



# **Application Guidelines**

## **Lining a Carbon Black Hopper Car**

### **1227-202 Gloss 7005 Gray DTM Epoxy**

This application guideline covers the necessary materials, equipment and procedures to properly prepare and apply a single coat of 1227-202 to the interior of a rail hopper car for carbon black service. The product data sheet and safety data sheets should be referenced for mixing, thinning, equipment and safety precautions.

#### **1) Materials**

- a. Abrasives : Select an abrasive that is free from contaminants and suitable to produce a 2.5 mil profile and near white metal blast according to NACE No.2/SSPC-SP10.
- b. Love & Associates 1227-202 7005 Gray Epoxy
- c. Reducing Solvent – If applied with single feed airless equipment and no heating, it may require up to 10% thinning with a L&A recommended solvent. Allow a 20 minute sweat in time for maximum chemical resistance properties. Avoid thinner when using inline heaters and a static mixer.

#### **2) Equipment**

- a. Equipment to measure dew point, humidity, air & steel temperature.
- b. Surface profile comparator or Testex Replica Tape x-coarse
- c. Broom with natural bristles and vacuum cleaning system to remove blast residue
- d. Airless Spray Equipment (45:1 pump or greater)
- e. Wet Film Thickness gauges
- f. Heating Equipment to force cure lining (optional)
- g. Magnetic dry film thickness gauge
- h. Holiday Detector – Low voltage, 67.5 volt
- i. NACE & SSPC standards for surface preparation.

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### 3) Surface Preparation

- a. In accordance with SSPC-SP1, remove any grease and oil from the surface.
- b. In accordance with SSPC-SP10, abrasive blast to a minimum near white blast to obtain a 2.0-3.2 blast mil profile, with 2.5 being optimal. Less severe service and repair cars can be prepared in accordance with SSPC-SP6.
- c. Welds must be smooth and continuous without any projections or irregularities. All weld flux, spatter, bb's and slag must be removed. Undercuts or pinholes will only be filled with weld metal and not caulking material.
- d. Any laminations or steel surface defects must be removed by grinding.

### 4) Coating Material

- a. Agitate component A with a power mixer until uniform consistency, then add component B. Make sure all the hardener gets used. If required, add thinner after the two components have been mixed thoroughly.
- b. The temperature of the mixed coating during application should be above 59°F.

### 5) Application

- a. The coating must be applied before any visible rusting occurs.
- b. Do not paint unless the metal surface temperature is 5°F above the dew point.
- c. It is recommended to cover the slope sheets with paper or plastic to prevent any over-spray from falling on the blasted surface.
- d. Apply by airless spray one full coat of 1227-202 to 9-14 mils wet (6-8 mils dry) to the blasted surface. Measure film thicknesses according to SSPC-PA2. Do not exceed 12 mils dry.
- e. Be sure to not allow any dust or airborne contaminants to enter the car. Continuous ventilation should be used to remove solvents from the coating.
- f. Before inspecting the coating, it must be dried. The introduction of ambient clean air into the compartments will accomplish this. Heating equipment can shorten the dry time. Avoid over curing the coating before inspection and repairs have been completed. Contact your Love & Associates representative for recommendations.

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## 6) System Film Thickness

- a. After the coating has been applied, the total dry film thickness should be 6-8 mils. Do not exceed 12 mils dry. Measure the thickness in accordance with SSPC-PA2.

## 7) Inspection & Touch Up

- a. After the lining has dried, but before fully cured or forced dry, it must be inspected for any defects such as holidays, overspray, pinholes, runs and sags.
- b. Overspray trash may be removed by sanding with fine sandpaper. Depending on the size of the defect area, it may be recoated by brush or spray.
- c. Sags and runs can be removed by a sharp scraper or sandpaper. Do not disturb the intact lining. The roughened area can be re-sprayed or brushed depending on the size of the area.
- d. Holidays can be identified using a 67.5 volt tester. Any defects should be repaired
- e. Use a calibrated type I or II dry film thickness gauge to check film thickness. Correct low thickness areas by spraying or brushing more material on. Heavy areas can be sanded or blasted followed by a light dress coat.
- f. See Technical Data Sheet for minimum and maximum recoat times.

## 8) Curing

- a. Sufficient cure time must allowed before placing in service. The time required is dependent on the coatings intended in service use, substrate temperature, humidity & DFT.
- b. The lining will be sufficiently cured for carbon black service after 5 days at 68°F and 6-8 mils dft.
- c. If force curing, do so at 130°F for 2 hours with ventilation. Raise the temperature of the substrate approximately 1°F per minute up to 130°F. Consult a Love & Associates representative for details.



## 9) Cleaning

- a. Clean all equipment with MEK if possible. Mixed material will harden in lines and equipment if left over night. On plural component equipment, be sure to flush from the mixing head through the delivery hose and guns

## 10) Storage

- a. Close all containers tightly
- b. Do not store outside
- c. Do not store above 100°F
- d. Rotate stock
- e. Do not use past shelf life – 1 year from the date of manufactured when stored properly.

Information contained herein is to the best of our knowledge believed to be true and accurate at the date of issuance. Should the owner's specification differ from these procedures, contact your Love & Associates representative to assure our coating will perform to owner's guidelines. Special shop conditions may exist that demand specific and unique application requirements.