

# AnlÄggningcement FA

## Cement type and application

AnlÄggningcement FA is a Portland-fly ash cement type CEM II/A-V 42,5 N MH/LA/NSR manufactured in Slite. It is developed for use in mass concrete structures with demands for cement with moderate heat of hydration. AnlÄggningcement FA has a low  $C_3A$  content and is suitable when improved resistance against harmful attacks caused by high sulfate concentrations in soil and water is required. The low alkali content contributes to increased resistance against harmful alkali silica reactions.



AnlÄggningcement FA can be used alone or together with additions such as fly ash, ground granulated blastfurnace slag and silica fume. Technical data can be found on page 2 of this Technical data sheet.

## Standards and control

AnlÄggningcement FA fulfills the requirements for Portland-fly ash cements in EN 197-1 Cement-Part 1: Composition, specifications and conformity criteria for common cements. Notified product certification body No 0402 (RISE Research Institutes of Sweden) has issued the certificate of constancy of performance with certificate No. 0402-CPR-SC1082-14. The number of Declaration of Performance is 0402-DoP-SE13 SC1082-14.



AnlÄggningcement FA Slite are manufactured with requirements for MH (moderate heat of hydration) according to SS 134202, LA (low alkali) according to SS 134203 and NSR (national sulfate resistance) according to SS 134204. RISE has issued a verification document that demonstrates that the requirements in these Swedish standards are met and AnlÄggningcement FA Slite is therefore in accordance with AMA AnlÄggning chapter EBE 11.

## Packaging, distribution and storage

Storage in an environment that has an element of moist air or direct contact with ground moisture or water damages the cement very quickly (days, weeks). AnlÄggningcement FA must be stored in a dry, sealed silo for a maximum of six months after delivery, as the chromate reduction process gradually loses its effect. The equivalent storage time for unbroken big bags is twelve months after date of packaging. It is always the buyer's responsibility to make sure and be able to show that the storage location is dry and sealed, and that the storage time is observed.



## General terms of delivery

The delivery of AnlÄggningcement FA is subject to ABM 07 and Cementa's Special Terms and Conditions.



## Safety during handling

All cement is dangerous to consume and must be stored out of the reach of children. Cement in the eyes creates a risk of serious eye damage. Moist cement forms calcium hydroxide, which irritates the skin and the respiratory organs. For complete information and instructions on protection, see the Material Safety Data Sheet.



## Product information

For the latest updates to the Technical data Sheet, Material Safety Data, EPD and other product information, see our website [www.cement.heidelbergmaterials.se](http://www.cement.heidelbergmaterials.se).



## Technical data

Anläggningscement FA fulfills the Technical data below. On rare occasions the values may deviate from the specified ranges or limits.

### Guideline values

Property	Target value	Range	Requirements according to SS-EN 197-1
Compressive strength*			
1 day (MPa)	11	± 3	
2 days (MPa)	20	± 3	≥ 10,0
7 days (MPa)	38	± 4	
28 days (MPa)	52	± 4	≥42,5 / ≤ 62,5
Setting time (min)	170	± 30	≥ 60

\* Measured on standard mortar according to EN 196-1

### Other technical data

Property	Value	Range	Requirement according to SS-EN 197-1
Compact density (kg/ m <sup>3</sup> )	3000	±20	
Bulk density (kg/ m <sup>3</sup> )	1250	± 250	
Blaine fineness (blaine, m <sup>2</sup> /kg)	430	± 30	
Passing 32 µm (%)	73	± 3	
Heat of hydration (kJ/kg)	1 day 3 days 7 days	± 20 ± 20 ± 20	≤ 320 <sup>1</sup>
Alkali (clinker), Na <sub>2</sub> O <sub>eqv</sub> (%) <sup>2</sup>	0,54	± 0,05	≤ 0,6 <sup>2</sup>
Sulfates, SO <sub>3</sub> (%)	2,8	± 0,2	≤3,5 <sup>3</sup>
C <sub>3</sub> A, clinker (%)	2,0	± 0,7	≤ 3 <sup>3</sup>
Chloride, Cl <sup>-</sup> (%)	0,01	± 0,01	≤ 0,10
Water-soluble chromium Cr <sup>6+</sup> (PPM)	0-2		≤ 2 <sup>4</sup>
Brightness (%)	22	± 1	
Loss of ignition (fly ash)	<5,0 %	-	≤ 5,0

1 According to SS 134202 verified with analysis method according to EN 196-11 (Isothermal Conduction Calorimetry method)

2 According to SS 134203. 3 According to SS 134204. 4 Clause 47 of Annex XVII of the REACH Regulation.