

BILL OF QUANTITIES



prasa cres

CORPORATE REAL ESTATE SOLUTIONS

PLUMBING WORKS

<u>Item No</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Rate</u>	<u>Amount</u>
	SECTION No. 1				
	BILL NO. 1				
	Occupational Health and safety				
	The contractor shall comply with all the requirements set out in the Construction Regulations, issued under The Occupational Health & Safety Act no 85 of 1993.				
	Safety file shall be provided by the contractor prior to commencement of work.				
	The contractor shall carry out the works with as little noise and mess as possible. All rubble shall be taken away from site on a daily basis.				
	Note: All designated items should comply with local content threshold.				
1	Compliance with Occupational Health and Safety Act (Act 85 of 1993) and its regulations and with the Employers Health and Safety	Sum	1		
				Carried to final summary	
<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Rate</u>	<u>Amount</u>
	SECTION 2				
	BILL NO. 1				
	ALTERATIONS				
	SUPPLEMENTARY PREAMBLES				
	General				
	Special care shall be exercised during the progress of the work to ensure that any electrical installations, water supply pipes, telephone and other services which may be encountered are not interfered with and notice shall be given to the project manager if any disconnection or alterations become necessary				
	The contractor shall take all precautions necessary to prevent any nuisance from dust whilst carrying out the work				
	Leave in good condition				
	The contractor must leave the existing building, in which the alterations are executed, clean and neat at completion				
	Price shall include removal and disposal of rubble from site				
	REMOVAL OF EXISTING WORK				
	Taking out and removing piping, sanitary fittings, etc. including disconnection piping from fittings				
1	Ceramic pan and cistern	No.	1		
2	Wash hand basin	No.	1		

3	Ceramic urinal basin including flush valve	No.	1		
4	150l to 250l geysers	No.	1		
5	Gutters and downpipes from 125x100mm to 300x200mm	m	1		
6	50mm Upvc piping including fittings and brackets	m	1		
7	38mm PVC piping including fittings and brackets	m	1		
8	25mm Galvanized steel piping including fittings and brackets	m	1		
9	22mm Copper piping including fittings and brackets	m	1		
10	Stainless steel double sink and drainer 1800 x 500mm and steel or timber cupboard	No.	1		
11	15mm whb tap or mixer tap	m	1		
12	22mm Copper piping including fittings and brackets	m	1		
13	Stainless steel double sink and drainer 1800 x 500mm and steel or timber cupboard	No.	1		
				Carried to final summary	
Item	Description	Unit	Quantity	Rate	Amount
	SECTION 2				
	BILL NO. 2				
	PLUMBING WORK				
	SANITARY FITTINGS AND ACCESSORIES				
	uPVC pipes and fittings				
	Soil,waste and vent pipes and fittings shall be solvent weld jointed				
	Copper pipes:				
	Pipes shall be hard drawn and half-hard pipes of the class stated.Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half -hard), class 2 (half-hard) and class 3 (heavy walled half - hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste,vent and anti-syphon pipes,capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground				
	Fixing of pipes				
	Unless specifically otherwise stated,descriptions of pipes shall be deemed to include fixing to walls etc,casting in,building in or suspending not exceeding 1m below suspension level				
	Reducing fittings				
	Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes,reducers,etc will be entertained				
	Wire gratings				
	Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings				
	Exposed concrete surfaces				

	Exposed surfaces of concrete stormwater channels,cover slabs,inspection eye marker slabs,gulley tops,cleaning eye tops,catchpits,inspection chambers,etc shall be finished smooth with plaster				
	Excavations				
	No claim for rock excavation will be entertained unless the contractor has timeously notified the PRASA Representative/Agent thereof prior to backfilling				
	"Soft rock" and "hard rock" shall be as defined in "Earthworks"				
	Laying,backfilling,bedding,etc.of pipes				
	Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers instructions				
	Where manufacturers instructions exist pipes shall be laid in accordance with clause 5.1 and 5.2 of each of the following: SABS 1200 L: Medium-pressure pipelines				
	LD:Sewers				
	LE:Stormwater drainage				
	Pipe trenches etc shall bebackfilled in accrodance with clauses 3,5.5,5.6,5.7 and 7 of SABS 1200				
	LB:Bedding(Pipes)				
	Unless otherwise described bedding of rigid pipes shall be class B bedding				
	Flush pans				
	Flush pans shall have straight or side outlets and "P" or "S" traps as necessary				
	Stainless steel basins,sinks,wash troughs,urinals,etc.				
	Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable				
	SOIL DRAINAGE				
	Upvc pipes				
1	50mm pipes	m	1		
2	50mm pipes chased into brick walls	m	1		
3	110mm Pipes	m	1		
4	110mm Pipes vertically or ramped to cleaning eyes etc (no excavation)	m	1		
5	110mm Pipes laid in and including trenches not exceeding 1m deep	m	1		
6	110mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep	m	1		
	Extra over uPVC pipes for fittings				
7	110 X 50mm Reducer	No	1		
8	110mm Long radius bend	No	1		
9	110mm Access junction	No	1		
10	110mm Gulley "P" trap	No	1		
11	160mm Access junction	No	1		
12	160 x 110mm Reducer	No	1		
13	190 x 110mm Gulley head and grating	No	1		
	Precast concrete gulleys				
14	Precast concrete gulley with 100mm outlet	No	1		

	"Herbish" or other equal approved				
15	Code HB 400 DIA grease trap size 1000 x 400mm diameter including excavation etc	No	1		
	Covers etc				
16	450 x 450mm Heavy duty cast iron single seal manhole cover and frame	No	1		
	Sundries				
17	300 x 300 x 50mm Precast concrete inspection eye marker slab set in ground	No	1		
18	300 x 300 x 50mm Precast concrete frame set in ground around "ABC" cleaning eye with and including steel cover with C.E. marked on top	No	1		
19	100mm Cast iron "ABC" cleaning eye	No	1		
20	Testing drainage pipe system	Item	1		
	RAINWATER DISPOSAL				
	0.8mm Galvanized sheet iron				
21	125 x 100mm Eaves gutters	m	1		
22	Extra over 125 x 100mm eaves gutter for stopped end	No	1		
23	Extra over 125 x 100mm eaves gutter for angle	No	1		
24	Extra over 125 x 100mm eaves gutter for outlet for 100 x 75mm pipe	No	1		
25	100 x 75mm Rainwater pipes	m	1		
26	Extra over 100 x 75mm rainwater pipe for shoe	No	1		
	1.2mm Galvanized sheet iron				
27	300 x 200mm Eaves gutters	m	1		
28	Extra over 300 x 200mm eaves gutter for stopped end	No	1		
29	Extra over 300 x 200mm eaves gutter for angle	No	1		
30	Extra over 300 x 200mm eaves gutter for outlet for 100 x 75mm pipe	No	1		
31	200mm diameter Rainwater pipes	m	1		
32	Extra over 200mm diameter rainwater pipe for shoe	No	1		
	SANITARY FITTINGS				
	Sink and Basins				
33	Franke Projectline Model PLN621 Grade 304 18/10 polished stainless steel double end bowl inset sink (Code: 821048) or other equal approved , overall size 1160 x 460mm wide with two 340 x 370 x 152mm deep bowls, fitted onto cupboard (elsewhere specified) including 38mm waste fitting and PVC traps (traps elsewhere specified).	No	1		
34	KWIKOT Double bowls stainless steel double end bowl inset sink, overall size 1200 x 535mm wide with two 340 x 370 x 150mm deep bowls or other equal approved , fitted onto cupboard (elsewhere specified) including 38mm waste fitting and PVC traps (traps elsewhere specified).	No	1		

35	Franke Projectline Model PLN611 Grade 304 18/10 polished stainless steel single end bowl inset sink (Code: 821047), overall size 800 x 460mm wide with one 340 x 370 x 150mm deep bowl or other equal approved , fitted onto cupboard (elsewhere specified) including 38mm waste fitting and PVC trap (trap elsewhere specified).	No	1		
36	KWIKOT Single bowl stainless steel double end bowl inset sink, overall size 900 x 535mm wide with two 340 x 370 x 150mm deep bowls or other equal approved , fitted onto cupboard (elsewhere specified) including 38mm waste fitting and PVC traps (traps elsewhere specified).	No	1		
37	Franke or other equal approved 0,9mm Grade 304 18/10 stainless steel LDS drip sink (code: 350960) or equal approved, size 600 x 500 x 258mm deep with pressed drip sink bowl, 40mm waste outlet connected to Cobra chromium plated bottle trap (code: 345/40), hinged bucket grid fitted over drip sink, connected to 15mm water supply, fixed to wall on pair of stainless steel Eagle brackets and bolted to wall with 4 No. anchor bolts 600mm from finished floor level.	No	1		
38	Franke 0,8mm Grade 430 17/0 stainless steel ET102 fabricated single wash trough (code: 320200), size 1030 x 430 x 300mm deep with two bowls, wash ridges and 40mm waste outlet, fixed to wall with fixing lugs and anchor bolts.	No	1		
39	KWIKOT Grade 430 17/0 stainless steel double wash trough or other equal approved , size 1030 x 435x 290mm deep with two bowls, wash ridges and 40mm waste outlet, fixed to wall with fixing lugs and anchor bolts.	No	1		
40	Franke or equal approved 0,8mm Grade 430 17/0 stainless steel ET102 fabricated single wash trough (code: 320200) or other equal approved , size 550x 430 x 300mm deep with two bowls, wash ridges and 40mm waste outlet, fixed to wall with fixing lugs and anchor bolts.	No	1		
41	KWIKOT Grade 430 17/0 stainless steel single wash trough, size 545 x 435x 290mm deep with two bowls or other equal approved , wash ridges and 40mm waste outlet, fixed to wall with fixing lugs and anchor bolts.	No	1		
42	Whyte House wall mounted basin with wall mounted push on demand tap - Vandal resistant	No	1		
43	Gypsy Waterborne Wash Hand Basin wall mounted push on demand tap - Vandal resistant	No	1		
44	Vaal "Hibiscus" wall mounted basin with one taphole & Universal half pedestal	No	1		
45	Vaal Sanitaryware Hibiscus vitreous china lavatory basin colour White (Code: 7023), size 510 x 405mm with one taphole including integrated overflow and chainstay hole bolted to wall with two x 10mm bolts (Code: 844820) and including Universal half pedestal with hanger springs (Code: 715221) and sealed with silicone sealant where basin meets wall. To be used in conjunction with paraplegic tap V07 as specified.	No	1		
46	Whyte House wall mounted basin with wall mounted push on demand tap - Vandal resistant	No	1		
47	Gypsy Waterborne Wash Hand Basin with wall mounted push on demand tap - Vandal resistant	No	1		
48	Vaal Sanitaryware Iceberg vitreous china drop-in vanity basin colour White (Code: 7034), size 420 x 420mm fitted into opening in granite vanity top (elsewhere specified) and sealed with silicone sealant where basin rim meets vanity top. To be used in conjunction with push on demand tap as specified V16-V20	No	1		

49	Basin fitted in granite vanity top (elsewhere specified) and sealed with silicone sealant where basin rim meets vanity top. To be used in conjunction with push on demand tap as specified V16-V20	No	1		
50	GYPSY drop-in vanity basin with push on demand tap - Vandal resistant	No	1		
51	Vaal Sanitaryware Iceberg vitreous china drop-in vanity basin colour White (Code: 7034), size 420 x 420mm fitted into opening in granite vanity top (elsewhere specified) and sealed with silicone sealant where basin rim meets vanity top. To be used in conjunction with wall mounted push on demand tap as specified V05-V06.	No	1		
52	Vaal Sanitaryware Hibiscus vitreous china lavatory basin colour White (Code: 7023), size 510 x 405mm with one taphole including integrated overflow and chainstay hole bolted to wall with two x 10mm bolts (Code: 8448Z0) and including Classic floor mounted pedestal (Code: 7150) and sealed with silicone sealant where basin meets wall. To be used in conjunction with cold water or mixer taps as specified, V08-V11.	No	1		
53	Vaal Sanitaryware Bantam vitreous china cloakroom basin colour White (Code: 7030), size 455 x 290mm with one taphole (LHS) including integrated overflow and chainstay hole bolted to wall with two 10mm bolts (Code: 8448Z0) and sealed with silicone sealant where basin meets wall. To be used in conjunction with cold water or mixer taps as specified, V08-V11.	No	1		
54	Gypsy Waterborne Wash Hand Basin with wall mounted push on demand tap - Vandal resistant	No	1		
55	Whyte House Security Wash Hand Basin	No	1		
	WC Pan				
56	Whyte House vandal resistant WC pan	No	1		
57	Gypsy vandal resistant WC pan	No	1		
58	Vaal Sanitaryware vitreous china "Parktown" duct cistern Push button mechanism elsewhere specified. Can be used with any back inlet pan	No	1		
59	Vaal Sanitaryware Oriental vitreous china squat washdown suite (code: 502300) comprising closed rim squat pan with floor plate and integrated raised foot treads including vitreous china Oriental P-trap (code: 220100) and 9 litre cistern (code: 710531), including lid and fitments and plastic 38mm diameter telescopic flush pipe and connector (code: 5022Z1).	No	1		
60	Vaal Sanitaryware Hibiscus vitreous china close coupled suite colour White (Code: 772654), comprising 90° outlet open rim pan (Code: 772600) with matching 9 litre front single flush cistern (Code: 772402) including lid and fitments and Jazz Thermoset seat.	No	1		
61	Vaal Sanitaryware Pearl Paraplegic vitreous china floor mounted paraplegic washdown suite colour White (Code: 7300SC) comprising semi close couple 90° outlet open rim washdown pan and matching 9 litre cistern, including lid, fitments and purpose-made chromium plated side flush lever.	No	1		

62	Vaal Sanitaryware vitreous china Parktown 90 degree outlet top inlet or back inlet. Top inlet can be used with an exposed flushvalve. Back inlet can be used with a concealed cistern, Vaal Sanitaryware duct cistern or a concealed flushvalve. Flush volume 6/3 liters, subject to the pan being installed with a cistern providing an effective 6/3 litre flush volume	No	1		
63	Vaal Sanitaryware Orchid Paraplegic vitreous china wall hung paraplegic back inlet washdown suite colour White, fixed on and including floor bracket (Code: 8082Z0) comprising 90° outlet open rim back inlet pan (Code: 439016) with exposed back inlet flushvalve (elsewhere specified) and Orchid double flap seat (Code: 8520Z0).	No	1		
64	Vandal resistance low level High traffic suite complete (Front flush), suite to includes CC white Cistern made from high strength technoplast polymer with concealed mounting bracket, heavy duty securing bolts, concealed tamper proof lid screws and hiflo MK3 flush valve, including CC Pan and and heavy duty seat.	No	1		
65	Concealed black flushing system vandal resistance low level High traffic suite complete (Front flush), suite to includes CC white Cistern made from high strength technoplast polymer with concealed mounting bracket, heavy duty securing bolts, concealed tamper proof lid screws and hiflo MK3 flush valve, including CC Pan and and heavy duty seat.	No	1		
66	1830 x 1220mm high floor mounted curved manual flush urinal Centre outlet manufactured from stainless steel AISI 304 including 20Mpa/20mm for installation and unreinforced concrete slab	No	1		
	TRAPS ETC				
	"Marley" or other equal approved				
67	Code SST 10 medium seal shower trap with removable domed grid and 50mm waste	No	1		
	"Cobra" or other approved				
68	Code 316-40 CP bath or sink waste with 70mm diameter flange,45mm long shank with backnut,plug,chain and stay,unslotted	No	1		
69	Code 370 38mm bath "P" trap	No	1		
70	Code VA2.360 38MM SINK "P" TRAP	No	1		
71	40mm rough brass shower P trap (Code: 373SQ) with shallow seal and chrome plated square grating.	No.	1		
72	38mm sink "P" trap	No.	1		
73	365/40 CP bottle trap 40 x 40 INC CP/PVC adaptor to 40mm suitable for wash hand basin and urinal ceramic basin	No.	1		
74	110mm pan connector completely	No.	1		
	Cast Iron				
75	50mm Cast Iron medium duty floor drain and grating incl grid and intergral P trap	No	1		
76	100mm Deep seal "P" trap	No	1		
	TAPS,VALVES,ETC				
	Brass				
77	22mm Air relase valve	No	1		

78	42mm Air release valve	No	1		
79	54mm Air release valve	No	1		
	"Cobra Watertech" or other equal approved				
80	22mm Code 128 Under-wall CP Star pattern stop taps	No	1		
81	15mm Code 128 Under-wall CP Star pattern stop taps	No	1		
82	15mm Code 139 "Copcal" capillary type under-wall CP Star pattern stop taps	No	1		
83	15mm 207AM bibcock	No	1		
84	15mm Code 505-21CP Elbow action pillar-tap	No	1		
85	15mm Code no 266/041/10 CP star pattern heavy duty wall type sink mixer	No	1		
86	15mm Cobra no 515/055-21 CP Elbow action wall type medical mixer with straight spout outlet(No.048) without backplate	No	1		
87	15mm Cobra no 508 CP Elbow action single lever wall type medical mixer with swivel outlet	No	1		
88	22mm Code 067S CP bath diverter spout with hand-shower attachment	No	1		
89	22mm Code 206 Toilet Bibtap	No	1		
90	15mm Cobra KP2.51 "Typhoon" CP Self cleaning shower rose with ball joint connection and fitted to CP shower arm	No	1		
91	15mm Cobra KP2.6 "Vanadalmaster" CP vandal-resistant showerhead with self-cleaning nozzle	No	1		
92	15mm Code 026 CP shower arm with fascia plate	No	1		
93	Cobra 232-10 CP angle regulating valve,outlet 10mm bore with nut and ring	No	1		
94	15mm code 1080 fullwayballcock	No	1		
95	28mm code 1080 fullway ballcock	No	1		
96	15mm "Prestex" SABS 776-1975 class 8 isolating valve	No	1		
97	22mm "Prestex" SABS 776-1975 class 8 isolating valve	No	1		
98	28mm "Prestex" SABS 776-1975 class 8 isolating valve	No	1		
99	32mm "Prestex" SABS 776-1975 class 8 isolating valve	No	1		
100	42mm "Prestex" SABS 776-1975 class 8 isolating valve	No	1		
101	54mm "Prestex" SABS 776-1975 class 8 isolating valve	No	1		
102	28mm Non Return valve	No	1		
103	PB1.1ORB vacuum breaker	No	1		
104	22mm Code "004Selecta" CP handshower attachment comprising No.28315 adjustable handshower, No.008/4C flexible tubing 1250mm long and No.0006S-20 conical cradle	No	1		
105	Cobra no 481 CP Basin set,comprising one pair pillar taps No 211,one basin waste , plug,chain,stay and bacjnut No 301	No	1		
106	22mm Code FJ6.00 "Flushmaster Junior" urinal flushvalve complete with connector,spray rose(Code FJT 5.4) and wallplate	No	1		

107	Code PA5.1 "Masterbox 1" House water station consisting of an isolating valve, strainer, combination pressure reducing valve (400kPa) and expansion relief valve with discharge over funnel	No	1		
108	WALCRO 155 UWS or equal approved 15mm Ø BSP built-in sleeve, DZR brass urinal flush valve with internal flow control, strainer and no-hold feature for single bowl urinal.	No	1		
	"Walker Croweller" or other equal approved				
109	20mm "Aquamix" anti scald proportional thermostatic mixing and diverting valve	No	1		
	SANITARY PLUMBING				
	Cast iron pipes				
110	110mm Pipes laid in and including trenches not exceeding 1m deep	m	1		
	Extra over cast iron pipes for fittings				
111	110mm Adaptor	No	1		
112	110mm Steel to PVC Adaptor	No	1		
113	110mm Bend	No	1		
114	110mm Reducer	No	1		
	PVC pipes				
115	38mm Pipes	m	1		
116	50mm Pipes	m	1		
117	50mm Pipes laid in and including trenches not exceeding 1m deep	m	1		
118	110mm Pipes	m	1		
119	110mm Pipes laid in and including trenches not exceeding 1m deep	m	1		
	Extra over PVC pipes for fittings	No	1		
120	50mm Bend				
121	50mm Access bend	No	1		
122	50mm Access Junction	No	1		
123	50mm "GI ONE-WAY" vent valve	No	1		
124	110mm Access bend	No	1		
125	110mm Long radius bend	No	1		
126	110mm Access Junction	No	1		
127	110mm Reducing Access Junction	No	1		
128	110mm Double Reducing Access Junction	No	1		
129	110mm Reducer	No	1		
130	110mm Pan connector	No	1		
131	110mm Deep seal "P" or "S" trap	No	1		
132	110mm "GI Two way" vent valve	No	1		
	Sundries				
133	Testing waste pipe system	Item			
	WATER SUPPLIES				
	Class "O" copper pipes				

134	15mm Pipes	m	1		
135	15mm Pipes chased into brick walls	m	1		
136	22mm Pipes	m	1		
137	22mm Pipes chased into brick walls	m	1		
138	28mm Pipes	m	1		
139	28mm Pipes chased into brick walls	m	1		
140	32mm Pipes	m	1		
141	42mm Pipes	m	1		
142	54mm Pipes	m	1		
	Extra over class "O" copper pipes for capillary fittings				
143	15mm Fittings	No	1		
144	22mm Fittings	No	1		
145	28mm Fittings	No	1		
146	32mm Tee	No	1		
147	32mm Bend	No	1		
148	32mm Reducer	No	1		
149	42mm Bend	No	1		
150	42mm Tee	No	1		
151	42mm Reducer	No	1		
152	54mm Bend	No	1		
153	54mm Tee	No	1		
154	54 mm Reducer	No	1		
	Extra over class "O" copper pipes for brass compression fittings				
155	15mm Fittings	No	1		
156	22mm Fittings	No	1		
157	28mm Fittings	No	1		
	Copper overflow and service pipes				
158	15mm Service pipe 500mm girth	No	1		
	ELECTRIC WATER HEATERS				
	Supply, deliver and install Electrical geysers with all other accessories "Zip" or other equal approved				
159	Model 10/60 Hydroboil	No	1		
	"Kwikot" or ther equal approved				
160	10 Litre "Prisma" or equally approved 2kw non pressure undersink geyser	No	1		
161	5 Litre "Prisma" or equally approved 2kw non pressure undersink geyser	No	1		
162	50 Litre 2kw horizontal high pressure steel type electric water heater with 400kPa safety valve, "Masterflow' pressure control valve,balanced cold water feed with vacuum breaker and isolating valve complete as supplied	No	1		

163	250 Litre 4kw horizontal high pressure steel type electric water heater with 400kPa safety valve, "Masterflow' pressure control valve,balanced cold water feed with vacuum breaker and isolating valve complete as supplied	No	1		
164	150 Litre 4kw horizontal high pressure steel type electric water heater with 400kPa safety valve, "Masterflow' pressure control valve,balanced cold water feed with vacuum breaker and isolating valve complete as supplied	No	1		
	0.6mm Galvanised sheet steel				
165	700 x 600mm Drip tray with 100mm high upstand with top edge bent over all round including 50mm diameter overflow pipe 5000mm long approximately 2m above ground level	No	1		
166	1500 x 600mm Drip tray with 100mm high upstand with top edge bent over all round including 50mm diameter overflow pipe 5000mm long approximately 2m above ground level	No	1		
	TESTING				
167	Testing water pipe system		Item		
	"Chubb" or other equal approved				
168	"Everyway" hose reel complete with 30m plastic hose,chromium plated stopcock,shut-off nozzle and wall bracket	No	1		
169	4.5kg Dry chemical fire extinguisher	No	1		
170	9kg Dry chemical fire extinguisher	No	1		
	WATER SUPPLIES TO FIRE APPLIANCES				
	High density polyethylene class 16 pipes				
171	32mm Bend				
	Galvanized steel pipes				
172	25mm Fittings				
173	32mm Fittings				
174	40mm Bend				
175	40mm Reducer				
	Sundries				
176	Testing fire water pipe system		Item		
177	1.5 L/sec @ 400KPa Fire hose reel booster pump	No	1		
	LAGGING				
	"Thermafex" or other equal approved pipe insulation				
178	Insulation to 54mm pipe couplings	m	1		
179	Insulation to 42mm pipe couplings	m	1		
180	Insulation to 32mm pipe couplings	m	1		
181	Insulation to 28mm pipe couplings	m	1		
182	Insulation to 22mm pipe couplings	m	1		
183	Extra wrapping around 54mm fittings	No	1		
184	Extra wrapping around 42mm fittings	No	1		
185	Extra wrapping around 32mm fittings	No	1		

