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# Case History No. 23

*Refractory Epoxy*

***Customer Need: Trowel-On Patch for Pre-Cast Crucible in Aluminum Induction Furnace***

***Solution 1: High Mullite, Fine Grained , Cement Bonded Patch Mix***

***Solution 2: Manufacture with Aluminum Penetration Inhibitors***

***Result: OEM of Crucible Satisfies Their Customer, Finds Other Uses for Product***

In Upstate New York, the Original Equipment Manufacturer of high alumina pre-cast crucibles was having trouble with a specific wear area. Coreless induction furnaces sometimes generate higher temperatures in some areas than in others, and the pre-cast crucibles were “bellying out”. The OEM asked if one of the HTC mixes from Westmoreland Advanced Materials™ would help.

**WAM® HTC CAM** is a fine grained mullite, bonded with high purity refractory cement. It is used as a patching mix or as a cover to make pre-cast shapes look especially good. Because this application was specifically for aluminum contact, the OEM elected to have our specially formulated aluminum penetration inhibitor package added to the product. The additives used by Westmoreland Advanced Materials™ to provide resistance to corundum formation, and to limit aluminum penetration are designed to be added to any one of our products upon request, so this was easy.

The OEM used **WAM® HTC CAM/AL** for the patch in the crucible, and the crew liked the way it mixed and applied. The patch is wearing about as well as the rest of the crucible, and the wear rate can now be evened out to extend the service life of the crucible.

Leftover **WAM® HTC CAM/AL** was used back in the OEM’s shop to help in assembly of other units being sold to non-ferrous metals customers. In particular, the mortars used to bond individual parts into assemblies were replaced with thin layers of **WAM® HTC CAM/AL**. It bonded the parts so well that the guys began to call it “refractory epoxy”.

*Does your refractory supplier customize products to solve your problems?*