Lordon Porcelain Enamel Specifications

1. Base Metal
Base metal shall be steel. For the purposes of this specification, steel is defined to include:
   a. Special purposed "enameling iron or steel" of low metalloid and copper content, especially manufactured and processed for the production of porcelain enamel units for architectural purposes
   b. Conventional cold rolled sheets which can be satisfactorily porcelain enameled and which meet other requirements of this specification.

2. Processing
A porcelain enamel coating shall be applied to all areas of each unit, including back and flanges, by methods recognized as good commercial practice. At least one additional fired coating shall be applied to the face side of each unit.

3. Corrosion Protection
The back side of non-laminated panels shall be protected with fired porcelain enamel coating. The coating requirements for the back side do not apply when adequate corrosion protection is provided to the panel by the laminated construction. Corrosion protection in laminated panels is dependent upon the durability of the lamination.

4. Porcelain Enamel Finish
   a. Weather Resistance
   The porcelain enamel finish on all surfaces exposed to weathering shall pass the acid spot test as given in the Test Methods section. In addition, all red, yellow and orange porcelain enamels shall pass the cupric sulfate test as described in the same section.

   b. Continuity of Coating
   Visual inspection of each piece shall reveal no visible breaks or surface defects in the cover coating that will expose the underlying coating or the steel on surfaces exposed to weathering, nor the underlying steel on either the back or flanges. This requirement shall not apply to sheared edges. Special metallic coatings are sometimes fired onto porcelain enamel surfaces to achieve specific textures and finishes. This coating may be continuous or may have purposely induces breaks and discontinuities. Such coatings shall qualify under this requirement if the underlying porcelain enamel satisfies all requirements in this specification.

   c. Surface Appearance
   The porcelain enamel on all surfaces exposed to weathering shall be free of blemishes in the coating that may impair the serviceability or detract from the general appearance of the panel when viewed from a distance of 5 feet or the distance at which the panel will be normally viewed, whichever is the greater. Orange peel and surface finish should be reviewed and agreed on before production. Color tolerances should be agreed on before production. Certain colors are more susceptible to color stability.

5. Flatness of Panel
Finished faces shall have a maximum variation of 3/16" (4.76mm) in a convex direction when measured perpendicular to the nominal plane of the panel face. Variation in the concave direction shall be limited to 3/32" (2.38mm) from actual plane of the panel face. These tolerances are for panels with a face area of 8 sq. ft. (0.86 m²) or less. Proportionately greater allowance will be permitted for panels of greater areas.

6. Clips and Attachments
All metal lugs, clips and other attachments fastened to the panel, as well as those furnished unattached by the manufacturer, for the purpose of attaching the panel to the building structure shall be made of a recognized corrosion resistant metal such as stainless steel type 302 or equivalent. This requirement specifically excludes stiffener bars or braces, clips for holding insulation in place, and similar devices not intended for the purpose of attaching the panel to the building structure. Also excluded are furring, substructure assemblies, or braces that may be furnished by the manufacturer.
7. Gloss
The gloss of the porcelain enamel finish, together with permissible tolerances in gloss, should conform visually with samples selected by the architect and/or purchaser during negotiation of the contract. It is also recommended that the finish be of a type that will not reflect distinct images. If the reflecting power is high, images seen in the mounted panels will usually be distorted due to even very small deviations from flatness.

8. Color
The color and color tolerance should be specified in the purchase contract. If possible, this should be based on porcelain enameled sample color specimens. Compliance with color specification may be determined by visual matching under viewing conditions mutually agreed upon by the contracting parties, or may be determined instrumentally. The color tolerance to be specified should depend upon the color service requirement and the ease with which particular color or colors can be controlled in production, and should be clearly specified in the purchase contract. To be considered also are the type of structure, the texture of the finish, and the proximity of adjacent panels. Some colors can be controlled more closely than others.

9. Texture
The porcelain enamel will be furnished in a smooth and non-textured finish. Orange peel tolerance should be specified with tolerance samples.

10. Thickness of Porcelain Enamel
Various thicknesses are encountered in commercial ware. Thickness tolerance should be agreed upon in writing before production. Texture, color and processing techniques influence the amount of porcelain enamel which is applied. Thin porcelain enamel coatings are desirable to provide maximum resistance to damage from flexure. However, processing methods and desired appearance characteristics may result in variations of recommended minimum thickness of the coating. A minimum of 0.0035" (0.089 mm) of cover coat will normally provide acceptable durability. The total thickness may range from 0.005 to 0.020" (.127-0.508 mm), depending upon process and appearance. Total thickness should not exceed 0.020" (0.508 mm), except where greater thicknesses are necessary to meet specific appearance requirements.

11. Thickness of Metal
Thickness, grade and design tolerance of metal should be agreed upon during negotiation of the contract. Full consideration should be given to the size, shape or detail of the unit, and the duty which the unit is to perform in the building structure.

12. Packaging and Shipping
Packaging, shipping and handling methods should be specified and should be practical for supplier, shipper, and erector.

13. Artwork Proofs
Complete artwork should show forming detail, tolerances allowed (both dimensional and flatness), location in completed structure, and on-the-job cutting or drilling requirements. The maximum allowable extent of damage due to drilling and cutting should be agreed upon by contracting parties.