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ARAB ENGINEERING BUREAU

10 JOINTS, CAULKING AND SEALANTS

10.1 GENERAL

10.1.1 Scope

- 1 This Part specifies the requirements for joints, caulking and sealants.
- 2 Related Parts and Sections are as follows

This Section

Part 5.....Tiles
Part 6.....Terrazzo
Part 7.....Stone Flooring
Part 8.....Unit Masonry Flooring
Part 9.....Floor Screeds and Treatments

Section 1 General
Section 5 Concrete
Section 17 Metalwork

10.1.2 References

- 1 The following standards are referred to in this Part:
 - BS 5212.....Cold applied joint sealant systems for concrete pavements.
 - BS 5212-2Cold applied joint sealant systems for concrete pavements - Code of practice for the application and use of joint sealants.
 - BS 5390.....Code of practice for stone masonry; (EN 1996-1-2 Eurocode 6. Design of masonry structures - General rules. Structural fire design; EN 1996-2 Eurocode 6. Design of masonry structures - Design considerations, selection of materials and execution of masonry; EN 1996-3 Eurocode 6. Design of masonry structures - Simplified calculation methods for unreinforced masonry structures; BSI PD 6697 Recommendations for the design of masonry structures to BS EN 1996-1-1 and BS EN 1996-2)
 - BS 8203.....Code of practice for installation of resilient floor coverings
 - BS 8204.....Screeds, bases and in situ floorings

10.1.3 System Description

- 1 The Contractor is to include for all pointing, sealing, jointing caulking etc., in all locations indicated on the drawings and where elsewhere required for waterproofing, movement, sealing, etc. All materials shall be of a proprietary manufacture whose instructions shall be followed at all times and shall be to the approval of the Engineer.
- 2 All materials shall be compatible with the other materials they shall come into contact with and shall be specifically manufactured for the location in which they have to be used.

10.1.4 Samples

- 1 The Contractor shall submit two cartridges or representative samples of all sealants and backup materials.

- 2 The samples shall include the following information:
- (a) supplier
 - (b) name of material
 - (c) specification
 - (d) colour
 - (e) date of manufacture
 - (f) life expectancy and shelf life.
- 3 The Contractor shall submit two (2) copies of manufacturer's specifications, recommendations and installation instructions for each type of sealant and associated miscellaneous backup material required.
- 4 These shall include manufacturer's published data or letter of certification, or certified test laboratory reports, indicating that each material is intended generally for the applications shown.

10.1.5 Test Panels

- 1 Before sealant installation work commences, test panels of each type and application of sealant shall be installed in strict conformity with the manufacturer's requirements in finished work. If necessary, this work shall be supervised by a representative of the sealant supplier.
- 2 The Engineer shall be informed of the location of such test panels, and may change their location if he deems necessary.
- 3 Test panels designated to be incorporated in the Works shall not be considered acceptable until the Engineer provides written approval. As-built drawing with the locations of each test panel shall be submitted to the Engineer.
- 4 Each test panel of a type and application of sealant shall be no less than 7.5 linear metres. The test panels shall be used for determining faults should any joint failure occur at a later stage.

10.1.6 Certification

- 1 The manufacturer of the sealant shall certify:
 - (a) that the sealants and accessory materials to be used are compatible with each other, chemically and in adhesion
 - (b) that the materials are fit for the purpose and conditions of use
 - (c) that the sealant, primer where required, and backer rod are compatible and will cause no staining of material in which they are installed.

10.2 MOVEMENT JOINTS IN TILED FLOORS

10.2.1 Installation and Workmanship

- 1 Unless otherwise indicated in the Project Documentation, a 10 mm movement joint is to be formed at the perimeter of all tiled floors and where the tiling meets structural features such as columns, machine bases etc.
- 2 In clay floor tiling additional intermediate movement joints are to be provided where the flooring exceeds 6 m in any direction. In other tiled floor finishes additional intermediate movement joints are to be provided where the flooring exceeds 12 m in any direction.

- 3 Where a structural movement joint is provided in the base, a movement joint of the same width in the bedded finish is to be positioned immediately above.
- 4 The movement joint cavities are to extend through the combined thickness of the finish and the bedding mortar or compound and be completely filled and sealed after grouting of the normal joints takes place.
- 5 The requirements of this Part shall be implemented with additional compliance to BS 5212: Part 2, BS 5390, BS 8203, and BS 8204 as applicable for the flooring system used.
- 6 Changes in colour or type of finish in doorways where movement joints occur are to be situated under the centreline of the door leaf.

10.2.2 Movement Joint Filler and Sealant

- 1 Movement joint filler is to be approved impregnated fibreboard or cellular polyethylene which is compatible with the sealant being used and which does not excrete bituminous or oily products.
- 2 Sealants are to comply with the requirements recommended by the manufacturer for the situation in which they will be used.
- 3 Butyl mastics and other forms of soft sticky mastics are not to be used.

10.3 BRASS DIVIDING STRIP

10.3.1 General Requirements

- 1 Where used for tile edging, brass dividing strips shall be flush with tile surface and shall comply with the relevant provisions of Section 17.

10.4 MATERIALS

10.4.1 General Requirements

- 1 Materials shall be installed in strict accordance with manufacturer's instructions. Where necessary, the manufacturer shall provide training and/or site supervision.

10.4.2 Products

- 1 Before purchase of each sealant the Contractor shall investigate its compatibility with the joint surfaces, joint fillers and other materials.
- 2 Three part sealants shall be an epoxidised polyurethane mixed in strict accordance with manufacturer's instructions. Activated (mixed) sealant not used on the job shall be discarded after a period of hours as instructed by the manufacturer, but in no case shall activated sealant be held overnight.
- 3 Two part sealants shall be a 100 % urethane abrasion-resistant products. They must be installed with a primer under the optimum surface conditions as indicated in the manufacturer's printed data.
- 4 Interior sealants shall be one-part, non-sag in areas of constant water or moisture contact, where no painting will take place. In places where painting or other dry wall finishing conditions prevail, the interior sealant shall be a one-part latex acrylic with a fungicide to reduce mildew, solvent-based acrylic 100% terpolymer, or silicon.
- 5 Joint cleaner shall be a cleaning compound recommended by the sealant manufacturer, for the joint surfaces to be cleaned.

- 6 Joint primer/sealer shall be as recommended by the sealant manufacturer, for the joint surfaces to be primed or sealed.
- 7 Bond breaker self-adhesive tape shall be polyethylene tape or other plastic tape as recommended by the sealant manufacturer. It shall be applied to sealant-contact surfaces where bond to the substrata or joint filler must be avoided for the proper performance of the sealant.
- 8 Sealant backer rod shall be compressible rod stock, non-grassing, closed cell urethane foam, polyethylene foam or neoprene foam or other flexible, permanent, durable, non-absorptive material as recommended for compatibility with sealant by the sealant manufacturer.

10.5 WORKMANSHIP

10.5.1 Execution

- 1 Sealants shall be installed by a firm with a minimum of 5 years successful experience in the application of the types of materials required.
- 2 Joint surfaces shall be cleaned immediately before installation of sealant. Dirt, insecure coatings, moisture and other substances, which would interfere with the bond of sealant or caulking compound, shall be removed.
- 3 Sealants shall not be placed on joint surfaces that have been painted, lacquered, waterproofed or treated with water repellent or other treatment or coating unless a laboratory test for durability (adhesion) has successfully demonstrated that the sealant bond is not impaired by the coating or treatment. If a laboratory test has not been performed or shows bond interference, the coating or treatment shall be removed from joint surface before installing the sealant.
- 4 Joint surfaces on vitreous coated and similar non-porous materials shall be roughened wherever sealant manufacturer's data indicates lower bond strength or porous surfaces.
- 5 Joint surfaces shall be primed and sealed wherever shown or recommended by the sealant manufacturer.
- 6 Sealant backer rod shall be installed behind sealants unless otherwise indicated in the Project Documentation or recommended by the sealant manufacturer.
- 7 Bond breaker tape shall be installed wherever recommended by the manufacturer to ensure that sealants will perform properly.
- 8 The sealant shall be installed to the depths as detailed in the Contract Documentation or as recommended by the sealant manufacturer but within the following general limitations. Measured at the centre (thin) section of the joint.
 - (a) for sidewalks, pavements and similar joints subject to traffic and other abrasion and indentation, joints shall be filled to a depth equal to 75% of joint width, but not more than 16 mm deep and not less than 10 mm deep.
 - (b) for normal movement joints not subject to traffic, joints shall be filled to a depth equal to 50% of joint width, but not more than 12 mm deep and not less than 9 mm deep
 - (c) where joints are wider than 25 mm, the recommendations of the sealant manufacturer shall be followed
- 9 Sealants, primers and sealers shall not be allowed to overflow or spill onto adjoining surfaces or to penetrate into the voids of adjoining surfaces. Masking tape or other precautionary devices shall be used to prevent staining of adjoining surfaces.

- 10 Excess and spilled sealants/primers/sealer shall be removed promptly as the work progresses. All adjoining surfaces shall be cleaned by whatever means may be necessary to eliminate evidence of spillage, without damage to the adjoining surfaces of finishes.
- 11 Sealants shall be cured in compliance with the manufacturer's instructions and recommendations, to obtain high early bond strength, internal cohesive strength and surface durability.
- 12 Procedures required for the curing and protecting of sealants during the construction period, as recommended by the manufacturer, shall be strictly followed.
- 13 No surface treatments will be allowed that will affect either appearance or physical characteristics of the sealing being installed.

END OF PART

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