

## **SECTION 101433 CODE COMPLIANT SIGNAGE**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Code compliant Signage.
- B. Reference:
  - 1. Reference 101425 Code Signage Guide

#### **1.2 DEFINITIONS**

- A. Accessible: In accordance with the accessibility standard.

#### **1.3 COORDINATION**

- A. Furnish templates for placement of sign-anchorage devices embedded in permanent construction by other installers.

#### **1.4 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
- B. Shop Drawings: For panel signs.
  - 1. Include fabrication and installation details and attachments to other work.
  - 2. Show sign mounting heights, locations of supplementary supports to be provided by others, and accessories.
  - 3. Show message list, typestyles, graphic elements, including raised characters and Braille, and layout for each sign at full size.
- C. Samples for Initial Selection: For each type of sign assembly, exposed component, and exposed finish.
  - 1. Include representative Samples of available typestyles and graphic symbols.

- D. Samples for Verification: For each type of sign assembly showing all components and with the required finish(es), in manufacturer's standard size unless otherwise indicated and as follows:
1. Room-Identification Signs: Full-size Sample.
  2. Variable Component Materials: Full-size Sample of each base material, character (letter, number, and graphic element) in each exposed color and finish not included in Samples above.
  3. Exposed Accessories: Full-size Sample of each accessory type.
  4. Requirements as indicated in the signage guideline attached.
- E. Sign Schedule: Use same designations specified or indicated on Drawings or in a sign schedule.

## **1.5 INFORMATIONAL SUBMITTALS**

- A. Qualification Data: For Installer and manufacturer.
- B. Sample Warranty: For special warranty.

## **1.6 CLOSEOUT SUBMITTALS**

- A. Maintenance Data: For signs to include in maintenance manuals.

## **1.7 QUALITY ASSURANCE**

- A. Installer Qualifications: Manufacturer of products or an entity that employs installers and supervisors who are trained and approved by manufacturer.

## **1.8 FIELD CONDITIONS**

- A. Field Measurements: Verify locations of anchorage devices embedded in permanent construction by other installers by field measurements before fabrication, and indicate measurements on Shop Drawings.

## **1.9 WARRANTY**

- A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.
1. Failures include, but are not limited to, the following:
    - a. Deterioration of finishes beyond normal weathering.

- b. Deterioration of embedded graphic image.
  - c. Separation or delamination of sheet materials and components.
- 2. Warranty Period: Five years from date of Substantial Completion.

## **PART 2 - PRODUCTS**

### **2.1 PANEL SIGNS, GENERAL**

- A. Meet requirements

### **2.2 PERFORMANCE REQUIREMENTS**

- A. Accessibility Standard: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines for Buildings and Facilities and ICC A117.1 for signs.

### **2.3 SIGNS**

- A. Panel Sign: Sign with smooth, uniform surfaces; with message and characters having uniform faces, sharp corners, and precisely formed lines and profiles.
  - 1. Provide signage in materials indicated and with finish specified in Gensler Base Code Signage Package.
  - 2. Text and Typeface: Accessible raised characters and Braille.
  - 3. Flatness Tolerance: Sign panel shall remain flat under installed conditions as indicated and within a tolerance of plus or minus 1/16 inch measured diagonally from corner to corner.

### **2.4 PANEL-SIGN MATERIALS**

- A. Aluminum Sheet and Plate: ASTM B 209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.
- B. Aluminum Extrusions: ASTM B 221, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.
- C. Bronze Plate: ASTM B 36/B 36M, alloy recommended by manufacturer and finisher for finish indicated.

- D. Stainless-Steel Sheet: ASTM A 240/A 240M or ASTM A 666, Type 304, stretcher-leveled standard of flatness.
- E. Acrylic Sheet: ASTM D 4802, category as standard with manufacturer for each sign, Type UVF (UV filtering).
- F. Polycarbonate Sheet: ASTM C 1349, Appendix X1, Type II (coated, mar-resistant, UV-stabilized polycarbonate), with coating on both sides.
- G. PVC Sheet: Manufacturer's standard, UV-light stable, PVC plastic.
- H. Plastic-Laminate Sheet: NEMA LD 3, general-purpose HGS grade, 0.048-inch nominal thickness.
- I. Vinyl Film: UV-resistant vinyl film of nominal thickness indicated, with pressure-sensitive, permanent adhesive on back; die cut to form characters or images as indicated and suitable for exterior applications.
- J. Paints and Coatings for Sheet Materials: Inks, dyes, and paints that are recommended by manufacturer for optimum adherence to surface and are UV and water resistant for colors and exposure indicated.

## **2.5 ACCESSORIES**

- A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signage, noncorrosive and compatible with each material joined, and complying with the following:
  - 1. Use concealed fasteners and anchors unless indicated to be exposed.
  - 2. Exposed Metal-Fastener Components, General:
    - a. Fabricated from same basic metal and finish of fastened metal unless otherwise indicated.
  - 3. Sign Mounting Fasteners:
    - a. Concealed Studs: Concealed (blind), threaded studs welded or brazed to back of sign material or screwed into back of sign assembly, unless otherwise indicated.
    - b. Projecting Studs: Threaded studs with sleeve spacer, welded or brazed to back of sign material or screwed into back of sign assembly, unless otherwise indicated.
    - c. Through Fasteners: Exposed metal fasteners matching sign finish, with type of head indicated, installed in predrilled holes.
  - 4. Inserts: Furnish inserts to be set by other trades into concrete or masonry work.

- B. Two-Face Tape: Manufacturer's standard high-bond, foam-core tape, 0.045 inch thick, with adhesive on both sides.

## **2.6 FABRICATION**

- A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.
  - 1. Preassemble signs and assemblies in the shop to greatest extent possible. Disassemble signs and assemblies only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly.
  - 2. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
  - 3. Comply with AWS for recommended practices in welding and brazing. Provide welds and brazes behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded and brazed connections of flux, and dress exposed and contact surfaces.
  - 4. Conceal connections if possible; otherwise, locate connections where they are inconspicuous.
  - 5. Internally brace signs for stability and for securing fasteners.
  - 6. Provide rebates, lugs, and brackets necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match sign finish.
- B. Surface-Engraved Graphics: Machine engrave characters and other graphic devices into panel surface indicated to produce precisely formed copy, incised to uniform depth.
  - 1. Engraved Metal: Fill engraved graphics with manufacturer's standard baked enamel.
  - 2. Engraved Opaque Acrylic Sheet: Fill engraved graphics with manufacturer's standard enamel.
  - 3. Face-Engraved Clear Acrylic Sheet: Fill engraved copy with manufacturer's standard enamel. Apply manufacturer's standard opaque background color coating to back face of acrylic sheet.
  - 4. Engraved Plastic Laminate: Engrave through exposed face ply of plastic-laminate sheet to expose contrasting core ply.
- C. Subsurface-Engraved Graphics: Reverse engrave back face of clear face-sheet material. Fill resulting copy with manufacturer's standard enamel. Apply opaque manufacturer's standard background color coating over enamel-filled copy.
- D. Brackets: Fabricate brackets, fittings, and hardware for bracket-mounted signs to suit sign construction and mounting conditions indicated. Modify manufacturer's standard brackets as required.

1. Aluminum Brackets: Factory finish brackets with baked-enamel or powder-coat finish to match sign-background color unless otherwise indicated.
2. Stainless-Steel Brackets: Factory finish brackets to match sign background finish unless otherwise indicated.

## **2.7 GENERAL FINISH REQUIREMENTS**

- A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- C. Directional Finishes: Run grain with long dimension of each piece and perpendicular to long dimension of finished trim or border surface unless otherwise indicated.
- D. Organic, Anodic, and Chemically Produced Finishes: Apply to formed metal after fabrication but before applying contrasting polished finishes on raised features unless otherwise indicated.

## **2.8 ALUMINUM FINISHES**

- A. Clear Anodic Finish: AAMA 611, Class II, 0.010 mm or thicker.
- B. Color Anodic Finish: AAMA 611, Class II, 0.010 mm or thicker.
- C. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

## **2.9 STAINLESS-STEEL FINISHES**

- A. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.
- B. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.
  1. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.
  2. Directional Satin Finish: No. 4.
  3. Dull Satin Finish: No. 6.
  4. Reflective, Directional Polish: No. 7.
  5. Mirrorlike Reflective, Nondirectional Polish: No. 8.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of signage work.
- B. Verify that sign-support surfaces are within tolerances to accommodate signs without gaps or irregularities between backs of signs and support surfaces unless otherwise indicated.
- C. Verify that anchor inserts are correctly sized and located to accommodate signs.
- D. Verify that electrical service is correctly sized and located to accommodate signs.
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

### **3.2 INSTALLATION**

- A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.
  - 1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
  - 2. Install signs so they do not protrude or obstruct according to the accessibility standard.
  - 3. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.
  - 4. Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.
- B. Room-Identification Signs and Other Accessible Signage: Install in locations on walls as indicated and according to accessibility standard.
- C. Mounting Methods:
  - 1. Concealed Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.

- a. **Masonry Substrates:** Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place sign in position and push until flush to surface, embedding studs in holes. Temporarily support sign in position until adhesive fully sets.
    - b. **Thin or Hollow Surfaces:** Place sign in position and flush to surface, install washers and nuts on studs projecting through opposite side of surface, and tighten.
  2. **Projecting Studs:** Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.
    - a. **Masonry Substrates:** Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place spacers on studs, place sign in position, and push until spacers are pinched between sign and substrate, embedding the stud ends in holes. Temporarily support sign in position until adhesive fully sets.
    - b. **Thin or Hollow Surfaces:** Place spacers on studs, place sign in position with spacers pinched between sign and substrate, and install washers and nuts on stud ends projecting through opposite side of surface, and tighten.
  3. **Through Fasteners:** Drill holes in substrate using predrilled holes in sign as template. Countersink holes in sign if required. Place sign in position and flush to surface. Install through fasteners and tighten.
  4. **Brackets:** Remove loose debris from substrate surface and install backbar or bracket supports in position so that signage is correctly located and aligned.
  5. **Adhesive:** Clean bond-breaking materials from substrate surface and remove loose debris. Apply linear beads or spots of adhesive symmetrically to back of sign and of suitable quantity to support weight of sign after cure without slippage. Keep adhesive away from edges to prevent adhesive extrusion as sign is applied and to prevent visibility of cured adhesive at sign edges. Place sign in position, and push to engage adhesive. Temporarily support sign in position until adhesive fully sets.
  6. **Two-Face Tape:** Clean bond-breaking materials from substrate surface and remove loose debris. Apply tape strips symmetrically to back of sign and of suitable quantity to support weight of sign without slippage. Keep strips away from edges to prevent visibility at sign edges. Place sign in position, and push to engage tape adhesive.
- D. **Field-Applied, Vinyl-Character Signs:** Clean and dry substrate. Align sign characters in final position before removing release liner. Remove release liner in stages, and apply and firmly press characters into final position. Press from the middle outward to obtain good bond without blisters or fishmouths. Remove carrier film without disturbing applied vinyl film.
- E. **Signs Mounted on Glass:** Provide opaque sheet matching sign material and finish onto opposite side of glass to conceal back of sign.



### **3.3 ADJUSTING AND CLEANING**

- A. Remove and replace damaged or deformed signs and signs that do not comply with specified requirements. Replace signs with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.
- B. Remove temporary protective coverings and strippable films as signs are installed.
- C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

### **END OF SECTION**