

ALAG[®]

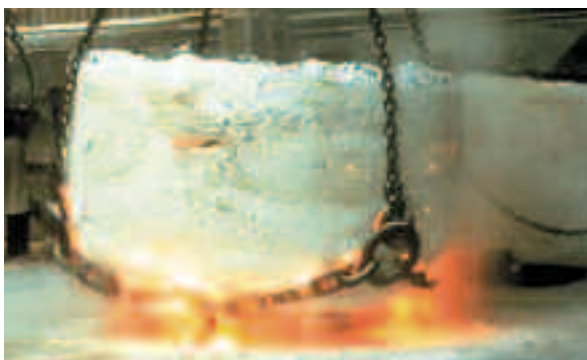


**Very hard aggregates for
high performance concrete**

>> Resistance to thermal shock and temperatures from -180 °C to +1,100 °C



Ciment Fondu®/Alag® concrete is characterized by a high alumina content and absence of free lime, capable of withstanding severe thermal shock and resist numerous temperature cycles.



Steelworks & coking plant

- > Cast house floors
- > Tracks for metal transfer vessels
- > Mill scale flumes
- > Blast furnace cast house floors
- > Coke wharves
- > Hot blast mains

Metal processing industries

- > Oxygen lance cutting areas
- > Abrasion and heat resistant floors
- > Foundry furnace areas

Cement plants

- > Pipe lining
- > Raw materials silos
- > Cyclones
- > Coolers
- > Hoods and other areas subject to high temperatures

Fire protection and fire training areas

- > Inflammable products retention tank
- > Fire training areas



Incinerators and boilers

- > Charging chutes
- > Ash boxes
- > Burning pits



For more information, visit us on:
www.cimentfondu.com

>> Resistance to abrasion and point loading

Alag® aggregates extreme hardness combined to optimal bonding with Ciment Fondu® give exceptional concrete performance in harsh conditions.



Hydraulic structures

- > Sills
- > Screening walls
- > Spillways
- > Scouring sluices
- > Collectors
- > Jetty heads
- > Sluice beds



Industrial floors

- > Heavy equipment tracks
- > Shop floors
- > Warehouses
- > Bulk material unloading areas and transfer pads



>> Resistance to corrosion pH ≥ 3.5

Ciment Fondu®/Alag® concrete specific chemistry provides excellent corrosion resistance to a wide range of aggressive substances including several acids (pH ≥ 3.5), sugar solutions, grease and fats, etc.



Sewerage plant

- > Channelling
- > Sedimentation tanks
- > Benching and sills



Food Industries

- > Discharge areas
- > Factory floors
- > Cold rooms
- > Freezing tunnels



Petrochemical

- > Sulphur pits
- > Coke discharge areas
- > Industrial floors



Chemical industries

- > Decantation basins
- > Effluent and sea water channels
- > Factory floors
- > Cryogenic loading and discharging areas



>> ALAG[®]: very hard aggregates

Alag[®] aggregates when combined with Ciment Fondu[®] yield an exceptional concrete with a unique capacity to resist aggressive environments where corrosion, abrasion and high temperatures are all present. The ability to withstand these extreme conditions in a single product makes Ciment Fondu[®]/Alag[®] concrete an optimal choice for a wide range of most demanding applications.

Properties



Temperatures

Withstands temperatures from -180°C to +1,100°C and thermal shock.



Abrasion and point loading

Extremely good resistance to abrasion, impact and point loading.



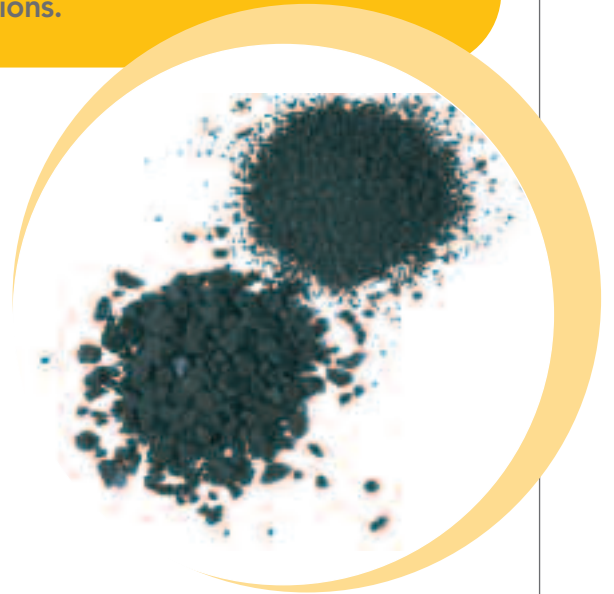
Corrosion

Resists corrosion by sulphates, oils, industrial effluents, aggressive chemicals, dilute acids (pH ≥ 3.5).



Rapidity

Back in service if necessary within 6 to 8 hours after placing.



Production



With drum-mixer



With ready-mix truck

For more information, visit us on:
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Our teams at your service around the world

Alag[®] is manufactured according to highest technical controls of Kerneos industrial teams.

Kerneos plants share identical quality standards, within a quality management system that is certified

according to ISO 9001 Standard requirements.

Alag[®] offer is supported by the technical, commercial and marketing Kerneos network, dedicated to Technical Concrete applications.



>> Technical details

Alag® aggregates

Alag® is a fused synthetic aggregate, containing 40% alumina. It has a high density and is extremely hard.

Alag® and Ciment Fondu® are mineralogically the same, so there is a strong chemical affinity between them producing a very intimate and homogeneous bond between aggregates and cement.

Physical characteristics of the aggregates and the cement, such as the coefficient of expansion, are also the same. This explains the exceptional thermal, mechanical and chemical properties of Ciment Fondu®/Alag® concretes.

Alag® is available in 25 kg sacks and 1.5 tonnes big bag in two principal gradings:

Alag® Fine: 0-4 mm

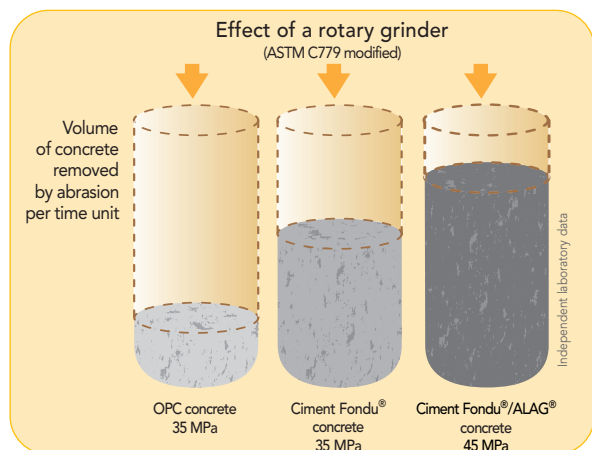
Alag® Coarse: 4-10 mm

Other gradings may be available on demand.

Technical information

- > Open porosity: none
- > Hardness (Mohs index): >7 (Quartz)
- > Crushing Index approx.: 14 (British Standard 812 test)
- > Apparent density: 3.25
- > Bulk density:
 - Alag® Fine: 1,650 to 1,700 kg/m³
 - Alag® Coarse: 1,600 to 1,650 kg/m³

Resistance to abrasion



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Ciment Fondu®/Alag® mortars and concretes

The mix design employed depends on:

- > the application
- > the thickness of the concrete
- > the method of placing
- > the degree of workability required.

Typical composition of mortar and concrete per cubic meter

		Ciment Fondu®	Water	Alag® Fine 0-4 mm	Alag® Coarse 4-10 mm
Mortar thickness	Parts by weight	1		3	-
	<50 mm Dosage	600 kg	240 kg max	1,800 kg	
Concrete thickness	Parts by weight	1		2	2
	>50 mm Dosage	515 kg	206 kg max	1,030 kg	1,030 kg

Proper performance will only be obtained by following the best concrete practice in particular by carefully respecting mix proportions, Water/Cement ≤ 0.40 , compaction by vibration and ensuring effective curing adapted to site conditions.

Compressive and flexural strengths (MPa)

- > Water/Cement ratio ≤ 0.40
- > Composition: as above

Early age compressive strength (1-28 days)	Long term compressive strength to consider for design (converted strength)
40 - 70 MPa	40 MPa

Tests conducted on 160 x 320 mm cylinders according to NF P 18-406. Only strength after conversion must be considered for design purpose.

See Ciment Fondu® Commercial Data Sheet for more information.

	Strength after heat treatment temperature		
	110°C	800°C	1,100°C
Flexural (MPa)	9.0	4.3	3.2
Compression (MPa)	84	52	23

Tests conducted on 40x40x160 mm prisms; all samples immersed in water for 24 hours then held for 24 hours at 110°C; some samples held for a further 24 hours at 800°C or 1,100°C and then cooled down slowly.

Indicative data only.

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