



Deployment of Qualified engineer, Applicability of PVC, and Maintenance period of work.

Sl. No	Description	Details.
1	Deployment of qualified engineer	As per Special condition Para-2.1(a) One qualified graduate Engineer.
2	Applicable of PVC	Applicable Except Electrical Portion ie Sch. C
3	Maintenance period of work	06 (Six) months after completion of work.

Scope of work: -

Mumbai Central Div.: -Provision of cover shed of left-over portion at 13 stations from Santacruz to Virar. (Composite -Civil+ Electrical)

Work is composite in nature – Civil + Electrical.

Scope-providing Cover shed of left over portion at 13 Station (STC,VLP,ADH,JOS,RMAR,GMN,KILE,BVI,MIRA,BYR,VSR,NSP and VR location. If any block/ period required will provided by railway .as per engineer in charge instruction. No any extra payment will be provided by the railway working under block period day/Night.

DSR items Sch- “A” -Earth work, Concrete work, Reinforced cement concrete, Steel work, flooring, Roofing, Finishing, , Dismantling and demolishing, etc. Schedule “B” all NS items as per

Electrical work: - As per Schedule” C” Special condition and specification attached on Tender document separately.

Signature of tenderer/'s

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Location of work:-

Santacruz to Virar – 13 location as specified above

The relevant test which are to be done as per specification for all items are to be got done from approved Govt laboratory by contractor's own cost.

In terms of HQ letter No. WR-HQ0ENGG(WWTC)/4/2020 Dated:27.04.2021 a safety condition as mentioned in Para No.19(1) of IRSGCC-2021 which is reproduced below for ready reference: Contractor's understanding: It is understood and agreed that the Contractor has, by careful examination, satisfied himself as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of equipment and facilities needed preliminary to and during the progress of the works, the general and local conditions, the labour conditions prevailing therein and all other matters which can in any way affect the works under the contract.

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Based on PCE's circular No. 88 for Improvement of quality of works (Letter No HQRS0ENGG (WWMC)/5/ 2025/E-658439 dt 04/09/2025)

A. Instructions for Design aspect

1. All structural elements shall be designed and approved strictly in accordance with the instructions contained in the CBE's letter No. W65/0(Policy)Vol. VII/E203601 Dated 28.11.2024 or any latest applicable revisions/amendments issued from time to time.
2. As far as practicable, RDSO standard type plans or Headquarters-approved type plans shall be adopted.
3. Prior to commencement of any field work, the concerned field staff must ensure that only duly approved structural drawings are available at site. Execution of work based on unapproved or draft drawings is strictly prohibited.
4. For all structures located directly over the running track or in close proximity to the track, proper launching and dismantling schemes shall be prepared in detail. These schemes must be submitted in advance and obtain formal approval from Headquarters before execution at site.
5. All launching and dismantling operations shall be executed strictly in accordance with the approved scheme, without any deviation. The launching and de-launching scheme shall include step-wise execution procedures, detailing the precautions to be taken and the protection measures for launched/de-launched girders. Adequate precautions, deployment of sufficient manpower, appropriate machinery, and all stipulated safety measures shall be ensured as per the approved scheme.

B. Method Statement for Works:

1. A Method Statement is a written, step-by-step document that describes how a specific activity will be carried out safely, efficiently, and as per quality standards laid down in IS codes and specifications
2. Execution of work shall be as per approved method statements only to ensure better quality of works.
3. Method statements are being issued for important/ critical works from HQ. For any site specific activity, executing agency can prepare method statements as per provisions under IS codes/ RDSO specifications/other guidelines.

C. Use of Approved Construction Materials

1. Construction material must be as per specification of item under CPWD-DSR/ IRUSSOR.
2. All construction material shall be passed/ approved by AEN as per the requirement of concerned code or specification.
3. Approved make/ Manufacturer of construction materials are as per letter no. WR-HQENGG(WWTC)/ 4/ 2019/E-907 dated 21.08.2025 enclosed with tender documents.

D. Work Site Registers

Various registers along with its formats to be maintained at worksites and enforcing conditions are enclosed. The registers should be got printed by the divisions and each page should be machine numbered. It shall be ensured that the registers are always kept

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undated in the field. While processing bills of contractor, a certificate shall be given by Rly's Supervisor that all prescribed registers have been maintained and records are kept up to date. The certificate shall be signed by the Contractor in token of his acceptance of records in Registers. All the registers duly completed and signed by Contractor's Engineer and Railway Supervisors should be sent to divisional office at the time of passing of first on account bill as well as with the final bill. The Engineer in charge can further call the registers during passing of other on account bills also if he so desires. The certificate shall also mention that items or materials for which payment is proposed are meeting the specifications passed the requisite tests and records thereof have been duly maintained and there are no instructions pending for compliance. Sectional ADEN shall test check records and then countersign the certificate and submit the same to Sectional DEN/Sr. DEN along with Measurement Books for passing the bills.

Construction site records

In order to maintain accurate records of performance of contract, the Railway's representative will maintain the following registers at site:

- i. **Site Order Register:** This register shall be for issuing work related instructions to the Contractor by Engineer or his Representatives. Verbal orders/instructions are confirmed by the SSE/ADEN in writing in the register. Contractor shall promptly acknowledge orders given therein and comply with them within a reasonable time, Contractor shall also record the compliance in above register. Railways representative shall report such issues that have not been complied by the Contractor in a reasonable time frame to his higher-ups for its early remedy. Reply to the inspecting officers regarding compliance, needs to be communicated by the Contractor promptly. Contractor may also record his grievance, if any, in above register, which the Railway shall try to settle promptly. **Proforma for the register is attached as Annexure-i.**
- ii. **Drawings issue register-** All records of issue of drawings viz. General Arrangement, Architectural, Structural, Plumbing, Sanitary etc. to the contractor by the department shall be maintained in this register. If the contract warrants submission of drawings by the contractor such as those for temporary works, structural designs & drawings in Design & Built contract, as built/completion drawings etc, it shall also be entered into the register. This register will also form a basis for analysing delay in execution of works by either party to the contract. All drawings shall be always kept at site in a separate folder for ready reference, Proforma for the register is attached as Annexure-ii.
- iii. **Technical Register-** This register will show technical details at site of work indicating layout of work, foundation works, variation in structural dimensions from

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drawings, any technical details necessary for verification of measurements, hidden works etc. This register is also meant for recording details of "Approved Method Statement" for major important activities that requires thorough detailing to ensure quality & safety of the work being executed. Proforma for the register is attached as Annexure-iii.

- iv. **Piling register-** A separate piling register indicating details of pile load test, location, size, depth of pile, strata encountered, time of start and end of boring, time of start and end of concreting, depth of socketing etc, may be maintained. For small qty, piling details may be entered into Technical Register. Proforma for the register is attached as Annexure-iv,
- v. **Cement Register** This register will be maintained to record daily receipt and consumption of the cement duly indicating the balance quantity. The quantum of the work done for the cement issued on a particular date will also be maintained. MTC and reference of Material Passing Register shall also be maintained in this register. **Proforma for the register is attached as Annexure-v.**
- vi. **Reinforcing Steel Register** This register will record the details of reinforcements and its location of use in structural members. MTC and reference of Material Passing Register shall also be maintained in this register, **Proforma for the register is attached as Annexure-vi.**
- vii. **Structural steel Register-** This register will record the details of structural steel and its location of use in structural members. MTC and reference of Material Passing Register shall also be maintained in this register. **Proforma for the register is attached as Annexure-vii.**
- viii. **Material Passing & Testing Register** This register will show material brought at site, passed, rejected etc. with quantity, brand, specifications & test results etc. in a tabular format. The records of sieve analysis of coarse & fine aggregates, impact or abrasion tests etc., admixture test etc. shall also be maintained in this register or Material passing & testing register. The documents related to material passing shall be maintained in a separate folder for ready reference. **Proforma for the register is attached as Annexure-viii,**
- ix. **Concrete Cube register-** All mix design shall have approval of sectional DEN/Sr DEN as per instructions issued vide PCE Circular No. 81 for Approval of Concrete Design Mix. The cube register shall maintain records of cube casting and testing for 7 days and 28 days strength. Locations from where samples are taken shall be specifically mentioned. For concrete brought through RMC, samples shall be collected in presence of Engineer's representative and additional records of plant/source, transit mixtures, challan, time of travel, batching record, slump etc. shall also be maintained in RMC Register. Source of RMC Plant shall have prior

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approval of sectional DEN/Sr. DEN. **Proforma for the register is attached as Annexure-ix.**

- x. **Ready Mix Concrete Register-** Ready mix Concrete Register shall contain information regarding Name of Structure, detail of Transit Mixer, its loading, arrival at Site & Time of discharge completion, Slump, Ambient temperature, concrete Temperature and reference of delivery Challan No. & batch Report No. Cement content as per approved mix design and as per Received batch report No. Shall also be maintained. **Proforma for the register is attached as Annexure-x.**
- xi. **Daily Progress Register** Daily progress register shall indicate daily progress of work done by the Contractor. It shall be got signed at least once in three days from Engineer in token of acceptance. **Proforma for the register is attached as Annexure-xi.**

Note:

- (a) Any other registers considered necessary by the Railway Engineer, shall also be maintained at site. Sectional DEN/Sr. DEN shall decide type of registers to be maintained at site at the time of commencement of work and approve them in writing.
- (b) All Registers, Proforma charts, etc, will be the property of the Railway.
- (c) All registers should Indicate on first page, Name of Work, Name of Agency, CA No., Completion period, Date of commencement, Schedule date of completion, Extended date, if any, Contract value, Revised Contract value, Name of Rly's contract value, supervisor, Name of Contractor's Supervisor/Engineer, if any. The registers should be preferably machine numbered. Few pages (3-4) should be left in the beginning for the inspection remarks of higher up officers.
- (d) Registers as mentioned above will be maintained by the Engineer's Representative and shall be seen & signed regularly by the Contractor or his authorized Representative for compliance of instructions recorded therein for satisfactory completion of work.
- (e) One hard bound copy of the contract agreement and supplementary agreements, if any shall always be maintained at site for ready reference.
- (f) Copies of Geotechnical reports shall always be maintained at site for ready reference. All level books & survey records shall be duly preserved and maintained.

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- (g) The Contractor for his own purposes, may also maintain accurate records, plans and charts showing the dates and progress of all main operations and the Engineer and his representative shall have access to this information all the times. Records of tests made shall be handed over to the Engineer's representative after carrying out the tests,


Signature of tenderer/s

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Annexure-I

1. 1st page shall be designated for General Information mentioned as under.

पश्चिम रेलवे Western Railway	मण्डल रेल प्रबंधक (कार्य) कार्यालय DRM (W)'s Office, Division).....Location.....
	
SITE ORDER BOOK	
Register issued on:	
Name of work:	
Letter of Acceptance:	
Contract Agreement No.	
Value of Work:	
Revised Value of Work:	
Date of Completion:	
Extended date of Completion:	
No. of Machine Numbered Pages:	
<u>Railways Officials</u>	
Senior Section Engineer.....	
Contact No.....	
Asst. Divisional Engineer.....	
Contact No.	
Sr. Divisional Engineer.....	
Contact No.....	
<u>Contractor's Officials:</u>	
Contractor's Authorised Representative:	
Contact No.....	
Contract's Engineer.....	
Contact No.....	
Signature of SSE/Works	Signature of Contractor's Authorised Representative/Engineer

Signature of tenderer/s

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2. 3-4 pages shall be kept for remarks of higher inspecting officers having format as under.

Sr. No.	Date	Inspecting officers Name & Designation	Remarks	Initials

3. Proforma for the Site Order Book shall be as under.

Sr. No.	Date	Instruction issued on the inspection of work with Signature & Designation	Contractor/Contractor's representative acknowledgment with Signature Name & Date	Compliance report by contractor's representative with Signature, Name & Date	Final remarks of the Railway Engineer with Signature, Designation & Date


Signature of tenderer/s

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Annexure- II

1. 1st page shall be designated for General Information mentioned as under

पश्चिम रेलवे Western Railway	मण्डल रेल प्रबंधक (कार्य) कार्यालय DRM (W)'s Office, Division).....Location.....
	
DRAWING REGISTER	
Register issued on:	
Name of work:	
Letter of Acceptance:	
Contract Agreement No.	
Value of Work:	
Revised Value of Work:	
Date of Completion:	
Extended date of Completion:	
No. of Machine Numbered Pages:	
<u>Railways Officials</u>	
Senior Section Engineer.....	
Contact No.....	
Asst. Divisional Engineer.....	
Contact No.	
Sr. Divisional Engineer.....	
Contact No.....	
<u>Contractor's Officials:</u>	
Contractor's Authorised Representative:	
Contact No.....	
Contract's Engineer.....	
Contact No.....	
Signature of SSE/Works	Signature of Contractor's Authorised Representative/Engineer

Signature of tenderer/s

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2. 3-4 pages shall be kept blank for remarks of higher inspecting officers having format as under.

Sr. No.	Date	Inspecting officers Name & Designation	Remarks	Initials

3. Proforma for the Drawing - issue Register shall be as under-

Sr. No.	Drwg. No. & Revision No. If Any	Details of Drwg.	Date of issue to the Contractor	Acknowledgement of Contractor/Remarks	Signature of Railway Engineer

Signature of tenderer/'s

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Annexure-III

1st page shall be designated for General Information mentioned as under

पश्चिम रेलवे
Western Railway



मण्डल रेल प्रबंधक (कार्य) कार्यालय
DRM (W)'s Office,
Division).....Location.....

TECHNICAL REGISTER

Register issued on:

Name of work:

Letter of Acceptance:

Contract Agreement No.

Value of Work:

Revised Value of Work:

Date of Completion:

Extended date of Completion:

No. of Machine Numbered Pages:

Railways Officials

Senior Section Engineer.....

Contact No.....

Asst. Divisional Engineer.....

Contact No.

Sr. Divisional Engineer.....

Contact No.....

Contractor's Officials:

Contractor's Authorised Representative:

Contact No.....

Contract's Engineer.....

Contact No.....

Signature of SSE/Works

Signature of Contractor's
Authorised Representative/Engineer

Signature of tenderer/s

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2. 3-4 pages shall be kept blank for remarks of higher inspecting officers having format as under.

Sr. No.	Date	Inspecting officers Name & Designation	Remarks	Initials

3. Proforma for the Technical Register shall be as under-

Sr.No .	Date	PARTICULARS (PERTAINING TO WORK-SITE) (SKETCH/DIAGRAMS/NOTE/ INSTRUCTION/ Drawings...Etc)	APPROVALS/COMMENTS/ REMARKS OF (ENGINEER INCHARGE)	Contractor's Representative with Signature, Name & Date


Signature of tenderer/s

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Annexure-IV

1. 1st page shall be designated for General Information mentioned as under

पश्चिम रेलवे Western Railway	मण्डल रेल प्रबंधक (कार्य) कार्यालय DRM (W)'s Office, Division).....Location.....
	
PILING REGISTER	
Register issued on:	
Name of work:	
Letter of Acceptance:	
Contract Agreement No.	
Value of Work:	
Revised Value of Work:	
Date of Completion:	
Extended date of Completion:	
No. of Machine Numbered Pages:	
<u>Railways Officials</u>	
Senior Section Engineer.....	
Contact No.....	
Asst. Divisional Engineer.....	
Contact No.	
Sr. Divisional Engineer.....	
Contact No.....	
<u>Contractor's Officials:</u>	
Contractor's Authorised Representative:	
Contact No.....	
Contract's Engineer.....	
Contact No.....	
Signature of SSE/Works	Signature of Contractor's Authorised Representative/Engineer

Signature of tenderer/s

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2. 3-4 pages shall be kept blank for remarks of higher inspecting officers having format as under.

Sr. No.	Date	Inspecting officers Name & Designation	Remarks	Initials

3. Proforma for the Piling Register shall be as under-(one page should be assigned for one pile followed by its sketch)

Sr.No.	Pile No.	Date of Boring	Date of Casting	Concrete Grade	Datum level	Depth from Datum	Socketting in Rocks	Level of Pile bottom
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)


Cut off level	Payable Length	Liner top level	Liner bottom level	Payable length of liner	Sign. Of site engineer with date	contractor's representative with Signature, Name & Date
(10)	(11)	(12)	(13)	(14)	(15)	(16)

Signature of tenderer/s

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**Annexure- V**

1. 1st page shall be designated for General Information mentioned as under

पश्चिम रेलवे Western Railway		मण्डल रेल प्रबंधक (कार्य) कार्यालय DRM (W)'s Office, Division).....Location.....
CEMENT CONSUMPTION REGISTER		
Register issued on:		
Name of work:		
Letter of Acceptance:		
Contract Agreement No.		
Value of Work:		
Revised Value of Work:		
Date of Completion:		
Extended date of Completion:		
No. of Machine Numbered Pages:		
<u>Railways Officials</u>		
Senior Section Engineer.....		
Contact No.....		
Asst. Divisional Engineer.....		
Contact No.		
Sr. Divisional Engineer.....		
Contact No.....		
<u>Contractor's Officials:</u>		
Contractor's Authorised Representative:		
Contact No.....		
Contract's Engineer.....		
Contact No.....		
Signature of SSE/Works		Signature of Contractor's Authorised Representative/Engineer

Signature of tenderer/s

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2. On second page following notes to be recorded by SSE/Works "**Original copy of Receipts/Challan shall be attested By SSE/Works mentioning the Name of Site where it is to be used**". Photocopy of the same is to be kept on record.
3. 3-4 pages shall be kept blank for remarks of higher inspecting officers having format as under.

Sr. No.	Date	Inspecting officers Name & Designation	Remarks	Initials

4. Proforma for the Cement Consumption Register shall be as under-

Sr.No .	Date of Receipt	Source of receipt	Bill/Challan No.	Manufactures Test Certificate Reference	Qty. Received (Bags/ Kg)	Progressive total of Receipts (Bags/ Kg)	Date of issue	Qty issued (Bags / Kg)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

Qty Returned at the end of the day (Bags/ Kg)	Net Qty Issued (Bags/ Kg)	Progressive Total of issued (Bags/ Kg)	Balance at the end of the day (Bags/ Kg)	Items of work for Which issued (Bags/ Kg)	Sign of Rly's Engineer with Date	Sign of contractor's Rep. With Date
(10)	(11)	(12)	(13)	(14)	(15)	(16)

Signature of tenderer/s

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Annexure- VI

1. 1st page shall be designated for General Information mentioned as under Annexure- vi.

पश्चिम रेलवे
Western Railway



मण्डल रेल प्रबंधक (कार्य) कार्यालय
DRM (W)'s Office,
Division).....Location.....

REINFORCEMENT STEEL REGISTER

Register issued on:

Name of work:

Letter of Acceptance:

Contract Agreement No.

Value of Work:

Revised Value of Work:

Date of Completion:

Extended date of Completion:

No. of Machine Numbered Pages:

Railways Officials

Senior Section Engineer.....
Contact No.....

Asst. Divisional Engineer.....
Contact No.

Sr. Divisional Engineer.....
Contact No.....

Contractor's Officials:

Contractor's Authorised Representative:

Contact No.....

Contract's Engineer.....
Contact No.....

Signature of SSE/Works

Signature of Contractor's
Authorised Representative/Engineer

Signature of tenderer/s

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2. On second page following notes to be recorded by SSE/Works "**Original copy of Receipts/Challan shall be attested By SSE/Works mentioning the Name of Site where it is to be used**". Photocopies of the same is to be kept on record.
3. 3-4 pages shall be kept blank for remarks of higher inspecting officers having format as under.

Sr. No.	Date	Inspecting officers Name & Designation	Remarks	Initials

4. Proforma for the Reinforcement Register shall be as under-

Sr. No	Date	Location/Member	Description & Diagram of bar Including bar indication	Dia. of Bar	Spacing
(1)	(2)	(3)	(4)	(5)	(6)

Numbers Provided	Lap length	Total length	Total weight	Reference of Material Passing Register	Sign of Rly's Engineer with Date	Sign of Contractor's Representative. with Date
(7)	(8)	(9)	(10)	(11)	(12)	(13)


Signature of tenderer/s

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Annexure-VII

1. 1st page shall be designated for General Information mentioned as under

पश्चिम रेलवे Western Railway	मण्डल रेल प्रबंधक (कार्य) कार्यालय DRM (W)'s Office, Division).....Location.....
	
STRUCTURAL STEEL REGISTER	
Register issued on:	
Name of work:	
Letter of Acceptance:	
Contract Agreement No.	
Value of Work:	
Revised Value of Work:	
Date of Completion:	
Extended date of Completion:	
No. of Machine Numbered Pages:	
<u>Railways Officials</u>	
Senior Section Engineer.....	
Contact No.....	
Asst. Divisional Engineer.....	
Contact No.	
Sr. Divisional Engineer.....	
Contact No.....	
<u>Contractor's Officials:</u>	
Contractor's Authorised Representative:	
Contact No.....	
Contract's Engineer.....	
Contact No.....	
Signature of SSE/Works	Signature of Contractor's Authorised Representative/Engineer

Signature of tenderer/s

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2. On second page following notes to be recorded by SSE/Works "**Original copy of Receipts/Challan shall be attested by SSE/Works mentioning the Name of Site where it is to be used**". Photocopy of the same is to be kept on record.
3. 3-4 pages shall be kept blank for remarks of higher inspecting officers having format as under.

Sr. No.	Date	Inspecting officers Name & Designation	Remarks	Initials

4. Proforma for the Structural Steel Register shall be as under-

Sr.No.	Date of Receipt	Designation of Item	Source of Receipt & Challan No./ Bill No.	Quantity Receipt (MT)	Cum. Qty Received (MT)
(1)	(2)	(3)	(4)	(5)	(6)

Details of MTC	Details of 3 rd Party Test Report	Reference of Material passing Register	Item of work in which Consumed	Sign of Rly's Engineer with Date	Sign of Contractor's Representative. with Date
(7)	(8)	(9)	(10)	(11)	(12)


Signature of tenderer/s

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Annexure-VIII

1. 1st page shall be designated for General Information mentioned as under

पश्चिम रेलवे Western Railway	मण्डल रेल प्रबंधक (कार्य) कार्यालय DRM (W)'s Office, Division).....Location.....
	
MATERIAL PASSING REGISTER	
Register issued on:	
Name of work:	
Letter of Acceptance:	
Contract Agreement No.	
Value of Work:	
Revised Value of Work:	
Date of Completion:	
Extended date of Completion:	
No. of Machine Numbered Pages:	
<u>Railways Officials</u>	
Senior Section Engineer.....	
Contact No.....	
Asst. Divisional Engineer.....	
Contact No.	
Sr. Divisional Engineer.....	
Contact No.....	
<u>Contractor's Officials:</u>	
Contractor's Authorised Representative:	
Contact No.....	
Contract's Engineer.....	
Contact No.....	
Signature of SSE/Works	Signature of Contractor's Authorised Representative/Engineer

Signature of tenderer/s

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2. 3-4 pages shall be kept blank for remarks of higher inspecting officers having format as under.

Sr. No.	Date	Inspecting officers Name & Designation	Remarks	Initials

3. Proforma for the Material Passing Register shall be as under-

Sr.No.	Type of material & Date of Receipt	Voucher No. & date	Source of receipt	Quantity Received	Name of Brand/Manufacturer
(1)	(2)	(3)	(4)	(5)	(6)

Batch No./ Heat No.	MTC with Date, Folio No. Of File & Result thereof.	Permissible range of value as per normative IS Code	Test Result from 3 rd Party Lab	Approval/Rejection Remarks of ADEN	Sign of Rly's Engineer with Date	Sign of Contractor's Representative. with Date
(7)	(8)	(9)	(10)	(11)	(12)	(13)


Signature of tenderer/s

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Annexure-IX

1. 1st page shall be designated for General Information mentioned as under

पश्चिम रेलवे Western Railway	मण्डल रेल प्रबंधक (कार्य) कार्यालय DRM (W)'s Office, Division).....Location.....
	
CONCRETE CUBE REGISTER	
Register issued on:	
Name of work:	
Letter of Acceptance:	
Contract Agreement No.	
Value of Work:	
Revised Value of Work:	
Date of Completion:	
Extended date of Completion:	
No. of Machine Numbered Pages:	
<u>Railways Officials</u>	
Senior Section Engineer..... Contact No.....	
Asst. Divisional Engineer..... Contact No.	
Sr. Divisional Engineer..... Contact No.....	
<u>Contractor's Officials:</u>	
Contractor's Authorised Representative:	
Contact No.....	
Contract's Engineer.....	
Contact No.....	
Signature of SSE/Works	Signature of Contractor's Authorised Representative/Engineer

Signature of tenderer/s

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2. 3-4 pages shall be kept blank for remarks of higher inspecting officers having format as under,

Sr. No.	Date	Inspecting officers Name & Designation	Remarks	Initials

3. Proforma for the Concrete Cube Register shall be as under-

Sr. No	Date of Casting	Structure Location	Grade of Concrete, Qty, & No. of Test required	Cube Identification No.	Weight of Cube	Proposed Date of Testing		7 days Compressive Strength			
						7 Days	28 Days	Load (KN)	Comp. Strength (N/MM ²)	Accepted Comp. Strength (N/MM ²) (Clause 15.4 of IS:456)	Avg. of accepted Comp. Strength (N/MM ²)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)

Table to be

continued.....

28 days Compressive Strength				Acceptance of Concrete as per IS:456/CBC	Signature	
Load (KN)	Comp. Strength (N/MM ²)	Accepted Comp. Strength (N/MM ²)	Avg. of accepted Comp. Strength (N/MM ²)		Contractor's Representative	Railway's Representative
(13)	(14)	(15)	(16)	(17)	(18)	(19)


Signature of tenderer/s

DRM (WA) BCT
(For & Behalf of President of India)



Annexure-X

1. 1st page shall be designated for General Information mentioned as under

पश्चिम रेलवे Western Railway	मण्डल रेल प्रबंधक (कार्य) कार्यालय DRM (W)'s Office, Division).....Location.....
	
RMC REGISTER	
Register issued on:	
Name of work:	
Letter of Acceptance:	
Contract Agreement No.	
Value of Work:	
Revised Value of Work:	
Date of Completion:	
Extended date of Completion:	
No. of Machine Numbered Pages:	
<u>Railways Officials</u>	
Senior Section Engineer.....	
Contact No.....	
Asst. Divisional Engineer.....	
Contact No.	
Sr. Divisional Engineer.....	
Contact No.....	
<u>Contractor's Officials:</u>	
Contractor's Authorised Representative:	
Contact No.....	
Contract's Engineer.....	
Contact No.....	
Signature of SSE/Works	Signature of Contractor's Authorised Representative/Engineer

Signature of tenderer/s

DRM (WA) BCT
(For & Behalf of President of India)



2. 3-4 pages shall be kept blank for remarks of higher inspecting officers having format as under.

Sr. No.	Date	Inspecting officers Name & Designation	Remarks	Initials

3. Proforma for the Ready Mix Concrete Register shall be as under-

Sr.No.	Date of Concreting	Location/ Structur/ Member	Estimated Quantity of Concreting	Transit Mixture No. & Qty.	Time of Loading
(1)	(2)	(3)	(4)	(5)	(6)

Time of arrival	Time of discharge Completion	Temperature		Slump		No. Of Cubes/Samples taken	Delivery Challan No. & its File Reference No.
		Ambient	Concrete	Required	Actual		
(7)	(8)	(9)	(10)			(11)	(12)

Batch Report No. & its File Reference No.	Cement Content		Type of Cement and Grade	Sign of Rly's Engineer with Date	Sign of Contractor's Representative. with Date
	As per Approved Mix Design	As per Batch Report of RMC			
(13)	(14)	(15)	(16)	(17)	(18)


Signature of tenderer/s

DRM (WA) BCT
(For & Behalf of President of India)



Annexure-XI

1. 1st page shall be designated for General Information mentioned as under

पश्चिम रेलवे Western Railway		मण्डल रेल प्रबंधक (कार्य) कार्यालय DRM (W)'s Office, Division).....Location.....
DAILY PROGRESS REGISTER		
Register issued on:		
Name of work:		
Letter of Acceptance:		
Contract Agreement No.		
Value of Work:		
Revised Value of Work:		
Date of Completion:		
Extended date of Completion:		
No. of Machine Numbered Pages:		
<u>Railways Officials</u>		
Senior Section Engineer.....		
Contact No.....		
Asst. Divisional Engineer.....		
Contact No.		
Sr. Divisional Engineer.....		
Contact No.....		
<u>Contractor's Officials:</u>		
Contractor's Authorised Representative:		
Contact No.....		
Contract's Engineer.....		
Contact No.....		
Signature of SSE/Works	Signature of Contractor's Authorised Representative/Engineer	

Signature of tenderer/s

DRM (WA) BCT
(For & Behalf of President of India)



2. 3-4 pages shall be kept blank for remarks of higher inspecting officers having format as under.

Sr. No.	Date	Inspecting officers Name & Designation	Remarks	Initials

3. Proforma for the Daily Progress/Labour/ Machinery Register shall be as under-

Date	Description of Work Executed	Labour Engaged		Machinery Mobilized
		Skilled	Unskilled	
(1)	(2)	(3)	(4)	(5)

Name of Contractor Supervisor	Name of Contractor Site Engineer	Approximate quantum of Work executed	Sign of Rly's Engineer with Date	Sign of Contractor's Representative. with Date
(6)	(7)	(8)	(9)	(10)

Signature of tenderer/s

**DRM (WA) BCT
(For & Behalf of President of India)**



Office of the,
Principal Chief Engineer
Western Railway HQ
Churchgate,
Mumbai-400 020

WR-HQENGG(WWTC)/4/2019/E-907

Date: 21.08.2025

**CWM/SBI, CE/CPOH/ADI
Sr.DEN(Co.)-ADI/MMCT/BRC/RJT/BVP/RTM
Dy.CE(Br.)- ADI/BRC/DDR**

Sub: Recommended maker/manufacturer of civil materials.

Ref: CE(Works&SD) letter no. WR-HQENGG(WWMC)/2/2019/E-1508 dated 08.08.2025

The list of recommended makes/manufacturers for various construction material being used in the works has been prepared in consultation with the executing agencies and is enclosed herewith.

It is advised that this list may be incorporated in the Tender Document for various works being taken up by the Western Railway so as to ensure better quality of material and work. The list is not exhaustive and executive agency may include/modify the makes/manufactures/material as per local conditions and nature of works. Whenever any change is made in the list, same should be advised to this office.

This has the approval of PCE.

DA: As above

Digitally Signed by Nand
Ram
Date: 21-08-2025 16:43:50
Reason: Approved

(Nand Ram)
Chief Engineer (Works & SD)

Signature of tenderer/s

**DRM (WA) BCT
(For & Behalf of President of India)**



RECOMMENDED MAKES/ MANUFACTURER OF MATERIALS		
SN	MATERIAL	MAKES/ MANUFACTURERS OR SIMILAR
1	AAC BLOCK	FINE CREATE / RS GREEN / ULTRATECH / SIPOREX/ AEROCON/ BUILTECH/ INSTABLOCK/ MAGICRETE/ JK/ ASCOLITE/ ASWANI INDUSTRIES PRIVATE LIMITED/ BIGBLOC/ BIRLA AEROCON/ JK LAKSHMI/ JK SMARTBLOX/ MAGICRETE/ MAGICRETE BUILDING SOLUTIONS PVT LTD/ ZETWERK
2	AAC BLOCK JOINTING MORTAR	FINE CREATE/ FERROUS CRETE/ ULTRATECH / SAINT-GOBAIN /KERA-COLE/ JK
3	ACOUSTICAL SEAL	DORMA/ GEZE/ HAFFLE/ DORSET/ KICH/ BECKAR
4	ACOUSTICS PANELLING	DIAMOND/ HIMALYAN ACOUSTICS/ HUNTER DOUGLAS/ DEXUNE/ BAUX/TRANQUILL / ANUTONE
5	ACP	ALUCOBOND/ RENUBOND/ ALPOLIC/ ALSTRONG/ ALEXVIRGO/ ALDEKO
6	ADHESIVE FOR DOOR WORK	FEVICOL/ VAMICOL/ ARALDITE
7	ADMIXTURE FOR CONCRETE	SIKA/ FOSROC/ BASF/ MC- BAUCHEMIE/ MAPEI/ SUPREME/ STARCOATING/ CICO/PIDILITE/ ASIAN LABORATORIES/ ULTRAACON/ KRYTON/ CAC/ CHRYSO/ KUNAL/ YASHKA/ FOSROC
8	AIR RELEASE VALVE	KIRLOSKAR/ VENUS/ZOOTO/ LEADER/ SANT
9	ALUMINIUM GLASS PARTITION	OTIC / JEB/ BENE/ LINDNER/CLIPARTITION / VEILS
10	ALUMINIUM LOUVERS	HINDALCO/ BORUKHA/ JINDAL ALUMINIUM
11	ALUMINIUM SECTIONS	HINDALCO/DOMAL/SAPA
12	ALUMINIUM WINDOWS & VENTILATORS SSW	JINDAL ALUMINIUM LIMITED/ TURBO VENT/ CRISPAIR/ HINDALCO
13	ANCHOR FASTNER	HILTI/ FISCHER/ BOSCH/ GWK/ ATUL/ RAWLPLUG
14	ANTI CORROSIVE TAPE FOR PIPE PROTECTION	PYPKOTE/ MAKPOLYKOTE/ JONSON
15	ANTI STATIC EPOXY FLOOR	FOSROC/ BASF/CICO/ SIKA/ NEOLAXE / MAPEI
16	ANTI-TERMITE TREATMENT	BAYER PREMISE/ RALLIS INDIA/ TERMEX/ PEST CONTROL INDIA LTD
17	ASPHALT EMULSION	PARK INDUSTRIES PVT. LTD./ OM TEX CHEMICALS PVT. LTD./ HINDUSTAN COLAS PVT. LTD./ IOCL
18	AUTOMATIC AIR VENT	DANFOSS/ COMFORT/ GIACOMINI
19	BACKER RODS/EXPANSION JOINT FILLER	SAND FIELD / KANTA FLEX / VEXKOLT / CONSTRUCTION SPECIALTIES/ KANTA=LEX/ M/S CAMEO MIGUA EXPANSION JOINT SYSTEMS
20	BALL COCK	ZOOTO/ L&T/ ADVANCE/ GPA/ L&K/ SANT
21	BALL VALVES (15 TO 40 MM)	ZOOTO/ AUDCO / CASTLE/ ADVANCE/ LEADER/ AIP
22	BINDING WIRE/ WARBED WIRE	GUPTA STEELS/ OMKAMAL STEEL (BINDING WIRE)/ SACHI STEEL SOLUTION PVT. LTD (BARBED WIRE)/ SACHI STEEL SOLUTION PVT. LTD (BINDING WIRE)/ SYSTEMATIC GROUP OF COMPANIES (BINDING WIRE)
23	BRASS STOP & BIB COCK	HANSGROHE/ KOHLAR/HINDWARE/ ZOOTO/ SANT/ L&K/ LEADER/ ASTRAL
24	BUTTER FLY VALVE	ZOOTO/ AUDCO / CASTLE/ ADVANCE
25	C.I VALVES (FULL WAY, CHECK AND GLOBE VALVES)	KIRLOSKAR/ SKF/ ZOLTO
26	C.I. FITTING	ELECTROSTEEL/ KESORAM/ NECO/ SKF/ NEEL/ KARTAR
27	C.I. SLUICE VALVE & NON RETURN VALVE	KIRLOSKAR/ IVC/ LEADER/ ZOOTO/ L&T/ AUDCO/ ADVANCE/AIP
28	C.P. WASTE, SPREADERS	SIMPOLO/ KOHLAR/ GROHE/ URINAL DURAVIT / VITRA/ JAQUAR/ PARKO
29	C.P.FITTINGS& ACCESSORIES	SIMPOLO/ KOHLAR/ GROHE/ DURAVIT / VITRA
30	CALCIUM SILICATE BOARDS	HILUX/ AEROLITE/ NEWAGE/ VEILS/ GYPROC/ BORAL/ ARMSTRONG
31	CALCIUM SILICATE TILES	AEROLITE/ HILUX/ NEWAGE/ DEXUNE / VEILS/ GYPROC/ BORAL/ ARMSTRONG

Signature of tenderer/s

DRM (WA) BCT
(For & Behalf of President of India)



SN	MATERIAL	MAKES/ MANUFACTURERS OR SIMILAR
32	CEMENT BASED PAINTS	BERGER/ NEROLAC/ ULTRATECH/ JOTUN/ SHIRWIN WILLIAMS / SNOWCEM PLUS/ TATA CEM / KAZONOBOLDULUX
33	CEMENT CONCRETE TILES	ULTRA / EUROCON / NITCO DURACRETE/ UNISTONE/ TERRA FIRMA
34	CEMENT PAINT	BERGER/ NEROLAC/ ULTRATECH/ JOTUN/ SHIRWIN WILLIAMS / SNOWCEM PLUS/ TATA CEM / KAZONOBOLDULUX
35	CEMENT SHEET	EVEREST/ RAMCO/ KAMDHENU
36	CEMENT(OPC/PPC)	ACC(ASSOCIATED CEMENT CO.)/ ULTRA TECH / GUJRAT AMBUJA CEMENT/ JK/ L&T / JPCEMENT/ WONDERCEMENT / HATHI/ HI-BOND/ SIDDHI CEMENT/ SANGHI/ JSW/ MP BIRLA
37	CENTRIFUGALLY CAST C.I RAIN WATER FITTING	ELECTROSTEEL/ KESORAM/ NECO
38	CERAMIC TILES	KAJARIA/ HRJOHNSON/ EMCER/ SIMPOLO/ RAK/ NEXION/AGL FROM THEIR AUTHORIZED COMPANY/ SOMANY/ H&R JOHNSON/ ASIAN (AGL)/ VERMORA/ NITCO
39	CHAIR	FEATHERLITE/ GODREJ/ HAWORTH / HARMANMILLER/ HOF / GEEKEN/ VEILS/ DURIAN/ SLEEP COMPANY/ IKEA/ NILKAMAL
40	CHECK VALVES (DUAL SLIM TYPE)	ZOLOTO/ AUDCO /CASTLE / ADVANCE/ DANFOSS/ KIRLOSKAR
41	CHEQUERED TILES	AGL/ NITCO / KK MANHOLES / KAJARIA/ VYARATILES/BASANT BETONS/ OSWAL INDUSTRIES/ BISAZZA/ UNITILE/ DALAL TILES INDUSTRIES/ UNISTONE
42	CHLORINATOR	THERMAXLTD/ LONEXCHANGE/ SIEMENS/ SUPREME
43	CLAY TILES	UNISTONE/DALALTILES/J.M.B. JHAJJAR / PIONEER / OSWAL INDUSTRIES JAIPUR/PROLAD
44	COCK ROACH TRAP	CHILLY/ GMGR/CAMRY/ SFMC
45	COMPOSITE WALL EXTRNAL CLADDING	SHUSH COMPOSITES / MAPAC TECHNOLOGY / MANKUVA / ALSTONE
46	CONCEALED CISTERN	SIMPOLO/ KOHLAR GROHE DURAVIT / VITRA/ HINDWARE/ ROCA/ GEBERIT
47	COPPER FITTINGS	IBP/ CONEX/ MEXFLOW
48	COPPER PIPES	MEXFLOW/ MANDEV/ JANYA
49	COVER BLOCKS	ASTRA CONCRETE/ CHARBUHA -CCB/ EPOCH CONCRETE WORK/ INFINITY INCORP/ MENTONE/ MORBOCON INC/ STEMRIGHT/ SUPERIOR CONCRETE PRODUCTS LLP/ VED PMC
50	CURING AGENTS	SIKA/ FOSROC/ BASF/THERMAX LIMITED / SUPREME / STAR COATING/ MC - BAUCHEMIE/ CICO/ STP/ PIDILITE/ BASF/ CHRYSO
51	DASH FASTENERS	HILTI/KONCEPTM BOSCH/ FISHER
52	DOOR CLOSER	DORMA/ GEZE/ HAFFLE/ DORSET/ KICH/ BECKAR/ GODREJ/ HETTICH/ EVERITE/ HARDWYN
53	DOOR CLOSER /FLOOR SPRING	DORMA/ GEZE/ KICH/ GODREJ/ HETTICH/ EVERITE/ HARDWYN/ DORSET
54	DOOR SEAL- WOOL PILE WEATHER STRIP	ANAND REDDIPLEX/ ENVIRO SEALS / VISION EXIM
55	DOOR STOPPER	DORMA/ GEZE/ HAFFLE/ DORSET/ KICH/ BECKAR
56	DOORS & WINDOWS FIXTURES/ FITTING	DORMA/ GEZE/ KICH/ DORSET/ GODREJ/ HETTICH/ HAFELE/ ASSA ABLOY
57	DRY DISTEMPER	BERGER/ NEROLAC/ ULTRATECH/ JOTUN/ SHIRWIN WILLIAMS / SNOWCEM PLUS/ TATA CEM / KAZONOBOLDULUX
58	DUCTILE IRON FITTINGS (IS:9523)	ELECTRO STEEL/ KESORAM/ TISCO/ JINDAL
59	DUCTILE IRON PIPES (IS:8329)	ELECTRO STEEL/ KESORAM/ TISCO/ JINDAL
60	ELASTOMERIC BEARING	HERCULES/ MAGEBA/ MAURER SANFIELD/ OCEAN RUBBER
61	EPOXY GROUTING	MYK LATIKRATE / DUBOND / SEMITRONE / GLUETITE / MC - BAUCHEMIE/ PIDILITE/ FERROUS CRETE/ KRYTON/ SIKA/ FOSROC
62	EPOXY PAINT	UL TRATECH/ SPECTRUM/ SKK/ OIKOS/ BERGER/ KANSAI NEROLAC/ ASIAN AKZONOBEL/ FOSROC/ ICI
63	EXPANSION JOINT	KANTAFLEX/ M/S CAMEO MIGUA EXPANSION JOINT SYSTEMS

Signature of tenderer/'s

DRM (WA) BCT
(For & Behalf of President of India)



SN	MATERIAL	MAKES/ MANUFACTURERS OR SIMILAR
64	EXTERNAL EMULSION PAINT	BERGER/ ASIAN/ ULTRATECH/ DULUX/ NEROLAC/ BERGER
65	FILTER/ SOFTENER	ION EXCHANGE /MAHLE FILTER SYSTEM/ DENSO
66	FILTRATION PLANT SOFTENING PLANT	BIKON WATER/ION EXCHANGE/ THERMAX LIMITED / EUREKA FORBES
67	FIRE RATED GLASS	SANTGOBAIN GLASS/PILKINGTON/ASAHI/MODIGUARD/PYROGUARD/SISECAM
68	FLUSH DOOR SHUTTERS DECORATIVE TYPE	ARCHIDPLY/DURO/ JAYANA/GREEN PLY/ CENTURY/ AIROLAM / NEOLAXE/ ORION/ HAFELE
69	FLUSH DOOR SHUTTERS NON-DECORATIVE TYPE	ARCHIDPLY/ DURO/ JAYANA/ GREEN PLY/ CENTURY/ AIROLAM / NEOLAXE / ORION/ MERINO
70	FLUSH VALVES	ZOLOTO/ AUDCO /CASTLE ADVANCE
71	FRP DOORS AND FRAMES	FIBERWAYS TECHNOLOGY /ROOFCLADINFRA/RVINFR/FIBREFILLSYSTEM ENGINEERS/JAYANASAINIK
72	G I STEEL DOOR FRAME	SYNERGY THRISLINGTON / NAVAIR/ SHAKTI / RAPL
73	G.I.FITTINGS (MALLEABLE IRON)	ZOLOTO-M/SWASTIK/JINDAL HISSAR/ UNIK/ KS/ R-BRAND/ SURYA
74	G.I.PIPES/ M.S.PIPES IS 1239/3589	JINDAL HISSAR /TATA STEEL/ SFMC / SAIL/ SURYA PRAKSH
75	GATE VALVE	ZOLOTO/ AUDCO / CASTLE/ ADVANCE
76	GLASS	AIS / SISECAM GLASS / PILKINTON / EMERATE/SAINT GOBAIN
77	GLASS FILM	3M DINOC FILM/ AVERY/ /GARVEY/ VEILS
78	GLASS MIRROR	MODIGUARD/ SAINTGOBAIN/ ASAHI INDIA SAFETY/ MODI FLOAT/ PILKINGTON/ ATUL/ GLALVERBEL
79	GLASS MOSAIC TILE	CORAL/ BISAZZA/ HYDROBUILD ENTERPRISE/ NITCO/ UNITILE/ DALAL TILES INDUSTRIES/ UNISTONE
80	GLASS MOSAIC TILES	ITALIAS/ BISAZZA/ PACEINDIA/ NITCO/ UNITILE/ DALAL TILES INDUSTRIES/ UNISTONE
81	GLASSED DOORS (MOTORISED)	MODIGUARD/ ST.GOBAIN/ AIS
82	GLAZED TILES	AGL / JOHNSON / KAJARIA /SIMPOLO/NEXION /NITCO/ SOMANY/ VERMORA/ OASIS/ ASIAN GRANITO LIMITED
83	GRAB BARS AND DISABLED HARDWARE	DORMA/ OZONE/ D-LINE/ SIO
84	GRC FLOOR/ WALL TILES	DALAL TILES/ NITCO/ N.T.C. OSWAL INDUSTRIES
85	GRC SCREEN JALI/ PANEL/ COLUMN/ CORNICE	BIRLA GRC / SHENISHA CROP. / DALAL TILES/ OSWAL INDUSTRIES JAIPUR/ UNISTONE/ ECOVISION/ UKRATECH
86	GROUTING MATERIALS	MYK ARMENT PVT. ARDEX ENDURA (ARDEX ENDURA FOR NON SHRINK GROUT/ BASF) SIKA INDIA PVT. LTD./ FAIRMATE CHEMICALS PVT. LTD./ FOSROC CHEMICAL (INDIA) PVT LTD./ KERAKOLL INDIA PVT. LTD. (TILE ADHESIVE)/ ULTRA TECH CEMENT LIMITED
87	GUNMETAL VALVE (FULL WAY VALVE) CLASS-I	ZOLOTO/ AUDCO / CASTLE/ ADVANCE/ KARTAR
88	GYPSUM BOARD	ST. GOBAIN(GYPROC)/ GYPSUMINDIALTD. / INDIA GYPSUM/ LAFFARGE/ BORAL/ DEXUNE
89	GYPSUM PLASTER	FERROUSCRETE/ ULTRATECH/ KERA-COLE/ SAINT-GOBAIN/ ELITE
90	HDPE PIPES/ MOULDED	EMCO/ POLYEFINS/ PIONEER FITTINGS PLYFAB / SUPREME / JAIN IRRIGATION/ FINOLEX/ DUTRON/ ASTRAL
91	HEAT RESISTANT TERRACE TILES	AGL/ THERMATEK/ SWASTIK/ DALAL TILES
92	HOLLOW SECTION	APL/ TATA/ JINDAL
93	HUME PIPE	PATEL/ RS PIPES/ PRANALI/ M/S JAY AMBE INDUSTRIES/ KALTHIA ENGINEERING & CONSTRUCTION LTD
94	INTER LOCKING PAVERS BLOCK	KK MANHOLES/ UNISTONE/ NITCO/ DALALTILES/ OSWAL INDUSTRIES JAIPUR/ ALCOCK
95	LRPC STRAND	TATA/ JSW/ USHA MARTIN

Signature of tenderer/s

DRM (WA) BCT
(For & Behalf of President of India)



SN	MATERIAL	MAKES/ MANUFACTURERS OR SIMILAR
96	M.S. STRUCTURAL WORKS	TATA/RINL/SAIL/JSPL, ESSAR, IISCO/ AM-NS INDIA/ APL/ APOLLO STEEL TUBES/ APL APOLLO TUBES LIMITED PVT LTD/ ARCELOR MITTAL NIPPON STEEL INDIA LIMITED/ HI-TECH PIPES LTD/ JINDAL STEEL AND POWER LTD/ JSW STEEL LTD
97	MINERAL ADMIXTURE (MICRO SILICA)	ELKEM/ FERROGLOBE/ KVALITET/ CORNICHE/ NOREMET/ ULTRAFINE MINERAL & ADMIXTURE PVT. LTD.
98	MINERAL ADMIXTURE (UGGBS)	JSW/ SUYOG/ TATA/ SAIL/ RINL/JINDAL
99	MODULAR FURNITURE	FEATHER LITE/ GODREJ/ HAWORTH/ HARMAN MILLER/ HOF/ GEEKEN / VEILS/ DURIAN/ NILKAMAL
100	MODULAR SS RAILING SYSTEM	KICH / KONCEPT/ DORMA/ JINDAL
101	MOSAIC/TERAZZO TILES	KK MANHOLES / AGL / UNI STONE / NITCO / DALAL TILES /OSWAL INDUSTRIES JAIPUR/ BISAZZA/ UNITILE
102	MOULD RELEASING AGENT	ADO ADDITIVE TECHNOLOGIES LTD/ CHRYSO INDIA PVT LTD/ EASTTO (EASTERN PETROLEUM PRMTE)/ FOSROC CHEMICAL (INDIA) PVT LTD./ MAPEI CONSTRUCTION PRODUCTS INDIA PVT. LTD./ MEKUBA PETRO PRODUCTS/ SIKA INDIA PVT. LTD.
103	NON METALLIC HARDENER COMPOUND	CICO/ RECRON/ FAIRMATE/ SIKA
104	NON RETURN VALVE	SANT/LEADER/ZOLOTO/AUDCO/ ADVANCE/ KARTAR
105	NUTS AND BOLTS	AGARWAL FASTNERS/ DEEPAK FASTENER/ KIRTI FASTENER/ KWALITY FORGE
106	OIL DISTEMPER/ ACRYLI/ WASHABLE	BERGER/ NEROLAC/ ULTRATECH/ JOTUN/ SHIRWIN WILLIAMS / SNOWCEM PLUS/ TATA CEM / KAZONBLDULUX
107	OTHER PAINTS/ PRIMER	BERGER/ NEROLAC/ ULTRATECH/ JOTUN/ SHIRWIN WILLIAMS / SNOWCEM PLUS/ TATA CEM / KAZONBLDULUX
108	PAVEMENT TILES	PAVIT/ AGL/ ULTRA DESIGNER TILES
109	PIPE COAT MATERIAL(PIPE PROTECTION)	RPG RAYCHEM / PYPKOTE /MAKPHALT/ IWL LTD. STP
110	PLASTIC EMULSION PAINT	BERGER/ ASIAN/ ULTRATECH
111	PLASTIC W.C. SEATS COVERS	SIMPOLO/ KOHLAR GROHE DURAVIT / VITRA
112	PLYWOOD/ BLOCK BOARD/ PLY BOARD	DURO/ GREENLAM/ JAYANA/ ARCHIDPLY/ AIROLAM/ BLACK COBRAVIRGO/ ORION/ MERINO
113	POLY SULPHIDE SEALANT	BASF PIDILITE/ FOSROC/CHOKSEY/ CICO /SIKA /STARCOATING/MC-BAUCHEMIE/ STP LIMITED
114	POLYCARBONATE SHEETS	DPI /GE/ POLYGEL/ GALLINA/ DPI DAYLIGHTING
115	POLYETHYLENE STORAGE TANKS	SINTEX/ SFMC/ SUPREME
116	POLYMER EMULSION	SOJITZ CORPORATION (NICHIREKI)/ ASAIN PAINTS/ ACROLITE POLYMERS PVT. LTD./ PIDILITE
117	PRE-COATED GALVANISED STEEL SHEET	TATA/ BLUE SCOPE/ LLYOD INSULATIONS INDIA LTD / S.R.METALS
118	PRE-ENGINEERED BUILDING (PEB) WORKS	ZETWERK MANUFACTURING BUSINESS PVT. LTD/ ARCEDES BUILDING INDIA LLP/ EUROCOUSTIC PRODUCTS LIMITED/ MODERN PREFAB SYSTEMS PVT. LTD./ R.D.ENGINEERING WORKS/ STEELFAB BUILDING SYSTEMS/ STRUCTEN PRE FAB PVT. LTD
119	PRESSED STEEL DOORS FRAME	SUKRITI/ GODREJ/ NAVAIR/ RAPL
120	PRESSURE GAUGE	FIEBIG/ H-GURU/ ALTOP/ DK INSTRUMENTS/ BAUMER
121	PRESSURE REDUCING VALVE (PRVS)	ZOLOTOI AUDCO CASTLE ADVANCE/ DANFOSS/ HONEY WELL
122	PU WATER PROOFING	SIKA/ PHOSROC/ THARMAX/ SOPERMA / MAPEI
123	PVC FLOORING	POLYFLOR / ARMSTRONG GERFLOOR/ FORBO/ TARQET/ LG
124	PVC FLUSHING CISTERN	COMMANDER/ JOHNSON PEDDER/ DURALITE/ GEBERIT/ CERA/ HINDWARE/ PARRYWARE/ JAQUAR/ SUPREME
125	PVC WATER STOPS	PRINCE/ SUPREME/ FINOLEX
126	REBAR COUPLER	SANFIELD/ DEXTRA/ KRIDHAN

Signature of tenderer/'s

DRM (WA) BCT
(For & Behalf of President of India)



SN	MATERIAL	MAKES/ MANUFACTURERS OR SIMILAR
127	REINFORCEMENT BAR	TATA/ RINL/ SAIL/ TISCO/ JINDAL/ RINL/ ESSAR/ IISCO/ JSW/ ARCELAR MITTAL (ONLY PRIMERY MANUFACTURE)
128	RESIN BASED PAINTS	BERGER/ NEROLAC/ ULTRATECH/ JOTUN/ SHIRWIN WILLIAMS / SNOWCEM PLUS/ TATA CEM / KAZONBLDULUX
129	ROLLER BLINDS	D-DECOR / DECK / HUNTERDOUGLAS/ AEROLUX/ VISTA
130	ROLLING SHUTTER	GATEMAN/ GODREJ/ AVIANS
131	SEISMIC STOPPER	L&T PIPING CENTRE/ HAZIRA/ ALLMARCO/ AHMEDBAD/ GERB/ MAGEBA ENGINEERING/ KOLKATA
132	SENSOR OPERATED AUTO FLUSHING SYSTEM	SIMPLO/ KOHLER/GROHE / DURAVIT/VITRA
133	SFRC MANHOLE COVER & FRAMES	DALAL TILES / NITCO / KK MANHOLES/ DAYA SPUN/N.T.C.I MODERNTILES/OSWAL INDUSTRIES/JAIPUR/ OCR/ PARGATI/ T-CON
134	SHEATHING DUCT	ASTRAL/ DYNAMIC/ PES.TEC/ TIRUPATI
135	SHUTRING OIL	SIKA/ FOSROC/ BASF/ THERMAX LIMITED / SUPREME / STAR COATING/ MC - BAUCHEMIE
136	SILICA SAND	SHREE SILICAAM MINERALS LLP/ RESICO INDIA PVT. LTD./ SHIV SHAKTI MINERALS
137	SILICON SEALANTS/WEATHER SEALANT	GE-SILICON/ PIDILITE/ CHOKSEY/ WACKER/ FORSOC/ CICO/ DOW CORNING / SIKA /STARCOATING
138	SLUICE VALVE/NRV	ZOLOTO/AUDCO / CASTLE / ADVANCE
139	SOIL, WASTE & RAIN WATER PIPES & FITTINGS-UPVC.	SUPREME/ SFMC PVC UPVC PIPE/ FLOW GUARD / ASTRAL / FINOLEX/ AKG/ UNITED FORGE/ METRO FORGE/ M/S METAL LLYOD INDUSTRIES
140	SOIL, WASTE WATER PIPES FITTINGS	NICO/SFMC PVC UPVC PIPE/ KAGECO / FINOLEX
141	SS FLOOR DRAIN, JALI, TRAPS	NEER/ JAYNA/ HINDWARE
142	SS GRATINGS, SOAP DISH TOWEL RAIL ETC.	CAMRY/ GLACIER/GEM
143	SS PLATE/SHEET	JINDAL/ BRG GROUP/ VIRAJ
144	STAIN LESS STEEL BOLTS, WASHERS AND NUTS	KUNDAN/ PUJA/ KONCEPT
145	STAINLESS STEEL	SALEM STEEL/ ARCELOR MITTAL/ TATA/ JINDAL ALLOYS/ SAIL
146	STAINLESS STEEL CLAMPS	HILTI/ INTELLOTECH/ KONCEPT
147	STAINLESS STEEL CP GRATING	CHILLY/ CAMRY/ KONCEPT/ ALUBOND
148	STAINLESS STEEL D-HANDLES	D-LINE / KONCEPT / DORMA / KICH / GEZE/ ORION
149	STAINLESS STEEL FRICTION STAY	EARL BIHARI/ SECURISTYLE/ EBCO
150	STAINLESS STEEL PRESSURE PLATE SCREWS	KUNDAN/ PUJA/ ATUL/ KONCEPT
151	STAINLESS STEEL SCREW FOR FABRICATION	KUNDAN/ PUJA/ ATUL/ KONCEPT
152	STAINLESS STEEL SINKS	FRANKE/ CARYSIL/ NEELKANTH/ ALLEX/ NIRALI/ JAYNA/ CERA/ ANUPAM/ FRANKE FABRE
153	STONE WARE PIPES & GULLY TRAPS	PERFECT/ R.K/HIND/ ANAND/ BURN
154	SUPER PLASTICIZER	CICO/ PIDILITE INDUSTRIES / THERMAX LIMITED/ STAR COATING/ MC-BAUCHEMIE/ FOSROC/ SIKA/ BASF/ ASIAN LABORATORIES/ ULTRAACON/ KRYTON
155	SYNTHETIC ENAMEL PAINTS	BERGER/ NEROLAC/ ULTRATECH/ JOTUN/ SHIRWIN WILLIAMS / SNOWCEM PLUS/ TATA CEM / KAZONBLDULUX
156	TACTILE TILES	AGL/ JOHNSON/ RAK/ NITCO/ PAVIT/ KAJARIA/ ORIENT BELL
157	TERRACOTTA TILE FOR EXTERNAL WALL CLADDING	TERREAL/HUNTER DOUGLAS/ SOLADRIHO / VEILS
158	TEXTURE PAINT	ULTRATECH/ SPECTRUM/ SKK/ OIKOS/ AKZONOBEL (DULUX) NEROLAC KANSAI (EXCELY SPECTRUM/ ASIAN

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SN	MATERIAL	MAKES/ MANUFACTURERS OR SIMILAR
159	THERMAL INSULATION SANDWICH BLOCK	VYARA TILES/ SUPER TILES/ BASANT BETONS/ DALAL TILES/ OSWAL INDUSTRIES JAIPUR
160	TILES/GRANITE ADHESIVE	FERROUSCRETE / THERMAX / PIDLITE / ULTRATECH/ KRRAKOLL/ MYK LATCRETE/ FOSROC/ BASF/ KRYTON
161	TOILET CUBICLES	GREENLAM/TRESPA/CENTURY/ VEILS/ MERINO/ T-LINE/ DORMA,
162	UPVC DOOR & WINDOW	ALUPLAST/ FENESTA/ JAYANA/ PSP / KOMMERLING/ WINTech/ WINDOWMAGIC/ RAJSHRI
163	UPVC PIPES/FITTINGS AND VALVES	ASTRAL/ SUPREME/ FYBEL/ AKG/ FINOLEX/ SURYA PRAKASH/ VECTUS/ SFMC
164	VITREOUS CHINA SANITARY WARE	SIMPOLO/ KOHLAR GROHE DURAVIT / VITRA
165	VITRIFIED TILES	KAJARIA/ HR JOHNSON/ SIMPOLO/ RAK/ NEXION/ EMCER/ AGL(SUPPLY TO BE MADE FROM THEIR AUTHORIZED COMPANY)/ SOMANY/ H&R JOHNSON/ ASIAN (AGL)/ VERMORA/ NITCO/ NITCO/ SOMANY
166	WALL PUTTY	BIRLA WHITE/J.K./ GRASIM
167	WATER METER	KAYCEE/ SANT/ZENNER/ PRIMA/ ZOLOTO/ LEADER/ CAPSTAN/ LEHRY
168	WATER PROOFING COMPOUND	BASF/ THERMAX / FOSROC / SIKA / SOPERMA / STARCOATING / MC - BAUCHEMIE/ PENETRON/ KRYTON FIRE STONE/ PIDILITE/ CARLISLE/ ARMSTRONG CHEMICALS PVT LTD/ EFFCO FINISHES & TECHNOLOGIES PVT LTD/ MYK ARMENT PVT. LTD./ PENETRON/ PIDILITE INDUSTRIES LTD/ STP LIMITED
169	WATERPROOFING MATERIALS	ARMSTRONG CHEMICALS PVT LTD/ EFFCO FINISHES & TECHNOLOGIES PVT LTD/ MYK ARMENT PVT. LTD./ PENETRON/ PIDILITE INDUSTRIES LTD/ STP LIMITED
170	WEATHER SEALENT	BASF/ THERMAX / FOSROC / SIKA / SOPERMA / STARCOATING/ NEROLAC/ BERGER/ AKZONOBEL/ M.C.BAUCHEMIE/ WACKER/ STP
171	WELDING ELECTRODES	ADOR WELDING LIMITED/ D&H SECHERON ELECTRODES PVT LTD/ ESAB GROUP/ GEE LIMITED
172	WHITE CEMENT	BIRLA WHITE/ J.K./ GRASIM/ LAFARGE/ DALMIA/ ULTRATECH

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ADDITIONAL SPECIAL CONDITIONS OF CONTRACT
FOR SUPPLY & USE OF CEMENT

- (A) The cement used shall be any of the following and type selected should be appropriate for the intended use,
- (i) 33 Grade Ordinary Portland Cement conforming to IS:269
 - (ii) 43 Grade Ordinary Portland Cement conforming to IS:8112
 - (iii) 53 Grade Ordinary Portland Cement conforming to IS:12269
 - (iv) Rapid hardening Portland Cement conforming to IS:8041
 - (v) Portland slag cement conforming to IS:455
 - (vi) Portland Pozzolana Cement (Fly ash based) conforming to IS: 1489(Part-1)
 - (vii) Portland pozzolana Cement (calcined clay based) conforming to IS: 1489 (Part-2)
 - (viii) Hydrophobic Cement Conforming to IS:8043
 - (ix) Low heat Portland cement conforming to IS: 12600
 - (x) Sulphate resisting Portland cement conforming to IS:12330

Note: -Portland Pozzolana Cement shall not be used for PSC Works

- (B) The cement shall be packed in jute sacking bags confirming to IS:2580-1982, double hessian bituminized (CRI type) or woven HDPE confirming to IS: 11652-1956 woven polypropylene confirming to IS:11653-1986. jute synthetic union confirming to IS:12174-1987 or any other approved composite bag bearing the manufacturer's name or his registered trade mark if any, and grade and type of cement.
- (C) Every delivery of cement shall be accompanied by a producer's certificate confirming that the supplied cement conforms to relevant specification. These certificates shall be endorsed to the Engineer for his record. Certified copy of the same shall be submitted to Divisional Office along with running bills/final bill
- (D) Every consignment of cement must have identification marks on packages indicating date of manufacture and grade and type of cement. Cement when brought to work shall not be more than 6 weeks old from the date of manufacture. In case due to some reason, it is not possible to use the cement within three months then it should be ensured that older lot is used in the lean concrete or other un-important items of work. Effective precautionary measures shall be taken to eliminate dust nuisance during loading or transferring cement. The procurement of cement shall be planned by the contractor. This does not affect the progress of work.

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- (E) Cement in bags shall be stored and stacked in a shed which is dry, leak proof and moisture proof as possible. Flooring of the shed shall consist of the two layers of dry bricks laid on well consolidated earth to avoid contact of cement bags with the floor. Stacking shall be done about 150 to 200mm clear above the floor, using wooden planks, old wooden sleepers or scrap GI sheets. Cement bags shall be stacked at least 450mm clear of the walls and in rows of two bags leaving in a space of at-least 600mm between two consecutive rows. In each row the cement bags shall be kept together so as to reduce air circulation. Stacking shall not be more than 10 bags high to avoid lumping under pressure. In stacks more than eight bags high, the cement bags shall be in header and stretcher fashion, ie. Alternately lengthwise and crosswise so as to tie the stacks together and minimize the danger of toppling over.
- (F) Different type of cement shall be stacked and stored separately. Cement bags shall be stacked in a manner to facilitate their removal and use in the order in which they are received. For extra safety during monsoon, or when cement is expected to be stored for an unusually long period, each stack shall be completely enclosed by a water proofing membrane, such as polyethylene/tarpaulin, which shall cover the top of the stack. Care shall be taken to see that the water proofing membrane is not damaged at any time during use. Cement which is set or partially set should on no account be used. Storage of cement at the worksite shall be at the contractor's expense and risk. Any damage occurring to cement due to faulty storage in contractor's shed or on account of negligence on his part shall be the liability of the contractor.
- (G) After receipt of each lot of cement at godown a sample of cement at the direction of Engineer in charge shall be tested at contractor's own cost for (a) Fineness, (b) Soundness, (c) Setting time (initial and Final), (d) Compressive strength & (e) consistency of standard cement paste as prescribed in IS code) IS:4031 Part-II, Part-III, Part-V & Part-VI for each lot or every 50 tonnes or part thereof. Only on receipt of satisfactory certificates this cement shall be allowed to be used on the work. Certified copy of the same shall be submitted to Divisional Office along with running bills/final bills.
- (H) Cement shall be procured/purchased from cement factories/authorized dealers/retailers from various popular brands e.g., "**ACC (ASSOCIATED CEMENT CO.) /ULTRATECH/ GUJRAT AMBUJA CEMENT / JK /L&T / JP Cement / WONDER CEMENT / HATHI /HI –BOND /SIDDHI CEMENT / SANGHI /JSW /MP BIRLA** (These brands are mentioned In terms of letter no. HQENGG (WWTC)/4/2019/E-907 dt 21/08/2025)". The contractor shall have to submit the cash memo along with the lot of cement purchased from the various cement factories/authorized dealers/retailers to Engineer in Charge in token proof of purchase of cement from reputed cement factories/authorized dealers/retailers. No cement shall accepted by the Engineer in Charge without cash memo. Certified

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copy of the same shall be submitted to Divisional Office along with running bills/final bills.

- (I) Although cement payment is in Quintal/MT as per item of tender, total quantities so paid shall be limited to quantity actually used in work, subject to further not exceeding the quantity laid down in CPWD Delhi Schedule of Rates of 2021 or latest (DSR Vol. I, Vol. 2), DSR 2020-Horticulture & Landscaping) or latest, WR-USSOR 2021 or latest & CPWD Specifications-(Vol. 1 & Vol. 2) whichever is less
- (J) No payment shall be made for the cement used in works rejected by Engineer. All empty bags shall be taken away by the contractor after use of cement and cost of empty cement bags shall not form part of quoted rates against the item of cement.
- (K) Cement consumption register shall be meticulously maintained giving quantity of work done/consumption of cement of each day.
- (L) Cement bags left after completion of work shall be taken away by the contractor and Railway shall not make any payment against these bags.

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SPECIFICATION OF STEEL ITEMS (Standard Clause)

REINFORCEMENT STEEL (TMT BARS) AND STRUCTURAL STEEL-

(Based on HQ letter no. W118/0 system improvement (W6) dt 15.02.2013)

(A) All Reinforcement Steel (TMT Bars) and structural Steel shall be procured as per specifications mentioned in BIS's documents-IS: 1786 and IS: 2062 respectively. Independent tests shall be conducted, wherever required, to ensure that the materials procured conform to the specifications.

(B) Steel shall be procured only from those firms, which are established, reliable, indigenous and Primary producers of steel, having integrated steel plants (ISP), using iron ore as the basic raw material and having in-house iron rolling facilities, following by production of liquid steel and crude steel.

Recommended manufactures/ Brand are as per CE(W &SD) letter no WR-HQENGG (WWTC)/4/2019/E-907 dt 21.08.2025 as mentioned below,

For reinforcement steel: --

“TATA/RINL/SAIL/TISCO/JINDAL/RINL/ESSAR/IISCO/JSW/ARCELAR MITTAL (Only primary manufacturer).

For Structural steel:-TATA/RINL/SAIL/JSPL, ESSAR, IISCO/AMNS INDIA/APL/APOLLO STEE TUBES/APL APOLLO TUBES LIMITED PVT LTD/ARCELOR MITTAL NIPPON STEEL INDIAN LIMITED/HI-TECH PIPES LTD/ JINDAL STEEL AND POWER LTD/JSW STEEL LTD.

(C) However, only certain isolated sections of structural steel, not being rolled by ISPs, can be procured from the authorized re-rollers of ISPs or authorized licensee of BIS having traceability system and who use billets produced by ISPs.

(D) The steel procured shall be reasonably free from cracks, surface flaws, laminations, rough and imperfect edges and all other harmful defects. Steel sections, shall be free from excessive rust, scaling and pitting and shall be well protected. The decision of the Engineer regarding rejecting any steel section on account of any of the above defects shall be final and binding.

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- (E) Structural steel work shall conform to the requirement as specified in “CPWD specification Vol- I & II–2019 or latest if any”
- (F) Necessary purchase bill along with test certificate for steel shall be obtained and submitted to the Engineer in Charge. Steel without the MTC & 3rd party test certificate (NABL approved laboratory/ Govt. Engineering college) shall not be used in the work.. Certified copy of the same shall be submitted to Divisional Office along with running bills / final bills. Steel shall be tested for Tensile strength and bend test as specified in specification of “CPWD specification Vol- I & II–2019(or latest if any)” and specification of “USSOR-2019(or latest if any)”
- (G) Quantity for this item shall be calculated as per nominal weight of steel section for the length actually used in the work. No payment will be made for the wastage and the contractor will be allowed to take away the scrap and excess steel away from site.
- (H) The contractor shall be responsible for getting the measurement of steel entered in to steel register and signed by the Engineer in charge of the work before concreting is done to avoid dispute regarding quantity of steel used in the work. 100% ADEN technical check is required for RCC steel.
- (I) The rates quoted for this item is deemed to be inclusive of the cost of binding wire and no separate payment shall be admissible for the same.
- (J) The steel shall be kept by the contractor under his custody at the site of work and Railway will not be responsible for any theft thereof
- (K) The quantity so payable under relevant item shall be restricted to the quantity as per approved plan / drawing and decision of the Engineer in Charge in this regard shall be final and binding upon the contractor.
- (L) Only brand-new steel from above mentioned manufacturer shall be used for this work.
- (M) Quantity of this item shall be calculated as per nominal weight of steel sections for the lengths in finished work. However, if the actual weight is found less than the nominal weight, payment will be made after ascertaining unit weight of steel for the actual weight only. If actual sectional weight is more than the nominal weight, payment will be made for nominal weight only,
- (N) Steel at site can be stored as per IS 4082:1996

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Specification ,Brand/Manufacturers of STENLESS STEEL ITEM'S

- (A) Stainless steel work shall conform to the requirement as specified in “CPWD specification Vol- I & II–2019 or latest if any” (IS codes & Grade of steel etc.) Or otherwise specified in the items.
Necessary purchase bill along with test certificate for stainless steel shall be obtained and submitted to the Engineer in Charge. Steel without the MTC & 3rd party test certificate (NABL approved laboratory/ Govt. Engineering college) shall not be used in the work.. Certified copy of the same shall be submitted to Divisional Office along with running bills / final bills. Steel shall be tested as specified in specification of “CPWD specification Vol- I & II–2019(or latest if any)” and specification of “USSOR-2019(or latest if any)”
- (B) Quantity for this item shall be calculated as per nominal weight of steel section for the length actually used in the work. No payment will be made for the wastage and the contractor will be allowed to take away the scrap and excess steel away from site.
- (C) The steel shall be kept by the contractor under his custody at the site of work and Railway will not be responsible for any theft thereof
- (D) Only brand-new steel from above mentioned manufacturer shall be used for this work
- (E) Manufactures/ Brand recommended as per CE (W &SD) letter no WR-HQENGG (WWTC)/4/2019/E-907 dt 21.08.2025,

1. SS Plates /Sheets-JINDAL/BRG GROUP/VIRAJ.
2. Stainless steel- SALEM STEEL/ARCELOR MITTAL/TATA/JINDAL ALLOYS/AIL
3. Stain less steel Bolt, washers and Nuts-KUNDAN/ PUJA/ KONCEPT.

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**SPECIFICATIONS/CONDITIONS FOR CONTROLLED
CONCRETE.**

1. The contractor/ shall be required to exercise effective quality control over production, placement & curing of concrete at site. He shall ensure that work is carried out in accordance with provisions as specified in specification of "CPWD specification Vol- I&II-2019 and specification of "USSOR-2021" with all relevant codes updated from time to time as applicable for this work. No extra payment is admissible for quality control.
2. Mechanical concrete mixer & mechanical vibrator should be used for concreting.
3. Any part of the RCC structure which is damaged during any operation of the work shall be fully made good by the contractor at his own cost and to the entire satisfaction of the Railway Engineer.
4. For concreting machine crushed stone of appropriate sizes shall be used. For mass concrete well graded stone aggregates shall be used as specified in specification of "CPWD specification Vol- I&II-2019 and specification of "USSOR-2021".
5. No concreting shall be done till the reinforcements & shuttering are properly checked and clearance given in writing by the Railway Engineer or his representative.
6. Any loose scales/rust in steel reinforcement shall be completely removed before the reinforcement is placed in position.
7. Only approved quality concrete mix produced by mechanical mixer shall be used in the work and in no case hand mixing shall be done for the work.
8. Course aggregate, Fine aggregate, cement & water to be used for the work shall conform to the relevant IS standards. Testing of materials to be used on the work shall be done at contractors cost to ensure quality. As far as possible stock piling of aggregates shall be done in accordance with standard practices to enable standard analysis being made of such batch that is brought to site. The design of the mix shall be carefully done from representative samples of the aggregates taken in presence of the Railway representative. The preliminary test results along with analysis of aggregates and mix design calculations should be got approved by the Railway Engineer. The contractor shall modify the mix design as directed by the Railway Engineer if required in the opinion of the Railway Engineer and final test results and analysis shall also be got approved by the Railway Engineer. Such approval however will not relieve the contractor of his responsibility & obligations regarding minimum strength requirement. Each mix design shall mention the slump value & designated slump should be adequate for concreting in the RCC member.

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9. All controlled concrete shall be weigh batched. Concrete mixers with devices for automatic/mechanical weighing facilities shall be used in concreting work. Moisture content in the aggregate should also be taken into consideration.
10. Tests on concrete cubes as per Mix Design shall be done by "AN NABL ACCREDITED MATERIAL TESTING LABORATORIES" at contractor's cost.
11. Regular cube tests for ascertaining strength of concrete shall be carried out as specified in specification of "CPWD specification Vol- I&II-2019 and specification of "USSOR-2021". & when required during construction work as directed by the Railway Engineer at contractor's cost. For controlled concrete, necessary stipulation as per code of practices specified in the design criteria shall be rigidly adhered to.
12. Contractor shall ensure continuous concreting during each shift of concreting. Any rest/pause for meals etc. Should be adjusted accordingly with consent of Engineer-in-charge. Needle vibrator shall be used for compactions where thickness of concrete is less/reinforcement is heavy.
13. During placing free fall of concreting as specified in specification of "CPWD specification Vol- I&II-2019 and specification of "USSOR-2021" and concrete shall be cured to the satisfaction of the Railway Engineer.
14. Removal of form work shall be as specified in specification of "CPWD specification Vol- I&II-2019 and specification of "USSOR-2021" and shall be done in presence of the Railway representative. No patch repairing or finishing shall be done without the approval of the Railway Engineer. There shall be no honey comb structures on concrete and concrete shall be dense, monolithic and surface to line, level, plumb & smooth finish. All rectification in defective work will have to be carried out by the contractor at his own cost as directed by the railway Engineer and with the knowledge of the Railway Engineer.
15. All exposed surfaces of concrete shall be brought to an even finish after removal of form work & no extra payment will be made for the same.
16. Any part of work which is not to the required standards & specifications in the opinion of the Railway Engineer shall be rejected and contractor shall make good such rejected works.
17. Contractor will have to make sufficient arrangement for water required for the work. Water used for curing shall be as per relevant IS codes and as specified in specification of "CPWD specification Vol- I&II-2019 and specification of "USSOR-2021". However all vertical surfaces and bottom exposed surfaces of concrete member will have to be cured by application of curing compound if necessary as per directions of the railway Engineer and no extra payment will be made for the same. The decision of the Railway Engineer in this regard will be final & binding upon the contractor. If contractor fails to do proper curing, Railway will be at liberty to get it done departmentally and recover the cost from the contractor

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18. Form work & false work are very important for all concrete structures in question for these have influence on shape, strength & durability of the structures. For this reason details must be correctly designed and installed. The design of form work shall take into account the required surface conditions (appearance, compatibility, required finish). The form work and false work together must provide safe working conditions. Safe access must be provided using additional scaffolding as necessary.
19. Pour plan shall be submitted by contractor's engineer before concreting and same shall be approved by Engineer in charge at site.

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Special Conditions Technical- General

1.0 Visit to the site of work prior to tendering.

The tenderer should visit the site of work and get himself acquainted with the site conditions, approach to the site, density of railway traffic, available clearances, space for working for the work. The location of site and scope of work including brief description has been enclosed with the tender. The tenderer must read it carefully to get a fair idea of the work involved.

If the work is to be carried out in block period, no separate payment shall be made for the same which may be noted. In case no block is approved or/ got cancelled, no payment will be made which may be noted.

2.0 Precaution to be observed during construction. The work will have to be carried out in such manner as to cause least obstruction to Railway traffic and also without jeopardizing the safety of moving trains. The successful tenderer shall also take all necessary precautions to ensure the safety of his workmen at the site of construction. The Railway will not be liable for payment of compensation due to any mishap to the workman or machinery during the course of work. The work shall be planned in such a way as not to cause any infringement to the dimensions laid down in the "Standard schedule of dimensions for broad gauge of Indian Railways" currently in force.

3.0 Time is the Essence of this work

The work including site clearing and other activities to be completed within the time specified.

4.0 Ancillary works

It should be carefully noted by the tenderers that approach roads, casting yards, test beds , bunds etc. if applicable are to be constructed and maintained at their cost within the quoted rates and no separate payment will be admissible against these items.

5.0 CODE OF PRACTICE

5.1 The work will be executed based on specification of "CPWD specification Vol- I&II- 2019 and specification of "USSOR-2021" , IRPWM, IRSOD , IRBM, etc., with all relevant codes updated from time to time.

5.2 In the event of any difference of opinion in regard to any item of work not explicitly covered by specifications or Codes in or in regard to the interpretation of specifications including Codes, the directions and decisions of the Chief Engineer or his authorized representative shall be the final and binding on the successful tenderer. All such changes, modifications to design and decisions shall not be entitled for any claim or compensation for payment. No plea of customs or usage shall be entertained. The tenderer should note that there might be changes after approval of design as per site conditions, which they are bound to carryout and comply with. There may be changes in the design even during the construction stage or before completion of the work and the successful tenderer shall be not be entitled for any claim or compensation on this account and shall bound to carry

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out without additional liability as covered in agreement such changes, modifications, revised designs as may be required to suit the completion of this work.

6.0 PRIORITY-WISE REFERENCES:

In case of any discrepancy or disagreement between different specifications to be followed for any item of work, the following preferences shall be adopted in the order of precedence as they appear below:-

- i) Provisions in the NIT as modified/supplemented/ clarified.
- ii) IRS Codes of Practice/Standard Specifications.
- iii) I.S.I. Codes.
- iv) Indian Roads Congress specifications.
- v) British Standard Specifications.
- vi) American standard specification;

6.1 Any timbering works required to be done for retaining earth during excavation for foundation will have to be arranged by the contractor as per IRWM.

7.0 While excavation the foundation, the contractor shall ensure that no damage is caused to underground sewer line pipes cables etc. He should also ensure the stability of the adjoining lines, building roads etc. damage to any of the underground services or any adjoining structures if caused during the course of work shall be fully made good by the contractor at his own cost.

8.0 No blasting will be permitted during excavation in foundation. In hard rock strata excavation will be done by chiselling only. In this regard decision of the Engineer will be final.

9.0 STORAGE OF MATERIAL

All materials may be stored at proper places so as to prevent their deterioration or intrusion by foreign matter and to ensure their satisfactory quality and fitness for the work. The storage space must also permit easy inspection, removal and restorage of the materials. All such materials even though stored in approved godowns/places, must be subjected to acceptance test prior to their immediate use.

10.0 REMOVAL OF REJECTED MATERIAL

Any material rejected by the Engineer for any reasons before or after placing shall be removed from site from the Railway land at Contractor's own expenses.

11.0 IS CODE / IRS SPECIFICATIONS:

1. Wherever any reference to code specifications, act etc. is made in this document, it shall be taken as a reference to the latest version thereof, including all amendments and corrections there to or otherwise specified.

2. The contractor shall not be entitled to any extra payment on any account for compliance with the various provisions of IS specifications/IRS specifications and special conditions of contract. The rates indicated in the schedule shall be deemed to include all works required to be done in compliance with the specifications.

12.0 Period of Completion:

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- a. The completion period for this work is as mentioned in tender documents.
 - b. The work is to be executed by the contractor with his materials and labour under supervision and direction of the ADEN-in-charge of work unless specifically mentioned otherwise.
 - c. The work should be executed as per the activity jointly agreed upon by the contractor's & Engineer-in-charge of the work.
13. For effective supervision at night, the contractor will have to make lighting arrangement to the satisfaction of the Engineer. He may apply for necessary water connection on payment from Railway. The contractor is permitted to use Railway water for all works on payment.
14. The rates for concrete works shall be deemed to include all charges for testing of aggregates, sand, water and the concrete as required to be done in accordance with specifications, including the cost of labour, materials, equipment's, moulds, transport etc. The contractor shall prepare at his own cost standard cubes of concrete according to the directions of the Engineer-in-charge both for the preliminary tests and during work tests, the charges of testing shall be borne by the contractor. The sample for cube test shall be collected at random by ADEN incharge of the work; the cost of testing shall be borne by the contractor.
15. The on account bill of the concrete works shall be passed by the ADEN subject to the cube strength being OK afterwards. In case cubes fail, contractor will have to redo the work.
16. The contractor should make his own approach road for transportation of materials for which no extra payment will be made.
17. No vehicle will be allowed to ply on platform surface, except with the approval of Engineer or his representative.
18. Any damage to PF surface while executing the work will have to be made good by the contractor at his own cost.
19. If pipelines or cables are required to be diverted or shifted, railway will shift the same on priority within a reasonable time.
20. Water and electric connections upon payment, as per rules admissible if possible may be given by railway as per extant rules, however, railway does not give guarantee to give water and electricity connections. No claim on this account will be entertained.
21. Contractor may come across some live electrical and telecommunication cables and he has to take sufficient precautions to protect the cables from any damage.
22. The above conditions are read, understood and accepted by me/us with the rates offered by me in the tender document.
- 23. Price Variation Clause for Cement will be considered on the basis of cement consumption statement shown in DSR/ I R-USSOR items**
- 24. In case the cement consumption is not mentioned in USSOR/DSR items, then the qty of cement as per approved design mix will be considered for calculation of Price Variation Clause for Cement.**

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(For & Behalf of President of India)



Specification and special condition of Items

1.NS – As per Tender schedule.

2NS- Supplying and fixing 6.00 mm thick multiwall easy clean Bronze/Blue/Green Lexan Polycarbonate sheet with end closure---

SPECIFICATION FOR POLYCARBONATE SHEET

The material (LTC 6/2 RS 1300) should be of following specification

- 1) It should be Thermo clear ® sheet range of high quality, multi-wall polycarbonate glazing sheets extruded from Lexan ® resin.

It Offers:

- Twin wall sheet 'rectangular structure'
- Fit for secondary flat or curved glazing
- High impact strength
- Excellent light transmission
- Light weight, easy installation
- Long term weather resistance
- Outstanding thermal insulation properties.

2) UV RESISTANCE

The complete Lexan Thermo clear sheet range features a proprietary one-side surface treatment designed to protect the sheet against the degrading effects of ultra-violet radiation in natural sunlight. This side must always be installed facing outwards.

3) NON-STANDARD SPECIFICATIONS

All GE Plastics multi-wall sheet products can be supplied by prior arrangement in non-standard widths, lengths and colours

Installation

Installation Design parameters shown here are typical values taken from building and construction Research Report No. B-90-480, the Netherlands organization for applied scientific research (TNO).

Availability (LTC6/2RS1300)

Widths	Lengths	Standard Colours
1250mm	6000mm	Clear 112, Opel white 82995
21000mm	7000mm	Bronze 515055

1) TYPICAL PROPERTIES

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Property Physical	Test method	Unit	Value
Weight	-	g/m ²	1300
Sound Insulation	DIN 52210	dB	18
Optical			
Light transmission clear (112)	ASTM D-1003	%	82
Opel white (82995)		%	58
Bronze (515055)		%	35
Solar Transmission	DIN 67507		
Clear (112)		%	86
Opal White (82995)		%	76
Bronze (5515055)		%	55
1.1 Mechanical			
Hail Impact Resistance	TNO Test*	m/s	>21
(hail simulation test 20mm plastic bullet)			
Stiffness	TNO Test**		
Bending		N.mm ² /mm	17243
Shear		N.mm	26115

* TNO Report No. 245/ 86E

**TNO Report No. B-90-024

Thermal			
U (or K) Value	DIN 52612	W/m ² K	3.5
Co-efficient of linear	VDE 0304/1	m / m °C	7x10 ⁻⁵
Recommended Maximum Continuous Use Temperature	UL 746B	°C	100

5) FIRE TEST PERFORMANCE:

Lexan Thermo clear should have good fire performance against many national fire codes depend on thickness and colours.

6) LTC 6/2RS1300: INSTALLATION DESIGN PARAMETERS*

I) .Flat installations.

a. Two sides clamped parallel with ribs.

Sheet width W (mm)	610	570	530
Loading (N/m ²)	600	800	1000

b. Two sides clamped perpendicular to ribs

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Purlin distance W (mm)	690	630	590	570	540	520	500	480
Loading (N/m ²)	600	800	1000	1200	1400	1600	1800	2000

c. Four sides clamped.

W/L ratio	Loading*(N/ m ²)	600	800	1000
1:1	Sheet width	920	850	780
1:1.5		920	850	780
1:>1.5	W in mm	610	570	530

* Safety factor of 1.5 against calculated 'pop-out'

II) . Curved Installations, four sides clamped

Radius (mm)	Loading (N/m ²)*	600	800	1000	1200	1400	1600	1800	>2000
1050	Sheet width	2100	1800	1500	1250	1070	960	860	750
1200		1900	1500	1250	1000	900	800	700	660
1300	W in mm	1700	1400	1100	900	790	700	630	530
1400		1600	1200	960	830	720	630	530	
1500		1450	1100	900	730	610	600		
1600		1350	1000	820	680	600			
1750		1200	900	730	610				
1900		1050	800	640	580				
2000		920	750	600					
2100		850	700						
2200		800	670						
2300		750	600						

Notes:-

- Width / length ratio(W/L) is > 1:2.
 - 1400 mm is minimum allowable radius.
- All NS items Material, colore, should got approve before procurement from railway Engineer in charge. Work done as per instruction of engineer in chrg.
 - Temporary barricading; - Type Plan for temporary barricading to be used at construction site as per attached in Tender document.
 - Railway has right to reject inferior quality of item used, no payment will be made to the contractor for the rejected quantity.

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- **All safety equipment to be provide by the contractor on his own cost & all safety measure follow by the contractor for working Laboure/staff.**

The above conditions are read, understood and accepted by me/us with the rates offered by me in the tender document.

Signature of tenderer/'s

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