



DALMIA CEMENT (B) LIMITED – ARIYALUR

MECHANICAL SOP

Issue No. 02	Rev. No: 00	Effective Date: 01/11/2019	SOP/MEC/040
Issued By: M.R		Approved By: HOD Mechanical	
KILN			

Scope:

This SOP is applicable for kiln inlet segment and lip plate replacement safely.

Responsibility : Section Engineer – Mechanical

Accountability : Section head – Mechanical

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

Procedure:



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1. Take the Energy isolation permit as per the isolation matrix
2. Ensure use of PPE & dust mask etc.
3. Ensure the closing of all cyclone feed pipe sluice flaps.
4. Open all the inspection doors of Kiln inlet & cooler.
5. Make a dummy at kiln inlet to avoid any dust/material entry.
6. Remove the castable on the lip plate and segments (kiln to be positioned at the bottom for the segment castable replacement)
7. Cut the locking blocks by means of gas cutting & remove the lock blocks.
8. Dismantle the Inlet lip plate 16 no's segments
9. Fix the new segments with locking blocks and after SS anchor welding give clearance for castable.
10. Scaffolding to be done in the kiln inlet up to center without touching the rotating part of the kiln. (Competent person to be certified the scaffolding)
11. Replace the segments in the approachable area of the horizontal position in both sides.
12. Tighten the segment bolt with torque 600 Nm.
13. Take the kiln position for all the segments and repeat the same procedure.
14. After tightening weld the nut from outside with 7018 electrode.
15. Weld the SS anchors on the segments.
16. Release the segments for castable work.
17. After castable work, inspect the area and close the kiln inlet door.

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.



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Records/Annexure:

1. Refer Line clearance/permit in mech department.

JSA is enclosed below

JOB SAFETY ANALYSIS :(JSA)

Job Safety Analysis	Job:	Date: 01/09/2014	Analysis by: P.ADHAVAN	Reviewed by: G.SHANKARAPPA
Title of employee doing job: Section Engineer	Supervisor: Section Head	Department: MECH	Section: PYRO	Approved by:
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 kiln inlet door.	Leg and 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.
Inspect the kiln inlet segments by clearing the material accumulation at the Segments.	Health injury	Use goggles & nose mask	Dusty area (Clinkers fines) may leads to suffocation & eye problem	Ensure Use of goggles & nose mask
Rotate the kiln to take the position	Health, Leg, hand & body injury	Use goggles & nose mask	During rotation dust emission will be there may leads to suffocation	Ensure nobody was inside before position of kiln
Clean the material at the fastener	Health injury & hand injury	Use goggles, nose mask & proper tools	Fines may injure the eye Sharp edges in the fastener may injure the fingers	Ensure Use of goggles & proper chipping tools or wire brush



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Scaffolding in kiln inlet and segment replacement	Leg and hand injury	Use proper scaffolding material and full body harness	Person may fall / scaffolding may collapse	Ensure the proper scaffolding material, certification by competent person and usage of full body harness
Open and remove the damaged segments	Leg and 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.
Clean the area where new segments are to be fixed.	Health injury & hand injury	Use goggles, nose mask & proper tools	Fines may injure the eye Sharp edges in the fastener may injure the fingers	Ensure Use of goggles & proper chipping tools or wire brush
Fix the new segments	Leg and 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.
Close the kiln inlet door after castable work	Leg and 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. Ensure tools & tackles are removed & nobody inside before closing

Isolation matrix:

Sl: No	Activity	Description	Electrical Energy			Other Energy	
1	Kiln inlet segments & lip plate replacement	Name and Tag for the Equipment	431MD1&M D2)PH bucket elevator	Cooler all fans (471FN1 to 471FN7)	Preheater (441FN1) and ESP fan (471FN8)	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	Kiln DG clutch to be locked	Dummy to be provided in feed pipe of kiln



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			<i>Kiln (481BL1) and pc (451BL1) & Standby blowers</i>	<i>Cooler all four drives</i>	<i>(471CC1) Hammer crusher</i>		<i>inlet</i>
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