



## DALMIA CEMENT (B) LIMITED – ARIYALUR



### MECHANICAL

Issue No. 01	Rev. No: 02	Effective Date: 17.10.2017	SOP/MEC/103
Issued By: M.R		Approved By: HOD Mechanical	
SOP for Roller and Roller Bearing Replacement			

**Scope: Roller and Roller Bearing Replacement**

**Responsibility: Section Engineer**

**Accountability: Mechanical-Section Incharge**

**PPE:**

1. Safety helmet,
2. Safety shoe,
3. Hand gloves.
4. Nose Mask

**TOOLS:**

1. Box spanner set.
2. Ring spanner set.
3. Puller
4. Feeler Gauge
5. Manila / Nylon rope.
6. Chain block
7. Puller
8. Torque Wrench
9. Jacks & Pumps

**Hazard Analysis:**

**Risks associated:** : Mitigating Measures

**Body Injury** : Use proper tools and tackles

### **SOP for the Roller and Roller Bearing Replacement**

#### **SOP FOR MAINTENANCE OF ROLLER AND ROLLER BEARING REPLACEMENT**

- a. Take electrical shutdown permit of Mill Main drive, roller hydraulic, Gear box lubrication, bag house fan and classifier with LOTO system.
- b. The Permit Paper should be with the person who is responsible for the job.



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- c. Trained Worker will be engaged for working with related PPE's.
- d. Take Confined permit from respective department to work inside the mill.
- e. Open the mill door to cool inside the mill.
- f. Clean the table by labor by wearing nose mask to avoid respiratory problem.
- g. Lift the central column of the table and put arm to three roller
- h. Remove the Inner roller stop and cover of the roller so that the pressure frame will isolate from the three rollers.
- i. Remove the seal air pipe to isolate it from roller.
- j. Cut the grit cone little bit to place the pressure frame to lift
- k. Get line clearance for Roller hydraulic alone to lift the pressure frame
- l. During lifting of pressure frame, ensure that nobody is in mill inside.
- m. After pressure frame lifted to maximum height lock the pressure frame by holding pin
- n. Get the line clearance for roller hydraulic
- o. Cover the piston extruded position so that the pressure frame not fall.
- p. Then erect the lift and swing system outside the mill to take out the roller.
- q. Please rotate the table by auxiliary drive to take out the roller.
- r. Roller must be seat on the box of the lift and swing system and place sling of the lift and swing system to the roller.
- s. Rotate the lift and swing system and put the sling and hook of the EOT crane to take the roller out
- t. Slowly lift the roller by EOT crane and place the roller out.



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- u. Release the sling and hook of the EOT crane.
- v. Open the top cover of the roller
- w. Check the seal of the roller if damages change with the new one.
- x. Check the bearing condition. If requires change the new one.
- y. Tighten the bolt of the top cover of the roller.
- z. Lift the roller by putting sling and hook of the EOT crane.
- aa. After lifting place the roller on the box of the lift and swing system and rotate. So that roller will placed inside the mill.
- ab. Then rotate the roller for the original position
- ac. Remove the pin holding of the pressure frame.
- ad. Get the line clearance for the roller hydraulic and down the roller and align the pressure frame and the roller
- ae. Take the shutdown permit of roller hydraulic
- af. Put the inner roller stop and cover of the roller
- ag. Maintain the degree of the roller by putting jack.
- ah. Close the door of the mill
- ai. Get the line clearance of Mill main drive, roller hydraulic, Gear box lubrication, bag house fan and classifier.
- aj. Informed to CCR person to take trial.

**Emergency / Emergency Shut OFF:**



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If any injury takes place, provide First aid and inform to the Safety department or Call Emergency number 3108/9865152222

### Records/Annexure:

1. Refer Line clearance certificates.
2. JSA as enclosed below.

S L N O	ACTIVITY	ISOLATION TYPE	TAG /NAME OF THE EQUIPMENT							
			ELECTRICAL ENERGY					OTHER ENERGY		
1	RAW MILL ROLLER AND ROLLER BEARING REPLACEM ENT	NAME AND TAG FOR THE EQUIPMENT	361MD2 MILL MAIN DRIVE MOTOR		361SR1 CLASSIFIER		361FN3 RAW MILL FAN		361AD1 AUXILIARY DRIVE CHAIN TO BE DE- LINKED	331MW1 ENSURED FLAP IN REJECT SIDE AND AIRLINE FOR CYLINDER SHOULD BE DEPRESSURIZE D
			361RV1 TRIPLE FLAP GATE		371SD3 RAW MILL BOOSTER FAN COMMON DAMPER		361LD4 HOT GAS INLET LOUVER DAMPER (IN CLOSED CONDITION)			
			361SD2 HOT GAS INLET SHUT-OFF DAMPER (IN CLOSED CONDITION)		361LD5 RAW MILL FAN OUTLET LOUVER DAMPER(IN CLOSED CONDITION)		361HD1 RAW MILL HYDRAULIC SYSTEM(AF TER PRESSURE FRAME POSITION)			



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<b>Job Safety Analysis</b>	Job: Reject Flap Maintenance	Date: 15/10/2014	Analysis by: Section Engineer	Reviewed by : Section Head
Title of employee doing job: Engineer	Supervisor: Section Incharge	Department: Mechanical.	Section: Raw Mill	Approved by: HOD Mech.
Req'd/recommended PPE:				
Sequence of Basic Job Steps	Potential Hazards	Recommended Safe Job Procedure	What Could Go Wrong	Corrective Action
Open & Close the inspection Door	Hand injury	Use proper tools Lifting tools	Tools may slip	Ensure proper tools & tackles in usage
Center Column lifting and arm fixing	Body injury	Use proper tools Lifting tools	Material may slip	Ensure the person Lifting the material as per lifting procedure
Inner stop and Pin Removal	Body injury	Use proper tools	Tools may slip	Ensure the person Skilled person for removal of inner stop and pin
Grit cone cutting work	Hand and Leg injury	Remove the cutting Pieces with Gloves	Cutting piece fall on Hand and Leg	Use Skilled cutter & Lifting person
Erection of lift and swing assembly	Hand injury	Use proper tools Lifting tools	Tools may slip	Ensure proper tools & tackles in usage
Roller get down through EOT crane	Body injury	Use proper tools Lifting tools	Material may slip	Ensure the person Lifting the material as per lifting procedure



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Roller top cover removal	Hand injury	Use proper tools	Tools may slip	Ensure proper tools & tackles in usage
Bearing and Seal Replacement	Hand injury	Use proper tools bearing & Seal replacement	Tools may slip	Ensure proper tools & tackles in usage
Roller assembly work	Hand injury	Use proper tools for assembly	Tools may slip	Ensure proper tools & tackles in usage
Roller lifting for position	Body injury	Use proper tools Lifting tools	Material may slip	Ensure the person Lifting the material as per lifting procedure
Inner stop and pin fixing work	Hand injury	Use proper tools fixing	Tools may slip	Ensure proper tools & tackles in usage
Maintain Degree of the roller	Body injury	Use proper tools for pushing roller	Tools may slip	Skilled person required for roller degree setting