



Mortar with basalt fiber 13.00635.12

Technical data sheet

Version 1207.008
 12th January 2012

Basalt fiber 13.00635.12 can be used for the reduction of susceptibility to concrete cracking. Testing results of mortars with basalt fibres 13.00635.12 show a change of failure type from brittle to ductile and strain softening.

1. Technical data of dispersible fiber

	Cem-FIL 70/30	Basalt fiber 13.00635.12
Monofilament diameter, μm	16	13 \pm 0.5
Length, mm	6.0	6.35 \pm 10%
Sizing	-	No.12 compatibility with EP, PF, PUR, concrete
Type of sizing/ dispersability	unknown/ easy dispersion	hydrophobic/ moderate dispersion
Sizing content, % weight	-	>0,4
Moisture content, % weight	-	<0,1
Density (without sizing), g/cm ³	-	2,67

2. Matrix composition: mix proportions of matrices [kg/m³]

	Mortar with Cem-FIL 70/30	Mortar with 13.00635.12
CEM III/B 32,5 N LW-HS-NA	539,4	539,4
Fly ash	242,7	242,7
Microsilica suspension	53,9	53,9
Sand 0/1 mm	1078,7	1078,7
Water	242,7	242,7
Glenium ACE 30 (BASF)	4,7	5,6
Cem-FIL 70/30	32	-
BASFIBER 13.00635.12	-	24,0

3. Mortar production

3 different mixing speeds: Speed I correspond to 120 rotations per minute (rpm), speed II to 200 rpm and speed III to 380 rpm. The mixing procedure is following:

- (1) Mixing of cement and fly ash at speed I for approx. 10 seconds,
- (2) Addition of water, mixing at speed I for 30 seconds,
- (3) Addition of microsilica, mixing at speed I for 60 seconds,
- (4) Addition of sand, mixing at speed I for 30 seconds,
- (5) Addition of superplasticizer, mixing at speed II for 60 seconds,
- (6) Addition of fibres, mixing at speed I for 10 seconds.
- (7) After homogenization of fibres mixing at speed III for 15 seconds.

4. Comparison of test results of mortars with integral fibres Cem-FIL 70/30 and 13.00635.12

	Mortar with Cem-FIL 70/30	Mortar with 13.00635.12	Difference
Bending strength, MPa	6.8	7,1	+4%
Compression strength, MPa	29.8	44,8	+50%

Based on performed test it is possible to conclude that in relatively young mortar or concrete age (some weeks after mortar or concrete mixing) basalt fibres 13.00635.12 are suitable for concrete reinforcement – as disperse fibres in the same applications as Cem-FIL 70.