

REPLACEMENT OF COAL TAR PITCH IN REFRACTORY TAP HOLE CLAY

Performance and workplace improvement with new REZIANCE refractory resin

SUCCESS STORY



STARTING POINT & CHALLENGE

The conventional approach is to use coal tar pitch (CTP) as a binder in the formulation of tap hole clays. CTP is a known human carcinogen and therefore regulations are being developed that will eventually forbid the use of CTP.

A German manufacturer of refractory materials approached ASK Chemicals with the following requirements:

- Phenolic binder that can replace CTP in tap hole clays
- The binder must comply to water hazard class 1
- The binder must have a medium reactivity to ensure a certain set time of the tap hole clay
- A balanced plasticity for a specific strength development

SOLUTION

- ASK Chemicals developed a new resol dissolved in glycol to meet the specifications of the customer.
- The resol is designed to have low residual monomers in terms of phenol (< 5%) and formaldehyde (< 0.1%), while also showing a medium reactivity.

RESULTS

- Significant reduction in the toxicity profile of the final tap hole clay
- Improved workplace health conditions
- Compliance to water hazard class 1
- The required set time and strength were achieved

TECHNICAL PROFILE OF THE RESIN

REZIANCE R-5012L is a phenolic resole resin dissolved in glycol and is cured by heat. The resin shows low residual monomers.

BENEFITS AT A GLANCE

Technological

- Low toxicity profile
 - Free phenol content < 5%
 - Free formaldehyde < 0.1%
- Good plasticity i.e. workability of tap hole clay
- Excellent strength development in a specific time

Environment & Workplace

- Reduced toxic and carcinogenic emissions in the workplace

Safety

- Peace-of-mind safety for foundry workers

 **Reziance**
Engineered resin solutions