

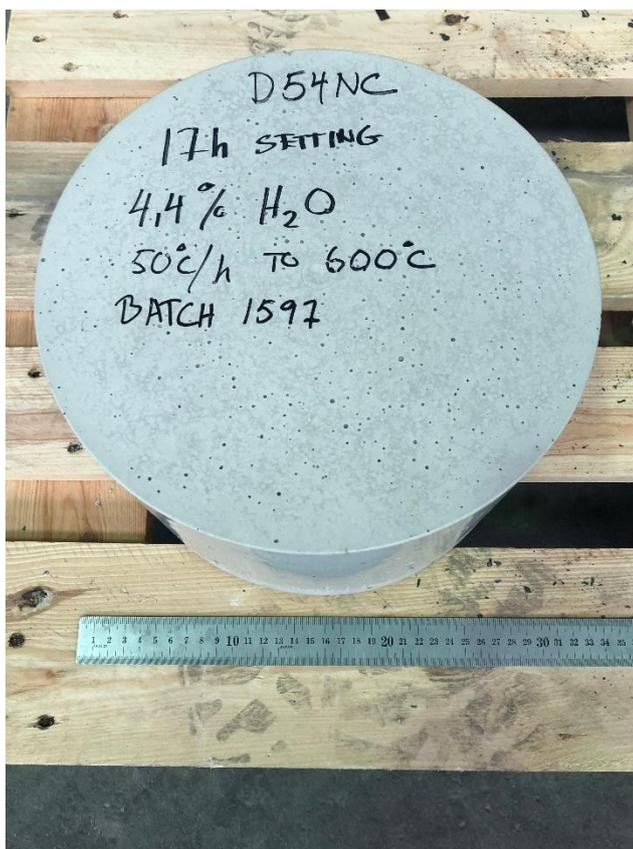
## Product description HASLE D54NC

HASLE D54NC is a Gel bonded Non-Cement Castable. It is based on Mullite and Chamotte for a combination of strength and high alkali resistance.

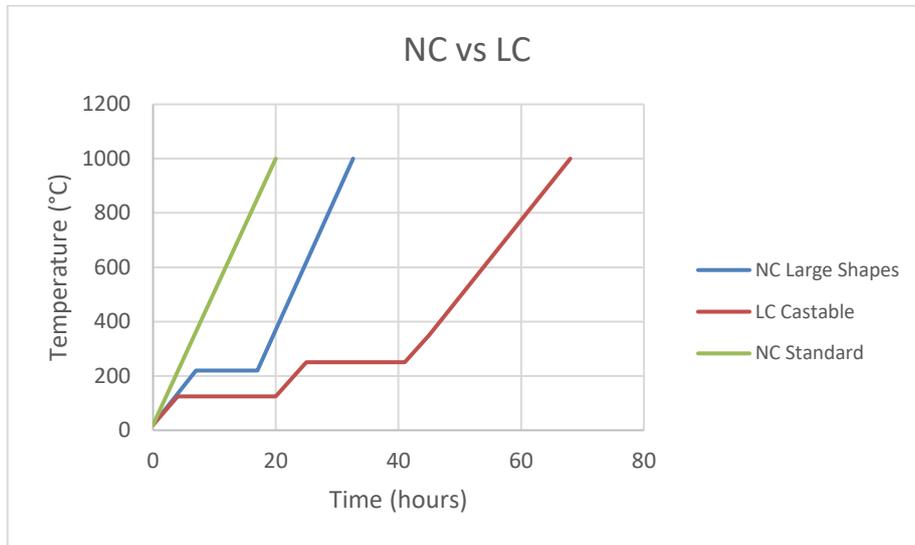
The **Silica gel bonding system** used in D54NC is “**all in the bag**”, meaning that it is included in the castable as opposed to a silica sol bonded system that comes separate and needs special attention transport and temperature wise. With D54NC you just add water, mix and cast as with a regular refractory castable.

The gel bonding system provides **excellent high temperature properties** and has the added benefit of **easy and fast dry-out procedures** compared to LCC.

This in combination with addition of dry-out enhancing plastic fibers means that a more uncomplicated and much faster heating profile can be used.



For castings < 300mm a continuous heating rate of 50°C can be used from room temperature to final operating temperature. For larger shapes HASLE recommend adding a single hold time of 10hours at approx. 200°C to minimize the risk of vapor pressure spalling.



From the dry-out profile shown above it is clear that substantial time savings can be achieved in installations using NC (Non-cement) castable when compared to LC (Low Cement) Castable. Further to this the NC standard **dry out profile is much less demanding** technically than the multistep profile of LC (Low cement). While Low Cement Castables require two hold times to safely remove first the free water (at approx. 125°C) and thereafter chemical bound water (at approx. 250°C), the Non-Cement bonded system require none or in case of large shapes a single hold time to evacuate water during dry-out.

The silica gel bonds of D54NC are less vulnerable to alkali attack than the cement bonds in LCC. This in combination with a balanced alumina-silica ratio provides D54NC with very good alkali resistance. This can be seen from the Cup test shown below:



The strength of the silica gel bonding system also means that the **strength of D54NC rises with increased temperature**. The high strength bonds also help to give D54NC a **very good abrasion index** measured at only 2,5cm<sup>3</sup> loss at 90° according to ASTM C 704.

**Application:**

HASLE D54NC is an all-round castable can be used in most high temperature processes employing alumina silicate based castables. Good workability and easy dry out would make it a good choice for final installations during shutdowns as faster dry-out will allow fast restart of production.

In the cement industry it could be considered for lower preheater, riser duct, smoke chamber, kiln hood, nose ring and medium part of cooler.

The good alkali resistance would make it suited for installation in boilers and WTE plants in parts not subject to high thermal shock.

The easy and fast dry out would also favor D54NC for fast repairs and for installation where access to technical equipment for dry-out is limited.

**Shelf Life**

HASLE D54NC has a shelf life of 6months after production