



F.No. NESTS/Civil/TPQA/49/2020-21

Date: 27.01.2022

To,  
CMD/MD/CEO  
B&R, HSCL, WAPCOS, TCIL, MANIDCO, MTDC, EPIL, NPCC

**MOST URGENT**

**Subject: Vetting of Structural Drawings from NIT /IIT/CBRI**

**Ref: Letter No 18015/11/2019/Pt dated 24.08.2022**

Sir,

Please refer the above letter dated 24.08.2021, wherein it is required to submit the vetted copy of structural drawings at the time of submission of DPR. In this regard a detailed procedures vide consolidated DPR guidelines dated 18.10.2021 were also issued. However, it is observed that construction agencies are still not following stipulated time frame for submission, delaying the commencement of building works even after awarding of work. Further, it is also found that due process is not being followed for submission of vetted structural drawings and in some cases the quality of structural drawings is also in question with regard to soundness of structure. Therefore, PSU shall ensure that the following procedure and guidelines are strictly adhered to.

- 1. The vetting of the structural drawings shall be done through IITs only in respect of all the works of North East Region due to high seismic zone and NITs/IIT/CBRI, Roorkee in respect of other locations.**
2. DPR with vetted copy of structural drawings shall only be processed for approval w.e.f. 01.04.2022.
3. The vetted copy of structural drawings duly certified by Structural Engineer, vetting authority with designation, institute name and signed by zonal manager of PSUs along with certificate of soundness of structure by vetting authority shall only be submitted.
4. The PSU shall take advance action immediately after the approval of MLP and shall share the soil report, foundation proposal duly signed by Soil/Structural consultant and Zonal Manager.
5. No building works shall be permitted without vetted copy of the structural drawings.
6. Wherever DPRs are approved, the PSU shall submit the Vetted Structural Drawings immediately.

Furthermore, it is again reiterated that the Construction Agency shall be fully responsible for quality of construction works, technical/ structural soundness and effective & efficient construction management of the work as per para 3.6 of the agreement executed for construction of EMRSs.

With Regards

(Asit Gopal)  
Commissioner, NESTS

Copy to Zonal Head: - B & R/EPIL/ HSCL/ NPCC/WAPCOS/TCIL/MANIDCO/MTDC for necessary action pl

राष्ट्रीय आदिवासी छात्र शिक्षा समिति

(जनजातीय कार्य मंत्रालय के अंतर्गत  
एक स्वायत्त संस्थान, भारत सरकार)  
भू-तल, गेट नंबर-3ए, जीवन तारा बिल्डिंग,  
संसद मार्ग, नई दिल्ली-110001  
दूर. 011-23340280



National Education Society for Tribal Students

(An Autonomous Organization under  
Ministry of Tribal Affairs, Govt. of India)  
Ground Floor, Gate No.3 A, Jeevan Tara Building,  
Parliament Street, New Delhi-110001  
Telephone No. 011-23340280  
वेबसाइट/Website: www.tribal.nic.in  
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F.No. 18015/11/2019-EMRS(Pt.)

Date: 24.08.2021

To,

1. The Chief Managing Director/Managing Director of Construction Agencies  
(HSCL, EPIL, MANIDCO, B&R, TCIL, WAPCOS, NPCC and MTDC)
2. The Director (Elect.)  
Central Public Works Department (CPWD),  
Directorate of General Works Unit (Elect.),

**Subject: Submission of vetted structural drawings of buildings regarding.**  
**Ref: NESTS order no. 18015/11/2019-EMRS(Pt.) dated 23.11.2020**

Dear Madam/Sir,

Kindly refer the DPR guidelines issued vide no.18015/11/2019 EMRS (pt.) dated 23.11.2020, wherein it is required to submit the vetted structural drawings at the time of submission of DPRs. However, it is observed that the construction agencies/state government are taking further time to submit the same. Further, as per scope of architectural consultancy under para 1.1.1 (iii), the vetting of Structural drawings is required from IIT/NIT/reputed Govt. Engg. College at **APPENDIX -A** of MOU signed between NESTS and Construction Agencies.

To ensure the vetted structural drawings available before execution of work, the competent authority has decided the following procedure to be adopted in respect of structural drawings.

1. The Vetted Structural drawings of buildings shall be submitted along with DPR as required in DPR guidelines. The CA should take the advance action immediately after the approval of MLP.
2. In respect of works where the DPRs were approved, the vetted copy of the structural drawings shall be submitted at the time of post tender processing approval. Post Tendering Approval shall be considered only with vetted copy of structural drawing.
3. In respect of works already awarded, the copy of vetted structural drawings shall be submitted immediately and no RCC work for building is allowed without the vetted copy of structural drawings.
4. The copy of DPR Checklist as per DPR guidelines dated 23.11.2020 and 23.12.2020 are enclosed for DPR submission.

Enclosures: - As Above

  
(Asit Gopal)  
Commissioner, NESTS

Copy to:

1. Principal Secretary/Secretary/Commissioner/Member Secretary, Tribal Welfare Department, Assam, Madhya Pradesh, Mizoram, Nagaland, Odisha, Rajasthan is requested for compliance the same and information may be shared to NESTS.
2. Nodal officer of Construction Agencies HSCL, EPIL, MANIDCO, B&R, TCIL, WAPCOS, NPCC and MTDC for necessary action
3. Guard File

**TERMS OF REFERENCE: SCOPE OF SERVICES**

**1.0 Scope of Services to be provided by Construction Agency**

The brief scope of services on part of the Construction Agency shall include the services as may be assigned by the NESTS in general but not limited to the following:

1.1 The services will include in general as described but not limited to the same. The agency is expected to make the assigned project functional and complete in all respects.

**1.1.1 Architectural Consultancy**

The architectural consultancy shall include in general detailed site survey, preparation of survey plans, preparation of Master Plan, Architectural layouts of buildings, elevations, sections, detailed working drawing, Structural Drawings, detailed Engineering. The details are as below but not limited to:

- i. Obtain approval of NESTS for the conceptual plan/s of project
- ii. Preparation of layout and detailed Architectural plans, individual building plans, detailed working drawings, Structural drawings, drawings of buildings, plumbing, sanitary, water supply, electrical services, fire protection services, telephone, wiring, landscaping etc. as per requirement and submission to concerned local bodies, wherever necessary and to obtain their approval if required before and after completion of work. The Structural Design of building shall be earthquake resistance with suitable foundation as per detailed soil investigation.
- iii. Vetting of Structural drawings before execution from IIT/NIT/reputed Govt. Engg. College
- iv. Preparation of Preliminary Estimate/Detailed Estimate (Technical Sanction) on the basis of DPAR 2012 (As per Annexure V for normal building/DSR with prevailing Cost Index approved by CPWD).

**1.1.2 Project Management Consultancy**

The Project Management Consultancy shall include Value Engineering, Tendering, Execution, Supervision, Quality Control, Maintenance, disbursement of fund to contracting agencies, Resource optimization etc. The scope of services shall include the services but not limited to the following:

- i. Complete construction of projects through contractors/vendors for work and supply of materials and labours or both, by way of time scheduling, monitoring, supervision, quality assurance/control, accounting, payment bills and taxes, royalty, GST, cess etc.
- ii. Adherence to the timelines indicates in the project documents.
- iii. Co-ordination with all other agencies, local authorities/bodies for implementation of project as per requirement of site conditions and local bye-laws.

- iv. Invitation of tenders giving wide publicity as per GFR 2017 norms and award of works.
- v. Supervision and Quality control as per CPWD specifications/BIS codes of practice.
- vi. After completion, handing over the project to NESTS in complete shape between NESTS and the Agency along with a hard copy and soft copy of full set of completed drawings.
- vii. Any other services as included in the specific sanction of project.

1.1.3 The technical circular issued by the NESTS during the progress of the work shall form part of the agreement.

**File No: 18015/11/2019-EMRS(Pt.)**  
**Government of India**  
**Ministry of Tribal Affairs**  
**National Education Society for Tribal Student**

**Shastri Bhawan, New Delhi**  
**Dated 23.11.2020**

**To**

Nodal Officers of Construction Agencies  
(TCIL, WAPCOS, NPCC, MTDC, MANIDCO, HSCL, B&R and EPIL)

**Subject: - Guidelines for preparation of Detailed Project Report (DPR) for Construction of EMRS**

Dear Sir/Madam,

I am directed to convey the approval of the competent authority the NESTS approved guidelines for preparation of Detailed Project Report (DPR) for Construction of EMRS and submission of estimates for issue of A/A & E/S for construction of EMRS. It is requested to submit the DPR at the earliest in respect of the sites for which MLP has been approved.

**ENCLOSURE:**

1. Annexure-I (Essential Features of EMRS Phase Wise)
2. Annexure- IIa, IIb, IIc (Building & Development Specification)

  
**(Sh. K C Meena)**

**Additional Commissioner, NESTS**

**GUIDELINE FOR PREPARATION OF DETAILED PROJECT REPORT (DPR)**

**A. Project Overview**

The Ministry of Tribal Affairs through the National Education Society for Tribal Students (NESTS) intends to setup Eklavya Model Residential Schools (EMRS) projects in every block with more than 50% residents belonging to scheduled tribes and at least 20,000 tribal people.

The Eklavya Model Residential School (EMRS) is being established as a quality residential school, to impart education to tribal student in the remote areas of the country. The infrastructure of the school and hostels has been designed to cater needs of 240 boys and 240 girls tribal student along with sports facility and in-house teaching faculty. Initially the infrastructure work shall be provided for school buildings, Hostel Building for 120 boy's and 120 girl's tribal student including Warden Residence, Dining & Kitchen and connected services. Subsequently the infrastructure shall be added for remaining students and faculty's residences for teachers & Staff.

NESTS has engaged ..... (Name of Construction agency) as Construction Agency for the construction of EMRS schools at Vill.....Block..... District ..... State..... This report provides the details of the proposed EMRS at ..... (Name of EMRS).

#### **B. Structure of EMRS**

The EMRS are spread out on ..... acre campuses having a school building, boys' & girls' hostels, dining and kitchen facility, residences for faculty and staff with ample open spaces for playing and recreation.

The built form of EMRS is simple, low profile, and vernacular so as not to appear alien and forbidding in its surroundings. The emphasis is not on the physical form but on its overall relationship with its setting, which is natural and quaint, in keeping with its predominantly rural set-up and an ambience which merges well with the surroundings.

All buildings are kept single or double storied to optimize the cost of construction and user friendliness. Specific provisions are being made for buildings in the earthquake zones. All new EMRS buildings are equipped with fire safety measures and provisions for differently abled students.

The schools are planned with sports facilities like running track, basketball court, volleyball court and archery court on site, along with a landscaped herbal garden and a playground. The infrastructure promotes the overall growth of the student (mental, physical, and psychological) such that these children help uplift and bring about change in the society around them. Special emphasis is given to the extracurricular activities such as sports and horticulture to extend learning outside the classroom, expanding the spectrum of knowledge.

**C. LOCATION** - Overview of location of school indicating village/Taluka/Dist, nearest Bus Station, Landmarks, and other features including Approach Road. Distance from the nearest town and Latitude, Longitude along with photograph of EMRS site.

*KLAVY*

**D. Land Particulars** – Land details such as land area, Plot No, Khatiyani/ Khasra Number, Sketch map, terrain of land, existence of HT/LT electric lines/poles, encroachment (if any), land use certificate stating that land has been allotted for construction of school by State Society/Local Authority, Demarcation and handing over documents for taking possession of lands by Construction Agency.

**E. Formal Sanction Order of EMRS** – Copy of the NESTS formal sanction order for establishment of EMRS in the approved location to be annexed.

**F. Estimate for issue of A/A & E/S:-** For issue of A/A & E/S following estimate provisions ( SUB-HEAD wise ) shall be followed:-

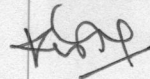
1. Preliminary Estimate based on DPAR 2012 (**As per rate specified for normal Building with specification annexed at Annexure V**) with applicable cost index as on 01.04.2019 for building portion
2. Detailed estimate for compound wall, services and campus development.
3. Provision of site-specific requirement such as retaining wall, filling, etc may be included separately and the sanction for the same may be conveyed depending upon availability of fund.
4. The Phasing of Construction Shall be as per NESTS Order No F. No. 18015 /11 /2019-EMRS(Pt), dated 08.09.2020.
5. The estimate shall be submitted for Phase-I & Phase II separately.

**G. Detailed Estimate:** - The Detailed estimate shall be submitted for phase-I as per the NESTS office Order No F. No. 18015 /11 /2019-EMRS (Pt), dated 08.09.2020.

**Essential Features of EMRS** – Phase- I & Phase-II (as per the attached **Annexure – I**)

**H. Essential Component of EMRS ( Necessary Documents to be attached):-**

1. Sanction orders Master Layout Plan.
2. Handing over/ Taking over possession of demarcated land by Local Authority/TWD
3. Compliance to remark of NESTS in approved MLP/Checklist indicating Phase-I & Phase-II separately in MLP.
4. Compliance to EMRSs/CPWD standards viz, Essential features (**Annexure -I**) and Building Specification (**Annexure-II**) for Estimate Preparation.
5. Soil investigation report and Type of foundation proposed.
6. Water Level, Availability of potable water and the source of water for construction.
7. Availability of nearest sewer line of Panchayat/Municipality if any/ proposal for disposal of sewage.
8. Proposal for site development of EMRS complex such as compound wall, leveling of site, drainage system, sewerage system, Rain Water Harvesting etc.
9. The other site requirement, if any, such as Retaining Wall, Cutting, Filling etc with technical justification along with Likely expenditure.
10. Design Parameters for the structural design of the buildings – , Dead Loads, Live Loads, Wind Loads, Design Life, Design Methodology, Foundation of the structure, Earthquake Resistant Design and Design codes, Earth Quake Zone and Standards (all should be of latest revised version)



11. Nearby source & lead for Construction Materials.
12. Detailed Drawings to be annexed as under: -
  - a. Master Layout Plan of EMRS along with contour details (A-3 Size)
  - b. Approved Architectural plan, elevations, and sections of all the buildings Indicating the title of school location ( A-3 Size)
  - c. Structural Drawings- Initially the foundation drawings shall be provided and Subsequently the remaining structural drawings shall be submitted
  - d. Vetting details/Proposal of the Structural Drawings
  - e. Plumbing & Water Supply Distribution lines
  - f. Electrical Services' Schedules like sub-station, LED Street Lights, Distribution UG Cable layout.
  - g. Details of electrical inventories etc.
  - h. Local Bodies Approval details, if any
13. Execution plans for deployment of Engineers having qualification and experience as per for the EMRS project.

S.N.	Name of Staff/Engineer	Designation	Experience of handling construction works	Education Qualification

14. Quality Control- List of the mandatory tests, proposal for third party quality assurance (TPQA), Construction Checklists.
15. An undertaking pertaining to environmental risk legal/contractual risk should be furnished.
16. Site Specific Issue, if any, requiring attention by NESTS.

**Note: - 1. Time Schedule of various activities for completion of Phase- I construction from the date of approval of DPR and issue of A/A & E/S shall be intimated to NESTS.**

**2. The CA shall also be required to submit the detailed program /PERT Chart for completion of work immediately after the award of work to the Contractor.**

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**Details of Essential features : Comparative NVS visa-vis NESTS - Annexure-I**

A Buildings		Unit	EMRS					
			Phase- I & Phase II			Phase-II		
			S. No.	Item of work	Nos.	Plinth area	Total PA	Nos
1	School Buildings	Sqm	1	2580	2580			
2	Kitchen & Dining	Sqm	1	550	550			
3	Boys Dormitory	Sqm	0.50	2280	1140	0.50	2280	1140
4	Warden Residence( Boys'	sqm	1	80	80			
5	Girls Dormitory	Sqm	0.50	2280	1140	0.50	2280	1140
6	Warden Residence ( Girls'	sqm	1.00	80	80			
7	Principal Residence	Sqm				1.00	130	130
8	Type-III Qtrs.	sqm				15.00	80	1200
9	Type-II Qtrs.	sqm				10.00	70	700
10	Guest House	sqm				1.00	80	80
11	Sub-station building	Sqm	1.00	53	53			
12	Pump House/sump	Sqm	1.00	12	22			
13	Sentry Booth	Sqm	1.00	5	5			
					<b>5650</b>			<b>4390</b>
<b>B Sports Facility</b>			<b>Phase -I</b>			<b>Phase -II</b>		
1	Play Ground					119 mt x 190 mt with 400mt/200 mt. track		
2	Kho Kho/Volley Ball -Each for Boys' & Girls'					Size 19 mt. x 30 mt ( Minimum dimension of 15.2 mts x28.7 mts in case site contstrains/ Less land area		
3	Basketball					Size 19 mt. x 30 mt ( Minimum dimension of 9 mts x 18 mts in case site contstrains/ Less land area		
5	Archery					Archary Ground 2500 Sq mt.		
<b>C Fire Fighting</b>								
1	School		Yes, Fire Extingusher					
2	Hostel		Yes, Fire Extingusher					
<b>D Drinking Water</b>			<b>Phase -I</b>			<b>Phase -II</b>		
1	Sump		RCC under Ground Sump 50,000 Litres			RCC under Ground Sump 50,000 Litres		
2	Deep Boring		200 Mt depth with submersible			200 Mt depth with		
3	Overhead Tank		RCC Overhead tank on each building					
4	External Water Supply System		Yes			Yes		
5	Pump Room with 2 No 7.5 Hp centrifugal pump		Yes					
<b>E Green Features</b>			<b>Phase -I</b>			<b>Phase -II</b>		
1	Dust Bins		Yes			Yes		

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2	Rain Water Harvesting	Yes, As per Phase-I requirement	Yes, As per Phase-II requirement
3	Storm Water drain & sewer	Yes, As per Phase-I requirement	Yes, As per Phase-II requirement
4	Sewage System	Yes, As per Phase-I requirement	Yes, As per Phase-II requirement
5	Solar panel on roof top		May be provided from RESCO model
6	Landscaping & Herbal Garden	To be indicated in MLP only, to be provided at a later stage	
<b>F</b>	<b>Others</b>	<b>Phase -I</b>	<b>Phase -II</b>
1	Boundary Wall (1.8 Meter)	Yes	
2	Entry Gate with Security Room	Yes	
3	Flag Hoisting Stage	Yes	
4	Doors & Windows with Mosquito	Only in residential buildings	Only in residential buildings
5	Internal Roads	Yes . As per minimum	Balance as per LOP
6	Internal pathways	Yes . As per minimum	Balance as per LOP
7	Electric substation	Yes	
8	External Sewrage system	Yes . As per minimum	Balance as per LOP
9	External Electrical Work	Yes . As per minimum	Balance as per LOP
10	Levelling	Yes . As per minimum	Balance as per LOP
11	Filtered Water Supply	Yes, if required, as per Phase-I requirement	Balance if required, as per minimum requirement
12	SITC of sub station equipments (200/250 KVA Transformer)	Yes, As per Phase-I requirement	Balance to be agumented as per Phase-II requirement
13	LED Street Light	Yes, As per Phase-I requirement	Balance ,as per Phase-II requirement
14	SITC of DG set (25 KVA)		Yes
15	SITC UPS (5 KVA)	Yes	
<b>F</b>	<b>Site Specific Requierment</b>	<b>Phase -I</b>	<b>Phase -II</b>
1	Cutting , Filling, Levelling	Yes . As per minimum requirement, depending upon availability of fund	Balance as per requirement
2	Retaing Wall	Yes . As per minimum requirement, depending upon availability of fund	Balance as per requirement

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**SPECIFICATION : HOSTEL DORMITORY & RESIDENTIAL QUARTERS- Anexure-II(a)**

SN	Item	Hostel Dormitory	Warden Residence/ Type III & Type II Quarters	Principal Quarters & Guest House.
1	Foundation & Structure	As per structural requirements based on soil investigation report. The design shall vary as per soil conditions.		
2	Superstructure			
	(a) Structure	RCC framed & Filler walls of Aerated Cement Concrete (ACC) / Cellular Concrete Block (CLC)/ Brick work/Fly-ash brick		
	(b) Internal Partition	Half brick thick masonry in ACC/CLC/Fly-ash Bricks		
	(c) Floor height	3.30 Mt	3.15 Mts	
	(d) Plinth Height	Plinth height of all the buildings shall be kept as 60 cm from the adjoining ground level/plinth protection level. Where plinth height becomes more than 60 cm special care shall be taken. If plinth height more than 1.20 mtrs., approval of the competent authority may be sought.		
3	DOORS & WINDOWS			
	(a) FRAME			
	(i) Door Frame	Providing and fixing T-iron frames of 40x40x6 mm with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (As per D.S.R.-2016 item no. 10.13.1)		
	(ii) Window Frame & Ventilators	Providing and fixing factory made ISI marked steel glazed windows with z- section, window grills fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6		
	(b) Shutters			
	(i) Main Doors	dormitory hall, one with stainless steel Mosquito Proof Jali with auto spring door closed and other Factory made flush door 35mmthick ( i/c Teak Wood Edge Lipping)	Double shutters one with painted iron grill with 35mm thick MS tubular box section styles and rails frame I/C stainless steel Mosquito Proof Jali and other Factory made flush door 35mm thick	
	(ii) Other Doors	Single shutters with 35 mm thick factory made exterior grade Non- Decorative type flush door shutter with teak wood lipping on edges & finished with one coat of wood primer followed by two or more coat of synthetic enamel paints. (As per D.S.R.- item no. 10.21.1 & 10.23 for flush door)		
	(iii) Bath, WC, Toilets Doors	Factory made Machine pressed pre-laminated flush door exterior grade with teak wood lipping on edges. The lamination sheet used shall be decorative high pressure of plain / wood grain in gloss / matt/ suede finish with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S. The door shall be fixed to T Iron frame with SS Hinges.		
	(iv) Windows & Ventilators	Z- Section Double shutter one with frosted glass panes and other with stainless steel wire mesh shutter. All windows and ventilator shall be provided with 12 mm square guard bars at 10 to 12 cms. C/C spacing		
	(c) Hardware & Fittings	Powder coated/anodized Aluminum/ SS fittings		
4	FLOORING			

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	(i) Living/Drawing Room, Bed Rooms, Dining & Family Lounge with matching grouting of joints	All flooring Kota stone combination with marble strip except WC/toilets area with matching grouting of joints	Ceramic Floor Tiles/ Vitrified Tile Flooring not less than 400mm x 400 mm laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) jointing with grey cement slurry @ 3.3kg/sqm including grouting the joints with white cement and matching pigments etc., complete.	600 mm x 600 mm Vitrified Tile Flooring laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) jointing with grey cement slurry @ 3.3kg/sqm including grouting the joints with white cement and matching pigments etc., complete.
	(ii) Kitchen	Anti skid vitrified tiles of size not less than 300 mm x 300 mm with water absorption less than 0.08% laid with matching grouting of joints	Anti skid Ceramic/ vitrified tiles of size not less than 300 mm x 300 mm with water absorption less than 0.08% laid with 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) jointing with grey cement slurry @ 3.3kg/sqm including grouting the joints with white cement and matching pigments etc., complete.	Anti skid vitrified tiles of size not less than 400 mm x 400 mm with water absorption less than 0.08% laid with 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) jointing with grey cement slurry @ 3.3kg/sqm including grouting the joints with white cement and matching pigments etc., complete.
	(iii) Kitchen Counter study table top for dormitories	Udaipur green marble / granite stone with nosing with matching grouting of joints		
	(v) Common circulation area	Mirror-polished Kota Stone flooring with matching grouting of joints.	NA	NA
	(vi) Staircase	Pre-polished Kota stone in single length of treads & risers with matching grouting of joints		
	(vii) Toilets / Bathroom	Glazed ceramic anti-skid of size not less than 300x300 mm with matching grouting of joints.		
	Dado & Skirting			
	(i) Skirting in rooms and other areas.	100 to 150 mm height skirting matching with floor materials		
	(ii) Kitchen Dado	NA	Ceramic Glazed tiles of size not less than 200 x 300 mm as per design from floor up to full height.	Ceramic Glazed tiles of size not less than 300 x 450 mm as per design from floor up to full height. NA
	(iii) Toilets/bathrooms/ WC Dado	Ceramic Glazed tiles of size not less than 200 x 300 mm up to full height with	Ceramic Glazed tiles of size not less than 200 x 300 mm up to full height with	Ceramic Glazed tiles of size not less than 300 x 450 mm as per design from floor up to full height. NA
5	FINISHES			

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a)	Internal Walls	All walls & ceiling to be treated with 2 mm thick POP (one time only) and painted with low VOC Acrylic washable distemper. Synthetic enamel paint on all wood works and steel works		
b)	External Walls	Quartz reinforced Texture Acrylic paint finish/ Premium Acrylic smooth water proof exterior finish. Synthetic enamel paint on all wood work & steel work		
6	Hand Rail	Railing shall be of stainless steel		
7	Roof	RCC Slab brick with Koba treatment (Item No. 22.7.1 of DSR-16).		
8	Toilets for Physically disable person	One each for boys and girls (specification as per NBC)	NA	NA

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**SPECIFICATION : HOSTEL DORMITORY & RESIDENTIAL QUARTERS - Annexure- II(b)**

SN	Item	School Building	Kitchen & Dining
1	Foundation & Structure	As per structural requirements based on soil investigation report. The design shall vary as per soil conditions.	
2	Superstructure		
	(a) Structure	RCC framed & Filler walls of Aerated Cement Concrete (ACC) / Cellular Concrete Block(CLC)/ Brick work/Fly-ash brick	
	(b) Internal Partition	Half brick thick masonry in ACC/CLC/Fly-ash Bricks	
	(c) Floor height	3.45 Mts.	3.30 Mts
	(d) Plinth Height	Plinth height of all the buildings shall be kept as 60 cm from the adjoining ground level/plinth protection level. Where plinth height becomes more than 60 cm special care shall be taken. In case plinth height more than 1.20 mtrs, approval of the competent authority may be sought.	
3	DOORS & WINDOWS		
	(a)FRAME		
	(i)Door Frame	Providing and fixing T-iron frames of 40×40×6 mm with 15×3 mm lugs 10 cm long embedded in cement concrete block 15×10×10 cm of C.C. 1:3:6 (As per D.S.R.-2016 item no. 10.13.1)	
	(ii) Window Frame & Ventilators	Providing and fixing factory made ISI marked steel glazed windows with z- section, window grills fixing with 15×3 mm lugs 10 cm long embedded in cement concrete block 15×10×10 cm of C.C. 1:3:6 (As per D.S.R.-2016 item no. 10.11.1)	
	(b) Shutters		
	(i) Main Doors	Single shutters with 35 mm thick factory made exterior grade Non- Decorative type flush door shutter with teak wood lipping on edges & finished with one coat of wood primer followed by two or more coat of synthetic enamel paints. (As per D.S.R.- item no. 10.21.1 & 10.23 for flush door).	Double shutters one with painted iron grill with 35mm thick MS tubular box section styles and rails frame with stainless steel Mosquito Proof Jali and other 35 mm thick factory made exterior grade non- decorative type flush with teak wood lipping on edges & finished with one coat of wood primer followed by two or more coat of synthetic enamel paints. (As per D.S.R.- item no. 10.21.1 & 10.23 for flush door).
	(ii)Other Doors	Single shutters with 35 mm thick factory made exterior grade Non- Decorative type flush door shutter with teak wood lipping on edges & finished with one coat of wood primer followed by two or more coat of synthetic enamel paints. (As per D.S.R.- item no. 10.21.1 & 10.23 for flush door)	
	(iii) Bath, WC, Toilets Doors	Factory made Machine pressed pre-laminated flush door exterior grade with teak wood lipping on edges. The lamination sheet used shall be decorative high pressure of plain / wood grain in gloss / matt/ suede finish with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S. The door shall be fixed to T Iron frame with SS Hinges.	
	(iv) All Window/ventilator Shutter (except WC, Toilets, Baths)	Z-section single shutter with plain glass panes. windows and ventilator shall be provided with 12 mm square guard bars at 10 to 12 cms. C/C spacing.	Z- Section Double shutter one with frosted glass panes and other with stainless steel wire mesh shutter. All windows and ventilator shall be provided with 12 mm square guard bars at 10 to 12 cms. C/C spacing
	(v) Windows/ventilators	Z-section single shutter with Frosted Glass	
	(c) Hardware & Fittings	Powder coated/anodized Aluminum/ SS fittings	
4	Flooring , Skirting, Dado, Counter/pantry, court yard		
	a) Flooring		
	(i)Main entrance hall, common circulation area.	Mirror polished Kota stone with marble strip	

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	(ii)Other	Classroom - Mirror polished Kota stone with marble strip	Dining Hall & Kitchen Area - Mirror polished Kota stone with marble strip.	
	(iii)Toilet/WC/Bath (including common circulation area of toilet block)	Glazed ceramic anti-skid of size not less than 300x300 mm including grouting the joints.	Glazed ceramic anti-skid of size not less than 300x300 mm including grouting the joints.	
	(iv)Staircase/steps	Pre-polished Kota stone in single length of treads & risers.	Pre-polished Kota stone in single length of treads & risers.	
	(b) Skirting : In rooms and other area	100 to 150 mm height skirting matching with floor materials	100 to 150 mm height skirting matching with floor materials	
	(c) Dado			
	(i) In toilets/WCs /Baths (including common circulation area of toilet block)	Glazed Ceramic tiles not less than 200mm x 300mm as per design from floor up to full height.	Glazed Ceramic tiles not less than 200mm x 300mm as per design from floor up to full height.	Glazed Ceramic tiles not less than 200x300 as per design from floor level up to 2.10 mtrs. height.
	d) Counter/ pantry	At Laboratory platform: Udaipur green marble/ granite stone with nosing	At Kitchen and Dining: platform: Udaipur green marble/granite stone with nosing	
	e) Open Court Yard	Central court yard of School Building:  (i)Top Course: 60 mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction etc. inrequired colour, pattern, 50 mm thick compacted bed of course sand etc.... (as per item no. 16.68, DSR-16) (ii) Based course: 7.50 cm thick CC (1:5:10). (iii) The top level of Court yard shall be (-) 30 cm from plinth level of School Building.		Back side of Kitchen : Kota stone flooring.
5	ROOFING	RCC Slab with Koba treatment (Item No. 22.7 of DSR-16).	Percolated profile sheet roofing DSR 2016 Item No. 12.50. False Ceiling (Item no. 12.45.1 of DSR-16. )	RCC Slab with Koba treatment (Item No. 22.7 of DSR-16)
6	FINISHING			
	(a) External	Quartz reinforcement Texture Acrylic paint finish/Premium Acrylic smooth water proof exterior finish. Synthetic enamel paint on all wood work & steel work.	Quartz reinforcement Texture Acrylic paint finish/Premium Acrylic smooth water proof exterior finish. Synthetic enamel paint on all wood work & steel work.	Quartz reinforcement Texture Acrylic paint finish/Premium Acrylic smooth water proof exterior finish. Synthetic enamel paint on all wood work & steel work.

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	(b) Internal	All walls & ceiling to be treated with 2 mm thick POP (one time only) and painted with low VOC Acrylic washable distemper. Synthetic enamel paint on all wood works and steel works	All walls & ceiling to be treated with 2mm thick POP (one time only) and painted with low VOC Acrylic washable distemper. Synthetic enamel paint on all wood works and steel works	All walls & ceiling to be treated with 2 mm thick POP (one time only) and painted with low VOC Acrylic washable distemper. Synthetic enamel paint on all wood works and steel works.
# # # #	Court Yard	Entire Central Court Yard: 60mm thick factory made CC interlocking paver block of M-30 grade including 50mm thick compacted bed of course sand, filling the joints with fine sand etc. (Item no. 16.68 of DSR-16) on the based course of 1:5:10 (cement: sand: coarse aggregate) CC of 75 mm thick.	N.A.	Back side of Kitchen and side of dining hall Court Yards: 60mm thick factory made CC interlocking paver block of M-30 grade including 50mm thick compacted bed of course sand, filling the joints with fine sand etc. (Item no. 16.68 of DSR-16) on the based course of 1:5:10 (cement: sand: coarse aggregate) CC of 75 mm thick.
8	Railing	Railing shall be of stainless steel, wherever required.		
9	Roof Water Treatment	Brick Coba Treatment as per DSR-16, item No. 22.7.1.		Brick Coba Treatment as per DSR-16, item No. 22.7.1.
10	Roof Water Tank	Boys toilets: 4000 ltrs. Girls Toilets: 2000 ltrs.	500 lites for each toilets.	(i) 10000 lites for Kitchen uses. (ii) 500 liters for each toilets
11	Cooking platform	-	-	RCC as per design and drawings.
12	Pantry	-	-	RCC as per design and drawings.
13	Laboratories Counter/ platform	RCC as per design and drawings.	-	RCC as per design and drawings.
14	Ramp for Physically disable person	One no. (specification as per NBC)	One no. (specification as per NBC)	Two nos. (specification as per NBC)
15	Toilets for Physically disable person	One each for boys and girls (specification as per NBC)	-	-

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**Details scope & specification of Development works and Campus Boundary wall**

**(A ) Development/external services work for EMRS/EMDBS Campus:-Annexure- II©**

Sl. No.	Name of work	Details
1	Land development for buildings.	The formation level of the land for building shall be developed considering the high floor level of the area, economic aspect. The quantities of earth filling/cutting shall be worked out in detailed calculation basis based on Initial level, contour plan.
2	Preparation of play fields:	
	(i) Playfield of Size 190mx110m for foot ball, cricket, hockey etc. including 400mtrs/200mtrs.- running track: 1 no. (Size may be very as per availability of land)	Leveling with good earth after filling/cutting of earth. The quantities of earth filling/cutting shall be worked out in detailed calculation basis as per initial level, contour plan. Finished level shall be 30 cm. higher than the adjoining ground level so that water logging can be avoided.
	(ii)Basket Ball fields – 2 nos.	(a) Size-40mx30m: Leveling with good earth after filling/cutting of earth. The quantities of earth filling/cutting shall be worked out in detailed calculation basis as per initial level, contour plan. Finished level shall be 30 cm. higher than the adjoining ground level so that water logging can be avoided. (b) Size 30mx18m CC court with pole, board, basket etc.(i) Based concreting (1:5:10) of 7.50 cm thick (ii) Top course Concreting (M-20 grade designed mix) of 10 cm thick. (iii) Pole, board, Basket: As per SAI standard.
	(iii) Khokho/ Volley Ball court: 2 nos. (Size-40mx30m for each)	Leveling with good earth after filling/cutting of earth. The quantities of earth filling/cutting shall be worked out in detailed calculation basis as per initial level, contour plan. Finished level shall be 30 cm. higher than the adjoining ground level so that water logging can be avoided.
3	Internal roads, paths and culverts:	
	(i) Internal roads (Cement Concrete roads) :	(i) Width: Shall be 3.50 mtrs. + 1 mtrs. Shoulder/side berm of each side. (ii) Road shall be constructed up to all buildings. (iii) Based Course (1:5:10) of 10 cm thick. (iv) Top Course (M-20 grade designed mix) of 10 cm thick.(v) Finished/top level of the edge of the roads i.e. shoulder level shall be 15 cm. higher than the adjoining ground level.

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	(ii) Pathways :	<p>(i) 2.00 mtrs. width + 1 mtrs. shoulder/side berm each side of the pathways.</p> <p>(ii) Pathways shall be provided to connect the buildings/ permanent infrastructure to nearby internal roads.</p> <p>(iii) No pathways shall be provided on side of the roads.</p> <p>(iv) Top Course: 60 mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction etc. in required colour, pattern, 50 mm thick compacted bed of coarse sand etc.... (as per item no. 16.68, DSR-16)</p> <p>(v) Based course: 7.50 cm thick CC (1:5:10).</p> <p>(vi) Kerb stone on edge( 50 mm thick, 250 mm height (for which shall be embedded underground): Factory Made kerb stone of M-25 grade cement concrete (as per item no. 16.69, DSR-16).</p> <p>(vii) Finished/top level of the edge of the paths shall be 15 cm. higher than the adjoining ground level.</p>
	(iii) Culverts:	As per actual requirement.
4	External water supply:	
	(i) Tube/open well i/c 2 Nos. submersible pump 7.5 HP(preferably Solar Powered)& cabling etc. complete.	Shall be executed as per availability of underground water after examination by the local PHED or any other related Govt. agencies i.e. Central Ground Water Board, Local PHED etc. The yield of water source shall be 15000 LPH or more.
	(ii) Overhead Tank	Required in all building
	(iii) Under Ground Sump:	100000 ltr. capacity with 2 nos. centrifugal pumps including one standby.
	(iv) Pump house	<p>(i) Maximum size-3.0mx3.00m,</p> <p>(ii) Plinth area-11.97 sqm.</p> <p>(iii) Floor height 2.90 mtrs.</p> <p>(iv) Building shall RCC framed structure with slop roof and shall be executed over Under Ground Water Tank.</p> <p>(v) Other specification as per Annexure-V of PAR-19 for Type-I qtrs.</p>
	(v) Water filtration plant (if required)	Shall be executed if required, after conducting necessary water test through local PHED or any other related Govt. agencies.
	(vi) GI/CI water supply distribution line	Distribution line shall be designed as per the intake of the buildings. All pipes shall be CPVC only. Maximum dia. of the main distribution pipes shall be 100 mm (nominal inner dia).
5	External Electrification:	
	(i) Substation building	<p>(i) Plinth area-52.80 sqm.</p> <p>(ii) Floor height 4.25m for 28.48 sqm plinth area and 3.35m for 24.40 sqm plinth area.</p> <p>(iii) Building shall RCC framed structure with slop roof.</p> <p>(iv) Other specification as per Annexure-V of PAR-19 for Type-I qtrs.</p>
	(ii) LT Panel	Fabricated from CPRI approved workshop.

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	(ii) External wiring/cable connection using U.G. cables from sub-station to feederpillar, building & pump house and necessary connection from DG set to infrastructures.	200 KVA/ 250KVA sub-station depending on the location of the School. However capacity of sub-station may be confirmed after consultation with concern state electricity board.
6	External sewerage System: (i) Septic Tank & Soak pit	(i) Proper planning shall be made before preparation of Preliminary estimate. (ii) Septic tank shall be designed as per the user and as per CPWD specification. (iii) Septic tank shall be RCC including walls. (iv) Sufficient soak pit or dispersion channels shall be provided as per the soil condition.
	(ii) External sewerage line (RCC NP2 pipe)	Proper planning shall be made before preparation of Preliminary estimate.
7	5.0 H.P. Sewerage Pump	Air Cool, mounted on trolley with 10m. suction & 10m. del. Flexible pipe
8	25 KVA DG Set	(i) Including erection, installation, testing, commissioning etc. (ii) Essential connection to various building shall be provided as per latest NVS guideline/ order.
9	Retaining wall / Breast wall (if required)	Proper planning shall be made before preparation of Preliminary estimate.
10	Storm Water Drain	(i) Proper planning shall be made after examining the levels of the campus very carefully before preparation of Preliminary estimate. Rain water pipe collect from the buildings shall be connected with the campus storm water drain. (ii) Road side drain shall be avoided. (iii) Level of out fall drains of EMRS is always kept higher than the highest water level of Nallah/Natural drainage where water will be disposed off finally.
11	Rain water harvesting	Proper planning shall be made before preparation of Preliminary estimate.
<b>(B) Campus Boundary Wall including Main Gate and Chowkider Hut:</b>		
<b>Sl. No.</b>	<b>Name of work</b>	<b>Details</b>
1	Campus Boundary wall	(i) Boundary wall shall be 1.80 mtrs. height masonry wall + 0.8 mtrs. fencing with 600 mm dia. concertina coil over masonry wall. (ii) The total height of Boundary wall shall be 2.60 mtrs. (iii) The campus boundary wall shall be of RCC column, plinth beam, top band and filler wall in brick work.
2	Chowkider Hut/Sentry Booth	(i) Plinth area-5.11 sqm. (ii) Floor height 2.90m. (iii) Building shall RCC framed structure with slop roof. (iv) Other specification as per Annexure-V of PAR-19 for Type-I qtrs.
3	Main Gate - Depending upon layout two gates, one for school and other for residential area may be provided.	(i) Width & Height of Main Gate: As per NBC (ii) Wicket Gate: As per NBC

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**F. No 18015/ 11/2019 – EMRS(Pt.)**  
**Government of India**  
**Ministry of Tribal Affairs**  
**National Education Society for Tribal Students**

Shastri Bhawan, New Delhi

Dated: 23<sup>rd</sup> Dec, 2020

**To**

- 1. The Nodal Officers of Construction Agencies**  
(TCIL, WAPCOS, NPCC, MANIDCO, B&R, HSCL and EPIL)
- 2. The Chief Engineer(Civil), CPWD**  
(Telengana, Tripura, AP, HP, Laddakh, Rajasthan, J&K & Maharastra)

**Sub: Modification in the guidelines for submission of DPR and Preliminary Estimate for issue of A/A & E/S.**

Phasing of construction work of EMRS was issued vide NESTS order F. No. 18015/11/2019-EMRS (Pt) dated 08.09.2020. Further DPR Guidelines & Checklist for preparation of DPR and submission of estimate for issue of A/A & E/S was also issued vide NESTS order F.No.18015/11/2019-EMRS(Pt) dated 23.11.2020.

Now, I am directed to convey the approval of the competent authority the following modifications of the DPR guidelines with reference to provision of National Building Code (NBC) and CPWD documents: -

- 1. Specification: -**
  - a. Ceiling Height of the School building shall be 3.60 mt. as per NBC Code (Ref.- 12.2.1.1 (a), Page 44) instead of 3.30 mt. provided in the NESRS approved drawing.
  - b. The clear width of stair case shall be 1.25 mt. for hostel building and 1.50 mt. for school building as per NBC code instead of 1.20 & 1.40 mt. in Hostel and School Building respectively. (Ref.- 12.18.1.1 (e), Page 49)
  - c. The slope of ramp shall be 1:20 as per NBC Code instead of 1:12 provided in the NESTS approved drawings. ( Ref.- B-2.2.1 (c), Page 67)

- 2. Material Specification: -**

**Flooring**

- a. The Anti-Skid Vitrified tile flooring of size 300mm x 300 mm is proposed in the ramp area instead of Kota Stone as per the prevailing trends, technically suitability and aesthetic point of view.
- b. The vitrified tile flooring of size not less than 600mm x 600 mm is proposed in principal room, vice principal room, staff room and medical room of Kota Stone as per the prevailing trends and for better aesthetic.
- c. Electrical Services- CCTV camera is proposed for School Building in phase-I.

*K. G. P.*  
23/12

**180228/2021/NESTS-JC (BCR)****3. Submission of Estimate for issue of A/A & E/S:-**

- i. A/A & E/S shall be issued at the time of approval of MLP on the

Based on the standard Preliminary Estimate prepared by NESTS on the basis of DPAR 2012 for building portion including service with applicable Cost Index as on 01.04.2019 and DPAR 2019/Market Rate for campus development such as roads, drainage, compound wall, etc

- ii. For the site-specific requirement such as retaining wall, filling, etc, the Construction Agency may submit the detailed estimate with details of measurement and detailed technical justification mentioning site conditions at the time of submission of MLP. The sanction for the same shall be conveyed depending along with MLP approval depending upon availability of fund.
- iii. The CA shall be required to submit DPR within 15 days of the approval of MLP.

**4. The provision of Sl. No 'F' of DPR guideline dated 23.11.2020 is amended as under: -**

- i. Copy of A/A & E/S with complete annexures shall be enclosed.
- ii. Detailed Estimate for Phase-I construction shall be submitted.
- iii. The detail estimate of campus development i.e. Compound wall, roads, drainage, rain water harvesting, external electrical services, LED street light and site-specific requirement such as retaining wall, filling, etc shall also be indicated component wise.
- iv. The detailed estimate items shall be prepared as per the approved building and material specifications and no deviation shall be permitted without the prior approval of NESTS.
- v. The Phasing of Construction and Detailed Estimate Shall be as per NESTS Order No F. No. 18015 /11/2019-EMRS(Pt), dated 08.09.2020.
- vi. The other provisions of DPR shall remain unchanged.

Your faithfully,



(K.C. Meena)

**Additional Commissioner, NESTS**

180920/2021/NESTS JC (BCR) सी छात्र शिक्षा समिति

(जनजातीय कार्य मंत्रालय के अंतर्गत  
एक स्वायत्त संस्थान, भारत सरकार)  
भू-तल, गेट नंबर-3ए, जीवन तारा बिल्डिंग,  
संसद मार्ग, नई दिल्ली-110001  
दूर. 011-23340280



**National Education Society for Tribal Students**

(An Autonomous Organization under  
Ministry of Tribal Affairs, Govt. of India)  
Ground Floor, Gate No.3 A, Jeevan Tara Building,  
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Telephone No. 011-23340280  
वेबसाइट/Website: www.tribal.nic.in  
Email: nests-tribal@tribal.gov.in

F. No. 18015/11/2019-EMRS(Pt.)

Date: 4<sup>th</sup> March 2021

To

1. The Nodal Officers of the Construction Agencies.

(TCIL/WAPCOS/NPCC/MTDC/MANIDCO/HSCL/B & R and EPIL)

2. The Chief Engineers (CPWD)

(Telangana, Tripura, Andhra Pradesh, Himachal Pradesh, Ladakh, Rajasthan, Jammu & Kashmir and Maharashtra)

**Subject:** List of preferred makes of materials (Civil & Electrical) to be used  
in EMRS/EMBDS works

Dear Sir/Madam

I am directed to convey the approval of the competent authority regarding list of preferred makes of materials (Civil & Electrical) for incorporation in DPR and tender document. The said list shall be treated as a part of DPR

**Enclosure:** as above

Yours faithfully

(Bipin Chandra Raturi)  
Joint Commissioner

04/03/21

## LIST OF PREFERRED MAKE OF MATERIALS (CIVIL) for EMRS/EMBDS Works

186926/2021/NESTS-JC (BCR)

Sl. No.	Material Name/Article	Conforming IS Code	Manufacturers/ Agencies/ Brand make
1	Cement (OPC 43 grade)	IS 8112:1989	A.C.C., Jaypee Cement, Ultratech, Shri Cement, Gujrat Ambuja Cement and cement Corporation of india.
2	Steel Reinforcement	IS 1786:2008	Thermo mechanically treated bars Fe-500 Grade conforming to IS 1786:2008 from approved brands i.e. SAIL, TISCO, RINL
3	Ready Mix Concrete	-	Ultra Tech (Ultra Tech Cement Ltd.), ACC (ACC Cements Ltd), RMC (India), RMC (India) Pvt. Ltd.
4	AAC Blocks	-	Xtralite (Ultra Tech Cement Ltd), Areocon (HIL), Nucon (Green Way building materials India Pvt. Ltd.), Magicrete (Magicrete Precast)
5	Structural Steel	IS 2062:2011	SAIL, TISCO, RINL
6	Stainless Steel		Salem (SAIL), Jindal (JSW), SAIL (SAIL)
7	Corrugated GI Sheets	IS 277:2003	TATA, Essar, SAIL, JSW, BHUSAN
8	Colour coated profile sheet	-	TATA
9	Float Glass Profile sheet TATA (transparent)	IS 14900:2000	TATA, Modiguard, Saint Gobain
10	Aluminium extruded sections	IS 733:1983 & IS 1285:2002	Jindal, Hindalco
11	Aluminium plain sheets	IS 733:1983 & IS 1285:2002	Jindal, Hindalco
12	Factory made Machine pressed Pre-laminated flush door shutter	IS 2202 (Part 1) : 1999 and relevant IS code	Century, Greenply, Archid, Kitply, Duroply, Merino
13	Block Board	IS 1659:2004	Century, Greenply, Archid, Kitply, Duroply, Merino
14	Flush door shutter	IS 2202 (Part 1) : 1999	Greenply, Century, Archid, Kitply, Duroply, Merino
15	Boiling Water proof plywood, Block board, Commercial plywood	IS 303:1989	Greenply, Century, Archid, Kitply, Duroply, Merino
16	Aluminium door & window fittings	Relevant IS Code	Jyoti, Argent, Everest
17	PVC rigid foam sheet	-	Rajshri or equivalent
18	Hydraulic Floor Spring	IS 6315:1992	Dorma, Hardwin, Ozone, Dorma, Dorset
19	Door Closure	IS : 3564	Dorma, Hardwin, Ozone, Dorma, Dorset
20	uPVC doors, door frames and windows	-	Fenesta (Fensta DCM Shriman), Encraft (Encraft India Pvt. Ltd.), Duroplast (Duro Plast Extrusion Pvt. Ltd.)
21	Float Glass	-	Saint Gobain (Saint Gobain India Pvt. Ltd.), Modiguard (Gujarat Guardian Ltd.), Asahi (Asahi India Glass ltd.)
22	SWR uPVC pipe & fitting	IS 4985:2000 & IS 14233:1999	Supreme, Finolex, Prince, Astral, Prakash
23	CPVC Pipe (White Colour) & fittings	IS 16088: 2012, IS 15778:2007	Supreme, Finolex, Prince, Astral
24	Ceramic glazed wall tiles	IS 13712:1993	Kajaria, Orientbell, Somany, NITCO, HR Johnson,
25	Vitrified Tiles	IS: 15622: 2006	Kajaria, Orientbell, Somany, NITCO, HR Johnson,
26	Bitumen VG-30, VG-10 etc.	IS:73:2013	As per particular specification of IOCL, BPCL, HPCL.
27	Admixtures	IS: 9103:1999	FOSROC, SIKKA, CICO Technologies Ltd., Pidilite
28	Mild Steel Tubes	IS: 1239:1990	As per IS Code
29	Ist quality Acrylic distemper(Ready mix)	-	Bison (Lewis Berger), Beauty (Nerolac), Tractor Uno (Asian Paints)
30	Premium Acrylic smooth exterior Paint with silicon additives	-	ULTIMA (Asian paint), Premium Exterior Emulsion (Dulux), Weathercoat long life 7 (Berger)
31	Paints	IS:101:1986	Lewis Berger, Asian Paints, Nerolac, Dulux
32	Steel/Wood Primer paints	IS:14177:1994	Lewis Berger, Asian Paints, Nerolac, Dulux
33	Factory made C.C. Interlocking Paver Blocks	IS: 15658:2006	Nitco, KK, NTC

186920/2021/NEST/JC (BCR)

S. No.	Material /Article	Conforming IS Code	Manufacturers/ Agencies/ Brand make
34	Water Proofing Compound	IS:702:1988	HPCI, IOCL
35	Water Proofing Compound	IS:2645:2003	FOSROC, Dr. FIXIT, BASF
36	G. I. Pipes	IS:1239	TATA, Jindal, Hissar
37	G. I. Fittings	-	UNIK
38	PVC Water Storage Tanks	IS: 12701:1996	Sintex, Plasto
39	P.T.M.T. Accessories	IS:9763	Prayag, Prakash, Surya
40	Mirror	-	Saint Gobain (Saint Gobain India Pvt. Ltd.), Modiguard (Gujarat Guardian Ltd.), Asahi (Asahi India Glass Ltd.), Atul (Autl Glass Industries Ltd.)
41	Stainless Steel Sink	IS: 13983:1994	Hindware, NIRALI
42	Sanitaryware/ Chinaware	As per IS Code	Cera, Parryware, Hindware
43	C.P. Fittings and accessories for bathroom / toilets	IS:7784:1993	Jaquar, Gem, Parko, Hindware
44	RCC Pipes	-	Indian Hume Pipes (Indian Hume Pipe Ltd.), Jain & Co (Jain spun pipes Co)
45	SFRC Cover and grating	-	KK (KK Manhole and gratings Co Pvt Ltd.)
46	CI Manhole cover		RPFM (M/s Raj Pattern Makers & founders Pvt. Ltd.), BIC (Bengal iron corporation), Neco (Jayaswal Neco Ltd)
47	Foot Rest (for manhole)		KGM (KGM Exports), Accurate Buildcon (Accurate Buildcon company), Neco (Jayaswal Neco Ltd)
48	Water stops		Hydrotite (Sika India), Dr. Fixit (Pidilite industries), Ferrous Crete (Ferrous Crete ( India ) Pvt Ltd.)
49	Aluminium doors/windows sections	-	Hindalco (Hindalco Industries Ltd.), Jindal (jindal Aluminium Ltd.)
50	Glass Reinforced Concrete (GRC) Jali		Terrafirma (Terrafirma GRC Industries), Ecovision (Ecovision Industries Pvt Ltd.), Mahesh GRC (Mahesh Prefab Pvt Ltd.)
<p><b>Note:</b> Equivalent materials and finishes of any other specialized make may be used, in case it is established that the brands specified above are not available in the market but only after approval of the alternate brand by the Competent authority/NIT Approving authority.</p>			



## LIST OF PREFERRED MAKES OF MATERIAL ( ELECTRICALS) - for EMRS/EMBDs Works

180920/2021/NEST/JG (BGR)		Manufacturers/ Agencies/ Brand make
1	Engine	Ashok Leyland /Cummins/ Caterpillar /KOEL/ Volvo Penta / Mahindra & Mahindra /Escorts / Eicher
2	Alternator	Kirloskar/NGEF/KEL/Crompton Greaves (AL. series) / KEC /Leroy Somer / Stamford/Jyoti Ltd
3	Battery (Lead Acid /Mntc. Free)	Amara Raja / AMCO / Hitachi / Exide/ Prestolite/ Standard/Crompton Greaves
4	HV Switchgear	Southern Switchgear/Biecco Lawrie / Crompton / Kirloskar /MEI /Voltas/ Jyoti Ltd. ( Make of the accessories like meters. CTs, PT etc. shall be as provided by the manufacturer of the H.T.Panel )
5	LT Switchgears	L&T/ Schneider Electric / Siemens/ABB/hager/Legrand
6	Vaccum Circuit Breaker	GE/Siemens
7	Transformer (Oil filled / Dry type)	ABB / Schneider Electric /Andrew Yule /Bharat Bijlee / Crompton Greaves / EMCO /Kirloskar /Siemens/Voltas/Areva/Hammond
8	HT Panels	ABB/Siemens/L&T/Schneider/Kirloskar/System Control
9	Air Circuit Breaker	L&T/ Schneider Electric / Siemens
10	MCCB (Ics=Icu)	L&T/ Schneider Electric / Siemens/Legrand/Havells
11	MV/LT Panels	TTA/CPRI Fabricators with panels cleared by CPRI
12	SDF units	L&T/ Schneider Electric / Siemens/ HPL/Havells
13	Power Contactors	L&T/ Schneider Electric / Siemens/Lakshmi(LECS)/BCH/GE Power Controls
14	Change Over Switch	HPL / Havells / H-H Elcon/Standard/Control & Switch gears
15	Air Break Switch	National/Kiran/Pactil/Atlas/Power grid switchgears
16	Pin and Disc Insulator	Jayshree/WS/IEC/BHEL/Bharat Industries
17	11 KV Horn Gap Arrestor	Sahal/Pactil/GEC/SEW
18	Lightning Arrestor	Atlas/GE/Elaro/Lamco/International/Oblum/Elpro
19	Drop out Fuses	National/Kiran/Pactil
20	G.I.Wire/Strip	Hot dipped Galvanized
21	APFC Relay	L&T/EPCOS(Siemens)/ Schneider Electric / Neptune Ducati/Syntron/ABB/Trinity Electronics
22	IDMT Relay	AVKC/SEGC
23	C.T./P.T.	AE/MP/Marshall/Pactil/Kappa/L&T/Ashmor/Waco/Meco/Gilbert/Trio/Indotech/Indo coil
24	Selector Switch	L&T/Kaycee/IMP/Thakoor/Vaishno/Seizer/rass control
25	Indicating Lamp (LED Type) and Push Buttons	Vaishno/Siemens/L&T/AE/IMP/Rass control/Crompton/Kaycee/BCH/EMCO
26	Power Capacitors (MPP/APP)	Khatau Junkar/L&T/EPCOS(Siemens)/ABB/Crompton/Schneider Electric/Neptune Ducati
27	Digital Panel Meters i/c Multi Function Meter	Conzerv/Schneider Electric/ AE/ Digitron / IMP/Meco / Rishabh /Universal/HPL/L&T/ABB
28	Ammeter/Voltmeter	AE/Universal/Rishabh/Kaycee/Meco/Enercom
29	Cold shrink HT/LT Cable Joint Kit	Denson / 3M(M-Seal) / Raychem
30	Rubber Matting ( ISI Marked)	Jyoti Rubber Udyog/Raychem/Padmini/Dozz
31	AVM Pads	Dunlop/Poly Bond
32	MCB/ Isolator/ELCB/RCCB/ Distribution Board	Crompton / Havells / Indokopp / MDS Legrand/ L&T / Schneider Electric/Siemens / Standard/ C&S/ABB/HPL ( makes of DBs and circuit breakers shall be same)
33	TPN Switches & HRC Fuses	Crompton / Havells / Indokopp / MDS Legrand/ L&T / Schneider Electric/Siemens / Standard/ C&S/HPL
34	PVC Conduits (ISI Marked) Colour : Ivory/Grey	AKG/BEC/Avon Plast/Precision/GM/Clipsal
35	Steel Conduits(ISI Marked)	BEC/Bharat/Gupta/AKG/RMCON/Steel Krafts
36	Piano/Modular Switches and Sockets	Legrand/MK/Havells/Anchor
37	Cable Tray	MEM/Bharti/Ratan/Slotco/Profab
38	Cable Glands	MCI, Comet/Jainson
39	Thimbles/Lugs	Jainson/Dowells/Ascon
40	1.1 KV/11KV grade Al. Condr., XLPE insulated armoured cables ( ISI Marked )	Finolex/Havells/Polycab/KEI/Universal/Gloster
41	Fire Survival cable	KEI/Polycab/RR Kable/Havells

S. No.	Material /Article	Manufacturers/ Agencies/ Brand make
42	Wires (PVC insulated Copper conductor cable FRLS - ISI marked)/Telephone cables/Submersible cables/Co-axial/TV cables	Finolex/Havells/Polycab/Anchor/RR kabel/L&T
43	Fans and Exhaust fans ( All Types)	Khaitan/Havells/Crompton/Orient/Almond/Bajaj
44	LED Luminaries i/c street light fittings ( ISI Marked)	Phillips/Havells/Wipro/Crompton Greaves/Bajaj/Osram
45	LAN Cables	Panduit/Legrand/Belden/Schneider/Molex/Extreme/Systimax(COMMSCOPE)
46	Centrifugal Pump	BE Power / Beacon /Crompton / Jyoti / Kirloskar / KSB
47	Submersible Pump	Crompton / BE Power /Kirloskar / KSB
48	Motors	ABB/ Bharat Bijlee / Crompton Greaves /Schneider Electric / HBB / Kirloskar /Siemens/Jyoti Ltd
49	Motor Starters	L&T/Siemens/BCH/ABB/MEI/GE Power Control/Schneider Electric
50	Fresh Air Fans	GE / Khaitan/Almonard/Crompton
51	Single Phase Preventer/Overload Unit	L&T / Minilec / Siemens / Zerotrip
52	Timers	L&T / Minilec / Siemens / Telemecanique/AE
53	GI/MS Pipe ( ISI Marked)	ATC / ATL / BST / GSI / ITC / ITS / IIA /JST / Jindal /TTA / Tata/Zenith
54	Gate Valve/Foot Valve/NRV/Butter Fly Valve	Advance/Audco/Johnson Controls/Zoloto/Annapurna / Fountain/Kirloskar / Leader / Sant / Trishul/Kartar/Inter Valve
55	Single/Double Headed GM Landing Valve	New Age (Mumbai)/Safex/Ceasefire/Padmini/Life guard
56	Hydrant Valve	New Age (Mumbai)/Safex/Ceasefire/Kalpana/L&T valves Ltd./Life guard
57	Gauges	Feibig / H.Guru / Pricol
58	Controls	FLICA / Honeywell / Indfoss / Penn-Danfoss / Ranco / Ranutrol / Sporland
59	Pressure Guage	H Guru/Fiebig
60	Fine Filters	Anfiltra Effluent / ARW / Athlete/Airtake/ Dyna / Kirsloskar/ Puromatic/Purafill/ Purolator / Tenacity
61	GI Sheet	HSU Jindal / National / Nippon Denro /Sail / Tata
62	Heat Detector	Appollo / Chemtron/ Edward / Fenwal/Hochiki / Nitton /System Sensor/Wormald/Honeywell Essar/Notifier
63	Ionization Detector	Appollo / Cerebrus / Edward/ /Fenwal /Hochiki / Nitton / System Sensor /Wormald
64	Photo Electric Smoke Detector	Appollo / Cerebrus / Edward / Fenwal/Hochiki / Nitton / Wormald
65	Fire Panel (Microprocessor based)	Agni Instruments / Agni Devices/ Aruna Agencies/ Carmel Sensor / Ravel Elect./Honeywell Essar/Notifier/Navin Systems
66	Sprinkler/ Hose Reel & Hose Pipe (ISI Marked)	Safex/Padmini/Ge Tech/Agni/Newage/Ceasefire/Life Guard/Omex
67	Fire Extinguisher ( ISI Marked)	Minimax/Lifeguard/Safeguard/Safex/Omex
68	Water Purifier	Eureka Forbes/Kent/Ion Exchange/LG
69	Inverter System	Sukam/Microtek/Luminous
70	Electrical Water Storage Heater (Geyser)	Racold/Crompton/Havells/Ditz

**Note:**

Equivalent materials and finishes of any other specialized make may be used, in case it is established that the brands specified above are not available in the market but only after approval of the alternate brand by the Competent authority/NIT Approving authority.

राष्ट्रीय आदिवासी छात्र शिक्षा समिति  
(जनजातीय कार्य मंत्रालय के अंतर्गत  
एक स्वायत्त संस्थान, भारत सरकार)  
भू-तल, गेट नंबर-3ए, जीवन तारा बिल्डिंग,  
संसद मार्ग, नई दिल्ली-110001  
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**National Education Society for Tribal Students**  
(An Autonomous Organization under  
Ministry of Tribal Affairs, Govt. of India)  
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वेबसाइट/Website: www.tribal.nic.in  
Email: nests-tribal@tribal.gov.in

**F. No. NESTS/Civil/EMRS Order/140/2021-22**

**Date: 09.08.2021**

To

The Nodal Officers of Construction Agencies  
(TCIL/WAPCOS/NPCC/MTDC/MANIDCO/HSCL/B&R and EPIL)

**Subject: - List of preferred makes of materials to be used in EMRS/EMBDS works-R1-  
regarding**

**Reference: - Prefer make List vide NESTS order no. 18015/11/2019-EMRS(Pt.) dated  
04/03/2021(R1)**


Dear Sir,

I am directed to convey the approval of the competent authority in respect of revision-1 to the list of preferred makes of materials (Civil) issued by this office vide order no. 18015/11/2019-EMRS(Pt.) dated 04/03/2021.

S. No.	Material /Article	Conforming IS Code	Original Manufacturers/ Agencies/ Brand make	Revised Manufacturers/ Agencies/ Brand make
1	Steel Reinforcement	IS 1786:2008	Thermo mechanically treated bars Fe-500 Grade conforming to IS 1786:2008 from approved brands i.e. SAIL, TISCO, RINL	Thermo mechanically treated bars Fe-500 Grade conforming to IS 1786:2008 from approved brands i.e. SAIL, TISCO, RINL and Shyam Steel (Shyam Steel Industries Ltd)

This is issued with the approval of the competent authority

Encls.: As Above



K C Meena

(Additional Commissioner)

Copy to:

1. PS to Commissioner, NESTS, Jeevan Tara Building, New Delhi
2. Guard File

**LIST OF PREFERRED MAKE OF MATERIALS (CIVIL) for EMRS/EMBDS Works (R1)**

S. No.	Material /Article	Conforming IS Code	Manufacturers/ Agencies/ Brand make
1	Cement (OPC 43 grade)	IS 8112:1989	A.C.C., Jaypee Cement, Ultratech, Shri Cement/Bangur, Gujrat Ambuja Cement and Cement Corporation of India,
2	Steel Reinforcement	IS 1786:2008	Thermo mechanically treated bars Fe-500 Grade conforming to IS 1786:2008 from approved brands i.e. SAIL, TISCO, RINL and Shyam Steel (Shyam Steel Industries Ltd)
3	Ready Mix Concrete	-	Ultra Tech (Ultra Tech Cement Ltd.), ACC (ACC Cements Ltd), RMC (India), RMC (India) Pvt. Ltd.
4	AAC Blocks	-	Xtralite (Ultra Tech Cement Ltd), Areocon (HIL), Nucon (Green Way building materials India Pvt. Ltd.), Magicrete (Magicrete Precast)
5	Structural Steel	IS 2062:2011	SAIL, TISCO, RINL
6	Stainless Steel		Salem (SAIL), Jindal (JSW), SAIL (SAIL)
7	Corrugated GI Sheets	IS 277:2003	TATA, Essar, SAIL, JSW, BHUSAN
8	Colour coated profile sheet	-	TATA
9	Float Glass Profile sheet TATA (transparent)	IS 14900:2000	TATA, Modiguard, Saint Gobain
10	Aluminium extruded sections	IS 733:1983 & IS 1285:2002	Jindal, Hindalco
11	Aluminium plain sheets	IS 733:1983 & IS 1285:2002	Jindal, Hindalco
12	Factory made Machine pressed Pre-laminated flush door shutter	IS 2202 (Part 1) : 1999 and relevant IS code	Century, Greenply, Archid, Kitply, Duroply, Merino
13	Block Board	IS 1659:2004	Century, Greenply, Archid, Kitply, Duroply, Merino
14	Flush door shutter	IS 2202 (Part 1) : 1999	Greenply, Century, Archid, Kitply, Duroply, Merino
15	Boiling Water proof plywood, Block board, Commercial plywood	IS 303:1989	Greenply, Century, Archid, Kitply, Duroply, Merino
16	Aluminium door & window fittings	Relevant IS Code	Jyoti, Argent, Everest
17	PVC rigid foam sheet	-	Rajshri or equivalent
18	Hydraulic Floor Spring	IS 6315:1992	Dorma, Hardwin, Ozone, Dorma, Dorset
19	Door Closure	IS : 3564	Dorma, Hardwin, Ozone, Dorma, Dorset
20	uPVC doors, door frames and windows	-	Fenesta (Fensta DCM Shriman), Encraft (Encraft India Pvt. Ltd.), Duroplast (Duro Plast Extrusion Pvt. Ltd.)
21	Float Glass	-	Saint Gobain (Saint Gobain India Pvt. Ltd.), Modiguard (Gujarat Guardian Ltd.), Asahi (Asahi India Glass ltd.)
22	SWR uPVC pipe & fitting	IS 4985:2000 & IS 14233:1999	Supreme, Finolex, Prince, Astral, Prakash
23	CPVC Pipe (White Colour) & fittings	IS 16088: 2012, IS 15778:2007	Supreme, Finolex, Prince, Astral
24	Ceramic glazed wall tiles	IS 13712:1993	Kajaria, Orientbell, Somany, NITCO, HR Johnson,
25	Vitrified Tiles	IS: 15622: 2006	Kajaria, Orientbell, Somany, NITCO, HR Johnson,
26	Bitumen VG-30, VG-10 etc.	IS:73:2013	As per particular specification of IOCL, BPCL, HPCL.
27	Admixtures	IS: 9103:1999	FOSROC, SIKKA, CICO Technologies Ltd., Pidilite

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28	Mild Steel Tubes	IS: 1239:1990	As per IS Code
29	Ist quality Acrylic Distemper (Ready mix)	-	Bison (Lewis Berger), Beauty (Nerolac), Tractor Uno (Asian Paints)
30	Premium Acrylic smooth exterior Paint withsilicon additives	-	ULTIMA (Asian paint), Premium Exterior Emulsion (Dulux), Weathercoat long life 7 (Berger)
31	Paints	IS:101:1986	Lewis Berger, Asian Paints, Nerolac, Dulux
32	Steel/Wood Primer paints	IS:14177:1994	Lewis Berger, Asian Paints, Nerolac, Dulux
33	Factory made C.C. Interlocking Paver Blocks	IS: 15658:2006	Nitco, KK, NTC
34	Bitumen 85/25	IS:702:1988	HPCL, IOCL
35	Water Proofing Compound	IS:2645:2003	FOSROC, Dr. FIXIT, BASF
36	G. I. Pipes	IS:1239	TATA, Jindal, Hissar
37	G. I. Fittings	-	UNIK
38	PVC Water Storage Tanks	IS: 12701:1996	Sintex, Plasto
39	P.T.M.T. Accesseries	IS:9763	Prayag, Prakash, Surya
40	Mirror	-	Saint Gobain (Saint Gobain India Pvt. Ltd.), Modiguard (Gujarat Guardian Ltd.), Asahi (Asahi India Glass Ltd.), Atul (Autl Glass Industries Ltd.)
41	Stainless Steel Sink	IS: 13983:1994	Hindware, NIRALI
42	Sanitaryware/ Chinaware	As per IS Code	Cera, Parryware, Hindware
43	C.P. Fittings and accessories for bathroom /toilets	IS:7784:1993	Jaquar, Gem, Parko, Hindware
44	RCC Pipes	-	Indian Hume Pipes (Indian Hume Pipe Ltd.), Jain & Co (Jain spun pipes Co)
45	SFRC Cover and grating	-	KK (KK Manhole and gratings Co Pvt Ltd.)
46	CI Manhole cover		RPFM (M/s Raj Pattern Makers & founders Pvt. Ltd.), BIC (Bengal iron corporation), Neco (Jayaswal Neco Ltd)
47	Foot Rest (for manhole)		KGM (KGM Exports), Accurate Buildcon (Accurate Buildcon company), Neco (Jayaswal Neco Ltd)
48	Water stops		Hydrotite (Sika India), Dr. Fixit (Pidilite industries), Ferrous Crete (Ferrous Crete ( India ) Pvt Ltd.)
49	Aluminium doors/windows sections	-	Hindalco (Hindalco Industries Ltd.), Jindal (jindal Aluminium Ltd.)
50	Glass Reinforced Concrete (GRC) Jali		Terrafirma (Terrafirma GRC Industries), Ecovision (Ecovision Industries Pvt Ltd.), Mahesh GRC (Mahesh Prefab Pvt Ltd.)
<b>Note:</b> Equivalent materials and finishes of any other specialized make may be used, in case it is established that the brandsspecified above are not available in the market but only after approval of the alternate brand by the Competent authority/NIT Approving authority.			

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**LIST OF PREFERRED MAKES OF MATERIAL (ELECTRICALS) - for EMRS/EMBDS Works**

S. No.	Material /Article	Manufacturers/ Agencies/ Brand make
1	Engine	Ashok Leyland /Cummins/ Cater pillar /KOEL/ Volvo Penta / Mahindra & Mahindra /Escorts / Eicher
2	Alternator	Kirloskar/NGEF/KEL/Crompton Greaves (AL. series) / KEC /Leroy Somer / Stamford/Jyoti Ltd
3	Battery (Lead Acid /Mntc. Free)	Amara Raja / AMCO / Hitachi / Exide/ Prestolite/ Standard/Crompton Greaves
4	HV Switchgear	Southern Switchgear/Biecco Lawrie / Crompton / Kirloskar /MEI /Voltas/ Jyoti Ltd.( Make of the accessories like meters. CTs, PT etc. shall be as provided by the manufacturer of the H.T.Panel )
5	LT Switchgears	L&T/ Schneider Electric / Siemens/ABB/hager/Legrand
6	Vaccum Circuit Breaker	GE/Siemens
7	Transformer (Oil filled / Dry type)	ABB / Schneider Electric /Andrew Yule /Bharat Bijlee / Crompton Greaves / EMCO /Kirloskar /Siemens/Voltas/Areva/Hammond
8	HT Panels	ABB/Siemens/L&T/Schneider/Kirloskar/System Control
9	Air Circuit Breaker	L&T/ Schneider Electric / Siemens
10	MCCB (Ics=Icu)	L&T/ Schneider Electric / Siemens/Legrand/Havells
11	MV/LT Panels	TTA/CPRI Fabricators with panels cleared by CPRI
12	SDF units	L&T/ Schneider Electric / Siemens/ HPL/Havells
13	Power Contactors	L&T/ Schneider Electric / Siemens/Lakshmi(LECS)/BCH/GE Power Controls
14	Change Over Switch	HPL / Havells / H-H Elcon/Standard/Control & Switch gears
15	Air Break Switch	National/Kiran/Pactil/Atlas/Power grid switchgears
16	Pin and Disc Insulator	Jayshree/WS/IEC/BHEL/Bharat Industries
17	11 KV Horn Gap Arrestor	Sahal/Pactil/GEC/SEW
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19	Drop out Fuses	National/Kiran/Pactil
20	G.I. Wire/Strip	Hot dippeed Galvanized
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32	MCB/ Isolator/ELCB/RCCB/ Distribution Board	Crompton / Havells / Indokopp / MDS Legrand/ L&T / Schneider Electric/Siemens /Standard/ C&S/ABB/HPL ( makes of DBs and circuit breakers shall be same)
33	TPN Switches & HRC Fuses	Crompton / Havells / Indokopp / MDS Legrand/ L&T / Schneider Electric/Siemens / Standard/ C&S/HPL
34	PVC Conduits (ISI Marked) Colour : Ivory/Grey	AKG/BEC/Avon Plast/Precision/GM/Clipsal
35	Steel Conduits(ISI Marked)	BEC/Bharat/Gupta/AKG/RMCON/Steel Krafts
36	Piano/Modular Switches and Sockets	Legrand/MK/Havells/Anchor

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37	Cable Tray	MEM/Bharti/Ratan/Slotco/Profab
38	Cable Glands	MCI, Comet/Jainson
39	Thimbles/Lugs	Jainson/Dowells/Ascon
40	1.1 KV/11KV grade Al. Condr., XLPE insulated armoured cables ( ISI Marked )	Finolex/Havells/Polycab//KEI/Universal/Gloster
41	Fire Survival cable	KEI/Polycab/RR Kable/Havells
42	Wires (PVC insulated copper conductor cable FRLS - ISI marked)/Telephone cables/Submersible cables/Co-axial/TV cables	Finolex/Havells/Polycab/Anchor/RR kabel/L&T
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57	Gauges	Feibig / H.Guru / Pricol
58	Controls	FLICA / Honeywell / Indfoss / Penn-Danfoss / Ranco / Ranutrol / Sporland
59	Pressure Guage	H Guru/Fiebig
60	Fine Filters	Anfiltra Effluent / ARW / Athlete/Airtake/ Dyna / Kirsloskar/ Puromatic/Purafill/ Purolator / Tenacity
61	GI Sheet	HSU Jindal / National / Nippon Denro /Sail / Tata
62	Heat Detector	Appollo / Chemtron/ Edward / Fenwal/Hochiki / Nitton /System Sensor/Wormald/Honeywell Essar/Notifier
63	Ionization Detector	Appollo / Cerebrus / Edward / Fenwal /Hochiki / Nitton / System Sensor /Wormald
64	Photo Electric Smoke Detector	Appollo / Cerebrus / Edward / Fenwal/Hochiki / Nitton / Wormald
65	Fire Panel (Microprocessor based)	Agni Instruments / Agni Devices/ Aruna Agencies/ Carmel Sensor / Ravel Elect./Honeywell Essar/Notifier/Navin Systems
66	Sprinkler/ Hose Reel & Hose Pipe (ISI Marked)	Safex/Padmini/Ge Tech/Agni/Newage/Ceasefire/Life Guard/Omex
67	Fire Extinguisher ( ISI Marked)	Minimax/Lifeguard/Safeguard/Safex/Omex
68	Water Purifier	Eureka Forbes/Kent/Ion Exchange/LG
69	Inverter System	Sukam/Microtek/Luminous
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