

Crack repair and anchoring of masonry elements

Areas of application:

The spiral anchor is suitable for various applications, including crack repair and subsequent masonry reinforcement (horizontal installation), stabilisation and needling, anchoring of multi-layered wall constructions and restoration of natural stone and decorative elements.

Technical data:

Nominal diameter	Ø 6 mm	Ø 8 mm	Ø 10 mm	Ø 12 mm
Gradient/ number of gears	25 (30)1 mm/2	30 (40)1 mm/2	50 (50)1 mm/2	60 (60)1 mm/2
Mass m	0,075 kg/m	0,085 kg/m	0,111 kg/m	0,173 kg/m
Cross-sectional area A_s	7,4 mm ²	10 mm ²	13 mm ²	27,5 mm ²
ideal diameter d_i	3,19 mm	3,57 mm	4,07 mm	5,92 mm
ideal scope u_i	10,02 mm	11,22 mm	12,79 mm	18,60 mm
Max. absorbable tensile force F_z /yield strength F_s	8,6 kN/7,6 kN	11,0 kN/10,13 kN	15,1 kN/12,4 kN	24,3 kN/19,7 kN
E-module	107.000 N/mm ²	114.000 N/mm ²	169.000 N/mm ²	146.000 N/mm ²

Processing:

Crack repair:

The spiral anchors should be laid horizontally or perpendicular to the course of the crack, not diagonally. Recommended diameters are 8 mm or 10 mm. The anchor length should be at least 40 cm on both sides of the crack, with a lateral offset of 20 cm for multiple anchor positions. The total anchor length should be at least 100 cm, with 50 cm spacing for inclined cracks. The vertical spacing of the anchor layers must be at least 35 cm. Particular care must be taken in edge areas, wall openings, corners and vaults. Groups of cracks should be bridged with longer anchors, with an overlap of at least 50 cm. Joint height: 10-20 mm, depth: 40-50 mm. Installation depth in the wall cross-section: at least 20 mm.

Needling:

The anchor diameter should ideally be 10 mm or 12 mm, but can also be smaller depending on the application. The anchor length depends on the static requirements, but should be at least 100 mm. If there are no other specifications, at least 2.5 anchors per square metre should be used. The horizontal spacing of the anchors must not exceed 900 mm and the vertical spacing must not exceed 450 mm. The drill diameter must be at least 12, 14, 16 or 20 mm, depending on the anchor diameter.

Anchoring:

According to the specifications of DIN 1053-1 and DIN 18515-2, the embedment dimension in the outer shell should be at least two thirds of the wall thickness, while the embedment dimension in the load-bearing shell must be at least 50 mm. The vertical spacing of the anchors must not exceed 500 mm and the horizontal spacing must not exceed 750 mm. At least 5 anchors are required per square metre of wall surface. In addition, at least 3 anchors per linear metre must be used at free edges.

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