

FM 753 evo-LW

Doorsteekanker optie 7 met brede sluitringen

Doorsteekankers FM 753 LW zijn uitzettingsbevestigingen voor betonnen ondergronden. Ze worden geleverd met voorgemonteerde brede sluitringen, ideaal voor verbindingen van hout op beton.

Kenmerken

Materiaal

- Elektrolytisch verzinkt staal.

Voordelen

- Kleine rand- en hartafstanden,
- Snelle en eenvoudige plaatsing: voorgemonteerde moer en sluitring en gereduceerde verankeringsdiepte;
- Ø van de schroefdraad = Ø van het boorgat,
- Schroefdraad beschermd tijdens de plaatsing: versterkte inslagpunt.
- Markering op de kop: identificatie van de afmetingen van het doorsteekanker na de plaatsing
- Voorgemonteerde brede sluitring

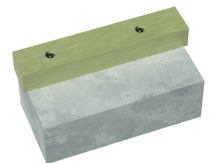
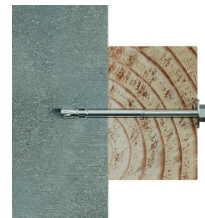
Toepassingen

Applications

- Timber sill to concrete
- Timber wall plate to concrete

Toepassingsgebieden

- Ongescheurd beton



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Technische gegevens

Dimensions

Referentie	Type size [d x L] [mm]	ID ¹⁾	Fixture thickness [t _{fix}] [mm]	Hole diameter [d _o] [mm]	Min. hole depth [h ₁] [mm]	Min. depth of anchorage [h _{ef}] [mm]	Nominal embedment depth [h _{nom}] [mm]	Hole diameter of fixing element [d _f] [mm]	Min. support thickness [h _{min}] [mm]	Washer Ø (d _w) [mm]	Torque [t _i] [Nm]
75345B1012300	M10x123	G	50	10	70	50	60	12	100	34	30
75345B1017300	M10x173	I	100	10	70	50	60	12	100	34	30
75345B1214900	M12x149	G	50	12	90	65	78	14	130	44	50
75345B1219900	M12x199	I	100	12	90	65	78	14	130	44	50

Design capacities - single anchor - no edge distances

Referentie	Design capacity - Non-cracked concrete ⁽³⁾ [kN]									
	Type size [d x L] [mm]	Tension - NRd ⁽¹⁾				Shear - VRd ⁽¹⁻²⁾ [kN]				Bending moment MRd [Nm]
		C20/25	C30/37	C40/50	C50/60	C20/25	C30/37	C40/50	C50/60	
75345B1012300	M10x123	11.6	14.2	16.4	18.3	11.6	11.6	11.6	11.6	37.3
75345B1017300	M10x173	11.6	14.2	16.4	18.3	11.6	11.6	11.6	11.6	37.3
75345B1214900	M12x149	17.2	20.8	23.9	26.7	20.1	20.1	20.1	20.1	65.3
75345B1219900	M12x199	17.2	20.8	23.9	26.7	20.1	20.1	20.1	20.1	65.3

1. The design loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s). The loading figures are valid for unreinforced concrete and reinforced concrete with a rebar spacing $s \geq 15$ cm (any diameter) or with a rebar spacing $s \geq 10$ cm, if the rebar diameter is 10mm or smaller.
2. The figures for shear are based on a single anchor without influence of concrete edges. For anchorages close to edges ($c \leq \max [10 h_{ef}; 60d]$) the concrete edge failure shall be checked per ETAG 001, Annex C, design method A.
3. Concrete is considered non-cracked when the tensile stress within the concrete is $\sigma_L + \sigma_R \leq 0$. In the absence of detailed verification $\sigma_R = 3$ N/mm² can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

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Recommended capacities - single anchor - no edge distances

Referentie	Recommended capacity - Non-cracked concrete									
	Type size [d x L] [mm]	Tension - Nrec ⁽¹⁻²⁾ [kN]				Shear - Vrec ⁽¹⁻³⁾ [kN]				Bending moment Mrec ⁽¹⁻⁶⁾ [Nm]
		C20/25	C30/37	C40/50	C50/60	C20/25	C30/37	C40/50	C50/60	
75345B1012300	M10x123	8.3	10.1	11.7	13.1	8.3	8.3	8.3	8.3	26.6
75345B1017300	M10x173	8.3	10.1	11.7	13.1	8.3	8.3	8.3	8.3	26.6
75345B1214900	M12x149	12.3	14.9	17.1	19.1	14.4	14.4	14.4	14.4	46.6
75345B1219900	M12x199	12.3	14.9	17.1	19.1	14.4	14.4	14.4	14.4	46.6

1. The recommended loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s) and with a partial safety factor for actions of $\gamma_F=1.4$. The loading figures are valid for unreinforced concrete and reinforced concrete with a rebar spacing $s \geq 15$ cm (any diameter) or with a rebar spacing $s \geq 10$ cm, if the rebar diameter is 10 mm or smaller.
2. The figures for shear are based on a single anchor without influence of concrete edges. For anchorages close to edges ($c \leq \max [10 h_{ef}; 60d]$) the concrete edge failure shall be checked per ETAG 001, Annex C, design method A.
3. Concrete is considered non-cracked when the tensile stress within the concrete is $\sigma_L + \sigma_R \leq 0$. In the absence of detailed verification $\sigma_R = 3$ N/mm² can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

Design capacities - single anchor - no edge distances - reduced embedment depth

Referentie	Type size [d x L] [mm]	Reduced embedment depth [h _{ef,r}]	Characteristic spacing for h _{ef,r} ⁽⁵⁾ [S _{cr,red}] [mm]	Characteristic edge distance for h _{ef,r} [C _{cr,red}] [mm]	Min. spacing for h _{ef,r} [S _{min,red}] [mm]	Min. edge distance for h _{ef,r} [C _{min,red}]	Design loads - Tension & Shear - N _{Rd} [kN]
75345B1012300	M10x123	35	105	55	50	50	4.7
75345B1017300	M10x173	35	105	55	50	50	4.7
75345B1214900	M12x149	50	150	75	70	70	7.2
75345B1219900	M12x199	50	150	75	70	70	7.2

Shear value valid with distance from the edge $c > 10 \times h_{ef,r}$

Recommended capacities - single anchor - no edge distances - reduced embedment depth

Referentie	Type size [d x L] [mm]	Reduced embedment depth [h _{ef,r}]	Characteristic spacing for h _{ef,r} ⁽⁵⁾ [S _{cr,red}] [mm]	Characteristic edge distance for h _{ef,r} [C _{cr,red}] [mm]	Min. spacing for h _{ef,r} [S _{min,red}] [mm]	Min. edge distance for h _{ef,r} [C _{min,red}]	Recommended loads - Tension & Shear - N _{rec} [kN]
75345B1012300	M10x123	35	105	55	50	50	3.4
75345B1017300	M10x173	35	105	55	50	50	3.4
75345B1214900	M12x149	50	150	75	70	70	5.2
75345B1219900	M12x199	50	150	75	70	70	5.2

The recommended loads N,V and F derive from the mean ultimate loads and are inclusive of the total safety factor $\gamma=4$ (shear $\gamma=3$).

Shear value valid with distance from the edge $c > 10 \times h_{ef,r}$

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Plaatsing

Spacing, Edge Distance and Member Thickness

Referentie	Type size [d x L] [mm]	Hole diameter [d _o] [mm]	Min. hole depth [h ₁] [mm]	Hole diameter of fixing element [d _f] [mm]	Wrench [SW] [SW]	Torque [t _{inst}] [Nm]	Embedment depth [h _{ef}]	Min. support thickness [h _{min}]	Characteristic spacing ⁽⁵⁾ [scr,N] [mm]	Characteristic edge distance [ccr,N] [mm]	N
75345B1012300	M10x123	10	70	12	17	30	50	100	150	75	!
75345B1017300	M10x173	10	70	12	17	30	50	100	150	75	!
75345B1214900	M12x149	12	90	14	19	50	65	130	195	98	!
75345B1219900	M12x199	12	90	14	19	50	65	130	195	98	!

