

## ESK Ceramics – Securely adhering casting ladle coatings

**ESK Ceramics is unveiling a newly developed coating for aluminium casting at ALUMINIUM 2008. It adheres securely to metal substrates, reliably separates the melt from the substrate, and is easy to apply. At the same time, it is environmentally friendly and reduces handling costs.**

The newly developed water-based 'EKamold Cast-M' coating forms an effective release layer wherever molten aluminium comes into contact with metal. One example is the application to casting ladles. For the first time ever, foundries can use a coating that can be easily applied and adheres securely to metal substrates, the company says. The suspension ensures that the castings have high-quality surfaces. At the same time, it increases the lifetime of the tools, reduces the effort required for application and slashes energy costs.

The new coating forms a smooth, long-lasting protective layer on the surface of the casting ladle, which is not wetted by molten metal – the melt simply rolls off the casting ladle like water off a leaf. It reliably separates the hot aluminium melt from the substrate and ensures that the end product is not contaminated with dissolved foreign matter. The oxide skin too, which rapidly forms on the surface of the hot aluminium, does not stick to the ladle – it is clean after each casting.

EKamold Cast-M is water-based and does not pollute the environment with harmful or toxic emissions. Unlike oil-based coatings, it does not burn off noxious fumes and is generally clean

to handle during application and cleaning. Water-based coatings also have another advantage: EKamold Cast-M is so viscous that it can be applied by brush. Alternatively it can be diluted with water and then sprayed on.

A newly developed binder makes the dried coating so firm that it does not chip off even when applied in very thick layers, giving it a long life. Moreover, the coating thickness is not critical, and accidental variations in thickness can be tolerated within wide limits. If the coating is damaged, it is easy and inexpensive to repair. Holes or cracks can be easily touched up with a brush.

EKamold Cast-M is also easy to handle after casting: it can be easily washed off with water. This contrasts with traditional coating materials, which must be removed by a labour-intensive process of sand-blasting or cleaning in chemical baths.

The new suspension features low thermal conductivity, and therefore the melt maintains its temperature for longer in the casting ladle. That means that a lower melt temperature can be used in the production shop. Moreover, more time is available for casting. This makes it unnecessary to



Quick and easy recoating of a hot casting ladle with ESK's EKamold Cast-M suspension for metal substrates

heat the melt back up to the correct temperature in the holding furnace. There is no risk of overheating.

According to ESK, the early experiences from foundries show that the life of the protective coating has been increased to several times that of traditional coatings, and can withstand several casting cycles. ESK's experts will give detailed reports of the operational results obtained with EKamold Cast-M. At its booth in Essen, ESK will be presenting a casting ladle treated with the new coating. Furthermore, the company will present its complete range of high-performance ceramic products for aluminium casting.

ESK Ceramics will be an exhibitor at ALUMINIUM 2008 in Essen. Galeria, Stand G10

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