# ALTO

## SECTION 10 11 00 – ALTO INTERIOR PANEL SYSTEM

## PART 1 - GENERAL

### RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

### SUMMARY:

Extent of porcelain enamel ceramicsteel interior panel system is as indicated on the drawings and as specified herein.

Types of panel system required for the project include:

Ceramicsteel panel system for interior use.

### DESIGN CRITERIA:

Coordinate panel attachment system design with panel support structure.

### SUBMITTALS:

Product Data: Submit manufacturer's product specifications, technical product data, standard details, installation recommendations and Care & Cleaning instructions for each type of CeramicSteel panel product required. Include the following information:

Fabrication methods.
Finishing.
System extrusions.
Accessories.

Shop Drawings: Submit shop drawings for fabrication and installation of Alto interior panel system, including the following:

Elevations and panel layouts.
Detail sections of typical joint conditions in the system.
Anchorages and reinforcements.
Expansion provisions.
Glazing details.

Samples: Submit pairs of 4-1/2” X 7-1/2” samples of each type panel along with CeramicSteel color chips. Submit unfinished pairs of 6" lengths of all standard extrusions.

**QUALITY ASSURANCE:**

Manufacturer's Qualifications: Provide CeramicSteel interior panel system produced by a single manufacturer with not less than 25 years successful experience in the lamination of CeramicSteel interior panels and not less than 10 years successful experience in the fabrication of CeramicSteel interior panel systems. Manufacturer shall be ISO 9001 certified.

Installer's Qualifications: For actual execution and installation of CeramicSteel interior panel system, use only personnel who are thoroughly trained and experienced in skills required and who are completely familiar with the manufacturer's current methods of installation, as well as requirements of this work.

Installing contractor shall be selected and approved in writing for such installation by the panel system manufacturer.

Warranty: Furnish manufacturer's CeramicSteel Surface Forever Warranty and 10-year limited panel construction warranty.

Codes and Standards: Comply with applicable requirements of the following, except where more stringent requirements are indicated by the manufacturer.

A. Reference Standards:

1. **ASTM International (ASTM)**
   a) ASTM E84-16 Standard Method of Test for Surface Burning Characteristics of Building Materials.
   b) ASTM C481 Standard Test Method for Laboratory Aging of Sandwich Constructions.
   c) ASTM C501 Standard Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abrader.
   d) ASTM D523 Standard Test Method for Specular Gloss.
   e) ASTM D3363 Standard Test Method for Film Hardness by Pencil Test.
   f) ASTM D2244-02 Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates.

2. **International Organization for Standardization (ISO)**
   a) ISO 2813 Determination of gloss value at 20 degrees, 60 degrees and 85 degrees.
   b) ISO 7724 Color Tolerance Standards
   c) ISO 15695 Vitreous and porcelain enamels -- Determination of scratch resistance of enamel finishes.
   d) ISO 4532 Vitreous and porcelain enamels -- Determination of the resistance of enamelled articles to impact -- Pistol test

3. **European Standard (EN)**
   a) EN 438-2.5 Panel Thickness
   b) EN 438-2.6 Lenth Tolerance
   c) EN 438-2.6 With Tolaerance
   d) EN 15771 Mohs Hardness
   e) EN 10209 Annex D Coating Adhesion

4. **Porcelain Enamel Institute (PEI)**
   a) PEI 1002 Performance Specifications for Porcelain Enamel Writing Surfaces

5. **American National Standards Institute Business and Institutional Furniture Manufacturer's Association (ANSI/BIFMA)**
   a) ANSI/BIFMA Furniture Emissions Standard (M7.1/X7.1-2011 R2016) and ANSI/BIFMA e3-2014e (Credits 7.6.1,7.6.2, 7.6.3)

**PROJECT CONDITIONS:**

Field Measurements: Butt jointed system panels cannot be field trimmed; check actual conditions by field measurement before fabrication to ensure proper fitting of work. Show field measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay in the work. Where necessary, proceed with fabrication without field measurements, and coordinate installation tolerances to ensure proper fit.

Environmental Conditions: Temperature within the space shall be above a constant minimum of 65 degrees F. with relative humidity not over 70%. During erection of the Alto System, when required, the General Contractor shall furnish heat. Erection of the panel system shall not begin until the building exterior provides complete protection from the outside weather. Panels shall not be stored where they are subjected to temperature, moisture or humidity extremes

**PRODUCT DELIVERY, STORAGE AND HANDLING:**

Deliver panels and accessories to the job site in manufacturer's original packaging, unopened and undamaged, just prior to installation.

Store panels and accessories above floor, in a dry location, to avoid warping and physical damage.

Exercise care during off-loading and installation to avoid damage and marring of finishes.

**PART 2 - PRODUCTS**

**MANUFACTURERS:**

- Acceptable System: Subject to compliance with requirements, furnish and install Flow System with nominal 13mm thick CeramicSteel interior panels as manufactured by Polyision Corporation and supplied by Polyvision and Marsh. **For all questions contact, Polyvision, 10700 Abbotts Bridge Rd, Suite 100, Johns Creek, GA 30097, (888) 325 6351.**

  Furnish factory finished panel construction consisting of nominal 0.35mm(28-Guage) CeramicSteel Face, 12mm Water-Resistant Medium Density Fiberboard, 0.4mm Mill Finished Aluminum; and possessing the following minimum Surface Burning Characteristics per ASTM E-84-16 in order to achieve a Class A as indicated by National Fire Protection Association NFPA 101 Life Safety Code, which also corresponds to Class I for other codes.

  Flame Spread Index: 20

  Smoke Density: 20

  Indoor Air Quality Certified to SCS EC 10.3-2014 v3.0 - **Indoor Advantage™ Gold**

**MATERIALS**

General: Provide panels which have been selected for flatness and smoothness. Exposed surfaces which exhibit pitting, discolorations, telegraphing of core material, or other imperfections on finished units are not acceptable.

Steel for CeramicSteel Finish: as selected by panel manufacturer to meet specified requirements of the interior composite panel system.

Metal Gauge: Thickness required for structural performance specified and not less than manufacturer's recommended minimums for applications indicated; minimum nominal 0.35mm, manufacturer's standard.

CeramicSteel Coating: The CeramicSteel shall 99% recyclable, made from 100% inorganic materials and be minimum Type A, acid resistant, continuously coil-coated and fused at approximately 1500 degrees F (700 degrees C).

Stabilizer: 12mm Moisture-Resistant Medium Density Fiberboard

Aluminum Sheet for Aluminum Backing: 0.4mm Aluminum Sheet Mill Finish

Laminating Adhesive: PUR, with bond strength equal to or higher than core stabilizer material.

Aluminum Extrusions and Clips: ASTM B221, 6063-T5, or alloy and temper as recommended by the manufacturer. Thickness required to meet structural performance specified; minimum shall be manufacturer's recommendations for profiles and applications indicated.

Fasteners: Provide fasteners of non magnetic stainless steel or other materials warranted by the manufacturer to be non corrosive and compatible with steel and aluminum components.

Exposed Fasteners shall not be used.

**FABRICATION:**

CeramicSteel : Both surfaces of continuously coiled pre-cleaned and treated enameling grade steel base metal shall receive a ground coat of porcelain enamel which shall be fused to the metal in a firing operation used exclusively for ground coat application. A color cover coat of porcelain enamel shall be applied to one surface of the ground coat and fused by a firing operation used exclusively for color coat application. All CeramicSteel "slip" shall be machine-applied with automatic spray or roll-coat equipment. Firing temperature shall be approximately 1500 degrees F (700 degrees C). CeramicSteel shall be covered with a protective film covering to be removed at the job site immediately before erection. Ensure consistency of PEC coating thickness, color, texture, specular gloss and flatness of CeramicSteel finish by use of continuous coil process.

Construction and Design: Alto System panels shall consist of CeramicSteel finish face, a stabilizer core, and a back face laminated into a monolithic unit. The adhesive used in laminating the finish face, core and back face shall be 100% applied to each surface to be laminated.

Back Face: Mill finished aluminum sheet, unless otherwise specified.

**COMPONENTS:**

Panel Mounting System: Provide aluminum spline and edge-cover extrusions to field-attach the Alto CeramicSteel panels. Extrusions are to be shimmed and leveled as necessary and mechanically anchored to framing members, sheathing or other structural support system.

**FINISHES:**

Panel Finish: Furnish CeramicSteel interior panels with faces finished as indicated:

Front Face:

CeramicSteel as indicated:

Available Finishes: White Gloss, Satin Gloss, Hygienic White Gloss, Moonlight, Blush, Glacier, Clearwater, Coastline, Silver Star, Rain, Twilight, Black Chalk

Back Face:

Color: Mill Finished Aluminum

Spline Extrusion Finish: Mill finished Aluminum.

Visible Extrusion Finish: Clear anodized finish.

Graphics: [DELETE BELOW IF NO GRAPHICS ARE REQUIRED.]

Graphics shall be factory manufactured PolyVision Digital 1 single or multicolor digitally printed inorganic images. Printed to high visual quality using stable ceramic mediums fired onto the base porcelain ceramic surface of CeramicSteel at temperatures fired in the range of 1292° – 1652° F (700° – 900° C) to produce a surface finish with the same performance characteristics as the porcelain ceramic surface of the wall panel. Process shall achieve a minimum resolution for grayscale, duotone and CMYK images is 150 DPI at 100%.

**PART 3 - EXECUTION**

**INSTALLATION:**

Comply with manufacturer's *Alto System Technical Guide* for instructions and recommendations for system installation.

The Alto System is a progressive-type installation and requires preparation and planning to ensure proper starting and ending conditions for an optimum finished appearance.

Set units plumb, level, and true to line, without warp or rack of clips or panels. Provide proper support and anchor securely in place.

Separate aluminum and other corrodible metal surfaces from sources of corrosion of electrolytic action at points of contact with other materials by insulating with inert materials.

Make field cuts as necessary using a power panel saw or skill saw. Use metal cutting, high tooth-count, carbide tip blades. The use of eye protection and a NIOSH approved respirator is recommended when saw cutting MDF core panels. All penetrations shall be covered with cover plates.

Where applicable, comply with mastic or sealant material manufacturer's instructions, and with applicable provisions of Division 6 or Division 7.

**CLEANING:**

Remove temporary protective coverings and strippable films as each panel is installed..

Clean panel system surfaces: Remove excess dirt and other substances from panels and moldings after installation using materials and methods recommended by manufacturer.

**PROTECTION:**

Institute protective measures required throughout the remainder of the construction period to ensure that CeramicSteel Alto interior panel system will be without damage or deterioration at time of acceptance.

**END OF SECTION 10 11 00**