SAINT-GOBAIN	STANDARD OPERATING PROCEDURE	Doc. No: SGC-FL5-BF-SOP-112
		Rev.No: 01
	MINI BARRAGE INSERTION	Date: 13/02/2025
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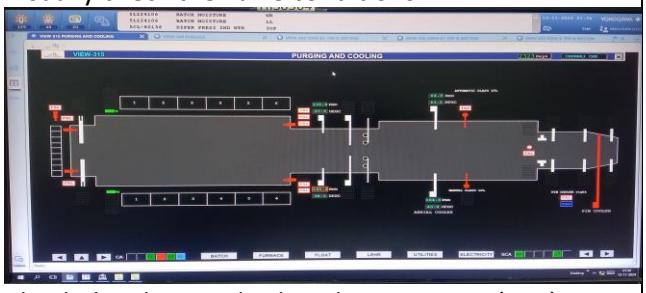
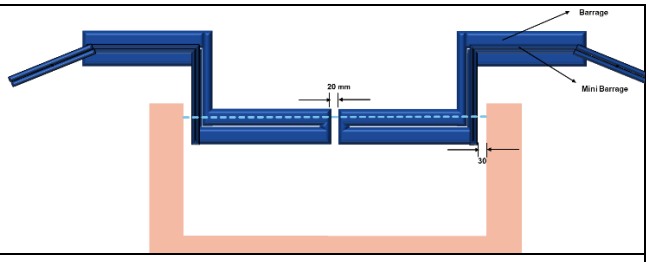
1.0 Scope	2.0 Resource Required
1.1 Purpose: The Mini barrage is a water- cooled equipment inserted from both sides in the neck of furnace. The mini barrage is used to prevent any flow of glass between the tank and the barrier causing premature corrosion. **1.2 Area of Application:** Neck **1.3 Responsibility:** Shift engineer & Manager/team members of hot end/Functional team	**2.1 Man:** Furnace field person **2.2 Machine :** Mini Barrage **2.3 Material:** There are three sizes of Barrage available (350- and 450-mm and 500 mm height) They are used based on the pull and tint.
3.0 Terms and Definition	**4.0 Key Performance Requirements**
3.1 Water flow **3.2** Water temperature **3.3** Mini Barrage body temperature	**4.1 Quality** Water temperature No leakage **4.2 EHS** No prolong heat exposure to the person. **4.3 Customer Spec/Internal requirement: SC/CC/OC – OC** ***Significant Characteristics(SC), Critical Characteristics (CC), Other Characteristics (OC)
5.0 Continual improvement – WCM Practices	**6.0 Competency Enhancement**
5.1 Refer Quick Kaizen sheet (SGC-FL5-BF-FOR-10) **5.2** Refer OPL sheet (SGC-FL5-BF-FOR-4)	**6.1** MKT2 : Furnace module

7.0 Procedure	
7.1 Sequence of Operation	
7.1.1 Two persons needed for barrage taking in or taking out & to be done very slowly. Additionally, an Electrician to be present to help in case there is problem in connection midway.	Slowly push in or out as per required during electrical motor failures
7.1.2 Mini Barrage connected with the Barrage so Barrage has to be Installed in trolley to assemble the mini barrage	
7.1.3 Mini barrage must be positioned upstream of the barrage and the wedges to be fixed properly.	

7.1.4 Ensure there is no gap between barrage and mini barrage as shown in the picture	
7.1.5 Connect the fittings required for the mini barrage to connect the water hose	
7.1.6 The mini barrage Diameter is 1 ¼" and our water pipeline diameter is 1 ½" so reducer to be installed in the mini barrage to connect the cooling hose (Fittings picture added for the reference).	
7.1.7 Measure the resistivity of Mini barrage with hose and without hose.	
7.1.8 Ensure that the mini barrage cooling hose is carbon free hose.	
7.1.9 Ensure hooter working condition by closing the inlet water valve. After hooter checking open the water valves.	Visually check the valve conditions.  Check the alarm is displayed in DCS Page (315) – Purging and cooling.
7.1.10 Insert the Mini barrage along with the barrage as per **SGC-FLC-BF-SOP-16**	
7.1.11 During the immersion in glass one person must verify the immersion in glass by looking through working end peephole. The barrage body should be visible above the glass melt by 25mm.	

7.1.12 Ensure the gap between barrage and tank sidewall. It should be 30mm or below to minimize the corrosion. And ensure the Penetration measurement scale value it should be same as reference value.	
7.1.13 Repeat the same on the other side.	
7.1.14 Check the Water flow, Temperature and Mini barrage body temperature before and after installation	By physical checking
Removal of Mini Barrage **7.1.15** Mini barrage is removed along with the Barrage so refer barrage insertion and removal SOP (SGC-FL5-BF-SOP-08) for removing the mini barrage.	
7.1.16 Mini barrage is removed using the LCS panel remote control. After removing the mini barrage & barrage fully out.	
7.1.17 Keep the cullet collection tray below the Barrage	
7.1.18 Lower down the barrage fully and close the door with ceramic boards.	
7.1.19 Remove the Mini barrage wedges to remove the Mini barrage from the barrage setup	
7.2 Special Process Requirements	
7.2.1 After barrage insertion / after barrage removal WE & PB temp will change drastically, need to adjust WE air flow accordingly	
7.3 Prevention & Detection Controls	
7.3.1 Mini Barrage water flow >50Nm3/hr. –to be checked for any flow alarm(Super critical alarm for Mini Barrage Low flow cooling water Left & Right) **7.3.2** Mini Barrage Water temperature – 32 to 36 deg C (Based on water temperature) **7.3.3** Mini Barrage body temperature ~45 deg C	
7.4 Controls Related to EHS	
7.4.1 PPE MATRIX	

				
Goggles	**Safety shoe**	**Hand gloves**	**Fleece top**	**Face hood**

8.0 EHS Compliance Obligations

8.1 Mini *Barrage must have been hydrotested @6bar by authorized people/Vendor & Process team*

9.0 Possible deviation & Impacts	10. Proposed actions
9.1 Mini Barrage water leakage in welding points	**10.1** Mini Barrage should be procured from DTI Authorized supplier (PEG – Projects Engineering Groups)
9.2 Barrage position after immersion not checked will lead to gap more in between the sidewall and barrage	**10.2** Scale measurement and stopper position to be checked after insertion of barrage and mini barrage

11. Reference documented information

11.1 SGC-FLC-BF-SOP-08 – Barrage Insertion and Removal

11.2 Barrage Operation Best Practice **(SGG-55-3414-01-D)**

12. Revision History

Revision No.	Date	Description of changes	
00	23/11/2024	New SOP Created	
01	13/02/2025	QCP Changed with CC/SC/OC	
	Prepared By	Reviewed By	Approved By
Name	Divya D	Sandeep Kumar	Kesavan D
Designation	Team member- Batch & Furnace	TL Batch & Furnace	Team Leader – Hotend
Date	13/02/2025	13/02/2025	13/02/2025