



## TRIAD\* Z-189

### SOL BONDED CASTABLE

- + Improved hot strength and corrosion resistance
- + Elimination of hydraulic set
- + Faster dry out
- + Elimination of H<sub>2</sub> off-gassing (safety)



# Sol Bonded Castables

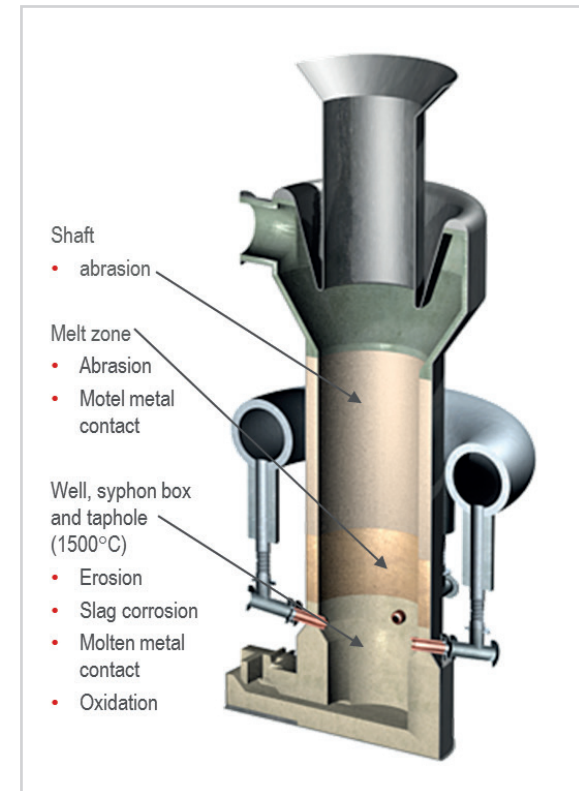
TRIAD Z-189

No cement castables have been available for many years and are attractive due to superior properties and corrosion resistance. In Iron applications, these castables contain the same base aggregates and additives, minus the somewhat dangerous metallic additives that can lead to Hydrogen Generation and potential explosion risk.

Another key benefit of the Sol bonded products is the lack of chemically combined water as compared with conventional and low cement castables. This means that all water is held physically in the material and can be removed much faster making dry out faster and less potentially damaging. Fast dry out is critical for cupola repairs that are typically completed in under 48 hours.

The Sol bonded castables are designed for use in long campaign cupolas in the lower portion including the well, syphon, and taphole areas where most erosion occurs due to constant contact with high temperature iron and slag.

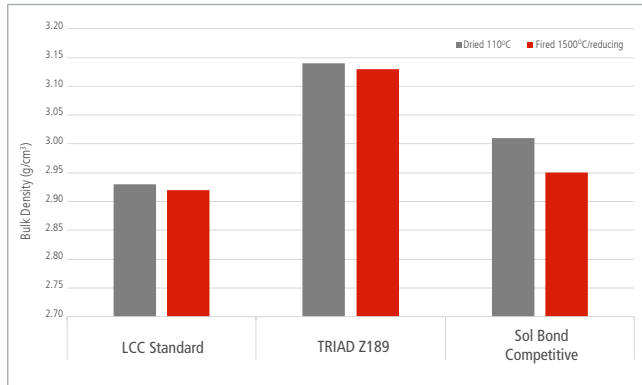
TRIAD Z-189 is a no cement castable based on high purity alumina aggregates enriched with SiC & Graphite. Developed for long campaign cupolas applications.



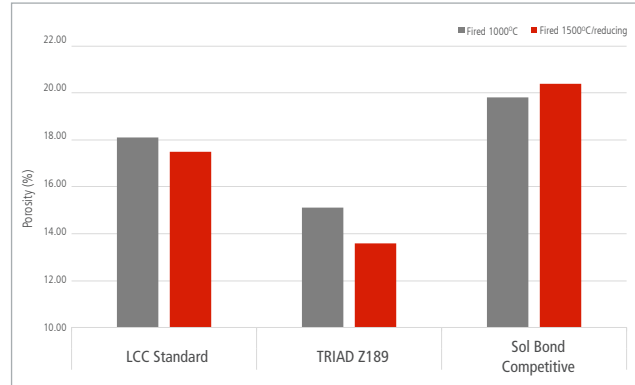
# Benchmarking

## Laboratory Test

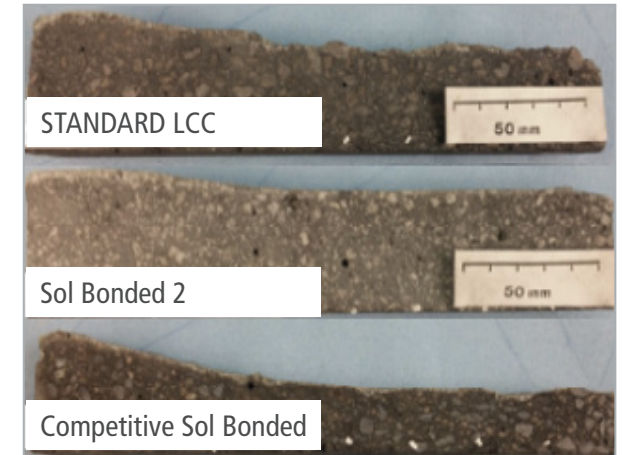
### Density comparison



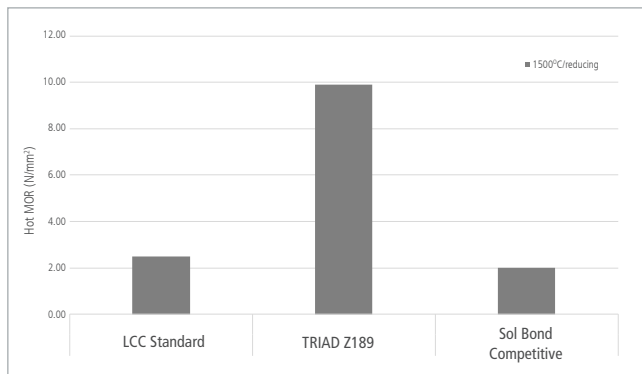
### Porosity comparison



### Rotary slag testing

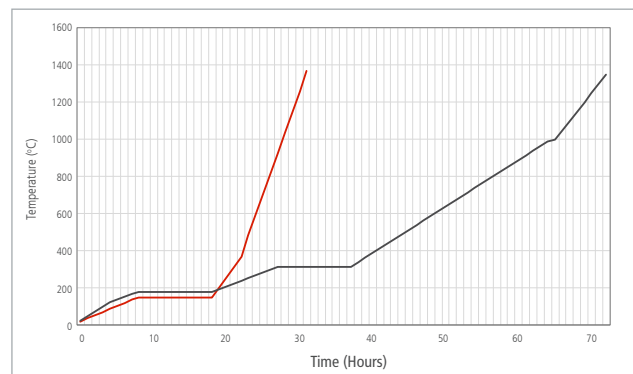


### Hot strength comparison



### Recommended drying and firing cycle

Comparison of TRIAD Z-189 and Standard LCC (25 cm / 10" thick wall)



— TRIAD Z-189 — Standard LCC

	Average Wear (mm)	Normalized wear (LCC = 100)
TRIAD Z-189	9.55	72
Low Cement Castable (LCC)	13.35	100
Sol Bond Competitive	26.48	198

Maximum service  $T^0 = 1700^{\circ}\text{C}$   
 Material Required = 3100 kg/m<sup>3</sup>

Typical Chemical Analysis:

SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	SiC + C
1.8%	76.5%	21%

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