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Marathon Method Statement and Guideline

A- Concrete Joint Sealing – Required Machinery & Material:

- 1- Concrete router and saw cutter, for modifications and cutting the damages joints and patches.
- 2- Hook for removal of old material at the joints to be attached to a tractor.
- 3- Air compressor and Hot Air Lance (HAL) for cleaning and possibly heating using gas cylinder.
- 4- Backer Rod to be placed at the joints more than 2 cm depths. 25% more than joint width.
- 5- Kettle for sealant injection – UCMK HD, applying the sealant with cone.
- 6- Hot Applied Sealant material – fuel resistant or non fuel resistant due to the requirements of the airfield.

Procedure:

Removal of existing old material and/or extra cutting to make sure that joint is in good shape. Cleaning thoroughly by air compressor, if needed HAL will be used to heat up the joint before sealant application. Placing of backer rod into the joints, and Injection of sealant to the joint, 2mm lower than the concrete surface

Notes:

- 1- Sealant can be the normal rubberized hot applied one or jet fuel resistant which shall be determined by airport authorities, normally if they expect fuel leakage at the application areas. It is not recommended to use the fuel resistant at the runway. The jet fuel resistant one is not an easy sealant to be dealt with, due to its specific characteristics, caution heating is needed to make sure the right flow of sealant. The cone kettles are the right choice.
- 2- Backer rod is used when you have more than 2 cm depth to cover the extra depth with that, the backer rod will move with slab movements in time and it won't melt when hot material is being applied, size shall be 25% more than joint width.

Items to be defined for the contract:

- 1- Depth of the joint
- 2- Width of the joint
- 3- Location of the joints – Apron, Runway, etc.
- 4- If jet fuel resistant sealant is needed to be applied
- 5- Total Linear Meters (LM) of the joints
- 6- If the joints dimensions are different in sections of the airfield

B- Concrete Slab Crack sealing – Required Machinery

- 1- RCR – Marathon Random Concrete Router
- 2- Air compressor and (HAL)
- 3- Wind Blower
- 4- Kettle for sealant injection – UCMK HD, cone injection

Procedure

Like asphalt, slab needs to be in 70-80% good condition in surrounding area and has got lateral or longitudinal cracks only. Crack will be routed by Marathon RCR, speed depends on the formation of the crack, to create the reservoir for sealant as well as solid crack edges. Cut shall be cleaned out of any debris by air compressor. Sealant will be applied with no over-band, it shall be finished to the surface level (in some areas mastic tapes can be used to create better application)

Notes:

- 1- Speed of the concrete crack sealing is lower than asphalt crack sealing.
- 2- The advantage of Marathon RCR is that can be guided by the operator to follow the random cracks even on concrete.
- 3- The nominal rout depth is Max. 19 mm and width 15 mm
- 4- If the routing depth and width has to be more, the use of backer rod is recommended.

Items to be checked:

- 7- Average width of the cracks?
- 8- Location of the cracks mostly – Apron, Runway, etc.
- 9- If jet fuel resistant sealant is needed to be applied at Apron, if it is on the runway, not recommended.
- 10- Total Linear Meters (LM) of the cracks
- 11- If the crack widths are different in each section, average is needed.

C- Concrete Slab Patching – Required Machinery

- 1- Saw cutter to create sharp edges and damaged corners
- 2- Jack Hammer with power generator, due to the severity milling machine may be needed
- 3- Air compressor and HAL
- 4- Marathon Mastic Mixer MM120 for application of hot applied mastic with aggregates, Level and Go.
- 5- Necessary tools for application

Procedure:

Repair area to be prepared by milling machine and hammer, to facilitate proper adhesion, the pavement should be clean and dry and clear out of any dirt, dust or other contaminates. The material is then dispensed directly into the repair area manually from back of the mastic mixer kettle with metal bins and then levelled with tools included in kettle.

Contract items:

- 12- SQM area?
- 13- Severity of the patches.