



DALMIA CEMENT (B) LIMITED – ARIYALUR



MECHANICAL SOP

| | | | |
|---|-------------|----------------------------|-------------|
| Issue No. 01 | Rev. No: 02 | Effective Date: 17.10.2017 | SOP/MEC/065 |
| Issued By: M.R | | Approved By: | |
| S.F. COOLER STATIONARY CROSS BAR REPLACEMENT. | | | |

Scope:

This SOP is applicable for S.F. Cooler cross bar replacement safely.

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 | SF Cooler cross bar replacement | Name and Tag for the Equipment | Cooler all four drives | Cooler all fans (471FN1 to 471FN7) | (471CC1) Hammer crusher & Cooler water spray pump (471WP1) | 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& MD2)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 | |

S.F. Cooler Stationary cross bar replacement

1. Energy isolation of the equipment to be taken from the concern department as per above matrix.
2. Ensure use of PPE & dust masks etc
3. Take Confined Area work permit from the safety department and process
4. Open the doors of cooler.
5. Arrange proper lightening inside the cooler.(24 v)
6. Clean the clinker bed of the cooler and put it into the circuit.
7. Use manual pumps or funnel for filling or draining the oil to reduce the oil spill.
8. Remove the locking wedges & spring pins from cross bar retainer bracket
9. Remove the retainer bracket.
10. Remove the Cross bar.



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11. Fix the new cross bar on the position.
12. Fix the retainer bracket.
13. Fix the wedges in position.
14. Measure the gap between stationary cross bar & U-profile (2 to 6mm)
15. Drill the locking wedges by hand drilling machine (drill size-8mm)
16. Fix the new spring pins of 8mm
17. Remove all old item & return back into stores.
18. Clear all LC's & Return the work permit.
19. Take trail of the cooler & check the cooler in operation.

Emergency / Emergency Shut OFF:

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

JOB SAFETY ANALYSIS :(JSA)

| Job Safety Analysis | Job: Cooler Cross bar repalcement | Date: 01/09/2014 | Analysis by: Section Engineer | Analysis by: Section Engineer |
|---|-----------------------------------|--|--|--|
| Title of employee doing job: Section Engineer | Supervisor: Section Head | Department: Mech | 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. |



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|--|---------------------|---|--|---|
| Clean the clinker bed & 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 |
| Removing of locking wedges, spring pins & retainer bracket | Leg and hand injury | Use proper tools and tackles for safe removing | Fasteners may slip and tools may hit to the hand and leg. | Ensure Use/working condition of TOOLS AND TACKLES. |
| Replacement of cross bars | hand injury | Use hand gloves | Worn out profile sharp edges may injure the fingers | Ensure Use of hand gloves |
| Fixing of retainer bracket, locking wedges, spring pins | Leg and hand injury | Use proper tools and tackles for safe fixing of | Fasteners may slip and tools may hit to the hand and leg. | Ensure Use/working condition of TOOLS AND TACKLES. |