

Improvement of basic ramming mixes

RMS basic ramming mass performance was variable after changes in raw materials, development work has improved performance by 300%

The Problem

A basic ramming mass using water addition, was supplied to a client which showed poor strength when rammed and heated and also hydrated on long holding periods at 100°C. This was never experienced before until recent raw materials were changed.

Client Request

Develop a ramming mix that will not hydrate and have excellent green strength after initial heatup to 110°C. The material also had to have a shelf life of 6 months.

Solution

RMS conducted several tests with changes in the raw materials and binding mechanisms. The ramming mass still uses water addition. By removing certain raw materials out of the fine fractions, cold strength improved when air dried. The testwork also revealed that commissioning procedure of the ramming also impacted the strength and performance of the ramming mass.

RMS changed the ramming mass formulations and binding mechanism for water based ramming masses, together with an improved commissioning plan.

Results

Ramming mass green strengths improved 100% on air drying and 300% on the modified commissioning procedure. No hydration was observed on the modified commissioning procedure. Refractoriness also has improved by changes in raw materials.

Shelf life of the product has improved from 3 months to over 6 months with further work on improving the performance after 6 months of shelf life to be undertaken.

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