

Dear Foundry Owner

## **Molten Metal Explosion Alert – 31<sup>st</sup> March 2021**

The Cast Metals Federation has been alerted to a number of incidents involving molten metal/moisture explosions in foundries that are now being investigated by the Health and Safety Executive (HSE).

At least four (4) such incidents that have occurred within the past twelve (12) months are being investigated. These incidents have occurred in foundries of different business sizes and casting different metal alloys.

The foundry industry is well aware that metal explosions, due to the presence of moisture, are a significant risk to human safety, as well as the risk of damage to plant and equipment. All measures to prevent such incidents must be taken, due to the potential for very significant personal injury.

All foundries are reminded that a suitable and sufficient risk assessments must be in place for the safe operation of furnaces from charging through to tapping, including proper housekeeping around the furnace areas, including preventing moisture in the charge.

It is important to ensure that the storage of virgin metal and scrap is controlled to ensure that there is no risk of moisture being introduced to the furnace during charging. Where storage does allow exposure to the elements, the charge materials should be dried prior to loading into the furnace - this may also require a check to look for trapped moisture, where it is safe to do so. Containment items such as pans or skips used to hold slags/dressings etc. should also be protected from the elements, and be dry (and ideally warm), prior to their use.

The handling of molten metal, from the furnace through to final casting, needs to be risk assessed and suitable controls measures in place. This will include ensuring that moisture is not present in moulds, whether semi-permanent (sand) or permanent (die casting moulds/dies). All equipment used for handling molten metal must be warm and dry to prevent moisture condensing onto them.

The control measures identified in the risk assessment(s) must be correctly used by all personnel at all times, including as necessary any interim or less experienced personnel who may be operating furnaces, on a temporary basis, due to the coronavirus pandemic.

Management teams should ensure that suitable and sufficient supervision of work activities is undertaken every working shift, so that all employees are working safely and in accordance with agreed procedures. All correct and suitable personal protective equipment (PPE) must be provided, and management must ensure it is worn correctly at all times by all employees while on the shop floor.

In the event of such an incident occurring and the HSE having to be informed, it is highly likely that you will be contacted with a visit to your site then taking place. The HSE are now working as normal so where failings are identified actions resulting may range from enforcement notices with a fee for intervention being levied (raised), through to the prosecution of the business, or where there is evidence to support it, the prosecution of any individual employee, whether shop floor up to Director level.

Yours faithfully,

Richard Heath

Health, Safety and Environment Officer  
Cast Metals Federation