that our basic lamination technology has been used successfully for more than 30 years.
We introduced REGENT® Brand Insulating Doors in 1984. Our purpose was to provide a line of cold storage doors which insulate effectively, seal tightly, and operate easily. REGENT® Single Horizontal Sliding Doors and Bi-Parting Doors are well known for their ability to seal and for their ease of operation. With the addition of our microprocessor controlled Flex Drive Electric Operator, REGENT® horizontal doors are truly "high speed." They are capable of averaging 40 inches per second and achieve a top speed of more than 60 inches per second. The REGENT® line also includes Single Vertical Sliding Doors, Sectional Overhead Doors, and Swing Doors.
Our most recent product introduction is INSULROCK®?? Brand Sandwich Panels. INSULROCK® panels have a core of structural mineral fiber and either metal or fiberglass reinforced polyester facings. INSULROCK® with painted galvanized steel facings has been tested by Underwriters Laboratories and a wall constructed with six inch thick panels achieved a Fire Resistance Classification of 3 Hours. A wall constructed with four inch thick panels achieved a One Hour Rating. See Design No U042 in the UL Fire Resistance Directory.

1. GENERAL
	1. SECTION INCLUDES

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

* + 1. Insulating panels (ISOWALL) (INSULROCK)
		2. Insulating horizontal sliding doors. (Regent)
		3. Insulating vertical lift doors. (Regent)
	1. RELATED SECTIONS

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

* + 1. Section 05 12 13 - Architecturally-Exposed Structural Steel Framing.
		2. Section 05 40 00 - Cold-Formed Metal Framing.
		3. Section 07 41 43 - Composite Roof Panels- Insulated Metal Roof Panels.
		4. Section 07 62 00 - Sheet Metal Flashing and Trim.
		5. Section 07 90 00 - Joint Protection.
		6. Section 13 30 00 - Special Structures.
	1. REFERENCES

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

* + 1. ASTM International (ASTM):
			1. ASTM A240 - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
			2. ASTM A446 - Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality.
			3. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
			4. ASTM C209 - Standard Test Methods for Cellulosic Fiber Insulating Board.
			5. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
			6. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
		2. National Fire Protection Association (NFPA).
		3. Underwriters Laboratories (UL).
		4. Unites States department of Agriculture (USDA).
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data:
			1. Manufacturer's data sheets on each product to be used.
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
			4. Typical installation methods.

\*\* NOTE TO SPECIFIER \*\* Delete if not applicable to product type.

* + 1. Verification Samples: Two representative units of each type, size, pattern, and color.
		2. Shop Drawings: Include details of materials, construction, and finish. Include relationship with adjacent construction.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
		2. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
		3. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

\*\* NOTE TO SPECIFIER \*\* Include mock-up if the project size or quality warrant the expense. The following is one example of how a mock-up on might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
			1. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
			2. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
			3. Retain mock-up during construction as a standard for comparison with completed work.
			4. Do not alter or remove mock-up until work is completed or removal is authorized.
	1. PRE-INSTALLATION CONFERENCE
		1. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
		2. Protect from damage due to weather, excessive temperature, and construction operations.
	3. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	4. WARRANTY
		1. Manufacturer's standard limited warranty unless indicated otherwise.
		2. ISOWALL Panels:
			1. ISOWALL panels furnished by Advanced Insulation Concepts, Inc. shall conform to the specifications set forth above and in the Bill of Materials used to order them and will be free from defects in material and workmanship when delivered to the job site. If any of the panels fails to conform to the above warranty, AIC will, upon written notice thereof received within one year following the initial date of installation, repair or replace, at AIC's option, the nonconforming panels. This Warranty shall not apply to failure caused by acts of God, fire, abuse or abnormal use, or other casualties, not to panels which have not been used in building application of adequate design, engineering, and construction and in accordance with AIC's current design and installation recommendation.
			2. Advanced Insulation Concepts, Inc. makes no other warranties, express or implied (including without limitation, merchantability, fitness for a particular purpose, or against infringement of any patent). Repair or replacement, as set forth herein, is the sole and exclusive remedy of purchaser and will satisfy all liabilities for Advanced Insulation Concepts, Inc. to purchaser whether based on contract, negligence or otherwise arising out of the purchase or use of the panels. In no event will Advanced Insulation Concepts, Inc. be liable for incidental consequential damages.
		3. INSULROCK PANELS
			1. INSULROCK insulating panels furnished by Advanced Insulation Concepts, Inc. Shall conform to the specifications set forth above in the Bill of Materials used to order them and will be free from defects in material and workmanship when delivered to the job site. If any of the panels fail to conform to the above warranty, AIC will, upon written notice thereof received within one year following the initial date of installation, repair or replace, at AIC's option, the nonconforming panels. This warranty shall not apply to failure caused by acts of God, fire, abuse or abnormal use, or other casualties, nor to panels which have not been used in a building application of adequate design, engineering, and construction and in accordance with AIC's current design and installation recommendations.
			2. Advanced Insulation Concepts, Inc. makes no other warranties, express or implied (including without limitation, merchantability, fitness for a particular purpose, or against infringement of any patent). Repair or replacement, as set forth herein, is the sole and exclusive remedy of purchaser and will satisfy all liabilities of Advanced Insulation Concepts, Inc. to purchaser whether based on contract, negligence or otherwise arising out of the purchase or use of the panels in no event will Advanced Insulation Concepts, Inc. be liable for incidental or consequential damages.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Advanced Insulation Concepts Inc., which is located at:8055 Production Ave.Florence, KY 41042-3094Toll Free Tel: 800-826-3100Tel: 859-342-8550Fax: 859-342-5445Email: [request info (mlloyd@aicinsulate.com)](https://arcat.com/rfi?action=email&company=Advanced%252BInsulation%252BConcepts%252BInc.&message=RE%253A%2520Spec%2520Question%2520(07432cia)%253A%2520&coid=30171&spec=07432cia&rep=&fax=859-342-5445);Web: <http://www.aicinsulate.com>

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

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

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. ISULATING PANELS (ISOWALL)
		1. Basis or Design: ISOWALL brand insulating panels as manufactured by Advanced Insulation Concepts, Inc., Florence, Kentucky.
		2. Panel Facings: Permanently bonded to insulating core with heat polymerizing adhesive.
			1. Exterior Facing: Hot dipped G-90 galvanized steel per ASTM A653 Grade 33.
				1. Thickness: 0.020 to 0.024 inch (0.51 x 0.91 mm).

\*\* NOTE TO SPECIFIER \*\* Delete precoat and surfacing options not required.

* + - * 1. Precoat: Nominal 1 mil (0.025 mm) thick silicone modified polyester finish.
				2. Precoat: Nominal 1 mil (0.025 mm) thick Kynar finish. Color: Beige.
				3. Precoat: Nominal 1 mil (0.025 mm) thick Kynar finish. Color: Sandstone.
				4. Precoat: Nominal 1 mil (0.025 mm) thick Kynar finish. Color: Limestone.
				5. Precoat: Nominal 1 mil (0.025 mm) thick Kynar finish. Color: Surrey Beige.
				6. Surfacing: Smooth.
				7. Surfacing: Stucco embossed.

\*\* NOTE TO SPECIFIER \*\* Delete interior facing options not required.

* + - 1. Interior Facing: Hot dipped G-90 galvanized steel.
				1. Galvanized per ASTM A653 Grade 33.
				2. Thickness: 0.020 to 0.024 inch (0.51 x 0.91 mm).
				3. Precoat: Nominal 1 mil (0.025 mm) thick silicone modified polyester finish; USDA acceptable. Color: Polar White.

\*\* NOTE TO SPECIFIER \*\* Delete surfacing option not required.

* + - * 1. Surfacing: Smooth.
				2. Surfacing: Stucco embossed.
			1. Interior Facing: Type 304 Stainless steel stucco embossed.

\*\* NOTE TO SPECIFIER \*\* Delete thickness option not required.

* + - * 1. Thickness: 0.018 inch (0.46 mm).
				2. Thickness: 0.023 inch (0.58 mm).
			1. Interior Facing: Plastic Coated hot dipped G-90 galvanized steel.
				1. Galvanized per ASTM A653 Grade 33.
				2. Precoat: 0.004 inch (0.10 mm) White polyvinyl chloride Plastisol; USDA acceptable.
				3. Thickness: 0.020 inch (0.51 mm).
			2. Interior Facing: Fiberglass reinforced polyester.
				1. Thickness: nominal .090 inches (2.29mm).
				2. Flame Spread Rating per ASTM E84: 25 or less; USDA acceptable.
				3. Smoke Developed Rating per ASTM E84: 450 or less; USDA acceptable.
			3. Interior Facing: Liner facings; Galvanneal A40.
				1. Thickness: 0.020 inches (0.51 mm).
		1. Panel Edges: Precisely formed. Assure foam-to-foam contact, alignment of panel facings, and facilitate vapor barrier and sanitary sealing as required.
			1. Tongue and Groove Edge Treatment (TAGET): Roll formed such that a formed tongue on one panel fits into a groove formed by the facing and core of an adjacent panel.
				1. Core: Grooved to accept a 0.25 x 2.75 inch (6 x 70 mm) tempered hardboard alignment spline.
		2. Metal Panel Facings: Roll formed configuration enhancing appearance and panel strength.
			1. Exterior Panel Facings with TAGET: Continuously roll formed.
				1. Configuration: Light mesa.
				2. Configuration: 0.06 inch (1.5 mm) deep grooves spaced 6 inches (152 mm) apart so the joint between panels simulates a groove.
			2. Interior Panel facings with TAGET: Continuously roll formed.
				1. Configuration: Light mesa configuration.
				2. Configuration: 0.06 inch (1.5 mm) deep grooves spaced 6 inches (152 mm) apart so the joint between panels simulates a groove.
		3. Insulating Core Thickness and Type: Determined based on temperature differential and other building requirements.
			1. Expanded Polystyrene: Must meet the following material properties.
				1. Density: 1.0 lbs per cu ft (16.02 kg per cu m).
				2. Elastic Modulus: 200 psi (1379 kPa).
				3. Shear Modulus: 300 psi (2068 kPa).
				4. K-Factor at 40 degrees F Mean: 0.24.
			2. Extruded Polystyrene: Styrofoam Blueboard or approved equal.
				1. Conform to product specifications published by manufacturer.
			3. Polyisocyanurate Foam: Elfoam T200 or approved equal.
				1. Conform to product specifications published by manufacturer.

\*\* NOTE TO SPECIFIER \*\* Plastic facing and insulating core materials are combustible and may present a serious fire hazard if improperly used or stored. Their flammability characteristics are defined for purposes of comparison with other materials by various standard tests such as ASTM E84. However, such tests do not measure the performance or reflect hazards presented by these materials or any other materials under actual fire conditions.

* + - 1. Core Materials: Tested by approved laboratory per ASTM E84.
				1. Core Thickness: 4 inches (102 mm).

Flame Spread Rating: 25 or less.

Smoke Developed Rating: 450 or less.

* + 1. Dimensions: Panels are fabricated in the field to fit the structure including sloping walls to fit roof shape and fitting wall corners.
			1. Panel Width: 47-3/8 inches (1203 mm). Plus, or minus 1/16 inch (1.6 mm).
			2. Panel Thickness: As ordered. Plus, or minus 1/16 inch (1.6 mm).
			3. Panel Length: As ordered. Plus, or Minus 1/8 inch (3 mm).
		2. Panel Accessories:
			1. Aluminum Extrusions: 6063 alloy.
				1. Exterior Painted: Color match panels.

Coating: Nominal 1.0 mil (0.025 mm) polyester finish.

* + - * 1. Anodized per AA-C22-A31: Architectural Class II.
				2. Interior Painted: Color match.

Coating: Nominal 1.0 mil (0.025 mm) polyester paint; USDA acceptable.

* + - 1. H-Moldings and Trim: Virgin polyvinyl chloride. Color: Match FRP. USDA acceptable.
			2. Tempered Hardboard Splines: 1/4 x 2-3/4 x 96 inch (6 x 70 x 2438 mm).
			3. Trim Around Doors and Other Penetrations: Fabricated by installer using materials which match panel facing.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. INSULATING PANELS (INSULROCK)
		1. Basis of Design: INSULROCK brand wall or ceiling panels as manufactured by Advanced Insulating Concepts, Inc., Florence, Kentucky.
		2. Performance Requirements:

\*\* NOTE TO SPECIFIER \*\* Delete panel thickness options not required.

* + - 1. Panel Thickness: 4 inches (102 mm).
				1. Panel Weight: 4.6 lbs (2.1 kg).
				2. Maximum Fire Endurance: 1 hour.
				3. Thermal Conductance: 0.069 btu / sqf.hr.F (0.392 W /sqm.K).
				4. Uniform Loading for 4 ft (1219 mm) Wide Panels:

5 psf (239 Pa): Panel Length: 22.2 ft (6767. mm).

10 psf (479 Pa): Panel Length: 15.7 ft (4785 mm).

15 psf (718 Pa): Panel Length: 12.8 ft (3901 mm).

20 psf (958 Pa): Panel Length: 11.1 ft (3383 mm).

25 psf (1197 Pa): Panel Length: 9.9 ft (3017 mm).

30 psf (1436 Pa): Panel Length: 8.2 ft (2499 mm).

40 psf (1915 Pa): Panel Length: 6.2 ft (1890 mm).

* + - 1. Panel Thickness: 5 inches (127 mm).
				1. Panel Weight: 5.3 lbs (2.4 kg).
				2. Maximum Fire Endurance: 2 hours.
				3. Thermal Conductance: 0.055 btu / sqf.hr.F (0.312 W /sqm.K).
				4. Uniform Loading for 4 ft (1219 mm) Wide Panels:

5 psf (239 Pa): Panel Length: 24.8 ft (7559 mm).

10 psf (479 Pa): Panel Length: 17.5 ft (5334 mm).

15 psf (718 Pa): Panel Length: 14.2 ft (4328 mm).

20 psf (958 Pa): Panel Length: 12.4 ft (3779 mm).

25 psf (1197 Pa): Panel Length: 10.6 ft (3231 mm).

30 psf (1436 Pa): Panel Length: 9.1 ft (2774 mm).

40 psf (1915 Pa): Panel Length: 6.8 ft (2073 mm).

* + - 1. Panel Thickness: 6 inches (152 mm).
				1. Panel Weight: 6.0 lbs (2.7 kg).
				2. Maximum Fire Endurance: 3 hours.
				3. Thermal Conductance: 0.046btu / sqf.hr.F (0.261 W /sqm.K).
				4. Uniform Loading for 4 ft (1219 mm) Wide Panels:

5 psf (239 Pa): Panel Length: 27.3 ft (8321 mm).

10 psf (479 Pa): Panel Length: 19.3 ft (5883. mm).

15 psf (718 Pa): Panel Length: 15.7 ft (4785 mm).

20 psf (958 Pa): Panel Length: 13.6 ft (4145 mm).

25 psf (1197 Pa): Panel Length: 12.1 ft (3688 mm).

30 psf (1436 Pa): Panel Length: 10.1 ft (3078 mm).

40 psf (1915 Pa): Panel Length: 7.6 ft (2316 mm).

* + - 1. Panel Thickness: 8 inches (203 mm).
				1. Panel Weight: 7.5 lbs (3.4 kg).
				2. Maximum Fire Endurance: 3 hours.
				3. Thermal Conductance: 0.036 btu / sqf.hr.F (0.204 W /sqm.K).
				4. Uniform Loading for 4 ft (1219 mm) Wide Panels:

5 psf (239 Pa): Panel Length: 31.5 ft (9601 mm).

10 psf (479 Pa): Panel Length: 22.3 ft (6797 mm).

15 psf (718 Pa): Panel Length: 18.2 ft (5547 mm).

20 psf (958 Pa): Panel Length: 15.8 ft (4816 mm).

25 psf (1197 Pa): Panel Length: 14.0 ft (4267 mm).

30 psf (1436 Pa): Panel Length: 11.6 ft (3536 mm).

40 psf (1915 Pa): Panel Length: 8.7 ft (2652 mm).

* + - 1. Panel Thickness: 10 inches (254 mm).
				1. Panel Weight: 8.9 lbs (4 kg).
				2. Maximum Fire Endurance: 3 hours.
				3. Thermal Conductance: 0.028 btu / sqf.hr.F (0.159 W /sqm.K).
				4. Uniform Loading for 4 ft (1219 mm) Wide Panels:

5 psf (239 Pa): Panel Length: 35.2 ft (10729 mm).

10 psf (479 Pa): Panel Length: 24.9 ft (7589 mm).

15 psf (718 Pa): Panel Length: 20.3 ft (6187 mm).

20 psf (958 Pa): Panel Length: 17.6 ft (5364 mm).

25 psf (1197 Pa): Panel Length: 15.6 ft (4755 mm).

30 psf (1436 Pa): Panel Length: 13.0 ft (3962 mm).

40 psf (1915 Pa): Panel Length: 9.8 ft (2987 mm).

* + - 1. Panel Thickness: 12 inches (305 mm).
				1. Panel Weight: 1.3 lbs (0.6 kg).
				2. Maximum Fire Endurance: 3 hours.
				3. Thermal Conductance: 0.023 btu / sqf.hr.F (0.131 W /sqm.K).
				4. Uniform Loading for 4 ft (1219 mm) Wide Panels:

5 psf (239 Pa): Panel Length: 38.6 ft (11765 mm).

10 psf (479 Pa): Panel Length: 27.3 ft (8321 mm).

15 psf (718 Pa): Panel Length: 22.3 ft (6797 mm).

20 psf (958 Pa): Panel Length: 19.3 ft (5883 mm).

25 psf (1197 Pa): Panel Length: 17.1 ft (5212 mm).

30 psf (1436 Pa): Panel Length: 14.2 ft (4328 mm).

40 psf (1915 Pa): Panel Length: 10.7 ft (3261 mm).

* + 1. Panel Facings: Permanently bonded to mineral wool core with heat polymerizing adhesive.
			1. Exterior Facing:

\*\* NOTE TO SPECIFIER \*\* Delete material and precoat options not required.

* + - * 1. Material: Hot dipped G-90 galvanized steel per ASTM A653 Grade 33.
				2. Material: AZ-50 Galvalume steel per ASTM A653 Grade 33.
				3. Steel Thickness: 0.020 to .026 inch (0.51 x 0.66 mm).
				4. Precoat: Nominal 1 mil (0.025 mm) thick silicone modified polyester finish.

\*\* NOTE TO SPECIFIER \*\* Delete surfacing option not required.

Surfacing: Smooth.

Surfacing: Stucco embossed.

* + - * 1. Precoat: Nominal 1 mil (0.025 mm) thick Kynar finish. Color: Beige.

Surfacing: Embossed.

* + - * 1. Precoat: Nominal 1 mil (0.025 mm) thick Kynar finish. Color: Sandstone.

Surfacing: Embossed.

* + - * 1. Precoat: Nominal 1 mil (0.025 mm) thick Kynar finish. Color: Limestone

Surfacing: Embossed.

* + - * 1. Precoat: Nominal 1 mil (0.025 mm) thick Kynar finish. Color: Surrey Beige.

Surfacing: Embossed.

\*\* NOTE TO SPECIFIER \*\* Delete interior facing options not required.

* + - 1. Interior Facing: Hot dipped G-90 galvanized steel.
				1. Galvanized per ASTM A653 Grade 33.
				2. Steel Thickness: 0.020 to 0.024 inch (0.51 x 0.61 mm).
				3. Precoat: Nominal 1 mil (0.025 mm) thick silicone modified polyester finish; USDA acceptable. Color: Polar White.

\*\* NOTE TO SPECIFIER \*\* Delete surfacing option not required.

* + - * 1. Surfacing: Smooth.
				2. Surfacing: Stucco embossed.
			1. Interior Facing: Type 304 Stainless steel stucco embossed.
				1. Steel Thickness: 0.020 to 0.024 inch(0.51 x 0.61 mm).
			2. Interior Facing: Plastic Coated hot dipped G-90 galvanized steel.
				1. Galvanized per ASTM A653 Grade 33.
				2. Steel Thickness: 0.020 inch (0.51 mm).
				3. Precoat: 0.004 inch (0.10 mm) White polyvinyl chloride Plastisol; USDA acceptable.
			3. Interior Facing: Plastic Coated Galvalume (AZ-50) commercial quality steel per ASTM A653.
				1. Precoat: 0.004 inch (0.10 mm) White polyvinyl chloride Plastisol; USDA acceptable.
				2. Steel Thickness: 0.020 inch (0.51 mm).
			4. Interior Facing: Composite.
				1. Facing Lamination: Fiberglass reinforced polyester.
				2. Facing Material: Hot dipped galvanized G-90 steel or Galvalume (AZ-50) steel, 0.020 inches (0.51 mm) thick.
				3. Facing Thickness: 0.090 inches (2.3 mm).
				4. Flame Spread Rating per ASTM E84: 25 or less; USDA acceptable.
				5. Smoke Developed Rating per ASTM E84: 450 or less; USDA acceptable.
			5. Interior Facing: Liner facings; Galvanneal A40.
				1. Thickness: 0.020 inches (0.51 mm).
		1. Panel Edges: Precisely formed. Assure core-to-core contact, alignment of panel facings, and facilitate vapor barrier and sanitary sealing as required.
			1. Tongue and Groove Edge Treatment (TAGET): Roll formed such that a formed tongue on one panel fits into a groove formed by the facing and core of an adjacent panel.
				1. Core: Grooved to accept a 0.5 x 2.75 inch (13 x 70 mm) fiber reinforced cement board spline.
			2. Panels with FRP or Composite Facings: Formed and grooved to accept polyvinyl chloride H-Moldings.
				1. Core: Grooved to accept a 0.5 x 2.75 inch (13 x 70 mm) fiber reinforced cement board spline.
		2. Metal Panel Facings: Roll formed configuration enhancing appearance and panel strength.
			1. Exterior Wall Facings with TAGET: Continuously roll formed.
				1. Configuration: Light mesa.
				2. Configuration: 0.06 inch (1.5 mm) deep grooves spaced 6 inches apart so the joint between panels simulates a groove.
			2. Interior facings with TAGET: Continuously roll formed.
				1. Configuration: Light mesa configuration.
				2. Configuration: 0.06 inch (1.5 mm) deep grooves spaced 6 inches apart so the joint between panels simulates a groove.
		3. Insulating Core Thickness: Determined based on fire rating, temperature differential, and other building requirements.
			1. Core Insulation Material: Conrock L structural mineral wool.
				1. Physical Properties:

Density : 8.5 lbs per cu ft (136.16 kg per cu m).

Compressive Strength to 10 percent Deflection: 15 psi (103 kPa).

Water Absorption per ASTM C209: 3 percent by volume.

K-Factor per ASTM C518 at 40 degrees F Mean: 0.277.

Thermal Resistance at 40 degrees F Mean: 3.61 per inch (1.42 per cm).

* + 1. Dimensions: Fabricated in the field to fit the structure including sloping walls to fit roof shape and fitting wall corners.
			1. Panel Width: 47-3/8 inches (1203 mm). Plus, or minus 1/16 inch (1.6 mm).
			2. Panel Thickness: As ordered. Plus, or minus 1/16 inch (1.6 mm).
			3. Panel Length: As ordered. Plus, or Minus 1/8 inch (3 mm).
		2. Panel Accessories:
			1. Angles, Channels, and Other Trim: Fabricated from 0.020 inch (0.51 mm) or heavier G-90 hot dipped galvanized steel, meeting requirements UL Design No. U042.
			2. Durock Splines: 1/2 x 2-3/4 inch (13 x 70 mm) fiber reinforced cement splines.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. INSULATING HORIZONTAL SLIDING DOORS - REGENT BRAND
		1. Door Leaf:
			1. Insulating Core: 4 or 6 inches (102 or 152 mm) thick.
				1. Cellular Modified Isocyanurate: Nominal 2.0 lbs per cu ft (32.04 kg per cu m) density.
				2. Tested by approved laboratory per ASTM E84; 4 inches (102 mm) thick.

Flame Spread Rating: 25 or less.

Smoke Developed Rating: 450 or less.

\*\* NOTE TO SPECIFIER \*\* Delete facing option not required.

* + - 1. Facings: G-90 hot dipped galvanized steel per ASTM A446 Grade A.
				1. Thickness: 24 or 26 gauge minimum.
				2. Precoat: 1 mil (0.025 mm) thick Polar White Polyester acceptable to the USDA.
			2. Facings: Type 304 embossed stainless steel per ASTM A240.
				1. Thickness: 26 gauge.
			3. Reinforcing Perimeter: 16 gauge Type 304 stainless steel channel.
			4. Fasteners: Double chromate plated (yellow) or 18-8 stainless steel.
		1. Door Frame: Structural fiberglass reinforced polyester tubes joined by stainless steel reinforcing brackets.
			1. Not Acceptable: Metal clad wood or extruded aluminum framing.
			2. Filled with foamed-in-place polyurethane foam insulation.
			3. Hardware: Mounted to threaded steel inserts.
		2. Hardware:
			1. Door Track: Formed zinc chromate plated 3/16 inch (5 mm) steel. Formed to allow gasket to be free from the floor and door frame after 1 inch of travel in the open direction.
				1. Formed Roller Dips: Provide simultaneous gasket seal to floor and door frame.
			2. Door Trolley: Full width anodized aluminum profile.
				1. Suspends door leaf and houses roller assemblies.
			3. Door Suspension and Floor Guides: Fully adjustable. Enable gasket to seal on four sides.
				1. Floor Guides: Wedge type. Allows doors to be adjusted in and out to achieve a proper seal at the bottom.
				2. Door Suspension Bolts: Adjustable vertically and horizontally. Adjusts gasket seal at top and floor.
			4. Doors to be suspended from the track by four needle bearing rollers.
				1. Rollers must operate to eliminate gasket drag in all but the final inch of closing travel.
			5. Handles: Mounted to leading edge of door to allow for easy operation.
				1. Single Sliding Doors: Lever type handles.
				2. Bi-parting Sliding Doors: Large fixed pull type handles.
				3. Outside Handle: Mounted to leading edge of door. Constructed of anodized aluminum and stainless steel.
				4. Inside Handle: Mounted to inside face of door leaf. Constructed of epoxy coated aluminum, PVC, and stainless steel.
			6. Door Stops: Fully adjustable and mounted to the track. Constructed of anodized aluminum and rubber bumpers.

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

* + 1. Options:
			1. Doors Requiring Locks Tamper resistant device capable of securing door leaf in the closed position.
				1. Lock: Lever action inside safety release.
				2. Locks for Power Operated Doors: Electrical control cut-off switch.
				3. Freezer Doors: Self-regulating, metal braid protected, UL listed heater cables.

No thermostat is necessary for the heater cables.

Heater Cables: 110 Vac, 1 phase, 15 amp power.

* + - 1. Doors Requiring Power Operation:
				1. Drive System: Microprocessor controlled belt drive.

Power Requirements: 110 volt, 15 amp power.

Safety Reversing: To be an integral function.

* + - * 1. Not Acceptable: Limit switches or sensitive edges; air bladder or electrical.
				2. Opening and Closing Speeds: Fully and independently adjustable.

\*\* NOTE TO SPECIFIER \*\* Other kickplates are available upon request. Delete kickplates option not required.

* + - 1. Kickplates: "TREADBRITE" 1/8 inch (3 mm) Aluminum
			2. Kickplates: \_\_\_\_\_\_\_\_.

\*\* NOTE TO SPECIFIER \*\* Other sizes available. All windows to be heated where necessary.

* + - 1. Doors Requiring View Windows: Thermopane Window with non-shorting frame.
				1. Aluminum Frame: 14 x 14 inch (356 x 356 mm).
				2. Aluminum Frame: 14 x 24 inch (356 x 610 mm).
				3. Dual Stainless Steel Frame: 12 x 12 inch (305 x 305 mm).

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. INSULATING VERTICAL LIST DOORS - REGENT BRAND
		1. Door Leaf:
			1. Insulating Core: 4 inches thick.
				1. Extruded Polystyrene: Nominal 2.0 lbs per cu ft (32.04 kg per cu m) density.
				2. Tested by approved laboratory per ASTM E84; 4 inches (102 mm) thick.

Flame Spread Rating: 25 or less.

Smoke Developed Rating: 450 or less.

* + - 1. Facings: G-90 hot dipped, galvanized steel per ASTM A446 Grade A.
				1. Thickness: 0.020 inch (0.51 mm) minimum.
				2. Precoat: 1 mil (0.025 mm) thick Polar White Polyester acceptable to the USDA.
			2. Reinforcing Perimeter: 16 gauge galvanized steel channel.
			3. Fasteners: Corrosion resistant.
		1. Door Frame: Full height metal clad wood sections.
			1. Section Surfaces: Accommodate track fastening and gasket sealing.
		2. Hardware:
			1. Door Track: Heavy duty 3 inch (76 mm) J style track. Galvanized finish.
				1. Constructed to provide simultaneous gasket seal.
				2. Sloped in sections to provide easy operation and a positive gasket seal.
				3. Does not require adjustments to attain a proper seal.
			2. Door Rollers: Factory lubricated 3 inch (76 mm) sealed bearing type rollers, and machined UHMW wheels.
			3. Door to be easily adjustable at all corners for proper gasket seal.
			4. Door to be suspended by a torsion spring balance system.
				1. Spring Balance System: Will utilize the following.

Aircraft Cable: 1/4-7 x 19 strand.

Heavy duty torsion springs

Solid steel shaft.

Center Coupling: Provided for door leveling.

* + - 1. Pull/Step Handles: On both sides of door where necessary, and a heavy duty pull rope.

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

* + 1. Options:
			1. Doors Requiring Power Operation:
				1. Operators: Jackshaft type. 120 volt, 15 amp power.
				2. Manual release mechanism.
				3. Doors taller than 10 ft (3048 mm): Backup chain hoist operation.
			2. Kickplates: "TREADBRITE" 1/8 inch (3 mm) aluminum.

\*\* NOTE TO SPECIFIER \*\* Other sizes available. All windows to be heated where necessary.

* + - 1. Doors Requiring View Windows: Thermopane Window with non-shorting frame.
				1. Aluminum Frame: 14 x 14 inch (356 x 356 mm).
				2. Aluminum Frame: 14 x 24 inch (356 x 610 mm).
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly constructed and prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.
	4. FIELD QUALITY CONTROL
		1. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.

\*\* NOTE TO SPECIFIER \*\* Include if manufacturer provides field quality control with onsite personnel for instruction or supervision of product installation, application, erection, or construction. Delete if not required.

* + 1. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.
	1. CLEANING AND PROTECTION
		1. Clean products in accordance with the manufacturer's recommendations.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION