

1.0 GENERAL

1.1 PERFORMANCE REQUIREMENTS

- .1 The sealant shall be totally waterproof, flexible and thermally compatible with the concrete substrate under applicable service conditions.
- .2 The sealant shall remain fully bonded to the concrete surfaces.
- .3 The sealed joint shall not leak.
- .4 The system shall allow zero chloride permeability.

1.2 SUBMITTALS

- .1 Contractor to submit a certified statement from manufacturer attesting that all areas and surfaces were satisfactorily prepared to receive sealant as per Manufacturer instructions and requirements.
- .2 Contractor to submit statement from manufacturer attesting that all sealant was installed in accordance with the manufacturer's written instruction.

1.3 REFERENCES

- .1 CAN/CGSB 19.24-M90: Multicomponent, Chemical-Curing Sealing Compound

2.0 PRODUCTS

2.1 MATERIAL

- .1 Caulking compound for crack and joint sealant and heal bead sealant shall be two or three component, ultra-low modulus polyurethane compounds with the following material characteristics:
 - .1 Low temperature flexibility shall pass the requirements of ASTM C793 at -54 degrees Celsius.
 - .2 Hardness, durometer scale "A" per ASTM C661 shall be 30 ± 3 .
 - .3 Movement capability shall be $\pm 50\%$ when tested using ASTM C719.
 - .4 Sealant shall pass the requirements of ASTM C793 for accelerated weathering.

- .5 Adhesion in peel shall be greater than 10 pli when testing using ASTM C794.
- .2 Crack and joint sealant: Ultra low modulus polyurethane compound of self-levelling consistency complete with Manufacturer's recommended primers and bond breakers, or backing rods.
- .3 Heel bead sealant or crack and joints for sloping surfaces: Ultra low modulus polyurethane compound gun grade complete with Manufacturer's recommended primers.
- .4 Backer rod to be non-gassing.
- .5 Window Sealant: high movement +100/-50%, UV resistant, single-component, polyurethane sealant. CAN/CGSB-19, 13-M87, paintable. Colour to be selected by departmental representative to match adjacent surfaces

2.2 SAMPLES

- .1 If requested by the Departmental Representative, samples of the joint sealant shall be applied on site to determine material application rates and final appearance.

3.0 EXECUTION

3.1 CRACK SEALING BY SAWCUTTING AND CAULKING

- .1 All slab surfaces to be sandblasted clean prior to designation of cracks to be sealed.
- .2 Unless otherwise noted on drawings or in specifications, joints and cracks will be routed, ground or sawcut to provide a straight sided, 13mm wide by 13mm deep joint. Do not over cut beyond the actual extent of the crack.
- .3 Lightly sandblast sawcut surfaces.
- .4 All broken concrete nosings to be removed and rough edges ground smooth.
- .5 Ensure joint is cleaned of all dust, paint, loose or foreign material prior to sealing.
- .6 All cracks and joints are to be primed.

- .7 If necessary to prevent staining, mask the concrete adjacent to the joint prior to primer application.
- .8 Sealant material to fill sawcut profile flush with slab surface, leaving a slight depression after curing.
- .9 Erect suitable barricades to ensure that traffic will not be allowed onto sealed or caulked areas prior to the materials being adequately cured.

3.2 HEEL BEAD

- .1 Ensure all existing caulking is removed and surfaces are prepared and primed in accordance with Manufacturer's recommendations.
- .2 The minimum standard of cleaning prior to priming shall be a light sand blast.
- .3 Apply a heel bead of sealant to all column/slab and wall interfaces to fill all voids and joints solid, tooling to a uniform fillet with a minimum throat of 15 mm.
- .4 Form surface of sealant smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.

3.3 WORKMANSHIP

- .1 Surfaces shall be cleaned of all moisture, dust, grease, oils, existing caulking, or other materials that may adversely affect sealant bond. Minimum standard of cleaning shall be sandblasting. Cleaned joints must be thoroughly dry, dust free, and frost free before sealing.
- .2 All material application is to be in strict conformance with manufacturer's recommendations, including application temperatures.
- .3 Application procedures that result in toxic fumes or flammable solvents collecting or endangering workmen or building occupants are not permitted.
- .4 Sealant to be continuous, free of air voids and applied such that it fills all voids.
- .5 Provide a smooth concave tooled joint.
- .6 Caulked joints shall be protected by Contractor until sufficiently cured.

3.4 INSPECTION AND TESTING

- .1 To ensure proper bonding of material to substrate, adhesion tests will be performed. Manufacturer's representative will also perform adhesion testing as required to satisfy issuance of manufacturer's warranty.
- .2 Contractor to repair all test locations at no extra cost.
- .3 Slabs will be flood tested upon completion of the slab crack repairs by the Contractor. All locations of leakage will be marked and leaking cracks identified and sealed by the Contractor.

END OF SECTION