



The Choice of Asphalt Professionals Worldwide

6561 Bernie Kohler Drive • North Branch, MI 48461

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KM 4-40 INFRARED ASPHALT RECYCLER SPECIFICATION

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Technical Product Specifications

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COMPLIANCE TO SPECIFICATIONS

The bidder shall indicate 100% compliance by checking “YES” or non-compliance by checking “NO” for each line item of specification. Any space left blank shall be considered non-compliant. Any deviation from the specification, or where submitted literature does not fully support the meeting of specifications, must be clearly cited in detail, in writing, by the bidder and submitted with the bid. NO verbal interpretations will be accepted! In addition NO deviations below “minimum” specifications as written will be accepted.

“BIDDING REQUIREMENTS SECTION”

SECTION		SPECIFICATION DETAIL
Section 1 <u>General Description</u>	1.1	This specification is to describe the Infrared Asphalt Recycler unit designed to recycle bituminous pavement surfaces.
	1.2	The unit provides a properly trained technician the ability to soften as large as a forty square foot (40 Sq. Ft.) area of standard hot mix surface enabling scarification, re-mixing, and re-compaction of the pavement.
	1.3	The unit is equipped with four (4) independent zones that allow for multiple heating configurations.
	1.4	The use of the described model for bituminous pavement repair, decorative services, or other use can only be defined per application.

Section 2 <u>Concept</u>	2.1	The specified unit generates an infrared wavelength which is absorbed to create heat.
	2.2	The infrared is produced by a mixture of vapor withdrawn liquefied petroleum gas with constant air blown through a ceramic blanket.
	2.3	Infrared heat is an invisible wavelength of heat energy that is transferred through the air.
	2.4	The infrared wavelength will energize the first object it comes in contact with. The specified model KM infrared recycler is designed to soften bituminous surfaces using infrared wavelengths.
	2.5	The time required to soften the asphalt surface is dependent primarily on the quality of the existing quality of the road surface. Average heating times will vary from 7 to 10 minutes. Variables including pavement design, aggregate size and type, ambient temperature and conditions, all affect the softening, or recycling time.
	2.6	The resulting softened bituminous pavement is then manipulated for repair, or other service, by an experienced technician.



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SECTION		SPECIFICATION DETAIL
Section 3 <u>Heating System</u>	3.1	The heating system will be a mixture of air and liquefied petroleum gas diffused through a 1" thick ceramic blanket.
	3.2	A combination of six (6) blankets will make up four (4) independently controlled heating zones both equaling the total heating area of the specified unit.
	3.3	The ceramic heating blanket will be secured by a combination of stainless steel bolts, washers and nuts.
	3.4	A framework will secure the outside edges of the ceramic heating blanket.
	3.5	Three (3) thirty pound LPG cylinders will provide the fuel for the heating system.
	3.6	The cylinders will combine to one manifold.
	3.7	A regulator will control the pressure and flow of fuel from the manifold into the heating system.
	3.8	A 12 VDC powered solenoid will be controlled by timed sequence allowing on/off cycling of fuel into the heating system.
	3.9	An automatic pilot light will ignite the fuel mixture during the on time cycling.
	3.10	Manual valves will be supplied to enable the operator control of each of the four (4) independent heating zones.
	3.11	Fuel adjustment valves will allow a technician to properly adjust the fuel to air mixture.
	3.12	The minimum BTU output will be 300,000.

SECTION		SPECIFICATION DETAIL
Section 4 <u>Trailer Design</u>	4.1	The trailer design of the infrared asphalt recycler will be permanent to the unit.
	4.2	The towing hitch coupling will be a 2".
	4.3	The suspension will be spring axle.
	4.4	The leaf springs will be four leaf 1,250 lb capacity each.
	4.5	The axle will be 2,000 lb. capacity.
	4.6	The wheels and tires will be three ply, 580 lbs capacity each.
	4.7	Stop, turn and tail lights will be provided.
	4.8	Side marker lights will be provided.
	4.9	Four wire standard wiring and harness will be supplied to the towing hitch coupling end.
	4.10	Dimensions when folded are to measure 8'4" L x 6'x6"W.

SECTION		SPECIFICATION DETAIL
Section 5 <u>Operating Controls</u>	5.1	An emergency stop "mushroom" type switch will be provided obvious and accessible for the operator.
	5.2	A keyed switch only will allow the unit to operate.
	5.3	A momentary type on/off push button switch will begin a timed heating sequence. A timed control will provide a maximum heating sequence of ten (10) minutes.



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SECTION		SPECIFICATION DETAIL
Section 6 <u>Heater Body Design</u>	6.1	The heater body will be folding clam shell design.
	6.2	The trailer components will be attached to the bottom shell.
	6.3	The top shell will include the heating fuel cylinders and heating controls.
	6.4	The top and bottom shells will be of 16 g mild steel.
	6.5	A front hood will be attached by a continuous hinge design and protect the interior of the heating unit when in the travel tow position.
	6.6	The hood will be attached to the bottom shell and move across the top shell when in the heating position.
	6.7	The hood will be made of 20 gauge mild steel.
	6.8	The controls will be affixed to the top shell and enclosed within a protective compartment.
	6.9	Only the operator controls will be exposed to the outside of the compartment.
	6.10	The fuel supply, standard including three (3) thirty pound (30 lb) LPG cylinders will fit the top shell.
	6.11	Chain and turnbuckles will secure the fuel cylinders.
	6.12	The chain will be minimum 3/16" welded link chain.

SECTION		SPECIFICATION DETAIL
Section 7 <u>Dimensions</u>	7.1	The units working dimensions (unfolded) measure 5'x8' plus castors.
	7.2	The unit's transit dimensions (folded) measure 8'4"x6'6".
	7.3	The unit is equipped with four (4) independent heating zones, two (2) zones measure 2'x4', and two (2) zones measure 3'x4'.

SECTION		SPECIFICATION DETAIL
Section 8 <u>Power Source</u>	8.1	A 12VDC Marine style deep cycle battery will power the heating system and controls.
	8.2	An onboard 10A Gen 1 Genius sealed marine type on board battery charger is to be included.
	8.3	A 2.5W solar ultra-thin charger is included. Solar charger is for battery maintenance and should not be depended on for fully charging battery supply.

SECTION		SPECIFICATION DETAIL
Section 9 <u>Timed Cycling</u>	9.1	The heating system shall be controlled by an automatic timed on/off heating cycle.
	9.2	The heating process must be cycled to prevent the burning of existing asphalt.
	9.3	A one shot timer will enact after ten (10) minutes of heating to eliminate the potential overheating of asphalt.



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SECTION		SPECIFICATION DETAIL
Section 10 <u>Blower</u>	10.1	The unit shall use one (1) 12 VDC blower providing air to the ceramic heating elements through an air channel system.
	10.2	The blower will be maintained within the control panel on the top shell.

SECTION		SPECIFICATION DETAIL
Section 11 <u>Casters</u>	11.1	Four (4) independently maneuvered casters will allow positioning of the unit when heating.
	11.2	Each caster will be four inch (4") diameter swivel type.
	11.3	Each caster will be attached to a swing arm that allows maneuver from side to end.

SECTION		SPECIFICATION DETAIL
Section 12 <u>Paint</u>	12.1	All pieces exposed will be properly coated.
	12.2	All raw materials used in the manufacturing process will be new and unused and properly coated with an industrial two part epoxy equipment primer and industrial urethane equipment paint coating.
	12.3	KM International chrome yellow will be the primary exterior coating color.