

616: Waterproofing of the tunnel

A _ Conform to **Technical Specification** Appendix VIII Clause 1, 2 and 305;
QAS Quality Assurance System: material input, method of execution, workmanship, testing.

B _ Method of Measurement & Payment Book / MoM&P

The units of measurement shall be for the different setups and diameters	m2
616.1 Waterproofing, membrane, PVC pipe d-150-200-250 mm	m2
616.2 Waterproofing, membrane, PVC pipe d-150-200-250 mm for variable section	m2
616.3 Waterproofing, membrane, PVC pipe d-150-200-250 mm for section wide	m2
616.4 Waterproofing, membrane, PVC pipe d-150-200-250 mm for Lay-Bay	m2
616.5 Waterproofing, membrane, PVC pipe d-150-200-250 mm for By-Pass	m2

The MoM&P for tunnel “waterproofing” defines all temporary and permanent “Works” (SC 01.1.5.8 MDB201), in order to be able to derive the adequate Unit Rate (breakdown of prime costs, overheads, surcharges, ...)

- (1) Preparation of the concrete surface of the tunnel for **isolation**;
- (2) Installation of **geotextile**;
- (3) Installation of waterproofing **membrane**;
- (4) Installation of the two external **perforated PVC pipes diam 150 mm for rock drainage**;
- (5) Installation of two internal rock drainage **main collector** PVC pipes diam 250 mm;
- (6) The **connections** of external and internal PVC pipes diam 200 mm;
- (7) **Inspection cockpits** every 50 meters;
- (8) Performing any other **auxiliary works**.

Payment will be applied to the **theoretical area of the tunnel** where the waterproofing will be applied. The term **waterproofing SYSTEM** would match better the **nature and extent of the works**. QS and Auditors should consider this, if new rates and prices used, to cover up “low unit rates”. The **inspection cockpits** every 50 meters indicates the extend of the build in waterproofing-system.

Payment by BoQ items in Tunnel = e.g. 8.55 LC /m2

PS: Please note, some **Specifications** in reference of the material, method of construction, workmanship requirement and testing **are very often out of date**. The “Employer’s personnel” **failed to adapt the Specification to the general accepted codes of practice / technology / state-of art / GIIP**.

Hence the Contractor has the **right to “request for clarification + instructions”** to change the Specification and to “claim” more monies for the execution of works. Either the Engineer request a **Variation Proposal VP** (SC13.1) or the Contractor submits a **Claim Notices/Claim Requests** (SC20.1) for delay due to procurement, sequence of construction a.s.o..

Note: If you read the **expression “as directed by the Engineer”** it indicates that the Spec is drafted ahead of FIDIC version 1999 and/or the Consultant / **Drafter of the Tender Dossier did not consider “innovations” in the Construction industry (cut + paste)**. “Subjective” directives of the Engineer do mostly not comply with the **Content** of the Contract [“not objectively given”] and hence can be challenged successfully with appropriate Notice of Claims & Claim Requests.

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