



Desofill™ HS Epoxy Sanding Surfacer
CA 7650
Application Guide

Use

Desofill™ HS CA 7650 high solids epoxy sanding surfacer is designed for use on fiberglass, composite, and primed metallic surfaces. CA 7650 sanding surfacer can be used as a high build/filler or as a primer/surfacer then sanded to a smooth finish. As high build/filler, it can be applied over surface irregularities, fasteners, rivets, or seams or used as a primer/surfacer to correct minor imperfections in the aircraft skin. Once applied, CA 7650 cures within a few hours and yields a smooth sandable finish, ideal for topcoating with Desothane® HS Polyurethane or Epoxy topcoats. Desofill™ HS sanding surfacer contains no chromates or other heavy metals.

Note: This material is available in both Gray CA7650 and White CA7650W colors.

Surface Preparation for Metallic Substrates

To insure proper corrosion resistance and to optimize adhesion to the substrate, a metallic surface must be primed with a corrosion inhibiting primer prior to the application of CA 7650.

The PPG Aerospace, PRC-DeSoto preferred system is to apply a clear chromated conversion treatment to the metallic surface then apply a corrosion inhibiting urethane compatible epoxy primer such as Desoprime™ HS. Apply the primer to a dry film thickness between 0.6 to 1.2 mils (15 to 30 microns). Allow the corrosion inhibiting primer to dry for a minimum of 2 hours, but not more than 72 hours at 77°F (25°C) before applying CA 7650 sanding surfacer. Refer to the corrosion primer application instructions / TDS for minimum overcoat time.

If the PPG Aerospace, PRC-DeSoto primer is over 72 hours old, lightly scuff the surface with abrasive pads or 240-grit (or finer) sandpaper. Remove any dust or debris with a mild solvent, or solvent blend, such as Desoclean™ 110 cleaner, then wipe dry with a lint-free cloth. Do not allow the solvent to dry on the surface. A urethane compatible tack rag may also be used to remove the dust or debris. Do not use excessive pressure when using a urethane compatible tack rag. Tack rag residue can be left on the primer surface and cause craters or rag marks. Never use a tack rag wet with solvent.

Surface Preparation for Composite / Fiberglass Substrates

Prior to sanding, clean the part thoroughly to insure that contaminants are not being ground into the part. Abrade the composite / fiberglass surface with 240-grit sandpaper. Remove any dust or debris with a mild solvent, or solvent blend, such as Desoclean™ 110 cleaner. Ensure the surface is clean prior to applying CA 7650 sanding surfacer.

Material Inspection Prior To Use

Inspect containers for damage during shipping. Open any bulging cans with extreme caution.

Mixing

Note: It is important to condition the sanding surfacer for 24 hours prior to mixing. Primer should be placed in the shop or hangar, with ambient temperatures between 60° to 95°F (16° to 35°C). The minimum temperature of the paint components should be 60°F (16°C) prior to mixing.

Be sure all mixing and measuring containers are clean and free of contamination. Paper mixing cups must not have a solvent soluble (i.e. wax) lining. These linings will contaminate the coating. Do not use thinners or flow control agents from other manufacturers. Other thinners or flow control agents may contain material(s) that can degrade the cure, adhesion, or appearance of the CA 7650 Sanding Surfacer. All components should be mixed at the proper ratios to achieve the optimum performance properties and the correct VOC. Failure to mix properly will affect the application characteristics and film properties.

Shake the base component for 15 minutes on a paint shaker to ensure that all solids have gone into solution. When opening the can stir the contents to ensure that no material remains on the bottom.

High Build / Filler, Surfacer Base: CA 7650A

Mix Ratio 1:1 Activator: CA 7650B

(by volume)

When mixing, always add components in the order shown on the label.

Mixing Instructions: Slowly add one (1) volume CA 7650B activator component to one (1) volume CA 7650A base component. Mix thoroughly for 5 minutes to make sure the material is homogeneous. Always add components slowly while agitating. Stir slowly when in use to ensure a homogeneous consistency during application.

Tinting – If CA7650T (Black Tinter) is added to darken the material. Mix this per the instructions on the Tinter container. Up to 1oz of Tinter can be added per gallon of base to obtain desired color.

Pot Life

Desofill™ HS CA 7650 sanding surfacer is ready to spray as soon as thoroughly mixed. An induction time is not required. **The pot life is for this material is 4 hours at 77° ± 5°F (24° ± 3°C).** The best application characteristics of the CA7650 occur when the material is freshly mixed.

Application

High Build / Filler

The primer should be applied using a 50% overlap or box coat method to achieve proper wet film thickness. Apply a wet film not to exceed 5.5 mils (137.5 microns) per coat. Apply up to three coats using this method to achieve a total dry film thickness (DFT) of up to 8-10 mils (200 to 250 microns) when mixed at a 1:1 ratio..

Note: Up to 5% of CA 7560T tint may be added for use as a guide coat.

Table I –Dry Times*

Dry times	60° – 69°F (16° – 20°C)	70° – 79°F (21° – 26°C)	80° – 89°F (27° – 31°C)	90° – 95°F (32° – 35°C)
Time between coats	45 minutes	40 minutes	35 minutes	30 minutes
Tack Free Time	6 – 7 hours	4 – 5 hours	3 – 3 ½ hours	2 – 2½ hours
Dry to Sand	10 – 14 hours	6 – 8 hours	5 – 7 hours	4 – 6 hours
Dry to Topcoat	10-14 hours	6 – 8 hours	5 – 7 hours	4 – 6 hours
Ultimate Cure	7 days	7 days	7 days	7 days

***Note:** Dry times (i.e. time between coats, dry to sand and topcoat) will be affected by temperature, airflow and film thickness. Thicker films, lower temperatures (below 60°F (16°C)), and poor airflow (less than 1.6 ft/sec (0.5 m/sec)) will increase the dry time between coats, tack free time, dry to sand and dry to topcoat.

Force curing is not recommended for this material.

Spray Equipment

Spray Application: PPG Aerospace, PRC-DeSoto sanding surfacers are formulated for all types of spray equipment. Below are recommended tip sizes and pressure settings. The final appearance depends on many factors. In general, small particles will create a smoother film with less orange peel. Air spray or HVLP atomize the paint more effectively than airless or assisted airless spray equipment and are recommended for CA 7650 sanding surfacer.

Electrostatic Air Spray Gun

Tip Size 1.2 mm or 1.5 mm (or equivalent)
Pot Pressure 16 to 20 psi (1.1 to 1.4 bar)
Atomization Pressure at the Cap 45 to 60 psi (3.1 to 4.1 bar)

Electrostatic Air Assisted Airless Spray Gun

Tip size #611 or #613 (Graco® Nomenclature)
Fluid Pressure 700 to 1800 psi (48 to 124 bar)
Atomization Pressure at the Cap 40 to 50 psi (2.8 to 3.5 bar)

High Volume Low Pressure Spray Gun (HVLP)

Tip Size	1.0 to 1.4 mm (or equivalent)
Pot Pressure	10 to 20 psi (0.69 to 1.4 bar)
Atomization Pressure at the Cap	10 psi maximum (0.69 bar)*

Conventional Air Spray Gun

Tip Size	1.2 to 1.8 mm (or equivalent)
Pot Pressure	10 to 20 psi (0.69 to 1.4 bar)
Atomization Pressure at the Cap	45 to 60 psi (3.1 to 4.1 bar)

Note: 1 psi = 0.0689 bar

- Spraying in excess of 10 psi at the air cap will cause “dry spray” with HVLP spray equipment.
- Length of fluid lines will affect pressures needed to insure proper fluid flow rates. Shorter lines need less pressure, longer lines need more pressure.

Fluid Flow Rate

To determine fluid flow rate of spray equipment, turn off the atomizing air at the pump. Enclose the air cap of the spray gun with a solvent resistant plastic bag. If more than one gun is being used from one pump, then both triggers must be pulled to draw pressure from the pump. Pull the trigger on the enclosed gun for 15 seconds. Remove the bag and transfer all the captured paint into a graduated container. Multiply the contents by 4 and this will be the flow rate per minute. The suggested flow rate to minimize sagging and orange peel is 8 to 12 ounces (227 to 340 milliliters) per minute. The flow rate can be adjusted by increasing or decreasing the fluid pressure or by changing the tip size.

Air Pressure Settings

In order to achieve 45 to 60 psi (3.1 to 4.1 bar) atomization pressure at the gun, the regulated pressure at the mixing pot should be set higher to compensate for pressure losses. Table II below shows regulator pressure requirements for different hose lengths.

Table II – Air Pressure Settings

Air Hose Length	Air Regulator Pressure
4 feet (1.2 meters)	45 psi (3.1 bar)
15 feet (4.6 meters)	50 psi (3.4 bar)
25 feet (7.6 meters)	55 psi (3.8 bar)
36 feet (11.0 meters)	65 psi (4.5 bar)
50 feet (15.2 meters)	70 psi (4.8 bar)
75 feet (22.9 meters)	85 psi (5.9 bar)
100 feet (30.5 meters)	100 psi (6.9 bar)

Sanding

It is important for the filler/surfacer to be completely dry prior to wet or dry sanding. For large areas, use a mechanical dry sanding method, such as a D/A sander, equipped with P180/P240 grit paper. For detail sanding by hand, 320/400 grit paper is recommended. Thoroughly clean the surface after sanding with a mild solvent, or solvent blend, such as Desoclean™ 110 cleaner or a 50:50 blend of Isopropyl Alcohol and water to remove any dust, debris or surface contaminants that may be present on the surface prior to topcoating. Do not use a strong solvent, such as Methyl Ethyl Ketone (MEK) to clean the surface.

It is recommended to start with 180 grit. If there is excessive film build, proceed with 220 and finish off with 320. Use 320 paper to smooth out the surface and remove any final defects.

It is recommend to sand all the way to the colored guide coat.

Force curing will make the 7650 much harder to sand, and can entrap solvent which causes pinholes thus is not recommended..

Clean Up

Clean spray equipment as soon as possible after use. Flush spray equipment with a strong ester or ketone solvent, or solvent blend, such as Desoclean™ 45 cleaner. PPG Aerospace, PRC-DeSoto polyurethane surfacers are chemically reacting systems that are not soluble in solvents after it has cured. For this reason, equipment should be cleaned as soon as possible after application and always before the material has cured. Even freshly applied coatings will deposit a film on the equipment that does not dissolve easily. Agitation with a brush or clean cloth will help to remove these deposits.

Health And Safety

This product is safe to use and apply when recommended precautions are followed. Before using this product, read and understand the PPG Aerospace, PRC-DeSoto "Safe Handling Guide" for aerospace coatings and the Material Safety Data Sheet (MSDS) for information on health, physical and environmental hazards, handling precautions and first aid recommendations. An MSDS is available on request. Avoid overexposure. All mixing and spraying must be conducted with adequate ventilation and proper personal protective equipment as recommended. Obtain medical care in case of symptoms of overexposure as outlined in Section III of the Material Safety Data Sheet (MSDS).

For industrial use only. Keep away from children.

EMERGENCY MEDICAL INFORMATION IN THE U.S.A. AND CANADA: 1-800-228-5635.

EMERGENCY MEDICAL INFORMATION (GLOBAL): 1-651-632-9265.

EMERGENCY SPILL CONTROL IN THE U.S.A.: 1-800-424-9300 (CHEMTREC).

EMERGENCY SPILL CONTROL INFORMATION IN CANADA: 1-613-996-6666 (CANUTEC).

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