

GRATING MANUFACTURING PROCESSES

Molded Grating Process

Molded grating is manufactured in an open, heated mold that resembles a large waffle iron. Continuous glass fibers are placed in the mold in alternating layers and thoroughly wetted out with resin. This continuous process produces an integral, one-piece construction, which offers excellent corrosion resistance as well as bi-directional strength.

When the weaving process is completed, the mold is heated to cure the panel. If the grating is to have embedded grit, the mold will receive the grit at this time before the part is cured.

After curing, the part is extracted from the mold. The standard part would have a meniscus (concave) top surface for slip resistance. Should a standard grit surface be specified, the grit would be bonded to the top of the completed grating panel as a secondary operation.

Pultrusion Process

Pultrusion is a continuous molding process using fiber reinforcements with thermosetting resin matrices.

Pre-selected reinforcement materials, such as fiberglass roving, mat, woven fabrics or stitched fabric, are drawn through a resin bath in which all material is thoroughly impregnated with a liquid thermosetting resin. Typical resins include polyesters, vinyl esters and phenolics.

The wet-out fiber is formed to the desired geometric shape and pulled into a heated steel die. Once inside the die, the resin cure is initiated by controlling precise elevated temperatures. The laminate solidifies in the exact cavity shape of the die, as it is continuously pulled by the pultrusion machine. Most any constant cross-section part can be pultruded.

Pultrusion allows the designer to customize the selection of the resin system, the type and form of fiberglass reinforcements, and the placement of the reinforcements within the composite profile.

Refer to Section 2.03 of the standard specification for grating assembly procedure.

