



**UNDER
Ministry of Health & Family Welfare
(GOVERNMENT OF INDIA)**

**Tender For
Upgradation of Cold Chain Facilities at GMSD Kolkata.**

Volume – IV-Kolkatta

Financial Bid & BOQ



December 2012

**HLL Lifecare Limited
B – 14A, Sector – 62,
NOIDA – 201301.**

SUMMARY PRICE BID GMSD KOLKATA

S.NO.	DESCRIPTION OF WORK	TOTAL TENDERED COST AS QUOTED BY BIDDER (IN RS.)
1.	CIVIL WORKS	
2.	ELECTRICAL WORKS	
3.	AIR CONDITIONIG & FIRE FIGHTING WORKS	
	TOTAL IN WORDS & FIGURE	

<u>PRICE BID</u> <u>CIVIL WORKS</u> <u>GMSD KOLKATA</u>		
Sub Head No.	ITEM/ WORKS	TOTAL AMOUNT OF WORKS AS PER BOQ (IN RS.)
1	EARTH WORK	
2	CONCRETE WORK	
3	REINFORCED CEMENT CONCRETE	
4	BRICK WORK	
5	FLOORING	
6	FINISHING	
7	WATERPROOFING	
8	CONCRETE PAVEMENT	
9	ALUMINIUM WORK	
10	EXTERIOR GRADE METALLIC FALSE CEILING. FOR CANOPY	
11	INTERIOR METALLIC FALSE CEILING.	
12	CANOPY	
13	DISMANTLING & DEMOLITION	
14	CARRIAGE OF MATERIAL	
	TOTAL	
	TOTAL (IN WORDS)	

Schedule of Quantities						
CIVIL WORKS						
GMSD KOLKATA						
Item No.	DSR. No.	Description of Items	Qty.	Unit	Rate Rs.	Amount Rs.
SubHead:1		EARTH WORK				
1.1	2.8	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means or drains(not exceeding 1.5m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50m.				
	2.8.1	All kinds of soil	123	cum		
1.2	2.25	Filling available excavated earth (excluding rock in trenches, plinth, sides of foundation etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering lead upto 50m and lift upto 1.5m.	42	cum		
1.3	2.27	Supplying and filling in plinth with sand under floors including, watering, ramming consolidating and dressing complete.	51	cum		
				SubHead Total		
SubHead: 2		CONCRETE WORK				
2.1	4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
	4.1.10	1:5:10 (1 Cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size).	71	cum		
	4.1.2	1:1.5:3 (1 cement : 1.5 coarse sand :3 graded stone aggregate 40mm nominal size)	1	cum		
2.2	4.11	Providing and laying damp-proof course 50mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size).	11	sqm		
2.3	4.13	Applying a coat of residual petroleum bitumen of penetration 80/100 of approved quality using 1.7kg per square metre on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	11	sqm		
				SubHead Total		
SubHead:3		REINFORCED CEMENT CONCRETE				
3.1	5.1	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level :				
	5.1.2	1:1.5:3 (1 Cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size).	8	cum		
3.2	5.2	Reinforced cement concrete work in walls(any thickened) including attached plasters,buttesses.plinth and string courses, fillets, columns, pillars,pilers,piers,abutments,posts and struts etc. upto floorfive level excluding coat of centring , finishing and reinforcement				
	5.2.2	1:1.5:3 (1 Cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size).	3	cum		

Item No.	DSR. No.	Description of Items	Qty.	Unit	Rate Rs.	Amount Rs.
		VITRIFIED FLOOR TILES				
5.3	11.41	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption's less than 0.08% and conforming to IS : 15622 of approved make in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc., complete.				
	11.41.2	Size of Tile 60x60 cm	299	sqm		
5.4	11.19	Chequered terrazzo 330tiles as DSR				
	11.19.2	Medium shade using 50% white + 50% grey cement.	10	sqm		
5.5	11.36	Providing and fixing 1st quality ceramic glazed wall types conforming to IS:15622 (thickness to be specified by manufacturer) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in Charge in skirting, risers of steps and dados over 12mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3Kg per sqm including pointing in white cement mixed with pigment of matching shade complete.				
4.8.1	(i)	Of size 600x600mm	1450	sqm		
					SubHead Total	
SubHead:6		FINISHING				
		CEMENT PLASTER				
6.1	13.1.2	12 mm cement plaster 1:6	54	sqm		
6.2	13.11	18 mm cement plaster in two coats under layer 12mm thick cement plaster 1:5(1 cement : 5 coarse sand) finished with a top layer 6mm thick cement plaster 1:6(1 cement : 6 fine sand).	1196	sqm		
	13.45	Finishing walls with textured exterior paint of required shade :				
6.3	13.45.1	New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including base coat of water proofing cement paint applied @ 2.20kg/10 sqm.	1196	sqm		
6.4	13.63	Painting with aluminum paint of approved brand and manufacture to give an even shade	5	sqm		
6.5	13.48	Finishing walls with Deluxe Multi surface paint system for interiors and exteriors using primer as per manufacturers specification:				
	13.48.3	Painting steel work with Deluxe Multi-surface Paint to give an even shade. Two or more coat applied@0.9Lts/10sqm over an under coat of primer applied @0.75lrs/10sqm of approved brand or manufacturer.	71	sqm		
6.6	22.12	Supplying and applying bituminous solution primer on floors and wall surface at 0.24 litre per sqm.	122	sqm		
					SubHead Total	
SUBHEAD 7		WATERPROOFING				
7.1	22.4.1	Cement concrete 1:2:4(1 cement : 2 coarse sand : 4 graded stone aggregate 40mm nominal size) in pavements, laid to required slope and camber in panels as required including consolidation finishing and tamping complete.	80	cum		

Item No.	DSR. No.	Description of Items	Qty.	Unit	Rate Rs.	Amount Rs.
7.2	N.S	Providing and laying APP modified prefabricated bitumen membrane 3mm thick AS per item of CPWD	1650	sqm		
7.3	N.S	Application of Polymer modified tapecrete or equivalent rest as per CPWD	120	sqm		
					SubHead Total	
SubHead:8		CONCRETE PAVEMENT				
8.1	16.42	Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 40 mm nominal size) in pavements, laid to required slope and camber in panels as required including consolidation finishing and tamping complete.	4	cum		
8.2	16.11	Dry stone pitching 22.5 cm thick including of supply of stones and preparing surface complet	24	sqm		
8.3	16.1	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulation etc., and re-rolling the sub grade disposal of surplus earth lead upto 50 metres	24	sqm		
8.4	16.7	Brick edging laid in full brick width & half brick depth rest as DPR	24	m		
					SubHead Total	
SubHead:9		ALUMINIUM WORK				
9.1	21.1	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS : 1285, fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and paneling to be paid for separately) :				
(a)	21.1.1	For fixed portion				
	21.1.1.3	Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron)	345	kg		
(b)	21.1.2	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of PVC / neoprene gasket required (Fittings shall be paid for separately).				
	21.1.2.3	Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron)	549	kg		
9.2	21.2	Providing and fixing 12mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS: 12823 Grade I Type II, in panelling fixed in aluminum doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge.				
	21.2.2	Pre-laminated particle board with decorative lamination on both sides.	29	sqm		

Item No.	DSR. No.	Description of Items	Qty.	Unit	Rate Rs.	Amount Rs.
SubHead:10		EXTERIOR GRADE METALLIC FALSE CEILING. FOR CANOPY				
10.1	N.S	PRECOATED STEEL FALSE CEILING SYSTEM:				
		Supply & Fixing of equilent make- Trac , luxalon, Sonex, Armstrong Coil Coated Steel False Ceiling system manufactured out of 0.5mm thick Galvanised Sheet (Z-180gms /Sq.Mtr. zinc coating mass total of both sides, 275Mpa yield stress) with Polyester coat of 20 micron on the face side and 5 micron on the back side. The ceiling system shall comprise panels of 150mm wide panels of 150mm width x 17mm deep roll formed out of 0.50mm thick polyester coated galvanised steel fixed on steel runner in size of 34.5mm wide x 48mm deep manufactured out of 0.60mm thick Pre-coated galvanised steel with rigid suspension arrangement consisting of G.I. angles, bracket, clamps etc. including all hard ware required for fixing the ceiling. The runner shall be fixed at 1 mtr. c/c and suspension angle at 1 mtr.c/c. The panel shall be factory cut in max length of 6 mtr. The panel shall be jointed after 6mtr.with special G.I. Splice in between two panel. The work shall	142	Sq.M		
					SubHead Total	
SubHead:11		INTERIOR METALLIC FALSE CEILING.				
11.1	N.S	FALSE CEILING SYSTEM- STEEL (WITH LAY IN SUSPENSION)				
		Supply of TRAC , luxalon, Sonex, Armstrong or any other approved make lay in Tile Steel Coated False Ceiling System (600mm X 600mm) manufactured out Of 0.50mm thick Regular Modified Polyester Coated Galvanised Steel (Z-180gms Zinc coating mass Total of both sides, 275Mpa yield strength) on the exposed side and primer coating on the back coil Coated on both the sides in manufacturer's standard colour shades, with square or bevelled edges and Flanges, produced on advanced equipment, which includes several levelling stages in the manufacturing Process. Exposed side of tile shall have 20 micron coil coated polyester finish and 5 micron back coat of				
		All tiles to be installed on a standard 600mm x 600mm module 24mm table exposed metal Grid and are precision made to within plus or minus 0.25mm. Table exposed metal grid features main runners and cross tees roll formed from galvanised steel to BS 2989Z-18 zinc coating, minimum tensile strength 270 Mpa				
		Grid system to be designed to satisfy ASTM C635 loading and deflection criteria. The main and cross runner to be provided with bayonet couplings For quick installation and shall have a height of 38mm. The grid is suspended from the roof with G. I. Wire rods or quick adjustment suspension hangers at maximum 1200mm along the main runners. The Tiles would be designed for lay- in mounting from below into the standard grid. The main runner shall Normally be fixed at 1200mm and shall be in filled with 1200mm / 600mm cross tees. Hangers to be fixed to roof by expansion fasteners. Wall angle to be 25 x 25 x 0.6mm thick coil coated steel matching the colour of tile.	526	Sq. M		
					SubHead Total	

<u>PRICE BID</u> <u>Internal Electrical Works</u> <u>GMSD KOLKATA</u>		
SI. No	ITEM/ WORKS	TOTAL AMOUNT OF WORKS AS PER BOQ (IN RS.)
A.	<u>Internal Electrical Works</u>	
1	WIRING	
2	EARTHING	
3	FANS & FITTINGS	
4	COMPUTER POINT	
5	TELEPHONE POINT	
	TOTAL (IN FIGURES)	
	TOTAL (IN WORDS)	

Schedule of Quantities Internal Electrical Works						
GMSD KOLKATA						
Sr.No.	DSR Item	Description	Unit	Qty.	Rate	Amount
A.		ELECTRICAL				
	Sub Head: 1	WIRING				
1.1	1.1	Point wiring in steel conduit of 20mm dia, with modular type switch (NORMAL) Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface/ recessed steel conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc as required.				
1.1.1	1.3.3	Group C	Point	67		
1.2	1.5	Power plug wiring in steel conduit of 20mm dia. Wiring for light/ power plug with 2X4 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed steel conduit along with 1 No 4 sq. mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	Meter	650		
1.3	1.31	S/F light plug point modular type accessories:- Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 amps modular socket outlet and 5/6 amps modular switch, connection, painting etc. as required.	Each	16		
1.4	1.32	S/F power plug point modular type accessories:- Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 15/16 & 5/6 amps modular socket outlet and 15/16 amps modular switch, connection, painting etc. as required.	Each	11		
1.5	1.7	Circuit/ sub main wiring in steel conduit: Wiring for circuit/ sub main wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required				
1.5.1	1.7.1	2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire	Meter	250		
1.5.2	1.7.2	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	Meter	180		
1.5.3	1.7.3	2 X 4 sq. mm + 1 X 4 sq. mm earth wire	Meter	100		
1.5.4	1.7.4	2 X 6 sq. mm + 1 X 6 sq. mm earth wire	Meter	0		
1.5.6	1.7.11	4 X 16 sq. mm + 2 X 16 sq. mm earth wire	Meter	25		
1.5.7	N.S	4 X 25 sq. mm + 2 X 16 sq. mm earth wire	Meter	20		
1.6	1.21	S/F PVC conduit : Supplying and fixing of following sizes of PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.(For TV, Internet, Telephone)				
1.6.1	1.21.1	20 mm	Meter	250		
1.6.2	1.21.2	25 mm	Meter	140		
1.7	1.22	S/F metal boxes : Supplying and fixing metal box of following sizes (nominal size) on surface or in recess with suitable size of phenolic laminated sheet cover in front including painting etc as required.				
1.7.1	1.22.2	100 mm X 100 mm X 60 mm deep	Each	0		
1.7.2	1.22.5	180 mm X 100 mm X 60 mm deep	Each	12		
1.8	N.S	Supply & Laying 3.5 Core 70mmSq. XLPE Insulated Armoured Underground Cable Including excavation, sand cushioning Protective covering & refilling trenching etc. as reqd. (as per CPWD Specification)	Meter	200		

Sr.No.	DSR Item	Description	Unit	Qty.	Rate	Amount
		SWITCHES & ACCESSORIES				
1.9	1.24	S/E modular type switch/socket:				
		Supplying and fixing following modular switch/socket on the existing modular plate and switch box including connections but excluding modular plate etc. as required.				
1.9.1	1.24.1	5/6 amps switch	Each	67		
1.9.2	1.24.6	Telephone	Each	3		
1.10	1.35	Erection of incandescent light fittings.				
		Erection of wall bracket/ceiling fittings of all sizes and shapes containing up to two CFL lamps per fitting, complete with all accessories including connection etc. as required.	Each	46		
1.11	1.41	ITC fluorescent fitting directly on surface :				
		Installation, testing and commissioning of pre-wired, fluorescent fitting / compact fluorescent fitting of all types, complete with all accessories and tube etc. directly on ceiling/ wall, including connection with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable and earthing etc. as required.	Each	8		
1.12	1.50.1	ITC exhaust fan up to 450 mm sweep :				
		Installation of exhaust fan up to 450 mm sweep in the existing opening, including making the hole to suit the size of the above fan, making good the damage, connection, testing, commissioning etc. as required.	Each	5		
1.13	1.51	Fixing louvers/ shutters for exhaust fan:				
		Extra for fixing the louvers/ shutters complete with frame for a exhaust fan of all sizes.	Each	5		
		PRE-WIRED MCB DISTRIBUTION BOARDS				
		MCB,s				
1.14		S/F 'B' series, SP MCB :				
		Supplying and fixing 5 amps to 32 amps rating, 10KA 240 volts, 'C' series, miniature circuit breaker suitable for lighting and other loads of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
1.14.1	2.10.1	Single pole	Each	22		
1.14.2	2.10.5	Triple Pole and neutral	Each	1		
1.15	2.11	S/F 'B' series, SP MCB blanking plate :				
		Supplying and fixing single pole blanking plate in the existing MCB DB complete etc. as required.	Each	2		
1.16	N.S.	S/F 20A TPN MCB prewired industrial socket outlet :				
		Supplying and fixing 20amps, 415 volts, TPN prewired industrial type, socket outlet, with 4 pole and earth, metal enclosed plug top along with 20 amps 'C' series, SP, MCB, in CRCA steel sheet, phosphatised Powder painted enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required as per Adhunik catalogue No. APOBTP 020 or equivalent of Havell's, Legrand.	Each	5		
1.17	N.S	PRE-WIRED MCB DISTRIBUTION BOARDS				
		S/I/T/C Prewired MCB Distribution Board, 4+24, 8 Way TPN Double Door.	Set	6		
		Incoming Double Pole MCB & Outgoing Single Pole MCB				
1.18	N.S	S/I/T/C of LT panel				
		Incomer :-				
		Incomer :- 100A 4 PMCCB (Main) - 1 No.				
		Incomer :- 100A 4 PMCCB (D.G Set) - 1 No.				
		Bus Coupler :- 100A - 1 No.				
		Busbar :- 200A TPN Aluminium				
		Outgoing:-				
		60A TPN MCCB - 3 Nos.				
		32A DP MCCB - 3 Nos.				
		32A TPN MCCB - 3 Nos.				

Sr.No.	DSR Item	Description	Unit	Qty.	Rate	Amount
1.19	1.37	S/F 600 mm stiff pendent with wiring:				
		Supply and fixing stiff pendent with 600 mm long, 20 mm dia X 1.6 mm thick steel conduit, aluminium cast back plate and brass holder complete, including wiring the down rod with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable and painting etc. as required.	Each	22		
			SubHead			
		Sub Head: 2				
		EARTHING				
2.1	5.6	Copper earth plate electrode:				
		Earthing with copper earth plate 600mm x 600mm x 3mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. (with charcoal or coke and salt) as required.	Set	4		
2.2	5.14	P/F 25mm X 5mm copper earth strip in surface/ recess				
		Providing and fixing 25mm X 5mm copper strip on surface or in recess for connections etc. as required.	Meter	80		
2.3	5.1	P/F 25mm X 5mm copper earth strip in pipe:				
		Providing and fixing 25mm X 5mm copper strip in 40 mm dia GI pipe from earth electrode, as required.	Meter	30		
			SubHead			
		Sub Head: 3				
		Fans & Fittings				
3.1	N.S.	Supply and installation of following luminaires comprising of electronic ballast with power factor ≥ 0.95 and THD $< 10\%$ complete with click fix lamp holders made out of ABS to impart strength including all control and internal wiring & hanging arrangement with G.I. chain - Fastners etc. as required for recess mounted fittings from approved manufacturers.				
	N.S.	Surface mounted decorative luminaire to match Philips Catalogue No. TCS 605/136 HF-E with 1 x 36 Watt T8 lamp or approved equivalent make.	Each	8		
3.2	N.S.	Recess mounted 2x36 Watt CFL decorative wide spread mirror optic luminaire having glare control with OLC technology to match Philips Catalogue No. FBS 450/236 D6 HF or approved equivalent make complete with 2 Nos. PLL 36 Watt CFL lamp.	Each	46		
3.3	N.S.	Exhaust fan Heavy duty				
	(A)	380mm 1400 RPM with louvers of Crompton / Bajaj/ Usha make	Each	5		
			SubHead			
		Sub Head: 4				
		Computer Point				
4.1	N.S.	Providing and fixing computer outlet (RJ-45) in M.S. flush box complete with all accessories connection etc. complete as required as per Legrand catalogue No. 689007, 74280, 674551 or approved equivalent.	Each	8		
4.2	N.S.	Providing and fixing wiring for LAN cable coaxial copper conductor cable (CAT-6 (E)) in existing conduit with all accessories connection etc. as per Legrand catalogue No. 032755 or approved equivalent.	Meter	175		
			SubHead			
		Sub Head: 5				
		Telephone Point				
5.1	N.S.	Supply, fixing, testing and commissioning of telephone cable 2 pair unarmored type in existing conduit complete with termination at both end.	Meter	60		
5.2	N.S.	Supply and installation of telephone outlets with spring shutter door suitable for terminating telephone cables including face plate with modular jack outlet colored snap-in-icon tab complete as required.	Each	3		
			SubHead			
			Total			

<u>PRICE BID</u> <u>AIR CONDITIONING / FIRE</u> <u>GMSD KOLKATA</u>		
Sub Head No.	ITEM/ WORKS	TOTAL AMOUNT OF WORK (IN RS.)
1	AIR CONDITIONING	
2	FIRE FIGHTING	
	TOTAL (IN FIGURES)	
	TOTAL (IN WORDS)	

Schedule of Quantities						
AIR CONDITIONING / FIRE						
GMSD KOLKATA						
Item No.	DSR. No.	Description of Items	Qty.	Unit	Rate (Rs.)	Amount (Rs.)
SubHead: 1		AIR CONDITIONING				
1.1	N.S	Providing & fixing 2 Ton high wall Split with remote complete with indoor & outdoor unit & necessary refrigerant insulated Copper piping, interconnecting power & control cable, Voltage regulator etc. & insulated PVC drain pipe complete in all respect of approved make.	6	Each		
1.2	N.S	Providing & fixing 1.5 Ton high wall Split with remote complete with indoor & outdoor unit & necessary refrigerant insulated Copper piping, interconnecting power & control cable, Voltage regulator etc. & insulated PVC drain pipe complete in all respect of approved make.	1	Each		
				SubHead Total		
SubHead: 2		FIRE FIGHTING				
2.1	N.S	Providing and fixing ABC-HFC-236 clean Agent stored pressure type, having 4 Kg capacity of Cease Fire or any other approved equivalent make Fire Extinguisher as per detail below:-				
		The Fire Fighting content is to be HFC-236 Gas based.				
		Quality of Sheet-				
		Cold Rolled Cold Annealed (EDD Grade) M.S.Sheet (thickness 1.8 mm) it should have following Chemical & Physical Properties - Carbon - 0.08% Maximum, Magnese 0.40% maximum, Sulphur - 0.03% maximum , Phosphorous-0.03% maximum, Tensile Strength-270-350Mpa., Yield Stress-220 MP a Max., Elongation-32% minimum. Hardness-50 HR.				
		Material of Contraction of FE: CRCA Steel for Cylinder, Brass Assembly made out of Extrusion Brass, EPDM Hose Pipe and EPDM O Rings should only be used.				
		Weight - Gross Wt. 6.9kg, Empty Wt.: 2.9kg				
		Height - 435mm & Diameter : 140mm				
		Discharge : Throw Range - 2.4mtrs, Discharge Time : less than 9 seconds.				
		Manufacturing Process: Cylinder should be made with Deep Drawn Process with no vertical Joint and be welded using Mig CO2 Argon Welding process.				
		Cylinder Surface Treatment : They should be coated with Zink Phosphate and Epoxy Powder Coating Inside & outside with Post office RED, Shade no 538, IS-5:1978				
		Leakage Test : All the Cylinders should be Helium Leakage Test with Certificate of Mass Spectrometer Helium Leakage Detection Test with the SI. No. Mentioned on the Certificate.				
		Pressure Gauge - Should be international Magnetic Pressure Gauge preferably imported from Germany.				
		Special Feature: Insta Alert Inbuilt 85 Decibels Fire Alarm				
		FIRE Rating : 8A, 55B				
		Certifications : CE & ISO 9001 Certified.				
		The Fire Estinguisher is to be supplied with 100% free replacement for 5 years in case of default.	8	Each		
2.2	N.S	Supply, Installation, Testing and Commissioning of Networkable Four Zone 4 PIPE Aspirating type Smoke Detector capable of covering upto 2000 sq. mtrs. similar to with Fire and Fault LEDs, necessary power supply unit and all mounting accessories and alarms as suitable for site installation complete as per the technical specifications of the tender documents and Drawings. Detector shall be UL Listed / FM approved.	1	L.S		
2.3	N.S	Supply, Installation, Testing and Commissioning of Air Sampling Pipe (PVC Smooth bore Conduit - 21mm Internal Dia & 25mm Outer Dia.) with all mounting accessories like bends, joints, junctions etc as suitable for site installation complete as per the technical specifications of the tender documents and drawings suitable for above area complete in all respect as required.	1	L.S		
				SubHead Total		