Recently we had a serious incident on a glass furnace drain. During the setup on an all electric (cold top) fiberglass furnace, the client noticed that we had welded a support from the bottom of the trough to some furnace steel work. He believed that this steel was not electrically isolated from the electrode current so he asked our crew lead to remove the support. Due to concerns over current leakage thru this steelwork, the brace was removed. The trough was welded at the top to furnace steelwork that the client believed was electrically isolated. An additional side support was cut free and re-attached with a C-clamp using insulating material.

During setup, the hole had been drilled and glass was encountered but the core did not come out. The hole was secured overnight with insulation balls. On the morning of the drain, the insulation balls were removed from the hole and the decision was made to use the drill to get the glass flowing by removing the remaining core. The hole was re-drilled to hot glass and during the process of removing the drill and core from the hole, it hung up. In the attempt to free the drill, the drill was lifted up and down while still inside the cover tile. The drill acted as a lever to put force on the covertile and the trough. Since the trough was not secured on the bottom, it moved and opened a gap between the cover tile and the furnace. Glass started to flow behind the covertile and control was quickly lost. Approximately 10 tons of glass was leaked before our crew inserted a water lance into the furnace. The flow was eventually stopped with both internal and external water lances.

The client decided to quench the furnace and the glass was eventually mined out. No one was hurt but there was property damage, delay and additional expense. The Hotwork crew reacted effectively once the emergency occurred.

This incident is still under investigation and we are working with the client on the resolution of the issues. Once root cause and corrective action are clarified we will forward more information. At this point it is apparent that the trough was not adequately secured on the bottom which allowed it to move when the drill was being maneuvered. More investigation is required with the client to understand the issues around securing the trough and electrical isolation. We will continue to use our historical trough bracing practices unless or until an alternative secure method is developed. If you have questions or concerns, please discus with Larry, George and/or me.

Here are a few pictures.

 Fighting the leak at the beginning.


Leak in process.


Lance inside furnace.

 Leaked glass and electrode cables.

This information is confidential and is for Hotwork only. As always, we must learn from our incidents to prevent similar or more serious incidents in the future.

Tom