

**PART 9 REQUIREMENTS OF HOUSING SECTOR**

CODE	ITEM	UNIT	QTY.
12-02-00001	<p><b>1) <u>Galvanized Steel Pipes And Fittings</u></b>  Galvanized steel pipes and fitting conforming to BS 1387 or equivalent with 10 bar working pressure, all joints shall be screwed to B.S. 21 up to 50mm diameters, on large diameters (65mm and over) flanged joints shall be used.</p> <p>Flange shall be conforming to B.S 4504 part 1.</p>		
	<p>1-1) Piping:-    ö 15 mm (6m length /piece)</p> <p align="center">                  ö 20 mm                    ö 25 mm                    ö 32 mm                    ö 40 mm                    ö 50 mm                    ö 65 mm                    ö 75 mm                    ö 100 mm</p>	<p>Pieces</p> <p align="center">=</p> <p align="center">=</p> <p align="center">=</p> <p align="center">=</p> <p align="center">=</p> <p align="center">=</p> <p align="center">=</p> <p align="center">=</p>	<p>2500</p> <p align="center">2000</p> <p align="center">1500</p> <p align="center">1000</p> <p align="center">1000</p> <p align="center">1500</p> <p align="center">1000</p> <p align="center">1000</p> <p align="center">500</p>
	<p>1-2) Ditto:- but with 15 bar working pressure</p> <p align="center">                  ö 100 mm (6m length / piece)</p> <p align="center">                  ö 150 mm</p>	<p>Pieces</p> <p align="center">=</p>	<p>500</p> <p align="center">300</p>
12-02-00002	<p><b>2) <u>Copper Pipes And Fittings</u></b></p>		
	<p>2-1) Copper tubes and compression or capillary fittings to BS 2871 part 1 table x</p> <p align="center">                  ö 10 mm                    ö 15 mm                    ö 22 mm                    ö 28 mm                    ö 35 mm                    ö 42 mm                    ö 54 mm                    ö 67 mm                    ö 76.1 mm                    ö 108 mm                    ö 159 mm</p>	<p>M.L</p> <p align="center">=</p> <p align="center">=</p> <p align="center">=</p> <p align="center">=</p> <p align="center">=</p> <p align="center">=</p> <p align="center">=</p> <p align="center">=</p> <p align="center">=</p> <p align="center">=</p>	<p>5000</p> <p align="center">7500</p> <p align="center">7500</p> <p align="center">7500</p> <p align="center">5000</p> <p align="center">5000</p> <p align="center">5000</p> <p align="center">5000</p> <p align="center">6000</p> <p align="center">4000</p> <p align="center">3500</p>
	<p>2-2) Ditto:- but to BS 2871 part 1 table T with fittings</p> <p align="center">                  ö 35 mm</p>	<p>M.L</p>	<p>3000</p>

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CODE	ITEM	UNIT	QTY.
	Ö 42 mm Ö 54 mm Ö 67 mm Ö 76.1 mm Ö 108 mm	= = = = =	3000 5000 4000 4000 3500
12-02-00003	<p><b>3) <u>Ductile Iron Pipe And Fittings</u></b></p> <p>Ductile iron pipes and fittings according to BS 4772 jointing should be flanged type with rubber gasket with 15 bar working pressure.</p>		
	Ö 75 mm (6 m length / piece)	Pieces	500
	Ö 80 mm Ö 100 mm Ö 125 mm Ö 150 mm Ö 200 mm Ö 250 mm Ö 300 mm Ö 350 mm Ö 400 mm	= = = = = = = =	2500 5500 750 4000 2500 1500 1500 1500 1000
12-02-00004	<p><b>4) <u>Cast Iron Pipes And Fittings</u></b></p>		
	<p>4-1) Socketless cast iron pipes and fittings in accordance with BS 437 or equivalent for drain pipes and fittings complete with coupling and rubber gasket</p>		
	Ö 50 mm (3m length / piece)	Pieces	1000
	Ö 75 mm Ö 100 mm Ö 150 mm Ö 200 mm Ö 250 mm Ö 300 mm	= = = = = =	500 1250 1000 1000 1200 750
	<p>4-2) Ditto, but conform to BS 416 for soil, waste and ventilation</p>		

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CODE	ITEM	UNIT	QTY.
	Ö 50 mm (3m length / piece)	Pieces	750
	Ö 75 mm	=	500
	Ö 100 mm	=	1000
	Ö 150 mm	=	500
	Ö 200 mm	=	350
	4-3) Ditto, but conform to BS 460 for roof drainage		
	Ö 75 mm (3m length / piece)	Pieces	250
	Ö 100 mm	=	750
	Ö 150 mm	=	300
	4-4) Ditto, but for roof outlets		
	- vertical type		
	Ö 75 mm	NOS	50
	Ö 100 mm	=	100
	Ö 150 mm	=	70
	- horizontal type		
	Ö 75 mm	NOS	50
	Ö 100 mm	=	100
	Ö 150 mm	=	60
	cast iron double branch under ground	190	pcs
	cast iron double branch above ground	400	pcs
	cast iron offset bend under ground	110	pcs
	cast iron offset bend above ground	220	pcs
	cast iron bend 45' under ground	1,650	pcs
	cast iron bend 45' above ground	3,300	pcs
	cast iron bend 87' under ground	1,900	pcs
	cast iron bend 87' above ground	3,800	pcs
	cast iron short pipe with door above ground	1,100	pcs
	cast iron single reducing branch 45' under ground	850	pcs
	cast iron single reducing branch 45' above ground	1,700	pcs
	cast iron single branch 45' under ground	1,020	pcs
	cast iron single branch 45' above ground	2,050	pcs
	cast iron single branch 87' 30' under ground	1,020	pcs
	cast iron single branch 87' 30' above ground	2,050	pcs
	cast iron single reducing branch 87' 30'	800	pcs
	cast iron single reducing branch 87' 30'	1,600	pcs
	cast iron right angle double branch under ground	200	pcs

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CODE	ITEM	UNIT	QTY.
	cast iron right angle double branch above ground	400	pcs
	cast iron bend 22' under ground	45	pcs
	cast iron bend 22' above ground	85	pcs
	cast iron bend 67' 30 under ground	45	pcs
	cast iron bend 67' 30 above ground	85	pcs
	cast iron double reducing branch 67' 30 under ground	60	pcs
	cast iron double reducing branch 67' 30 above ground	200	pcs
	cast iron trap under ground	800	pcs
	cast iron trap above ground	1,600	pcs
	cast iron plug above ground	870	pcs
	cast iron coupling clamp under ground	15,250	pcs
	cast iron coupling clamp above ground	21,500	pcs
	cast iron hang type 802 above ground	4,000	pcs
	cast iron hang type 401 above ground	4,000	pcs
	cast iron universal plug under ground	1,100	pcs
	cast iron stepping ring above ground	160	pcs
	cast iron pipes according to BS 877 dia 50 mm	1,500	pcs
	cast iron pipes dia 75 mm	1,250	pcs
	cast iron pipes dia 100 mm	3,500	pcs
	cast iron pipes dia 150mm	1,800	pcs
	cast iron pipes dia 200 mm	1,100	pcs
<b>12-02-00005</b>	<p><b>5) Sectional Pressed Steel Tanks</b></p> <p>Sectional pressed steel tanks shall be consists of (1x1)m dimensions galvanized plates modular or (1.22 x 1.22) m to BS 1564. All plates shall be of 6 mm thickness, the cover shall be of 3 mm thickness. The tanks have compartments. The tank plate shall be of external flange construction and bolting with suitable gasket materials. All piping connections shall be flanged type.</p> <p>The tank should be provided with all necessary accessories such as floats ventilators, manhole opening, inside and outside ladder, over flow and drain pipes with level indicator .... Etc.</p> <p>Strip jointing must be provided for all joints.</p> <p>5-1) Pressed steel tank of 100 m<sup>3</sup></p> <p>5-2) Pressed steel tank of 280 m<sup>3</sup></p>		
<b>12-02-00006</b>	<p><b>6) Water Service Booster Pump Set</b></p> <p>6-1) Three centrifugal pumps, direct coupled,</p>		

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CODE	ITEM	UNIT	QTY.
	<p>end suction type arranged to run as two duty/one standby. The pumps have the following specifications:            Q= 15m<sup>3</sup>/hr - H= 65m            Casing:- cast iron            Impeller:- bronze            shaft:- stainless steel            Seal:- mechanical            Insulation:- class F            IP:- 54 suitable for 380V/ 3pH/ 50Hz            6-2) Two pneumatic pressure vessel of 2m<sup>3</sup> capacity and 10 bar working pressure. complete with oil free compressor            6-3) All necessary accessories such as isolating valves on suction and discharge, non return valves, pressure and flow gauges, pressure swtiches...etc.            6-4) Control panel            The whole assembly shall be mounted on a purpose mode base from complete with steel pipe work, pipe supports and lifting lugs.</p>	unit	1
12-02-00007	<p><b>7) <u>Fire Fighting Pumps Set (Wetriser)</u></b>            7-1) Ditto, as item 6-1, but two multistage pumps (horizontal type, one duty / one stand by)            Q= 90 m<sup>3</sup>/hr            H= 90M            7-2) Ditto, as item 6-1, but one pump multistage vertical type with Q= 10m<sup>3</sup>/hr            H= 90M (as Jocky pump)            7-3) Ditto, as item 6-3            7-4) Ditto as item 6-4</p>	unit	1
12-02-00008	<p><b>8) <u>Fire Fighting Pumps Set (Hose Reel)</u></b>            Ditto, as item (7), but without providing Jocky pump.            H=75m            Q= 8m<sup>3</sup>/hr -</p>	unit	1
12-02-00009	<p><b>9) <u>Drainage Submersible Pumps Set</u></b></p>		

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CODE	ITEM	UNIT	QTY.
	<p>Fully automatic drainage pump set, comprises of two pumps, non clogging type, motor squirrelcage, 3pH with class F insulation, complete with guide rails for retaining pump position, and chain shall be attached to the pump. The set shall be complete with isolating valves, non return valves, pressure switches...etc. Electrical floats shall be provided to control water level.</p> <p>Casing:- cast iron Impeller:- cast iron shaft:- stainless steel Seal:- mechanical</p> <p>9-1) Q= 25m<sup>3</sup>/hr - H=10M 9-2) Q= 20m<sup>3</sup>/hr - H=12M 9-3) Q= 15m<sup>3</sup>/hr - H=12M 9-4) Q= 10m<sup>3</sup>/hr - H= 10M 9-5) Q= 5m<sup>3</sup>/hr - H=12M</p>	unit	10
12-02-00010	<p><b>10) Sewage Submersible Pumps</b></p> <p>Ditto for sewage submersible pumps:</p> <p>10-1) 20m<sup>3</sup>/hr - H=10M 10-2) 10m<sup>3</sup>/hr - H=10M 10-3) 5m<sup>3</sup>/hr - H=12M 10-4) 3m<sup>3</sup>/hr - H=12M</p>	unit	10
12-02-00011	<p><b>11) Circulating Pumps Units</b></p> <p>Electrically driven inline circulator pumps with vairable velocities. Motor of non-over loading characteristics with by passarrangement, valves, timer... etc. The unit shall be complete with control panel.</p> <p>Q= 5m<sup>3</sup>/hr - H=12</p>	unit	8
12-02-00012	<p><b>12) Make-up Boosting Pumps Set (Cooling Tower)</b></p> <p>Ditto as item 6 but with the following specification:-</p> <p>Q= 20m<sup>3</sup>/hr H= 35M</p> <p>Complete with two diaphragm pressure vessel of capacity 500 liter per each.</p>	unit	1
12-02-00013	<p><b>13) Water Softener</b></p> <p>Fully automatic duplex water softener complete with necessary accessories such as piping, valves, flow meters, pressure gauges complete with control panel ... etc.</p>		

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CODE	ITEM	UNIT	QTY.
	Flow rate= 20m <sup>3</sup> /hr Inlet pressure= 1.5bar working pressure= 10bar	unit	1
<b>12-02-00014</b>	<b><u>14) Heavy Duty Filters</u></b> Fully automatic packaged unit high rate muliti-layered sand filters complete with main operating valves , pipes and fitting ,flow control , controls, filter media and accessories such as pressure gauges ,cocks for inlet and outlet with 10 bar working pressure.  14-1) Flow rate 30 m3/hr 14-2) Flow rate 60 m3/hr	No. No.	1 1
<b>12-02-00015</b>	<b><u>15) Actived carbon Filters</u></b> Ditto , but with activated carbon beds with 10 bar working pressure 15-1) Flow rate 25 m3/hr 15-2) Flow rate 50 m3/hr	No. No.	1 1
<b>12-02-00016</b>	<b><u>16) Cast iron adaptor</u></b>  16-1) Cast iron ( mentioned in item 4 ) adaptor to be connected with upvc pipes conform to BS 4514 . For soil and ventilating pipe : 50 mm 75 mm 100 mm	Nos Nos Nos	100 80 100
	150 mm 200 mm 16-2) Ditto but be connected with pvc pipes  50 mm 75 mm 100 mm 150 mm	Nos Nos  Nos Nos Nos Nos	60 45  150 75 90 50
<b>12-02-00017</b>	<b><u>17) Flexible Hose</u></b> 17-1) Rubber flexible hose used for connection between sanitary fixture and feeding water pipes :- working pressure 3.5 bar diam 15 mm 17-2) Ditto, but copper hose working pressure 7 bar diam 15 mm	Nos. Nos.	300 500
<b>12-02-00018</b>	<b><u>18) Sanitary Fixtures</u></b> Vitrus china (or equivelant) sanitary fixtures of white colour .All fixtures shall be of the best quality .	Nos	80

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CODE	ITEM	UNIT	QTY.
	18-1) Eastern style we ( Ø100 mm s trap) supplied with vitrus china cistern of 14 lit capacity complete with ball valve and float .All wcs shall be provided with accessories.		
	<p>18-2) Ditto , but "P" trap</p> <p>18-3) Ditto , but westeren style wc supplied with cast iron cistern of 14 lit-capacity complete with ball valve and flood, chain.All wc's shall be provided with Ø32 mm flush pipe and Ø15 mm chromium flexible hose of 0.75m length and 3.5 bar resisting pressure.The hose completed with 10 mm chromium nozzle.</p> <p>18-4) Ditto ,but wash basin complete with vitrus china stands, shelves and soap trys.All the wash basins shall be provided with:-</p> <p>Ø25mm chromium bottle (or"p") trap Ø15mm chromium plated mixer and 3.5 bar resisting pressure</p> <p>18-5) Ditto ,but bedit complete with:- - Ø 40 mm chromium plated bottle trap ( or 'P')</p> <p>- Ø15 mm chromium mixer and 3.5 bar resisting pressure.</p>	<p>Nos</p> <p>Nos</p> <p>Nos.</p> <p>Nos.</p>	<p>75</p> <p>70</p> <p>300</p> <p>100</p>
	<p>18-6) Cast iron shower tray , complete with Ø15 mm chromium plated mixer with 15 mm flexible chrom. Hose ended with chrom head, shower ( resisting pressure 3.5 bar ) .The flexible hose has the alternative of being fixed on wall.Complete with all accessories such as soap tray ...etc</p> <p>- Tray size 800x800</p> <p>18-7) Ditto, but bath tub , complete with Ø15 mm chromium mixer with 15 chromium tube with head shower .The bath shall be provided with MM 15 chromium flexible hose ended with shower . All the bath tubs shall be provided with accessories such as soap tray , chromium handle , Ø40 mm chromium bottle 'p' trap</p> <p>18-8) Ditto as 18-5, but for urinal complete with</p> <p>- 9 lit vitrus china automatic cisternen complete with flushing pipe</p>	<p>Nos</p> <p>Nos</p>	<p>100</p> <p>50</p>



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CODE	ITEM	UNIT	QTY.
	- Ø32 mm chromium plated bottle trap ('p' trap ) - partitions	Nos	60
12-02-00019	<b>19) Grease Trap</b> Cast iron grease trap with Ø100 MM mm outlet with access at ground level, supplied with single seal cover and frame and screwed flange for Ø50 mm vent , supplied with galvanized sediment pans .	Nos	30
12-02-00020	<b>20) Covers and Frames</b> 20-1) Medium duty double sealed cast iron cover and frames with the following size :  Ø 550 mm - 600 x 450 mm - 900 x 600 mm  20-2) Ditto, but heavy duty - Diam 550 mm  20-3) Ditto, but heavy medium grating and frames 600 x 450 20-4) Ditto, but for Hydrant cover and frame 500 x 350  20-5) Ditto, but special purpose covers and frames have a single seal and supplied with 4 brass screws.	Nos. Nos. Nos.  Nos.  Nos.  Nos.	120 50 70  200  100  100
12-02-00021	The top is recessed for filling to material match the surrounding surfaces. 20-6) Ditto, but roadway gratings and frames 500 x 350 20-7) Ditto, but heavy duty cast iron channel grating , supplied with lugs cast at 30 cm centers. Size 100 x 30 cm	Nos.  Nos.  Nos.	75  500  500
12-02-00021	<b>21) Pillar Fire Hydrant</b>		

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CODE	ITEM	UNIT	QTY.
	<p>21-1) A pillar fire hydrant consists of a body equipped with "3" nozzles , one forward Ø100 mm and two side ways Ø65 mm . The body projects a bove ground level .The valve box containing the closure device below ground between these two main 100 mm diam. stand pipe , the hydrant shall be completed with a screw - down system for opening and closing , automatic drainage device and on air inlet device . All the iron fire hydrant are coated with red polyurethane paint , the threading shall be to BS 750</p> <p>21-2) Ditto, but consists of 2 nozzels Ø80 mm forward nozzel and Ø65 mm side way nozzel</p>	Nos.	50
	<p>21-3) Ditto , but fire and washing hydrant consists of iron body . The box enclosing on outlet nozzel . It has a detachable ductile iron with+B359 lid.</p> <p>80 mm hydrant with 65mm nozzel</p>	Nos	50
12-02-00022	<p><b><u>22) Hose Real &amp; Wet Riser / Cabinet</u></b></p> <p>22-1) Hose real cabinet accomodates a manually or automatically operated swinging hose reel which can be combined with a matching wer riser or extinguisher cabinet .</p> <p>Door have right opening and swing through a full 180 :</p> <p>Size :- 1350 x 810 x 355 mm</p> <p>Construction :- steel . Door panel shall be provided with stainless steel finger panel</p> <p>Capacity :- 30 x 19 mm dia</p> <p>Nozzle :- jet ( hose reel )</p> <p>Pressure:- max. operation pressure 10 bar</p>	Nos.	25
	<p>22-2) Ditto, swinging open wall hose reel</p> <p>Diam:- 560 mm</p> <p>Overall height:- 610 mm</p> <p>Width:- 250 mm</p>	Nos.	10
12-02-00023	<p><b><u>23) Dimener lized water</u></b></p> <p>Full automatic , Duplex Dimenerlizer complete with necessary accessories such as piping ,</p>		

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CODE	ITEM	UNIT	QTY.
	regulating valves , valves , flow meters , pressure gauges complete with control panel ....etc. - flow meter 25 m3/hr - inlet pressure 1.5 bar - working presure 10 bar	set	1
12-02-00024	<u>24) Distilled Water</u>  Ditto , but Duplex Distiller , but of flow rate 20 m3/hr	set	1
12-02-00025	<u>Centrifugal Water Chiller</u> Type - Centrifugal , water cooled <u>Compressor and motor</u> The compressor - motor combination shall be Hermatic construction complete with starter and capacitor for power factor correction .The motor power is 3 phase 380 volt, 50 HZ with main power factor of o.91 at full load <u>Cooler and Condenser</u> Cooler and condenser shall be shell and tube designed for ( 10 ) atm water side working pressure <u>Control Panel</u> Automatic control panel shall be electronic type including all safety devices. <u>Evaporator Data</u> Fouling factor =0.0002 m2.hr.Cú/Kcal Ent. Water temp . =11.6Cú Leav. Water temp . =6 Cú Max. water pressure drop =6 M.water Gauge <u>Condenser Data</u> <u>Fouling factor= 0.0004</u> m3.hr.Cú/kcal Ent. Water Temp = 29.4 Cú Leav. Water Temp =35 Cú Max. water pressure drop =7 M.water Gauge Capacity		
	1200 000 kcal/hr ( 400 ton )	4	Nos.
12-02-00026	<u>Hot Water Boiler</u> Type IN LINE		

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CODE	ITEM	UNIT	QTY.
	<p>Electric  <u>Tank</u>                      shall be constructed from low carbon steel -                      working                      pressure 7.5 bar  <u>Heating</u>                      Elements shall be of immersion type copper                      sheath of                      11.6 watt/cm2 max.density  <u>Control</u>                      proportional temperature control with multi -                      step control                      complete with control board and all safety                      devices                      capacity 650 kw</p>	Nos	4
12-02-00027	<p><u>Pumps</u>  <u>Type</u>                      End - section centrifugal oase mounted ,                      direct coupled  <u>Impeller Material</u>                      Bronze                      Shaft material                      stainless steel                      seal -Mechanical  <u>Motor</u>                      squirrel cage, drip proof type 1450 R.P.M  <u>Base Material</u>                      cast iron or welded steel                      chiled water pump capacity 61 L/S                      Head 45 m                      Hot water pump capacity 14 L/S                      Head 42 m                      Condenser water pump                      capacity 76 - L/S                      Head 18 m</p>	Nos.	4  4  4
12-02-00028	<p><u>Cooling Tower</u>  <u>Type- outdoor</u>                      forced draft  <u>casing - hot dip</u>                      galvanized steel of min thickness 1.6 mm  <u>Louvers , eliminators</u>                      and air inlet screen are hot dip galvanized                      steel                      Full: shall be polyvinal</p>	nos	4
	<p><u>Basin-</u>                      shall be hot dip galvanized steel of min -                      thickness 3.5 mm</p>		

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CODE	ITEM	UNIT	QTY.
	<u>Water distribution system</u> shall be galvanized steel pipes with bronze non - clog spray nozzles <u>Motors</u> Outdoor use with class " F" insulation <u>Electric power</u> 3 phase / 380v/50HZ <u>Water Temp</u> IN- 35 Cú out 29.4 Cú <u>Out door wet bulb</u> temp- 27 Cú Heat Rejection Capacity 1500 000 K cal/ HR	Nos	4
12-02-00029	<u>Roof Top Packaged</u> A/C unit - Air Cooled Max ambient outdoor working temp -52Cú Entering Air temp to condenser -46Cú Unit shall be complete with filter thermostat Capacity 69000 kcal/hr Capacity 56000 kcal/hr Capacity 45000 kcal / hr Capacity 33000Kcal / hr	Nos. Nos. Nos. Nos.	10 8 8 6
12-02-00030	<u>Roof Ventilator</u> Horizontal discharge Power 400v/3ph/50 hz Unit shall be complete with back draught shutter, bird guard local isolating switch and speed control External static pressure 6mm .W.G Capacity 1200 m3/hr Capacity 2000 m3/hr Capacity 3000 m3 /hr Capacity 4000 m3/hr	Nos. Nos. Nos. Nos.	10 10 10 10
12-02-00031	<u>Supply Air Linear slot diffuser</u> <u>Diffuser shall be constructed from Aluminum natural colour</u>		
	slot width 19mm integral volume control damper,fully adjustable from the face of the diffuser <u>complete with air deflection blades, mounting bracket.</u>		

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CODE	ITEM	UNIT	QTY.
	A) 3 SLOT	M.L	1000
	B) 4 SLOT	M.L	1000
	C) 5 SLOT	M.L	600
12-02-00032	<b><u>Supply Air square diffuser</u></b> <u>alumin. construction</u> <u>complete with volume control damper of</u> <u>opposed blade type</u> A) size (neck)mm 225x225 B) 300x 300 C)375 x 375	Nos. Nos. Nos.	200 300 300
12-02-00033	<b><u>Supply Air Register</u></b> aluminum construction with volume control damper. adjustable front horizontal bars and rear vertical adjus. bars neck size ( B x H) mm 400 x 150 500 x 150 600 x 150 700 x 150 800 x 200 900 x 200	Nos. Nos. Nos. Nos. Nos. Nos.	100 100 100 100 100 100
12-02-00034	<b><u>Exhaust Air Valve</u></b> shall be aluminum white colour complete with counter frame nominal diameter mm Diam. 100 Diam. 150	Nos. Nos.	20 20
12-02-00035	<b><u>Piping</u></b> Black steel class B,schedule 40,with 10.5 Kg/cm2, seamless with fittings.B432 pipe size(mm diam.) 300 250 200 150 125 100 80 65 50	M.L M.L M.L M.L M.L M.L M.L M.L M.L	500 1000 2000 2000 2000 3000 3000 3000 5000
	40	M.L	5000
	32	M.L	5000
	25	M.L	5000
	20	M.L	5000

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CODE	ITEM	UNIT	QTY.
	15	M.L	5000
12-02-00036	<p><b><u>VALES</u></b>  cast iron gate valve with flanges 10.5  kg/cm2  Ö250 mm  Ö200 mm  Ö150 mm  Ö125 mm  Ö100 mm  Ö80 mm  Ö65mm  Bronze gate valve serewed end- non-rising  stem  Ö50 mm  Ö40mm  Ö32 mm  Ö25mm  Ö20 mm  Ö15 mm</p>	Nos. Nos. Nos Nos Nos Nos Nos Nos Nos Nos Nos Nos	50 60 60 60 60 40 40  100 100 100 100 100 200
12-02-00037	<p><b><u>Galvanized sheet steel</u></b>  Galvanized sheet steel (duct material)  U.S steel gouge  18  20  22  24</p>	TON TON TON TON	25 50 50 25
12-02-00038	<p><b><u>Duct thermal insulation</u></b>  fiber glass.flexible blanket type.25mm thick  with vapour barrier consisting of Ö 0.05mm  aluminium : foil reinforced with kraft paper  and glass fibre .Density of 24 kg per cubic  meter</p>	M <sup>2</sup>	100 000
12-02-00039	<p><b><u>Pipe insulation</u></b>  sectional fibre glass with aluminum density  of 48 kg/m3, factor applied vapour barrier  jacket of minimum 0.05 aluminium foil  laminated to kraft paper reinforced with  glass fibers.   insulation nominal  thickness  _____Bore(mm)  mm  up to 65</p>		
	40		80-150
	50	200 and	larger
	size (mm diam.)		

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CODE	ITEM	UNIT	QTY.
	300	M.L	500
	250	M.L	1000
	200	M.L	2000
	150	M.L	2000
	125	M.L	3000
	100	M.L	3000
	80	M.L	3000
	65	M.L	5000
	50	M.L	5000
	40	M.L	5000
	32	M.L	5000
	25	M.L	5000
	20	M.L	5000
	15	M.L	5000
<b>12-02-00040</b>	<b>CABLES &amp; WIRES</b>		
	<u>A) Power cables: -</u>		
	Low tension cables stranded copper conductors, PVC insulated, all cores colour coded PVC inner sheath, high impact PVC outer sheath black, rated voltage		
	600/1000v generally to BS 6346 or to VDE 0271 NYY-J 0.9.86.		
	A-1) 4 x 2.5 mm <sup>2</sup> NYY-J	M.L	5000
	A-2) 4 x 4 mm <sup>2</sup> NYY-J	M.L	5000
	A-3) 4 x 6 mm <sup>2</sup> NYY-J	M.L	5000
	A-4) 4 x 10 mm <sup>2</sup> NYY-J	M.L	5000
	A-5) 4 x 16 mm <sup>2</sup> NYY-J	M.L	5000
	A-6) 3 x 25 + 16 mm <sup>2</sup> NYY-J	M.L	5000
	A-7) 3 x 35 + 16 mm <sup>2</sup> NYY-J	M.L	6000
	A-8) 3 x 50 + 25 mm <sup>2</sup> NYY-J	M.L	5000
	A-9) 3 x 95 + 50 mm <sup>2</sup> NYY-J	M.L	5000
	A-10) 3 x 120 + 70 mm <sup>2</sup> NYY-J	M.L	5000
	A-11) 3 x 150 + 70 mm <sup>2</sup> NYY-J	M.L	5000
	A-12) 3 x 240 + 120 mm <sup>2</sup> NYY-J	M.L	3000
	A-13) 3 x 300 + 150 mm <sup>2</sup> NYY-J	M.L	3000
	A-14) 4 x 6 mm <sup>2</sup> PVC/SWA/PVC	M.L	5000
	A-15) 4 x 10 mm <sup>2</sup> PVC/SWA/PVC	M.L	5000
	A-16) 4 x 16 mm <sup>2</sup> PVC/SWA/PVC	M.L	5000
	A-17) 3 x 25 + 16 mm <sup>2</sup> PVC/SWA/PVC	M.L	5000
	A-18) 3 x 35 + 16 mm <sup>2</sup> PVC/SWA/PVC	M.L	5000
	A-19) 3 x 50 + 25 mm <sup>2</sup> PVC/SWA/PVC	M.L	5000
	A-20) 3 x 70 + 35 mm <sup>2</sup> PVC/SWA/PVC	M.L	5000
	A-21) 3 x 70 + 35 mm <sup>2</sup> NYY-J	M.L	5000
	<u>B) Wires:</u>		
	Single wires, copper stranded core PVC insulated, rated 700 permanent and 160c		



**PART 9 REQUIREMENTS OF HOUSING SECTOR**

CODE	ITEM	UNIT	QTY.
	short circuit, rated voltage 450/750v generally to BS 6004 or to vde 0250 type nya Packing: 100 yds each coil in specified. colours B-1) 2.5 mm <sup>2</sup> Red Black Blue Yellow Grn/Ylw  B-2) 1.5 mm <sup>2</sup> Red Black Blue Yellow Grn/Ylw B-3) 4mm <sup>2</sup> Red Black Blue Yellow Grn/Ylw B-4) 6mm <sup>2</sup> Red Black Blue Yellow Grn/Ylw	Coils Coils Coils Coils Coils  Coils Coils Coils Coils Coils  Coils Coils Coils Coils Coils  Coils Coils Coils Coils Coils	1500 1500 1500 1500 1500  1000 1000 1000 1000 1000  500 500 500 500 500  500 500 500 500 500
12-02-00041	<u><b>Telephone Cables &amp; Accessories</b></u> A) Telephone cables: - PVC/Bare copper conductor 0.6mm/tinned /PVC		
	A-1) 10 pair.	M.L	5000
	A-2) 20 pair.	M.L	5000
	A-3) 30 pair.	M.L	5000
	Packing: on wooden drums.		
	<u>B) Accessories: -</u> Terminal Box-Flush Mounted Steel Grey / rust proof + Terminal block. B-1) 10 pair. B-2) 20 pair. B-3) 30 pair. B-4) 100 pair.	No. No. No. No.	50 50 50 20

**PART 9 REQUIREMENTS OF HOUSING SECTOR**

CODE	ITEM	UNIT	QTY.
12-02-00042	<p><b><u>Conduit &amp; Accessories</u></b>                      A) Size 20mm: -                      A-1) Hot dip galvanized heavy gauge steel conduit, screwed both ends, one coupler, 3.75m long to BS 4568.                      A-2) Galvanized circular malleable iron junction boxes.                      Terminal Through Angle Tee Intersection                      B) Size 25mm: -                      B-1) Hot dip galvanized heavy gauge steel conduit, screwed both ends, one coupler, 3.75m long to BS 4568.                      B-2) Galvanized circular malleable iron junction boxes.                      Terminal Through Angle Tee Intersection                      C) Draw in steel tape: -                      C-1) 20m length                      C-2) 30m length                      D) Complete set comprising stock dies &amp; guides: -                      D-1) 20+25 mm</p>	<p>Cond  No. No. No. No. No.  Cond  No. No. No. No. No.  No. No. No. No. No.  No. No.  set</p>	<p>10000  2000 5000 2000 2000 3000  5000  1000 1000 1000 1000 1000  50 50  20</p>
12-02-00043	<p><b><u>A -Panel distribution boards:</u></b>                      Three-phase and neutral distribution boards voltage 415v AC 50 HZ BS 5486 IP 20 with door and lock to fixed in the wall (flush type) with Earthing terminal bus bars and with main incoming tripple phase MCB                      A-1) Distribution board 6 triple pole MCB ways                      Main in coming 100A MCB three phase Single poles MCB 15A.10 .NOS                      Single poles MCB 30A 8Nos.                      A-2) Distribution board 8 triple pole MCB ways-</p>	<p>NOS.  NOS.</p>	<p>25  25</p>



**PART 9 REQUIREMENTS OF HOUSING SECTOR**

CODE	ITEM	UNIT	QTY.
	<p>clearly visible on the detector casing ambient temp range (0c- 50c)</p> <p>A-4)complete with a amounting base amount- ing heat detector with visual Indication of an alarm is given by red- light diode, clearly visble on detector with base off white colour ambient range (0c- 40c)</p> <p>A-5) Indoor fire alarm bell 24v.DC black poly- carbonete base.6" hight reliability, long running life and easy installation,no maintenance in normal use.</p>	<p>NOS</p> <p>NOS</p> <p>NOS</p>	<p>70</p> <p>10</p> <p>15</p>
<p><b>12-02-00046</b></p>	<p><b><u>Light fittings: -</u></b> NOTE: Below mentioned fluorescent fittings . are security quick startPower factor not lessthan 0.9 Lagging 240 volt-AC 50HZ. A-1) 2 x 40w fluoresent fitting with Lamella louvre -recessed mouting A-2) 2 x 40w fluoresent fitting with Lamella . louvre-Surface mounting A-3) 1 x 40w fluoresent fitting with Lamella louvre-Recessed mounting. A-4) 1 x 40w fluoresent fitting with Opal Diffuser-Surface mounting. A-5) 2 x 20w fluoresent light fitting with</p>	<p>NOS</p> <p>NOS</p> <p>NOS</p> <p>NOS</p> <p>NOS</p>	<p>400</p> <p>250</p> <p>400</p> <p>250</p>
	<p>Opal Diffuser-Surface mounting. A-6) 4 x 20w recessed fluorescent light fitting with Opal Diffuser-Surface mounting. A-7) 60 X 60 cm Fluorescent light with lamela diffuser</p>	<p>NOS</p> <p>NOS</p> <p>NOS</p>	<p>500</p> <p>500</p> <p>400</p>
<p><b>12-02-00047</b></p>	<p><b><u>Aluminum false ceiling</u></b> closed type with all fixing accessories 30 x 60 cms 30 x120 cms 60 x 60 cms</p>	<p>M<sup>2</sup></p> <p>M<sup>2</sup></p> <p>M<sup>2</sup></p>	<p>4000</p> <p>4000</p> <p>12000</p>

**PART 9 REQUIREMENTS OF HOUSING SECTOR**

CODE	ITEM	UNIT	QTY.
	10 x 360 cms	M <sup>2</sup>	5000
	suspension accessories and angle bead	M <sup>2</sup>	25000
12-02-00048	<u>Door closers</u> Yale type or equivalent with all accessories	No.	100
12-02-00049	<u>Expansion joint beads</u> made of stainless steel, 0.5mm thick	M.L	500
	Floor type	M.L	200
	Wall type	M.L	450
	Ceiling type	M.L	100
12-02-00050	<u>Special doors</u> frames and door leaves different dimensions, with door handles (cylinder and bath).	No.	450
12-02-00051	<u>Anti static Vinyl tiles</u> 120cm width, 3.5 mm thickness, with welding rods and fixing materials.	M <sup>2</sup>	500
12-02-00052	<u>Ceramic tiles</u> 10 x 10 cm, 6mm thick, non-slip ceramic	M <sup>2</sup>	3500
12-02-00053	<u>Epoxy paints</u> for walls	Lit	3000
12-02-00054	<u>Metal Lath</u> 60 x 240 cm, weight 1.7kg/m <sup>2</sup>	M <sup>2</sup>	5000
12-02-00055	50 Tons hydraulic crane	Nos.	6
12-02-00056	25-30 Tons Hydraulic crane	Nos.	8
12-02-00057	Bulldozers	Nos.	12
12-02-00058	Scrapers	Nos.	24
12-02-00059	Medium size wheel loaders	Nos.	60
12-02-00060	Small size wheel loaders	Nos.	30
12-02-00061	Large size Wheel loaders	Nos.	35
12-02-00062	Tower crane 40m high 40m radius	Nos.	3
12-02-00063	Concrete batching plant 50 m <sup>3</sup> /h	Nos.	10
12-02-00064	Concrete batching plant 90 m <sup>3</sup> /h	Nos.	3
12-02-00065	Mobile concrete Pump 36m. High	Nos.	4
12-02-00066	Mobile concrete pump 31m high	Nos.	15
12-02-00067	Truck mixer 6m <sup>3</sup>	Nos.	70
12-02-00068	Medium size tyre excavator	Nos.	20
12-02-00069	Piling machines & accessories	Nos.	12
12-02-00070	Guard rail driving machines	Nos.	2
12-02-00071	Road marking Equipment	Nos.	4
12-02-00072	Well point system	Nos.	4
12-02-00073	Sheep foot rollers	Nos.	30
12-02-00074	Tyre rollers	Nos.	20
12-02-00075	Steel rollers	Nos.	20
12-02-00076	Tandem rollers	Nos.	20
12-02-00077	Graders	Nos.	10
12-02-00078	Crawler hydraulic excavator	Nos.	5

**PART 9 REQUIREMENTS OF HOUSING SECTOR**

CODE	ITEM	UNIT	QTY.
12-02-00079	Asphalt batching plant 180ton/h	Nos.	2
12-02-00080	Road milling machines	Nos.	10
12-02-00081	Field concrete mixers	Nos.	40
12-02-00082	Tipper 12m3 (20tons)	Nos.	130
12-02-00083	Lorry 6-8 tons	Nos.	15
12-02-00084	Semi trailer+tractor 40 tons (Flat trailers)	Nos.	15
12-02-00085	Tipper trailers	Nos.	20
12-02-00086	Low loader+tractor	Nos.	10
12-02-00087	Small dumpers 1-2 tons	Nos.	35
12-02-00088	Bus 20 passengers	Nos.	8
12-02-00089	Field transport cars	Nos.	152
12-02-00090	Roller 1 ton	Nos.	12
12-02-00091	Water tankers 8000-10000 lit.	Nos.	5
12-02-00092	Water tankers 25000 lit.	Nos.	30
12-02-00093	Oil Transport vehicle	Nos.	10
12-02-00094	Recovery vehicles for salvage	Nos.	2
12-02-00095	Cement silo Trucks 30-35 m3	Nos.	16
12-02-00096	10 tons hydraulic truck crane.	Nos.	4
12-02-00097	Fork lifts 3-10 tons	Nos.	8
12-02-00098	Low bed trailers	Nos.	8
12-02-00099	Diesel elevators for materials (1000Kg, hight=40m)	Nos.	20
12-02-00100	Soil stabilizers	Nos.	3
12-02-00101	Mixing plants for sub-base materials (gravel, sand, water,...)	Nos.	8
12-02-00102	2-Tons lorry	Nos.	30
12-02-00103	Stationary concrete pump	Nos.	4
12-02-00104	Medium capacity air compressors & accessories	Nos.	8
12-02-00105	Manual & diesel (vibratory) Compactors	Nos.	12
12-02-00106	Furnishing complete site work shop for cutting, bending ..etc. For		
12-02-00107	reinforcement steel upto 40mm dia bars	Sets	2
12-02-00108	Furnishing complete site work shop for carpentary works Doors, windows .. Etc	Sets	2
12-02-00109	Welding Equipments (diesel) Electrical) & cutting machine for steel materials with all necessories	Sets	2
12-02-00110	Furnishing complete site Workshop for manufactuning air ducts cooling,heating..different sizes	Sets	2
12-02-00111	Heavy machinary tires	Qty.	Lump sum

**PART 9 REQUIREMENTS OF HOUSING SECTOR**

<b>CODE</b>	<b>ITEM</b>	<b>UNIT</b>	<b>QTY.</b>
12-02-00112	Spare parts for machinery And equipment	Qty.	Lump sum
12-02-00113	Asphalt plants 250 ton/H	Nos.	2
12-02-00114	Crusher & screening plant	Nos.	4
12-02-00115	Bitumen transporting truck -	Nos.	4
12-02-00116	Different tools for finishing works buildings	Sets	2
12-02-00117	Slip forms and accessories	Qty.	Lump sum
12-02-00118	Precast plants and spare parts	Qty.	Lump sum
12-02-00119	Piling and foundation materials	pcs	5875
12-02-00120	Laboratory equipment and accessories	Qty.	Lump sum
12-02-00121	Tower crane free height 100 m arm length 50 m	Nos.	1
12-02-00122	Mobile concrete pump min. height 52 m	Nos.	1
12-02-00123	Stationary concrete pumps with spare parts	Unit	2