

FIVE WHY ANALYSIS

Problem Description	Potential causes										4M	Actions	
	Why (1)	Check	Why (2)	Check	Why (3)	Check	Why (4)	Check	Why (5)	Check		PREVENTIVE ACTION	CORRECTIVE ACTION
CL3 Defects Increased (CTB and CBB defects)	Barrage Flushing done	Yes	No abnormalities found and reinstalled the same	No									
	AG3 Fingers Condition checked	Yes	No abnormalities found	No									
	AG4 stirrer condition checked	Yes	No abnormalities	No									
	Checked all the water cooled equipments condition	Yes	Doghouse cooler & AG4 fingers removed and checked	Yes	No Abnormalities	NO							
	Barrage inspection done after submerging it in glass	Yes	Small bubble pop-up found during barrage immersion	Yes	Barrage removed, Hydro test done and observed pin holes, reduction in pressure	Yes	Leak point were identified and New barrage replacement done	yes			Machine	Hydrotest done for all water cooled equipments from Vendor side & in process side and also the life time of water cooled equipments declared as one year.	Inspection of barrage & replacement of barrage done
	Working end	Yes	Working end pressure and air flow and blower are checked found normal	No									

5 Whys

In 2024

Failure mode	Potential causes									7M (Mother Nature, Man-Operator, Man-Management, Machine, Method, Material, Measure)	Actions					
Defect Root cause analysis	Why (1)	Cause?	Why (2)	Cause?	Why (3)	Cause?	Why (4)	Cause?	Why (5)	Cause?	Actions to confirm hypothesis	% completion	Corrective action	Preventive Action	Who?	When?
Band of Class-3 defects in LHS	Barrage	y	water quality is not good	Y	Due to turbidity increase in water	Y	may leads to water leak in the metallic structure	N			Barrage was taken out	100%	New Barrage Replaced			
										4. Machine			Barrage & all other water cooled equipments replaced within one year.	Functional Team	Yearly once	
		y	Barrage age is more than 1 year	Y	Due to non availability of spare barrage, 8 months old barrage is reinstalled on Aug'23	Y	may leads to water leak in the metallic structure	Y			6. Material (specificaito ns)					
	AG4	y	AG4 Stopped	Y	AG4 stopped and new one replaced	Y	Pressure drop in hydro test	N								
Y		Y		Taken out the new AG4	Y	Resistivity checked and found (>0L)	Y	Carbon free hose replaced to reduce the resistivity		6. Material (specificaito ns)		Carbon free hose replaced	Carbon free hoses to be installed in all the equipments which is contact with molten glass	Functional Team	Based on the condition	