

Binder system for the Alkyd-NB process

Kold Set TKR systems are no-bake Alkyd-Urethane systems consisting of:

- a polyol component based on linseed oil Alkyd resins (Kold Set TKR resin)
- a polyisocyanate component (Hardener TKR).

Kold Set TKR resin is a red brown, clear and oily liquid. It is water, sulphur and nitrogen free. Hardener TKR is a dark brown solvent-free liquid.

The system is suitable for moulds and cores for castings carbon, manganese and stainless steel, for hot tears-prone castings and in all cases where metal-mould reactions are possible.

The following standard mixtures are suggested

	<u>silica sand 55/60</u>	<u>chromite sand 65/80</u>
Kold Set TKR	0.80-1.00 kg	0.70-0.90 kg
Hardener TKR	0.20-0.30 kg	0.15-0.25 kg

The above compositions can be modified to meet individual requirements. At room temperature the characteristics of the mixtures above are the followings

approximate bench-life:	50' with silica sand 25' with chromite sand
flexural strength after 24h:	350-450 N/cm ² with silica sand 500-600 N/cm ² with chromite sand

Kold Set TKR systems are compatible with all basic sands (chromite, olivine, etc.) and both mechanical and thermal sand reclamations are possible.

Cured moulds and cores can be treated with all kind of water-based or alcohol-based refractory coatings. For high quality castings, a water-based refractory coating (oven or hot air dried) is preferable to an alcohol-based one.

NO-BAKE System KOLD SET TKR

The reaction takes place in two steps:

Alkyd resin + Isocyanate



Polyurethane resin

Conventional reaction of polyol and isocyanate

Alkyd and PU resin + Oxygen



Polyurethane resin

Additional crosslinking promoted by the reaction of Alkyd resin and Oxygen

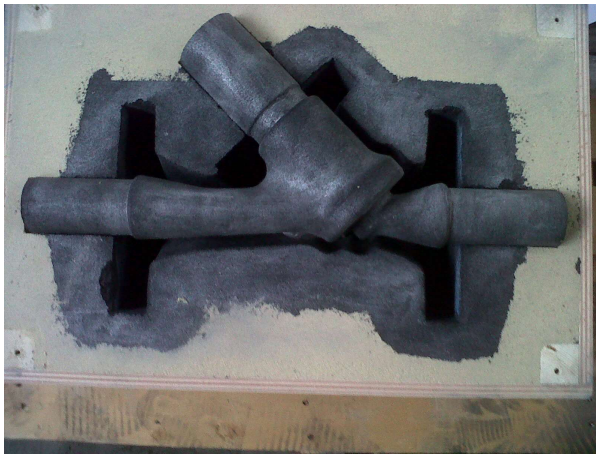


Fig. 1 – Kold Set TKR – Induritore TKR