



PRODUCT DATA SHEET

EFA-Füller[®] S-MA

Pulverised fly ash (PFA) according to DIN EN 450-1 for concrete according to EN 206-1

EFA-Füller[®] S-MA is produced in the mixing and processing plant of BauMineral GmbH on the site of the Scholven power station of Uniper Kraftwerke GmbH in Gelsenkirchen-Buer by mixing certified hard coal fly ashes.

It is a fine-grained pozzolanic binder consisting essentially of SiO₂ and Al₂O₃ (aluminosilicate).

Main components* in % by mass				
SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	CaO	MgO, K ₂ O, Na ₂ O
52 - 56	21 - 25	6 - 9	3 - 6	1 - 3

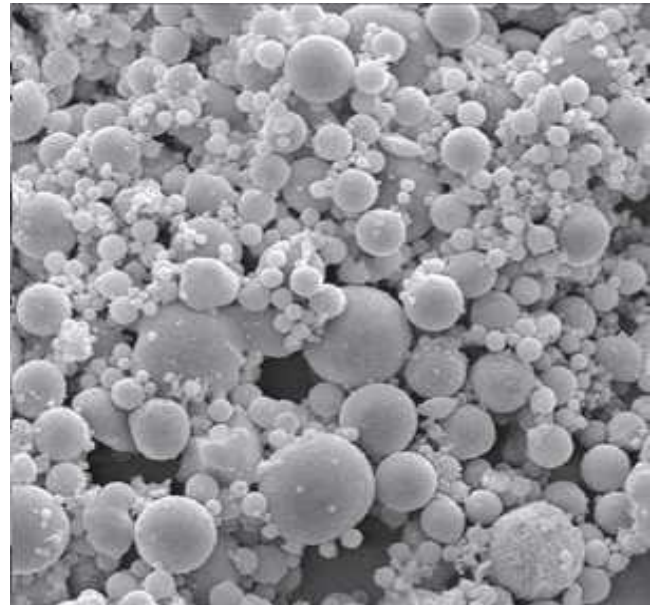
The content of reactive SiO₂ is at least 25 % by mass.

As a concrete admixture of type II according to DIN 1045-2 / DIN EN 206-1, EFA-Füller[®] S-MA meets both the building material requirements of DIN EN 450-1 (CE mark) and the environmental compatibility requirements.

DIN 1045-2, in combination with DIN EN 206-1, regulates the use of EFA-Füller[®] S-MA:

- the chargeability to the cement content according to the k-value concept
 - as a rule with k = 0.4
 - for underwater concrete, bored piles according to DIN EN 1536 and slot walls according to DIN EN 1538 with k = 0.7
- the minimum cement content
- the maximum permissible equivalent water-cement ratio (w/c)_{eq}
- the production of concrete with high sulfate resistance
- the combination with silica fume
- the limit values for the fines content

The composition of the concrete shall always be determined by an initial test according to DIN EN 206-1 in conjunction with DIN 1045-2.



Scale: 1000:1

EFA-Füller[®] S-MA benefits:

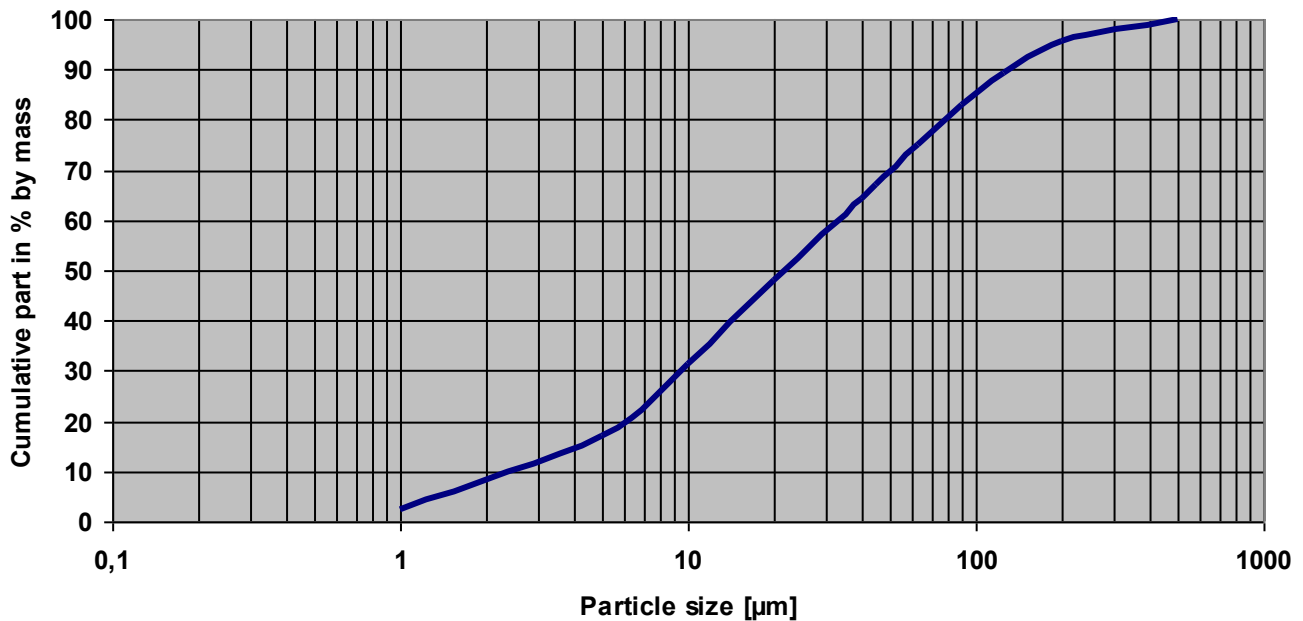
- Reduction of cement
- Reduction of the water demand of the binders
- Improved workability of fresh concrete including pumping capability
- Increased compactability of fresh concrete
- Reduction of the hydration temperature, e.g. for mass concrete
- Reduced efflorescence of the concrete
- Increased resistance against chemical attacks on concrete, e.g. sulphate, chloride, sea water
- Reduced risk of a alkali-silica-reaction in conjunction with alkali-sensitive aggregates

Characteristic values

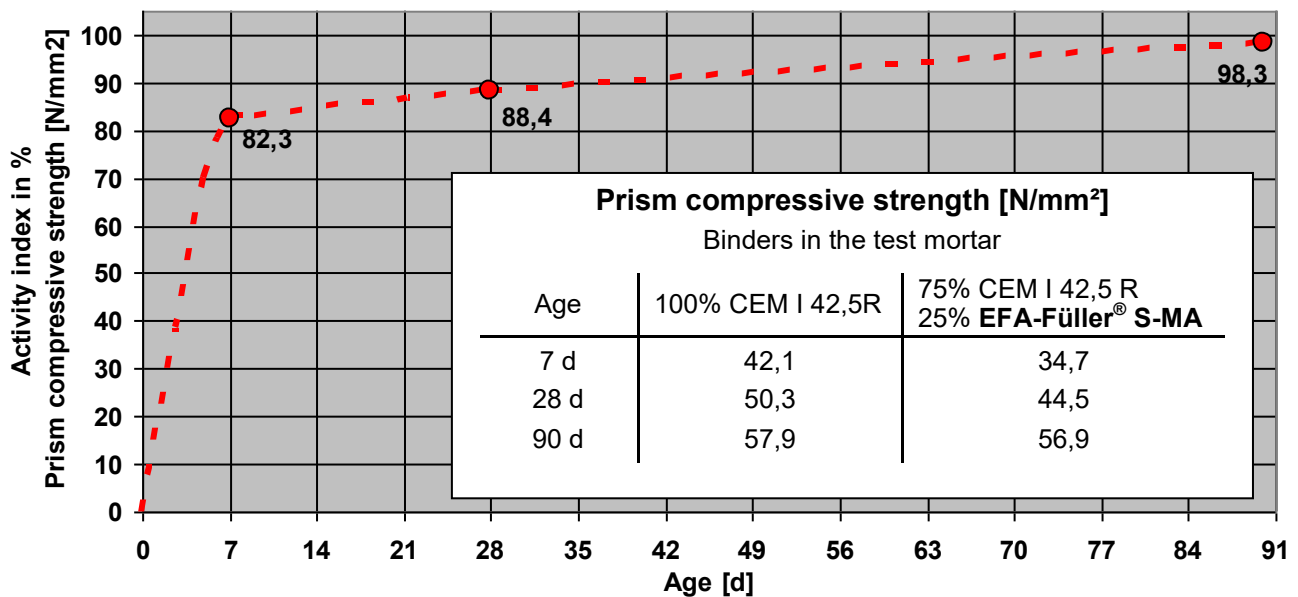
Loss on ignition category A:	≤ 5 % by mass
Fineness category N > 45 µm:	21 ± 10 % by mass
Na ₂ O equivalent* :	2,4 % by mass
Bulk density* (DIN 459-2):	1,06 t/m ³
Particle density:	2,30 ± 0,20 t/m ³

* Average of the year 2021

Particle size distribution * (determined with a laser particle sizer)



Strength development * (according to EN 196 - 1)



Prism compressive strength [N/mm ²]		
Binders in the test mortar		
Age	100% CEM I 42,5R	75% CEM I 42,5 R 25% EFA-Füller® S-MA
7 d	42,1	34,7
28 d	50,3	44,5
90 d	57,9	56,9

* Average from 2021

Certification body

Institut für Bauforschung
der RWTH Aachen (ibac)
Schinkelstraße 3
52062 Aachen

EFA-Füller® S-MA
Pulverised Fly ash according DIN EN 450-1
MVVTB, Ldf. Nr. A 3.2.3 and DAfStb (Environmental Policy)

CE

1077 - CPR- 42603101



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Building materials testing body
VMPA recognised concrete testing body

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