

Technical Sheet

**FRUL
SIDER**

**SIMPSON
StrongTie**

FM 753 evo

Doorsteekanker optie 7

*Doorsteekankers FM 753 zijn
uitzettingsbevestigingen voor betonnen
ondergronden.*

Features

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

Applications

Applications

- Railings
- Metal and wood carpentry
- Facades

Toepassingsgebieden

- Ongescheurd beton,
- Harde natuursteen



Fixation de structure bois

Zoom de la pointe



Steel frame structure
anchoring

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Technische gegevens

Dimensions

Referentie	Metallic fixings dimensions									
	Dimensions					Metingen[mm]				
NOI	Dimensions See full table online → 									
	setting depth	[do] [mm]	in fixings [df][mm]	outer box					Thread length [Lv] [mm]	Wrenc size[m

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Design capacities - single anchor - no edge distances

Referentie	Metallic fixings dimensions	Metallic fixings loads								
	Afmetingen[mm]	Design capacity - Non-cracked concrete (3)[kN]								Design capacity - Cracked concrete
	Dimensions[mm]	Tension - NRd (1)				Shear - VRd (1-2)[kN]				Bending moment MRd[Nm]
		C20/25[kN]	C30/37[kN]	C40/50[kN]	C50/60[kN]	C20/25[kN]	C30/37[kN]	C40/50[kN]	C50/60[kN]	
75340B0604800	M6x48*/**	4	4	4	4.1	5.1	5.1	5.1	5.1	7.3
75340B0606500	M6x65	4	4	4	4.1	5.1	5.1	5.1	5.1	7.3
75340B0608500	M6x85	4	4	4	4.1	5.1	5.1	5.1	5.1	7.3
75340B0806800	M8x68	8	8.3	8.5	8.7	7.9	7.9	7.9	7.9	21.5
75340B0807300	M8x73	8	8.3	8.5	8.7	7.9	7.9	7.9	7.9	21.5
75340B0808300	M8x83	8	8.3	8.5	8.7	7.9	7.9	7.9	7.9	21.5
75340B0809300	M8x93	8	8.3	8.5	8.7	7.9	7.9	7.9	7.9	21.5
75340B0810300	M8x103	8	8.3	8.5	8.7	7.9	7.9	7.9	7.9	21.5
75340B0811300	M8x113	8	8.3	8.5	8.7	7.9	7.9	7.9	7.9	21.5
75340B0813300	M8x133	8	8.3	8.5	8.7	7.9	7.9	7.9	7.9	21.5
75340B0816300	M8x163	8	8.3	8.5	8.7	7.9	7.9	7.9	7.9	21.5
75340B1007800	M10x78	11.6	14.2	16.4	18.3	11.6	11.6	11.6	11.6	37.3
75340B1008300	M10x83	11.6	14.2	16.4	18.3	11.6	11.6	11.6	11.6	37.3
75340B1009300	M10x93	11.6	14.2	16.4	18.3	11.6	11.6	11.6	11.6	37.3
75340B1010300	M10x103	11.6	14.2	16.4	18.3	11.6	11.6	11.6	11.6	37.3
75340B1011300	M10x113	11.6	14.2	16.4	18.3	11.6	11.6	11.6	11.6	37.3
75340B1012300	M10x123	11.6	14.2	16.4	18.3	11.6	11.6	11.6	11.6	37.3
75340B1014300	M10x143	11.6	14.2	16.4	18.3	11.6	11.6	11.6	11.6	37.3
75340B1017300	M10x173	11.6	14.2	16.4	18.3	11.6	11.6	11.6	11.6	37.3
75340B1021300	M10x213	11.6	14.2	16.4	18.3	11.6	11.6	11.6	11.6	37.3
75340B1210400	M12x104	17.2	20.8	23.9	26.7	20.1	20.1	20.1	20.1	65.3
75340B1210900	M12x109	17.2	20.8	23.9	26.7	20.1	20.1	20.1	20.1	65.3
75340B1211900	M12x119	17.2	20.8	23.9	26.7	20.1	20.1	20.1	20.1	65.3
75340B1212900	M12x129	17.2	20.8	23.9	26.7	20.1	20.1	20.1	20.1	65.3
75340B1213900	M12x139	17.2	20.8	23.9	26.7	20.1	20.1	20.1	20.1	65.3
75340B1214900	M12x149	17.2	20.8	23.9	26.7	20.1	20.1	20.1	20.1	65.3
75340B1217900	M12x179	17.2	20.8	23.9	26.7	20.1	20.1	20.1	20.1	65.3
75340B1219900	M12x199	17.2	20.8	23.9	26.7	20.1	20.1	20.1	20.1	65.3
75340B1221900	M12x219	17.2	20.8	23.9	26.7	20.1	20.1	20.1	20.1	65.3
75340B1223900	M12x239	17.2	20.8	23.9	26.7	20.1	20.1	20.1	20.1	65.3
75340B1225900	M12x259	17.2	20.8	23.9	26.7	20.1	20.1	20.1	20.1	65.3
75340B1611000	M16x110*/**	23.5	27	29.8	32.4	37.5	37.5	37.5	37.5	155.3

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 ($c \leq \max [10 \text{ hef}; 60d]$) 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 $\sigma_R = 3 \text{ N/mm}^2$ can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

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Referentie	Metallic fixings dimensions	Metallic fixings loads								
	Afmetingen[mm]	Design capacity - Non-cracked concrete (3)[kN]								Design capacity - Cracked concrete
	Dimensions[mm]	Tension - NRd (1)				Shear - VRd (1-2)[kN]				Bending moment MRd[Nm]
		C20/25[kN]	C30/37[kN]	C40/50[kN]	C50/60[kN]	C20/25[kN]	C30/37[kN]	C40/50[kN]	C50/60[kN]	
75340B1615100	M16x151	23.5	27	29.8	32.4	37.5	37.5	37.5	37.5	155.3
75340B1617100	M16x171	23.5	27	29.8	32.4	37.5	37.5	37.5	37.5	155.3
75340B1620100	M16x201	23.5	27	29.8	32.4	37.5	37.5	37.5	37.5	155.3
75340B1622100	M16x221	23.5	27	29.8	32.4	37.5	37.5	37.5	37.5	155.3
75340B1626100	M16x261	23.5	27	29.8	32.4	37.5	37.5	37.5	37.5	155.3

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 ($c \leq \max [10 \text{ hef}; 60d]$) 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 $\sigma_R = 3 \text{ N/mm}^2$ 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	Metallic fixings dimensions	Metallic fixings loads									
	Afmetingen[mm]	Recommended loads - Non-cracked concrete								Design capacity - Non-cracked concrete (3) [kN]	
		Dimensions[mm]	Tension - N _{rec} [kN]				Shear - V _{rec} [kN]				Bending moment MRd[Nm]
			C20/25[kN]	C30/37[kN]	C40/50[kN]	C50/60[kN]	C20/25[kN]	C30/37[kN]	C40/50[kN]	C50/60[kN]	
75340B0604800	M6x48*/**	2.2	2.9	2.9	2.9	2.9	3.6	3.6	3.6	3.6	
75340B0606500	M6x65	2.2	2.9	2.9	2.9	2.9	3.6	3.6	3.6	3.6	
75340B0608500	M6x85	2.2	2.9	2.9	2.9	2.9	3.6	3.6	3.6	3.6	
75340B0806800	M8x68	2.4	5.7	5.9	6.1	6.2	5.6	5.6	5.6	5.6	
75340B0807300	M8x73	2.4	5.7	5.9	6.1	6.2	5.6	5.6	5.6	5.6	
75340B0808300	M8x83	2.4	5.7	5.9	6.1	6.2	5.6	5.6	5.6	5.6	
75340B0809300	M8x93	2.4	5.7	5.9	6.1	6.2	5.6	5.6	5.6	5.6	
75340B0810300	M8x103	2.4	5.7	5.9	6.1	6.2	5.6	5.6	5.6	5.6	
75340B0811300	M8x113	2.4	5.7	5.9	6.1	6.2	5.6	5.6	5.6	5.6	
75340B0813300	M8x133	2.4	5.7	5.9	6.1	6.2	5.6	5.6	5.6	5.6	
75340B0816300	M8x163	2.4	5.7	5.9	6.1	6.2	5.6	5.6	5.6	5.6	
75340B1007800	M10x78	4.7	8.3	10.1	11.7	13.1	8.3	8.3	8.3	8.3	
75340B1008300	M10x83	4.7	8.3	10.1	11.7	13.1	8.3	8.3	8.3	8.3	
75340B1009300	M10x93	4.7	8.3	10.1	11.7	13.1	8.3	8.3	8.3	8.3	
75340B1010300	M10x103	4.7	8.3	10.1	11.7	13.1	8.3	8.3	8.3	8.3	
75340B1011300	M10x113	4.7	8.3	10.1	11.7	13.1	8.3	8.3	8.3	8.3	
75340B1012300	M10x123	4.7	8.3	10.1	11.7	13.1	8.3	8.3	8.3	8.3	
75340B1014300	M10x143	4.7	8.3	10.1	11.7	13.1	8.3	8.3	8.3	8.3	
75340B1017300	M10x173	4.7	8.3	10.1	11.7	13.1	8.3	8.3	8.3	8.3	
75340B1021300	M10x213	4.7	8.3	10.1	11.7	13.1	8.3	8.3	8.3	8.3	
75340B1210400	M12x104	7.2	12.3	14.9	17.1	19.1	14.4	14.4	14.4	14.4	
75340B1210900	M12x109	7.2	12.3	14.9	17.1	19.1	14.4	14.4	14.4	14.4	
75340B1211900	M12x119	7.2	12.3	14.9	17.1	19.1	14.4	14.4	14.4	14.4	
75340B1212900	M12x129	7.2	12.3	14.9	17.1	19.1	14.4	14.4	14.4	14.4	
75340B1213900	M12x139	7.2	12.3	14.9	17.1	19.1	14.4	14.4	14.4	14.4	
75340B1214900	M12x149	7.2	12.3	14.9	17.1	19.1	14.4	14.4	14.4	14.4	
75340B1217900	M12x179	7.2	12.3	14.9	17.1	19.1	14.4	14.4	14.4	14.4	
75340B1219900	M12x199	7.2	12.3	14.9	17.1	19.1	14.4	14.4	14.4	14.4	
75340B1221900	M12x219	7.2	12.3	14.9	17.1	19.1	14.4	14.4	14.4	14.4	
75340B1223900	M12x239	7.2	12.3	14.9	17.1	19.1	14.4	14.4	14.4	14.4	

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 ($c \leq \max [10 \text{ hef}; 60d]$) 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 $\sigma_R = 3 \text{ N/mm}^2$ can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

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Referentie	Metallic fixings dimensions	Metallic fixings loads								
	Afmetingen[mm]	Recommended loads - Non-cracked concrete								Design capacity - Non-cracked concrete (3) [kN]
	Dimensions[mm]	Tension - N_{rec} [kN]				Shear - V_{rec} [kN]				Bending moment M_{Rd} [Nm]
		C20/25[kN]	C30/37[kN]	C40/50[kN]	C50/60[kN]	C20/25[kN]	C30/37[kN]	C40/50[kN]	C50/60[kN]	
75340B1225900	M12x259	7.2	12.3	14.9	17.1	19.1	14.4	14.4	14.4	14.4
75340B1611000	M16x110*/**	9.2	16.8	19.3	21.3	23.1	26.8	26.8	26.8	26.8
75340B1615100	M16x151	9.2	16.8	19.3	21.3	23.1	26.8	26.8	26.8	26.8
75340B1617100	M16x171	9.2	16.8	19.3	21.3	23.1	26.8	26.8	26.8	26.8
75340B1620100	M16x201	9.2	16.8	19.3	21.3	23.1	26.8	26.8	26.8	26.8
75340B1622100	M16x221	9.2	16.8	19.3	21.3	23.1	26.8	26.8	26.8	26.8
75340B1626100	M16x261	9.2	16.8	19.3	21.3	23.1	26.8	26.8	26.8	26.8

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 ($c \leq \max [10 \text{ hef}; 60d]$) 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 $\sigma_R = 3 \text{ N/mm}^2$ can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

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

Referentie	Metallic fixings dimensions	Metallic fixings loads	Montagegegevens				
	Afmetingen[mm]	Design loads - Tension & Shear - N·d[kN]	Montagegegevens	Spacing and edge distances			
	Dimensions[mm]		Reduced setting depth [$h_{ef,red}$][mm]	Characteristic spacing for $h_{ef,r}^{(2)}$ [mm]	Min. setting depth [h_{ef}] [mm]	Min. spacing for $h_{ef,r}$ [mm]	Min. edge distance for $h_{ef,r}$
75340B0604800	M6x48**/**	5.2	30	90	45	30	40
75340B0606500	M6x65	5.2	30	90	45	30	40
75340B0608500	M6x85	5.2	30	90	45	30	40
75340B0806800	M8x68	13.4	30	90	45	40	40
75340B0807300	M8x73	13.4	30	90	45	40	40
75340B0808300	M8x83	13.4	30	90	45	40	40
75340B0809300	M8x93	13.4	30	90	45	40	40
75340B0810300	M8x103	13.4	30	90	45	40	40
75340B0811300	M8x113	13.4	30	90	45	40	40
75340B0813300	M8x133	13.4	30	90	45	40	40
75340B0816300	M8x163	13.4	30	90	45	40	40
75340B1007800	M10x78	26.6	35	105	55	50	50
75340B1008300	M10x83	26.6	35	105	55	50	50
75340B1009300	M10x93	26.6	35	105	55	50	50
75340B1010300	M10x103	26.6	35	105	55	50	50
75340B1011300	M10x113	26.6	35	105	55	50	50
75340B1012300	M10x123	26.6	35	105	55	50	50
75340B1014300	M10x143	26.6	35	105	55	50	50
75340B1017300	M10x173	26.6	35	105	55	50	50
75340B1021300	M10x213	26.6	35	105	55	50	50
75340B1210400	M12x104	46.6	50	150	75	70	70
75340B1210900	M12x109	46.6	50	150	75	70	70
75340B1211900	M12x119	46.6	50	150	75	70	70
75340B1212900	M12x129	46.6	50	150	75	70	70
75340B1213900	M12x139	46.6	50	150	75	70	70
75340B1214900	M12x149	46.6	50	150	75	70	70
75340B1217900	M12x179	46.6	50	150	75	70	70
75340B1219900	M12x199	46.6	50	150	75	70	70
75340B1221900	M12x219	46.6	50	150	75	70	70
75340B1223900	M12x239	46.6	50	150	75	70	70
75340B1225900	M12x259	46.6	50	150	75	70	70
75340B1611000	M16x110**/**	110.9	59	180	90	90	90
75340B1615100	M16x151	110.9	59	180	90	90	90
75340B1617100	M16x171	110.9	59	180	90	90	90
75340B1620100	M16x201	110.9	59	180	90	90	90
75340B1622100	M16x221	110.9	59	180	90	90	90
75340B1626100	M16x261	110.9	59	180	90	90	90

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

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

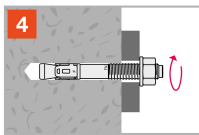
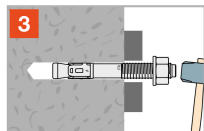
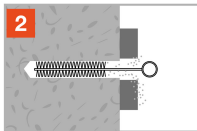
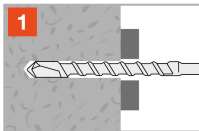
Referentie	Metallic fixings dimensions	Metallic fixings loads	Montagegegevens				
	Afmetingen[mm]	tension / shear load R_{ec} [kN]	Montagegegevens	Spacing and edge distances			
	Dimensions[mm]		Reduced setting depth [$h_{ef,red}$][mm]	Characteristic spacing for $h_{ef,r}^{(5)}$ [mm]	Min. setting depth [h_{ef}][mm]	Min. spacing for $h_{ef,r}$ [mm]	Min. edge distance for $h_{ef,r}$
75340B0604800	M6x48*/**	1.6	30	90	45	30	40
75340B0606500	M6x65	1.6	30	90	45	30	40
75340B0608500	M6x85	1.6	30	90	45	30	40
75340B0806800	M8x68	1.7	30	90	45	40	40
75340B0807300	M8x73	1.7	30	90	45	40	40
75340B0808300	M8x83	1.7	30	90	45	40	40
75340B0809300	M8x93	1.7	30	90	45	40	40
75340B0810300	M8x103	1.7	30	90	45	40	40
75340B0811300	M8x113	1.7	30	90	45	40	40
75340B0813300	M8x133	1.7	30	90	45	40	40
75340B0816300	M8x163	1.7	30	90	45	40	40
75340B1007800	M10x78	3.4	35	105	55	50	50
75340B1008300	M10x83	3.4	35	105	55	50	50
75340B1009300	M10x93	3.4	35	105	55	50	50
75340B1010300	M10x103	3.4	35	105	55	50	50
75340B1011300	M10x113	3.4	35	105	55	50	50
75340B1012300	M10x123	3.4	35	105	55	50	50
75340B1014300	M10x143	3.4	35	105	55	50	50
75340B1017300	M10x173	3.4	35	105	55	50	50
75340B1021300	M10x213	3.4	35	105	55	50	50
75340B1210400	M12x104	5.2	50	150	75	70	70
75340B1210900	M12x109	5.2	50	150	75	70	70
75340B1211900	M12x119	5.2	50	150	75	70	70
75340B1212900	M12x129	5.2	50	150	75	70	70
75340B1213900	M12x139	5.2	50	150	75	70	70
75340B1214900	M12x149	5.2	50	150	75	70	70
75340B1217900	M12x179	5.2	50	150	75	70	70
75340B1219900	M12x199	5.2	50	150	75	70	70
75340B1221900	M12x219	5.2	50	150	75	70	70
75340B1223900	M12x239	5.2	50	150	75	70	70
75340B1225900	M12x259	5.2	50	150	75	70	70
75340B1611000	M16x110*/**	6.5	59	180	90	90	90
75340B1615100	M16x151	6.5	59	180	90	90	90
75340B1617100	M16x171	6.5	59	180	90	90	90
75340B1620100	M16x201	6.5	59	180	90	90	90
75340B1622100	M16x221	6.5	59	180	90	90	90
75340B1626100	M16x261	6.5	59	180	90	90	90

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 $c>10 \times h_{ef,r}$

FM 753 evo
Doorsteekanker optie 7

Plaatsing



Spacing, Edge Distance and Member Thickness

Referentie	Metallic fixings dimensions				Montagegegevens						
	Afmetingen[mm]		Overig		Montagegegevens			Spacing and edge distances - Behar		Spacing and edge dist	
	Dim									Characteristic ing(5) - N[mm]	Characteristic edge distance[mm]
75340B0604800	M									120	60
75340B0606500	M6x65	10	6	7	55	8	40	100	40	120	60
75340B0608500	M6x85	10	6	7	55	8	40	100	40	120	60

Spacing, Edge Distance and
Member Thickness

See full table online →

