

## Specification for DecoTherm® Digital Ceramic Frit Glass Decoration

### A. SCOPE

This specification covers the manufacture of decorative architectural glass products manufactured by the DecoTherm application process.

### B. APPLICABLE SPECIFICATIONS

GANA 95-1-31 Decorative Architectural Flat Glass  
 GANA Glass Informational Bulletin GANA 01-0300 - Proper Procedures for Cleaning Architectural Glass  
 ASTM C724-91 Durability of Decorated Glass

### C. OBJECTIVE

The objective of this document is to provide guidelines to the user in determining the acceptability of architectural glass decorated with the DecoTherm process.

### D. GENERAL REQUIREMENTS

#### D.1 Appearance

- a. DecoTherm glass to be viewed in a vertical position from a distance of 3 feet (1 meter) illuminated under overhead incandescent lighting conditions.
- b. Acceptable quality – cosmetic appearance (see Table 1). Any voids, scratches, discolorations, or gross opacity shifts that are noticeable when viewed from 3 feet (1 meter) away will be deemed unacceptable.

<b>Table 1</b> Specifications for Cosmetic Appearance of DecoTherm® Decorated Glass Viewed from 1 Meter (3 feet)		
<b>Blemish</b>	<b>Specification</b>	<b>Comments (viewed at 1 meters)</b>
Voids & Craters	None greater than 1/16" (1.6mm)	All others Non-Visible
Ghosts	None greater than 1/16" (1.6mm)	Non-Visible
Mottle	Some variation may occur	Non-Visible
Opacity	Some variation may occur	Some variations may occur
Pinholes	Scattered pinholes are permissible	Non-Visible
Cracks	None greater than 1/2" (12.7mm) in length	All others Non-Visible

#### D.2 Pattern registration tolerances

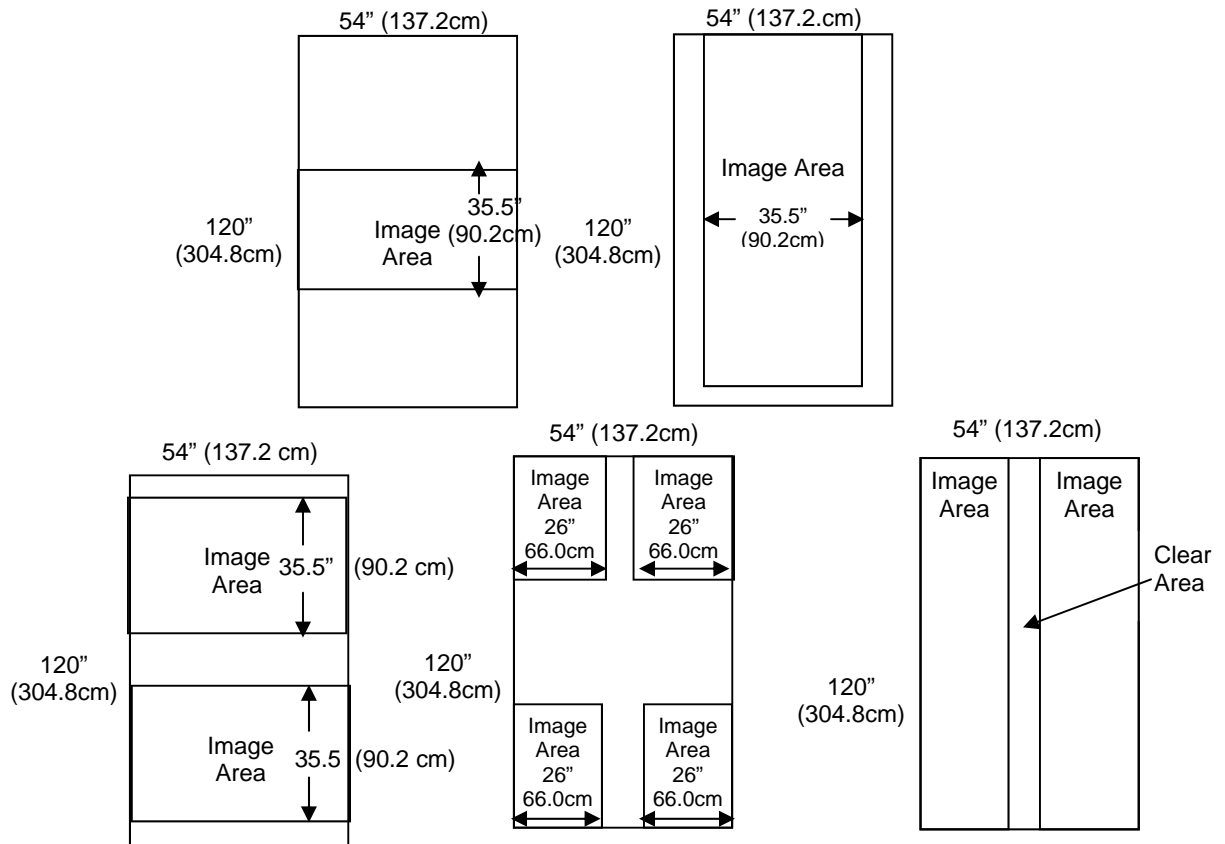
- a. Pattern can be off parallel from the decal edge up to 1/8" (3.2mm) over a 10 ft. (3.1 meters) length.
- b. For line patterns, the maximum variation in line width or distance between lines will be 1/32" (0.8mm).
- c. All images need to leave at least 1/8" (3.2mm) clear area from the edge on all sides of the glass

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### D.3 Glass & image size restrictions

Minimum Glass Panel Size	12" x 18" ( 30.5cm x 45.7cm) [12"x12" (30.5cm x 30.5cm) for samples]
Maximum Glass Panel Size	54" x 120" (137.2cm x 304.8cm)
Maximum Image Area Size	Across the width of the glass or down the length: - 35.5" (90.2cm) wide 100% solid edges - 34.5" (87.6cm) wide tinted edges (less than 100% fill)  In cases where there are clear areas in a design, more coverage (tiling) is possible. See D4 for examples
Colors	Up to 3 colors per image
Minimum Glass Thickness	1/4" (6.4mm)
Maximum Glass Thickness	3/4" (19.1mm)

### D.4 Glass & image size examples



(Consult your DecoTherm supplier for other possibilities)

## **Specification for DecoTherm<sup>®</sup> Digital Ceramic Frit Glass Decoration**

### **E. Sample Approval**

If DecoTherm samples are requested for a job, the quality will be an exact representation of the actual job. Upon approval of the sample(s), customer accepts that quality level for the actual job. All samples will contain a DecoTherm Watermark.

### **F. Cleaning**

Read the entire GANA specification before cleaning any DecoTherm decorated glass. (GANA Glass Informational Bulletin GANA 01-0300 - Proper Procedures for Cleaning Architectural Glass). In general glass should be cleaned when dirt and residue appear. Glass should be cleaned with a mild, non-abrasive window cleaning solution. Do not use razors or scraper to clean glass. Test clean a small portion of glass and inspect for damage.

### **G. DecoTherm Limited Warranty**

DecoTherm, decorative glass frit image, is warranted for a period of 5 years from the date of manufacture for durability and colorfastness of the fritted image applied to the glass per the DecoTherm specifications, fully tempered and used under normal conditions. DecoTherm is not warranted for unprotected outdoor use.

For the purposes of this limited warranty, durability is defined as meeting ASTM C724-91 Specification, and colorfastness is defined as no appreciable deterioration in the image, making it unacceptable for its intended application, as determined by customary standards of the industry, when viewed from the intended viewing distance.

Not responsible for glass breakage, product failure due to improper usage, incompatibility with other coatings, sealants, lubricants, or failure caused by harsh cleaners, solvents, acids or other harsh chemicals.

### **H. Disposal**

As with normal disposal procedures with any float glass product, discarded glass imaged with DecoTherm decals should be placed in suitable containers for disposal in a licensed landfill or treatment facility in accordance with all applicable local/municipal, state/provincial, and federal regulations. DecoTherm decal-imaged glass panes are considered non-hazardous waste in accordance with USEPA RCRA regulations (40 CFR Part 261). Wear appropriate protective clothing and provide adequate ventilation during clean-up.