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## APPLICATION INSTRUCTIONS

# HOT-APPLIED SUPERSEAL SEALANTS

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### READ BEFORE USING THIS PRODUCT

**GENERAL:** Crafco Hot-Applied Superseal sealants are liquid, hot-applied, single component materials which when properly applied form resilient and adhesive compounds which effectively seal joints in portland cement concrete pavements. Since Superseal sealants contain coal tar, which is not compatible with asphalts, they should not be used to seal asphalt concrete cracks or joints or in places where they will be in contact with asphalt concrete pavement.

**HEATING:** Crafco Superseal sealants must be heated in jacketed double boiler type melter units equipped with both agitation and recirculation systems. During heating Superseal sealants will be thin up to temperatures of approximately 170°F (77°C). Between 170°F (77°C) and 200°F (93°C) the sealant will thicken considerably as constituents swell. As temperature increases above 240°F (116°C) the sealant will thin. When 250°F (121°C) is reached, the material circulation pump should be started. Sealant should be heated to between the recommended pouring temperature of 270°F (132°C) and the safe heating temperature of 290°F (143°C). Melter applicators with horizontal agitators should be powered by an engine of at least 16 HP and be equipped with an agitator in first class operating condition. If vertical agitators are used, the engine should have at least 12 HP. The melter applicator should also be equipped with a rotary pump with a 2 inch (5cm) minimum port size and without an internal pressure relief valve. The pumping system should include a 2 inch (5cm) manual bypass that will allow recirculation of the sealant from the pump back into the heating vat at the top of the tank. A 15 foot (5m) sealing hose with a 1 inch (2.5cm) inside diameter, coupled to a sealing wand with a 3/4 inch to 1 inch (1.9-2.5cm) inside diameter is ideal. Superseal sealants must be charged into a clean melter. All residue from previous sealants must be cleaned out of the entire system. This is accomplished by heating the melter to remelt residue and flushing the system with 10 gallons (38L) of Crafco Flush Oil (Part No. 34630). Superseal sealants may be charged into a clean melter as soon as the oil bath heaters and sealant agitator are operational. The entire amount of material may be added at once and the polyethylene liner may also be included. Do not completely fill machine with cold sealant because the material will expand approximately 10 percent when reaching application temperature. Important precautions during heating are as follows:

1. **AGITATION:** It is absolutely essential that continuous agitation of Superseal sealants be maintained when heat is being applied.
2. **TEMPERATURE CONTROL:** Temperature controls and indicators on the sealing machine must be maintained to a degree of accuracy than can be totally relied upon. An additional hand held temperature gauge should also be used to verify sealant temperature.
3. **SAFE HEATING TEMPERATURE:** Do not exceed the safe heating temperature. Temperatures in excess of the safe heating temperature reduce the pot life drastically and will cause gelling (curing to a

solid). When this happens it is necessary to remove the sealant physically from the melter by cutting, scraping, etc. and disposing of properly. Superseal sealants may be remelted if allowed to cool and become solid, however they may not meet the intended specifications and should not be applied to pavement joints. At the safe heating temperature the application life of Superseal sealants is approximately nine hours.

4. **CIRCULATION:** Do not attempt to recirculate Superseal sealants at temperatures under 250°F (121°C)

5. **ADDITION OF FRESH MATERIAL:**

One of the following two methods is recommended:  
A. Add full five gallon pail(s), the polyethylene bag liner may be included. A maximum amount of 10% fresh material should be added to the heated sealant. After addition, circulate material through plumbing and applicator wand back into the melter for a minimum of ten minutes after adding fresh material prior to restarting sealant application.

B. Place fresh material into a tray mounted inside the melter lid opening. This tray should control the rate of fresh material addition to one-half gallon,(2L) or less, per minute. The polyethylene bag liner can be added to the melter when most of the fresh material has drained from it. It is not necessary to wait for material reaction when using this method.

Special care should be given to avoid plugging the machine when adding to less than fifty gallons of heated material. Do not apply material that is below the recommended application temperature.

### **JOINT PREPARATION AND SEALANT APPLICATION:**

**New Concrete:** All joints should be formed or sawed to produce a minimum joint size of 3/8" x 1 1/2"(1.0 x 3.8 cm), on approximately 15 foot (5m) spacing. Joints 1/2 inch (1.2cm) wide should be 1 3/4 inch (4.4cm) deep and 5/8 (1.6cm) inch wide should be 1 7/8 inch (4.8cm) deep. Prior to sealing the joint, surfaces should be cleaned of all dirt, curing compound residue, laitance and any other foreign material. After sawing, immediately flush the joints with water to remove a majority of the saw slurry. After the joints have dried, just prior to applying sealant, the remaining residue must be removed by sandblasting **"Both Joint faces must be adequately sandblasted to remove all traces of sawing residue"**. For effective sandblasting the nozzle should be positioned within 2 inches (5cm) of the surface being cleaned. After sandblasting the joint should be cleaned using clean compressed air with a minimum pressure of 90 psi (62 N/cm<sup>2</sup>). Moisture and oil traps are required on compressor unit. The objective of the above cleaning operations is to provide vertical, intact and clean concrete bonding surfaces which are free from all contaminants and are dry. Joints should be fully inspected to assure that the appropriate level of cleanliness has been achieved. This can be accomplished by

rubbing your finger along each joint face, if any evidence of dust and contamination occur, additional sandblasting should be performed until all dust and contaminants are removed. Non-water absorptive and heat resistant backer rod which is about 25% larger than the joint width should be placed in the joint to provide a minimum sealed depth of 3/4 inch (1.9cm).\* Do not puncture the backer rod. Damaged backer rod may cause sealant to bubble. Sealant should be applied at a temperature between the recommended pour temperature and the safe heating temperature. Sealant should be recessed a minimum 1/8 inch (3mm) below the pavement surface. Sealant should not be applied if ambient temperature or joint temperature is below 50°F(10°C) or in excess of 90°F (32°C). Bubbles are known to develop in hot-applied sealant which has been installed in concrete pavements. This phenomenon may develop within the first year of field service when hot summer temperatures occur. Bubbling is generally more noticeable in pavement less than one year old. Hot ambient temperatures can cause moisture in the concrete to vaporize. These moisture vapors can migrate through the sealant creating bubbles. An alternate sealant should be used if bubbling is not acceptable to the project owner. A low modulus non-sag silicone sealant will reduce the chance of bubble formation. Contact the Crafcro Product Manager for further information.

**RESEALING:** Old sealant should be removed by any appropriate method such as using a joint plow, a router, or hooks. After removal of old sealant, the joint is to be saw cut to an appropriate width to provide clean vertical bonding surfaces which are free from contamination by old sealant. As a general rule, the joint should be sawn to a width which is between 1/8 inch and 1/4 inch (3-6mm) wider than the original joint. The same joint depths listed in the “New Concrete” section should be used. For reservoir width of 3/4 inch (1.9cm), joint depth should be a minimum 1 7/8 inch (4.8cm). The additional sandblasting and cleaning operations contained in the above “New Concrete” section should then be followed.

**CLEAN OUT:** Superseal sealants should not be reheated and applied. Therefore, the sealing machine must be completely emptied at the end of the sealing run and the entire system flushed with Crafcro Flushing Oil. Ten gallons (38L) of flush oil should be used, circulating it through the bypass system as well as the sealing hose and wand. Once the system has been cleaned and emptied, the flush oil should be disposed of properly and not reused.

**SAFETY PRECAUTIONS:** All personnel involved with the sealing operation should read the Material Safety Data Sheet for Crafcro Superseal sealants before sealing is started. User should check D.O.T. requirements for transportation of sealant at elevated temperatures above 212°F (100°C).

**STORAGE:** Superseal sealants should not be stored in direct sunlight, and ambient storage temperature should not exceed 100°F (38°C). Do not store sealant outside under a tarp or plastic cover as this could lead to excessive heat buildup under the cover. Sealant should be stored inside with adequate ventilation. With time, the suspended solids in the Superseal can begin to settle. When settling is light, the pail may be turned over for 8 – 24 hours to re-suspend the solids before being poured into the melter. After 2 years the settlement will begin to harden and the Superseal must be disposed of properly. The Shelf life of Superseal is 2 years minimum from date of shipment.

**SAFETY AND USAGE PRECAUTIONS:** Since Superseal Sealants must be heated to elevated temperatures to prepare for

use, it is essential that operations be conducted in manners which assure safety of the application personnel and other. All personnel associated with use of the material need to be aware of the hazards of using hot applied materials and safety precautions. Before use, the crew should read and understand all sections of the product Material Safety Data Sheet. This sheet which is supplied with each shipment, describes the characteristics of the product as well as any potential health hazards and precautions for safe handling and use.

**HAZARDS ASSOCIATED WITH HOT APPLIED**

**MATERIALS:** Simply stated, skin contact with hot applied materials will cause burns. Additionally, over exposure to fumes may cause respiratory tract irritation, nausea, or headaches. Therefore, appropriate precautions need to be taken to prevent contact with the hot material, and to avoid inhalation of fumes for everyone in the vicinity of the sealing operation. Safety precautions should include: 1. Protective clothing to prevent skin contact with hot material. 2. Care when adding product to melters to reduce splashing. 3. Careful operation and control of wands or our pots which are used to apply product. 4. Traffic and pedestrian control measures which meet or exceed local requirements to prevent access to work areas while product is still in a molten state. 5. Avoidance of material fumes. 6. Proper application configurations with a minimum amount of excesses of material. 7. Appropriate clean up of excessive applications or product spills.

**ADDITIONAL INFORMATION:** Additional information regarding these products is available by contacting your distributor or Crafcro, Inc. This information includes 1) Product Data Sheets, 2) Material Safety Data Sheets, 3) Safety Manual, 4) Sealant Selection Guide.

\*For Crafcro Low-mod Superseal, #34656, minimum depth should be 1/2” (1.2 cm)