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SPECIFICATIONS

SUPER SHOT™ 60 (DIESEL) SKID MOUNT WITH PUMP ON DEMAND FEATURES

JULY 2016

The purpose of these specifications is to describe a double-boiler type melter applicator that is specifically designed for and shall be capable of heating and applying all grades of asphalt rubber sealant, fiber modified asphalt sealant and specification joint sealant without any further equipment modification. It may be used for the application of resinous, colored sealant and fillers. This unit shall be the manufacturer's current production model manufactured in the United States of America.

	Comply	Does Not Comply
1. GENERAL SPECIFICATIONS		
A. The machine shall be capable of starting at ambient temperature and bringing the sealant material up to application temperature in one hour at 70° F (21.1° C) ambient temperature.	_____	_____
B. All qualified bidders must have and maintain a complete inventory of replacement parts and have experienced factory-trained service personnel for this equipment.	_____	_____
C. A comprehensive safety manual and operational/maintenance CD shall be supplied with each unit.	_____	_____
D. A factory-trained person shall be made available for initial start-up and training in the operation of the melter.	_____	_____
E. Temperature indicating devices shall have intervals no greater than 1° F (2.8° C) and shall be calibrated as required to assure accuracy.	_____	_____
F. The melter shall have continuous sealant agitation and a mixing system to provide uniform viscosity and temperature of material being applied.	_____	_____
Other:_____ _____	_____	_____
2. REQUIRED SAFETY FEATURES		
A. The unit shall have a safety shut-off on the lid that automatically stops the agitator when the lid is opened.	_____	_____
B. The applicator wand shall be equipped with an automatic shut-off feature that will stop the rotation of the sealant pump, sealant flow, and all line pressure when the handle is released or dropped.	_____	_____
C. The heat transfer oil shall adequately and efficiently bring the sealant material to application temperature without the use of a heat transfer oil circulation pump. This eliminates the potential exposure of personnel to pressurized hot heat transfer oil.	_____	_____
Other:_____ _____	_____	_____

	Comply	Does Not Comply

3. FRAME

A. This unit shall be skid mounted. The longitudinal side frames and cross members of the skid shall be of one continuous piece construction composed of hot rolled steel channel having the minimum dimensions of 3.15 inches (8.0 cm) x 1.69 inch (4.3 cm) x 0.21 inch (0.53 cm) thickness. _____ _____

B. Total shipping weight is approximately 2,546 pounds (1155 kg). _____ _____

Other:_____
_____ _____ _____

4. HEATING TANK

A. The material heating tank shall be a minimum of 30 inches (76.2 cm) in diameter by 19 inches (48.3 cm) deep having a minimum capacity of 58 gallons (219.97 l) at ambient temperature. Oval or square sided tanks are unacceptable as they allow for uneven agitation resulting in a non-homogenous sealant and uneven heating of sealant. _____ _____

B. The tank will have a rear discharge from the pump and a rear plugged outlet. A double boiler type jacket shall create a reservoir that shall hold a minimum of 21 gallons (79.5 l) and require no more than 25 gallons (95 l) of heat transfer oil at 70° F (21.1° C). (Note: At 500° F (260° C) the heating oil will expand approximately 18%). _____ _____

C. The jacket shall wrap around 100% of the outside area of the circular material tank and bottom and allow for complete circulation of the heated transfer oil. _____ _____

D. The tank and jacket shall be made of not less than .157 inch (4 mm) rolled sheet steel. _____ _____

E. There shall be one plug to allow the entire heat transfer oil system to be drained. _____ _____

F. The heat transfer oil shall be of ISO grade 68. _____ _____

Other: _____
_____ _____ _____

5. EXPANSION TANK

A. A sealed expansion tank shall be provided to minimize oil oxidation and prevent moisture condensation into the heat transfer oil. Overflow down tubes are unacceptable. _____ _____

Other: _____
_____ _____ _____

	Comply	Does Not Comply
6. HYDRAULIC SYSTEM		
A. The hydraulic system shall incorporate a hydraulic pump to power the agitation and pumping system. Belt driven hydraulics is unacceptable.	_____	_____
B. All valves shall be solenoid operated by toggle switch and wand handle switch.	_____	_____
C. The controls will allow for bi-directional operation of the sealant pump and agitator.	_____	_____
D. A flow control valve will be mounted on the rear of the unit to allow the operator to adjust the pump operational speed.	_____	_____
E. The minimum 26 gallon (98.42 l) hydraulic tank will be equipped with an internal 10-micron full flow filter. The filter shall be equipped with a restriction indicator to indicate the need for service. A sight gauge level indicator equipped with a thermometer to measure oil temperature will be mounted on the tank and located where it is easily viewed.	_____	_____
Other: _____ _____	_____	_____
7. TANK INSULATION		
A. The heating tank shall be insulated with a minimum of 1-1/2 inch (3.81 cm) thick high temperature ceramic insulation and covered by a 22 gauge (.07 cm) steel outer wrapper. Fiberglass and rock wool insulation are unacceptable due to their moisture retention properties resulting in a significant loss of their insulating value over an eighteen-month period.	_____	_____
Other:_____ _____	_____	_____
8. LOADING HATCH		
A. The opening shall have a minimum area of 180 square inches (1,161 square cm), while not exceeding 200 square inches (1290 square cm) in order to prevent heat loss, and shall be hinged to allow placement of a block of sealant onto lid and closure of lid for easy, anti-splash loading.	_____	_____
Other:_____ _____	_____	_____
9. HEATING SYSTEM		
A. The heat transfer oil is heated by one (1) 205,000 BTU diesel high efficiency forced air burner directly at the bottom of the heat transfer oil tank.	_____	_____

	Comply	Does Not Comply
B. Total area exposed to the burner shall be a minimum of 3,335 square inches (21,516 square cm). The material tank shall have a minimum of 2,538 square inches (16,374 square cm) of contact with the heat transfer oil. No other mechanical circulation of the heat transfer oil by pump shall be accepted. This provides for a melt rate of 480 pounds (217.7 kg) per hour.		
Other:_____ _____		

10. IGNITION OF BURNER

A. The burner shall be lit by a constant duty high voltage transformer powering an electric spark ignitor. This ignitor shall work in conjunction with a sensor that detects a lack of burn or ignition and shuts down the fuel supply.		
Other:_____ _____		

11. TEMPERATURE CONTROL

A. The melter applicator shall have a thermostatic control device that will automatically regulate hot oil, material, and hose temperature.		
B. The control shall have a digital readout for temperatures of hot oil, material, and hose.		
C. The thermostat shall control burner ignition for a temperature range from a low of 200° F (93.3° C) up to a high of 425° F (218.3° C) for a wide variety of sealants.		
D. The temperature controls shall be in a single weatherproof control box.		
E. The controls shall be activated by a single power switch, which will then turn each function on at the proper time.		
F. The control will have fully integrated electric over hydraulic lockout for the agitation system, which prevents the agitator from being powered until the material temperature reaches 275°F (135°C). This prevents hydraulic system damage caused by overheating of hydraulic oil and reduces wear.		
G. The control shall have a fully integrated electric over hydraulic lockout for the pumping system, which will prevent the pump from being powered until the hose temperature reaches 325°F (162.8°C). This prevents hydraulic system damage caused by overheating of hydraulic oil and reduces wear.		
Other: _____ _____		

	Comply	Does Not Comply
12. DRIVE AND DRIVE CONTROLS		
A. The motive force to the agitator and material pump shall be hydraulic motors driven by a single hydraulic pump.	_____	_____
B. The drive controls governing the rotational speed of the material pump shall be controlled by adjustable hydraulic valves.	_____	_____
C. The drive controls governing the rotational speed of the material pump shall be controlled by adjustable hydraulic valves.	_____	_____
D. The material pump will have infinite speed control and is electrically actuated by a toggle switch on the control panel or a switch on the hand wand.	_____	_____
Other:_____ _____	_____	_____
13. AGITATION		
A. The sealant material shall be mixed by a hydraulically driven, full sweep vertical agitator with two opposing horizontal paddles and vertical risers attached to the ends. This feature ensures that material remains in complete suspension and that the hot material stays in the lower area of the tank and does not get splashed or thrown to the upper areas of the tank.	_____	_____
B. The agitation system shall be chain driven from the hydraulic motor to the agitator.	_____	_____
C. The agitator rotates in both directions.	_____	_____
D. For additional safety the agitator will shut off automatically when the loading hatch is opened.	_____	_____
Other: _____ _____	_____	_____
14. BI-DIRECTIONAL VARIABLE SPEED PUMPING UNIT		
A. A hardened steel gear pump is located in the center of the material tank attached to the bottom of the tank.	_____	_____
B. Pumping of material is controlled by a switch on the hand wand and output is controlled hydraulically.	_____	_____
C. The pump and agitator drive shaft stands vertically attached to two motors on the top surface of the tank.	_____	_____
D. One motor rotates an axial tube having radial mixing blades at the chamber bottom.	_____	_____

	Comply	Does Not Comply
E. The second motor drives a coaxial shaft running through the tube to the pump.		
F. Sealant pumping shall be on demand.		
G. When pumping stops, all line pressure and sealant flow shall stop.		
H. No external plumbing or recirculation back into the tank is acceptable.		
I. No internal or external valves shall be used in the pumping and sealant delivery system.		
J. The pump shall be capable of delivering sealant at a rate that exceeds the melt rate of the unit.		
Other: _____ _____		

15. ACTIVE PUMP PROTECTION

A. The pump shall be completely encircled by a protective screen.		
B. The screen shall not allow anything larger than 1/2 inch (1.27 cm) in size to pass from the sealant tank into the pump suction port.		
C. The screen shall continuously rotate 360º around the pump whenever the sealant agitator is engaged.		
D. The active screen will protect the pump from foreign object damage and will self-clean as it rotates around the sealant pump and suction port.		
Other:_____ _____		

16. SEALANT HOSE AND APPLICATOR WAND

A. Both the hose and wand are heated by 24 VAC voltage electric current and are temperature regulated.		
B. The combination length between the hose and wand shall not be less than 19 feet (5.79 m).		
C. Due to weight and safety considerations, an oil-jacketed hose is unacceptable.		
D. The hose shall be specifically manufactured for handling liquid asphalt products up to 500° F (260° C) at 500 psi (34.47 bar) working pressure.		
E. Hose shall not be less than 15 feet (4.57 m) in length.		

		Comply	Does Not Comply
F.	For maximum operator safety it shall be made of stainless steel braid with a 3/4 inch (1.91 cm) inside diameter and shall be Teflon lined. Further, it shall be heavily insulated to prevent hot material from leaking out.		
G.	Total diameter of the hose shall be not greater than 2 ¼ inch (5.72 cm). The total weight of the hose shall not exceed 20 pounds (9.07 kg).		
H.	The hose is to be wrapped with a minimum of three electrical wires with terminal ends. The wires will be capable of heating the hose to 400°F (204° C) in less than 45 minutes and have variable temperature control capability.		
I.	The hand wand shall not be less than 4 feet (1.22 m) in length.		
J.	The hand wand shall be constructed of steel with sufficient strength to withstand normal day-to-day operation.		
K.	Material flow is controlled by a trigger switch.		
L.	For greater operator mobility, the connection between the wand and hose shall be through a 360° swivel.		
M.	There shall be no obstruction or valves between the material pump and the wand end.		
N.	The hose is supported by a 52 inch long boom (132.08 cm), which swivels side to side on dual pillow block bearings.		
O.	The boom is centered at the rear of the machine.		
	Other:_____ _____		

	Comply	Does Not Comply

17. ENGINE

The unit shall be equipped with a diesel engine complying with the following specifications:

Electric Start
Three Cylinder 19 HP (14.2 kW) @ 3000 RPM
3.03" (77 mm) Stroke
Constant Speed Mechanical Governor
61.02 cu in. (1.0 l) Displacement
Full Flow Oil Filter
2.91" (74 mm) Bore
Water Cooled
The engine speed is preset at the factory for optimal alternator output to power the heated wand and hose.
Engine Shutdown Package (low oil pressure & high temperature)

Other:_____
_____ _____ _____

18. FUEL CAPACITY

A. The melter shall have a 26 gallon (98.42 l) diesel fuel tank for operation of the entire unit. _____ _____

B. The unit will be capable of operating for one working day on one tank of fuel. _____ _____

C. The tank shall be equipped with full length sight gauges for fuel level indication protected in a steel cover. _____ _____

Other:_____
_____ _____ _____

19. PAINT

A. All painted surfaces shall be coated with Dupont two-part epoxy paint applied by Dupont certified painters. _____ _____

Other:_____
_____ _____ _____

20. TRAINING

A. An authorized, factory 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. _____ _____

	Comply	Does Not Comply
D. Additionally, the representative will be available at that time for "on the job" safety and field training.		
Other:_____ _____		
21. SAFETY AND TRAINING MANUALS		
A. A written Safety Manual will be provided to the bidding agency.		
22. PARTS		
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.		
23. AWARD		
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 manufacturer 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.		
24. WARRANTY		
A. The manufacturer shall warranty the equipment for one year or as otherwise noted in the manufacturer's standard warranty policy.		
25. QUALIFICATIONS OF BIDDERS		
A. No bid will be considered unless the bidder can meet the following conditions:		
B. Bidder must have a parts/service location and keeps a sufficient stock of parts on hand at all times.		
C. The equipment offered is the stock model chassis that meets the requirements of the specifications without material changes or modifications.		
D. The model is regularly advertised and sold by the manufacturer.		
E. The bidder has been engaged in the sale and support of this make and model of equipment for at least twenty-four months.		

OPTIONS REQUIRED (X if to be included)

(Customer to insert quantity for each option required)
_____Sealant Tip Adapter
_____3 inch Applicator Disk
_____V-Shaped Squeegee (Qty.___)
_____1/2 inch Round Sealing Tip
_____Extra Electric Hose
_____Extra Hydraulic Filter
_____Lockable Battery Cover
_____Tool Box
_____Fire Extinguisher Mounted on the Frame
_____Mast Mounted Strobe Light, Class II.
_____Mast Mounted Strobe Light, Class I/CA Title 13
_____Custom Paint
_____Overnight Heater

APPROVED EQUAL

The approved make and model for this specification is a Crafco SS60. 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 who have successfully heated, mixed and applied Crafco sealants 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.