

Master Document for

Special conditions of contracts for Civil/Building works

- A). Conditions for Building works.
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SPECIAL CONDITIONS OF CONTRACT FOR CIVIL / BUILDING WORKS

A. Conditions for Building works.

1. The quantities shown in the tender schedule are approximate and will be operated in full or part at the discretion of the Engineer in charge. Payment will be made based on the actual items operated.
2. All items included in the tender schedule should be carried out in accordance with the Standard Specifications.
 - i). For materials and works, (up to date corrections shall be followed along with) Delhi schedule of Rates DSR - 2021 and for Horticulture items DSR - 2020 of Railways.
 - ii). All materials to be supplied and used by the contractor in connection with this work should have prior specific approval of the Engineer in charge and should be in accordance with the specifications for materials and works of SC Railway.
3. The tenderers are required to study all the drawings referred to in the tender thoroughly before quoting the rates. The Railway reserves the right to change their drawings during the execution of works and the contractor should execute the work as per the revised drawings. No extra payment or claim will be entertained on that account. Payment will be made to the contractor for the work actually done at the accepted rates of agreement.
4. Details of ducts, opening, grooves etc., that may be required to be provided for wiring, etc., will be indicated during progress of the work. Tenderers/Contractors will arrange to provide them in walls, floors, RCC slabs, etc., where ever necessary as directed by the engineer in charge without any extra claim.
5. Any pipes, conduct or hooks, required for electrical works shall be placed by the tenderer/contractor at any position indicated without any extra claim. The pipe conduit, hooks, bends etc., to the required degree will be supplied by the Railway at the site of work.
6. The contractor is required to safe guard the steel brought to site and to use the same on the work in accordance with actual requirement as approved by the Engineer as may be indicated in the relevant drawings or specification.
7. Weigh batch plant shall be used in case of design mix. Concrete without fail.
8. The cement supplied should conform to I.S. specification 8112 for 43 Grade and as per approved list issued by Hqrts. (Authority : PCE/SC letter No. SCR – HQ/ENGG(SOR)/1/2020-Dy CE- WORKS-SCR of 11-09-2024). Annexure – I list of Brands is enclosed. Before executing the work, the agency should submit a test certificate for Standard Properties as well as indicating the source of supply and brand of the cement.
9. The reinforcement steel to be used in work shall be from TISCO, SAIL, VIZAG and JSW Steel plant and as per approved list issued by Hqrts vide letter No. SCR – HQ/ENGG(SOR)/1/2020-Dy CE-WORKS-SCR of 11-09-2024 is enclosed or Steel vendor approved by RDSO (list available in RDSO website) with the consultation of Engineer/in/charge. The steel shall not be rerolled variety. The agency shall produce necessary vouchers in original in support of the purchase of steel and cement from the suppliers along with certificates to relevant standards from the manufacturers before the commencement of work.

10. Approved list of Brands / Makes for use in works in SCR, all other construction materials shall be used as per approved brands / makes of **162 items vide** (Authority : PCE/SC **letter No. SCR-HQ/ENGG(SOR)/1/2020 - Dy-CE/WORKS-SCR of 11-09-2024**). Annexure – I list of Brands are enclosed.
11. No contractor's vehicle will be allowed on PFs on crossing of track through pathways etc without prior permission from Engineer- in-charge of section. Such vehicles after obtaining permission should move under authorized supervision of Rly. only. Contractor has to take necessary precautions to safe guard his men, materials and safety of passengers.
12. The contractor labour shall be provided with identity cards due to security problems.
13. The damages done to the adjoining wards/items to carry out the new work shall be made good at the cost of the contractor.
14. When it is required to operate JCB/Proclainer or any other heavy machinery/Plant in the Rly. land, the contractor is reqd. to take written permission from the concerned engineering official.
15. The contractor should take care without causing any damage to the cables during execution of work, he will be fully be responsible for the act for which penalty will be imposed, can be arrested/prosecuted for the damages caused by him.
16. The Railway reserves the right to reject or alter any part of the work executed by the contractor which in the judgment of Rly. does not comply with the requirements of the specification. The decision of Railway shall be final on conclusive for all purposes.
17. Potable fresh water is only permitted for all concreting works and other machinery works.
18. Electrical energy that may be reqd. for operating the plant will be supplied by the Railway wherever feasible at the discretion of the Railway on payment of the charges as reqd. by the Electrical dept. The contractor will have to make his own arrangements for taking the connection from the nearest Railway electrical source of supply duly obtaining approval from the electrical department.
19. The contractor is required to use power consumption judiciously, and to draw the current through "Meter" only and a "Circuit Breaker" is also fixed on it which prevents chances of fire in circuit of building. If any contractor is found to draw the current from any socket without meter, action will be initiated according to Railway Electrical Rules i.e. "Penalty of Rs.10,000/- or Imprisonment for 6 months" or both will be levied on the contractor.
20. Contractor shall adopt / choose material brands from this approved list only.

i). There will no maintenance period for Zonal Works.

ii). For repair works maintenance will be 6 months.

iii). For New works maintenance will be 36 months.

B. CONDITIONS FOR EXECUTION OF EARTH WORK

1. Specifications for earth works as per mentioned in IRUSS shall be followed Comprehensive guidelines & specifications for Rly formation as per specifications vide No. RDSO /2020/GE:IRS-0004,Sept.-2020 shall be followed.
2. Rate to be quoted by the contractors should be inclusive of Royalty, seignorages, taxes etc., complete as applicable is to the state concern.
3. Contractor required to quote the rate duly considering the royalty, seignorage charges as applicable in Telangana, Andhara Pradesh, Karnataka & Maharastra state and revision thereof from time to time.
4. B.C. Soil of any kind shall not be permitted. Tenderer should note that proper quality of earth may not be available at some locations. Hence, tenderer has to be careful and visit the location before quoting the tender.
5. The cess work will be carried out at the locations as indicated in the name of the works. If any change of quantity/location is required, prior approval of concerned Sr.DEN/ DEN before operation of this item and reasons for change of location shall be kept on record.
6. The Contractors are advised to inspect the site and availability of road facility / approaches before quoting their rate.
7. No extra payment will be made for jungle clearance and repairs to service road or for formation of road if required for leading/transporting of earth to cess location.
8. Payment for the earth work will be made to the quantity arrived based on cross sectional measurements duly making deductions as per specifications.
9. Before executing the work, concerned ADEN/SSE (Works/P.Way) should submit numbered level books from Divisional office and obtain numbering and signature of concerned Sr. DEN/ DEN, after that only initial levels should be recorded in level books and submitted to divisional office with Initial and proposed levels along with graph sheets duly signed by concerned SSE (Works/P.Way), ADEN and Contractor.
10. After completion of earth work, new level books should be collected from Divisional office and final levels should be recorded and the same should be submitted to Divisional office along with graph sheets duly signed by SSE(Works/P.Way), ADEN and Contractor.

- 11). The soft copy of graph sheets and calculations also submitted to Divisional office along with hard copy and shall be uploaded in IRWCMS along with running bills.
- 12). Concerned SSE (Works/P.Way) has to certify on each graph sheet that the slope provided is 2:1.
- 13). If level books not submitted vide above note No.1, 2 & 3, the bills cannot be considered by Divisional office.

C. SPECIFICATIONS FOR STRUCTURAL STEEL

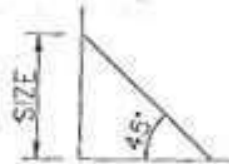
1. All rivet steel to comply with IS specification 1148/82.
2. Fabrication of steel work should comply with IRS specification B1/2001.
3. Welding should conform to IS 823/64 wherever required.
- 4 . The steel used for Structural steel shall conform to specification No IS 2062-1992 grade 'A' as per approved brands enclosed.
5. The joints for main structural members such as ISMB/RSJ/Angles are not permitted. No two pieces shall be welded or otherwise jointed to make up required length of a member.
6. QUALITY CONTROL OF WELDING DURING FABRICATION OF STEEL WORK FOR COP's(Authority Head Quarters Lr.No. W.71/Br/P/9/Vol .VI dt 17-09-08).

To ensure better quality control in welding during fabrication of steel structure, the following tests to be conducted invariably by contractor in presence of Engineer –in –charge.

- a). After removing the slag and brushing with a stiff wire brush, the welds shall be visually inspected for size and profile (Acceptable and defective weld profiles of fillet welds are illustrated in ANNEXURE- I) enclosed sketches. Separately in PDF file.
- b). Confirming of fillet welds to size and contour shall be determined by use of gauges (as per ANNEXURE -II) enclosed sketches .separately in PDF file.
- c). Welds shall also be examined by the Dye Penetration test as per IS-3658 or by Magnetic particle Flaw Detection method as per IS-3703.
- 7). Any deficiencies noticed to be corrected immediately by the contractor at his own cost.
- 8). Any work shall be executed by the contractor on running track in a workman like manner to the satisfaction of the Engineer-in-charge. In the event of an accident occurring wholly or partly due to any act of tantamount to the negligence on the part of the contractor or his labour, the contractor shall render himself liable for the damages and legal prosecution if loss of life is involved.

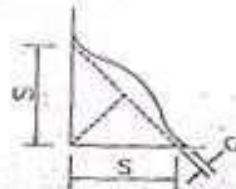
ACCEPTABLE AND DEFECTIVE WELD PROFILES

ANNEXURE I



DESIRABLE FILLET WELD PROFILE

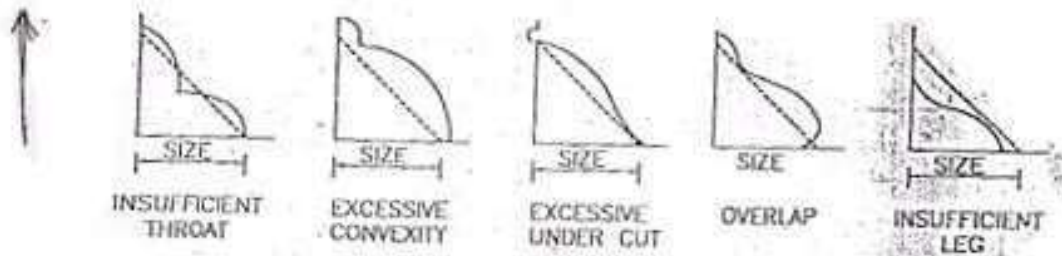
FIG.-24



CONVEXITY C NOT TO EXCEED $0.1 S + 0.76 \text{ mm}$

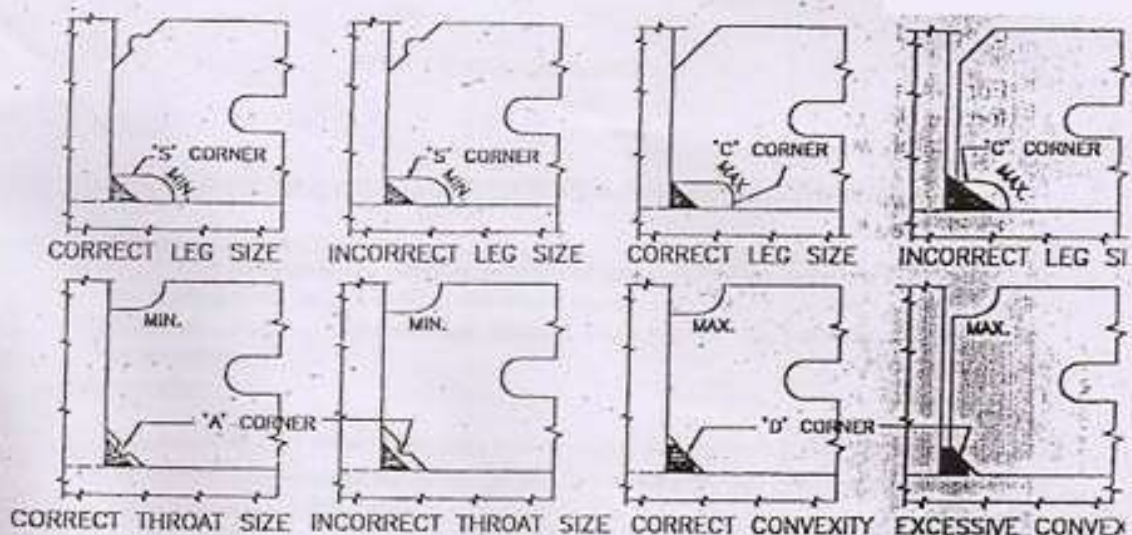
ACCEPTABLE FILLET WELD PROFILE

FIG.-25



METHOD OF GAUGE APPLICATION

ANNEXURE II



1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. GAUGE FOR EACH WELD SIZE TO BE MANUFACTURED TO THE DIMENSIONS GIVEN IN THE TABLE ABOVE
3. WELD GAUGE SIZE TO BE MARKED AT LOCATION 'S' IN 3mm LETTERS. OTHER MARKING IN 2mm LETTERS
4. ALL MARKINGS TO BE DONE ON BOTH FACES.
5. THESE GAUGES ARE SUITABLE FOR INSPECTION OF NORMAL FILLET WELD OF SIZES : 25mm WITH ANGLE BETWEEN FUSION FACE OF 90° FOR DEEP PENETRATION WELD AND FOR ANY OTHER ANGLE BETWEEN FUSION FACES, SPECIAL GAUGES MAY BE MADE

D. Defects Liability Clause:

(Authority PCE/SC letter No.SCR-HQ0ENGG(WC)/38/2019, Dt.24.09.2020)

Contractor's primary obligation under this contract is to carry out and complete the works to the high quality standard set out in the contract i.e., only new material of specified quality and high standard of workmanship shall be ensured during execution. The defects liability period is intended to complement this liability by remedying the defective work i.e., deficiency in quality of works including defects due to faulty material or workmanship which may become apparent during the defects liability period reckoned from date of issue of completion certificate. The normal use based wear and tear or damage due to an act or omission not attributable to the contractor, shall be excluded from the liability of the contractor under this clause. The Defect Liability period (DLP) shall be 36 months for the works consisting of construction of (i) Buildings, Roads, RCC tanks, Platform walls/Surface, Concrete/Masonry Drains, Bridges including FOBs/ROBs or major repair/painting of important bridges and liability of the contractor shall be as under :

- 1) If any defect is found during the defects liability period, the contractor must, promptly and at its own cost repair, replace or otherwise make good (in consultation with the Engineer) the defect as well as any damage to the facility caused by the defect. The Contractor will bear all incidental costs, including any costs of removal associated with the repair, replacement or making good of the defect or damage.
- 2) If the contractor fails to commence the work necessary to remedy the defect or any damage to the facility caused by the defect within a period of 21 days of issue of such notice, the Railway may proceed to do the work, or engage any other agency to do the work and the costs, including incidental costs, incurred by the Railway as a result will be a debt due and payable to the Railway on demand and may be deducted from Security Deposit or from any payments otherwise due to the contractor in any other contract anywhere in Indian Railways.
- 3) Where the Railway, acting reasonably, considers that substantial repair, replacement or making good is done during last quarters of DLP or during 21 days notice period which falls beyond original DLP, the defects liability period shall extend by a suitable period in such a manner that any repair, replacement or making good the works shall have cover of 3 months of extended DLP.
- 4) The acceptance at any time of Materials or Equipment by or on behalf of the Railway shall not be a bar to future rejection if they are subsequently found to be defective, inferior in quality, or uniformity to the Material or Equipment specified, or are not as represented to the Railway.
- 5) The decision of the Engineer for determination of the defects needing repair/replacement or the cost incurred by Railways in defect rectification or estimated cost of repair, if the contractor fails to do the work within specified period shall be final and binding on the Contractor.
- 6) Only after successful completion of aforesaid liability by the Contractor, SD money shall be released after deductions, if any due to failure on the part of the Contractor. On submission of "Indemnity Bond" in the Format enclosed (Annexure – 3), SD money may be released after 12 months from the date of issue of Completion Certificate provided no defects have been observed in the work executed during 1st year of DLP.
- 7) The rights of the Railway under this clause are in addition to and do not limit any other rights which the Railway has under this contract or under any law of the land.
- 8) The "Defect Liability Clause" shall supplement the liability of the contractor during Maintenance Period "specified elsewhere in the contract" and the conditions under this Clause shall supersede such conditions of the contract to the extent of contradiction.
- 9) Any determination by the engineer under Defect Liability Clause shall be treated as "Excepted Matter" and shall not be arbitrable.

ANNEXURE - 3

FORMAT OF INDEMNITY BOND FOR RELEASE OF SD BEFORE DEFECT LIABILITY PERIOD IS OVER

(To be furnished in stamp paper as per stamp act) (Stamp paper should be purchased in the name of the Contractor)

This deed of indemnity executed on at by M/s... having its registered office at, through Mr.....as the authorized representative of M/s hereinafter referred to as 'Indemnifier ' which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, representative and assignees in favour of South Central Railway having its registered office at..... through Mr..... as the authorized representative, hereinafter referred to as the 'Indemnified' the expression which shall, unless repugnant to the context or meaning thereof, include its administrators, Successors, representative and assignees.

Whereas the indemnified herein has awarded to the indemnifier herein a contract for the work "....." on terms and conditions set out inter alia in the Contract Agreement No. Dated Valued at Rs..... (Rupees only).

AND

Whereas, Defect Liability Clause (Clause no..... of special conditions of the above mentioned Contract Agreement) provides for guarantee (i.e.) for the works executed under the contract to be free from defect due to faulty material or workmanship identified during Defect Liability Period (DLP) of 36 calendar months from the date of issue of completion certificate of the work.

The indemnifier hereby irrevocably agrees to indemnify the indemnified that in the event of any specified liability during Defect Liability Period, original or extended as per the terms of the contract, the Indemnifier shall repair /replace the defective works at site or pay the amount on demand as debt due without any objection and in case of any non-compliance by the Indemnifier, the Indemnified may deduct the amount determined under the Defect Liability Clause from any payments due to the Indemnifier in any other contract anywhere in Indian Railways. The Indemnifier also irrevocably agrees that any determination of the Indemnified under Defect Liability Clause shall be final and binding upon Indemnifier and treated as "Excepted Matter " and shall not be arbitrable.

For
(Signature with Name and Designation)
Company seal

Station:
Date :
Witness

:1.....

....

Signature with Name, Designation &
Address

2.....

..... Signature with Name,
Designation & Address.

E. Approved List of Brands / Makes of 162 items for use in all Civil Engineering Works :-

(Authority : SCR-HQOENGG(SOR)/1/2020- Dy.CE/Works/SCR of Dt.11.09.2024

In case, Brands/Makes from approved list is not available, other reputed Brands/Makes having better aesthetic and life may be used with the approval of Sr.DEN/Co-ord or Project in charge as the case may be.

Material from Govt./Semi-Govt. subsidiaries amongst the approved Brand / Makes should be given 1st priority. Only in case of non-availability, other brand should be used if required for expeditious execution of the work.

List is enclosed as Annexure - 4

LIST OF APPROVED BRANDS/MAKES			
SI No.	Material Description	Brand	Make
1	Chloropyrifos(Pesticides)	Piramid	Amvac Agri Rasayan Pvt. Ltd.
		Noban	Chemet Wets & Flows Pvt. Ltd.
		Dursbantct	DE-NOCIL Ltd.
		Premise Agenda	Bayer Ltd
		Hilban	Hindustan Insecticides Ltd.
		Sarups Pest Control	Sarups Pest Control Ltd.
2	Ordinary Portland Cement	ACC	ACC Cements Ltd
		Ultra Tech	Ultra Tech Cement Ltd
		Birla.A1	Orient cement Ltd.
		Dalmia	Dalmia Cement Bharat Ltd.
		Zuari	Zuari Cement Limited
		Jaypee Cement	Jaypee Cement Ltd.
		J.K.Cement	J.K.Cement Pvt.Ltd.
		Ambuja Cement	Ambuja Cements Ltd.
		Coromandel OPC Cement	Coromandel Cements Ltd
		Ramco OPC 53 grade	Ramco Cements
		Penna OPC cement	Penna Cement Industries Ltd
		KCP OPC cement	The KCP Limited
		Chettinad OPC cement	Chettinad Cement Corporation Pvt.Ltd
		Bharathi OPC cement	Kalburgi Cement Private Limited
		MAHA Cement	My Home Industries Private Limited
		Sagar Cement	Sagar Cements limited
		JSW Cement	JSW Cement Pvt.Limited
		Nagarjuna cement	NCL Industries Limited
		Deccan Cement	Deccan Cements Limited
3	Damp Proof material	MAPEI	MAPEI Construction Products India P Ltd.
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Impermo	Snowcem Paints
		Duraseal	Apurva India Pvt. Ltd.
		ACCO Proof	ACC Cements Ltd
		Dr.Fixit	Pidilite Industries
		Fosroc	Fosroc Chemicals India Pvt. Ltd.
		CICO	CICO Industries
		SIKA	Sika Inida Pvt Ltd.
		PIDILITE	Pidilite Industries Ltd
		BASF	BASF India Ltd
		MYK	MYK LATICRETE India Pvt. Ltd
4	TMT bars	Guidelines issued vide this office letter No.SCR-HQ0ENGG(SOR)/1/2020-Dy CE WORKS/SCR dt 28.08.2024 enclosed as Annexure-A(1)	

SI No.	Material Description	Brand	Make
5	Plasticiser & Super Plasticiser	BASF	BASF India Ltd
		CICO	CICO Industries
		Plastiment, Sikament	Sika Inida Pvt Ltd.
		Contrament, Power flow	MC Bauchemie (India) Pvt. Ltd
		Conplast SP430	FOSROC India
		MYK Schomburg	MYK Arments Pvt. Ltd.
		Chryso-HP / Delta / Optima	Chryso India Pvt. Ltd.,
		Sunanda Chemicals	Sunanda Chemicals Ltd.
		Bond tuf	Bond tuf Construction Chemicals
		CAC	Concrete additives & Chemicals Pvt.ltd
6	Expansion Joint Bitumen board	Dura board HD100	Supreme Industries
		STP	Shalimar Tar Products
		DURAFILL	Supreme industries
7	Post tensioning System	CRUX	Crux Processing systems Pvt Ltd.,
		VSL	VSL India Pvt Ltd.
		Ultracon	Ultracon Structural Systems Pvt Ltd
		BBR	BBR (India) Pvt . Ltd
		Dynamic	Dynamic Prestressing
		Usha Martin	Usha Martin Ltd
		JK Pre stressing	JK Pre stressing company,Hyd
8	PT Strands	DP wires	D.P Wires Ltd.
		TATA wiron	TATA Steel Ltd
		Usha Martin	Usha Martin Ltd
9	Adhesives	Dunlop	Dunlop India Tire and Rubber Co(India) Ltd.
		Vamorganic	Vamorganic Ltd.
		Sika	Sika India Pvt. Ltd.
		Fevicol	Pidilite Industries
		CICO	CICO Industries
		Proofex of Adhesive	FOSROC India Ltd
10	Grout	Ardex	Ardex Endura Adhesive India Pvt. Ltd
		Ferrous crete	Ferrous Crete (India) Pvt. Ltd.
		LATA POXY	MYK LATICRETE India Pvt. Ltd
		BASF	BASF India Ltd
		Fosroc GP2	Fosroc India Ltd
		MYK Schomburg	MYK Arments Pvt. Ltd.
		Fugabella, Porcelana	Kerakoil India Pvt. Ltd
		Dr.Fixit	Pidilite Industries
		Weber	Saint-Gobain India Pvt. Ltd
		Asian Paints-Apcorep Repair range	Asian paints Ltd
		Polyglaze	Evershine Build India Private limited
		Bond tuf	Bond tuf Construction Chemicals
		Berger	Berger Paints India Limited

SI No.	Material Description	Brand	Make
11	Ready Mix Concrete	Ultra Tech	Ultra Tech Concrete
		ACC	ACC Ltd
		RMC (India)	RMC (India) Pvt. Ltd.
		Lafarge	Lafarge India Pvt. Ltd
		Aparna(RMC)	M/S.Aparna Enterprises Limited
		Nagrjuna RMC	NCL Industries Limited
		Prism RMC	Prism Johnson Ltd
		JAIDHAR Concrete	Jaidhar constructions
		Infra Market Concrete	Hella Infra Market Pvt Ltd
		R6 Infra	R6 Infra RMC
		IJM Concrete Products	IJM Concrete Products Pvt Ltd
12	AAC Blocks	Xtralite	ULTRATECH Cement Ltd
		Areocon	HIL
		Siporex	SIPOREX
		Nucon	Green way building materials India Pvt. Ltd
		NCL	NCL VEKA Ltd
		Renacon	Renaatus Procon Pvt. Ltd
13	Wooden Flush door shutters	Indian Timber Products	Indian Timber Products
		Greenlam	Greenlam Ply Industries Ltd.
		Mayur	Mayur Ply Industries
		Kitply	Kitply Industries Ltd
		Duro Flush doors	Duro Ply Industries Ltd.
		Kenwood	Kenwood Ply & Board
		Century	Century Flush Doors
14	Water Proof Plywood, Commercial ply, Fire retardant ply and Block boards	Green Ply	Green Ply Industries Ltd.
		Kitply	Kitply Industries Ltd
		Duroply	Duro Ply Industries Ltd.
		Archidply	Archid ply industries Ltd.
		Century ply	Century Flush Doors
15	Laminate	Green Lam	Green lam Industries Ltd.
		Centuary	Centuray laminates
		Merino	Merino laminates
		Archidply	Archid ply industries Ltd.
		Kitmica	Kitply Industries Ltd
		Sunmica	Sunmica Industries
		Formica	Formica Laminates (India) Pvt Ltd
		Decolam	Decolam India Pvt Ltd.
16	Prelaminated particle board Exterior Grade	Novapan	GVK Novapan Industries Pvt Ltd.,
		Merino	Marino laminates
		Kitlam	Kitply Industries Ltd
		TESA Action Co.	TESA Action Co.
		Ecoboard	Ecoboard Industries Ltd.
		Associate	Associate Decor Limited
		Archid ply	Archid ply industries Ltd.
		Centuary	Centuary MDF
		Green Lam	Green lam Industries Ltd.

SI No.	Material Description	Brand	Make
17	High Density (HDF) Prelaminated board	Pergo	Red Floor India
		Green Ply	Green Ply Industries Ltd.
		Green Lam	Green Lam Industries Ltd.
18	Gypsum board	Gyproc Saint Gobain	Saint Gobain Gyprock India Ltd.,
		Lafarge	Lafarge Gypsum India Pvt. Ltd
		USG Boral Board	USG Board India (P) Ltd.
		Armstrong	Armstrong World Industries
19	Glass door hardware	Dorma	Dorma India Pvt Ltd
		Kich	Kich Architectural Products Ltd.
		Classic	Classic hardware
		Squash	Squash glass doors
		Hafele	Hafele India Pvt. Ltd
		Ozone	Ozone Hardware.
		Geze	GEZE GmbH
		Dorset	Dorset Industries Pvt Ltd
20	Hydraulic door closers/Floor springs	Godrej	Godrej locking solutions & systems
		Hardwyn	Hardwyn hardware
		MAGNUM KIT	Mukund Overseas
		Dorma	Dorma India Pvt Ltd
		Everite	Everite agencies
		Dorset	Dorset Industries Pvt Ltd
21	Locks & Latches	Dorset	Dorset Industries Pvt Ltd
		Godrej	Godrej locking solutions & systems
		Hitech	Globe Locks India
		Hafele	Hafele India Pvt. Ltd
		Harrison	Harrison locks
		Plaza	Bharat lock House
		Yale	ASSA ABLOY India (P) Ltd.
		Link	Link Locks
22	Metalic / Steel Fire Door	Shakthi Hormann	Shakthi Hormann Pvt Ltd
		Promat	Promat fire & Insulation (P) Ltd
		MPP Schodders	MPP Technology Pvt.Ltd.
		NAVAIR	NAVAIR International Pvt Ltd
		Signumfire Protection	Signumfire Protection Pvt. Ltd
		Sukri	Sukri Fire doors Pvt.Ltd
		Kenwood	Kenwood Ply & Board
		Godrej	Godrej Security solutions
		Tata pravesch	Tata steel
		KROSS door	Kross Innovations Pvt Ltd
23	Fire Smoke Seal	Hilti	Hilti India Pvt Ltd
		Promat	Promat fire & Insulation (P) Ltd
		Atroflame	Atroflame Ltd.
		Raven	Raven Global

SI No.	Material Description	Brand	Make
24	Fire rated hardware	Dorma	Dorma India Pvt Ltd
		Ingersolrand	Ingersolrand (India) Ltd
		Dorset	Dorset Industries Pvt Ltd
		Backers FS	Backers FS
		Geze	GEZE GmbH
25	Non Metallic Fire door	NAVAIR	NAVAIR International Pvt Ltd
		Promat	Promat fire & Insulation (P) Ltd
		Godrej	Godrej Security solutions
		Kenwood	Kenwood Ply & Board
26	Stainless steel screws	Kundan	Kundan Industires Ltd
		Alloy	Alloy Ltd
		GKW	GKW Limited
		Nettlefold	Nettlefold screws
		Atul	Atul fasteners Ltd
27	Butt Hinges openable window shutters	Hafele	Hafele India Pvt. Ltd
		Earl Bihari	Earl Bihari India Pvt Ltd.
		Dorma	Dorma India Pvt Ltd
		Dorset	Dorset Industries Pvt Ltd
		Alu Alpha	Alu Alpha India
28	Mild Steel Butt Hinges	Jolly	Jolly Engineering works
		Supreme	Supreme
		Saswat	Saswat
		Deepak	Deepak
		Swift	Swift screws
		Garg	D P Garg & Company
		Amit	Lovely metal industries Pvt Ltd.
		Jyoti	Jyoti Architectural Pvt Ltd.
29	Stainless steel Butt hinges	Prayag	Prayag Polymers (P) Ltd
		Ozone	Ozone Hardware.
		Dorma	Dorma India Pvt Ltd
30	Concealed tower bolt	Dorma	Dorma India Pvt Ltd
		Ingersolrand	Ingersolrand (India) Ltd
		DORSET	Dorset Industries Pvt Ltd
		Alu Alpha	Alu Alpha India
31	UPVC doors, door frames and windows	Fenesta	Fenesta DCM Shriman
		Encraft	Encraft India Pvt.Ltd.
		LG	LG India Pvt. Ltd.
		Rehau	Rehau Unlimited Polymer Solutions
		Aluplast	Alu Alpha India
		Komarling	Profile India Window Technology Pvt.Ltd.
		Duroplast	Duroplast Extrusion Pvt Ltd
		Aparna(venster) /Okotech	M/S.Aparna Enterprises Limited
		NCL VEKA	NCL VEKA Ltd

SI No.	Material Description	Brand	Make
32	PVC Doors and Frames	Accucel	Accura Polytech Pvt.Ltd
		Sintex	Sintex plastic technology Ltd.,
		Duroplast	Duroplast Extrusion Pvt Ltd
		Polyline	Polyline extrusion Pvt Ltd
		Rajshri	Rajshri Productions Pvt. Ltd.
33	Stainless friction hinges	Hettich	Hettich India Pvt .Ltd.
		Hafele	Hafele India Pvt. Ltd
		Securistyle	Securistyle India Pvt .Ltd.
		Earl Bihari	Earl Bihari India Pvt Ltd.
		EBCO	EBCO
		ROTO	ROTO Frank Asia
34	Float Glass	Saint Gobain	Saint Gobain India Pvt Ltd
		Modiguard	Gujarat Guardian Ltd.
		Asahi	Asahi India glass Ltd.
		Pilkinton	Pilkinton India Pvt
35	Reflective glass	Saint Gobain	Saint Gobain India Pvt Ltd
		Asahi	Asahi India glass Ltd.
		Pilkinton	Pilkinton India
		Modifloat	Gujarat Guardian Ltd.
		Glaverbel	Glaverbel India
36	Tempered reflective/clear glass	Saint Gobain	Saint Gobain India Pvt Ltd
		FUSO	FUSO Glass India Pvt .Ltd.
		Gurind	Gurind India
		Asahi	Asahi India glass Ltd.
		Modiquard	Gujarat Guardian Ltd.
		Impact safety	Impact safety glass works Pvt Ltd
37	Fire rated glass	Contra flam /Pyroswiss of Saint Gobain	Saint Gobain India Pvt Ltd
		Promat	Promat fire & Insulation (P) Ltd
		Pyran of Schott	Schott glass India Pvt Ltd.
		Pilkinton	Pilkinton India
38	Anchor / SS Stone Cladding Clamps / Dash fasteners	Hilti	Hilti India Pvt Ltd
		Fischer	Fischer India
		Anchor	Anchor Ltd
		Nutech	Nutech fasteners
		Canon	Cannon
		Wuerth	Wuerth India Pvt. Ltd
		Trixel	Axel India Pvt.Ltd
		Helfen	Helfen Gmbh
		BOSCH	BOSCH Ltd
39	Structural Steel	SAIL	SAIL
		VIZAG	RINL
		TISCO	TATA STEEL
		JSW	JSW
		JSPL	Jindal Steel & Power Limited

SI No.	Material Description	Brand	Make
40	M.S.Pipe, Tubes	SAIL	SAIL
		TISCO	TATA STEEL
		JINDAL	JSW
41	Stainless steel / Stainless steel pipes	Salem	SAIL
		Connect	Connect Ltd.
		Jindal	JSW
		SAIL	SAIL
		KINGSTON	KINGSTON Brass
		JSL	Jindal stainless limited
42	Stainless steel Bolts, washers, nuts	Kundan	Kundan Industires Ltd
		Atul	Atul fasteners Ltd
		Hilti	Hilti India Pvt Ltd
43	Stainless steel pressure plate screws	Kundan	Kundan Industires Ltd
		Pooja	Pooja steel corporation
		Atul	Atul fasteners Ltd
44	Welding rods	Advani	Advani oerlikon Ltd.
		ESAB	ESAB India Pvt. Ltd
		G-Weld	GEE Limited
		Royal Ark	Royal Ark
		Raaj Ratna	Raaj Ratna
		Mailan	Mailan
45	Metal Deck Sheet	TATA	TATA STEEL
		SAIL	SAIL
46	Shear Stud / Connector	KOCO	KOSTER & Co.
		PE	PE
		MNE	MNE
		Stalwart	Stalwart Techno source India Pvt Ltd
47	Vitrified tiles	Jhonson	Prism Jhonson Ltd
		Kajaria	Kajaria Ceramic Ltd
		Somany	Somany Ceramic Ltd
		NITCO	NITCO Ltd
		RAK	RAK Ceramic India Pvt Ltd.
		Varmora Granito	Varmora Granito Granite Pvt. Ltd
		Aparna(Vitero)	M/S.Aparna Enterprises Limited
		Exxaro	Exxaro Tiles
		CERA	CERA Sanitaryware Limited.
		Orient	Orient bell Ltd
48	Glazed Ceramic tiles (Also wall tiles)	Jhonson	Prism Jhonson Ltd
		Kajaria	Kajaria Ceramic Ltd
		Somany	Somany Ceramic Ltd
		NITCO	NITCO Ltd
		RAK	RAK Ceramic India Pvt Ltd.
		Varmora Granito	Varmora Granito Granite Pvt. Ltd
		Aparna(Vitero)	M/S.Aparna Enterprises Limited
		Cera	Cera Ceramics limoted

SI No.	Material Description	Brand	Make
49	Synthetic Sports flooring	Armstrong	Armstrong flooring
		LG	LG Hausys India
		Wondorfloor	RMG Polyvinyl India Ltd.
50	Linoleum sports flooring	Armstrong	Armstrong flooring India Pvt Ltd.
		Forbo	Forbo flooring India Pvt. Ltd.
		Gerflor	Gerflor flooring
51	False floor	Hewetson	Hewetson India
		Access floor system	Access Floor System
		Unifloor	Unifloor India Ltd
		Unitile	Unitile office systems Pvt. Ltd
		PINNACLE	PINNACLE
		Kebao	Inner Space (Distributors)
52	Engineered wood floor	Armstrong	Armstrong flooring
		Mikasa Real wood floors	Green Lam Industries
		New wood	New Wood India Ltd
		Werner	Duraflor werner GmbH
		Pergo	Red Floor India
53	Floor spring	Dorma	Dorma India Pvt Ltd
		Ingersolrand	Ingersolrand (India) Ltd
		OZONE	Ozone Hardware.
		GEZE	GEZE GmbH
54	Cement concrete parking tiles	NITCO	NITCO Ltd
		Ultra	Ultra tile Private Ltd
		Eurocon	Eurocon tiles India
		Dazzle	Dazzle Designer Tiles Pvt Ltd
		NTC	NTC Parking tiles
		Hindustan tiles	Hindustan tiles, Ranchi Pune
55	Synthetic Carpet tiles	TOLI	TOLI corporation
		Hollitex	Hollitex carpet tiles
		Standard Carpets	Standard Carpets
56	Vitrified paving tiles	PAVIT	PAVIT Ceramics Pvt Ltd
		Johnson	Johnson
		Nitco	Nitco
		Kajaria	Kajaria Ceramics Pvt Ltd
57	Glass mosaic tiles	Italia	Tile Italia mosaics Pvt Ltd.
		Coral	Coral tiles
		Mridul	Mridul tiles
		Palladio	Palladio Mosaics
		Bisazza	Bisazza Italy
		Birla White	Birla Corportion Ltd.
		JK White	J. K. Cement Ltd
		PAVIT (Eco Tile)	PAVIT Ceramics Pvt Ltd
58	Thermal Insulation	Pidilite	Pidilite Industries
		Elastospray	BASF

SI No.	Material Description	Brand	Make
59	Acoustic Insulation	Twingerinsul	U.P.Twiga fiber glass Ltd
		Lloyd Insulation	Lloyd Insulation (India) Ltd
		Saint Gobain Gyproc	Saint Gobain Gyproc India
		Himalyan Acoustics	Himalyan Acoustics
		Knauf	Knauf Gypsum India Pvt. Ltd.
		Anutone	Anutone Accoustics Ltd.
60	UPVC Pipes and fittings (Rain water pipes)	Supreme	Superme Industries Ltd
		Prince	Prince Pipes and finttings Ltd
		Finolex	Finolex Industries Ltd.
		Prepoly	Premier PVC Industry
		Astral	Astral polytechnik Ltd
		Ashirwad	Ashirwad PVC Pipes
		Flow Guard	Flow Guard
		Sudhakar	Sudhakar Pipes and Fittings
61	Sandwich PUF panelled roofing sheets	Lloyd Insulation	Lloyd Insulation (India) Ltd
		JINDAL MECTEC	JINDAL Mectec Pvt. Ltd
		Danpalon	Danpal Light architecture
		GE Plastic	GE Silicones
		LEXAN	LEXAN Ltd
62	Poly carbonate Sheet	MG Polyplast	MG Polyplast
		GE Lexon	GE Silicones
		Danpalon	Danpal Light architecture
		Alcox	Hindeggan Alcox Ltd.
		Polygal	Polygal India Pvt Ltd.
63	False ceiling	Saint Gobain Gyproc	Saint Gobain Gyproc India
		Armstrong	Armstrong World Industries
		USG Boral	USG Boral
		Aerolite	Andhra Polymers Pvt. Ltd./Aerolite Industries Pvt.Ltd.
		Hunter Dougals	Hunter Dougals
		Gridsquare	Gridsquare Ceilings
		Knauf	Knauf Gypsum India Pvt. Ltd.
		Anutone	Anutone Accoustics Ltd.
64	False Ceiling Members (Perimeter, Ceiling section, intermediates, angles etc.,)	Armstrong	Armstrong World Industries
		Aerolite	Andhra Polymers Pvt. Ltd./Aerolite Industries Pvt.Ltd.
		Gridsquare	Gridsquare Ceilings
		Gypframe steel	British Gypsum
		Knauf	Knauf Gypsum India Pvt. Ltd.
		Lloyd	Lloyd Insulation (India) Ltd
		Saint Gobain	Saint Gobain Gyproc

SI No.	Material Description	Brand	Make
65	Synthetic enamel Paint	Premium glass enamel	Asian paints Ltd
		Dulux	ICI dulux Ltd
		Nerolac	Nerolac Paints Ltd
		Berger	Berger Paints
		Nippon	Nippon Paint India Ltd.
		INDIGO	Indigo Paints
		Shalimar Paints	Shalimar Paints Limited
		JSW	JSW Paints
66	Pink primer	Wood primer	Asian Paints
		Dulux	ICI Dulux
		Nerolac	Nerolac Kansia Nerolac Paints Ltd.,
		Berger	Berger Paints
		Nippon	Nippon
67	Red Oxide Zinc Chromate primer	High performance yellow metal primer	Asian Paints
		Dulux	ICI Dulux
		Nerolac	Nerolac
		Berger	Berger Paints
		Nippon	Nippon
		Shalimar Paints	Shalimar Paints Limited
68	Oil Bound Distemper	Tractor Agalock	Asian Paints
		Dulux (Maxilite)	Dulux
		mG Polyplast	Nerolac
		Berger (Bisom)	Berger Paints
69	Acrylic emulsion	Premium emulsion	Asian Paints
		Dulux (Super Cover)	ICI Dulux
		Nerolac (Beauty Gold)	Nerolac
		Berger(BISM)	Berger Paints
		Indigo Paints	Indigo Paints Pvt Ltd
		JSW Paints	JSW Paints Pvt Ltd
		Shalimar Paints	Shalimar Paints Limited
70	Water Proof Cement paint	Asian exterior wall primer	Asian Paints
		Berger	Berger Paints
		Surfa	Surfactoats (India) Pvt. Ltd.
		ICI DULUX	ICI Dulux
		Snowcem	Snowcem Paints
		Birla Cements	Birla Cements
		JK Cements	JK Cements Pvt Ltd
		JSW Paints	JSW Paints Pvt Ltd

SI No.	Material Description	Brand	Make
71	Acrylic smooth exterior paint	Dulux	ICI Dulux
		Apex	Asian Paints
		Nerolac	Nerolac
		Berger	Berger
		Nippon	Nippon
		Birla Cements	Birla Cements
		JK Cements	JK Cements Pvt Ltd
		JSW Paints	JSW Paints Pvt Ltd
		Indigo Paints	Indigo Paints Pvt Ltd
		Shalimar Paints	Shalimar Paints Limited
72	Premium Acrylic smooth exterior paint with silicon additives	ULTIMA	Asian Paints
		Dulux	ICI Dulux
		Nerolac	Nerolac
		Berger	Berger
		Royal Emulsion	Asian Paints
		JSW Paints	JSW Paints Pvt Ltd
		Shalimar Paints	Shalimar Paints Limited
73	Cement based wall putty	J.K.wall putty	J. K. Cement Ltd
		Birla wall care	Birla Cements Ltd.
		Asian paints	Asian paints Ltd
		Altek	NCL Alltek & seccold Ltd.
		Berger	Berger
		Ardex Endura	Ardex Endura India Pvt. Ltd.
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Polyglaze	Evershine Build India Private limited
74	Acrylic textured plaster	Apex Duracast	Asian Paints
		Spectrum paints	Spectrum paints Ltd.
		Heritage	Heritage Rajkamal Group
		Asian paints	Asian Paints
		Nerolac	Nerolac
75	Ready mix cement plaster	Readi Plast	Ultra Tech Cement Ltd
		Gyproc Plasters	Saint Gobain Gyproc India
		Ultra tech	Ultra Tech Cement Ltd
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
76	Melamine Polish	Asian paints	Asian Paints
		Melamine Gold wudfin	Pidilite Industries
		Polycure	Polycure Malaysia
77	Fire retardant paint	Jotun	Jotun paints
		Hilti	Hilti India
		Akzonobel	Dulux Akzonobel Paints
		Asian Paints	Asian Paints
		STPL	STPL Ltd.
78	Anticorrosive bitumastic paint	Berger	Berger Paints India Ltd
		Shalimar	Shalimar paints India Ltd.
		Bituminous black	Asian Paints

SI No.	Material Description	Brand	Make
79	Cement Primer	Asian paints	Asian Paints
		JK Primaxx	J. K. Cement Ltd
		Berger	Berger Paints India Ltd
		Shalimar Paints	Shalimar Paints Limited
80	Epoxy paint	Asian epoxy	Asian Paints
		Berger	Berger Paints India Ltd
		Shalimar	Shalimar paints
		STP	Shalimar Tar Products
		Ardex Endura	Ardex Endura India Pvt. Ltd.
		Nerolac	Nerolac
		Asian Paints-Apcorep Repair range	Asian paints Ltd
81	Epoxy coating	BASF	BASF India Ltd
		Fosroc	Fosroc India
		Laticrete	MYK Laticrete India
		Ardex Endura	Ardex Endura India Pvt. Ltd.
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Bond tuf	Bond tuf Construction Chemicals
82	Silicon coating	Dow corning	Dow corning India
		BASF	BASF India Ltd
		GE	GE Silicones
		Wacker	Wacker silicones.
83	Interlocking Concrete Paver Blocks	NITCO (ROCKARD)	NITCO
		Ultra	Ultra tile Private Ltd
		REGENCY	Regency
		Hindustan tiles	Hindustan tiles, Ranchi , Pune
		Vyara tiles	VYARA TILES Pvt Ltd./ Surat
		BHARAT (NILSAN)	Bharat
		Dazzle	Dazzle Designer Tiles Pvt Ltd
		Shree	Shree Bharat Paver blocks
		Basant Betons	Basant Betons,Hyd
84	Solar studs/ Median markers	3M	3M Science
		Avery Dennison	Avery Dennison India Pvt Ltd.
		Nikkalite	Nippon carbide Industires (USA)
85	Polycarbonate Convex mirrors, Rubberised road	Unique safety solutions	Unique safety solutions
86	Mirror	Modi Guard	Gujarat Guardian Ltd.
		Saint Gobain	Saint Gobain Glass India Ltd.
		AIS mirror	Asahi India glass Ltd.
		Atul	Atul glass Industries Ltd.,
87	Vitreous Commodes/ Wash basin	Hindware	HSIL Ltd
		Roca	ROCA Bath room products
		Parryware	ROCA Bath Pvt. Ltd.
		Kohler	Kohler world wide
		CERA	CERA Sanitaryware Ltd.
		Jaquar	Jaquar Group
		Johnson	Johnson

SI No.	Material Description	Brand	Make
88	Flushing Cistern	Parryware	ROCA Bath Pvt. Ltd.
		Kohler	Kohler world wide
		Hindware	HSIL Ltd.
		CERA	CERA Sanitaryware Ltd.
		Jaquar	Jaquar Group
		Johnson	Johnson
		Prayag	Prayag Polymer (Pvt.) Ltd.
89	SWR PVC Pipes & fittings	Supreme	Superme Industries Ltd
		Astral	Astral polytechnik Ltd
		Finolex	Finolex Industries Ltd.
		Flowgard	Ashirwad PVC Pipes
		Prince	Prince Pipes and fittings
90	Stainless Steel Kitchen Sink	Jhonson	Prism Jhonson Ltd
		Diamond	Pheonix Appliances Pvt. Ltd.
		Jindal	Centuary polytech
		Nilkanth	Nilkanth
		Nirali	Jyoti (India) metal Industries Pvt Ltd.
		Hindware	HSIL Ltd
		Silver shine	Blue stone sanitary Industries Pvt. Ltd.
		Joyna	Joyna
		Navkar	Shri Navkar Metals Ltd.
		Franke	Franke India Ltd.
		Futura	Futura Kitchen Sinks India Pvt. Ltd.
91	Centrifugally Caste (Spun) Iron Soil Pipes	Neco	Jayaswal Neco Ltd
		SKF brand	SKF Industries
		HEPCO	Hepco
		Bengal Iron	Bengal Iron Corporation
		RPMF	Raj Pattern Makers and Founders Pvt. Ltd.
92	PE-AL-PE Composite	Kitec	Kitec Industries (India) Pvt. Ltd.
93	G I Pipes	TATA	TATA Steel Ltd
		Zenith	Zenith Birla (India) Ltd.
		HISSAR	HISSAR
		Jindal	Jindal Pipes Ltd.
94	G I Pipe fittings	Zoloto	Zoloto Industries
		Unik	Unik malleables
		HB	HB Industries
		ICS	Shree samarth Engineers
95	Water supply Valves	Zoloto	Zoloto Industries
		Leader	leader valves Ltd.
		ARCO	Arco valves Pvt. Ltd.

SI No.	Material Description	Brand	Make
96	CPVC pipes and fittings	Supreme	Superme Industries Ltd
		Finolex	Finolex Industries Ltd.
		Astral	Astral polytechnik Ltd
		Prince	Prince Pipes and fittings Ltd
		Truflo	HIS Ltd.
		Birla Aerocon	HIL Ltd.
		Ashirwad	Ashirwad PVC Pipes
		Flowgard	Flow Guard
		Sudhakar	Sudhakar Pipes and Fittings
97	PVC / HDPE water storage tanks	Sintex	Sintex plastic technology Ltd.
		Vectus	Vectus Industries Ltd
		Supreme	Superme Industries Ltd
		Plasto water tank	RC plasto tanks & pipes Pvt Ltd
98	DI (Ductile-Iron) Pipes	Electrosteel	Electrosteel
		Jindal	Jindal
		Tata Ductura	Tata Ductura
		Electrosteel	Electro Steel Castings limited
99	DI Fittings	Electrosteel	Electrosteel
		Jindal	Jindal
		Tata Ductura	Tata Ductura
100	Water supply fixtures like bibcock, Shower panels	Jaquar	Jaquar Group
		Parryware	Roca bath room products Pvt. Ltd.
		Johnson	Prism Jhonson Ltd
		MARC	MARK Showers
		HINDWARE	HSIL Ltd
		Prayag	Prayag Polymers (P) Ltd
		CERA	CERA Sanitaryware Limited
101	Air release valve	Kirloskar	Kirloskar brothers Ltd
		RBM	AFS Ltd.
		Kartar	Kartar valves private Ltd.
102	Centrifugally (Spun) Cast Iron	Electrosteel	Electrosteel castings Ltd.
		Lanco/Sripipes	Electrosteel castings Ltd.
		Jindal	Jindal saw Ltd.
		Kesoram	Kesoram Industries Ltd
103	Spun cast iron fittings	Neco	Jayaswal Neco Ltd
		Kartar	Kartar Valves Private Ltd.
		Electrosteel	Electrosteel castings Ltd.
		Kapilansh Centrifugal	Kapilansh Dhatu Udyog(P)Ltd.
		SKF brand	SINGHAL IRON FOUNDRY Pvt. Ltd
104	CI double flange sluice valve	Kirloskar	Kirloskar brothers Ltd
		RBM	AFS Ltd.
		Kartar	Kartar valves private Ltd.
		IVS	Indian valves private Ltd.
		Zoloto	Zoloto Industries
		BURN	BURN
		Leader	Leader valves Ltd.

SI No.	Material Description	Brand	Make
105	CI double flanged non return valve	Kirloskar	Kirloskar brothers Ltd
		Fluidtech	Fluidtech
		Zoloto	Zoloto Industries
106	Gun metal Valves	Zoloto	Zoloto Industries
		Leader	Leader valves Ltd.
		Sant	Sant valves Pvt Ltd
		Audco	L&T Valves
107	PTMT/PVC water supply sanitary fittings, bib cocks, pillar cock	PEARL	Precision Products
		Prayag	Prayag Polymers (P) Ltd
		Supreme	Supreme Industries
108	RCC Pipes	Indian Hume Pipe	Indian Hume Pipe Ltd.
		Madurai spun pipe	Madurai spun pipe company
		Lakshmi Sood & Sood	Lakshmi Sood & Sood Pipe Co.
		Jain & Co	Jain spun pipes Co.
		Uday Industries	Uday Industries
109	CI/FRP/GRP Composite Manhole cover	Neco	Jayaswal Neco Ltd
		HEPCO	Binay Udyog Pvt. Ltd.
		BIC	Bengal iron corporation
		Thermodrain	Thermoset Poly products (I) Pvt Ltd
110	SFRC/ FRP/GRP Composite Cover and grating	KK	KK Manhole and gratings Co Pvt Ltd.
		Advent	Advent concrete vision
		Kutty	Kutty Industries
		Nu-TEC	Nu-Tech concrete products (P) Ltd.
		Thermodrain	Thermoset Poly products (I) Pvt Ltd
111	Plastic Encapsulated Foot Rest	KK India	KK Manhole and gratings Co Pvt Ltd.
		KGM	KGM Exports
		Accurate Buildcon	Accurate Buildcon company.
112	Spun cast iron covers & gratings	Neco	Jayaswal Neco Ltd
		Jagannath	Sri Jagannath Iron Foundry Pvt Ltd.
		Kapilansh Centrifugal	Kapilansh Dhatu Udyog(P)Ltd.
		SKF brand	SINGHAL IRON FOUNDRY Pvt. Ltd
113	Aluminium doors/windows sections	Hindalco	Hindalco Industries Ltd.
		Jindal	Jindal Aluminium Ltd.
		Padmavathi Extrusion	Padmavathi Extrusion Private Ltd.
		Hyd	Hydro Extrusion
		Omalco Extrusion	Omalco Extrusion Pvt. Ltd.
		Bhoruka	Bhoruka Aluminium Ltd.
		Indal	Indian Aluminium Ltd
		ALTEZA	Aparna Craft Exteriors PVT Ltd
114	Aluminium systems/Anodised aluminium fittings for doors/windows	Define	Define Overseas Pvt. Ltd.
		Schueco	Schueco India Pvt. Ltd.
		Bhoruka	Bhoruka Aluminium Ltd.
		Kawneer	Kawneer India
		Hardima	Hardima sales corporation
		Everite	Everite Agencies
		Jyothi	Jyothi Industries
		Sigma	Sigma Corporation

SI No.	Material Description	Brand	Make
115	Friction stay hinges	Earl Bihar	Earl Bihari Pvt. Ltd.
		KINLONG	Kinlong Industries
116	EPDM Gaskets	Anand	Anand NVH products (P) Ltd.
		Roop	Roop Polymers Ltd
		Bohra	Bohra rubber Pvt Ltd.
		Hanu	Hanu Industries
		Amees Rubber	Amees Rubber Industries Pvt Ltd.
117	Silicon Gaskets	Sree Gaurav	Sree Gaurav Rubber products
118	Masking Tapes	3M	3M
		Sun	Sun
		Wonder polymer	Wonder Tape Industries
		Roop	Roop Polymers Ltd
119	Water proofing compound	Fosroc	Fosroc India
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Sika	Sika India
		MYK Schomburg	MYK Arments Pvt. Ltd.
		Penetron	Penetron India Pvt Ltd
		Dr. Fixit	Pidilite Industries
		Accoproof	ACC Cements Ltd
		Ardex Endura	Ardex Endura (India) Ltd
		Alchemica	Alchemica Ltd.
		Berger	Berger Paints India Limited
120	Membrane Water proofing system	BASF	BASF India Ltd
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		STP Ltd	Shalimar Tar Products
		MYK Schomburg	MYK Arments range of products
		SmartCare Membranes	Asian paints
		Dr Fixit	Pidilite Industries
		Alchemica	Alchemica Ltd.
		Ardex Endura	Ardex Endura Ltd
		Hydro tech	Hydro tech Ltd
		Membrane tech	Membrane tech Pvt Ltd
		Asian Paints-Smart care Water proofing	Asian paints Ltd
		Berger	Berger Paints India Limited
121	Chemical water proofing system	BASF	BASF India Ltd
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		MC-Bauchemie	MC-Bauchemie India Ltd
		Sika	Sika India
		Sunanda speciality coating	Sunanda speciality coating Pvt Ltd.
		Perma construction Aid	Perma construction Aid Pvt Ltd,
		Fosroc	Fosroc India
		Dr. Fixit	Pidilite Industries
		Bond tuf	Bond tuf Construction Chemicals
		Berger	Berger Paints India Limited

SI No.	Material Description	Brand	Make
122	Water stops	Hydrotite	Sika India
		BASF	BASF India Ltd
		Dr. Fixit	Pidilite Industries
		Ardex Endura	Ardex Endura Ltd
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Hydroswell	Sika India
		Berger	Berger Paints India Limited
123	Aluminium composite panels	Alucobond	3A Composites India Pvt.Ltd.
		Eurobond	M/S Euro panel products Pvt. Ltd
		Aludecor	M/S Aludecor Lamination Pvt. Ltd
		Reynobond	Reynobond
		Alpolic	Alpolic
		Alstrong	Alstrong
124	PVC Perforated Pipes	Rex Polyextrusion	Rex Polyextrusion Ltd,
		Akash Enterprises	Akash Enterprises
		Zenplas Pipes	Zenplas Pipes Pvt. Ltd
		Supreme	Supreme Industries
125	Play Equipements	Koochie Play	Koochie Play Systems Pvt. Ltd
		Playworld Systems	Playworld Systems India
126	Structural Sealant	Dow corning	Dow corning India
		Wacker	Wacker Silicones.
		GE	GE Silicones
		STP Ltd.	Shalimar Tar Products
		Smart Care Sealant	Asian paints
		Fosroc	Fosroc India
		BASF	BASF India Ltd
127	Poly-sulphide sealant	Dr. Fixit	Pidilite Industries Ltd
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		MYK Schomburg	MYK Arments Pvt. Ltd.
		Pidilite	Pidilite Industries
		STP	Shalimar Tar Products Limited
		Fosroc	Fosroc India
		Techseal	Choksey Chemical Pvt. Ltd
		Tuff seal	Bondit construction Chemical
		Berger	Berger Paints India Limited
128	Bitumen Impregnated Board	Shalitex	Shalimar Tar Products
129	Polyethylene backer rod	Supreme	Supreme industries
130	Epoxy	Fosroc	Fosroc India
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Shalibons	Shalimar Tar Products
		Asian paints	Asian Paints
		Ardex	Ardex Endura India Pvt. Ltd.
131	Weather Silicon makeand grade	Dow corning	Dow corning India
		Momentive (GE)	GE Silicones

SI No.	Material Description	Brand	Make
132	GRC Jali	Terrafirma	Terrafirma GRC Industries
		Ecovision	Ecovision Industries Pvt. Ltd.
		Mahesh GRC	Mahesh Prefab Pvt Ltd.
133	Air transfer grills	Cool grills	Cool grills, Pune
		Systemair India	Systemair India Pvt. Ltd..
134	Ready made/ Gypsum Plaster	Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Gyproc Cute 100	Gyproc India
		Ultrtech	Ultra Tech Cement Ltd
		Polyglaze	Evershine Build India Private limited
135	Steel Windows/Pressed Steel Frames	Madhu Industries	Madhu Industries
		San Harvic	Sen-Harvic Windows Private Limited
		NCL	NCL Industries
136	PVC Door Frames & Shutters	Rajshri	Rajshri Productions Pvt. Ltd.
		Plastiwood	Plasiwood
		Sintex	Sintex plastic technology Ltd.
		Accucel	Accura Polytech Pvt.Ltd
137	PVC Flooring	LG Hausys	LG Hausys
		Gerflor	Gerflor flooring
		Armstrong	Armstrong World Industries
138	Grass Paver	Unistone	Unistone
		Ultra	Ultra Ltd.
		Basant Betons	Basant Betons Expirience Centre
		Green Natural	Green Natural Products Pvt Ltd
139	FRP Door Frames & Shutter	Meena Fibre Glass.	Meena Fibre Glass
		Duroplast	Duroplast Extrusion Pvt Ltd
		Cactus	Cactus
		Polyline.	Polyline
140	Non Metallic Floor Surface Hardners	Ironite	Ironite
		Hardonite	Hardonite
		FOSROC	Fosroc India
		SIKA	SIKA India
		BASF	BASF India Ltd
		CICO	CICO Technologies Ltd.
		Pidilite	Pidilite Industries Ltd
141	PU Enamel Metallic Paints on MS Structure & Epoxy paints (Premium Quality)	SKK	SKK Ltd
		Akzonobel	Akzonobel
		Asian	Asian Paints
		Berger	Berger Paints India Ltd
		MRF	MRF Paints
142	Rockwool/Glasswool insulation	Twigafiber	Twigafiber glass Ltd
		Lloyd Insulation	Lloyd Insulation Ltd.
		Supereme	Superme Industries Ltd

SI No.	Material Description	Brand	Make
143	Actactic Polypropylene (APP) Modified Water proof Membrane	STP	Shalimar Tar Products
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Bitumat	Bitumat Co. Ltd
		Piditite	Pidilite Industries Ltd
		Ardex Endura	Ardex Endura
		Hydrotech Ltd.	Hydro tech Ltd
		Berger	Berger Paints India Limited
144	Structural Glazing	Modi	Modi Guard
		Saint Gobain	Saint Gobain Glass India Ltd.
		Asahi	Asahi India glass Ltd.
		Glaverbel	Glaverbel India
145	Sensor Based Auto flush Systems	AOS Systems	AOS Systems
		TOTO	TOTO Ltd
		Parryware	Parryware Sanitaryware
		Hindware	HSIL Ltd
		Grohe	Grohe
		Jaquar	Jaquar Group
		Kochier	Kochier
		Cera	CERA Sanitaryware Limited
146	Float Valve (Ball Valve)	Prayag	Prayag Polymers (P) Ltd
		Leader	Leader valves Ltd.
		Zoloto	Zoloto Industries
		IBP	IBP Industries
		Arco	Arco valves Pvt. Ltd.
147	Spider Patch Fittings for Structural Glazing	Dorma	Dormakaba
		Sevax	Saint Gobain Glass India Ltd.
		Kich	Kich India
		Ozone	Ozone Ltd
		Hafele	Hafele Ltd
148	Multi Walled Potycarbonate Roofing Sheets	Danpalon	Danpal Light architecture
		Lexan GE	GE Lexan
149	Adhesive for AAC Block/Tiles	Ultratech	Ultra Tech Cement Ltd
		Ardex Endura/Gold Star	Ardex Endura
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Bricklite	Bricklite Blocks Private limited
		Polyglaze	Evershine Build India Private limited
		Bond tuf	Bond tuf Construction Chemicals
		Berger	Berger Paints India Limited
150	Aluminium Framework	MFE(MIVAN)	MIVAN
		S-Form	S-Form
		MFS	MFS

SI No.	Material Description	Brand	Make
151	EPDM Water Proofing Membrane	Smart Care	Asian Paints
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Pidilite	Pidilite Industries
		STP	Shalimar Tar Products
		Fosroc	Fosroc India
		Berger	Berger Paints India Limited
152	PU Coating (UV Resistant Liquid Applied Coating)	Smart Care	Asian Paints
		Pidilite	Pidilite Industries
		BASF	BASF
		Fosroc	Fosroc India
		SIKA	SIKA India
		Berger	Berger Paints India Limited
153	Polyurea Ultra	Smart Care/Ferrous Crete	Asian Paints
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		BASF	BASF
		SIKA	SIKA India
		Pidilite	Pidilite Industries
		Berger	Berger Paints India Limited
154	Modular Kitchen	Sleek	Asian Paints
		Godrej	Godrej & Boyce Co.
		Spacewood	Spacewood
		Evoke	Evoke
155	High end Exterior Textures	Allura/Graniza Range	Asian Paints
		SKK Brand	SKK Ltd
		Berger	Berger Paints India Ltd
156	Acrylic Exterior Textures	Asian paints	Asian Paints
		Berger	Berger Paints India Ltd
		Akzonobel	Akzonobel
		Ebco	Ebco
		Nerolac	Nerolac Paints Ltd
157	Puff Insulations	Smart Care	Asian Paints
		Lloyd Insulation	Lloyd Insulation (India) Ltd
		Fosroc	Fosroc India
		BASF	BASF
		Pidilite	Pidilite Industries Ltd
		Supreme	Supreme Ltd
158	Galvolume sheet for roofing, cladding, Sandwich panel	Lloyd Metal Craft	Lloyd Insulations.
		Tata Blue Scope	Tata Bluescope
		Bhushan	Bhushan steel
		JSW	JSW
		Essar	Essar group

SI No.	Material Description	Brand	Make
159	Mechanical coupler for Reinforcement	Dextra	Dextra India Pvt. Ltd
		Sanfield	Sanfield India Ltd
160	Aluminium composite panels	Hynadecor	Hynadecor
		Alstone	Alstone
		4 Mann Aluminium composite panels	4 Mann Industries Pvt.Ltd
161	Stainless Steel bars	Sunflag Steel	Sunflag Iron & Steel Co.ltd
		JSL	Jindal stainless limited
162	GRP Water tanks	Exeed	Exeed Engineers (i) Pvt. Ltd.
		Sintex	Sintex Industries Ltd
		Pipeco	Pipeco Group
		Sovisy	Sovisy India Pvt.Ltd

PEDDU
MURALI
KRISHNA

Digitally signed
 by PEDDU
 MURALI KRISHNA
 Date: 2024.09.11
 16:39:44 +05'30'

Dy.Chief Engineer / Works



दक्षिण मध्य रेलवे

SOUTH CENTRAL RAILWAY

प्रमुख मुख्य इन्जिनियर कार्यालय/ PCE's Office

कार्य शाखा/ क / Works Branch

रेल निलयम / Rail Nilayam

सिकंदराबाद / Secunderabad

SCR-HQ0ENGG(SOR)/1/2020-Dy CE WORKS/SCR

Annexure-A(1)

Ph.No. 040-27822004

Rly: 070- 86365

email:dyceworkshqscr@gmail.com

दिनांक /Date. 28.08.2024

CAO/C, CAO/RSP

CPM/ GS/ SC, BZA, GTL, HYB, GNT, NED,

Sr. DEN/Co-Ord/SC, BZA, GTL, HYB, GNT, NED,

Dy.CE/EWS/LGD, Sr.DEN/LGDS,

Dy.CE/TM/Lines/BZA, Dy.CE/CPOH/RYP.

Sub: Guidelines for Procurement of TMT bars – Reg.

Ref: 1) RDSO letter no.WKS/67/VD/TMT dt 21.02.2022 (Copy enclosed).

2) Railway Board letter no. 2022/TK-II/22/7/1 dt 09.02.2022 (Copy enclosed)

RDSO Vide letter under **ref.2** above have **Decontrolled** the Vendor list for TMT bars stating that, these can be purchased from market based on the specifications. However RDSO shall continue to frame functional specifications, Schedule of Technical Requirements (STR) etc., for the all civil engineering items as per present practice and communicated the same to all Zonal railways vide **ref.1** above.

In this Connection, it is to mention that all Reinforcement steel (TMT bars) as per IS 1786 with latest amendments should be Procured from the following steel producers.

1. SAIL (Steel Authority of India ltd.)

2. VIZAG (Rastriya Ispat Nigam Ltd.)

3.TISCO (TATA Steel Ltd.)

4.JSW (JSW Steel Ltd.)

5.JSPL (Jindal Steel & Power Limited)

6. Any Other Steel Producer having Integrated Steel Plant (ISP), Using Iron Ore as basic raw material and having in-House Iron rolling facilities for production of steel through the process of **DRI-EAF, BF-BOF and Corex-BOF** only, duly following the RDSO guidelines issued Vide letter No.2022/TK-II/22/7/1 dt 09.02.2022 and **Schedule of technical requirements (STR) Doc.no. WK-G-8.1-1 Ver.1.3.**

This Issues with the approval of PCE

Encl: As above

[Signature]
28/08/2024

(N.Anjaiah)

Dy.CE/Works

Copy to: Dy.CVO/Engg for information & necessary action.

F. Special Conditions for Concrete Mix Design : -

(Authority : PCE/SC letter No. W.416/Unified/SS/SSR/Vol.IV of Dated : 23.03.22)

The Contractor shall be guarantor of quality of concrete used in construction. It shall be obligatory on the Contractor to carry out the mix design and obtain the approval of the Engineer before use in permanent work. Without in any way limiting the generality of the foregoing, the procedure shall include the following:

- a) The Engineer shall advise the Contractor the ruling design parameters for each grade of concrete. Contractor shall carry out the mix design (through Govt. Engg. Colleges/NITs/IITs only), following all Appropriate codes (IS: 10262, IS: 456, IS: 383, IS: 9103, IRS Concrete Bridge Code and all other Codes referred therein)/specifications/guidelines in selection of suitable constituent material and its proportioning for preparing design mix for prescribed strength and durability, and obtain approval of the Engineer. The mix proportion shall be prepared keeping in view the required strength, long term durability in the intended exposure condition and with sufficient workability to place in intended position of the structure uniformly in well compacted condition without any segregation or bleeding.
- b) The mix proportion so designed shall be checked by means of trial batches. Workability of the 1st Trial Mix shall be measured and the mix shall be carefully observed for freedom from segregation and bleeding and its finishing properties.
- c) If the workability of the 1st trial mix is as stipulated, two more Trial Mixes shall be made with the water content same as initial Trial Mix and varying the free water cement ratio by 110 percent of the preselected value. From all three trial mixes, at least three test cubes shall be made, cured and tested at 28 days in accordance with IS: 516.
- d) If the measured workability of 1st Trial Mix is different from the stipulated value, the water and/or admixture content shall be adjusted suitably. With this adjustment, the mix proportion shall be recalculated keeping the free water cement ratio at the pre-selected value and procedures in para no. "b" and "c" above may be followed.
- e) If the test results of the samples at three variable water cement ratios are valid (for each sample, the individual strength of all specimen are within $\pm 15\%$ of average of three specimens) and more than target strength, Graph between three water-cement ratio and their corresponding strength shall be plotted and mix proportion for field trial should be worked out.
- f) Above details of test and mix proportion duly authenticated by approved institution/lab should be submitted in a prescribed Pro-forma (Annexure - 5) for approval of Engineer for field trial.

- g) On receipt, the Engineer shall expeditiously scrutinize the proposed design mix for field trial. Apart from all other aspects, it should be specifically observed that the quantity of cement content should be minimum possible for meeting the due requirement and is within the limit prescribed vide letter No.W.416/Unified/SS/SSR/Vol. IV d1.09.02.2022 for all types of works. If it is more, and there is possibility to bring it within limit by redesigning the proportion, the same should be returned to the Contractor with remarks to submit the mix design with reduced cement content. If the cement content is marginally on higher side and the Engineer is convinced that in the specific circumstances there is no possibility for further reduction even after use of plasticizer/super plasticizer, he will forward the mix design for approval of the Competent Authority.
- h) After review of the design mix received with recommendation of the Engineer, the competent Authority shall either approve the Design Mix for field trial or return the same to Engineer to get fresh design mix for approval.
- i) On approval of mix design in field trial, again cube samples should be made with the concrete produced by method of actual concrete production.
- j) Test cubes (specimens) will be tested for compressive strength at 28 days. The results are considered valid only if the average compressive strength of the sample (3 specimens make one sample) is not less than the Target mean strength and variation among individual specimens is within $\pm 15\%$ of average strength. The concrete mix design shall be allowed by Engineer for use in actual execution, if the test results of samples are valid.
- k) Above approval by the Engineer shall not relieve the Contractor of any of his responsibilities under the Contract.
- l) For Bridge works, concrete design mix shall be designed as per para no 5.5.1.2 and 5.5.2 of IRS Concrete Bridge code: 1997. Minimum cementitious material and exposure condition shall be as per table 4(c) of IRS Concrete Bridge Code: 1997.

CONCRETE DESIGN MIX

Name of work :-

Agency :-

Agt. No. / Acceptance letter details :-

Type of Work - Bridge**/Other than Bridges** :-
(** strike whichever is not applicable)

A	Basic Data	
A-1	To be specified by Engineer	
1	Concrete grade* (Min*/Max* cement content Kg/Cum)	
2	Workability (Slump)*	
3	Cement Grade*	
4	Exposure Condition*	
5	Nominal size of Coarse Aggregate (CA)*	
A-2	Other Details	
1	Source of CA	
2	Results of sieve analysis of CA	
3	Specific Gravity of Coarse Aggregate	
4	Grading Zone of fine Aggregate	
5	Source of FA	
6	Results of sieve analysis of FA	
7	Plasticizer / Super Plasticizer (brand name, qty used etc)	
8	Water absorption of fine aggregate	
9	Water absorption of Coarse aggregate	
B	MIX PROPORTION	
1	Cement	Kg
2	Water	Kg
3	FA	Kg
4	CA	Kg
5	Plasticizer / Super plasticizer	Kg
C	CUBES CASTING DETAILS	
1	Date of casting of cubes	
2	Officials present at the time mixing & casting of cubes	
3	Workability of trial mix was as per design	
D	CUBESS TESTING DETAILS	
1	Date of casting of cubes	
2	Testing done at	
3	Officials present at the time of testing	
4	Is test results and strength vs. Water cement ratio enclosed?	
5	Does the test result comply with design requirements	

* To be specified by Engineer depending upon the specific requirement.

**strike whichever is not applicable.

Signature of the Designer :
 Name of Designer :
 Name of the Lab/Institute
 Stamp :

Signature of the Contractor :
 Remarks of the Engineer :

G. Guide lines for bringing economy in concrete design mix.

(Authority : PCE/SC letter No. W.416/Unified/SS/SSR/Vol.IV of Dated : 09.02.2022)

CVC published an article in their web site on “Design Mix concrete – Economy & Environmental issues”. As per the above article, the range of cement content for various grades of concrete observed in all Govt./Semi Govt. bodies are as follows.

Grade of Concrete	Cement content in Kg. per Cum	Average cement content in Kg per Cum
M 15	250 to 300	275
M 20	300 to 330	315
M 25	310 to 360	335
M 30	340 to 390	365
M 35	360 to 420	390
M 40	380 to 450	415
M 45 to M 55	400 to 450	425

Increase in cement quality more than required may have adverse effect on the durability of concrete apart from avoidable additional cost. Therefore, for Design mix concrete, efforts should be made to use minimum amount of cement in the above stated ranges at the time of approval of Design mix. In case Design mix contains cement quantity more than average shown above, design mix will be approved by SAG level i.e (i). CE/Construction of the projects in Construction organization. (ii). ADRM/Infra in divisions. (iii). for workshops and other similar works by Concerned HOD. Where ADRM/Infra is other than Civil Engineer, Design mix will be approved by mentor HOD of HQ. However, while approving all possibilities should be explored to reduce the cement content and it should not be ritual without any technical inputs.

Contractor shall adhere to the above guidelines while doing mix design for concrete works and take approval of Engineer-in-charge accordingly.

H. Maintenance of Site records in contracts for ensuring quality of work :

(Authority : PCE/SC Letter No. W.55/II/1/Quality control/Site records of dated : 26.05.2022.)

List of registers required to be maintained commonly for **both building and bridge works** and **exclusively for Bridge works** is mentioned below.

A. Common Registers to be maintained for both Buildings and Bridge works (18 registers).

1. Site order book (E – 1123),
2. Field book (E – 1122),
3. Technical register,
4. Quality control register. {consists of (i) Tests for Cement Steel & Water, (ii) Sieve Analysis for CA & FA, (iii) Bulkage of sand, (iv) Bricks tests, (v) Compressive strength of Concrete cube register, (vi) Slump test and (vii) Timber test},
5. Cement register,
6. Steel register,
7. Wood work register,
8. Anti corrosive treatments register,
9. Other consumable items register,
10. Daily contractor's labour register,
11. Daily progress of work register,
12. Tools and plants of Contractor at site register,
13. Bill register (no annexure),
14. Hindrance Register,
15. Drawing issue register,
16. Piling Register,
17. Structural Steel Register,
18. RMC Register.

B. Registers to be maintained exclusively for Bridge works (09 Registers).

19. Grouting record register,
20. Cable profile register,
21. Permeability Concrete test register,
22. Pile passing register,
23. Well passing register,
24. Record of load testing of foundation,
25. Record of load testing of PSC Girders,
26. Camber Register,
27. Stressing cum Elongation register.

It shall be ensured that all registers duly completed and signed by both parties to the contract and should be submitted during passing of bills. A certificate mentioning that items for which payment is proposed are meeting the specifications passed the requisite tests and records thereof have been duly maintained.

Encl: Compiled list of site registers along with proformas :

ANNEXURE - 6

SOUTH CENTRAL RAILWAY DRM (W)'s Office,

(Division).....Location.....

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

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.....

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

Contractor's Officials:

Contractor's Authorised Representative :Contact No.....

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

Signature of SSE/Works

Representative/Engineer

Signature of Contractor's

Authorised

I. Site Laboratory Establishment by Contractor :

(Authority : PCE/SC letter No. W.496/Policy/Vol.IX of dated : 28.12.2021)

The contractor should set up site laboratory within 45 days from the date of issue of letter of acceptance (LOA). If he/she does not setup site laboratory, the following penalty shall be imposed.

Category	Value of Work	Penalty per Month in Rs.
a	Works costing upto Rs. 2.0 Crs.	No penalty
b	Works costing above Rs. 2.0 Crs and upto Rs. 5.0 Crs	25,000/-
c	Works costing above Rs. 5.00 Crs	50,000/-

Equipment's required in site lab for above category of works is enclosed as
Annexure – “7” & “8”

J. Applicability of Stage payment for steel after receipt at site of work :-

(Authority :- PCE/SC letter No. W.496/Policy/Vol.IX of Dt : 26.05.2022.)

Reimbursement of cost of steel on 75% of invoice value or at the rate of 75% of the quoted rate of steel in the contract, whichever is less, can be done to the contractor on his request, after steel is physically brought to the site and verified by engineer-in-charge at site. Proper accountal of the received quality at site is to be made by engineer-in-charge.

Annexure – “7”

List of Equipment to be provided by Contractor in site Laboratory
(For value of work costing above Rs. 2.0 Crs and upto Rs. 5.0 Crs.)

Sl.No	Details	Nos.
1	Full set of IS sieves for testing of materials for Coarse aggregate, fine aggregate, soil and Blanket Materials as per IS code and as per RDSO guidelines along with sieve shaker and brushes.	1 No.
2	Balance	
	a. Pan balance – upto 10kg capacity (with 1.0gm least count)	1 No.
	b. Electronic/Digital balance upto 10 Kg capacity (with 1.0gm least count)	1 No.
3	Concrete cube testing machine - 200 Tonne capacity	1 No.
4	Slump testing apparatus with tamping rod	2 Nos.
5	Concrete cube moulds 150 x 150 x 150mm	12 Nos.
6	Levelling instrument with tripod & 2 Nos. of 4m high levelling staff	1 No.
7	Weigh batch mixing unit	1 No.
8	Screw gauge, Vernier caliper, Sprit level, Measuring tapes etc	1 No.

The above list is only tentative. Before commencement of work, the actual requirement will be given by the Engineer in charge depending on the nature of work. All equipment's and apparatus should be of IS approved brands and in case IS brand is not available these should be of well-known brands as per decision of the Engineer-in-charge.

Annexure – “8”

List of Equipment to be provided by Contractor in site Laboratory
(For value of work costing above Rs. 5.0 Crs)

Sl.No	Details	Nos.
1	Full set of IS sieves for testing of materials for Coarse aggregate, fine aggregate, soil and Blanket Materials as per IS code and as per RDSO guidelines along with sieve shaker and brushes.	1 No.
2	Balance	
	a. Pan balance – 10kg capacity (with 1.0gm least count)	1 No.
	b. Electronic/Digital balance 10 Kg capacity (with 1.0gm least count)	1 No.
3	Concrete cube testing machine - 200 Tonne capacity	1 No.
4	Slump testing apparatus with tamping rod	2 Nos.
5	Concrete cube moulds 150 x 150 x 150mm	12 Nos.
6	Levelling instrument with tripod & 2 Nos. of 6m high levelling staff	1 No.
7	Set of Soil testing equipment's as per IS codes	1 No.
8	Set of Cement testing equipment's as per IS codes	1 No.
9	Weigh batch mixing unit	1 No.
10	Screw gauge, Vernier caliper, Sprit level, Measuring tapes etc	1 No.
11	Rebound hammer apparatus	1 No.
12	Digital Camera	1 No.

The above list is only tentative. Before commencement of work, the actual requirement will be given by the Engineer in charge depending on the nature of work. All equipment's and apparatus should be of IS approved brands and in case IS brand is not available these should be of well-known brands as per decision of the Engineer-in-charge.

Maintenance of Site records in contracts for ensuring quality of work

(Authority : PCE/SC Letter No. W.55/I/1/Quality control/Site records of dated : 26.05.2022.)

Common Registers to be maintained for .both Buildings and Bridge works (18 registers).

SITE ORDER BOOK (E - 1123)

This book contains Pages from page No.....to page No.....

Sd
Sr.DEN/DEN

Note: 1. Site order book shall be opened for every agreement by Supervisor. The first entry should be of the date of mark out/commencement of work, which should be entered by Supervisor.

2. Pages should be machine numbered. The first page should indicate starting page and ending page and below which Sr.DEN/DEN will sign.

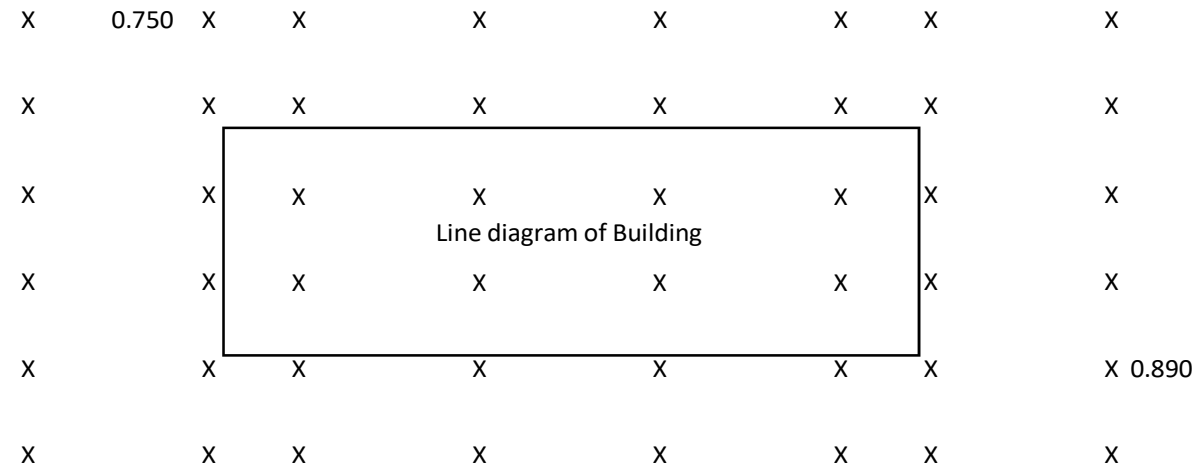
[illegible]

FIELD BOOK (E - 1122)

[illegible]

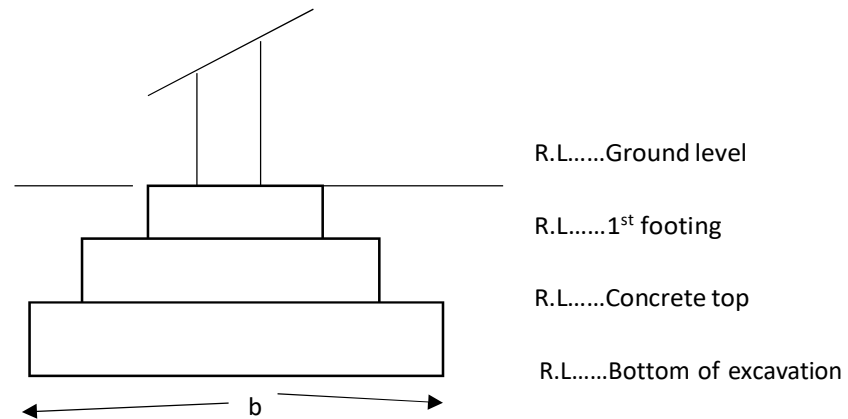
TECHNICAL REGISTER

1 Plan with initial ground levels shall be recorded in the register.



2. All initial ground levels, final levels after excavation and earth work calculations shall be recorded in technical register.

3. Foundation cross sections at every change of section shall be drawn with all details.



TECHNICAL REGISTER

4. Bar bending schedule for all reinforcement work shall be recorded.

S.No	Description	Shape of Bar	Dia. Of Bar	Cut length	No's Provided	Laps	Total Length	Total Weight	Remarks

5. Any modifications from standard drawing or agreement shall be recorded in Technical register.

6. Any items or measurements which has no separate register, shall be entered in technical register.

QUALITY CONROL REGISTER

Note : 1. A separate page shall be opened for each test.

2. Date of testing shall be recorded for every test.

Cement :

Date	Test	Value
	Fineness	
	Soundness	
	Initial Setting time	
	Final setting time	
	Compressive strength	

Steel :

Date of testing	S.No	Type and nominal Size of Bar	Carbon percent	Ultimate Tensile Stress	Yield Stress	Elongation Percent	Unit Weight

Quality Control Register

Water :

Date	S.No	Characteristics	Value
	1	Turbidity	
	2	Colour Haten units	
	3	Taste and odour	
	4	PH value	
	5	Total dissolved solids (mg/l) max.	
	6	Total hardness as CaCo3 (mg/l) max.	
	7	Chlorides as Cl2(mg/l) 250	
	8	Sulphates as SO4(mg/l) max.	
	9	Fluorides as F(mg/l) max.	
	10	Nitrates as NO3(mg/l) max.	
	11	Calcium as Ca(mg/l) max.	
	12	Iron as Fe(mg/l) max. 0.3	
	13	Zinc as Zn(mg/l) max. 5.0	
	14	Mineral Oil(mg/l) max. 0.01	
	15	Copper as Cu(mg/l) max. Toxic materials	
	16	Arsenic as As(mg/l) max.	
	17	Cadmium as Cd (mg/l)	
	18	Lead as Pb(mg/l) max 0.05	
	19	Residual free chlorine	

QUALITY CONTROL REGISTER

Coarse Aggregate :

Date	Test	Value
	Deleterious materials & Organic impurities	
	Aggregate crushing value	
	Aggregate impact value	
	Aggregate abrasion value	
	Soundness	

Sieve Analysis

[illegible]

Quality Control Register

Fine Aggregate :

Deleterious materials & Organic impurities:

Sieve Analysis

Date	IS Sieve Designation	Percentage passing
	10 mm	
	4.75 mm	
	2.36 mm	
	1.18 mm	
	600 microns	
	300 microns	
	150 microns	

Bulkage of sand :

Date of testing	Initial weight of Speciman	Weight after dried in oven	Difference in weight

Surface moisture content can be taken from IS 456 - 2000

Quality Control Register

Bricks :

Date	Test	Value
	Compactness	
	Water absorption	
	Afforescences	
	Dimensions	
	Uniform colour (Yes / No)	
	Sharp, square corners and edges (Yes / No)	
	Free from cracks, chipped surfaces and broken corners (Yes / No)	

Quality Control Register

Concrete

Compressive strength of Cubes :

Sl.No	Date of Casting	Grade of Concrete	Description of Work	07 Days Compressive Strength				Average	Minimum Strength Required
				Due Date for 7 Days Strength	Test Results 07 Days				
					a	b	c		
1	2	3	4	5	6	7	8	9	10

28 Days Compressive Strength				Average	Minimum Strength Required	Sign of Rly. representative	Sign. Of Contractor	Remarks
Due Date for 28 Days Strength	Test Results 28 Days							
	a	b	c					
11	12	13	14	15	16	17	18	19

Quality Control Register

Slump Test :

Date of Testing	Location from Where Concrete Specimen collected	Slump value		
		Specimen 1	Specimen 2	Specimen 3

Timber :

[illegible]

CEMENT REGISTER

[illegible]

STEEL REGISTER

NOTE:1. Separate page shall be opened for each diameter of bar.

[illegible]

WOOD WORK REGISTER

[illegible]

Anti-corrossive Treatment Register

[illegible]

OTHER CONSUMABLE ITEMS REGISTER

Note :

1. A separate page shall be opened for each material.

[illegible]

**DAILY PROGRESS
REPORT**

Date	Activity (1)	Activity (2)	Activity (3)	Activity (4)	Signature		Remarks
					Railway Engineer	Contractor/ Authorised Representative	
Example: 17/06/2005	Earth work excavation at....location, approximate volume of work done....	M20 RCC work atlocation, approximate volume of work done.....				

NOTE: In major works number of items of work being operated at a time, in such cases each item of work shall be recorded in separate column with proper details.

DAILY CONTRACTOR'S LABOUR REGISTER

[illegible]

TOOLS AND PLANTS OF CONTRACTOR - REGISTER

[illegible]

Hindrance Register

[illegible]

Drawing issue Register

[illegible]

Piling Register

[illegible]

Structural Steel Register

[illegible]

RMC Register

[illegible]

B. Registers to be maintained exclusively for Bridge works (09 Registers).

[illegible]

CABLE PROFILE RECORDS	
-----------------------	--

Section:	
----------	--

Girder No.		Date of Pre-stressing	
------------	--	-----------------------	--

Cable profile ordinates	DISTANC E (X)	X12=	X11=	X10=	X9=	X8=	X7=	X6=	X5=	X4=	X3=	X2=	X1=	X0=	X1=	X2=	X3=	X4=	X5=	X6=	X7=	X8=	X9=	X10=	X11=	X12=
-------------------------------	------------------	------	------	------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------

[illegible][illegible][illegible][illegible]

PERMIABILITY TEST RECORD

Bridge No:

Section:

S.No.

Date of Casting

Grade of Concrete

Description of work

Date of test

Depth of permeabilty

Signature

Pile Passing Register

[illegible][illegible]

Well Passing Register

PIER/ ABUTMENT NO: SHAPE OF WELL :

SIZE OF WELL: INITIAL CUTTING EDGE LEVEL :

A) DURING DAILY SINKING:

Date	Tilt	Shift	Whether Tilt is within Permissible Limit	Whether Shift is within Permissible Limit	Correction Measures adopted for Tilt and Shift	After Correction		Depth of Sinking from Bottom of Well Cap	Daily Progress of Well Sinking			Total Depth of Sinking	Signature of Railway Representative	Signature of Contractor	Remarks
						Tilt	Shift		Starting Time	Ending Time	Depth of Sinking				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

B) PASSING OF WELL

Date	Final Tilt	Final Shift	Final Level of Cutting Edge	Actual Depth of Sinking from Bottom of Well Cap	Depth of Sinking as per Approved Drawing	Signature of Railway Representative	Signature of Contractor	Remarks
1	2	3	4	5	6	7	8	9

C) BOTTOM PLUGGING

Date	Final Level of Cutting Edge	Final Level of Bottom Plugging	Depth of Bottom Plugging below Cutting Edge	Final Level of top of Bottom Plugging	Approval of Chief Engineer before Bottom Plugging is obtained or Not
1	2	3	4	5	6

Record of Load Testing of Foundation

C) General Load Test

Date	Time	Initial Load in MT	Load added in MT	Total Load in MT	Settlement in MM (Dial Gauge Reading)			Remarks	Sig. of Rly. Representa tive	Sig. of Contract or
					No.1	No.2	Average			
1	2	3	4	5	6	7	8	9	10	11

D) Routine Vertical Load Test on Pile (IS: 2911- Part-4)

- 1) Date of Casting of Pile under test :
- 2) Date of Testing of Pile :
- 3) Diameter of Pile :
- 4) a) Safe load on Pile :
b) Design load for testing of pile :
- 5) Driven depth of pile :
- 6) Pile No. :
- 7) Cement used :
- 8) Concrete Grade :
- 9) Cube Strength of :
7 Days :
28 Days :
- 10) Reinforcement used :
- 11) Type of Jack :
- 12) Pressure Gauge make :
- 13) Dial Gauge make and type :
- 14) Least count of Pressure Gauge :
- 15) Diameter of Jack Ram :
- 16) Area of Ram for 3 Jacks :
- 17) No. of Dial Gauges :
- 18) Least Count of Dial Gauge :
- 19) Duration of Stage Load increments :
- 20) Load Increment :
- 21) Maximum Settlement :
- 22) Rebound :
- 23) Net Settlement :

Record of Load Testing of PSC Girders

Br. No.	Girders		Least count of Dial Gauge	Load for Testing	Max Permitted Deflection	Max Observed Deflection
	Foot path side	Ballast retainer side				
1	2	3	4	5	6	7

Sl. No.	Day	Time	Loading/ Unloading	Dial Gauge Reading					
				End of Span Girders		Middle of Span Girders		End of Span Girders	
				D1	D2	D3	D4	D5	D6
1	2	3	4	5	6	7	8	9	10

Temperature Correction	Net Deflection						% Recovery	Average % Recovery of Deflection for the Span
	End of Span Girders		Middle of Span Girders		End of Span Girders			
	D1	D2	D3	D4	D5	D6		
11	12	13	14	15	16	17	18	19

CAMBER REGISTER	
Bridge No:	
Section:	

Section:

B

[illegible]

PRESTRESSING CUM ELONGATION RECORD

GIRDER STRESSING REPORT

Bridge No:																																																																														
Section:																																																																														
Date of casting				Date of Stressing																																																																										
Girder No.				Cable No.																																																																										
Span Details				Cube Strength																																																																										
LRPC STRAND DETAILS		DESIGN DATA (AS PER DRAWING)																																																																												
S.No.		GFC DWG No./Rev.No.																																																																												
Actual MOE of strand		Thea MOE of strand																																																																												
Actual Area of C/s of Strand		Thea Area of C/s. of Strand																																																																												
Pre stressing Jack Details		Design Elongation																																																																												
Pre stressing Jack Ram Area		Design Stressing Load																																																																												
Jack Efficiency																																																																														
Modified Elongation		=	$\frac{\text{Design Elongation} \times \text{Thea Area of C/s Strand} \times \text{Thea MOE of Strand}}{\text{Actual area of Strand (A)} \times \text{Actual Modulus of Elasticity } E}$																																																																											
Tolerance in Elongation	Max (+5%)																																																																													
	Min (-5%)																																																																													
Modified Pressure (KG/CM2)		=	$\frac{\text{Stressing load in Ton} \times 1000}{\text{Ram Area} \times \text{Jack eff.}}$																																																																											
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