



## DALMIA CEMENT (B) LIMITED – ARIYALUR

### MECHANICAL SOP

Issue No. 02	Rev. No: 00	Effective Date: 01.11.2019	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. <b>Use 24 V lights for working</b>
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.