



**SPECIFICATIONS FOR THE PATCHER I (100 GAL)  
DIESEL FUELED**

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The purpose of these specifications is to describe a double-boiler type mixer that is specifically designed for and shall be capable of heating and melting Crafco TechCrete, Mastic One, Matrix 501 and PolyPatch products. All qualified bidders must have and maintain a complete inventory of repair parts and have experienced factory-trained service personnel for this equipment.

|   | <u>Comply</u> | <u>Does Not Comply</u> |
|---|---------------|------------------------|
| <b>1. GENERAL</b>   |               |                        |
| A. This machine shall be the manufacturer's current production model manufactured in the United States of America.  | _____         | _____                  |
| B. A factory-trained person shall be made available for initial start-up and training in the operation of the mixer.  | _____         | _____                  |
| C. A comprehensive safety manual and an operational/maintenance manual shall be supplied with each unit.  | _____         | _____                  |
| D. Thermostatic control for the heat transfer medium shall be provided and shall have sufficient sensitivity to maintain product temperature within the manufacturer's specified application temperature range.                                       | _____         | _____                  |
| E. Temperature indicating devices shall have intervals no greater than 5°F (2.8°C) and shall be calibrated as required to assure accuracy.  | _____         | _____                  |
| F. The mixer shall have a continuous material mixing system to provide uniform viscosity and temperature of material being applied.   | _____         | _____                  |
| <b>2. REQUIRED SAFETY FEATURES</b>  |               |                        |
| A. The unit shall have a safety shut-off on the lid that automatically stops the agitator when the lid is opened.   | _____         | _____                  |
| B. This unit shall have a safety chain in place to prevent accidental discharge of material.  | _____         | _____                  |
| C. The unit shall be oil jacketed to ensure safe heating and handling of materials. Direct fire and air jacketed units are not acceptable.  | _____         | _____                  |
| D. The heat transfer oil shall adequately and efficiently bring the material to application temperature without the use of a heat transfer oil circulation pump. This eliminates the potential exposure of personnel to pressurized hot transfer oil. | _____         | _____                  |
| E. All fluid tanks shall be located and mounted above the top of the frame to prevent exposure and damage.  | _____         | _____                  |
| F. Other _____  | _____         | _____                  |
| _____   | _____         | _____                  |

Comply      Does Not Comply

**3. FRAME**

- A. This unit is manufactured to be mounted to a truck bed or trailer. \_\_\_\_\_
- B. The base frame shall be constructed of 2" x 2" x 3/16" wall square steel tubing. \_\_\_\_\_
- C. The frame shall be welded to 8" x 3" x 3/16" wall rectangle steel tubing orientated so a fork lift can be used to maneuver the machine easily. \_\_\_\_\_
- D. Total shipping weight for the skid mounted machine is approximately 3,000 pounds (1,360 kg). \_\_\_\_\_
- E. Other \_\_\_\_\_

**4. HEATING TANK**

- A. The material heating tank shall be a minimum of 25 inches (63.5 cm) diameter by 44.88 inches (114 cm) long having a capacity of 95 gallons (360 l) at ambient temperature. \_\_\_\_\_
- B. The tank will have a rear discharge with a minimum 7" wide opening to properly accommodate flow and discharge of materials. \_\_\_\_\_
- C. The bottom of the tank rear discharge shall be a minimum of 10 3/8" from the ground. It should be a minimum of 24" from the ground when mounted to a vehicle. \_\_\_\_\_
- D. A double boiler type jacket shall create a reservoir that shall hold a minimum of 17 gallons (64 L) of heat transfer oil at 70°F (21.1°C). (Note: at 500°F (260°C) the heating oil will expand approximately 18%) \_\_\_\_\_
- E. The jacket shall wrap around 100% of the lower outside area of the circular material tank and bottom and allow for complete circulation of the heated transfer oil. \_\_\_\_\_
- F. The tank shall be made of not less than 1/2 inch (1.27 cm) steel. The hot oil tank shall be made of not less than 0.1875 inch (0.48 cm) steel. \_\_\_\_\_
- G. There shall be one plug to allow the entire heat transfer oil system to be drained. \_\_\_\_\_
- H. The heat transfer oil shall be ISO grade 68. \_\_\_\_\_
- I. Other \_\_\_\_\_

**5. EXPANSION TANK**

- A. A vented expansion tank for heat transfer oil shall be provided. \_\_\_\_\_
- B. Other \_\_\_\_\_

| <u>Comply</u> | <u>Does Not Comply</u> |
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**6. HYDRAULIC SYSTEM**

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| A. The hydraulic system shall incorporate a hydraulic pump to power the mixer.   | _____ | _____ |
| B. Mixer valve shall be solenoid operated by toggle switch located on the burner control box.  | _____ | _____ |
| C. The control will allow for bi-directional operation of the mixer.   | _____ | _____ |
| D. Dual selector valves will be mounted under the hood to allow the operator to adjust the mixer operating speed.                                    | _____ | _____ |
| E. The minimum 13 gallon (49 L) hydraulic tank will be equipped with an internal 10-micron full flow filter.   | _____ | _____ |
| F. The filter shall be equipped with a restriction indicator to indicate the need for service.   | _____ | _____ |
| G. A sight level indicator equipped with a thermometer to measure oil temperature will be mounted on the tank and located where it is easily viewed. | _____ | _____ |
| H. Other _____<br>_____  | _____ | _____ |

**7. INSULATION**

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|---|-------|-------|
| A. The heating tank shall be insulated with a minimum of 1 inch (2.54 cm) thick high temperature ceramic insulation and covered by a 12 gauge (.27 cm) steel outer wrapper.               | _____ | _____ |
| B. Fiberglass or rock wool insulation is unacceptable due to their moisture retention properties resulting in a significant loss of their insulating value over an eighteen-month period. | _____ | _____ |
| C. Other _____<br>_____   | _____ | _____ |

**8. LOADING HATCH**

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| A. Two low profile openings for loading shall be required.                                       | _____ | _____ |
| B. The loading height shall not exceed 42 inches (107 cm).                                       | _____ | _____ |
| C. Each opening shall have a minimum area of 255 square inches (1644 square cm) in each opening. | _____ | _____ |
| D. One opening shall be equipped with a grated internal cover plate.                             | _____ | _____ |
| E. Other _____<br>_____  | _____ | _____ |

Comply      Does Not Comply

**9. HEATING SYSTEM**

- A. The heat transfer oil is heated by a 240,000 BTU diesel burner directly at the bottom of the heat transfer oil tank. \_\_\_\_\_
- B. The total area exposed to the burner shall be a minimum of 2,177 square inches (14,045 square cm). \_\_\_\_\_
- C. The material tank shall have a minimum of 1,830 square inches (11,806 square cm) of contact with the heat transfer oil. \_\_\_\_\_
- D. No other mechanical circulation of the heat transfer oil by pump shall be accepted. \_\_\_\_\_
- E. Other \_\_\_\_\_  
\_\_\_\_\_

**10. IGNITION OF BURNER**

- A. The burner shall be lit by a constant duty high voltage transformer powering an electric spark igniter. \_\_\_\_\_
- B. This igniter shall work in conjunction with a sensor that detects a lack of burn or ignition and shuts down the fuel supply. \_\_\_\_\_
- C. The thermostat control is located on the curbside of the machine for operator safety. \_\_\_\_\_
- D. Other \_\_\_\_\_  
\_\_\_\_\_

**11. TEMPERATURE CONTROL**

- A. The mixer shall have a thermostatic control device that will automatically regulate hot oil and material temperature. \_\_\_\_\_
- B. The control shall have a digital readout for temperatures of hot oil and material. \_\_\_\_\_
- C. The thermostat shall control burner ignition for a material temperature range from a low of 200°F (93.3°C) up to a high of 425°F (218.3°C). \_\_\_\_\_
- D. The hot oil temperature range shall be from a low of 200°F (93.3°C) up to a high of 550°F (287.7°C). \_\_\_\_\_
- E. The controls shall be activated by a single power switch. \_\_\_\_\_
- F. All temperature controls shall be contained in a single weatherproof control box. \_\_\_\_\_
- G. Other \_\_\_\_\_  
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**12. DRIVE AND DRIVE CONTROLS**

- A. The motive force to the mixer shall be a hydraulic motor driven by a single (dual element) hydraulic pump. \_\_\_\_\_
- B. The drive controls governing the rotational direction of the mixer shall be controlled by a hydraulic valve. \_\_\_\_\_
- C. The valve is electrically actuated by a toggle switch on the burner control panel and can be reversed as required. \_\_\_\_\_
- D. Engagement of two selector valves can be used to adjust mixer rotational speed. \_\_\_\_\_
- E. Other \_\_\_\_\_  
\_\_\_\_\_ \_\_\_\_\_

**13. AGITATION**

- A. The material shall be mixed by a hydraulically driven, full sweep horizontal mixer shaft with four opposing V- shaped paddles. \_\_\_\_\_
- B. This feature ensures that material remains in complete suspension. \_\_\_\_\_
- C. The mixer shaft shall be coupled from a 6 to 1 gearbox reducer to a hydraulic motor capable of 400 ft. lbs. of torque. \_\_\_\_\_
- D. The mixer rotates in both directions. \_\_\_\_\_
- E. For additional safety the mixer will shut off automatically when the loading hatch or grate is opened. \_\_\_\_\_
- F. Other \_\_\_\_\_  
\_\_\_\_\_ \_\_\_\_\_

**14. ENGINE**

- A. The unit shall be equipped with a diesel engine complying with the following specifications: \_\_\_\_\_
- B. Electric Start \_\_\_\_\_
- C. Single cylinder 10 hp (7.45 kw) @ 3600 RPM \_\_\_\_\_
- D. Full Flow Oil Filter \_\_\_\_\_
- E. Air cooled \_\_\_\_\_
- F. The melter shall have a 26 gallon (98.4 L) diesel fuel tank for operation of the entire unit. \_\_\_\_\_
- G. Other \_\_\_\_\_  
\_\_\_\_\_ \_\_\_\_\_

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| <b>15. <u>PAINT</u></b>  |               |                        |
| A. All painted surfaces shall be coated with two-part epoxy primer and two-part urethane paint applied by trained painters.  | _____         | _____                  |
| B. Other _____<br>_____  | _____         | _____                  |
| <b>16. <u>MISCELLANEOUS</u></b>  |               |                        |
| A. There shall be a gate valve at the rear of the machine to control material flow from tank.  | _____         | _____                  |
| B. Other _____<br>_____  | _____         | _____                  |
| <b>17. <u>TRAINING</u></b>   |               |                        |
| A. An authorized, factory-trained representative will be made available for a full day of training at a facility designated by the bidding agency.                                     | _____         | _____                  |
| B. At this training session a complete operational, mechanical and safety overview will occur.   | _____         | _____                  |
| C. Both safety and operational manuals will be viewed and discussed with all concerned personnel.  | _____         | _____                  |
| D. Additionally, the representative will be available at that time for "on the job" safety and field training.   | _____         | _____                  |
| E. Other _____<br>_____  | _____         | _____                  |
| <b>18. <u>SAFETY AND TRAINING MANUALS</u></b>  |               |                        |
| A. A written Safety Manual will be provided to the bidding agency.   | _____         | _____                  |
| <b>19. <u>PARTS</u></b>  |               |                        |
| A. Bidders must show proof that a large stock of parts for the model of equipment upon which he is bidding is maintained at his facility.  | _____         | _____                  |
| <b>20. <u>AWARD</u></b>  |               |                        |
| A. Equipment is for use by the Highway Department and must meet the requirements of that agency as interpreted by the Highway Commissioner.  | _____         | _____                  |
| B. Prior to award the Purchasing Agency may require a visit to the supplier's facility to assure supplier has plant capacity to manufacture and deliver equipment on time as required. | _____         | _____                  |
| C. If it is determined that the supplier cannot supply as requested, this is just cause for cancellation.  | _____         | _____                  |

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| <u>Comply</u> | <u>Does Not<br/>Comply</u> |
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**21. WARRANTY**

A. The manufacturer shall warranty the equipment for one year or as otherwise noted in the manufacturer's standard warranty policy.

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**22. QUALIFICATIONS OF BIDDERS**

A. No bid will be considered unless the bidder can meet the following conditions:

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| _____ | _____ |
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B. Bidder must have a parts/service location and keeps a sufficient stock of parts on hand at all times.

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C. The equipment offered is a stock model chassis that meets the requirements of the specifications without material changes or modifications.

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D. The model is regularly advertised and sold by the manufacturer.

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E. The bidder has been engaged in the sale and support of this make and model of equipment for at least twenty-four months.

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**OPTIONS (X if to be included:)**

- \_\_\_\_\_ Propane Torch and Bottle  
30 lb. bottle with regulator, 500,000 BTU propane hand torch with 20 foot (6.1 meter) hose.
- \_\_\_\_\_ Shoe Boxes (various sizes):
  - \_\_\_\_\_ Small 8 X 8 X 6
  - \_\_\_\_\_ Medium 8 X 10 X 6
  - \_\_\_\_\_ Large 8 X 12 X 6
  - \_\_\_\_\_ X Large 8 X 14 X 6
- \_\_\_\_\_ 2 ½ Inch Pintle Hitch
- \_\_\_\_\_ 3 Inch Pintle Hitch
- \_\_\_\_\_ Hot Air Lance
- \_\_\_\_\_ Extra Hydraulic Filter
- \_\_\_\_\_ Fire Extinguisher mounted on the Trailer Frame
- \_\_\_\_\_ Tool Box
- \_\_\_\_\_ Custom Paint
- \_\_\_\_\_ Tool Heating Box
- \_\_\_\_\_ Chute Scraper
- \_\_\_\_\_ Ironing Wand (2 each)
- \_\_\_\_\_ Towing Frame and Jack (Optional Trailer Mounted)\*

**\*Optional Trailer Specification**

A. The longitudinal side frames and tongue members of the trailer shall be on one continuous piece construction composed of hot rolled steel channel having the minimum dimensions of 5 inches (12.70 cm) web, 3/16 inch (.48 cm) thickness with 1.75 inch (4.5 cm) flanges.

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| _____ | _____ |
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B. The configuration of the channels shall be cold formed with the flanges on the outside resulting in a one-piece frame member with no cross welding of or on the flanges to avoid any possibility of flange stress cracking.

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|   | <u>Comply</u> | <u>Does Not Comply</u> |
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| C. The tongue shall be equipped with an appropriate heavy duty pintle hitch, the center of which shall be a minimum of 25 inches (63.5 cm) from the nearest obstruction on the tongue and shall be adjustable in height above ground level from a minimum of 14 inches (35.6 cm), to a maximum of 32 inches (81.3cm), permitting practically level towing with a wide range of towing vehicles. | _____         | _____                  |
| D. The towing hitch shall be bolted to the hitch plate for easy height adjustment and/or conversion to other type hitches.  | _____         | _____                  |
| E. A screw-post tongue jack shall be a heavy duty type with a load capacity of 5,000 pounds (2,268 kg) and it shall be side mounted and swing away for positive road clearance while under tow.   | _____         | _____                  |
| F. The unit shall be equipped with a dual independent rubber torsional suspension having a safe load capacity of 7,000 pounds (3,175 kg), electric brakes, modular disc wheels and ST205 R75 - 14 tubeless tires (Load Range C).  | _____         | _____                  |
| G. This suspension eliminates springs and shackles that rust and reduce ground clearance.   | _____         | _____                  |
| H. The trailer shall have dual taillights, stop lights and turn signals.  | _____         | _____                  |
| I. Lights shall be ICC approved.  | _____         | _____                  |
| J. A license plate holder shall be attached to the rear of trailer as well.   | _____         | _____                  |
| K. The unit shall also be equipped with two safety chains not less than 48 inches (121.9cm) of .38 inch. (.97 cm) coil proof chain, attached to the tongue with a drilled type clevis pin on the end attached to the frame and screw type clevis pin on the opposite end.   | _____         | _____                  |
| L. Total shipping weight for trailer mount is approximately 4,420 pounds (2,004 kg).  | _____         | _____                  |
| M. Other _____<br>_____   | _____         | _____                  |

**APPROVED EQUAL**

The approved make and model for this specification is a Crafcro Patcher I. Bidders offering to supply equipment other than the approved make and model must supply a detailed description of the equipment being offered. Bidders offering to supply equipment other than the approved make and model shall also supply a list of references of who have successfully heated, mixed and applied Crafcro TechCrete, Mastic One, Matrix 501 and PolyPatch through the equipment being offered. For purposes of comparison a separate list of all deviations to this specification must be attached to your bid document.

Prior to bid award an on-site demonstration of the equipment offered may be requested. All bidders offering other than the approved model listed will be required to provide an on-site demonstration at the agency's location within 7 days of request to verify that their unit complies with all specification requirements before their bid will be considered.

Failure to carry out the provisions noted herein is deemed sufficient reason to reject the bidder's proposal.