



DALMIA CEMENT (B) LIMITED – ARIYALUR



MECHANICAL SOP

| | | | |
|----------------|-------------|-----------------------------|-------------|
| Issue No. 01 | Rev. No: 02 | Effective Date: 17.10.2017 | SOP/MEC/097 |
| Issued By: M.R | | Approved By: HOD Mechanical | |
| HAMMER CRUSHER | | | |

Scope:

This SOP is applicable for hammer crusher maintenance work.

Responsibility : Section Engineer – Mech

Accountability : Section head – Mech

PPE:

1. Helmet,
2. Safety shoe,
3. Goggles
4. Gloves.
5. Nose mask
6. Full body harness

Tools:

1. Spanner set
2. Hammer

Hazards:

Risks associated

1. Body injury
2. Leg injury
3. Hand injury

Mitigating Measures

1. Safe and tested tools and tackles
2. On job training



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Isolation matrix:

| Sl: No | Activity | Description | Electrical Energy | | | Other Energy | |
|--------|----------------------------|--------------------------------|--|---|--|---|----------------------------------|
| 1 | Hammer crusher maintenance | Name and Tag for the Equipment | (471CC1) Hammer crusher & Cooler water spray pump (471WP1) | Cooler all fans (471FN1 to 471FN7) | Cooler all four drives & water pump | Inlet air blasters Compressor air Valve to be Closed & locked | Air in the Header to be released |
| | | | Primary Air fan 481FN2&3 | (461KL1) Kiln main drive | (461AD1) Kiln aux | Hydraulic line pressure to be made zero | |
| | | | (431MD1&MD 2)Ph bucket elevator | Kiln (481BL1) and pc (451BL1) & Standby blowers | Pre-heater (441FN1) and ESP fan (471FN8) | Cooler water spray pump valve closing after line made zero | |

SOP for the Maintenance of Hammer Crusher.

1. Take the energy isolation permit for the as per the isolation matrix.
2. Take work permit for the work area with the relevant department and allow the people to work.
3. Remove all inspection doors of the upper grate.
4. Ensure 24 V Supply for proper lighting.
5. Ensure coating in the top casing if so remove and then take the job



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6. Use PPE'S while working.
7. Check the condition of hammers for wear and tear.
8. Check the condition of the casing liners for wear and tear.
9. Ensure proper tightening of all the internal fasteners.
10. Check the condition of both drive and non drive bearings.
11. Check the condition of the v belt for any looseness.
12. Check the condition of the pulleys for wear and tear.
13. Ensure shaft end sealing condition if not provide proper sealing arrangement.
14. Check the grizzly bars condition for any damage.
15. After checking and tightening of all the internals close the inspection doors.
16. Remove all unwanted and scraps material from the area.
17. Cancel the line clearance for operation.

Emergency / Emergency Shut OFF:

1. If body injury is there, First aid will be given and inform to the Safety department or Call Emergency number 3108/9865152222.

Records/Annexure:

1. Refer Line clearance/permit in mech department.
2. JSA is enclosed below.



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JOB SAFETY ANALYSIS :(JSA)

| Job Safety Analysis | Job: | Date: 15/10/2013 | Analysis by: Section Engineer | Reviewed by: Section Head |
|---|-----------------------------|--|--|--|
| Title of employee doing job: Section Engineer | Supervisor: Section Head | Department: Mechanical | Section: PYRO | Approved by: HOD Mechanical |
| Req'd/ recommended PPE: Safety helmet, Safety shoe, Gloves, Goggles, Gloves, Nose mask & Full body harness | | | | |
| Sequence of Basic Job Steps | Potential Hazards | Recommended Safe Job Procedure | What Could Go Wrong | Corrective Action |
| Opening of the cooler doors | hand injury | Use proper tools and tackles so that fasteners will not slip | Fasteners may slip and tools may hit to the hand and leg | Ensure Use/working condition of TOOLS AND TACKLES. |
| Remove the clinker coating/ boulders & check the condition | Health injury | Use goggles & nose mask & 24 V lights | Dusty area (Clinkers fines) may leads to suffocation & eye problem | Ensure Use of goggles & nose mask. Use 24 V lights for working |
| Inspection of hammer, disc, liner wear & tear condition with the use of ladder from cooler/ planks from the discharge chute | Hand or leg injury | Planks & ladder should be in good condition | Persons may slip | Use of certified ladder & full body harness |
| Tightening of the loose fasteners and Closing of the door | hand injury | Use proper tools and tackles so that fasteners will not slip | Fasteners may slip and tools may hit to the hand and leg | Ensure nobody inside & remove all tools & tackles & Scraps from inside and Use/working condition of TOOLS AND TACKLES. |