

SECTION 07430

COMPOSITE PANELS

PART GENERAL

SECTION INCLUDES

Aluminum composite material (building panels) used as the exterior cladding of new buildings.

Aluminum composite material (building panels) used as the exterior cladding for retrofit applications.

RELATED SECTIONS

Section 05100 - Structural Metal Framing.

Section 05400 - Cold-Formed Metal Framing.

Section 07200 - Thermal Protection.

Section 07600 - Flashing and Sheet Metal.

Section 07900 - Joint Sealers.

Section 09900 - Paints and Coatings.

REFERENCES

ASTM B 117 - Practice for Operating Salt Spray (Fog) Apparatus.

ASTM C 481 - Test Method for Laboratory Aging of Sandwich Constructions.

ASTM D 635 - Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position.

ASTM D 822 - Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus.

ASTM D 903 - Test Method for Peel or Stripping Strength of Adhesive Bonds.

ASTM D 968 - Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive.

ASTM D 1781 - Test Method for Climbing Drum Peel for Adhesives.

ASTM D 2015 - Test Method for Gross Calorific Value of Coal and Coke by the Adiabatic Bomb Calorimeter.

ASTM D 2244 - Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.

ASTM D 2247 - Practice for Testing Water Resistance of Coatings in 100 Percent Relative Humidity.

ASTM D 2794 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).

ASTM D 3363 - Test Method for Film Hardness by Pencil Test.

ASTM D 4214 - Test Methods for Evaluating Degree of Chalking of Exterior Paint Films.

ASTM E 84 - Test Method for Surface Burning Characteristics of Building Materials.

ASTM E 108 - Test Methods for Fire Tests of Roof Coverings.

ASTM E 162 - Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source.

ASTM E 906 - Test Method for Heat and Visible Smoke Release Rates for Materials and Products.

ASTM G 23 - Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials.

NCCA 11-18 - Cure Test.

UBC 17-6 - Multi-Story Fire Evaluation.

UBC 26-3 - Interior Room Corner Burn Test.

UBC 26-8 - Intermediate Scale Multi-Story Fire Test for

Rout and Return and Continuous Edge Grip Reynobond Systems.

---

#### SUBMITTALS

Submit under provisions of Section 01300.

Product Data: Manufacturer's catalog data, detail sheets, and specifications.

Shop Drawings: Prepared specifically for this project, not less than one-half size; show panel system including attachment methods, joinery, sealing methods, and accommodation of thermal movement.

Samples: Each custom color.

Certification: Affidavit certifying that panels meet or exceed requirements specified.

#### QUALITY ASSURANCE

Panel Fabricator and Installer: Acceptable to panel manufacturer.

Painted Surfaces of Composite Panels: Meeting all criteria printed in manufacturer's literature.

Furnish calculations confirming structural adequacy.

Where possible, take field measurements before completion of shop fabrication.

#### DELIVERY, STORAGE, AND HANDLING

Protect panel finish and edges per panel manufacturer's recommendations.

Store material in accordance with panel manufacturer's recommendations.

PART PRODUCTS

MANUFACTURERS

Acceptable Manufacturer: Reynolds Metals Company,  
Architectural Products Division, P.O. Box 27003,  
Richmond, VA 23261; ASD. Tel: (804) 281-4186, Fax: (804)  
281-3602; Internet: www.rmc.com

Requests for substitutions will be considered in  
accordance with provisions of Section 01600.

Substitutions: Not permitted.

Provide all composite panels from a single manufacturer.

#### MATERIALS, ALUMINUM COMPOSITE PANELS

Panels: "Reynobond(R) FR" Fire Resistant panels,  
manufactured by Reynolds Metals Company, furnished by a  
dealer/distributor approved by the manufacturer.

Class A building material classification per ASTM E  
84.

Meeting or exceeding all Model Code requirements for  
fire safety.

Meeting the following test requirements:

RB200FR Core Material: Flame spread 15, smoke  
developed 30, per ASTM E 84.

UBC 17-6 - Multi-Story Fire Evaluation.

ASTM E 108 Modified (and damaged).

ASTM D 2015 (core only): Less than 6,000

BTU/square foot.

University of Pittsburgh Toxicity Test.

UBC 26-8 - Intermediate Scale Multi-Story Fire  
Test for Rout and Return and Continuous Edge Grip  
Reynobond Systems.

UBC 26-3 - Interior Room Corner Burn Test.

ASTM E 162 Surface Flammability of Materials

Using a Radiant Heat Energy Source.

ASTM D 903 Method for Peel or Stripping Strength  
of Adhesive Bonds.

Thickness: RB200FR, 0.197 inch (5 mm).

Thickness: RB160FR, 0.157 inch (4 mm).

Weight: RB200FR, 2.02 pounds/square foot (9.86  
kg/square m).

Weight: RB160FR, 1.63 pounds/square foot (7.96  
kg/square m).

Panels: "Reynobond(R) PE" panels, manufactured by  
Reynolds Metals Company, furnished by a  
dealer/distributor approved by the manufacturer, meeting  
the following requirements:

Class A building material classification per ASTM E 84: flame spread 15, smoke developed 120, with a center panel joint; flame spread 0, smoke developed 0, with no joint.

ASTM E 108 Modified.

ASTM D 635 Rate of Burning Evaluation on Plastic.

ASTM E 906 Heat and Visible Smoke Release Rates

Thickness: RB160PE, 0.157 inch (4 mm).

Thickness: RB240PE, 0.236 inch (6 mm).

Weight: RB160PE, 1.12 pounds/square foot (5.47 kg/square m).

Weight: RB240PE, 1.49 pounds/square foot (7.27 kg/square m).

#### Finishes:

Colorweld 300 fluoropolymer coating utilizing 70 percent Kynar 500 resins.

Color: Selected by Architect from manufacturer's standard or custom colors.

Factory-apply coating on a continuous process paint line, consisting of approximately 0.2 mil (5 micrometers) prime coat and approximately 0.8 mil (20 micrometers) finish coat containing 70 percent Kynar resins; nominal dry film thickness of 1.0 mil (25 micrometers).

Specular Gloss: 20-30 at 60 degrees.

Colorweld 300XL fluoropolymer coating utilizing 70 percent Kynar 500 resins.

Color: Selected by Architect from manufacturer's standard or custom colors.

Factory-apply coating on a continuous process paint line, consisting of approximately 0.2 mil (5 micrometers) barrier prime coat, approximately 0.8 mil (20 micrometers) metallic/color coat containing 70 percent Kynar resins, and approximately 0.5 mil (13 micrometers) clear coat containing 70 percent Kynar resins; nominal dry film thickness of 1.5 mils (38 micrometers).

Specular Gloss: 25-35 at 60 degrees.

Pencil Hardness: HB-H minimum (Eagle Turquoise), per ASTM D 3363.

Impact Adhesion: Showing no cracking and no loss of adhesion, per ASTM D 2794.

Cure Test: Withstand 50+ double rubs of MEK soaked cloth, per NCCA 11-18.

Humidity Resistance: Showing no blisters after 3,000 hours of 100 percent humidity at 95 degrees F (35 degrees C), per ASTM D 2247.

Salt Spray Resistance: Scored sample showing none or few No. 8 blisters and less than 1/8 inch average creepage from scribe after 3,000 hours of exposure to 5 percent salt fog at 95 degrees F (35 degrees C), per ASTM B 117.

Salt Spray Resistance: Scored sample showing none or few No. 8 blisters and less than 1/16 inch average creepage from scribe after 3,000 hours of exposure to 5 percent salt fog at 95 degrees F (35 degrees C), per ASTM B 117.

Weatherometer Test (ASTM D 822/G 23): Showing no cracking, peeling, blistering, or loss of adhesion after 2,000 hours.

Chalking Resistance: No chalk greater than No. 8 after 10 years Florida exposure at 45 degrees South, per ASTM D 4214.

Color Change: Not exceeding 5 NBS units after 10 years Florida exposure at 45 degrees South, per ASTM D 2244.

Chalking and Color Change: No objectionable chalking or color change after 5,000 hours in Atlas Weatherometer.

Abrasion Resistance: Resistance to minimum 65+/- liters per mil of falling sand, per ASTM D 968.

#### ACCESSORIES

Exposed Fasteners: Self-tapping 300 Series stainless steel.

Self-Drilling Fasteners: Protected with a corrosion-resistant finish.

Sealants: Compatible with panel materials.

#### PANEL FABRICATION

Composition: Thermoplastic compound core sandwiched between two aluminum sheets formed by a continuous process.

Bond Integrity: Minimum 40 inch-pounds/inch (peel strength), per ASTM D 1781 and ASTM C 481, Cycle B.

Aluminum Face Sheets: 3105 H25 aluminum alloy.

Thickness: 0.028 inch (0.71 mm)

Thickness: 0.020 inch (0.51 mm)

Tolerances:

Panel Bow: Maximum 0.8 percent of panel overall width or length dimension.

Panel Dimensions: Allowance for field adjustment and thermal movement.

Panel Lines, Breaks, and Curves: Sharp, smooth, free of warps or buckles.

Flatness: Visually flat.

Panel Surfaces: Free of scratches or marks caused during fabrication.

## PART EXECUTION

### EXAMINATION

Panel Substructure:

Level and plumb.

Structurally sound as determined by Architect.

Free of defect detrimental to work and erected in accordance with established building tolerances.

Installer shall inspect substructure and shall not proceed with panel erection until deviations are corrected.

### INSTALLATION

Erect panels level and plumb, in proper alignment and relation to substructure framing and established lines.

Erect panels in accordance with approved shop drawings.

Maximum Deviation of Erected Panels from Vertical or Horizontal Alignment: 1/4 inch in 20 feet (6 mm in 6 m).

Anchor panels structurally sound and per engineering recommendations, if required.

Aluminum in Contact with Dissimilar Materials:

Apply bituminous paint or install calking tape to insulate dissimilar materials.

Factory-applied protective paint or G-90 galvanized steel is considered adequate insulation.

### ADJUSTING AND CLEANING

Replace panels that have received irreparable damage.

Repair panels with minor damage.

Clean foreign material from panel gutter system when applicable.

Remove strippable film (if used) as soon as possible after surrounding material has been installed and glass above has been washed.

END OF SECTION