

Bill of quantity

KeraLine-System

Prefabricated ceramic lining elements using ceramic tiles to EN 186, for the rehabilitation of sewer lines and constructions.

The exact constructional design of the sewer constructions takes place after a joint site visit of principal and contractor, during which the contractor can inform himself of the prevailing surface conditions, or of the guidelines of the consultant.

The manufacturer will prepare shop drawings before production of the KeraLine elements starts at the plant. With his signature the contractor accepts the shop drawings as good for production

The guidelines of the material suppliers are unconditional to be observed. Quality tests are made following the guidelines of the owner. The acceptance of the works is made during a site visit. Related expenses are to be included and are not separately refunded.

Work related safety regulations must be observed during the execution of the works. The contractor, in coordination with the principal, is responsible for the coordination of all necessary works on site.

Necessary additional installations, dewatering, lighting, alerting, safety related measures and other methods for rehabilitation are listed as separate items.

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Item	Description	Quantity	Rate per	Unit total per item
1	Surface preparation			
1.1	Removal of the contaminated sewer surfaces with highest water pressure (2800 bar). Depth of ablation according to the instructions of the engineer. Surface roughness 5 mm minimum. Marking out of the area for ablation by a cut with a disk cutter, inclusive. Removal of gravel nests, inclusive. Collection of ablated material, transport to a landfill of contractors choice, inclusive. Settlement of fees to the instructions of the client. Per meter sewer	m		
1.2	Cleaning inclusive degreasing with hot water vapouriser. Nozzle pressure max. 100 bar. Settlement to the instructions of the client. Per meter sewer	m		
1.3	Sealing of cracks and grouting of infiltrations in the area for the KeraLine elements, inclusive all materials and equipment	m		
2	Installation of the KeraLine-Elements			
2.1	<p>Installation of KeraLine elements in areas selected by the engineer, with the required quality characteristics, respectively tot he instructions of the site engineer.</p> <p>Material: KeraLine-tiles Per meter of sewer, regardless the actual material consumption, efforts or other additional costs for the contractor.</p> <p>Works included:</p> <ul style="list-style-type: none"> • sharpening of the sewer walls • sharpening of gravel nests, reprofiling, possibly filling. • necessary preconditioning like cleaning, bonding bridges, soaking etc. • installation of ceramic lining elements in mortar suitable for use in sewers • alignment of low level inflows • all necessary cuts to the elements, in particular to shape curves • all reprofiling under the stoneware elements • in the area of the construction joints, generate "nominal breaking points". • form the butt joints between the elements (secondary joints) with epoxy resin mortar. • formation of longitudinal joints at the transition from 	m		

	<p>KeraLine elements to concrete including any inserts.</p> <ul style="list-style-type: none"> • necessary pre- and after treatment, in particular washing-off residual pointing material • delivery of all necessary materials (choice of products in consultation with the site management, according to the required quality). • incl. all other costs incurred by the company for the provision of the service. Execution according to the information provided by the client. Dimension per meter of canal. 			
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