

# SmartMelter Inspections during and after Covid-19 Lockdowns

What will life be like for glassmakers after the lockdown? Fred Aker\* discusses how manufacturers can assess their furnaces in the most challenging of circumstances.

**G**lass melting furnaces continue to wear and degrade during a crisis and won't wait for lockdowns and travel bans to pass.

In contrast to repair and construction companies who must be on-site to perform their services, SmartMelter has given customers the flexibility to conduct self-performed repeat inspections to monitor refractory corrosion for years. Most repeat customers make use of this option.

Covid-19 has produced unique challenges to SmartMelter, as it has to every business. One of these challenges is that customers have less personnel in their facilities as they try to keep as few employees in the factory as necessary. This means engineers and hot maintenance personnel who are not directly involved in daily production are working reduced hours or remotely. Those employees who are still showing up are working in staggered shifts and maintaining physical distance to reduce the chance of infections.

The new challenges also include:

- Getting to customers – especially first-time customers – to label the furnace and train plant personnel.
- Helping customers who can't perform their own furnace scans during times of lockdowns.

For the first challenge of getting to customers, we have developed a new self-inspect programme to equip initial customers to be self-sufficient. Under this scenario, we send the equipment (a single 22kg rolling case) to customers and teach them how to label the furnace and use

the equipment.

This is done via videoconference and training videos we have developed for this purpose. These customers have a SmartMelter coach available during all working hours in their time zone to assist on the phone. Daily check-ins are conducted as well to review the progress and data collected.

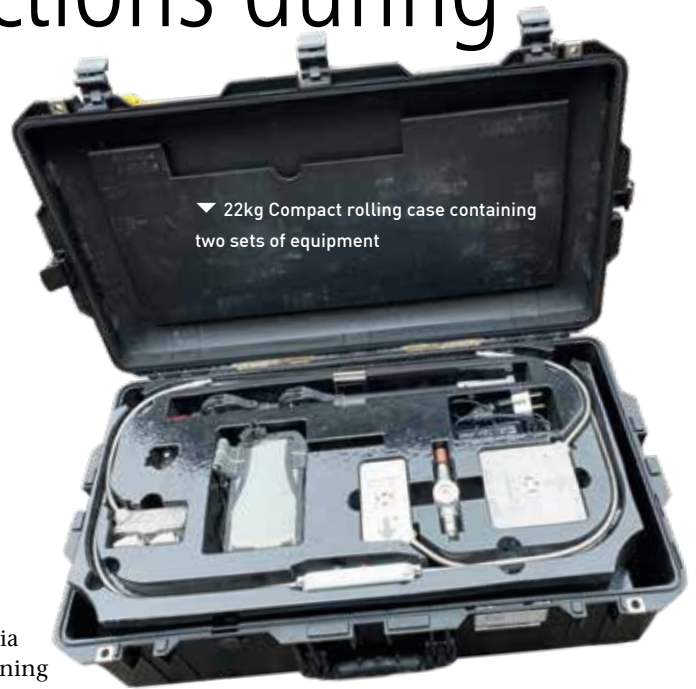
We also give these customers longer equipment lease periods to allow them to inspect at their own pace or with limited personnel. This new variation on first-time inspections has already been sold to customers on three continents.

One of these inspections led to the customer having to cancel a market-driven colour change to flint and will affect the scope and timing of an upcoming intermediate repair.

For the second challenge, which is helping customers who can't scan the furnace themselves due to dire circumstances, we get creative. PaneraTech has field engineers on three continents who can at a minimum serve customers in the country where they live. Our Certified Partner, Fosbel, expands this reach even further. Customers who are near a Fosbel technician have the option to receive a comprehensive furnace audit that includes a SmartMelter report and targeted recommendations. For standalone SmartMelter inspections, we also have access to contract technicians who are geographically close to customers and can operate our equipment.

Our practice has always been to teach the customer to be self-sufficient at

▼ 22kg Compact rolling case containing two sets of equipment



data collection. Even during the initial inspection, we have typically shared the burden of collecting data with the customer. It has always been a partnership. Now, with physical distancing so important, we can offer to perform the entire inspection. There is no need for the technician to interact with the plant personnel or touch the customer's computer to upload data. All we need is WiFi access or to tether to a mobile phone. The customer receives an email from us with a link to install the SmartMelter XSight software. From there, he can monitor the inspection progress remotely. Again, no interaction with plant personnel is necessary.

We managed to conduct this type of inspection for the Italian manufacturer Vetrerie Riunite during the darkest hours of the Coronavirus crisis in northern Italy without endangering the plant personnel or our field engineer. Our inspection revealed that the throat needed to be overcoated immediately.

These inspections that require us to do everything through a third party or our own field engineer are more costly. Pricing is also being updated to reflect the savings when customers scan the furnace themselves.

## What happens to the industry after lockdowns are lifted?

We hope lockdowns are a thing of the past by the time this article is printed.

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Depending on how long the ‘new-normal’ takes, things are going to get complicated. Will there be mandatory quarantines when crossing borders? If so, the measures addressed above will address this situation for SmartMelter.

For customers who need other services, things will get complicated.

- They may continue to not have access to specialised furnace repair and maintenance skills. Especially in less developed countries.

- Repair and furnace construction companies need to catch up for the weeks/months that they lost. Due to this backlog of work, rebuilds and repairs will need to be delayed.

- Supply chains have been interrupted. While specialised equipment such as IS, ware handling, and inspection machines have continued to be produced during lockdowns, the specialists from Europe and the USA have not been able to travel to customers to install and commission this equipment.

This will lead to further delays and require furnaces on their last legs to operate longer than planned.

### How can SmartMelter help with these challenges?

SmartMelter can determine what maintenance is immediately necessary and what can wait. Our experience has been that many companies are too conservative with maintenance. They overcoat more than is necessary and before it is necessary/prudent to do so.

We can help customers make condition-based decisions.

We can also monitor the insulation for early glass or metal penetration, giving manufacturers the confidence to possibly operate a furnace for a year or longer than planned. We can detect and quantify problems long before there are thermal or visual indications through the insulation. This will be especially important for certain sectors of the glass industry.

On one end of the spectrum, we have pharmaceutical glass producers who will be especially critical for providing ongoing medical supplies. To quote the New York Times from May 2, 2020: “Bill Gates, the Microsoft founder, whose foundation is spending \$250 million to help spur vaccine development, has warned about a critical shortage of a mundane but vital component: medical glass.

“Without sufficient supplies of the glass,



▲ Poor monitoring of a glass furnace.  
Courtesy of the Millville, NJ Fire Department.

*there will be too few vials to transport the billions of doses that will ultimately be needed.”*

While we respectfully disagree with Mr. Gates or New York Times categorisation of glass as ‘mundane’, we do agree that pharmaceutical glass will continue to play a life and death role in this crisis.

Depending on the vaccine developed, 7-14 billion doses will need to be administered. These critical infrastructure operations cannot afford any unplanned or avoidable downtime.

On the other end, we will have especially hard-hit glass segments. These include tableware makers who are primarily selling into the hospitality industry (restaurants, hotels, bars). Tableware producers were already living on razor-thin margins before Covid-19. Anything they can do to extend the

life of their assets while reducing the probability of a catastrophic leak may be necessary for their survival. This holds true for any low margin glass sector.

### Summary

Where do we expect SmartMelter services to develop in the future? We expect more customers to perform their own data collection with our easy to operate equipment. This will save money on inspections while reducing the number of outsiders entering plants. The turnaround time on this equipment including shipping will be much slower than if PaneraTech or our certified partner Fosbel is hand-carrying equipment to the plant and leaving with the equipment following completion of the data collection. We have prepared for this by building additional sets of our proprietary hardware and making it even easier to use.

No matter how the industry wants to execute inspections, SmartMelter will be available through multiple channels to serve the customer’s needs. This may be through our Certified Partner, Fosbel, self-service, contract technicians or PaneraTech field engineers. It is not important how the data is collected. The value we provide is in the analysis of that data and the resulting reports and recommendations. This allows customers to plan the life cycle of their furnaces with deterministic data. ■

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▶ Marked up photo to help label the furnace.