

TD-106-1 Rev No. 5 Form No.		PRODUCT STANDARD PULVERISERS HYDERABAD		Product STD NO.	BA89002
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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED, It must not be used directly or indirectly in any way detrimental to the interest of the company. <u>SPECIFICATION OF HYDROCYCLONE SYSTEM FOR WBM-4074</u> 1. <u>DESCRIPTION:</u> A hydrocyclone is a classifier that has two exits on the axis: one at the bottom (underflow or reject) and one at the top (overflow or accept). The underflow is generally the denser or coarser fraction, while the overflow is the lighter or finer fraction. 2. <u>APPLICATION:</u> The hydrocyclone classification system shall be provided to classify the limestone slurry to the specified size. The limestone slurry is fed to hydro cyclone by a slurry pump. The underflow shall be recycled back to the ball mill for further grinding. Overflow from the hydro cyclone shall be gravity fed by distribution piping to the mill circuit tank and limestone storage tank based on the slurry level in the mill circuit tank. 3. <u>FEED SLURRY PROPERTIES:</u> 3.1 Flow Rate : 280 m³/Hr. 3.2 Solids (limestone) Concentration: 55% (w/w) 3.3 Specific Gravity of feed slurry :1.53 4. <u>UNDERFLOW SLURRY PROPERTIES:</u> 4.1 Flow Rate : 139.40 m³/Hr. 4.2 Solids (limestone) Concentration: 72 % (w/w) 4.3 Specific Gravity of underflow slurry : 1.83 5. <u>OVERFLOW SLURRY PROPERTIES:</u> 5.1 Flow Rate : 140.60 m³/Hr. 5.2 Solid (limestone) Concentration : 30 % (w/w) 5.3 Specific Gravity of overflow slurry : 1.23 5.4 Fineness should be 90% (or higher) passing through 325 mesh (44 microns) 6. <u>RECIRCULATING LOAD RATIO</u> : 3.529					
Revisions: Refer to record of revisions:		Prepared: K PAVAN KUMAR	Approved: AMAN SURIN	Date: 12.06.2020	

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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED, It must not be used directly or indirectly in any way detrimental to the interest of the company. 7. CONSTRUCTION OF MILL HYDROCYCLONE SYSTEM: 7.1 HYDROCYCLONE : 7.1.1 The hydrocyclone shall be of modular construction with rubber lining. 7.1.2 The cone angle shall not be larger than 20°. 7.1.3 Minimum operating pressure maintained at feed section of Hydrocyclone is 20 PSI (138 KPa). 7.1.4 The hydrocyclone system shall have sufficient redundancy. A minimum of 10% spare hydrocyclone shall be provided in each system of hydrocyclone. 7.1.5 The lining in the hydrocyclones shall have a minimum wear life of not less than 8000 Hrs without reversal of liners. 7.2 MANIFOLD SYSTEM : 7.2.1 It shall be possible to remove and replace individual hydrocyclone when the cluster is in service. 7.2.2 An individual isolation valve shall be provided for each hydrocyclone for this purpose. 7.2.3 The manifold system with the feed distributor should be selected/designed in such a way that it results in an even slurry flow, pressure, density and uniform distribution of particle size to each hydrocyclone. 7.2.4 A local pressure gauge and transmitter with diaphragm seal and capillary shall be provided for monitoring and operating of the feed distributor pressure. 7.2.5 The pressure head loss in distribution of slurry (by feed distributor) to individual hydrocyclones should be minimum. 7.2.6 The feed distributor in hydrocyclone system shall be provided with replaceable rubber lining of thickness 12 mm. 7.2.7 The performance of each cyclone (working) in the cluster shall be uniform. 7.3 OVERFLOW AND UNDERFLOW LAUNDERS : 7.3.1 The overflow and underflow launder shall be provided with replaceable rubber lining of thickness 12 mm. 7.3.2 The hydrocyclone system shall be designed to prevent splashing of slurry from the launders. 7.3.3 The pipes downstream to the underflow and overflow launders shall be flange connected.					
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		8. GENERAL:			
		8.1 All the fastners such as anchor bolts, nuts, washers and other associated components for mounting of hydrocyclone system shall be under vendor scope.			
		8.2 The mounting details of the system shall be shared along with the offer.			
		8.3 All the companion flanges for the hydrocyclone system shall be in the vendor's scope.			
		8.4 Vendor should furnish the list of recommended commissioning / operational spares of the hydrocyclone system with prices along with the offer.			
		8.5 Vendor shall furnish technical data as per Annexure I and GA drawings along with the offer.			
		8.6 Supervision for commissioning shall be included in this scope. This shall be 7 mandays. This amount to be quoted separately. This will be paid on receipt of site certification for completion of activity.			
		9. INSPECTION AND TESTING REQUIREMENTS:			
		9.1 Inspection and quality shall be done as per BHEL/customer approved quality plan.			
		10. PACKING:			
		10.1 The hydrocyclone system shall be packed in closed wooden cases to prevent damages during transit and storage at BHEL.			
		10.2 The flanged openings shall be protected properly to prevent entry of foreign matter.			
		10.3 Rain water should not enter into the internals during storage in the outer yard of the installation site			
		11. PAINTING:			
		11.1 SURFACE PREPARATION : Power Tool Cleaning to St3 (SSPC-SP3)			
		11.2 PRIMER COAT:			
		11.2.1 PRIMER: Red Oxide Zinc Phosphate Primer to IS:12744 (Two coats) DFT 60 microns.			
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