

SCOPE OF WORK

1. Name of work - Constr of Pre Fabricated Staff Room TAPPS Kaluchak

Details are as under :-

S No	Items	
(a)	Prefabricated multipurpose staff room of size 6.10m x 7.20 m and 2.60m clear height upto ceiling with one side verandah of width 1.2m including structure with roof, door, windows, false ceiling, wall panel, roof purlin, truss, vertical column, painting, foundation bolt, nuts and bolts etc.	
(b)	<p><u>DESIGN PARAMETERS</u></p> <p>(a) Seismic - Zone IV (b) Wind Speed - 55 m/s (as per IS-875) (c) Temperature Range - (-0⁰) to (+) 50⁰ c (d) Thermal Insulation - 0.25 W/m deg K (e) Acoustic transmission >40db (f) Fire Propagation < 60 min</p> <p>Dimensions of each shelter given below:-</p> <p style="margin-left: 40px;">(i) <u>Shelter.</u> Size 6.10m x 7.20 m (ii) <u>Verandah.</u> 1.2m wide along longer side</p>	

Note : For more information/details, please visit APS Kaluchak website www.apskaluchak.edu.in.

DETAIL TECHNICAL SPECIFICATION

SIZE (6.10 X 12.20 MTRS)

Ser No	Brief Specification	Remarks A/U/Qty
1	Prefabricated multipurpose staff room of size 6.10m x 7.20 m and 2.60m clear height upto ceiling with one side verandah of width 1.2m including structure with roof, door, windows, false ceiling, wall panel, roof purlin, truss, vertical column, painting, foundation bolt, nuts and bolts etc.	
2.	<p><u>DESIGN PARAMETERS</u></p> <p>(a) Seismic - Zone IV (b) Wind Speed - 55 m/s (as per IS-875) (c) Temperature Range - (-0°) to (+) 50° c (d) Thermal Insulation - 0.25 W/m deg K (e) Acoustic transmission >40db (f) Fire Propagation < 60 min</p> <p>Dimensions of each shelter given below:-</p> <p>(i) <u>Shelter.</u> Size 6.10m x 7.20 m (ii) <u>Verandah.</u> 1.2m wide along longer side.</p>	
3.	<p>(a) Wall Panels. All wall shall be made of GI metal skin PUF panel of the thickness 40mm. The wall is in sandwich panel system using 02 Nos 0.60mm thick 200 gms/m² zinc plated pre-coated sheets with 40 mm gap filled with polyurethane foam. Wall panels are made of GI metal skin PUF while panels of 40 mm thick with not with not less than 0.60 mm TCT GI skin while panel internally and camouflage pattern externally. The total thickness of the finished composite panel should be 4100±20mm. The tolerance in the panel can only be on the plus side. The bottom channel should have 3 min thick will be provided.</p> <p><u>Physical standard and properties of the PUF Panel:</u></p> <p>(i) The bulk density of insulation is 44 (+-) 10% kg/m³. (ii) The outer GI skin of the panels should be 0.60 m thick TCT with 50 micro thick PVC guard film on the finished surface only for protection against scratches during handing and transports . (iii) Base metal of 3 mm thick GI skin CRAC as per IS-513 galvanized as per GR-120 IS- 277 (iv) Pre-coated sheet shall be conforming to IS 14246-1995. (v) Panel weight is min 11 kg/m² (vi) U Value of external walls will not exceed 0.36 + 5% w/m²kg (vii) Blowing agent (non CFC) (viii) Compressive strength at 10% deformation – 2.1 kg/Cm² (ix) Tensile strength 3.7 kg/Cm² (x) Bending strength 4.0 kg/Cm² (xi) Adhesive strength 2.9 kg/Cm² (xii) Close cell content 90-95%</p> <p>The panels are lined with a male-female type groove made with extended wall panel sheets where by complete air tightness can be achieved, The PUF wall panel.</p> <p>(b) <u>Single Skin Insulation False Ceiling:-</u> False ceiling panels of size 610mm x610mm made of 6mm thick Gypsum board (Asbestos free) confirming to IS: 14276-1995. The Gypsum board will be water proof and PVC coated. The false ceiling panels are placed 60 to a suspended grid frame of size 610x1220mm made from GI "L & T section of 0.63mm confirming to IS-277:2003 (Reaffirmed 2013) with amdots 1to 4 having min GSM of 120 gms. The false ceiling grid is suspended from the roof frame work with the help of adjustable Galvanized wire of 3.0 mm dia. The finished clear height of the false ceiling shall be placed 2600mm from FFL.</p> <p>(c) <u>Roof :</u> The roof slop shall be 1.4 approx. The wall height shall be 2.7m at eaves an 3.36m at centre gable. The roof shall be done with corrugated pre painted galvanized steel and pre painted galvanized still sheet ridge cover with thickness of BMT minimum thickness not less than 0.60mm confirming to IS14246-2003. A protection sheet (Polyethylene) shall also be provided on top coated of the steel for transport. These corrugate pre painted GI steels are laid over a from work of trusses columns and purlins fixed using suitable fasteners SDS tripping etc. A pre painted galvanized steel sheet ridge cover of size 450mmx 450mm min is to be fixed on top junction of the roof using suitable fasteners.</p>	

(d)	<p>Roof Structural Frame Work:- The roof shall be laid over a frame work of trusses, column and purlins fixed using suitable SDS. The trusses shall be made using ISI marked rectangular hollow section of size 66mm x 33 mm x 2.9mm conforming to IS4923: 1997 (Reaffirmed 2013) with amdots 1to 6. The trusses are provided a distance of 2.44 m and shall be supported on truss. The column shall be welded with 200mm x 200mm x 8mm thick MS and plate and shall be fixed to the foundation bolts through this plate. The purlins shall be made using ISI marked rectangular hollow steel sections of size 66mm x33 mm into 2.9mm conforming to IS 4923: 197 (Reaffirmed 2013).</p>	
(e)	<p>Verandah: Verandah shall be 7.01m long and 1.2m in width. The GI roof over the verandah shall be a continues provided along the roof the structure. The verandah shall have a clear height of 2.60m. The purlines provided at verandah are made using ISI marked rectangular hollow steel section of size 66 x 33x 2.90mm and are fixed and flushed with the top level of the truss extension member with help of 8mm thick MS end plate with 10mm nut and bolts. The verandah columns are made using ISI marked rectangular hollow steel section of size 66 x 33 x 2.90 mm fixed with the leveled base by using 8 mm thick MS end plates and 4 Nos 12 mm dia, 305mm long foundation bolts.</p>	
(f)	<p>Doors: Frame shall be made from pressed steels four sided frame using CR steel of size 75 mm x 45 mm x 2.90 mm confirmed to IS 513: 1986 (Reaffirmed 2013) with amdot No 1. It will also have fur nos 100 mm long MS hinges welded on the frame. Shutter will be made out of 80mm thick flush door as per IS: 2202 (Part – 1) : 1990 (Reaffirmed 2011) with amdot No 1 to 3. The door shutter shall be fixed with door frame with four no MS oxidized hinges of 100 mm length. The door shutter shall be provided with 2 No MS oxidized aldrops of 300 mm length. MS oxidized tower bolts of size 200 mm at the top and end 100 mm at the bottom on each shutter and two nos 150mm long handles and 01 nos aluminum door stopper. Door size is 2.080 x 0.915 m – 01 no. The frame to have female ends of easy fixing of panels.</p>	
(g)	<p>Windows :- Windows frame shall be made from pressed steel using CR steel of 2.90 mm thickness of size 75 mm x45 mm profile confirming IS : 513:2008 (Reaf Firmed 2013) with amdot No 1. It will also have 6 Nos 75mm MS butt hinges welded on the frame. The frame shall have grill made from MS square Bar of 12 mm having equal spacing of 125 mm. Shutter shall be made out of steel rectangular hollow box profile of 2.90 mm thick as per drawing. Each of the windows shutter will include MS oxidized handle 150 mm , 2 Nos MS oxidized tower bolts of 100 mm and 1 No window stay glass sheet of 4 mm thickness shall fixed using glass Putty window wire mesh will be provided. Windows size is 1.22 x 1.22m – 4 Nos (make : agew steel manufacture Pvt Ltd Ahmadabad , multiwyn industrial crop, Kolkata, satkar industries , pathankot rd Jalandhar , arcat, m/s Laxmi steel works , Rothak , m/s steel man industry Jalandhar) The frame to have female ends for easy fixing of panels .</p>	
(h)	<p>Foundation (Depth of foundation as per site condition). Column foundation shall be as per Sketch 'R'</p>	
(j)	<p>Dwarf wall. Brick wk in CM 1:6 height of plinth above GL shall be 320 mm and below GL 650 mm, laid over 100 mm thick PCC 1:4:8 type D2 sub base using 40 mm graded aggregate</p>	
(k)	<p>DPC . PCC (1:2:4) type B1 using 20 mm graded_aggregate 40 mm thick with WPC 3% of weight of cement shall be placed over draft wall.</p>	
(l)	<p>Flooring . Non skid ceramic tiles 600x600x8.10 mm thick over 40 mm thick PCC 1:2:\$ type B1 , using 20 mm graded stone crushed aggregate over 75 mm thick PCC 1:4:8 using grade stone crushed aggregate as in sub base over 100 mm thick using 63 mm agg hardcore over rammed earth</p>	
(m)	<p>Plinth protection. Plinth protection to be provided 1.00m wide & 75 mm thick in PCC 1:3:6 using 20 mm graded stone aggregate over 100 mm thick hardcore , all rounded the shelter. <u>s</u>hall be provided</p>	

4	Furniture	
(a)	Fire extinguisher 02 Kgs capacity , foam typ w MAP-90 alongwith its accessories	
(b)	Chair plastic Hand rest chairs made up of hard plastic m heavy, duty, specialized designed for comfortable upright seating , making them ideal for dining, ISI Marked and colour duly approved.	
(c)	PVC Tabe of 6 Men made up of hard plastic, heavy duty , making them ideal for dining , ISI Marked and colour duly approved.	
5	Constr Material :- Following construction material will be used for fdn of column , plinth protection , sub base & flooring.	
(b)	Ordinary Portland cement grade 43, IS-12269-1990, packed in 50 Kgs HDPE bags conforming to ISI 1652/2000.	
(c)	Coarse sand Sand shall be clean , sharp, angular hard and durable free from adherent coating and shall not contain, clay , mica and other impurities. The maximum quantities of clay and fine slit in sand shall not be more than 5 % by mass as per IS-383-1970.	
(d)	20mm stone aggregates Stone aggregate shall be crushed stone 20 mm graded conforming IS-383-1970 and shall be clean har tough , durable and of uniform quality throughout. The aggregate shall be free from soft disintegrated materials , vegetable and other organic impurities.	
(e)	40mm stone aggregates Stone aggregate shall be crushed stone 40 mm graded conforming to IS-383-1970 and shall be clean hard tough , durable and of uniform quality throughout . The aggregate shall be free from soft disintegrated materials , vegetable and other organic impurities .	
(f)	Hardcore 63 mm stone Aggregate Stone aggregate shall be crushed stone not exceeding 63 mm graded conforming to IS-383-1970 and shall be clean hard tough , durable and of uniform quality throughout. The aggregate shall be free from soft disintegrated materials, vegetable and other organic impurities.	
(g)	Bricks sub class 'B' of side 23cmx11.5 cm conforming to IS 1077-1986. Average compressive strength not less than 75kg/cm2	
(h)	Non skid ceramic floor tiles joint free of size 600 mm x 600 mmx8-10 mm thick	
(j)	White cement	
(k)	Water proofing compound	
7	Electrical Appliances/Fittings	
(a)	PVC insulated cable elect 11.5 Sqmm single core copper conductor unshearted to IS 694-1990.	
(b)	1 Sqm single core multi stranded copper conductor FR PVC insulated (un shearted) heavy duty cable.	
(c)	PVC insulated cable 10 Sqmm 2 core aluminum conductor unarmored with 4mm dia GI wire and round type insulator S/C	
(d)	Flexible wire three core 23/0.0076 confirming of IS 9537 PT III 1983	
(e)	LED tube light fitting 20 watt, ultra bright glass shell, glare fee, wide angle,double side connection retrofit LED tube G 13 lamp holder complete with fixing accessories	
(f)	LED 5 W with holder	
(g)	PVC Ceiling Rose 4" dia	
(h)	Switch plano type 5/6 Amps 230 volts confirming to IS 3854-1966	
(j)	PVC square box 4"x4"	
(k)	CP Screw 25 mm (per Pkt 100 Nos)	
(l)	PVC insulation Tape of size 20 mm ISI Marked	
(m)	PVC Casing caping square box 30x16 mm confirming to IS 14927 (Part II)	
(n)	PVC Junction box 3 way	
(o)	PVC Junction box 2 way	
(p)	Ceiling Fan 1200 mm sweep 230 V complete including hanging hook with inbuilt regulator	
(q)	Main Switch 32 Amps, 240V DP confirming tot IS 13947-1983	
(r)	GI Service bracket of 1.2 mtr long of GI pipe light grade 40 mm dia	
(s)	Desert cooler PVC body cover of 34 Ltr water storage capacity with 0.5 HP submersible water pump , humidity controller	
(t)	6w LED rechargeable emergency light	
(u)	PVC switch board 8"x10"	
(v)	MCB DB 8 way 230 V	
(w)	MCB 40 Amp DP (isolated)	
(x)	MCB 32 AMP SP	
(y)	PVC flexible conduit pipe	

	(z)	Grip PVC rework plug	
	(aa)	L-section for PVC casing and casing and capping	
	(ab)	T-section for PVC casing and capping	
	(ac)	I-section for PVC casing and capping	
	(ad)	Wiring screws full threaded for PVC casing and capping	
	(ae)	Earthling complete set comprising of GI earth plate 600x600 mm thick, GI wire for earthling 4 mm dia 16 Mtr , GI pit cover with hinged and locking arrangement of size 300x300 mm thick, funnel with wire mesh, GI pipe 200 mm dia 10 ft long ,charcoal 50 Kgs and salt 50 Kgs.	
		(i) GI earth plate of size (600x600x6mm)	
		(ii) GI Cover the rframe (300x300x6 mm)	
		(iii) GI pipe light grade (20 mm dia x1.3m) long	
		(iv) GI wire 4 mm diameter (For Service wire)	
		(v) Charcoal dust	
		(vi) Salt	
		(vii) Ordinary Portland Cement grade 43 IS-12269-1990, Packed in 50 KgsHDPE bag Confirming to ISI 1652/2000. Make : Ambuja/JK Cement /Ultra Tech	
		(viii) 200mm stone aggregate shall be crushed stone 20 mm graded conforming to IS-383-1970 and shall be clean hard tough , durable and of uniform quality throughout. The aggregate shall be free from soft disintegrated materials, vegetable and other organic impurities.	
		(ix) Coarse Sand shall be clean, sharp , angular hard and durable free from adherent coating and shall not contain clay, mica and other impurities. The maximum quantities of clay and fine silt in sand shall not be more than 5 % by mass as per IS-1970.	
		(x) GI pipe 15 mm dia for protection of GI wire.	
		(xi) Nut and bolt for fixing of GI wire with GI	
		(xii) MS clamp for fixing of protection pipe of 15 mm dia	
		(xiii) 5 Amp switch socket combination 240 volt along with gang box.	
		(xiv) 15/5 Amp switch socket combination 240 volt along with gang box.	
8		Service Complete fitting & fixing/installation of all items as per para 1 to 7	

