AEROGLAZE Z307

POLYURETHANE COATING

Technical Data Sheet

Approvals and conformities

ADCOLE	A26364
AIL Systems	986643
COMDEV USA	CMS41803
EMS Technologies	194909SCD
Exelis, Inc	561455
GOODRICH	HPA0210C
HONEYWELL	FMC9625-01, P8251333
Harris	2011362
Hughes	SCGMS56061
Kearfott	Y122A013
L3 Communications	635907-3, 699-006849, B185239, N500045
LOCKHEED MARTIN	LAC-37-4462-0600, MAP-CK10787
Merrimac	801642
Raytheon	HMS15-2135
THALES ALENIA SPACE (formerly ALENIA SPAZIO)	M02C018N00A
TRW	C809398
US Air Force	0N814850-1

Aeroglaze Z307 coating is an electrically conductive moisture-curing polyurethane coating designed for substrates used in aerospace applications. These operations include those where coatings must exhibit low outgassing characteristics, while providing static dissipation, high thermal absorptivity, and high emissivity. Aeroglaze Z307 coating cures to a flat black finish.

Features & Benefits

- **Low Outgassing*:** exhibits low outgassing properties in high vacuum environments.
- **Durable:** provides mechanical properties required for rigorous durations in space for both rigid or flexible substrates.
- **High Thermal Absorptivity:** provides high solar absorptivity and emissivity to obtain control of thermal and optical properties.
- **Static Dissipation:** resistivity between 10^2-10^5 ohms/square.

**A bakeout may be required to achieve acceptable outgassing results depending on project requirements. Reference outgassing.nasa.gov for outgassing data and bakeout schedules.*

DIRECTIONS FOR USE

Surface Preparation
Thoroughly clean surfaces to remove all dust, oil, and grease. For most substrates, apply a primer to ensure proper adhesion and performance of the coating. Contact your Socomore representative for an appropriate primer recommendation.

Mixing
Before opening container, thoroughly mix coating for 5 minutes using a paint shaker. Open the lid carefully as the container may be under slight pressure. Stir the coating with a clean paint stick to check for any settled material and ensure mixture is homogeneous. If material has settled, return closed container to the paint shaker and mix for an additional 5 minutes or until no settling is apparent.

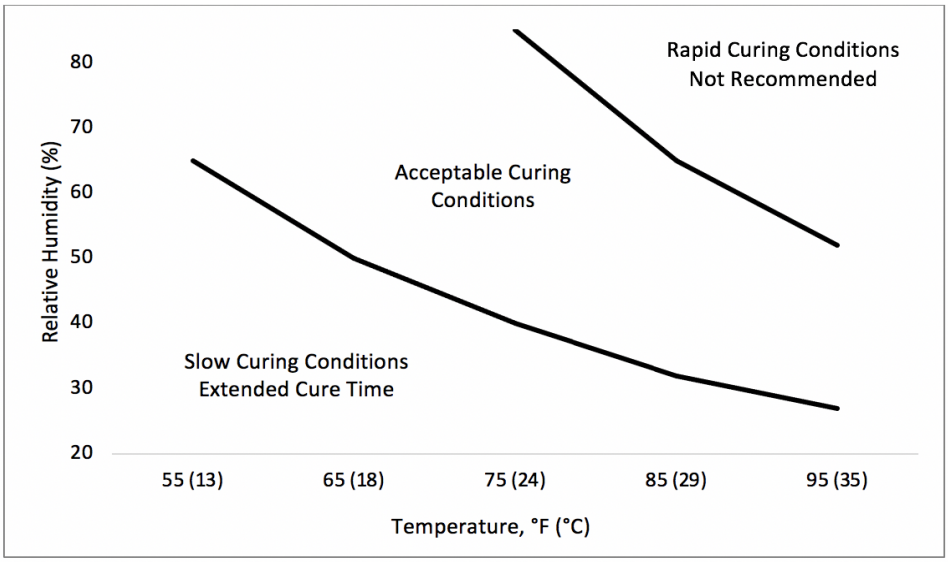
Application
Aeroglaze Z307 coating is best applied at 13-35°C (55-95°F), with substrate temperatures at least 2.8°C (5°F) above the dew point. The optimum dry film thickness of Aeroglaze Z307 is 38-51 micron (1.5-2.0 mil). Apply a maximum of 100 micron (4 mil) wet film thickness per coat as excessively thick coats can cause bubbling and sagging. The approximate coverage rates at the suggested film thicknesses are 138 - 184 ft^2/gal. For a general coverage rate, refer to the table in the characteristics section.

Spraying
Dilute coating with 15-20% Aeroglaze 9958 thinner by volume to a Zahn Cup #2 viscosity of 18-22 seconds. Apply coating by HVLP spray with a 1.4 mm spray tip and a dry air feed with less than 500 ppm moisture. Hold the gun at right angles to the surface approximately 20.3-30.5 cm (8-12 in) away and apply with a 50% overlap between passes.

Brushing
Application by brush is only recommended to touch-up small areas. Add up to 5% by volume of Aeroglaze 9958 thinner to control the application properties.

Curing
Aeroglaze Z307 coating cures by reacting with moisture in the air. The cure rate is dependent on the temperature, relative humidity, and amount of air circulation required to remove the solvent.

Under the acceptable curing conditions, the coating will develop its ultimate properties in approximately 7 days. Refer to the psychrometric chart below. Lower temperatures and humidities decrease the rate of cure, while higher temperatures and humidities may cause bubbling.



Aeroglaze Z307 coating cures to a tack-free surface in 2-3 hours at 25°C (77°F) and 50% relative humidity. Room temperature cure times of 12 hours permit handling.

Aeroglaze Z307 coating may be recoated after the first application within 3 hours minimum and 24 hours maximum. Recoat time is dependent on temperature and humidity. High temperature and humidity promote fast cure while low temperature and humidity slow down the cure. In high temperature and high humidity conditions, recoat within 8 hours to prevent intercoat adhesion failure. If the maximum recoat time is exceeded, the surface must be roughened by sanding with fine sandpaper prior to application of an additional coat.

The constant operating temperature of Aeroglaze Z307 is -150 to 104°C (-238 to 220°F), with excursions to 121°C (250°F) permitted for no longer than four hours at a time.

Clean-Up
Use Aeroglaze 9958 thinner to clean equipment. Do not use lacquer thinners, water, or solvents containing alcohol.

TECHNICAL CHARACTERISTICS

Typical Properties[1]

Property	Value
Appearance	Black Liquid
Viscosity, cps @ 25°C (77°F), ASTM D 2196-86, Brookfield LVT	50-400
Density, ASTM D 1475-85	0.91-0.96 kg/L (7.6-8.0 lb/gal)
Solids Content by Weight, ASTM D 2369-87 modified	20-24%
% Volume Solids	17.2%
Approximate Coverage Rate	290 ft^2/gal/mil DFT
Flash Point (Seta), ASTM D 3278-82, Closed Cup	19°C (67°F)
Volatile Organic Content (VOC), ASTM D 3960-87	731 g/L (6.1 lb/gal)
Outgassing[2], ASTM E 595-77	1.06% TML[3], 0.04% CVCM[4]
Solar Absorptivity, Gier-Dunkle Integrating Sphere	0.97
Normal Emissivity	0.89
Gloss at 85°	≤ 10

Resistivity, 19-38 micron (0.75-1.5 mil) Film Thickness	10^2-10^5 ohms/square

1) Data is typical and not to be used for specification purposes
2) 40-day cure at room temperature
3) Total Mass Loss
4) Collected Volatile Condensable Materials

PRECAUTIONS FOR USE AND STORAGE

The shelf life is one year from date of shipment when stored in the original, unopened container at temperatures between 10-32°C (50-90°F). Store indoors away from heat, sparks, and open flames.

The pot life of Aeroglaze Z307 is two hours at 25°C (77°F) and 50% relative humidity. Lower temperatures and humidities increase the pot life, while higher temperatures and humidities decrease the pot life. To maintain product freshness after the container has been opened, keep container closed as much as possible, nitrogen purge before resealing, and use within 7 days after opening. If the product has built up excessive pressure that causes the can to bulge, has formed a skin on the top layer of the product, or appears foamy, the product should not be used.

Before using this or any SOCOMORE product, refer to the Safety Data Sheet (SDS) and label for safe use and handling instructions.

For industrial/commercial use only. Must be applied by trained personnel only. Not to be used in household applications. Not for consumer use. Not for immersion service. Do not apply to wet or damp substrates.

Manufactured for SOCOMORE by: LORD Corporation, Saegertown, PA

This technical data sheet replaces and cancels the previous one.

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