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PRESERVATION PRODUCTS

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SPECIFICATIONS

47600EC100 E-Z SERIES II 1000 EC MELTER APPLICATOR WITH 100 CFM COMPRESSOR; PUMP ON DEMAND FEATURES; DIESEL-FUELED

JULY 2026

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 modified asphalt and specification hot pour crack and joint sealants without 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.

	Comply	Does Not Comply
1. GENERAL SPECIFICATIONS		
A. The machine shall be capable of dispensing sealant material within one hour of start up at a 70° F (21.1° C) ambient temperature.	_____	_____
B. All qualified bidders must have and maintain a complete inventory of repair parts and have experienced factory trained service personnel for this equipment.	_____	_____
C. A comprehensive safety manual, operation/maintenance and DVD manual 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.	_____	_____
2. REQUIRED SAFETY FEATURES		
A. The unit shall have safety shut-off on the loading hatch that automatically stops the agitator when the loading hatch is opened. When equipped with a conveyor loading option the safety shut-off will lock out the conveyor operation during loading.	_____	_____
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 material tank meets all FMCSA requirements for elevated temperature materials by meeting CFR Title 49, Part 173.247.	_____	_____
Other: _____ _____	_____	_____

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	Comply	Does Not Comply

3. TOWING FRAME AND JACK

A. 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 (12.7cm) depth, .325-inch (.825 cm) web thickness with 1.885-inch (4.789 cm) flange width. _____ _____

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. _____ _____

C. The tongue shall be equipped with an appropriate pintle hitch. It shall be adjustable in height above ground level from a minimum of 14 inches (35.6 cm), to a maximum of 32 inches (81.4 cm), permitting practically level towing with a wide range of vehicles. The towing hitch shall be bolted to the hitch plate for easy height adjustment and/or conversion to other type hitches. _____ _____

D. A screw post tongue jack shall be furnished. It 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. _____ _____

Other:_____
_____ _____ _____

4. TRAILER RUNNING GEAR

A. The unit shall be equipped with dual independent rubber torsional suspension each having a safe load capacity of 5,200 pounds (2,358.7 kg), electric brakes, modular wheels, and ST225/75 R15 tubeless tires (Load Range D). Trailers with springs and shackles are unacceptable as they require more maintenance and reduce ground clearance. _____ _____

B. The unit shall have dual LED taillights, stoplights, turn signals. The lighting shall be ICC approved. A license plate holder shall be attached to the driver's side taillight. _____ _____

C. All melter fluid tanks shall be positioned no lower than the deck level and be mounted on the top of the channel frame members to assure proper ground clearance. Units that have components that extend below the trailer frame are unacceptable. _____ _____

D. 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. _____ _____

E. Total shipping weight is approx. 6,775 pounds (3,073 kg). _____ _____

Other:_____
_____ _____ _____

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	Comply	Does Not Comply

5. HEATING TANK

A. The material tank shall be cylindrical with a minimum of 53.38 inches (135.5 cm) in diameter by 28.5 inches (72.39 cm) deep having a capacity of 265 gallons (1000 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 to the pump and rear plugged outlet. A double boiler type jacket with internal oil column shall create a reservoir that shall hold a minimum of 36.5 gallons (138.2 l) of heat transfer oil at 70°F (21°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 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 12 inches (30.48 cm) from a heat surface.	_____	_____
E. The tank and jacket shall be made of not less than 3/16 inch (.94 cm) rolled sheet steel.	_____	_____
F. There shall be one plug to allow the entire heat transfer oil system to be drained.	_____	_____
G. The heat transfer oil shall be of ISO grade 68.	_____	_____
H. The efficiency rating shall be a minimum of 96% 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 96% are unacceptable.	_____	_____
Other: _____ _____	_____	_____

6. EXPANSION TANK

A. A vented expansion tank for heat transfer oil. Overflow down tubes are unacceptable.	_____	_____
Other: _____ _____	_____	_____

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	Comply	Does Not Comply
7. HYDRAULIC SYSTEM		
A. The hydraulic system shall incorporate a hydraulic pump to power the agitation pumping and compressor system. Belt driven hydraulics is unacceptable.	_____	_____
B. All valves shall be solenoid operated by a toggle switch and wand handle switch.	_____	_____
C. The controls will allow for bi-directional operation of the sealant pump and agitator.	_____	_____
D. The flow control valve will be mounted on the rear of the unit to allow the operator to adjust pump operational speed.	_____	_____
E. 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.	_____	_____
F. The minimum 30 gallon (113.6L) 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.	_____	_____
G. The unit shall have a self-contained air to oil hydraulic cooler with an electric fan to maintain proper hydraulic oil temperatures.	_____	_____
Other: _____ _____	_____	_____
8. 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 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.	_____	_____
Other:_____ _____	_____	_____

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	Comply	Does Not Comply

9. LOADING HATCHES

A. The low profile angled opening for loading shall be required at the top of the material tank and shall be located on the curbside of the machine for operator safety. A second low profile opening shall be required on the driver side and be easily adaptable for an addition of a retrofit power loading conveyor with anti-splash tower.	_____	_____
B. The loading height shall not be less than 56 inches (142.24 cm) for operator safety. Loading Heights below 50 inches (127 cm) may expose the operator to splash hazards and fume exposure when loading and are unacceptable.	_____	_____
C. The dual opening shall have a minimum area of 252 square inches (1,625 sq. cm), approximately 14 inches (35.56 cm) by 18 inches (45.72 cm) and shall be hinged to allow placement of a block of sealant onto the loading hatch and closure of loading hatch for easy, anti-splash loading.	_____	_____
D. The loading door will allow the operation of the equipment, including sealant loading, from curbside. Loading systems that require the operator to step onto the melter are unacceptable.	_____	_____
E. The loading hatch shall be easily adaptable for the addition of a retrofit powered loading conveyor with anti-splash tower.	_____	_____
Other:_____ _____	_____	_____

10. HEATING SYSTEM

A. The heat transfer oil is heated by one 12-volt 271,000 BTU high efficiency forced air diesel fired burner directly at the bottom of the heat transfer oil tank.	_____	_____
B. 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 the vibration and over road travel. Rigid insulation is unacceptable.	_____	_____
C. The burner and combustion box shall be positioned offset from the center of the machine towards the passenger side frame rail. To allow safe and easy access for maintenance and repair, no components shall be positioned between the passenger side frame rail and the burner/combustion box.	_____	_____
D. The total area of the heat transfer oil tank exposed to the burner shall be a minimum of 7,676 square inches (49,522 square cm). The material tank shall have a minimum of 7,406 square inches (47,780 square cm) of contact with the transfer oil. This provides for a melt rate of 2,120 pounds (961.6 kg) per hour.	_____	_____
E. 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.	_____	_____

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	Comply	Does Not Comply
F. The burner fuel system is to be self-priming with a shut off valve and a removable in-line filter along with its own feed and return lines to the main fuel tank.		
G. The thermostat control is located on the curbside of the machine for operator safety.		
Other:_____ _____		

11. INTEGRATED CONTROL SYSTEM

A. The control box shall provide a fully integrated control system for the engine, heating system, agitation system and application system.		
B. The melter applicator shall have a thermostatic control device that will automatically regulate hot oil, material, and hose temperature.		
C. The control shall have a digital readout and independent dial control for each heat transfer oil, material, and applicator hose temperatures.		
D. 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.		
E. The temperature controls shall be in a single weatherproof control box.		
F. The controls will automatically turn power on to the agitation system when the material reaches 275°F (135°C).		
G. The controls will automatically start the hose heating system when the material temperature reaches 275°F (135°C).		
H. The controls will automatically activate the application (pumping) system when the hose temperature reaches 325°F (162.8°C).		
I. The controls will lock out operation of the agitation system, hose heating system, and application system when the material temperature is below the minimum operation temperature for operator safety and to prevent damage to the operational components.		
J. The burner has an audible 105db alarm that will sound in the event the burner goes into lockout mode. There is a reset switch to reset the burner if it does go into lockout mode.		
K. The control system will run the engine at “warm up” RPM for 30 to 45 seconds before it automatically adjusts to a standard engine idle RPM. When the sealant temperature reaches 275°F (135°C) the engine will automatically idle up to the operational RPM.		
L. In the event the air compressor is turned on before material reaches 275°F (135°C), the RPM will automatically increase in order to provide enough power to run the air compressor.		

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	Comply	Does Not Comply
Other:_____		
_____	_____	_____
12. DRIVE AND DRIVE CONTROLS		
A. The driving force to the agitator and material pump shall be hydraulic motors driven by a hydraulic pump.	_____	_____
B. The drive controls governing the rotational speed of the material pump shall be controlled by adjustable hydraulic valves.	_____	_____
C. 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 shall mix the sealant material at an ASTM specified tip speed of 250 ft. /min. Variable speed agitation is unacceptable.	_____	_____
B. The agitator drive shaft shall stand vertically attached to a hydraulic motor on the top surface of the tank.	_____	_____
C. The surface area of the agitator paddles shall be a minimum of 513 square inches (3310 square cm). Surface areas of less than 250 square inches (1612.9 square cm) are unacceptable.	_____	_____
D. The agitation system shall be direct driven by a hydraulic motor.	_____	_____
E. The agitator shall rotate in either direction.	_____	_____
F. For additional safety the agitator will shut off automatically when either loading hatch is opened.	_____	_____
Other: _____		
_____	_____	_____
14. BI-DIRECTIONAL VARIABLE SPEED PUMPING UNIT		
A. The material pump shall be a 2 inch (5.1 cm) positive displacement helical gear pump rated at 20 GPM.	_____	_____
B. The pump shall be hot oil jacketed for fast heating and piped in series with the heat transfer oil circulation pump.	_____	_____
C. Applicator, Recirculation, and Tank valves are heated by an enclosed insulated chamber.	_____	_____
D. Heat flow to this chamber shall be controlled with a slide gate that will separate this chamber from the tank air jacket.	_____	_____

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	Comply	Does Not Comply
E. The insulated heating chamber shall have insulated doors hinged and notched for sealant hose access.		
F. The heating chamber shall have a removable rear panel for easy access to the pump.		
G. The heating chamber shall provide storage for sealant hose.		
H. Pumping of material is controlled by a switch on the hand wand and output is controlled hydraulically.		
I. 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.		
J. The pump shall be capable of delivering sealant at a rate that exceeds the melt rate of the unit.		
Other:_____ _____		

15. <u>SEALANT HOSE AND APPLICATOR WAND</u>

A. Unit shall be capable of using both heated and non-heated hose and wand applicators.		
B. The hose is supported by a 7ft. 2 in. boom (2.18m), which swivels side to side on dual pillow block bearings. The hose carriage shall pivot and have 7ft. (2.13m) of horizontal linear movement on roller bearing wheels for further operator comfort.		
C. 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.		
Other: _____ _____		

<u>Heated Hose and Wand</u>

A. Both the hose and wand are heated by 24 VAC electric current and are temperature regulated.		
B. Both the hose and wand will be serviceable (designed to be factory rebuilt). The manufacture must have an established re-build program to service these components.		
C. The combination length between the hose and wand shall not be less than 19 feet (5.8 m). The hose and wand shall have a working radius of 16’ 6” from the center of the machine.		
D. Due to weight and safety considerations, an oil-jacketed hose is unacceptable.		

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	Comply	Does Not Comply
E. 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.	_____	_____
F. Hose shall not be less than 15 feet (4.6 m) in length.	_____	_____
G. For maximum operator safety it shall be made of 3/4 inch (1.91 cm) inside diameter PTFE Teflon® inner core and reinforced with a stainless-steel outer braid. This braid serves a dual purpose; it provides a protective covering for the inner core and allows the hose to carry pressure. It shall also be insulated and 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.	_____	_____
H. 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).	_____	_____
I. The hose and wand shall be heated 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.	_____	_____
J. The hand wand shall not be less than 4 feet (1.22 m) in length.	_____	_____
K. The hand wand shall be constructed of steel with sufficient strength to withstand normal day-to-day operation.	_____	_____
L. Material flow is controlled by a trigger switch.	_____	_____
M. For greater operator mobility, the connection between the wand and hose shall be through a 360° swivel.	_____	_____
N. 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.	_____	_____
Other: _____ _____	_____	_____

Non-Heated Hose and Wand Options

A. The hose shall be specifically manufactured for handling liquid asphalt products up to 400°F (204.4°C) at 350 psi (24.13 bar) working pressure.	_____	_____
B. Hose and wand shall not be less than 23 feet (7.01 m) in length. The hose and wand shall have a working radius of 16 feet 6 inches from the center of the machine.	_____	_____
C. A digital readout displays the temperature of material being pumped through the hose.	_____	_____
D. The hand wand shall be constructed of steel with sufficient strength to withstand normal day to day operation. For greater operator mobility,	_____	_____

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	Comply	Does Not Comply
the connection between the wand and hose shall be through a 360° swivel.		
E. Material flow is activated by a toggle switch in the control box and is controlled by a ball valve on the wand and recirculation valve.		
F. For maximum operator safety it shall be made of 1 inch (2.54cm) inside diameter insulated, rubber coated, steel braid reinforced, and neoprene lined.		
Other:_____ _____		

16. ENGINE

A. The unit shall be equipped with a diesel engine complying with the following specifications: Electric Start Three Cylinder 42.5 HP (31.69 kw) @ 2850 RPM Stage 5 Emissions 3.54” (90 mm) Stroke 95.2 Cubic Inch (1.56 L) Displacement Full Flow Oil Filter 3.38” (86 mm) Bore 19.2 to 1 Compression Ratio Water Cooled Dual Speed Control Engine Shutdown Package (low oil pressure & high temperature) Digital Engine Controller		
B. Digital engine controller shall have a gauge package that includes battery voltage, hour meter, engine RPM, engine temp, and engine load. It shall also have an Auto Start function which preheats and starts engine.		
C. The engine will start and run at 1000 RPM for 30 seconds, then the RPM will increase to medium RPM. When the material temperature reaches 275°F (135°C) or the compressor toggle switch is turned “ON” the RPM will increase to high RPM which is full throttle.		
Other:_____ _____		

17. FUEL CAPACITY

A. The melter shall have a 30 gallon (113.56 l) diesel fuel tank for operation of the entire unit.		
B. The unit will be capable of operating for a minimum of 12 hours on one tank of fuel.		
C. The tank shall be equipped with a full length sight gauge for fuel level indication protected in a steel cover		

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	Comply	Does Not Comply
D. The fuel tank meets all FMCSA requirements for non-side-mounted fuel tanks by meeting CFR Title 49, Part 393.67.		
Other:_____		
_____		

18. AIR COMPRESSOR

A. The unit shall be equipped with a 100 CFM @ 125 PSI (2832 l/m @ 8.62 Bar) rotary vane air compressor.		
B. The compressor shall be driven hydraulically. Belt drive compressors are non-conforming.		
C. Air pressure shall be controlled by a continual intake valve modulation, which adjusts air flow to increase or decrease depending on user demand. The maximum pressure relief is set to 85psi (5.86 Bar).		
D. The compressor shall have a toroidal cooler to maintain proper oil temperature.		
E. There shall be a high temperature shut down.		
F. 50 foot of 3/4" (19mm) air hose with Chicago quick couplers on each end and a storage rack shall be supplied along with a cold air lance.		
G. For greater operator mobility, the connection between the cold air lance and air hose shall be through a 360° swivel.		
H. Equipped with an air safety shut off valve. In the event of a hose rupture, this valve will significantly reduce the air flow to prevent injuries from a failing hose.		
Other:_____		
_____		

19. PAINT

A. All painted surfaces shall be coated with Axalta two-part epoxy paint applied by Axalta 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.		

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	Comply	Does Not Comply
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.		
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 they are bidding is maintained at their 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 two years or longer as otherwise noted in the manufacturer's standard warranty policy.		

25. QUALIFICATIONS OF BIDDER

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.		

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	Comply	Does Not Comply

OPTIONS REQUIRED (X if to be included)

(Customer to insert quantity for each option required)
_____3-inch (7.6cm) Pintle Hitch
_____18” (45.7 cm) Hitch Extension
_____28” (71.1 cm) Hitch Extension
_____39” (99.1 cm) Hitch Extension
_____Dripless Sealant Tip Adapter
_____3-inch (7.6cm) Swivel Applicator Disk
_____4-inch (25.8cm) Swivel Applicator Disk
_____1/2” Round Sealing Tip
_____Heavy Duty Metal Handle V-shaped Squeegee (Qty._____)
_____Wooden Handle V-shaped Squeegee (Qty._____)
_____Extra Electric Hose
_____Non-Heated Hose and Wand
_____12” Steel Braided Sealant Hose Extension
_____Extra Hydraulic Filter
_____Lockable Battery Cover
_____Lockable Engine Cover
_____Fire Extinguisher mounted on the Trailer Frame
_____Spare Tire with Storage Mount
_____Toolbox
_____18ft. Electric Hose Option
_____Auto Loader
_____Overnight Heater
_____Custom Paint
_____Water Separator Kit for the ¾” Cold Air Lance
_____Self Retracting Hose Reel Kit with 3/4” Air Hose
_____Stainless Steel Self Retracting Hose Reel Kit with 3/4” Air Hose
_____ Various Safety and Work Light kits, see brochure for more info

APPROVED EQUAL

The approved make and model for this specification is a Crafco EZ 1000. 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.

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