GOUDA *refractories*

Zinc Magnesium Pots

Zinc Industry

Gouda Refractories delivers complete refractory solutions for Zinc, Galvalume, ZnMg, ZnAlMg and FAL Pots used in the production of Zinc and Zinc alloys.

For many years, Gouda Refractories has successfully designed and supplied refractory materials for pots for different types of Zinc alloys. Due to the close relation with our customers, Gouda Refractories is strongly involved in the development of suitable refractory lining for new alloys.

LRQA CERTIFIED ISO 9001

Scope **A-Z**

Years of experience **> 40**

Dedicated product range

The strength can be found in defining the best choice of materials, the process-related defense mechanisms and the stability of the refractory materials. This is the result of years of development and successful experience on specific process-knowledge.

Gouda Refractories' world-class solutions can be provided in bricks, castables or a combination of both.

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Cup Test

ZnMg alloy (95/5%), 500°C, 72 hrs

Castable Curon 18 SCC

Brick AK 85 P1

Technical Background

Pushed by the demand of the automotive industry for higher quality galvanizing coatings, a new generation of Zinc-Magnesium alloys is being developed and put into production.
This development also poses new challenges for the refractory lining used in galvanizing pots: refractory lining designs proven to work perfectly for pure zinc are no longer suitable for ZnMg alloys.

Reasons for changing the refractory lining:

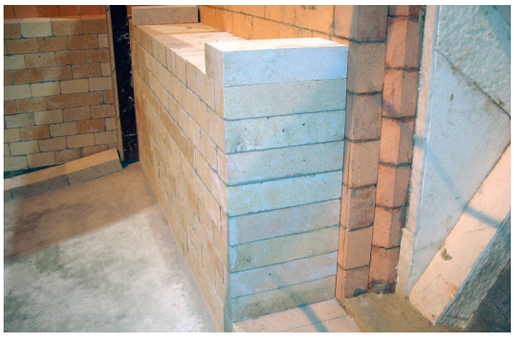
Freezing Temperature - Design of the Refractory Lining

An alloyed zinc bath (with Al and/or with Mg) tends to have a longer freezing trajectory at a lower temperature (~375°C) than pure Zinc (420°C). As a result the 'freeze line' (the location inside the refractory where, in case of a breakthrough, the melt will freeze) is more to the outside of the lining. When the freeze line is in the back-up layer, which is usually not ZnMg-resistant, the smelt can reach the steel casing and may cause leakage.

As standard, Gouda Refractories provides Heat Transfer Calculations based on the type of alloy and on the operational temperatures (bath-, freezing- and ambient-) to calculate the location of the freeze line inside the refractory lining and to ensure that it is in the ZnMg resistant hot-face layer.

Chemical Resistance - Selection of the Materials

Zn-Mg shows strong adherence to especially chamotte based linings that may result in clogging up the inductor channels in time. Gouda therefore recommends to apply a corundum based inductor throat lining with a very low SiO_2 content which can avoid potential reaction between Mg and SiO_2.



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(*) = Complete list of references is available upon request.

Materials

Curon 18 SCC

This corundum based castable is specially developed for Zn-Mg alloys. The Curon 18 SCC has a very low SiO_2 content.

AK 85 P1

This high alumina phosphate bonded bauxite brick with a low porosity, is perfectly suitable for this alloy.

Datasheets are available upon request.

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