



METHOD STATEMENT

**Joint Sealing of Road and Pavement joints with
CRAFCO ROADSaver SILICONE SL / Equivalent**

SEALING PROCEDURE

1. Surface preparation: Good adhesion is the key to durable tight joints.
2. Backing: Enable movement by preventing 3 flank adhesion and preventing the sealant from flowing away
3. Sealant application: Sealing the joint.
4. Finishing & Curing behavior: Opening the joints to traffic

1. Surface preparation: Good adhesion is the key to durable tight joints.

1.1. CONCRETE

The joint surface/substrate must be clean, sound and homogeneous, free from oils, grease, dust and loose or friable particles. The bond strength is directly dependent on the substrate condition, so it is essential that any weaker layer or cement laitance be removed so that the sealant can bond directly to sound concrete. Weak, loose, or foreign material between the sealant and substrate will cause a failure point. The joint surface should be checked e.g. with a clean cloth on the surface, which should come away clean and free of dust or contaminants. It is important that this condition is achieved for the entire surface where the sealant will adhere, taking into consideration the sealant recess.

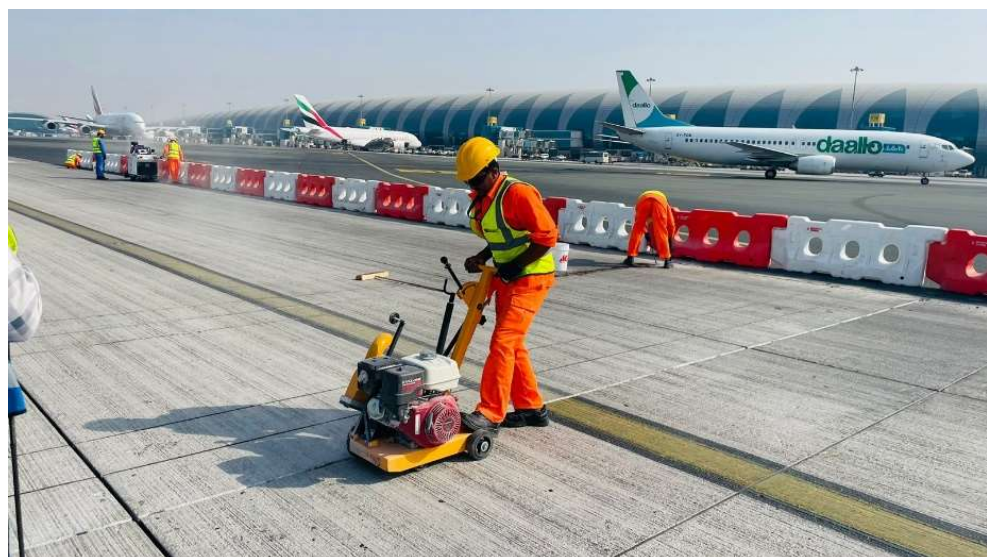
1.1.1. Concrete surface preparation procedures:

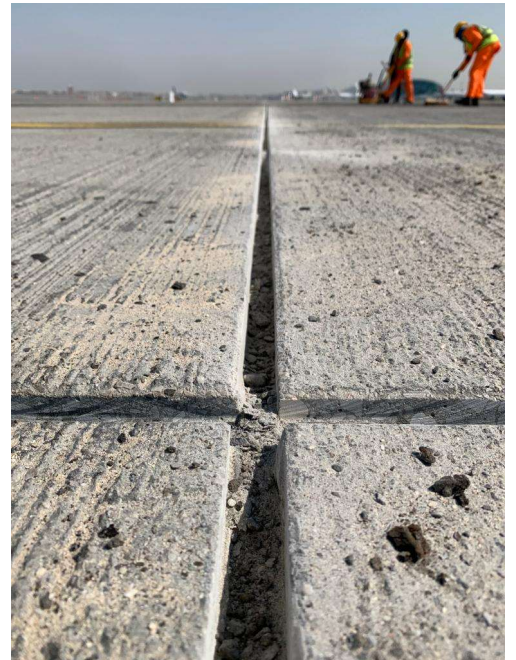
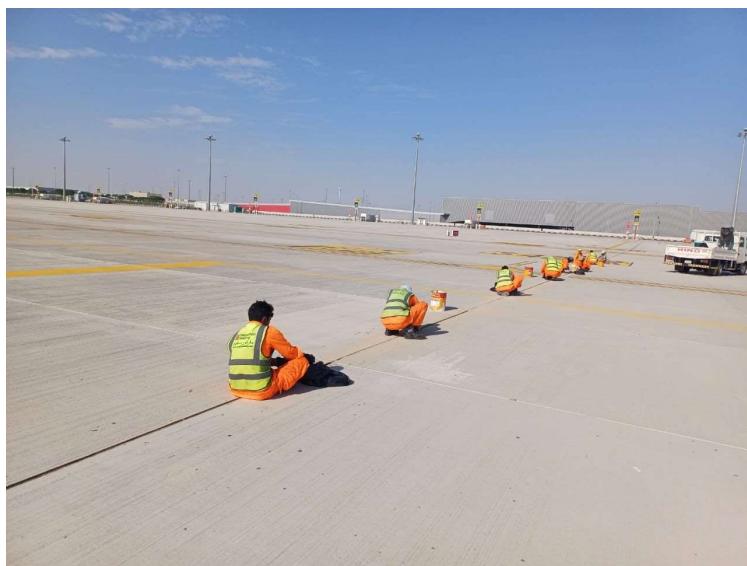
- After appropriate concrete curing (7 day minimum is recommended) widened joint reservoirs are sawn at the design spacing using appropriate concrete sawing procedures and equipment. In “fast track” or high early strength concrete, joints can be sawn sooner than the 7 day minimum for standard concrete mixes.
- Joint width should be selected to limit movement due to expansion and contraction to no more than 25% of the joint width. For new pavements designed with narrow joints, using the initial saw cut as the reservoir, spaced at 15 ft. (5 m) maximum, joint width may be as narrow as 1/8 inch (3mm) when using RoadSaver Silicone SL.
- After sawing, immediately flush the joints with water to remove the saw slurry. After the joints have dried, just prior to applying sealant any remaining sawing residue must be removed by sandblasting. Both joint faces must be adequately sandblasted to remove remaining traces of sawing residue. For effective sandblasting, the nozzle should be positioned within 2 inches (5cm) of the surface being cleaned.

- After sandblasting the joint should be thoroughly cleaned using clean, dry, oil free compressed air with a minimum pressure of 90 psi. (620 kpa). Moisture and oil traps are required on the compressor.
- The objective of the above cleaning operations is to provide vertical, intact, and clean bonding surfaces which are free from all contaminants and are dry. Joints should be carefully inspected to assure that an appropriate level of cleanliness has been achieved. This can be accomplished by rubbing your finger along each joint face. If any evidence of dust and contaminants occur, additional sandblasting should be performed until all dust and contaminants are removed.
- Cleaning shall occur on the same day that sealant will be installed. Alternate cleaning methods that accomplish the same level of cleaning as sandblasting may be considered.

1.1.2. REPLACING EXISTING SEALANTS

When replacing existing sealants, the best performance is obtained when the existing sealant is completely removed mechanically and a sound, clean concrete substrate is exposed for the new sealant to bond to. The method for removing the existing sealant will depend on its condition. The best results are achieved by saw cutting the joint again with a slightly wider blade. Sometimes the existing sealant can be completely removed by hand or by using a claw-like metal ripper device to expose the concrete substrate.





2. Backing: Enable movement by preventing 3 flank adhesion and preventing the sealant from flowing away

Sealant should adhere to only two sides of the joint in order to perform properly. To allow extension and compression, the bottom surface of the sealant must be free to deform. If the bottom of the sealant adheres, this can cause the sealant to rupture in order to deform. Backer rods or bond breaker tapes are used to prevent adhesion to the bottom of the joint and limit the sealant depth.

It is recommended to use closed-cell polyethylene backing rods. If the joint is not deep enough to allow space for a backer rod, a bond-breaking tape (e.g. polyethylene) can be used. To provide sufficient backpressure during sealant application, the backing rod should be sized ~25% larger than the joint width. Sizing differs among backing rod types; refer to the manufacturer's recommendations.

Apply the backing rod into the joint using a blunt tool. Make sure that the backing rod skin is not damaged as this can cause gassing out of the backer rod into the sealant. On longer stretches, a roller can be used to easily install the backer rod at a proper depth.



3. Sealant application: Sealing the joint.

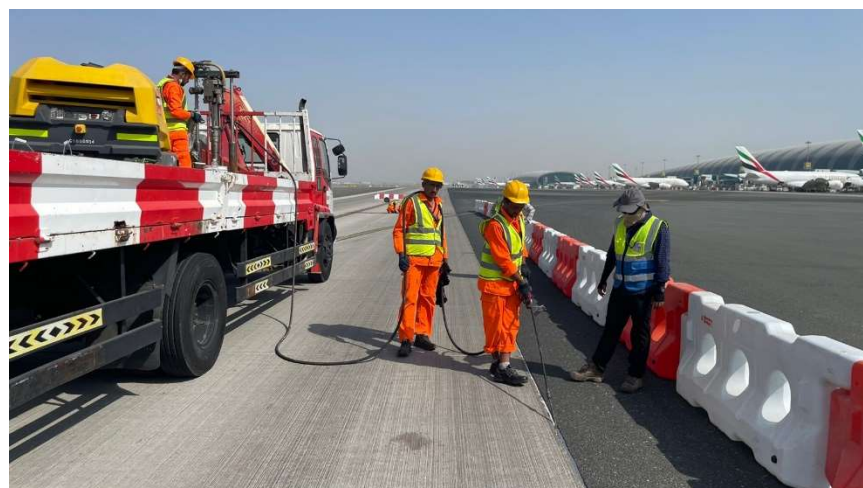
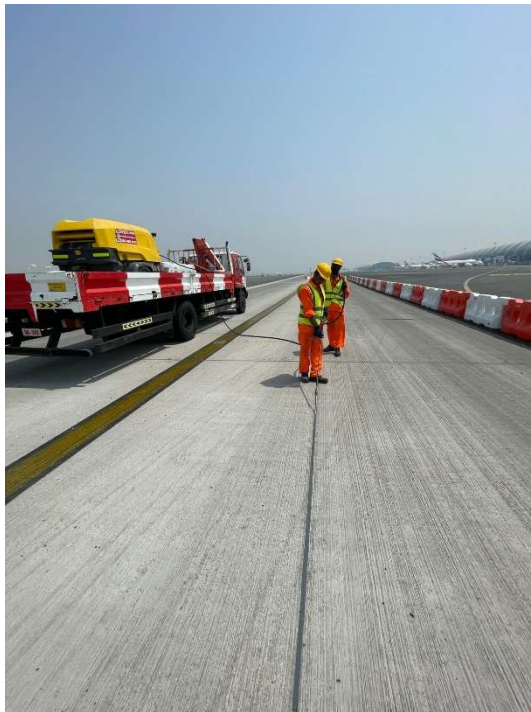
3.1. MANUAL SEALANT APPLICATION

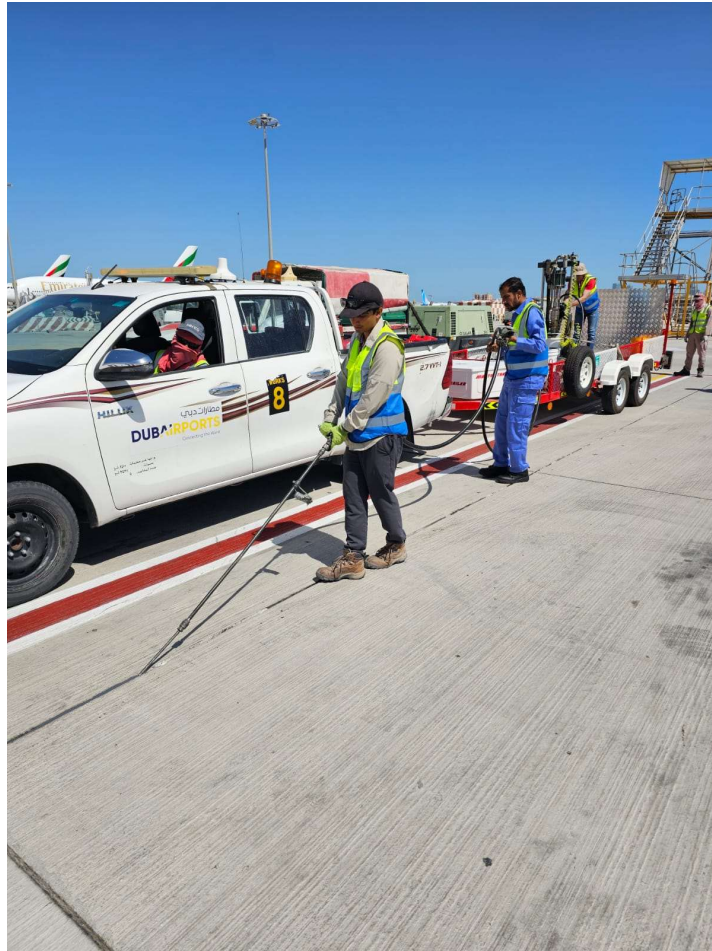
Sealant can be applied manually using Handheld guns, pouring manually into the joint recess. This can only be applied if the quantity is less.

3.2. PUMP SEALANT APPLICATION

Road Saver Silicone sealant from drums or pails is installed in pavement joints using air powered bulk dispensing systems such as Road Star Joint Sealant Pump. This method is used for larger quantities.

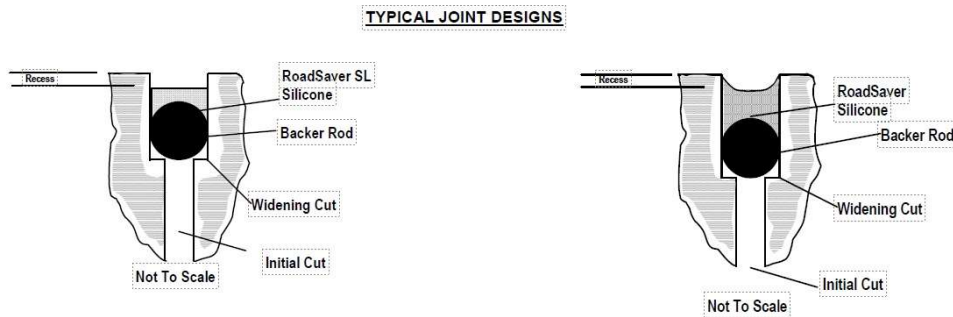
Sealant should be installed 3 mm below the surface level to avoid direct contact to traffic.



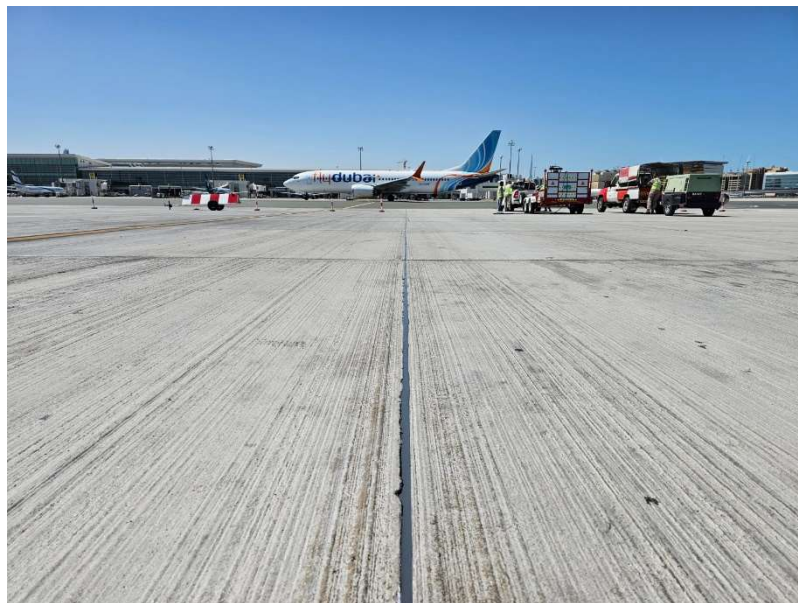


4. Finishing and curing behavior: Opening the joints to traffic.

The sealant bead should be at least ¼ inch (6 mm) thick but no more than ½ inch (12 mm) thick.



After installation, Road Saver Silicone sealants will start to cure and form a surface skin, generally within 10 to 30 minutes. Traffic should be kept off sealed areas until the sealant is “tack free” as indicated by lightly touching with no transfer of material. Road Saver Silicone sealants will cure throughout within 14 days after application to form a strongly bonded long lasting seal.



Note: With self-leveling silicone sealants, air voids (bubbles) may develop if pavement moisture content and ambient temperature are high (fresh concrete during hot, humid conditions). Warm ambient temperature increases moisture vapor release. These vapors can migrate through partially cured sealant creating air voids. When sealant has fully cured, no additional voids will develop.