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Insulation Castables and Gunmixes

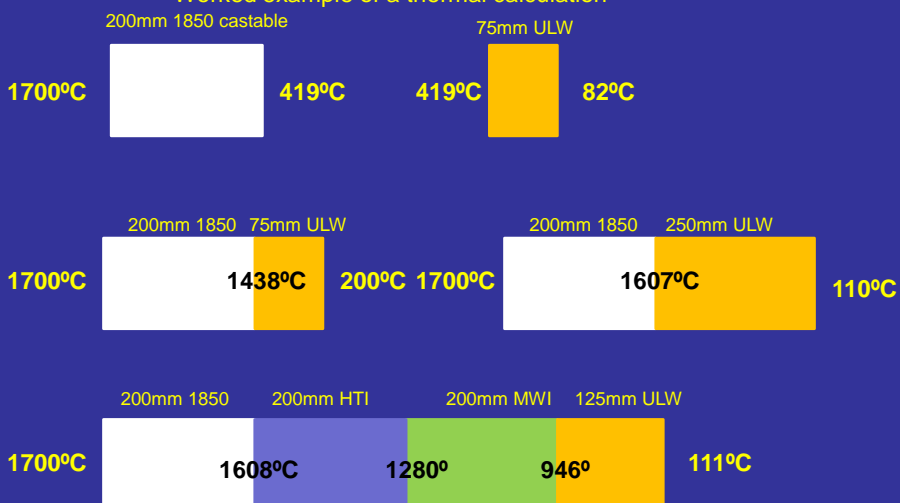
Sheffield
9th October 2014

Ian Spicer



Thermal Calculation

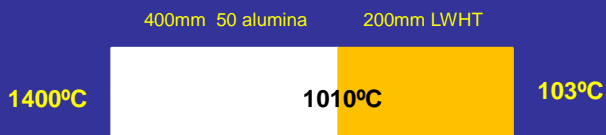
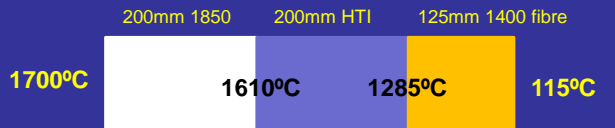
Worked example of a thermal calculation





Thermal Calculation

Worked example of a thermal calculation



Aggregates

Natural Aggregates

Vermiculite and Perlite
Expanded Fireclays

Secondary Products

Cenospheres
Lyttag

Synthetic products

Bubble alumina
SLA92



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Monolithic Insulations

Simple formulations

Calcium aluminate cement
4 or 5 sizes of aggregate
clay in the gunmixes

Chemically bonded grouting mixes



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Properties of Insulating monolithics

Density

Range from 350kg/m³ to 1700kg/m³

Service temperature

Range from 1000°C to 1700°C

Crushing strength

from <1 mN/m² to 30 mN/m²



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Energy Loss ambient at 20°C

1,700°C 750,000w/m²

1,000°C 135,000w/m²

500°C 20,000w/m²

200°C 3,200w/m²

150°C 1,950w/m²

120°C 1,340w/m²

100°C 1,160w/m²

60°C 450w/m²



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Installation Methods

Casting

Gunning

Grouting

Shotcreting

Parging

Dry Vibe



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