

NTPC LTD

VDC, RAIPUR

Sub: Qualifying Requirement for Vendor Enlistment for ‘Supply and Stacking of Ballast for MGR track as per RDSO specification no. IRS GE -1 2004 with latest amendments’

A)	MEG Details		
	1.0	MEG No.	75MEG-06
	2.0	MEG Description	Supply and Stacking of Ballast for MGR track as per RDSO specification no. IRS GE -1 2004 with latest amendments (CAT-I)
	3.0	Responsibility Centre	VDC
B)	Technical Criteria of QR: 1. The applicant should have executed the Supply and stacking of machine crushed stone ballast as per RDSO/Indian Railway specifications through road during last five years from the date of application. Note- The combined activity of “Supply and stacking” of machine crushed stone ballast as per RDSO/Indian Railway specifications through road” should be executed into one or multiple Work Orders.		
C)	Other Documents to be uploaded: In addition to the documents required in support of meeting technical requirements as stated above, following documents are required to be submitted by the Applicants applying for enlistment: - 1. Three POs of the highest executed values of similar works during previous five years from the date of application. Copy of Invoice / Completion certificate from the concerned buyer/s in support of successful execution of supply against the POs to be submitted. 2. Audited balance sheet including Profit & Loss statement for the previous three completed financial years reckoned from the date of application. In case the audited documents are not ready / available, then certified copy by a registered practicing Chartered accountant may be submitted. 3. Latest annual report OR NSIC / SSI / MSME registration certificate / BIS license / ISO certificate / Certificate of registration from the concerned excise department / any other statutory document as a proof of being manufacturer of the required material. 4. Any other documents in addition to the above which the applicant wants to submit.4. NTPC can ask more documents if felt necessary.		
D	Note-1	Similar works means: Supply and stacking of machine crushed stone ballast as per RDSO/Indian Railway specifications through road during last five years from the date of application.	
	Note-2	The executed value means Basic value of quantity of similar works executed/supplied against the reference PO (also applicable to partly executed POs as on date of application). Where PO value is composite(i.e. including Taxes etc.),the applicant to give item-wise break-up of Composite PO value mentioning Basic Value, Taxes etc.	

NTPC LTD

VDC, RAIPUR

Sub: Technical Specifications & Quality Plan for 'Supply and Stacking of Ballast for MGR track as per RDSO specification no. IRS GE -1 2004 with latest amendments'

Technical Specifications:

A)	MEG Details		
	1.0	MEG No.	75MEG-06
	2.0	MEG Description	Supply and Stacking of Ballast for MGR track as per RDSO specification no. IRS GE -1 2004 with latest amendments (CAT-I)
3.0	Responsibility Centre	VDC	
B	Technical Specifications		<p style="text-align: center;"><u>SPECIFICATIONS FOR TRACK BALLAST</u></p> <ol style="list-style-type: none">1. Basic quality: Ballast should be hard, durable and as far as possible angular along edges/ corners, free from weathered portions of parent rock, organic impurities and inorganic residues.2. Particle shape: Ballast should be cubicle in shape as far as possible. Individual pieces should not be flaky and should have generally flat faces with not more than two rounded / sub rounded faces.3. Physical properties: Ballast sample should satisfy the following physical properties in accordance with IS: 2386, Pt. IV-1963 when tested as per procedure.<ol style="list-style-type: none">a. Aggregate abrasion value - 30% Maximumb. Aggregate impact value - 20% Maximumc. The water absorption tested as per IS: 2386 Pt. III -1963 should not be more than 1%.4. Size and gradation: Ballast should satisfy the following size and gradation.<ol style="list-style-type: none">(i) Retained on 65 mm square mesh sieve - 5% Maximum(ii) Retained on 40mm square mesh sieve - 40% to 60%(iii) Retained on 20 mm square mesh sieve - Not less than 98% for machine crushed ballast.5. Oversize Ballast<ol style="list-style-type: none">(i) Retention on 65mm square mess sieve:<ul style="list-style-type: none">• A maximum of 5% ballast retained on 65mm square mesh sieve shall be allowed and no deduction in payment shall be done.• In case ballast retained on 65mm sieve exceeds 5% but does not exceed 10%, payment at 5% reduction in contracted rate shall be made for the full stack. Stack having more than 10% retention of ballast on 65mm sieve shall be rejected.(ii) If ballast retained on 40mm square mesh sieve (machine crushed case only) > 60%, payment at the reduced rates shall be made for the full stack in addition to the reduction worked out above.

- 5% reduction in contracted rates if retention on 40mm sq. mesh sieve is between 60% (excluding) and 65% (including)
- 10% reduction in contracted rates if retention on 40mm sq. mesh sieve is between 65% (excluding) and 70% (including).

(iii) In case of retention on 40 mm square mess sieve exceed 70%, the stack shall be rejected.

6. Undersize ballast:

The ballast shall be treated as under size and shall be rejected if:

- i Retention on 40mm sq. mesh sieve is less than 40%.
- ii Retention on 20mm sq. mesh sieve is less than 98 % (for machine crushed) or 95% (for hand broken)

7.Method of Sieve Analysis:

(i) The following tolerance in the size of holes for 65, 40 and 20mm nominal size sieves size shall be permitted.

65mm square mesh sieve	± 1.5mm
40mm square mesh sieve	± 1.5mm
20mm square mesh sieve	± 1.0mm

(ii) Mess sizes of the sieves should be checked before actual measurement. The screen for sieving the ballast shall be of square mesh and shall not be less than 100 cm of length, 70cm in breadth and 10 cm in height on sides.

(iii) While carrying out sieve analysis, the screen shall not be kept inclined but held horizontally and shaken vigorously. The pieces of ballast retained on the screen can be turned with hand to see if they pass through but should not be pushed through the sieve.

(iv) The percentage passing through or retained on the sieve shall be determined by weight only.

8.Method of measurement:

Stack Measurement:

(i) Stacking shall be done on a neat plain and firm ground with good drainage. The height of stack shall not be less than 1m. The height shall not be more than 2.0 m. Top width of stack shall not be less than 1.0m. Top of stack shall be kept parallel to the ground plane. The side slopes of stack should not be flatter than 1.5:1 (Horizontal: Vertical). Cubical content of each stack shall normally be not less than 30M3 in plane area.

9. Sampling and Testing:

In order to ensure supply of uniform quality of ballast the following norms shall be followed in respect of sampling, testing and acceptance.

(9.1) Minimum three samples of ballast for sieve analysis shall be taken for measurement done on any particular date. Even if the numbers of stacks to be measured are less than three.

(9.2) The test viz. determination of Size of ballast, Abrasive value, impact value and water absorption should be got done through NTPC laboratory/NTPC approved lab on chargeable basis.

(9.3) In order to ensure supply of uniform quality of ballast, the following norms shall be followed in respect of sampling, testing and acceptance.

(9.3.1) On supply of the first 100 cum, the tests for size gradation, Abrasion value, Impact value and water absorption shall be carried out by NTPC. Further supply shall be accepted only after this ballast satisfies the specifications for these tests. NTPC reserves the right to terminate the contract at this stage itself in case the ballast supply fails to Confirm to any of these specifications.

(9.4) During supply of ballast subsequent tests shall be carried out at follows:

Sl.	Description	Supply in stacks	
		For each stack of volume less than 100M ³	For each stack of volume more than 100M ³
	(a) Size & Gradation Tests		
	No. of Tests	One for each Stack	One for each Stack
	Size of one sample	0.027M ³	0.027M ³ for every 100 cum or part thereof.
	b) Abrasive value, Impact value & Water absorption tests		
	Testing Frequency	One of every 2000M ³	
	Size of one sample	25 Kg	

9.4.1) The sample should be collected using a wooden box of internal dimensions 0.3m x 0.3m x 0.3m from different part of stack.

9.5) the above shall be done for the purpose of maintaining quality during supply. In case the test results not being as per prescribed specifications at any stage, further supplies shall be suspended till suitable corrective action is taken and supplies ensured as per specifications.

9.6) The above tests may be carried out more frequency if warranted at the discretion of EIC.

9.7) All tests for abrasion value, Impact value and water absorption conducted subsequent to award of contract shall be done as per Field Quality Plan (Quality plan enclosed).



REFERENCE FIELD QUALITY PLAN

ITEM : CIVIL WORK		QIP NO. : NTPC/KGN/RFP/04		PROJECT:KHARGONE STPP, (2x660 MW)					
SUB-SYSTEM: Supply and Stacking of Machine Crushed Stone Ballast 65mm for MGR Track		REV. NO. :		Package					
DATE : 03.04.2020		CONTRACT NO.		Supply and Stacking of Machine Crushed Stone Ballast 65 mm for MGR Track					
PAGES : 1 of 1		CONTRACTOR		For tender purpose only.					
Sl. No	Activity and operation	Characteristics / Instruments	Class of check	Type of Check	Quantum Of check	Reference Document	Acceptance Norms	Format of Record	Remarks
1	2	3	4	5	6	7	8	9	10
1.00	Physical appearance of Ballast (Basic Quality/ Particle Shape	Misc. Items	B	Physical	Each batch of delivered at site	As per PO and BOQ			
2.00	Ballast testing								
2.01	Aggregate Abbrasion Value	Lab Testing	B	Testing	1 test per 2000 m3	RDSO specification for Track Ballast (1999/1 atleast)	IS:2386, Part-IV-1963	Testing Report	Sample collection, sample size and preparation as per P.O.
2.02	Aggregate Impact Value	Lab Testing	B	Testing	1 test per 2000 m3	RDSO specification for Track Ballast	IS:2386, Part-IV-1963	Testing Report	Sample collection, sample size and preparation as per P.O.
2.03	Water Absorption	Lab Testing	B	Testing	1 test per 2000 m3	RDSO specification for Track Ballast	IS:2386, Part-III-1963	Testing Report	Sample collection, sample size and preparation as per P.O.
2.04	Gradation	Field Test	B	Testing	1 test per 100 m3 or part there of	specification for Track Ballast (1999/1 atleast)	As per PO	SR/Testing Report	Sample collection, sample size and preparation as per P.O.
Note: Site Co-ordinator from agency will be responsible for all kinds of QA & QC checks / test, all test will be carried out in NTPC FQA Lab or EIC approved third party QA lab.									
Legend to be used: Class # : A = Critical, B=Major, C=Minor; SR=Site Register, TR, MTC, LB									
Categorization Witnessing & Accepting (As per NTPC QA&I System) Category 'A' FQA Engineer in association with Executing Engineer, Category 'B' Executing Engineer, Category 'C' Executing Engineer; SR = Site Register, TR= Test Report, MTC = Manufacturer's Test Certificate		For NTPC USE							
This document shall be read in conjunction with NTPC Tech. Specifications, BOQ, Drawings		REVIEWED BY		APPROVED BY		APPROVAL SEAL			



REVIEWED BY

APPROVED BY

APPROVAL SEAL

W.M.

W.M.
03/04/2020

श्री. आर. देवगर्ष

APPROVED BY

APPROVAL SEAL