

NTPC Limited  
CC-OS, EOC Noida

**Subject: Qualifying requirement & other details for vendor enlistment – Vendors for supply of Cast Basalt Pipes.**

A)	<p><b>Details of MEG (Material Enlistment Group)</b></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 30%;">MEG No</td> <td>16MEG-10</td> </tr> <tr> <td>MEG Description</td> <td>Cast Basalt Pipes</td> </tr> <tr> <td>Responsibility Centre</td> <td>CC&amp;M-CPC</td> </tr> </table>	MEG No	16MEG-10	MEG Description	Cast Basalt Pipes	Responsibility Centre	CC&M-CPC
MEG No	16MEG-10						
MEG Description	Cast Basalt Pipes						
Responsibility Centre	CC&M-CPC						
B)	<p><b>Technical Criteria of QR:</b></p> <ol style="list-style-type: none"> <li>1. The applicant should be a manufacturer of cast basalt lined pipes and should have supplied cast basalt pipe minimum 2500 meters of minimum 200 mm diameter, in any continuous 365 days period in the last five years from the date of application for enlistment. These supplies should have been made directly to thermal power plants / end user industries or to package contractors for ash handling system / material handling.</li> <li>2. The applicant should have in house testing facilities or should be able to arrange testing facilities at NABL/Government approved laboratories for carrying out complete analysis of the cast basalt lines MS Pipes &amp; Bends as specified in the Technical Specifications / Quality Plans of the Owner.</li> </ol>						
C)	<p><b>Documents to be submitted as proof of meeting the stipulated Qualifying Requirements:</b></p> <p>QR-1: i. Copy of valid documentary proof for being manufacturer of cast basalt lined pipes. ii. Copy of Purchase Orders from thermal power plants / end user industries / package contractors for cast basalt pipes as specified along with execution proofs</p> <p>QR-2: Self declaration from the applicant along with details of the specified facilities.</p>						
D)	<p><b>Other documents to be submitted:</b></p> <p>In addition to the documents required in support of meeting technical requirements as stated above, following documents are required to be submitted by the applicant for enlistment:</p> <ol style="list-style-type: none"> <li>1. Three POs of highest executed values of <b>similar work</b> during last five years from the date of application (PO date should not be more than five (5) years old as on the date of the application) along with copy of invoice / completion certificate from the concerned buyer/s in support of successful execution of supply against POs.</li> <li>2. Audited balance sheet including profit and loss statement for the previous three completed financial years reckoned from the date of application.</li> </ol> <p>In case the audited results for the preceding financial year is not available, certification of financial statements from a practicing chartered account may be submitted. In case, Applicant is not able to submit the certificate from practicing chartered Account certifying its financial parameters, the audited results of three consecutive financial years preceding the last financial year shall be considered for evaluating the financial parameters. Further a Certificate would be required from the CEO/CFO as per the format enclosed in the application format documents stating that the financial results of the company are under audit as on the date of Application and the Certificate from the practicing Chartered Accountant certifying the financial parameters is not available</p> <ol style="list-style-type: none"> <li>3. Any other documents in addition to the above which the applicant wants to submit.</li> </ol>						

E)	Note-1	<b>Definition of Similar work</b> (Refer to Point 1 of Row D above):- Supply of cast basalt lined pipes / cast basalt lined bends of minimum dia 200 mm to thermal power plants / end user industries / package contractors for ash handling system / material handling.
	Note-2	The executed value means Basic value of quantity of similar works / orders executed / supplied against the reference PO (also applicable to partly executed PO, as on the date of application). Where PO value is composite (i.e. including taxes etc.), the applicant should submit item wise break up of composite PO value mentioning basic PO Value, Tax details etc.

<b>A) Details of MEG</b>	
MEG No	16MEG-10
MEG Description	Cast Basalt Pipes
Responsibility Centre	CC&M-CPC
<b>B) Technical Specifications</b> <ul style="list-style-type: none"> <li>• Specific Gravity: 2.8 to 3.1 g/cm<sup>3</sup> (Min).</li> <li>• Hardness of Basalt Lining: 8 Mohs (Min).</li> <li>• Compressive Strength: 4500 kg/cm<sup>2</sup>(Min)</li> <li>• Bending Strength: 300 kg/cm<sup>2</sup> (Minimum)</li> <li>• Basalt thickness: 20mm (with tolerance of ± 2 mm)</li> <li>• Casing: MS-pipe as per IS 1239 / 3589 having thickness 6 mm</li> <li>• Basalt casting in the form of cylinder</li> </ul>	



ITEM (MATERIAL, CLASS, GRADE, RATING, RANGE, SIZE ETC.):  
BASALT LINED PIPES & FITTINGS

**STANDARD QUALITY PLAN**

CONFORMING TO CODE: AS PER TECH SPEC

QP NO.: 0000-999-QQM-S - 056  
REV. NO: 02 DATE: 03/01/2020  
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REVIEWED BY:  
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APPROVED BY:  
B C ROY  
D:.....

SI NO	COMPONENT & OPERATION	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS		
					M	C/N				M	C	N			
1	2	3	4	5	M	6	7	8	9	D*	M	C	N	**10	11
<b>1.0 Raw Materials</b>															
1.1	(a) Plates for Rolled & Welded Casing (b) Flanges	Surface Defects Chemical & Mechanical Properties	Major	Visual Chemical & Mechanical Test	100%	100%	Relevant Material Std Relevant Material Standard as per NTPC Approved Drg/Datasheet /Tech Spec	NTPC Approved Drg/Datasheet /Tech Spec	IR	-	P	V	-		
1.2	Pipes for Casing (SAW/ERW Pipe)	Chemical Properties Mechanical Properties Flattening Test Hydrotest	Major	Review of Manufacturer TC	100%	100%	Relevant Material Standard as per NTPC Approved Drg/Datasheet /Tech Spec	NTPC Approved Drg/Datasheet /Tech Spec	TC	✓	P	V	V	Pipes shall be from NTPC approved source	
1.3	Cast Basalt (See Note A)	Chemical Properties	Major	Chemical Analysis	1 Sample/ Production Batch	1 Sample/ Production Batch	NTPC Approved Drg/Datasheet /Tech Spec	NTPC Approved Drg/Datasheet /Tech Spec	TC	✓	P	V	V	See Note C	
		Compressive Strength	Major	Physical Test	1 Sample/ Production Batch	1 Sample / offered lot	1121 Part I / EN 993 - 5/ DIN 28062 (DIN 14879-6) / Equivalent International Std	NTPC Approved Drg/Datasheet /Tech Spec	IR	✓	P	W/V	W/V		
		Density		Physical Test			IS 1124 / EN 993-1 / DIN 28062 (DIN 14879-6) / Equivalent International Std								
		Hardness		Measurement			Moh Scale Comparison								
		Bending Strength		Physical Test			1121 Part - II / EN 993-6 / DIN 28062 (DIN 14879-6) / Equivalent International Std								
		Thickness	Major	Measurement	1/ Batch	1 Sample / offered lot	NTPC Approved Drg/Datasheet /Tech Spec		IR	✓	P	W/V	W/V	See Note C	

**LEGEND:** \* RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION.  
\*\* M: MANUFACTURER / SUB-SUPPLIER C: MAIN SUPPLIER, N: NTPC P: PERFORM W: WITNESS AND V: VERIFICATION.  
AS APPROPRIATE, CHP: NTPC SHALL IDENTIFY IN COLUMN "N" AS 'W'.

FORMAT NO.: QS-01-QAI-P-10/F3-R1

ENGG. DIV./QA&I



ITEM (MATERIAL, CLASS, GRADE, RATING, RANGE, SIZE ETC.):  
**BASALT LINED PIPES & FITTINGS**

**STANDARD QUALITY PLAN**  
 CONFORMING TO CODE: AS PER TECH SPEC

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REVIEWED BY:  
 ANKUSH BIRLA  
 M KHALIQUZZAMA



2.0 In-Process Inspection												
2.1	WPS, Procedure & Welder Qualification	Conformance to Standards	Major	Verification / Mechanical Test	100%	100%	ASME Sec IX	ASME Sec IX	WPS, PQR & WPQ	See Note D		
2.2	Fabrication of Casing	Surface Defects on: • Root Run of Butt weld • Final Run of Butt weld • Fillet Weld	Major	DPT	100%	100%	ASTM E 165	ASME Sec VIII Div 1 Appendix 8	DPT Report	V P V V		
2.3	Hydro test of casing before Lining (as applicable)	Soundness	Major	Hydro test	100%	100%	NTPC Approved Drg/Datasheet /Tech Spec	No Leakage	TC	V P V V		
3.0 Final Inspection												
3.1	Cast Basalt Lined Pipes & Fittings	Completeness	Major	Visual	100%	10%	NTPC Approved Drg/Data sheet/Tech Spec	IR	V	P	W	W
		Dimensional	Major	Measurement	100%	10%	NTPC Approved Drg/Data sheet/Tech Spec	IR	V	P	W	W
		Lining Inspection	Major	Visual	100%	10%	No loose, broken pipes, no layer variation /mismatch in layers & Concentricity of liners with casing	IR	V	P	W	W

Note A: Cast Basalt liner makes shall be subject to NTPC approval.  
 Note B: Acceptance norm for chemical properties as per NTPC Approved Drg/Datasheet /Tech Spec. In case not indicated in NTPC Approved Drg/Datasheet /Tech Spec, same shall be as per Manufacturer standard

Note C: Inspection Involvement by Main contractor & NTPC shall be decided at the time of QP finalization for Corporate Awarded Contracts / Site POs and shall be indicated in the Endorsement sheet. Sample shall be taken from Cast basalt cylinders before lining.  
 Note D: Lloyds/BV/DNV/TUV/TPL approved WPS, PQR & WPQ are acceptable. Only Qualified welders to be deployed.

Note E: If Hydro test pressure is not indicated in NTPC Approved Drg/Datasheet /Tech Spec then Hydro test pressure shall be 1.5 x design pressure or 2 x working pressure whichever is higher for 30 min duration. In case casings are made without fabricated joints (i.e. made from pipes without fabrication joints) then re-Hydro test of such casings is not envisaged.

Note F: Acceptance criteria for cracks on Basalt liner is as follows:  
 (i) Not more than 3 minor hair line cracks / cylinder liner over the total length of the liner are permitted.  
 (ii) Damages in transit and handling resulting in Chip of the Basalt cylinder lining not deeper than 04 mm are acceptable when area is not larger than 10 Sq cm.  
 (iii) Broken edge of Basalt cylinder at the end are only acceptable if depth is not more than 4 mm and area is not more than 5 Square cm. In such cases epoxy resins shall be used to fill the chipped off edges.

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