



DALMIA CEMENT (B) LIMITED – ARIYALUR



MECHANICAL

Issue No. 01	Rev. No: 00	Effective Date: 20.02.2017	SOP/MEC/138
Issued By: M.R		Approved By: H.O.D MECHANICAL	
SOP-RABH SANDBLASTING & ALUMINIZING WORK			

Scope: RABH Sandblasting work

Responsibility: Section Engineer

Accountability: Mechanical-Section Incharge

PPE:

1. Safety helmet,
2. Safety shoe,
3. Hand gloves.
4. Nose Mask
5. Blasting Face Shield

TOOLS:

1. Box spanner set.
2. Ring spanner set.
3. Manila / Nylon rope
4. Scaffolding Pipes
5. Arc Spraying Machine
6. Rubber Hose 2"
7. Hopper
8. Sieves

Hazard Analysis:

Risks associated	: Mitigating Measures
Body Injury	: Use proper tools and tackles
Face Injury	: Use Proper Shields



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SOP FOR RABH SANDBLASTING WORK

1. Isolate the chamber by closing inlet damper and Lock dampers mechanically for which Sandblasting needs to be done
2. Close the reverse poppet & outlet poppet valve also and Lock dampers Mechanically
3. Open the chamber inspection/manhole doors at bottom side.
4. After ensuring cold condition of the chamber, Start the Job
5. Remove all the bags from the chamber and also empty the Hopper, close the Hopper Slide Bottom Slide Gate
6. Clean the Entire Chamber Tube Sheet
7. Provide three Exhaust Fans on all three inspection doors for Venting out the blasted Dust
8. Use Only 24 Volts Lamp for illumination inside chamber
9. Provide Scaffolding as per DCBL Scaffolding Standard if required
10. Sandblasting can be carried out either by Sand or Copper Slag
11. Use Proper Sizers/Sieves (Sieves Should be as per Swedish Standard) for removing the dust and Separating Coarse Particles from the copper slag or sand
12. After Proper Sizing Fill the Collected Dust in the Hopper Unit
13. Connect First Rubber Hose to Compressed air Supply and Second Rubber Hose (Blasting Hose) in bottom of Hopper and lay Outlet Hose of Hopper properly to the workplace
14. Sandblasting Should be Carried out at a compressed air pressure of 100PSI or 6.5 bar
15. Sandblasting Material Removal Rate and Thickness should be done as per Swedish Standard
16. After Carrying Out Sandblasting ,Use Electric Arc Spray Machine and Gun,Aluminium Wire for Aluminizing Work
17. Connect compressed air supply of 4 bar to metal Spray Gun for Proper Thermal Spray of Aluminum coating and Bonding



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- 18 Carry out Aluminum Spray Coating to Required Thickness (general Thickness 175-200 micron) coating thickness can be controlled by number of passes of metal spray
19. Measure the Thickness of Coating of Aluminizing by Alco meter and Note the Values
20. After Completing Aluminizing, apply one of Coat Heat Resistant Paint to metal sprayed area
21. Clean the Tube Sheet after Completion of Job to Remove Copper Slag/sand
22. Refix the entire chamber bags, clamps and apply proper Tension
23. Open the inlet, outlet & reverse poppet valves for putting the chamber to normal operation
24. Intimate the CCR personnel



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SOP-RABH SANDBLASTING & ALUMINIZING WORK

Sequence of Basic Job Steps	Potential Hazards	Recommended Safe Job Procedure	What could go wrong	Corrective action
Close the inlet manual damper	Injury in hand	Use proper PPE	Injury by slip of chain	Allot trained workers to close the inlet damper
Closing the poppet valves	Release of pressurized air	Lock the poppet valve by mechanical stopper	Sudden release of poppet valves while working	Arrest the pneumatic valves
Open the chamber	Fall of door & injury	Use proper PPE & tools	Impact of door on workers while opening	Use crow bars for opening
Crew entry	Poor visibility	Ensure illumination more than 50 lux to ensure clear vision while working at night.	Less illumination-Strain for workers	Use 24V light
During working chamber	Fall of material (bag)	Ensure that there is no simultaneous working is done below and ensure proper virtual barrication while bag is being lifted	Bag falling over worker	Tie the end of the bag with proper locking system in the top
Sandblasting	Face Injury	Use Proper Face Shield to protect from Injury	Dust Fumes may Hit worker Face	Engage only Trained personnel and provide exhaust fan
Aluminizing	Face Injury and Hand Injury	Use Proper Face Shield and Proper Leather Gloves to avoid heat	Spraying Fumes may Hit Face and Heat Sprayer may affect Hand or Palm	Engage only Trained personnel and Hold Sprayer in handle area only
Tensioning the bag	Leak of clamp	Ensure proper clamping	Hit of pressurized hose	Fasten the hose with the tensioning tool with proper clamps
Closing the doors	Fall of door & injury	Use proper PPE & tools	Impact of door on workers while closing	Use crow bars for opening
Release the air pressure & open the inlet & poppet valves	Hit of pressurized hose	Clamp the hose & release the air	Sudden release of air on workers	After fastening the hose release the hose slowly