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INSTALLATION INSTRUCTIONS
TECHCRETE TBR-SF

Part Number 34953SF (Type TBR)

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READ BEFORE USING THIS PRODUCT

GENERAL: Crafco TechCrete TBR-SF (Part No. 34953SF) is a hot-applied, polymer modified resin based, flexible concrete repair material with high quality aggregate that is used for patching and repairing potholes, spalls and deteriorated areas of portland cement concrete pavements and bridge decks. TechCrete TBR-SF contains large aggregate particles and is used for ¾ inch to 8 inch (20 to 200 mm) deep pavement voids and can be complemented with a bulking aggregate. See Pavement Preparation, Installation and Bulking Aggregate instructions for cutting repair areas to minimum depths and Techcrete TBR-SF thickness requirements. Additional information on the product is shown on the Product Data Sheet.

MELTING and HEATING: TechCrete TBR-SF must be melted in an appropriate indirectly heated melter with sufficient agitation to uniformly mix the product and with an effective product delivery system. Heat transfer oil temperature should not exceed 525°F (274°C). The recommended melter is a Crafco Patcher I or II. Contact Crafco for suitability of other melters. Prior to starting, ensure that the heater/mixer is clean and free of any residual material or contamination. Do not remove TechCrete TBR-SF material from the bag. Place the bag containing TechCrete TBR-SF into the melter. Do not mix different types of TechCrete materials together. Heat the TechCrete TBR-SF to the minimum application temperature of 375°F (190°C) before using. The maximum heating temperature is 428°F. It is recommended that a secondary device be used to measure the temperature of the material (i.e. non-contact infrared thermometer, hand held thermometer, etc.) prior to application. Do not heat TechCrete TBR-SF continuously for longer than six (6) hours.

PAVEMENT TEMPERATURES: Do not install TechCrete TBR-SF material if the pavement temperature is below 40°F (4°C).

TRAFFIC CONTROLS: Place appropriate traffic controls in accordance with Part 6, of the FHWA Manual on Uniform Traffic Control Devices (MUTCD) to protect the work site for the duration of the repairs.

PAVEMENT PREPARATION: Mark out the pavement area to be repaired and use suitable equipment (saws, planers, pneumatic hammers, etc.) to remove the defective pavement. Sufficient pavement is to be removed to ensure the TechCrete is bonding to sound intact pavement and ensure the repair area has a 1 ½ inch minimum depth (38 mm) or a 2 ½ inch (63mm) minimum depth if a bulking aggregate is used. If the area to repair is between ¾" and 1 ½" (19 – 38 mm) deep the pavement must be removed to a depth of 1 ½ inches (38mm) to accommodate TechCrete TBR-SF. TechCrete TBR-SF is not a full depth or concrete slab replacement material. The maximum size of the repair should be determined on an individual basis with information on pavement structural integrity, maximum size for workability with the TechCrete-SF and any surface treatments that may be involved. When TechCrete TBR-SF is applied across a joint, a minimum of a 4 inch (102 mm) width of material is required to be placed on each side of the joint measured perpendicularly from the joint. Remove all loose debris from the work site. Clean and dry the repair area with a hot air lance (Crafco part No. 45650). Prime the entire repair area side and bottom surfaces with TechCrete Primer (Part No. 34290 or 34295) with a brush or spray applicator and allow the primer to dry before applying the TechCrete TBR-SF material. Puddled or pooled primer in the repair area should be brushed out to speed drying and prevent bubbling from occurring. Primer should not be applied below 40°F (4°C). Primer is dry when lightly touched with ones finger and there is no transference or pick up of primer residue. Drying time varies depending on temperature, humidity, and concrete conditions. Typical dry time varies from approximately 15 minutes at warm, dry conditions, to several hours at cooler damp conditions. TechCrete TBR-SF shall be installed on the same day that primer is applied. If TechCrete TBR-SF is installed on primed areas that are not cured sufficiently, adhesion may be reduced. Do not use an open flame to dry the primer. The perimeter of the repair area may be masked with a fabric tape to prevent excess or stray material from contacting the surface of the pavement. At untied construction, butt or expansion joints, excessive pavement movements can occur which may exceed product performance capabilities. In these types of joints, which can experience high movements, the product installation geometry must be modified so that the TechCrete TBR-SF is installed across the joint a minimum of 10 inches (250 mm) on each side of the joint instead of the 4 inches (102 mm) on each side stated above.

INSTALLATION: Gravity feed the heated TechCrete TBR-SF material directly into the repair area or into an appropriate transfer container such as the Crafco Techcrete Bucket (Part No. 32263) and immediately pour the material into the repair area. TechCrete TBR-SF is used for repairs 1-1/2 inch (38 mm) in depth up to 8 inches (200mm), as noted above. Installations over 2 ½ inches (63mm) deep require TechCrete TBR-SF material to be applied in multiple layers that do not exceed 2 1/2 inches (63mm) thickness and the top layer should not be greater than 1 inch (25 mm) deep. Allow the TechCrete TBR-SF surface to cool to at least 200°F (93°C) between each layer. Work the TechCrete TBR-SF material into the edges of the repair and level the surface with a heated iron such as the Crafco Ironing Wand (Part No. 32243). Allow bubbles to expel from the applied TechCrete TBR-SF material. Surfacing aggregate is applied to complete the repair. Contact your Crafco sales representative or Crafco distributor to determine which surfacing is best for your requirements.

Prior to applying the surfacing aggregate, quickly expose the surface of the TechCrete TBR-SF material to hot compressed air or a flame to remove any surface bubbles and to heat the surface for good adhesion to the surfacing aggregate. Apply dry surfacing aggregate while the TechCrete TBR-SF patch surface temperature is 225°F ± 25°F (107°C ± 14°C), as measured with a non-contact infrared thermometer. Heating the surfacing aggregate just before application may be advantageous for some repairs. TechCrete-SF cools around the perimeter of a repair before the center surface. Where practical, the surfacing aggregate should be applied around the perimeter first and then applied to

the center, after the temperature falls into range. When the surfacing aggregate must be applied at one time, the center surface of the TechCrete TBR-SF should be allowed to cool to 225°F ± 25°F (107°C ± 14°C) before application. The perimeter surface temperature will have cooled below the aggregate application temperature range and must be gently heated back to the recommended patch surface temperature range using hot compressed air or a torch, before application of the surfacing aggregate. The usage rate for the surfacing aggregate is approximately 2 lb. per square foot. Surfacing aggregate shall be applied to completely cover the patch surface. Quite often diamond grinding is scheduled as part of the maintenance project after the application of the TechCrete repair. If diamond grinding is scheduled to occur on the pavement and TechCrete TBR-SF repairs as part of the maintenance project, follow the TechCrete Grinding Instructions instead of the above surfacing aggregate instructions. These TechCrete Grinding Instructions can be obtained from your Crafco sales representative or Crafco distributor. Once the TechCrete TBR-SF material has cooled to the surrounding pavement surface temperature, final cleaning with a sweeper or vacuum is performed to remove any surplus surfacing aggregate prior to opening to traffic. Excess surfacing aggregate can be reused if kept clean, not contaminated, and dry.

BULKING AGGREGATE: Bulking aggregate (Crafco Part No. 33032) can be used with TechCrete TBR-SF as an interlayer between lifts for deep repairs. Bulking aggregate is only used when more than one lift is necessary. The bulking aggregate is applied in a single layer thickness on top of a minimum of 1 inch (25mm) thick TechCrete TBR-SF for proper bonding. This requires the repair area to have a minimum 2 ½ inch depth. As noted above, installations over 2 ½ inches (63mm) deep require TechCrete TBR-SF material to be applied in multiple layers that do not exceed 2 1/2 inches (63mm) thickness and the top layer should not be greater than 1 inch (25 mm) deep.

The bulking aggregate must be dry when used and can be heated and dried in a vented barrel mixer up to 300°F before using. When applying the lift of TechCrete TBR-SF before the 1 inch (25mm) thick final surface lift, the level of TechCrete TBR-SF should be 1 ¼ – 1 ¾ inches (31 – 45 mm) below the surface of the pavement before applying the bulking aggregate. The bulking aggregate will bring the TechCrete TBR-SF to the appropriate level before the final lift. The bulking aggregate is applied in a single layer thickness into the Techcrete TBR-SF immediately after the Techcrete TBR-SF is applied and worked to level. The usage rate is approximately 3.5 pounds per square foot. While several layers of bulking aggregate can be used the bulking aggregate should never exceed 25% by volume of the TechCrete TBR-SF. The surface of the TechCrete TBR-SF and bulking aggregate must be allowed to cool to less than 200°F before the 1 inch thick final surface lift is applied. Do not apply bulking aggregate to the surface of the last lift before application of the surfacing aggregate.

CLEAN OUT: Remove all excess material from the mixer/heater at the completion of each days repair, using the Crafco Chute Scraper (Part No. 32246) and the Crafco Tank Scraper (Part No. 32258).

STORAGE: Pallets of bagged TechCrete are protected with a weather resistant covering. During storage, the protective wrap must be kept on the pallets to prevent bags from getting wet. If bags are subjected to moisture, the material may get wet which could create foaming and boil-over of the product from the mixer tank during heat-up. If rips in the pallet covering occur during handling, they should be repaired to help maintain packaging integrity. Pallets should be stored on a level surface which is dry and has good drainage. Pallets should not be stacked. Material properties are not affected by packaging deterioration.

SAFETY PRECAUTIONS: Since these materials are heated to elevated temperatures, it is essential that operations be conducted in manners which assure safety of personnel. All 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 product use and safety information on each bag of TechCrete and the product MSDS. 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. User should check D.O.T. requirements for transportation of TechCrete at elevated temperatures above 212°F (100°C).

HAZARDS ASSOCIATED WITH HOT APPLIED MATERIALS: Skin contact with hot applied materials causes burns. Over exposure to fumes may cause respiratory tract irritation, nausea, or headaches. 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 work area 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 tools which are used to apply product. 4. Traffic and pedestrian control measures which meet or exceed MUTCD 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 Crafco, Inc. This information includes: 1) Product Data Sheets, 2) Material Safety Data Sheets and 3) TechCrete Grinding Instructions.