

SECTION 10100  
VISUAL DISPLAY BOARDS  
FHM SERIES WRITING WALL

*THIS SECTION IS WRITTEN IN CSI 3-PART FORMAT AND IN CSI PAGE FORMAT; THE PROJECT NAME/NUMBER/DATE AND SECTION TITLE IN THE FOOTER ARE OPTIONAL. NOTES TO THE SPECIFIER, SUCH AS THIS, MUST BE DELETED FROM THE FINAL SPECIFICATION.*

**PART 1 GENERAL**

1.01 SECTION INCLUDES:

- A. Section Includes: Full Height Marker Boards.

1.02 RELATED SECTIONS

*IF THE PROJECT INCLUDES ALLOWANCES OR ALTERNATES OR UNIT PRICES, RETAIN PARAGRAPHS BELOW AND COORDINATE WITH DIVISION 1.*

- A. Allowances: Section 01210.
- B. Alternates: Section 01230.
- C. Unit Prices: Section 01270.
- D. Division 05400 Cold-Formed Metal Framing.
- E. Division 06100 Blocking
- F. Division 09900 Paint and Coatings.

1.03 REFERENCES

*DELETE REFERENCES NOT USED IN PART 1 OR PART 3.*

- A. American National Standards Institute (ANSI):
  - 1. A208.1, American National Standard for Particleboard.
  - 2. H35.1 Alloy and Temper Designation for Aluminum.
- B. American Society for Testing and Materials (ASTM):
  - 1. A 424, Specification for Steel, Sheet, for Porcelain Enameling.
  - 2. B 221, Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
  - 3. C 523, Standard Test Method for Specular Gloss.
  - 4. C 614, Test Method for Alkali Resistance of Porcelain Enamel.
  - 5. C 282-99, Standard Test Method for Acid Resistance of Porcelain Enamels
  - 6. C 448-88 (1999) Standard Test Methods for Abrasion Resistance of Porcelain Enamels

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7. D 4060-01 Standard Test Method for Abrasion Resistance of Organic Coatings by Taber Abraser
8. D 2244, Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates.
9. C 538 Atmospheric Corrosion Color Test (no change)

C. BYK-Gardner Wavescan 5+

D. Porcelain Enamel Institute (PEI):

1. PEI-1002, Manual and Performance Specifications for Porcelain Enamel Writing Surfaces (Whiteboards).

#### 1.04 SYSTEM DESCRIPTION

A. Performance Requirements:

1. Reflectivity: Not to exceed specified range when tested at 60 degrees with a gloss meter in accordance with ASTM C 523.
2. Contrast for marker boards (Light and Dark Effects): not more than 11.7 when tested with a BYK-Gardner Wave Scan 5+ Measurement Device showing visual acuity to the human eye at distances greater than 3 meters (10 feet).

#### 1.05 SUBMITTALS

A. Product Data:

1. Technical data for the components of each board specified.
2. Technical data for hardware, accessories, anchorage devices, and fasteners.

B. Shop Drawings:

1. Include types of units provided, location within each room, and length of each unit.
2. Include dimensioned elevation drawings of each board assembly indicating joint locations and type of joint where required, and board mounting distances from floors.
3. Include cross-section details showing each type of product and components; trim, pen/chalk tray, face, core, backing materials and thickness, and key to elevations.
4. Show locations and quantities of accessories.
5. Show anchorage details and necessary grounds.
6. Show installation details.

C. Samples:

1. Selection: Manufacturer's full range of colors for each material specified.
2. Verification: Manufacturer's standard sized samples of each finish and selected color of each material specified.

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- D. Quality Control Submittals:
  - 1. Test Reports: Copies of test reports, from certified testing agency, verifying that products have been tested and meet the specified performance requirements.
  - 2. Certificates: Manufacturer's certification that the installer is acceptable.
  - 3. Manufacturer's Instructions: Installation instructions for all products specified.
- E. Contract Closeout Submittals:
  - 1. Maintenance Data: Manufacturer's cleaning and maintenance instructions covering both routine (daily or weekly) and long-term (yearly or longer) operations.
  - 2. Warranty: Executed copy of manufacturer's warranty.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer shall be a firm engaged in the manufacture of visual display boards in the United States, making the types and sizes required, and whose products have been in satisfactory use in similar service for a minimum of 10-years.
- B. Installer Qualifications: Acceptable to the manufacturer.
- C. Single Source Responsibility: Obtain visual display boards of each type from a single source with resources to produce products of consistent quality in appearance and physical properties without delaying the work.

1.07 DELIVERY AND STORAGE

- A. All materials shall be stored with packing materials between each to prevent damage.
- B. Store all materials in dry areas at temperatures above 55 degrees F.

1.08 PROJECT CONDITIONS

- A. Deliver products after the building has been enclosed and interior air and substrate temperatures are stable and approximate design conditions.

1.09 WARRANTY

- B. Special Warranties:
  - 1. Writing Surface: Manufacturer's standard, written, material warranty agreeing at manufacturer's option to repair or replace the original boards if they do not retain their original writing and erasing qualities, gloss variance, or color consistency under normal usage and maintenance, without reducing or otherwise limiting any other rights to correction which

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the Owner may have under the Contract Documents. Warranty does not include the cost of removal or reinstallation.

- a. Term of Warranty: As long as the product is installed and in use, or Forever, whichever comes first.
2. Workmanship and Materials: Manufacturer's standard, written, material replacement warranty agreeing at manufacturer's option to repair or replace any products which, under normal usage and maintenance, show defects in workmanship or materials, without reducing or otherwise limiting any other rights to correction which the Owner may have under the Contract Documents. Warranty does not include the cost of removal or reinstallation.
  - a. Term of Warranty: 10 years from date of Substantial Completion.

## PART 2 PRODUCTS

### 2.01 MANUFACTURERS

- A. Basis of Design: FHM Series manufactured by PolyVision as provided by WIUSA.com, PO Box 567949, Dallas, TX 75356, 800-527-9014, FAX 214-631-4654, web: [www.wiusa.com](http://www.wiusa.com), email: [sales@wiusa.com](mailto:sales@wiusa.com).

*THE FOLLOWING MANUFACTURERS MAKE PRODUCTS  
COMPARABLE TO THOSE OF POLYVISION.*

- B. Products manufactured by the following will be acceptable, provided they conform to project requirements:
  1. ADP Lemco, Inc.
  2. Best-Rite Manufacturing.
- C. Substitutions shall be made 21 days in advance of the bid date. Manufacturers' must submit all data required in its entirety for review by the architect. Samples of the facing sheet showing progressive enamel coatings along with metering devices capable of measuring coating thickness, ground coat thickness, manufacturers' certificate of compliance of all items. Prior to consideration, lamination and fabrication sections must be submitted to the architect for testing and also inspection of methods and quality (samples will be retained).

### 2.02 MATERIALS FOR WRITING SURFACES

- A. Writing Surface Facing Sheet
  1. Shall be enameling grade cold rolled steel .025" thickness for all boards.
  2. Manufacturer shall offer all of the following items as standard and at No Extra Charge to the owner.

*IF MORE THAN ONE FACING SHEET IS  
BEING USED, CREATE A DESIGNATOR FOR  
EACH FACING SHEET AND COORDINATE  
WITH THE DRAWINGS.*

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- a. P<sup>3</sup> *Ceramicsteel*<sup>TM</sup> Marker board, 91 to 97 percent gloss (high gloss surface).
  - b. P<sup>3</sup> *Ceramicsteel*<sup>TM</sup> Marker board 80 to 85 percent gloss (low gloss surface, recommended for projection. Wet cleaning required if used as a marker surface.)
  - c. Facing sheet construction
    1. 7-2.5 mils enameled ground coat on face minimum thickness.
    1. 2.0-2.5 mils enameled cover (color) coat for chalkboard.
    2. 3.0 – 4.0 mils enameled cover (color) coat for marker board.
    3. 1.7-2.5 mils enameled minimum ground coat on back of facing.
    4. Firing temperatures shall be 1250 –1300 degrees minimum for chalkboard; 1475 - 1500 degrees minimum for marker board.
  - d. Color(s): As selected by the Architect from the manufacturer's range of standard colors.
3. Screen-printed Graphics: See drawings
- a. Polar coordinates.
  - a.. USA map.
  - a. World map.
  - a. Graph coordinates.
  - a. Penmanship lines.
  - a. Invis-a-dots
  - a. Invis-a-squares
  - a. Invis-a-rectangles
  - a. Custom Design – See Detail \_\_\_\_\_ on drawing \_\_\_\_\_.

B. Writing Surface Core

1. 1/2" thick particleboard shall be provided for all boards. All joints/seams shall be equipped with continuous steel splines routed into the particleboard core to assure alignment of writing surfaces joined in the same plane.

*CHOOSE ONE*

- C. Moisture backer of aluminum .005 thick shall be factory laminated to core material.
- C. Moisture backer of aluminum .015 thick shall be factory laminated to core material.

2.03 TRIM

- A. Perimeter trim shall be minimum .062" thick clear anodized aluminum furnished loose for field modification to site conditions. Trim shall be #C-8, 3/4-inch by 11/16-inch.

*OPTIONAL-IN PLACE OF CONTINUOUS WRITING SURFACE*

1. Provide #D-2N, clear anodized aluminum "H" bar at all vertical joints between panels.

B. Accessories

1. Marker Tray: 24" magnetic marker tray

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2. Display Rail: 18" magnetic display rail
3. Marker Pens:
  - a. Magnetic marker pens
  - b. Standard marker pens (one set of 4 or 12 per full height marker wall)
4. Erasers: (one per full height marker wall)
  - a. Magnetic eraser
  - b. Magnetic eraser with marker pen holder
  - c. Standard eraser, and magnetic erasers with penholders,  
*CHOOSE ONE*
5. Wall mounted map rail 2" with \_\_\_\_\_ insert.
6. Wall mounted map rail 3" with \_\_\_\_\_ insert.

#### 2.04 FABRICATION

- A. Panel Size: Laminate FHM Series panels up to 4' wide by up to 12' high.
  1. Laminate P3 Ceramicsteel to ½-inch particle board, under pressure, using factory machine type lamination equipment.
    - a. Utilize specially formulated environmentally friendly adhesives.

*DELETE IF NOT REQUIRED*

- B. Continuous Writing Surface: All panel core material shall be routed along the vertical edge of the panel to receive a 1" wide continuous steel spline from top to bottom.

### PART 3 EXECUTION

#### 3.01 EXAMINATION

- A. Verification of Conditions:
  1. Verify that surfaces to receive units are true and plumb. Advise responsible contractor of unacceptable conditions. Begin installation upon correction.
  2. Verify that moisture and temperature levels of substrate and environment have stabilized.

#### 3.02 INSTALLATION

- A. General:
  1. Install units as recommended by the manufacturer. Provide all necessary installation accessories. Locate accessories on each board as specified.  
*DELETE IF NOT REQUIRED*
  2. Install 1-inch wide continuous vertical steel spline where two panels meet and align panels to achieve a hairline joint and an even writing surface.
  3. Apply manufacturer's recommended adhesive behind each fixed board using egg sized gobs at 16 inches on center.
  4. Install field applied trim with mitered and neatly fitted hairline joints.
  5. Provide fasteners for perimeter trim at 16 inches on center or less. Use concealed fasteners. Exposed fasteners shall be rejected.

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B. Mounting Height: As indicated on the drawings.

3.03 CLEANING

A. At Substantial Completion, clean boards using manufacturer's recommended procedures and install cleaning labels for each room.

END OF SECTION 10100