MAGOTTEAUX
SHAPING A WORLD OF PERFORMANCE

Alloy:
A metallic material, consisting of a mixture of 2 or more metals or of metal with non-metal elements.
Steels or combined metals are the product of elements (C, Cr, Ni, Mn, etc...) incorporated in the iron.

Crushing / Grinding:
To break material into smaller particles.
At a cement works, for example, rocks extracted from the quarry are passed through different crushers until the material reaches a size of +-50mm.

There are various types of crushers : with cones, jaws, blow bars, hammers, anvils and impellers. These work either on a vertical axis (VSI stands for Vertical Shaft Impactor), or on a horizontal axis (HSI stands for Horizontal Shaft Impactor).

The grinding process is carried out in ball mills or vertical mills.
This allows material to be ground to a much finer consistency, which cannot be achieved by crushers.

Fluids:
This category encompasses the whole range of Magotteaux pieces commercially available and marketed in the field of dredging.

Grinding process:
The series of stages which a bulk material of a certain consistency is first broken, then crushed and finally ground to reach the required fineness.

Heat treatments:
The heat processes which grant particular properties to a casting in a defined alloy. The parameters of temperature and time are extremely important and the greatest precision is required.
For example, quenching increases hardness while tempering reduces internal stresses.

Linings:
A ball mill is simply a cylindrical tube positioned horizontally on 2 supports and rotating.
It is filled, partly, by hundreds of tonnes of very hard steel grinding media, weighing up to several kilos each.
In order to protect or armour the steel shell of the mill, lining plates are fixed to the whole internal surface.
These must clearly have excellent wear and impact resistance.
The particular profile of these linings is designed to give he best energy transmission to the ball charge when the mill is rotating.

Mag'Impact® II :
High performance Vertical Shaft Impactor designed by Magotteaux. Mainly used in quarries.

Pyro-processing:
A term enveloping all operations within a high temperature environment (Pre heaters, Kilns, Coolers, etc.).
Therefore clinker, which will become cement after the fine grinding process, is produced from the limestone at a temperature of more than 1.470°C in a long horizontal kiln.

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Refractory Steels:
Are steels that are able to resist high and even extreme temperatures or thermal shocks which can prove to be destructive.
Corrosion and abrasion complete this list of harmful wear factors.
Chrome and nickel are among the elements most frequently used in heat resistant steels.

Vertical mill:
Takes its name from the vertical axis upon which the mill rotates.
As in old mills, where the 2 "millstones" would turn against each other, thus creating sufficient pressure to crush the material being fed through the mill.
(In comparison to a ball mill which turns on its horizontal axis.)

Wear mechanisms:
Abrasion, corrosion and impact are the 3 main contributory factors that cause wear.
High temperatures and thermal impact equally contribute to wear.