

VIK

BILL OF QUANTITIES FOR THE WATER SUPPLY AND SEWERAGE SYSTEMS.					
A.	CONSTRUCTION WORKS				
1.	Channel excavation:				
	Excavate channel in III category soil for water supply and sewerage system installation, up to 2.0 m deep.				
	machine excavation	m ³	192.16		
	manual excavation	m ³	48.00		
2.	Trench bottom planning:				
	Plan the trench bottom according to given levels and slopes in the design, accuracy Δ3 cm. Re-dug areas shall be refilled with gravel or very coarse sand and properly compacted before putting sand in the equalizing bed.				
		m ²	128.80		
3.	Sand:				
	Purchase, transport, spread, plan and compact sand as necessary in a 10-cm layer.				
		m ³	69.40		
4.	Channel backfilling:				
	Backfill the channel using excavated soil in layers up to 30 cm including compacting.				
		m ³	157.60		
5.	Excess soil removal:				
	Remove and transport excess soil to the landfill, including loading it onto the vehicle, unloading it and rough planning.				
		m ³	82.60		
6.	Base layer:				
	Purchase, transport, spread and compact natural granulation gravel in a 10-cm layer in steady state under manhole slab.				
		m ³	1.00		
7.	Bottom slab concrete works:				
	Concrete bottom slab of the manhole fully in accordance with the design. The slab shall be AB MB30, 20-cm thick. The price shall include the necessary form, but reinforcement shall be calculated separately.				
		m ³	1.60		

VIK

8.	Building manhole walls:				
	Build manhole walls using concrete blocks in cement mortar. Form vertical reinforced concrete beams on the corners, fully in accordance with the design. The wall shall be 20 cm thick.				
		m ³	4.30		
9.	Concreting top manhole slab:				
	Concrete top manhole slab fully in accordance with the design. The slab shall be made of reinforced concrete, 20 cm thick, with reinforced concrete beams. The price shall include the necessary form, but the reinforcement shall be calculated separately.				
		m ³	1.60		
10.	Reinforcement:				
	Purchase, cut, bend and install reinforcement fully in accordance with the specification and assembling plans.				
	MAG 50/56	kg	135.00		
	GA 24/36	kg	183.00		
11.	Cast iron covers for water supply manholes:				
	Purchase and install cast iron covers with frame, weight 24 kg, with 50 KN load for the water supply manhole.				
		pcs	4.00		
12.	Sewerage manhole:				
	Purchase and make sewerage manhole using concrete prefabricated 1000 mm rings with tapered cone 1000 / 600 mm. The first ring shall be placed on the concrete slab d = 15 cm, in the form of channel pipe. All connections shall be made watertight. The price shall include entire manhole installation together with step irons spaced at 30 cm.				
		m ¹	8.60		
13.	Cast iron covers for sewerage manholes:				
	Purchase and install cast iron covers with frame, weight 48 kg, with 150 KN load for the sewerage manhole.				
		pcs	6.00		
14.	Sewerage connection:				

VIK

	Connect the sewerage to the existing sewerage manhole. The price shall include all works on manhole penetration including the subsequent finishing on the installed pipe so that it is watertight. RESPONSABILITY OF THE INVESTOR - not to be offered.				
	TOTAL A.				
B.	WATER SUPPLY				
1.	Water supply connection:				
	Connect to the water supply system up to the manhole "ŠAHT 1". The price shall include all works on the connection with all the necessary fittings and connecting materials. Lumpsum calculation.				
2.	PE pipes:				
	Purchase and install PE water supply pipes with all the necessary connecting materials and fittings.				
	Ø 63 mm (2")- RESPONSABILITY OF THE INVESTOR - not to be offered	m ¹	120.00		
	Ø 50 mm (6/4")	m ¹	33.00		
	Ø 40 mm (5/4")	m ¹	21.00		
	Ø 32 mm (1")	m ¹	31.00		
3.	PP pipes:				
	Purchase and install PP water supply pipes class SDW11 with all the necessary connecting materials and fittings. The price shall include all works under this item, including the opening on the inter floor structure and closing it after the installation of the pipe, chase cutting of the walls and patching after pipe mounting.				
	Ø 40 mm (5/4")	m ¹	17.00		
	Ø 32 mm (1")	m ¹	14.00		
	Ø 25 mm (3/4")	m ¹	53.00		
	Ø 20 mm (1/2")	m ¹	151.00		
4.	PP pipes:				
	Purchase and install class SDR7.4 thermo stabilized (composite) PP pipes for warm water with all the necessary connecting materials and fittings. The price shall include all works under this item, including the opening on the inter floor structure and closing it after the installation of the pipe, chase cutting of the walls and patching after pipe mounting.				

VIK

	Ø 20 mm (1/2")	m ¹	110.00		
5.	Thermal insulation of pipes:				
	Purchase and install thermal insulation for pipes, conductivity $\lambda = 0.040 \text{ W/(mK)}$, Armaflex - Tubolit or similar with same characteristics and all the necessary accessories.				
	22 x 4 (1/2")	m ¹	261.00		
	28 x 4 (3/4")	m ¹	53.00		
	35 x 4 (1")	m ¹	14.00		
	42 x 4 (5/4")	m ¹	17.00		
6.	Water meter:				
	Purchase and install water meter with fullway and discharge valves and all the necessary connecting materials and fittings.				
	DN 40 mm	pcs	1.00		
7.	Ball valves:				
	Purchase and install ball valves in water supply manholes with all the necessary connecting materials and fittings.				
	DN 32 mm	pcs	2.00		
	DN 25 mm	pcs	4.00		
8.	Fullway valves:				
	Purchase and install fullway valves with chrome plated bonnet and escutcheon plate and all the necessary connecting materials.				
	DN 20 mm	pcs	18.00		
	DN 15 mm	pcs	79.00		
9.	EK valves:				
	Purchase and install EK valves with all the necessary connecting materials.				
	DN 15 mm	pcs	33.00		
10.	Water supply network testing:				
	Hydraulic testing of the water supply network as shown in the design and reporting.				
		m ¹	345.00		
11.	Disinfection and washing of the water supply network:				
	Disinfect the water supply network installed fully in compliance with technical regulations, after which wash the pipeline and test quality in a certified lab.				
	lumpsum				

VIK

	TOTAL B.				
C.	SEWERAGE				
1.	PVC PIPES:				
	Purchase and install PVC sewerage pipes with all the necessary connecting material and fittings. Pipes shall be connected using rubber rings. Inspection chamber must be installed on the bottom of the verticals. The price shall include all works under this item, including the opening on the inter floor structure and closing it after the installation of the pipe, chase cutting of the walls and patching after pipe mounting.				
	pipes in the ground				
	Ø 160 mm	m ¹	122.00		
	Ø 110 mm	m ¹	23.00		
	verticals in the channel				
	Ø 110 mm	m ¹	84.00		
	Ø 75 mm	m ¹	15.00		
	verticals in the wall				
	Ø 75 mm	m ¹	32.00		
	sewerage distribution				
	Ø 110 mm	m ¹	26.00		
	Ø 75 mm	m ¹	36.00		
	Ø 50 mm	m ¹	86.00		
2.	Pipe insulation:				
	Purchase and install insulation type Plamaflex SSL or similar; d = 4 mm verticals built in the walls.				
	DN 75	m ¹	32.00		
3.	Gully:				
	Purchase and install dry gully traps (seal preventing foul odours), with chrome plated class K3 grid and lateral connection for the shower tub.				
	Ø 50 mm	pcs	15.00		
4.	Ventilation:				
	Purchase and install PVC vent with flashing on the point of penetration of the roof.				
	Ø 150 mm	pcs	9.00		
	Ø 125 mm	pcs	6.00		
5.	Washing machine connection:				
	Purchase and install PP built-in drain pipe for the washing machine, all together with connection to the sewerage system.				

VIK

		pcs	15.00		
6.	Sewerage network testing:				
	Test sewerage network as shown in the design and report.				
		m ¹	161.00		
	TOTAL C.				
D.	SANITARY EQUIPMENT				
1.	Toilet:				
	Purchase and install faience toilet with seat and low-mounted silent tank with flush pipe and all the necessary connecting materials and connect to the water supply and sewerage network.				
		pcs	18.00		
2.	Sink:				
	Purchase and install faience sink with upstanding single handle faucet with combined hot and cold water, drain and all the necessary materials for installation.				
	60 cm	pcs	15.00		
4.	Sink:				
	Purchase and install faience sink with drain and all the necessary materials for installation.				
	50 cm	pcs	1.00		
	45 cm	pcs	2.00		
5.	Shower tub:				
	Purchase and install steel tub including all the necessary accessories for connection to the sewerage network, i.e. the drain and overflow tube.				
	size 80 x 80 cm - shower tub	pcs	15.00		

VIK

6.	Shower tub faucet:				
	Purchase and install single handle wall shower faucet with hand held shower head with flexible hose, for hot and cold water combined with all the necessary materials for installation.				
		pcs	15.00		
7.	Electric water heater:				
	Purchase and install electric water heater and connect it fully to the water supply and power supply installations.				
	V = 80 lit	pcs	15.00		
8.	Kitchen sink:				
	Purchase and install single bowl kitchen sink, all together with standing kitchen unit, drain and all the necessary connecting materials.				
		pcs	16.00		
9.	Instantaneous water heater:				
	Purchase and install 10-l instantaneous low-mounting water heater with combined hot and cold water faucet for the kitchen sink.				
	mount below the sink	pcs	4.00		
10.	Faucet for kitchen sink:				
	Purchase and install single handle faucet for kitchen sink for hot and cold water combined including mounting onto the wall.				
		pcs	12.00		
11.	Nickel-plated hose cock:				
	Purchase and install nickel-plated hose cock with all the necessary connecting and sealing materials.				
	for washing machine	pcs	15.00		
12.	Nickel-plated faucet for sink:				
	Purchase and install nickel-plated wall faucet for cold water with all the necessary connecting and sealing materials.				
	for sink	pcs	3.00		
13.	Bathroom accessories:				
	Purchase and install sanitary accessories:				
	mirror with frame 50x40cm	pcs	18.00		
	towel holder	pcs	18.00		
	soap holder	pcs	18.00		
	toilet paper holder	pcs	18.00		
	TOTAL D.				

VIK

RECAPITULATION					
A.	EARTH WORKS				
B.	WATER SUPPLY				
C.	SEWERAGE				
D.	SANITARY EQUIPMENT				
	TOTAL				