

Part 1 General**1.1 SECTION INCLUDES**

- .1 These sections cover the requirements about the repairs of bituminous pavement by infrared method. The works cover in the present section will be executed under the supervision of the departmental representative.

1.2 RELATED SECTIONS

- .1 Section 01 11 00 – Description of Work.
- .2 Section 01 35 13.13 – Airports in use.
- .3 Section 01 74 11 – Cleaning.

1.3 MEASUREMENT PROCEDURES

- .1 Buying of bagged bituminous concrete cold mix will be paid in unit of bag, only delivered bags to the Kuujuaq airport will be taken in consideration. The unit price must include the buying, the delivery and all the necessary manpower until delivery and stocked at the airport.
- .2 The bituminous pavement repairs by infrared will be paid on a basis of controlled expanse at submitted unit price for the different categories of man power, equipments or materials as describe bellow:
 - .1 Specialised general worker (4 minimum): hourly rate
 - .2 Foreman: hourly rate
 - .3 Hand tools: daily rate
 - .4 Serviced vehicles: daily rate including rent and operating cost.
 - .5 Living expense and meals: daily rate / person
 - .6 Propane fuel: KiloThe submitted rate must included all direct and indirect coast, administration costs, profits, mobilisation and demobilisation and other costs incurred in the execution of this work.
- .3 On a daily basis, submit for approval to the departmental representative, a work slip showing the hours worked and equipment assigned and other expenses incurred to perform the repairs of cracks. Only the expenses that are on a daily work slip signed by the departmental representative will be consider for payment.
- .4 The disposal of the removed existing crack filling and bituminous materials will not be measured. These materials must be evacuated of Kuujuaq to the south and transported to an recycling or disposal center accepting this type of material. The inherent coast for that disposal must be included in the contractor general administration fees.

Part 2 Products

2.1 PURCHASE OF MATERIALS TO BE DELIVERED TO THE AIRPORT

- .1 Bagged bituminous cold mix:
 - .1 Bituminous mix : 0-5mm
 - .2 Weight by bag : 22.g min.
 - .3 Suggested supplier : DJL, BOMIX or equivalent.

2.2 MATERIALS

- .1 Cold bituminous mix in bag will be supplied by Transports Canada. The contractor will have to transport the bags from the Transports Canada facilities to the works.
- .2 The contractor must take into consideration that Transports Canada will supply the following materials and equipments;
 - .1 2 infrared machines HDE P200 and HDE P300 from Heat Design Inc..
 - .2 1 cylindrical vibratory compactor auto-propelled Bomag BW65H.
 - .3 1 small vibratory plate Bomag BP12/50.
 - .4 Bituminous cold mix in bag.
 - .5 Flatbed trailer.
- .3 The others equipments and hand tools must be supplied by the contractor. Here is an approximate list:

Tools description	Use	Suggested quantities
Ice cutter 8.5'' ex : Garant LB9 or YFSW9	Crack filling material removal	6
Propane torch +- 450 000 btu	Heating of the ice cutter	1
Square shovel for asphalt	Reworking of the asphalt	6
Aluminum asphalt rake ex: Garant Grizzly EAAL36	Reworking of the asphalt	2
Propane tank 100lbs	Propane torch	2
Propane tank 40lbs	Infrared machine	6
5 gal. Metallic recipient with removable cover	Disposal of the crack filling material	50
Truck equipped with 1 ½''	Pull the equipment trailer, the team and	2

hitch	transport of the cold asphalt bags	
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N.B. - verifies the availability of propane cylinder and the refuelling of tank with the local supplier 'Propane Kuujuaq inc'.

Part 3 Execution

3.1 PREPARATION OF AREAS TO BE REPAIRS

- .1 Mark the area to be repairs with a 4 meters straight edge. Trace a line where the pavement begins to drop.
- .2 Remove the maximum of crack filling materials with hot blades before proceeding with the infrared machine and dispose it in metallic container. Obtain the approval of the departmental representative for any other method of removal of crack filling materials.
- .3 The small 18in milling can be used to repair longitudinal or transversal cracks with little subsidence. The contractor must provide the Bobcat. These type of repairs will be done after the repairs with a large subsidence to minimize the rent time of a Bobcat

3.2 HEATING OF THE PAVEMENT WITH INFRARED MACHINE

- .1 Heat the existing bituminous pavement located inside the limits done before with an infrared machine. Proceed section by section, place the infrared machine in a manner to cover the wider area of the cracks.
- .2 Do not overheat the mix to avoid oxidizing it. If the fire takes under the infrared plate, remove immediately the machine to avoid damaging it. Removed any oxidized pavement.
- .3 As pavement heating continues, it will be necessary to move the machine and remove with a shovel excess of crack sealing material that will be in liquid form.
- .4 When the existing pavement is warm enough, reform the bottom of the crack to allow the addition of cold mix asphalt. Form ridges on each side of the intervention as vertical as possible and having about 40mm deep.

3.3 PLACING COLD BITUMINOUS MIX AND COMPACTION

- .1 Re-heat the section in progress to loosen the existing pavement
- .2 Place new cold bituminous mixture in the section and level the surfaces, the cold mixture can be heated slightly to untie it and facilitate its installation.
- .3 Begin the compaction with the edges of the section and then cylinder all the section to densify it. Check the level achieved with a straight edge of 4 meters. If the level of the repairs is too high or too low by more than 5mm, loosen the repair by re-heating it and re-adjust the level of the material.
- .4 Compact until the roller left no trace on the repair.

3.4 FINISH TOLERANCES

- .1 Tolerances are 5mm measured with a straight edge of 4 meters.

3.5 CLEANING

- .1 Clean continually the surfaces dirtied by the works. Remove all materials stick to the pavement and broom the areas at the satisfaction of the departmental representative.

END OF SECTION