

SECTION NO.12
MECHANICAL WORKS

		Unit	Quantity	Rate	Amount
<u>SECTION NO.12</u> <u>MECHANICAL WORKS</u> <u>BILL NO. 1</u> <u>MECHANICAL WORK</u> Tenders are advised to carefully study the full intent and meaning of "Construction Works: Specifications (PW371-A Edition 2.1 of July 2014 and PW371-B Edition 2.2 of December 2015)" before pricing this bill as these standards shall apply to all items of work on this project. Additional Supplementary Preambles have been incorporated. Where these are at variance with PW371-A & B such Supplementary Preambles will take precedence. Note: Unless otherwise stated herein, all items in this bill shall be deemed to fall into Work Group No. 170 for calculation of Contract Price Adjustments on the Haylett Formula <u>Site-Wide Cold Water Installations</u> <u>Supply, deliver, install and commission as per specification the following Copper Class 0 Piping for COLD WATER SYSTEM.</u>					
1	15mm DIA. Class 0 Copper Pipes	m	115		
2	22mm DIA. Class 0 Copper Pipes	m	346		
3	28mm DIA. Class 0 Copper Pipes	m	268		
4	35mm DIA. Class 0 Copper Pipes	m	605		
5	42mm DIA. Class 0 Copper Pipes	m	185		
6	54mm DIA. Class 0 Copper Pipes	m	95		
<u>Extra Over The Class 0 Copper Pipe with Capillary Fittings</u>					
7	22mm-15mm DIA Reducing Tee	No	105		
8	28mm-15mm DIA Reducing Tee	No	45		
9	42mm-35mm DIA Reducing Tee	No	50		
10	35mm-28mm DIA Reducing Tee	No	34		
11	28mm-22mm DIA Reducing Tee	No	44		
12	54mm-42mm DIA Reducing Tee	No	25		
13	15mm Elbow	No	105		
Carried to Collection				R	
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Mechanical Work					

		Unit	Quantity	Rate	Amount
14	22mm Elbow	No	84		
15	28mm Elbow	No	55		
16	42mm Elbow	No	38		
17	54mm Elbow	No	26		
18	15mm Isolation Valve	No	84		
19	22mm Isolation Valve	No	84		
20	35mm Isolation Valve	No	34		
21	42mm Isolation Valve	No	26		
22	54mm Isolation Valve	No	15		
23	15mm Straight Coupler	No	13		
24	22mm Straight Coupler	No	14		
25	28mm Straight Coupler	No	15		
26	42mm Straight Coupler	No	16		
27	54mm Straight Coupler	No	17		
28	22-15mm Reducing Straight Coupler	No	18		
29	28-22mm Reducing Straight Coupler	No	19		
30	28-15mm Reducing Straight Coupler	No	20		
31	35-28mm Reducing Straight Coupler	No	21		
32	42-35mm Reducing Straight Coupler	No	22		
33	54-42mm Reducing Straight Coupler	No	23		
Carried to Collection					
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Mechanical Work					
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		Unit	Quantity	Rate	Amount
34	Additional fittings, components, fixings, sleeves, supports, strainers, end caps, consumables and any other items that are not specifically mentioned herein but are required in order to make the cold water supply system fully functional, capable of meeting performance test requirements and complaint to all the latest revisions of the defining Codes, Standards and Legislation. The Contractor to supply a priced list (at cost) with tender of all additional components for verification and approval for measuring and payment purposes. The Engineer will, on his approval and assessment, grant the Contractor additional percentage for markup and labour in line with the provisions of the Contract.	Lump Sum			50 000 00
35	Installation and Profit	Item			
36	Commissioning	Item			
37	As-Built and Documentation	Item			
<u>FIRE TANK AND PUMPSTATION</u>					
<u>COMBINED FIREWATER AND POTABLE WATER TANK</u>					
38	90 m3 Working Volume Tank, Steel Panel tank, complete with all Accessories, Tank support stand of 20m height, nozzles and piping from nozzles down to ground level and float control system for inlet water. 56m3 dedicated for potable water - 33m3 dedicated for firewater storage. PC SUM INCLUSIVE OF PROFIT, INSTALLATION, COMMISSIONING	Prov Sum			1 400 000 00
<u>SANS 62/719 Sch40 MEDIUM CLASS BLACK MILD STEEL PIPING</u>					
39	100mm Pipes	m	65		
40	65mm Pipes	m	12		
41	50mm Pipes	m	20		
42	76mm Pipes	m	25		
43	80mm Pipes	m	12		
<u>MILD STEEL FITTINGS</u>					
44	100mm, 90 Degree Elbow Flanged	No	10		
Carried to Collection				R	
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		Unit	Quantity	Rate	Amount
45	100mm Equal TEE	No	10		
46	100mm Isolation valve, Gate Valve	No	10		
47	100mm Non-return valve, Check Valve	No	10		
48	50mm Non-return valve, Check Valve	No	6		
49	100mm - 110mm Flange Adaptor - Steel to HDPE	No	8		
50	110mm - 75mm Flange Adaptor - Steel to HDPE	No	8		
51	110mm - 50mm Flange Adaptor - Steel to HDPE	No	8		
52	110mm - 55mm Flange Adaptor - Steel to HDPE	No	8		
53	80mm-100mm Reducer	No	12		
54	65mm-100mm Reducer	No	12		
55	50mm, Isolation valve, Gate Valve	No	8		
56	100mm, Klamflex Dismantling Joint	No	10		
57	50mm, 90 Degree Elbow Flanged	No	8		
58	100NB Table D Slip on Flanges with bolt, nut and washer sets	No	36		
<u>PUMPSETS AND AUXILLARIES</u>					
59	KSB, Etanorm, 80-065-315 close coupled with ASIB fire rated motor and mounted on galvanised steel baseplate and factory aligned	Sets	2		
60	Grundfos jockey pump, vertical multistage pump or other approved	Sets	1		
61	4 Tier Autostart with all pressure switches and gauges. Alarm panels, controls and all field wiring.	Sets	1		
62	Electrical installation within the confines of the of the pumpstation with cable runs not exceeding 6m between pumps and panels supplied	Sets	1		
63	Direct reading flow meter	Sets	1		
<u>RINGMAIN, SUPPLY PIPING AND AUXILLARIES</u>					
<u>UNDERGROUND RINGMAIN AND BRANCHES - HDPE PIPING</u>					
64	110mm Pipe	m	1 000		
65	75mm Pipe	m	250		
66	50mm Pipe	m	200		
Carried to Collection				R	
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		Unit	Quantity	Rate	Amount
67	25mm Pipe	m	100		
68	75mm - 110mm Reducing TEE	No	30		
69	75mm - 50mm Reducing TEE	No	20		
70	50mm - 25mm Reducing TEE	No	30		
71	110mm - 50mm Reducing TEE	No	20		
72	110mm - 25mm Reducing TEE	No	20		
73	75mm Adaptor	No	20		
74	50mm Adaptor	No	20		
75	25mm Adaptor	No	20		
76	110mm , 90 Degree Elbow	No	10		
77	110mm , 45 Degree Elbow	No	3		
78	25.4mm Pipes	m	125		
79	28mm Pipes	m	80		
80	76mm Pipes	m	80		
	SANS 62 Sch40 MEDIUM CLASS BLACK MILD STEEL PIPING				
	<u>WATER SUPPLIES</u>				
	<u>Extra over Mild Steel fittings</u>				
81	25mm Fittings	No	14		
82	28mm Fittings	No	14		
83	25.4mm Elbow	No	28		
84	28mm - 76mm Reducing Tee	No	10		
	<u>Supply, deliver and install all Fire appliances and piping with complete with all auxilliary fittings :.</u>				
85	"Everyway" hose reel complete with 30m rubber hose, chromium plated stopcock, shut-off nozzle and wall bracket,bolted to wall.	m	30		
86	4.5kg Carbon Dioxide fire extinguisher on and including brackets plugged and screwed to wall.	m	32		
87	Fire Hydrant	No	2		
88	Twin-Booster Connection	No	1		
	Carried to Collection			R	
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		Unit	Quantity	Rate	Amount
89	Allowance for a 120 Minute rated fire doors	No	5		
90	1200kg SWL Lifting Tackle and Crawler at fire pumpstation house	No	1		
91	Additional fittings, components, fixings, sleeves, supports, strainers, end caps, consumables and any other items that are not specifically mentioned herein but are required in order to make the Fire Fighting system fully functional, capable of meeting performance test requirements and complaint to all the latest revisions of the defining Codes, Standards and Legislation. The Contractor to supply a priced list (at cost) with tender of all additional components for verification and approval for measuring and payment purposes. The Engineer will, on his approval and assessment, grant the Contractor additional percentage for markup and labour in line with the provisions of the Contract.	Prov Sum			150 000 00
92	Installation and Profit	Item			
93	Commissioning	Item			
94	As-Built and Documentation	Item			
<u>RAIN WATER TANKS AND PUMPSTATION</u>					
<u>RAIN WATER ACCUMULATION AND HARVESTING TANKS</u>					
95	82 m3 Working Volume Tank, Steel Panel tank, complete with all Accessories, integral nozzles. Located at ground level on reinforced concrete beams. RC Foundation and support beams allowed for in structural engineers BOQ.				
	PC SUM INCLUSIVE OF PROFIT, INSTALLATION, COMMISSIONING	Prov Sum			850 000 00
96	5 m3 Working Volume Tank, HDPE Tank, complete with all Accessories, integral nozzles. Located at ground level on reinforced concrete foundation. RC Foundations allowed for in structural engineers BOQ.	No	20		
<u>PUMPSETS AND AUXILLARIES</u>					
97	KSB, Etanorm, 80-065-315 close coupled with 30 kilowatt motor and mounted on galvanised steel baseplate and factory aligned	Sets	1		
Carried to Collection				R	
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		Unit	Quantity	Rate	Amount
98	Autostart control panel with pressure switches and gauges and all field wiring.	Sets	1		
99	Electrical installation within the confines of the of the pumpstation with cable runs not exceeding 6m between pumps and panels supplied	Sets	1		
100	80mm Isolation valve, Gate Valve	No	2		
101	80mm Non-return valve, Check Valve	No	2		
102	65mm Non-return valve, Check Valve	No	2		
	<u>MAINS, SUPPLY PIPING AND AUXILIARIES</u>				
	<u>UNDERGROUND GRAVITY AND PRESSURE MAINS AND BRANCHES - HDPE PIPING</u>				
103	80mm Pipe	m	500		
104	50mm Pipe	m	600		
105	42mm Pipe	m	100		
106	30mm Pipe	m	100		
107	25mm Pipe	m	100		
108	80mm - 50mm Reducing TEE	No	30		
109	80mm - 25mm Reducing TEE	No	20		
110	50mm - 25mm Reducing TEE	No	30		
111	80mm - 42mm Reducing TEE	No	20		
112	110mm - 30mm Reducing TEE	No	20		
113	80mm Adaptor	No	20		
114	42mm Adaptor	No	20		
115	50mm Adaptor	No	20		
116	25mm Adaptor	No	20		
117	110mm , 90 Degree Elbow	No	10		
118	110mm , 45 Degree Elbow	No	3		
	<u>WATER SUPPLIES</u>				
	SANS 62 Sch40 MEDIUM CLASS BLACK MILD STEEL PIPING				
119	25.4mm Pipes	m	100		
	Carried to Collection			R	
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		Unit	Quantity	Rate	Amount
120	28mm Pipes	m	50		
121	76mm Pipes	m	50		
122	65mm Pipes	m	50		
	<u>Extra over Mild Steel fittings</u>				
123	25mm Fittings	No	14		
124	28mm Fittings	No	14		
125	25.4mm Elbow	No	28		
126	28mm - 76mm Reducing Tee	No	10		
127	Additional fittings, components, fixings, sleeves, supports, strainers, end caps, consumables and any other items that are not specifically mentioned herein but are required in order to make the Rain Water system fully functional, capable of meeting performance test requirements and complaint to all the latest revisions of the defining Codes, Standards and Legislation. The Contractor to supply a priced list (at cost) with tender of all additional components for verification and approval for measuring and payment purposes. The Engineer will, on his approval and assessment, grant the Contractor additional percentage for markup and labour in line with the provisions of the Contract.	Prov Sum			50 000 00
128	Installation and Profit	Item			
129	Commissioning	Item			
130	As-Built and Documentation	Item			
	<u>SCHOOL WIDE INSTALLATIONS</u>				
	<u>CEILING FANS</u>				
131	Ceiling Fans - XPELAIR, NWAN60, 1500mm Sweep Diameter, 3-Blade, supplied with 1 down rod for 375mm drop, 3878 l/s and including controller unit complete	No	46		
	<u>SPLIT UNIT AIRCONDITIONERS</u>				
132	Safe removal and storage of existing airconditioners on site - 9000 Btu	No	2		
133	Safe removal and storage of existing airconditioners on site - 18000 Btu	No	1		
134	Servicing of existing airconditioners - 9000 Btu	No	2		
	Carried to Collection			R	
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		Unit	Quantity	Rate	Amount
135	Servicing of existing airconditioners - 18000 Btu	No	1		
136	Reinstallation of existing airconditioners - 9000 Btu	No	2		
137	Reinstallation of existing airconditioners - 18000 Btu	No	1		
138	Installation and Profit	Item			
139	Commissioning	Item			
140	As-Built and Documentation	Item			
	<u>HYDROBOIL</u>				
141	HYDROBOIL INSTANT HOT WATER GENERATORS - 50L Capacity, supplied with all electrical components and integral piping to form a complete and operating functional unit	No	2		
	<u>KITCHEN STOVE AND GAS INSTALLATION</u>				
142	6 X Gas Burner stove, 1200mm x 600mm complete and fitted onto a galvanised steel frame by specialists and inclusive of all appurtances, devices, safety devices and integral equipment to form a complete and operating functional unit	No	1		
143	Gas reticulation system complete with all piping, valves, connectors, hoses, safety devices, supports, clamps, housings etc to form a complete and operating functional unit and in accordance with the relevant Codes, Standards and Legislation and drawings	Prov Sum			26 000 00
144	48kg Gas Cylinder bottles - full with all dispensing attachments	No	6		
145	Gas storage cage for storing 6off, 48kg gas bottles, lockable supplied with locks, fabricated from mild steel and painted with an appropriate corrosion protection, supplied with safety signage and in compliance with the relevant Codes, Standards and Legislation and drawings	Prov Sum			25 000 00
146	Installation and Profit	Item			
147	Commissioning	Item			
148	As-Built and Documentation	Item			
	Carried to Collection			R	
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Amount

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