

A new suspension to prevent molten aluminium adhering to metallic equipment

A water based release coating to prevent molten aluminium and oxide adhering to casting ladles and other bare metal equipment offers increased coating life, easy repairability, good insulation and ease of removal and disposal when finished with.

A newly developed water-based coating which forms an effective release layer wherever molten aluminium comes into contact with metal has been developed by ESK Ceramics. One example of its use is the application to casting ladles. For the first time ever, there is a coating available that can be easily applied and adheres securely to metal substrates.

The suspension ensures that the lifetime of tools is increased and it reduces the effort required for application and reduces 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. It reliably separates the hot aluminium melt from the equipment substrate and ensures that the end product is not contaminated with dissolved foreign matter.

It not only reliably separates the melt from the substrate but also prevents the oxide skin, on the surface of hot aluminium, from sticking to the ladle leaving it clean after each casting.

The product, *EKamold® Cast-M* is water-based and does not pollute the environment with harmful or toxic emissions. Unlike oil-based coatings, for example, it does not burn off noxious fumes, and is generally clean to handle during application and cleaning.

The water-based coating also has another advantage, it is sufficiently viscous to be applied by brush. Alternatively it can be diluted with water and sprayed on. This achieves a smoother surface and is a faster method of application than using a brush.

EASY TO HANDLE

A newly developed binder makes the dried coating so firm that it does not chip off even when applied in very thick layers. This gives it a long life. Moreover, the coating thickness is not critical, and 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.

The product is also easy to handle after



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

casting: it can be easily washed off with water. This contrasts with traditional coating materials, which must be removed by a labour-intensive sand-blasting or cleaning in chemical baths.

The new suspension features low thermal conductivity, and therefore the melt retains 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 heat the melt back up to the correct temperature in the holding furnace. There is no risk of overheating.

EARLY EXPERIENCES

The early experiences from trials show that the life of the protective coating has been increased to several times that of traditional coatings, and it can withstand several casting cycles.

ESK Ceramics is one of the world's foremost manufacturers of advanced ceramic products and materials for industrial applications. Its product portfolio includes 18 registered trademarks and 10 specialised materials used by customers from over 30 industries around the world.

ESK is continually developing new applications for ceramic materials in cooperation with customers and research institutes. Other products it produces include:

- *EKatherm®* silicon nitride thermocouple protection, riser and heating tubes;
- Cryolite- and aluminium-resistant ESK® titanium diboride thermocouple protection tubes;
- *EKamold® Cast-C*: boron nitride suspensions as long-lasting coatings for ceramic substrates;
- *EKamold® Cast-G*: boron nitride suspensions as long-lasting coatings for graphite-containing substrates;
- *EKamold® P2*: boron nitride powder as release agent for aluminium extrusion;
- *EKamold® Extrusion*: boron nitride spray and suspension as release agents and lubricants for aluminium extrusion;
- *EKamold® W*: boron nitride suspension as release agents and lubricants for aluminium extrusion.

The company was founded in 1922 and now employs over 700 people at its headquarters in Kempten, Allgäu, South Germany and its subsidiary in Bazet, France. Since 2004, ESK has been a wholly owned subsidiary of Ceradyne Inc, which is based in Costa Mesa, California, USA.

FIVES SOLIOS CONTACTS

Following the rebranding of Solios Group at the end of 2007 – now called Fives Solios – some of the contact details of Solios Environnement used on page 37 of the May/June issue of *AIT* on the Qatalum project were out of date.

The name and address of the Head Offices as well as e-mail/ web details are now:

Solios Environnement Sa, 25 - 27 bd de la Paix 78100 St Germain en Laye France. Tel +33 1 30 87 45 50, Fax +33 1 30 87 45 55 e-mail: fabienne.virieux@fivesgroup.com – web www.fivesgroup.com

For further clarification of the changes, only the brand name (logo and visual identity) has changed, the names of the companies making up the group have not changed and remain Solios Environnement Sa located at St Germain en Laye, France; Solios Environnement Inc in Montreal, Canada; Solios Thermal in Wombourne UK and Solios Carbone in Givors, France.

We apologise for any inconvenience.

CONTACT

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