



## DALMIA CEMENT (B) LIMITED – ARIYALUR



### MECHANICAL SOP

Issue No. 01	Rev. No: 02	Effective Date: 17.10.2017	SOP/MEC/086
Issued By: M.R		Approved By: HOD Mechanical	
PREHEATER			

#### Scope:

This SOP is applicable for Dip tube maintenance work

**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



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### Isolation matrix:

Sl: No	Activity	Description	Electrical Energy			Other Energy	
1	Dip tube maintenance	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 above & below feed pipe
			Kiln (481BL1) and pc (451BL1) & Standby blowers	Cooler all four drives	(471CC1) Hammer crusher		

### SOP FOR Cyclone Dip Tubes Maintenance / Replacement

1. Take the energy isolation permit as per the above matrix.
2. The line clearance paper should be with the person who is working in the site.
3. Take the confined work area with the relevant department and allow the people to work.
4. Use PPE'S while working.
5. Open the entire Inspection door
6. Provide 24 v Lighting supply inside the cyclone



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7. Ensure sufficient light inside the cyclone
8. Check coating material if any inside the cyclone before taking the job. If so remove and then start the job
9. Provide exhaust fans if required to avoid suffocation.
10. Arrange staging material up to the dip tube area for safe working.
11. Ensure proper tightness of fixtures of the staging material and then enter to the dip tube area for checking.
12. Check the condition of the dip tube segments and its hanging fasteners thoroughly and if found wear or damage changes the segments one by one by taking utmost care to avoid fall of material while lifting and removing the segments.
13. After completion of the work remove the staging material one by one to avoid collapsing of the staging material.
14. Remove all damaged segments as well as scrap material, including staging material from the area.
15. After completion clear the line clearance.

### 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.

JSA is enclosed below



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### JOB SAFETY ANALYSIS :( JSA)

<b>Job Safety Analysis</b>	Job:	Date: 01/09/2014	Analysis by: Section Engineer	Reviewed by: Section Head
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 cyclone doors	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.
Dummy fixing in feed pipe	Leg and hand injury	Use full body harness in the height job	Person may fall from height	Ensure certified full body harness
Lighting	Health injury	Use 24V lights only	If other 24 Volts Person may lead to shock accident if short circuiting happen	Ensure 24 volts use
Scaffolding work	Leg and hand injury	Use proper scaffolding material and full body harness. Provide safety net at the bottom Use ladder to climb in the scaffold	Person may fall / scaffolding may collapse	Ensure the proper scaffolding material, certification by competent person and usage of full body harness.
Clean the area where new dip tube segments 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
Replacement of the new dip tube 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.



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Removing of scaffolding & dummy	Leg and hand injury	1.Use full body harness 2.Remove the scaffolding in reverse order	1.Person may fall from height 2.Removing of clamp in bottom leads to scaffolding collapse	1.Ensure certified full body harness use 2.Ensure the dismantling procedure correctly
Closing of the cyclone 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.