



# BULLSEYE

**GLASS CO**

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July 15, 2016

Dave Kauth  
Oregon Department of Environmental Quality  
Northwest Region  
700 NE Multnomah St, Suite 600  
Portland, OR 97232-4100

RE: Furnace Cleaning

In June 2016, Bullseye responded to section 22.F of the Mutual Agreement and Final Order in a timely manner. Bullseye provided written procedures describing the processed to clean difference furnace equipment. Based on your comments and suggestions, Bullseye edited the procedures to clarify specific steps. The revised procedures are attached.

Bullseye has been cleaning furnace equipment on a regular basis. Cleaning is necessary for the proper operation of the furnaces. Bullseye will continue the regularly scheduled furnace cleaning.

In addition to the regular furnace cleaning, Bullseye will perform augmented cleaning of specific furnaces. We will start with uncontrolled furnaces that we plan to operate and are currently using (or used in the past) metal HAPs. The stack cleaning SOP has two brush strokes in the routine cleaning cycle. We will repeat this cycle several times for the cleaning session planned for 07/23/2016 and 07/30/2016, and will continue this augmented cleaning as necessary.

Bullseye Glass is installing pollution control devises on several furnaces. By September 1, 2016, seven furnaces will remain uncontrolled. Tanks 15 and 16 have not had metal HAPs processed in them. The other uncontrolled furnaces will have received augmented cleaning by the end of July 2016.



CONNECTIONS

A Glassworking  
System

Furnace	Notes	Pollution Control	Galvanized Pipe -- Extra Scrub
T1		BHW by 9/1/16	
T2		BHW by 9/1/16	
T3	Re-Bricked & Ready, Cold	BHW by 9/1/16	
T4		BHW by 9/1/16	
T5	11/4/2016 Scheduled Take Down		7/23/2016
T6	12/22/2016 Scheduled Take Down		7/23/2016
T7		BH-1	
T8		BHW by 9/1/16	
T9		BHW by 9/1/16	
T10		BHW by 9/1/16	
T11		BH-2 by 9/1/16	7/30/2016
T12	7/22/16 Scheduled Take Down		N/A
T13	Re-Bricked & Ready, Cold		scrubbed
T14	Re-Bricked & Ready, Cold	BHW by 9/1/16	
T15	Never had HAPs, being re-bricked		
T16	Never had HAPs		
T17		BHW by 9/1/16	
T18		BHW by 9/1/16	
T19	There is no tank #19		
T20		BHW by 9/1/16	
T21	8/18/16 Scheduled Take Down		7/23/2016

We would appreciate your approval of the revised procedures. If you have any questions, or need any additional information, please do not hesitate to contact me.

Sincerely,  
BULLSEYE GLASS COMPANY



Eric E. Durrin  
Controller

Attachments

# Stack Cleaning

Bullseye Glass Maintenance Furnace Tech SOP#0047

11-23-2015

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## Purpose:

*Maintaining appropriate pressure and draw on the furnaces by the removal of stack particulate build-up. Prevent particulate emission during the stack cleaning operations.*

## Scope:

*8" stack pipes on the tank and pot furnaces down to the square to round transition.*

## Tools and Materials:

- 2 Ladders
- Hinged stack pipe cap
- 8" Brush on a 20' pole
- Broom
- 2 Two-way radios
- Cart
- Clamp
- Damper opening cap
- Particulate Collection Box
- Vacuum (designated for particulate)
- Dust pan and whisk broom
  - Wool for flue opening/Brick
- Bungee Cord for Damper Cover
- Two ½" wrenches

## Preparation:

Two people are needed for this task, each with a two-way radio and listed PPEs.

Have the dampers and catch boxes and cleanouts cleaned out the day before.

Assemble tools and materials on the roof and production floor.

## Procedure:

1. Open pot mouth leave stopper off for the duration of cleaning, open Vent hood valve.
2. Plug flue opening with a piece of fiber wool and a refractory plug.
3. On the production floor remove the damper catch box. Vacuum out the particulate from the box and any material built up on the damper.
4. Put differential pressure sensor into manual.
5. Release the damper from the actuator. Open the damper past the refractory opening, fix into open position with a clamp.
6. Put furnace in low fire.
7. Place the particulate collection box in the stack cleanout opening. Close the clean out doors.
8. On the roof use a ladder to put the brush in the stack pipe opening. Hold on to brush at all times while in the stack to avoid breaking rods (possibly develop clamp to hold this?), slide the cap on top of stack to prevent emissions during cleaning.

## Stack Cleaning

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9. On the floor close off the damper opening with the damper opening cover, hold snug with a bungee cord. Attach vacuum to the cover.
10. Once set up is complete and it is confirmed that the vacuum is on and pulling air and particulate away from the stack outlet, communicate via radio the commencement of brushing.
11. Push brush down the stack until it reaches the transition. This can be felt by the resistance to the brush ceasing. Pull brush back to stack top. Repeat the process of pushing the brush down and pulling the brush back to the top of the stack. Signal completion to the production floor.
12. Wait for 2 minute for particulate to settle. On the roof leave Brush in the stack and the pipe cap on, on the production floor leave the stack doors shut, plug and cover in place and vacuum operating. Peep in clean out door to see if particulate has settled.
13. Signal to roof the end of the 2 minute pause.
14. On the roof remove brush and cap.
15. On the production floor, remove particulate collection box, vacuum out box and cleanout opening.
16. Remove damper cover, vacuum clean.
17. Reconnect damper arm to the actuator and put the differential pressure sensor into Auto.
18. Remove wool plug from flue.
19. Take furnace out of low fire.
20. Shut pot mouth stopper, pot mouth may be red-hot.
21. Replace particulate collection box.
22. Place stack cleaning tools in their respective storage areas. Brush and cap in roof buckets, damper cover and collection box on cart. Store brush in storage box.
23. Record cleaning in smart sheet.

### Troubleshooting:

### Hazards and PPE's:

- Leather Gloves
- Helmets with visor
- Respirator
- Regularly required PPEs (Coveralls, Boots, etc.)

### Associated Forms:

### Responsibility:

Furnace Tech

### Notes:

P:\Finance\Environmental Reporting\DEQ Annual Report -- 2016\Stack Cleaning Procedure with Pictures.docx

## Stack Cleaning

Bullseye Glass Maintenance Furnace Tech SOP#0047

11-23-2015

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Damper opening cover with vacuum hose attached

## Stack Cleaning

Bullseye Glass Maintenance Furnace Tech SOP#0047

11-23-2015

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Cleaning cap installation

## Stack Cleaning

Bullseye Glass Maintenance Furnace Tech SOP#0047

11-23-2015

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**Cleaning cap installed**

## Stack Cleaning

Bullseye Glass Maintenance Furnace Tech SOP#0047

11-23-2015

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Stack cleaning particulate catch box



# Weekly Damper and Flue Cleaning

7/11/16

**Purpose:** The procedure serves to clean out around damper plate in the stack and remove material accumulated in flue trough. A clean damper and flue trough allow the furnace to operate correctly by providing consistent flow of gasses.

**Scope:** This procedure helps maintain clearance around damper plate and to keep materials from running back into tank.

**Tools and Materials:** Blue Hazmat Vacuum, damper cleaning tool, flue hoe, Bun (10" by 12" piece of fiber wool, steel bucket and slotted flat shovel.

**PPE's:** Respirator, melting uniform, Boots, Leather gloves, safety glasses.

## Procedure:

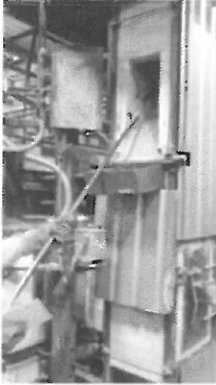
1. Loosen locking ring on "Stack Clean Out Collection Barrel" with speed wrench.



2. Open flue clean out door and place bun in flue to shield the heat from the furnace and to restrict the flow of flue gasses. Close the flue clean out door.



3. Open damper door and swipe sides of plate and against the back wall of stack using the damper cleaning tool to remove any accumulated materials that might restrict the movement of the damper plate.



4. Close damper door.
5. Open bottom stack clean out door.
6. Remove metal pan in bottom stack.



7. Deposit material in Stack Clean Out Collection Barrel. Replace lid and locking ring. Tighten the locking ring with the wrench.
8. Open flue clean out door. Remove the bun.
9. Drag flue with flue hoe to move any accumulated material to the bottom of the stack.



10. Close flue clean out door.

11. Remove glass from bottom of stack with slotted flat shovel and put in steel bucket.



12. Replace metal pan in bottom of stack.
13. Deposit flue glass in glass dumpster.
14. Vacuum damper catch pan.



15. Vacuum ledges on stack and around base of stack.
16. Put tools away.
17. Sign off on "Weekly Melter Task" check off form.