

## 1500 Liter (396 Gallon) Oil Jacketed, Thermostatically Controlled, Melter Applicator with Double Pumps

<b>GENERAL DESCRIPTION</b>	Are you in compliance with this specification?	
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, asphalt fiber blends and specification hot pour crack and joint sealants without further equipment modification. This unit shall be the manufacturer's current production model.	Yes	No
The machine shall be capable of starting at ambient temperature and bringing the sealant material up to application temperature in less than one hour at a 70° ambient temperature.	Yes	No
All qualified bidders must have and maintain a complete inventory of repair parts and have experienced factory-trained service personnel for this equipment.	Yes	No
A comprehensive safety manual, operational/maintenance and DVD manual shall be supplied with each unit.	Yes	No
A factory-trained person shall be made available for initial start-up and training in the operation of the melter.	Yes	No
Temperature indicating devices shall have intervals no greater than 1°F and shall be calibrated as required to assure accuracy.	Yes	No
The melter shall have continuous sealant agitation and a mixing system to provide uniform viscosity and temperature of material being applied.	Yes	No
<b>REQUIRED SAFETY FEATURES</b>	Yes	No
The unit shall have a safety shut-off on both loading doors that automatically stops the agitator when the lid is opened. When equipped with a conveyor loading option the safety shut off will lock out the conveyor operation when the loading door is open.	Yes	No
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.	Yes	No
There shall be no valves to allow interruption or diversion of sealant flow away from the applicator hose and wand. Sealant flow will be controlled by stopping and starting of the pump rotation. Units that maintain sealant flow of any type when the handle is released are unacceptable.	Yes	No
<b>TOWING FRAME AND JACK</b>	Yes	No
This unit shall be trailer mounted. The longitudinal side frames and tongue members of the trailer shall be of one continuous piece construction composed of hot rolled steel channel having the minimum dimensions of 5 inches (12.7 cm) depth, .325 inch (.825 cm) web thickness with 1.885 inch (4.789 cm) flange width.	Yes	No
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.	Yes	No

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The tongue shall be equipped with an appropriate heavy-duty ball or pintle hitch, the center of which shall be a minimum of 25 inches (63.5 cm) from the nearest obstruction on the tongue. It shall be adjustable in height above ground level from a minimum of 14 inches (35.6 cm), to a maximum of 32 inches (81.3 cm), permitting practically level towing with a wide range of towing vehicles. The towing hitch shall be bolted to the hitch plate for easy height adjustment and/or conversion to other type hitches.	Yes	No
A screw-post tongue jack shall be furnished. It shall be a heavy-duty type with a load capacity of 7,000 pounds (3,175 kg) and it shall be side mounted and swing away for positive road clearance while under tow.	Yes	No
<b>TRAILER RUNNING GEAR</b>	Yes	No
The unit shall be equipped with a dual independent rubber torsional suspension each having a safe load capacity of 6,000 pounds (2,721 kg), electric brakes, drop center disc wheels and ST235/85R16 tubeless tires (Load Range E). Trailers with springs and shackles are unacceptable as they require more maintenance and reduce ground clearance.	Yes	No
The melter shall have dual LED taillights, stoplights and turn signals. The lighting shall be ICC approved. A license plate holder shall be attached to the driver's side taillight.	Yes	No
All melter fluid tanks shall be positioned no lower than the deck level and be mounted on the top of channel frame members to assure proper ground clearance. Units that have components that extent below the trailer frame are unacceptable.	Yes	No
The unit shall also be equipped with two safety chains not less than 48 inches (121.9 cm) 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.	Yes	No
Total shipping weight is approximately 7,040 pounds (3,193 kg). Gross Vehicle weight shall be 10,940 pounds (4,962 kg).	Yes	No
<b>HEATING TANK</b>	Yes	No
The material heating tank shall be cylindrical with a minimum of 64.25 inches (163.19 cm) in diameter by 28.75 inches (73.03 cm) deep having a capacity of 396 gallons (1500 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.	Yes	No
The tank will have a rear discharge to the pump and rear outlet. A double boiler type jacket with internal oil column shall create a reservoir that shall hold a minimum of 43 gallons (162.72 l) of heat transfer oil at 70° F (21° C). (Note: at 500° F (260° C) the heating oil will expand approximately 18 %.)	Yes	No
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.	Yes	No
The heat transfer oil tank design shall provide a center tower of a minimum 18 inches (7.08 cm) in height to provide efficient melting and uniform product heating. At no point in the tank shall there be a distance of greater than 27.8 inches (70.6 cm) from a heat surface.	Yes	No

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The tank and jacket shall be made of not less than 3/16 inch (.94 cm) rolled sheet steel.	Yes	No
There shall be a plug to allow the entire heat transfer oil system to be drained.	Yes	No
The heat transfer oil shall be of ISO grade 68.	Yes	No
The efficiency rating shall be a minimum of 95% as determined by the ratio of the material tank surface area to the HTO tank surface area. Units with an efficiency ratio of less than 95% are unacceptable.	Yes	No
<b>HEAT TRANSFER OIL EXPANSION TANK</b>	Yes	No
A sealed expansion tank for heat transfer oil shall be provided to minimize oil oxidation and prevent moisture condensation into the heat transfer oil. The tank shall have a filtered breather to allow pressure to vent to the atmosphere. Overflow down tubes are unacceptable.	Yes	No
<b>HYDRAULIC SYSTEM</b>	Yes	No
The hydraulic system shall incorporate a single hydraulic pump to power the agitation.	Yes	No
All valves shall be solenoid operated by toggle switch and/or wand handle switch.	Yes	No
The controls will allow for bi-directional operation of both the sealant pump and agitator	Yes	No
A flow control valve will be mounted on the rear of the unit to allow the operator to adjust the pump operational speed.	Yes	No
All controls shall be mounted at the curb side rear on the trailer for easy access by the operator. Hydraulic controls located at the side or forward portion of the trailer are unacceptable.	Yes	No
The minimum 24-gallon (90.8 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.	Yes	No
<b>TANK INSULATION</b>	Yes	No
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 steel outer wrapper. Fiberglass and rock wool insulation are unacceptable due to their moisture retention properties resulting in a significant loss in insulating value over an eighteen-month period.	Yes	No
<b>LOADING HATCHES</b>	Yes	No
Two low profile angled lid openings for loading shall be required at the top of the material tank. The loading height shall not be less than 56 inches for operator safety. Loading heights below 50 inches may expose the operator to splash hazards and fume exposure when loading and are unacceptable.	Yes	No
One loading door will allow the operation of the equipment, including sealant loading, from curbside even when equipped with a conveyor loading system. Loading systems that require the operator to step onto the melter are unacceptable.	Yes	No

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The passenger side opening shall have a minimum area of 384 square inches (2,477.4 square cm) approximately 16 inches (40.6 cm) by 24 inches (60.9 cm). The driver's side opening shall have a minimum area of 252 square inches (1,625.8 square cm) approximately 14 inches (35.5 cm) by 18 inches (45.7 cm) and shall be hinged to allow placement of a block of sealant onto it to simply close the lid for easy anti-splash loading.	Yes	No
Each loading door will have an insulated handle for opening and closing while the unit is hot.	Yes	No
The driver side loading hatch shall be easily adaptable for the addition of a retrofit powered loading conveyor with anti-splash tower.	Yes	No
<b>HEATING SYSTEM</b>	Yes	No
The heat transfer oil is heated by one 420,000 BTU high efficiency forced air diesel fired burner directly at the bottom of the heat transfer oil tank.	Yes	No
The burner shall fire into an easy access removable burner combustion box. The box will be insulated by a high temperature flexible insulation that is resistant to damage from vibration and over road travel. Ridged insulation is unacceptable.	Yes	No
The total area of the heat transfer oil tank exposed to the burner shall be a minimum of 9,921 square inches (64000 square cm). The material tank shall have a minimum of 9,448 square inches (60,954 square cm) of contact with the heat transfer oil. This provides for a melt rate of 2,800 pounds (1,270 kg) per hour.	Yes	No
The burner shall be lit by a constant duty high voltage transformer powering an electric spark igniter. This igniter shall work in conjunction with a sensor that detects a lack of burn or ignition and shuts down the fuel supply.	Yes	No
The burner shall be controlled by a thermostat control located on the rear curbside of the machine and shall have a toggle switch shut off for operator safety.	Yes	No
<b>OPERATION CONTROLS</b>	Yes	No
The melter applicator shall have a thermostatic control device that will automatically regulate each the hot oil and material temperature.	Yes	No
The control shall have digital readouts for temperatures of hot oil, material, and dual material pumping temperature.	Yes	No
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.	Yes	No
The controls shall be activated by a single power switch.	Yes	No
The control system shall automatically turn on each function; agitation and sealant pump, at the proper temperature without any action by the operator.	Yes	No
The control will have an interlock for the agitation system, which will not allow the agitator to be activated by the operator until the material temperature reaches 275°. Units without a positive agitation control lockouts based on appropriate temperature are unacceptable	Yes	No
It will also have an interlock for the pumping systems, which will not allow the pumps to be activated by the operators until the material temperatures reaches 275°. Units without a positive sealant pump control lockouts based on appropriate temperature are unacceptable	Yes	No

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All controls including engine operation shall be contained in a single weatherproof control box located at the rear passenger side of machine for operator's safety and convenience. Any operational controls located at the side or forward portion of the trailer are unacceptable.	Yes	No
<b>AGITATION AND PUMP DRIVE AND DRIVE CONTROLS</b>	Yes	No
The motive force to the agitator and material pumps shall be hydraulic motor driven by a double hydraulic pump.	Yes	No
A non-adjustable hydraulic valve shall control the rotational speed of the agitator. The agitator speed shall be set at 250 ft/min tip speed per ASTM D5167 specification for sealant melting equipment.	Yes	No
The drive controls governing the speed of each material pump shall be controlled by an adjustable independent hydraulic valve from the rear of the machine.	Yes	No
Each material pump will have an independent speed control and is electronically actuated by a switch on the hand wand or recirculation port switch.	Yes	No
Material pumps can be reversed by a toggle switch on the control panel as required.	Yes	No
Material pumps will also be activated when wand is inserted into the shoebox for recirculation of material. This function shall be controlled by a switch that can be turn on or off by the operator as desired from the control box. Recirculation shall not be required to operate the unit.	Yes	No
<b>AGITATION</b>	Yes	No
A hydraulically driven full sweep vertical agitator with two opposing horizontal paddles with vertical risers attached to the ends shall mix the sealant material at an ASTM specified tip speed of 250 ft/min. Variable speed agitation is unacceptable.	Yes	No
The agitator drive shaft shall stand vertically attached to a hydraulic motor on the top surface of the tank.	Yes	No
The surface area of the agitator paddles shall be a minimum of 313 square inches (1,988 square cm). Surface areas of less than 300 inches are unacceptable.	Yes	No
The distance between that tank wall and the edge of agitator paddles shall never exceed three inches. 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. Units that do not comply are unacceptable.	Yes	No
The agitation system shall be direct driven by a hydraulic motor.	Yes	No
The agitator shall rotate in either direction.	Yes	No
For additional safety the agitator will shut off automatically when either loading hatch is opened.	Yes	No
<b>BI-DIRECTIONAL VARIABLE SPEED PUMPING UNIT</b>	Yes	No
The material pumps shall be two 2 inch (5.1cm) positive displacement helical gear pumps rated at 20 GPM.	Yes	No
The tank valves are heated by an enclosed insulated heating chamber. The pump is oil jacketed for fast heating and is piped in series with the heat transfer oil circulation pump	Yes	No
Heat flow to this chamber shall be controlled with a slide gate that will separate this chamber from the tank air jacket.	Yes	No

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The heating chamber shall have insulated doors hinged and notched for sealant hose access.	Yes	No
The heating chamber shall provide storage for a sealant hose.	Yes	No
Pumping of material is controlled by a switch on the hand wand and output is controlled hydraulically.	Yes	No
Sealant pump operation shall be on demand. The pump rotation shall stop when sealant application wand trigger is not activated. Units that divert sealant flow without stopping the pump rotation are not ON DEMAND and are unacceptable.	Yes	No
Only one valve shall be required in each pumping system. This valve will be accessible from outside of heat chamber and will separate the material tank from the application system.	Yes	No
No recirculation back into the tank shall be needed to operate the unit. The unit will allow recirculation back to the tank through the applicator wand at the operator's discretion.	Yes	No
No internal or external valves shall be used between the pump and the sealant delivery to the pavement. Units with valves that divert flow to stop sealant from flowing to the application are unacceptable.	Yes	No
The pump shall be capable of delivering sealant at a rate that exceeds the melt rate of the unit.	Yes	No
There are separate controls for both pumps so each can be operated independently.	Yes	No
<b>SEALANT HOSE AND APPLICATOR WAND</b>	Yes	No
Unit shall have a non-heated hose and wand applicator.	Yes	No
Each hose and wand applicator is independently temperature regulated. Due to weight and safety considerations, an oil-jacketed hose is unacceptable.	Yes	No
The hose shall be specifically manufactured for handling liquid asphalt products up to 400° F (204.4° C) at 350 psi working pressure.	Yes	No
Hose and wand shall not be less than 19 feet (5.8 m) in length. The hose and wand shall have a working radius of 18' 0" from the center of the machine.	Yes	No
For maximum operator safety it shall be made of 1" inch (2.54 cm) inside diameter insulated, rubber coated, steel braid reinforced and neoprene lined. The hose shall have a cover to prevent damage to the hose or allow hot material from leaking out. Further, it shall have an abrasive sleeve to protect the operator from heat.	Yes	No
The hand wand shall be constructed of steel with sufficient strength to withstand normal day-to-day operation. Material flow is activated by a trigger switch. For greater operator mobility, the connection between the wand and hose shall be through a 360° swivel.	Yes	No
There shall be no obstruction or valves between the material pump and the wand end. The applicator wand shall have a self closing silicone valve at the delivery point of the sealant delivery. This valve will automatically close when sealant application pressure stops and shall not require the operator to manually close any valves.	Yes	No

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The hose is supported by a 7ft. 7 in. boom (2.32m), which swivels side to side on dual pillow block bearings. The hose carriage at the end of the boom shall pivot and have 7ft. (2.13m) of horizontal linear movement on roller bearing wheels for further operator comfort.	Yes	No
There shall be a minimum of 6ft. 6in. (1.98m) clearance under boom. Fixed carriage hose booms are unacceptable as they do not allow for easy maneuverability.	Yes	No
<b>ENGINE</b>	Yes	No
The unit shall be equipped with a diesel engine complying with the following specifications: Electric Start Three Cylinder 35.5 HP (26.47kw) @ 3000 RPM 3.54" (90 mm) Stroke Constant Speed Mechanical Governor 91.53 cu. In, (1.5l) Displacement Full Flow Oil Filter 3.30" (84 mm) Bore 22 to 1 Compression Ratio Water Cooled The engine speed is preset at the factory for optimal alternator output to power the heated wand and hose.	Yes	No
<b>FUEL CAPACITY</b>	Yes	No
The melter shall have a 30 gallon (113.56 l) diesel fuel tank for operation of the entire unit.	Yes	No
The unit will be capable of operating for a minimum of 12 hours on one tank of fuel.	Yes	No
The tank shall be equipped with a full length sight gauge for fuel level indication protected in a steel cover	Yes	No
<b>PAINT</b> All painted surfaces shall be coated with DuPont two-part epoxy paint applied by DuPont certified painters.	Yes	No

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<p><b>OPTIONS REQUIRED</b> (Customer to insert quantity for each option required)</p> <p><input type="checkbox"/> 2-5/16 inch (5.9cm) Ball Hitch</p> <p><input type="checkbox"/> 2 inch (5cm) Pintle Hitch</p> <p><input type="checkbox"/> 3 inch (7.6cm) Pintle Hitch</p> <p><input type="checkbox"/> Dripless Sealant Tip Adapter</p> <p><input type="checkbox"/> 3 inch (7.6cm) Swivel Applicator Disk</p> <p><input type="checkbox"/> 4 inch (25.8cm) Swivel Applicator Disk</p> <p><input type="checkbox"/> V-shaped Squeegee (Qty. _____)</p> <p><input type="checkbox"/> 1/2 inch Round Sealing Tip</p> <p><input type="checkbox"/> Extra Electric Hose</p> <p><input type="checkbox"/> Extra Hydraulic Filter</p> <p><input type="checkbox"/> Lockable Battery Cover</p> <p><input type="checkbox"/> Lockable Engine cover</p> <p><input type="checkbox"/> Fire Extinguisher Mounted on the Trailer Frame</p> <p><input type="checkbox"/> Tool Box</p> <p><input type="checkbox"/> Mast Mounted Strobe Light</p> <p><input type="checkbox"/> 18ft. Electric Hose Option</p> <p><input type="checkbox"/> Auto Loader</p> <p><input type="checkbox"/> Overnight Heater</p>		
<p><b>AWARD</b> Equipment is for use by the highway department and must meet the requirements of that agency as interpreted by the highway commissioner. 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. Purchasing agency may require a list of references and a demonstration of the unit to be bid prior to award of the bid. If it is determined that the supplier cannot supply as requested, the proposal will be declared non-responsive for this bid.</p>		
<p><b>WARRANTY</b> The manufacturer shall warranty the equipment against defects for a minimum of one year.</p>	Yes	No
<p><b>QUALIFICATIONS OF BIDDERS</b> No bid will be considered unless the bidder can meet the following conditions:</p> <ol style="list-style-type: none"> <li>1. That it has in operation a parts/service location and keeps a sufficient stock of parts on hand at all times.</li> <li>2. That it is bidding upon the stock model chassis that meets the requirements of the specifications without material changes or modifications. The model is regularly advertised and sold as having a capacity of not less than called for herein. The bidder has been engaged in the manufacture of equipment of the type bid upon for at least twenty-four months.</li> </ol>		

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### **APPROVED EQUAL**

These specifications are not intended to be restrictive, but are meant to describe the kind and size of unit desired to be purchased in detail. If a bidder is basing his proposal on other equipment than what is specified in these bid documents and wishes the equipment he proposed to be considered as an "approved equal," he will submit on a separate sheet attached to the Technical Specifications contained herein, an item by item description of that which he proposes. For purposes of comparison, include only those items on each sheet as given in these technical specifications. Such bidders shall also include, but not as a substitute for the above, any manufacturer's literature or specifications. In addition, if the bidder takes exception to any item, he will note the item and describe in detail the exception. Failure to carry out the provisions noted herein may be cause to deem the bid "non-responsive."

Prior to bid award, the agency may request an on-site demonstration of a like model unit. Upon request from the agency, prospective bidders will have no more than 30 days to provide a demonstration at a location designated by the agency.