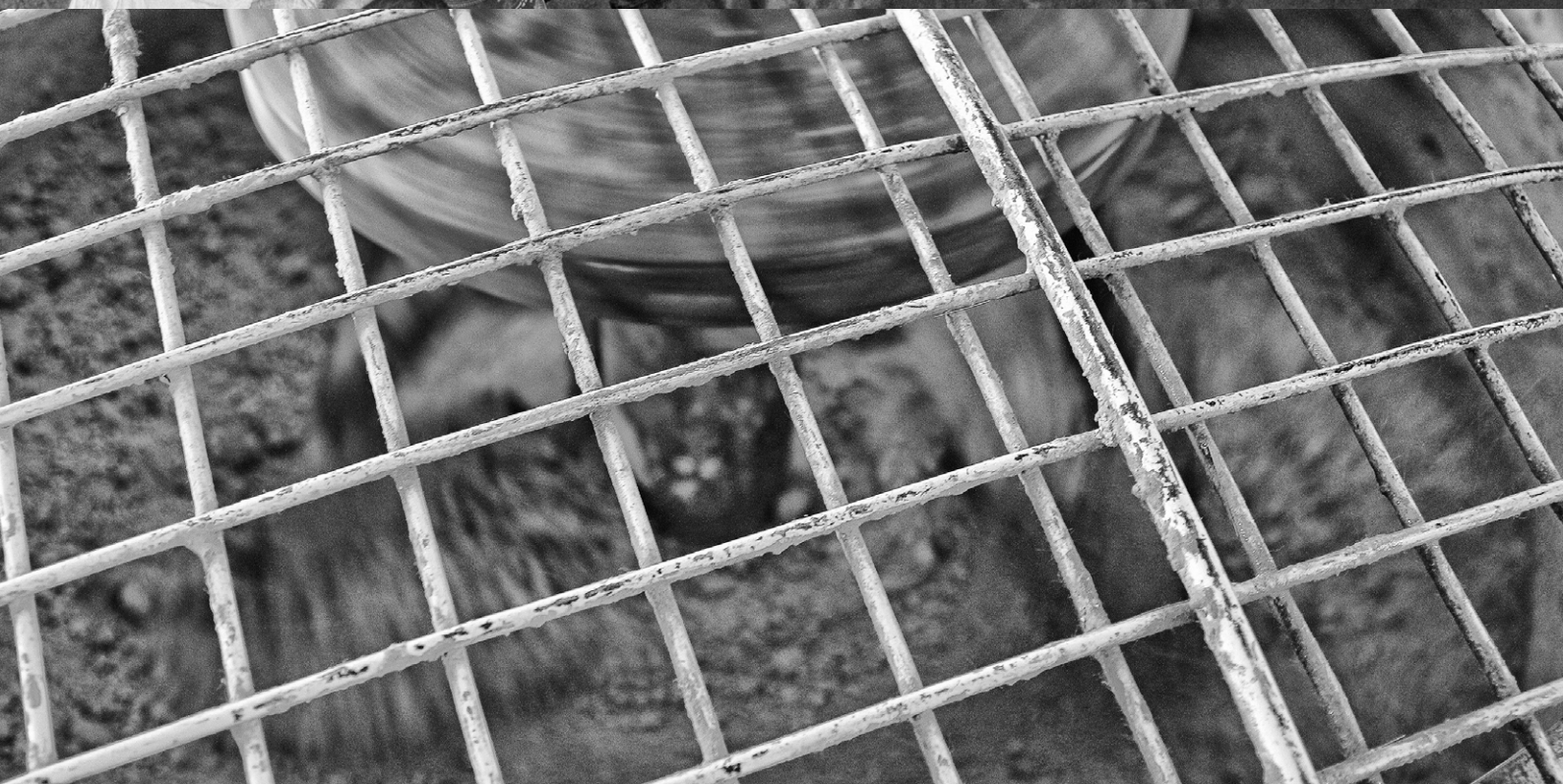
J+C
REFRACTORIES

[JUCAN] or you can't

Latest gunning technology for abrasion-resistant refractory castables to be installed in Circulating Fluidized Beds



JU[enger+Graeter] + CA[st] + [gu]N = JUCAN

With JUCAN J+G succeeded in developing a technology for the application of refractory castables by using a dry gunning process. By using the developed gunning additives this high performance refractory castable (HP-castable) has become a shotcrete that is easy to apply by using a standard dry gunning machine and a high pressure nozzle.

This technology is very special in that the physical properties of the cast and gunned grade hardly differ from one another. Abrasion strengths – one of the most important material properties in the CFB sector – are achieved that are almost equal to those of cast products. Consequently, the J+G technology sets new standards in this industrial sector.

A further invaluable advantage during the overhaul process is the application flexibility of JUCAN. Depending upon the installation situation, with a single product we are in a position to cast or gun the product and always obtain superb property values.

Consequently, we now only need one refractory castable to properly line many areas inside the CFB plant. At the moment we offer four product variants.

>> Advantages

- One product for various application processes
- High installation flexibility during the overhaul process
- Superb property values for abrasion and strength regardless if cast or gunned
- Gunning loss similar to that for other standard shotcretes
- Longer shelf availability
- alkali-resistant

Test pieces
Examination of abrasion-resistance

conventional LC shotcrete

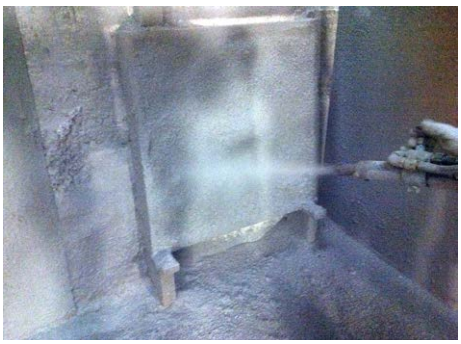
JUCAN HP100B, gunning

	HP000A	HP000B	HP000C	HP000D	HP100A	HP100B	HP100C	HP100D
Application:	casting	casting	casting	casting	gunning	gunning	gunning	gunning
Raw material base:	fireclay	bauxite	fireclay	bauxite	fireclay	bauxite	fireclay	bauxite
Type of setting:	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic
Bulk density [g/cm³]:	2,27	2,75	2,25	2,75	2,10	2,65	2,05	2,40
Grain size [mm]:	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6
Required material [t/m³]:	2,27	2,75	2,25	2,75	2,10	2,65	2,05	2,40
Mixing liquid:	water	water	water	water	additive	additive	additive	additive
State at delivery:	dry	dry	dry	dry	two-component	two-component	two-component	two-component
Shelf life:	6 months	6 months	6 months	6 months	6 months	6 months	6 months	6 months
Max. service temperature:	1.450 °C	1.450 °C	1.400 °C	1.450 °C	1.450 °C	1.450 °C	1.400 °C	1.450 °C
Abrasion resistance ASTM C704:	7,5 cm³	4,0 cm³	7,5 cm³	4,0 cm³	13,0 cm³	6,0 cm³	14,0 cm³	7,5 cm³
Chemical Analysis:								
Al_2O_3	44,0-49,0 %	78,0-83,0 %	44,0 %	74,0 %	44,0-49,0 %	78,0-83,0 %	44,0 %	74,0 %
SiO_2	43,0-48,0 %	7,0-12,0 %	41,0 %	9,0 %	43,0-48,0 %	7,0-12,0 %	41,0 %	9,0 %
Fe_2O_3	1,5 %	1,9 %	1,0 %	1,5 %	1,5 %	1,9 %	1,0 %	1,5 %
SiC	-	-	8,0 %	8,0 %	-	-	8,0 %	8,0 %
Irrev. change of length [1.000°C]:	-0,15% (800°C)	n/a	-0,45%	-0,40%	-0,15% (800°C)	-0,30 %	-0,30 %	-0,20 %
Cold crushing strength 110°C [MPa]:	100-120	180-200	120	140	100-120	130-150	80	100
Cold crushing strength 1.000°C [MPa]:	90-110	130-150	110	160	75-95	100-120	60	80
Thermal conductivity 200°C [W/mK]:	1,40	n/a	n/a	n/a	1,40	2,40	1,40	n/a
Thermal conductivity 500°C [W/mK]:	1,35 (600°C)	1,90	1,40	1,90	1,35 (600°C)	1,80 (800°C)	1,35 (600°C)	1,90
Thermal conductivity 1.200°C [W/mK]:	,45	1,82	1,50	1,82	1,45	1,85	1,45	1,82
Remarks	-	-	alkali-resistant	alkali-resistant	-	-	alkali-resistant	alkali-resistant

Test pieces
Examination of alkali-resistance

JUCAN HP100B, not alkali-resistant

JUCAN HP100D, alkali-resistant



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