

FM-753 CRACK A4

Kotwa mechaniczna A4

Kotwy FM-735 crack charakteryzuje się szybkością montażu i wysoką nośnością przy niewielkich odległościach pomiędzy kotwiami i niewielkich odległościach krawędziowych. Stosowane są głównie do mocowania w podłożach gładkich i twardych tj. beton, żelbet itp. Kotwa przeznaczona jest do mocowania w zakresie średnich obciążeń elementów konstrukcji budowlanych, elewacji, barier, poręczy itd. Kotwa certyfikowana do zastosowań sejsmicznych C1 i C2 przetestowana w warunkach pożarowych R120.

Nadaje się do zastosowań w betonie zarysowanym i niezarysowanym (opcja 1).

Właściwości

Materiał

- Stal nierdzewna A4

Zalety

- Szybkiego montażu w zarysowanym i niezarysowanym betonie (opcj 1).
- Zoptymalizowany klips rozporowy gwarantuje równomierny rozkład naprężeń umożliwiając stosowanie przy dużych obciążeniach dopuszczalnych
- Małe odstępki osiowe do krawędzi w przypadku niewielkich elementów budowlanych.
- Zwiększona wytrzymałość na rozciąganie i ścinanie.

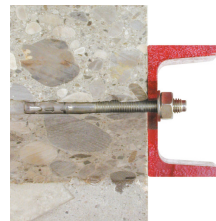
Zastosowanie

Obszar zastosowań

Stosowane są głównie do mocowania w podłożach gładkich i twardych tj. beton, żelbet itp. Kotwa przeznaczona jest do mocowania w zakresie średnich obciążeń elementów konstrukcji budowlanych:

- Zamocowania konstrukcyjne
- Konstrukcje stalowe
- Zastosowania sejsmiczne

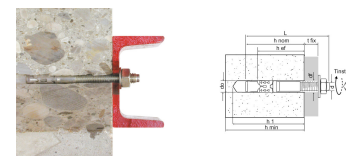
Suitable for



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Dane techniczne

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Wymiary produktu

Referencje	Product Reference	Wymiary [mm]	seismic certification	Grubość mocowanego elementu $[t_{fix,max}]$ przy standardowej głębokości kotwienia $[h_{ef,STD}]$ [mm]	Grubość mocowanego elementu $[t_{fix,max}]$ przy zredukowanej głębokości kotwienia $[h_{ef,RED}]$ [mm]	Średnica otworu przelotowego $[d_f]$ [mm]	Średnica otworu $[d_0]$ x głębokość $[h_1]$ w podłożu o zmniejszonej standardowej głębokości kotwienia $[h_{ef,RED}]$ [mm]	Średnica otworu $[d_0]$ x głębokość $[h_1]$ w podłożu o zmniejszonej głębokości kotwienia $[h_{ef,RED}]$ [mm]	Min. głębokość kotwienia $[h_{ef,STD}]$ [mm]	Zredukowana głębokość kotwienia $[h_{ef,RED}]$ [mm]
7535000806800	FM-753 CRACK A4	M8x68	C1	4	18	9	8x70	8x56	48	34
7535000807500	FM-753 CRACK A4	M8x75	C1	10	24	9	8x70	8x56	48	34
7535000809000	FM-753 CRACK A4	M8x90	C1	25	39	9	8x70	8x56	48	34
7535000811500	FM-753 CRACK A4	M8x115	C1	50	64	9	8x70	8x56	48	34
7535000813500	FM-753 CRACK A4	M8x135	C1	70	84	9	8x70	8x56	48	34
7535000816500	FM-753 CRACK A4	M8x165	C1	100	114	9	8x70	8x56	48	34
7535001009000	FM-753 CRACK A4	M10x90	C1/C2	10	30	12	10x80	10x60	60	40
7535001010500	FM-753 CRACK A4	M10x105	C1/C2	25	45	12	10x80	10x60	60	40
7535001011500	FM-753 CRACK A4	M10x115	C1/C2	35	55	12	10x80	10x60	60	40
7535001013500	FM-753 CRACK A4	M10x135	C1/C2	55	75	12	10x80	10x60	60	40
7535001015500	FM-753 CRACK A4	M10x155	C1/C2	75	95	12	10x80	10x60	60	40
7535001018500	FM-753 CRACK A4	M10x185	C1/C2	105	125	12	10x80	10x60	60	40
7535001211000	FM-753 CRACK A4	M12x110	C1/C2	10	30	14	12x100	12x80	72	52
7535001212000	FM-753 CRACK A4	M12x120	C1/C2	20	40	14	12x100	12x80	72	52
7535001214500	FM-753 CRACK A4	M12x145	C1/C2	45	65	14	12x100	12x80	72	52

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Kotwa mechaniczna A4

Referencje	Product Reference	Wymiary [mm]	seismic certification	Grubość mocowanego elementu [$t_{fix,max}$] przy standardowej głębokości kotwienia [$h_{ef,STD}$] [mm]	Grubość mocowanego elementu [$t_{fix,max}$] przy zredukowanej głębokości kotwienia [$h_{ef,RED}$] [mm]	Średnica otworu przelotowego [d_f] [mm]	Średnica otworu [d_0] x głębokość [h_1] w podłożu o zmniejszonej standardowej głębokości kotwienia [$h_{ef,RED}$] [mm]	Średnica otworu [d_0] x głębokość [h_1] w podłożu o zmniejszonej głębokości kotwienia [$h_{ef,RED}$] [mm]	Min. głębokość kotwienia [$h_{ef,STD}$] [mm]	Zredukowana głębokość kotwienia [$h_{ef,RED}$] [mm]
7535001217000	FM-753 CRACK A4	M12x170	C1/C2	70	90	14	12x100	12x80	72	52
7535001220000	FM-753 CRACK A4	M12x200	C1/C2	100	120	14	12x100	12x80	72	52
7535001613000	FM-753 CRACK A4	M16x130	C1/C2	10	30	18	16x115	16x95	86	66
7535001615000	FM-753 CRACK A4	M16x150	C1/C2	30	50	18	16x115	16x95	86	66
7535001618500	FM-753 CRACK A4	M16x185	C1/C2	60	80	18	16x115	16x95	86	66
7535001622000	FM-753 CRACK A4	M16x220	C1/C2	100	120	18	16x115	16x95	86	66

FM-753 CRACK A4 Kotwa mechaniczna A4

Recommended loads / Non-cracked concrete / for single anchors / with no edge distances or spacings

Referencje	Product Reference	Wymiary [mm] [mm]	Recommended loads - Non-cracked concrete								Bending moment M_{rec} [Nm]
			Tension - N_{rec}				Shear - V_{rec}				
			C20/25 [kN]	C30/37 [kN]	C40/50 [kN]	C50/60 [kN]	C20/25 [kN]	C30/37 [kN]	C40/50 [kN]	C50/60 [kN]	
7535000806800	FM-753 CRACK A4	M8x68	4.8	5.9	6.8	7.4	7.8	7.8	7.8	7.8	10.5
7535000807500	FM-753 CRACK A4	M8x75	4.8	5.9	6.8	7.4	7.8	7.8	7.8	7.8	10.5
7535000809000	FM-753 CRACK A4	M8x90	4.8	5.9	6.8	7.4	7.8	7.8	7.8	7.8	10.5
7535000811500	FM-753 CRACK A4	M8x115	4.8	5.9	6.8	7.4	7.8	7.8	7.8	7.8	10.5
7535000813500	FM-753 CRACK A4	M8x135	4.8	5.9	6.8	7.4	7.8	7.8	7.8	7.8	10.5
7535000816500	FM-753 CRACK A4	M8x165	4.8	5.9	6.8	7.4	7.8	7.8	7.8	7.8	10.5
7535001009000	FM-753 CRACK A4	M10x90	7.6	9.3	10.7	11.8	13.4	13.4	13.4	13.4	21.5
7535001010500	FM-753 CRACK A4	M10x105	7.6	9.3	10.7	11.8	13.4	13.4	13.4	13.4	21.5
7535001011500	FM-753 CRACK A4	M10x115	7.6	9.3	10.7	11.8	13.4	13.4	13.4	13.4	21.5
7535001013500	FM-753 CRACK A4	M10x135	7.6	9.3	10.7	11.8	13.4	13.4	13.4	13.4	21.5
7535001015500	FM-753 CRACK A4	M10x155	7.6	9.3	10.7	11.8	13.4	13.4	13.4	13.4	21.5
7535001018500	FM-753 CRACK A4	M10x185	7.6	9.3	10.7	11.8	13.4	13.4	13.4	13.4	21.5
7535001211000	FM-753 CRACK A4	M12x110	10.5	12.8	14.8	16.3	17.3	17.3	17.3	17.3	37.4
7535001212000	FM-753 CRACK A4	M12x120	10.5	12.8	14.8	16.3	17.3	17.3	17.3	17.3	37.4
7535001214500	FM-753 CRACK A4	M12x145	10.5	12.8	14.8	16.3	17.3	17.3	17.3	17.3	37.4
7535001217000	FM-753 CRACK A4	M12x170	10.5	12.8	14.8	16.3	17.3	17.3	17.3	17.3	37.4
7535001220000	FM-753 CRACK A4	M12x200	10.5	12.8	14.8	16.3	17.3	17.3	17.3	17.3	37.4
7535001613000	FM-753 CRACK A4	M16x130	18.7	22.8	26.4	29	34.9	34.9	34.9	34.9	94.9
7535001615000	FM-753 CRACK A4	M16x150	18.7	22.8	26.4	29	34.9	34.9	34.9	34.9	94.9
7535001618500	FM-753 CRACK A4	M16x185	18.7	22.8	26.4	29	34.9	34.9	34.9	34.9	94.9
7535001622000	FM-753 CRACK A4	M16x220	18.7	22.8	26.4	29	34.9	34.9	34.9	34.9	94.9

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Referencje	Product Reference	Wymiary [mm] [mm]	Recommended loads - Non-cracked concrete								Bending moment M_{rec} [Nm]
			Tension - N_{rec}				Shear - V_{rec}				
			C20/25 [kN]	C30/37 [kN]	C40/50 [kN]	C50/60 [kN]	C20/25 [kN]	C30/37 [kN]	C40/50 [kN]	C50/60 [kN]	
<p>1) In case of interaction of tension and shear loads (lever arm) as well as in case of anchor groups and/or edge influence, a design according to EN 1992-4 (seismic actions - Annex C / fire action - Annex D) shall be carried out taking into account the entire European Technical Assessment ETA-10/0293.</p> <p>2) The load data take into account the partial safety factors of the resistances given in the European Technical Assessment (ETA) and a partial safety factor of the actions of $\gamma F = 1.4$. The values given assume unreinforced or normally reinforced concrete with a spacing of the reinforcing bars $s \geq 15$ cm or $s \geq 10$ cm at a rebar diameter $d_s \leq 10$ mm is assumed.</p>											

FM-753 CRACK A4 Kotwa mechaniczna A4

Design capacities - single anchor - no edge distances - Uncracked concrete

Referencje	Product Reference	Wymiary [mm] [mm]	Design capacity - Non-cracked concrete (3)								Bending moment MRd [Nm]
			Tension - N_{Rd} (1)				Shear - V_{Rd} (1-2)				
			C20/25 [kN]	C30/37 [kN]	C40/50 [kN]	C50/60 [kN]	C20/25 [kN]	C30/37 [kN]	C40/50 [kN]	C50/60 [kN]	
7535000806800	FM-753 CRACK A4	M8x68	6.7	-	-	-	10.9	-	-	-	-
7535000807500	FM-753 CRACK A4	M8x75	6.7	-	-	-	10.9	-	-	-	-
7535000809000	FM-753 CRACK A4	M8x90	6.7	-	-	-	10.9	-	-	-	-
7535000811500	FM-753 CRACK A4	M8x115	6.7	-	-	-	10.9	-	-	-	-
7535000813500	FM-753 CRACK A4	M8x135	6.7	-	-	-	10.9	-	-	-	-
7535000816500	FM-753 CRACK A4	M8x165	6.7	-	-	-	10.9	-	-	-	-
7535001009000	FM-753 CRACK A4	M10x90	10.7	-	-	-	18.8	-	-	-	-
7535001010500	FM-753 CRACK A4	M10x105	10.7	-	-	-	18.8	-	-	-	-
7535001011500	FM-753 CRACK A4	M10x115	10.7	-	-	-	18.8	-	-	-	-
7535001013500	FM-753 CRACK A4	M10x135	10.7	-	-	-	18.8	-	-	-	-
7535001015500	FM-753 CRACK A4	M10x155	10.7	-	-	-	18.8	-	-	-	-
7535001018500	FM-753 CRACK A4	M10x185	10.7	-	-	-	18.8	-	-	-	-
7535001211000	FM-753 CRACK A4	M12x110	14.7	-	-	-	24.2	-	-	-	-
7535001212000	FM-753 CRACK A4	M12x120	14.7	-	-	-	24.2	-	-	-	-
7535001214500	FM-753 CRACK A4	M12x145	14.7	-	-	-	24.2	-	-	-	-
7535001217000	FM-753 CRACK A4	M12x170	14.7	-	-	-	24.2	-	-	-	-
7535001220000	FM-753 CRACK A4	M12x200	14.7	-	-	-	24.2	-	-	-	-
7535001613000	FM-753 CRACK A4	M16x130	26.1	-	-	-	48	-	-	-	-
7535001615000	FM-753 CRACK A4	M16x150	26.1	-	-	-	48	-	-	-	-
7535001618500	FM-753 CRACK A4	M16x185	26.1	-	-	-	48	-	-	-	-
7535001622000	FM-753 CRACK A4	M16x220	26.1	-	-	-	48	-	-	-	-

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Referencje	Product Reference	Wymiary [mm] [mm]	Design capacity - Non-cracked concrete (3)								Bending moment MRd [Nm]
			Tension - N_{Rd} (1)				Shear - V_{Rd} (1-2)				
			C20/25 [kN]	C30/37 [kN]	C40/50 [kN]	C50/60 [kN]	C20/25 [kN]	C30/37 [kN]	C40/50 [kN]	C50/60 [kN]	

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 loads - Cracked concrete - single anchor - no edge distances

Referencje	Product Reference	Wymiary [mm] [mm]	Recommended loads - Cracked concrete								Bending moment M_{rec} [Nm]
			Tension - N_{rec}				Shear - V_{rec}				
			C20/25 [kN]	C30/37 [kN]	C40/50 [kN]	C50/60 [kN]	C20/25 [kN]	C30/37 [kN]	C40/50 [kN]	C50/60 [kN]	
7535000806800	FM-753 CRACK A4	M8x68	3.1	3.8	4.4	4.8	5.4	5.4	5.4	5.4	10.5
7535000807500	FM-753 CRACK A4	M8x75	3.1	3.8	4.4	4.8	5.4	5.4	5.4	5.4	10.5
7535000809000	FM-753 CRACK A4	M8x90	3.1	3.8	4.4	4.8	5.4	5.4	5.4	5.4	10.5
7535000811500	FM-753 CRACK A4	M8x115	3.1	3.8	4.4	4.8	5.4	5.4	5.4	5.4	10.5
7535000813500	FM-753 CRACK A4	M8x135	3.1	3.8	4.4	4.8	5.4	5.4	5.4	5.4	10.5
7535000816500	FM-753 CRACK A4	M8x165	3.1	3.8	4.4	4.8	5.4	5.4	5.4	5.4	10.5
7535001009000	FM-753 CRACK A4	M10x90	4.8	5.9	6.8	7.4	13.4	13.4	13.4	13.4	21.5
7535001010500	FM-753 CRACK A4	M10x105	4.8	5.9	6.8	7.4	13.4	13.4	13.4	13.4	21.5
7535001011500	FM-753 CRACK A4	M10x115	4.8	5.9	6.8	7.4	13.4	13.4	13.4	13.4	21.5
7535001013500	FM-753 CRACK A4	M10x135	4.8	5.9	6.8	7.4	13.4	13.4	13.4	13.4	21.5
7535001015500	FM-753 CRACK A4	M10x155	4.8	5.9	6.8	7.4	13.4	13.4	13.4	13.4	21.5
7535001018500	FM-753 CRACK A4	M10x185	4.8	5.9	6.8	7.4	13.4	13.4	13.4	13.4	21.5
7535001211000	FM-753 CRACK A4	M12x110	6.2	7.6	8.7	9.6	17.3	17.3	17.3	17.3	37.4
7535001212000	FM-753 CRACK A4	M12x120	6.2	7.6	8.7	9.6	17.3	17.3	17.3	17.3	37.4
7535001214500	FM-753 CRACK A4	M12x145	6.2	7.6	8.7	9.6	17.3	17.3	17.3	17.3	37.4
7535001217000	FM-753 CRACK A4	M12x170	6.2	7.6	8.7	9.6	17.3	17.3	17.3	17.3	37.4
7535001220000	FM-753 CRACK A4	M12x200	6.2	7.6	8.7	9.6	17.3	17.3	17.3	17.3	37.4
7535001613000	FM-753 CRACK A4	M16x130	12.4	15.1	17.5	19.2	26.2	26.2	26.2	26.2	94.9
7535001615000	FM-753 CRACK A4	M16x150	12.4	15.1	17.5	19.2	26.2	26.2	26.2	26.2	94.9
7535001618500	FM-753 CRACK A4	M16x185	12.4	15.1	17.5	19.2	26.2	26.2	26.2	26.2	94.9
7535001622000	FM-753 CRACK A4	M16x220	12.4	15.1	17.5	19.2	26.2	26.2	26.2	26.2	94.9

- 1) In case of interaction of tension and shear loads (lever arm) as well as in case of anchor groups and/or edge influence, a design according to EN 1992-4 (seismic actions - Annex C / fire action - Annex D) shall be carried out taking into account the entire European Technical Assessment ETA-10/0293.
- 2) The load data take into account the partial safety factors of the resistances given in the European Technical Assessment (ETA) and a partial safety factor of the actions of $\gamma_F = 1.4$. The values given assume unreinforced or normally reinforced concrete with a spacing of the reinforcing bars $s \geq 15$ cm or $s \geq 10$ cm at a rebar diameter $d_s \leq 10$ mm is assumed.

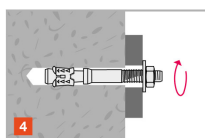
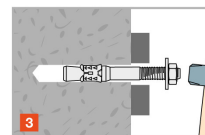
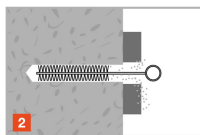
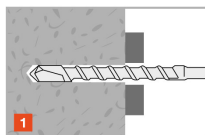
FM-753 CRACK A4
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SIMPSON

Strong-Tie[®]

FM-753 CRACK A4
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Montaż



FM-753 CRACK A4 Kotwa mechaniczna A4

Installation data

Referencje	Product Reference	Wymiary [mm] [mm]	Ø drilling hole [d0] [mm]	Min. drill depth [h1] [mm]	Ø drilling fixture [df] [mm]	Wrench size [SW] [mm]	Installation torque [Tinst] [Nm]	Embedment depth [hef] [mm]	Min. support thickness [hmin] [mm]
7535000806800	FM-753 CRACK A4	M8x68	8	70	9	13	20	48	100
7535000807500	FM-753 CRACK A4	M8x75	8	70	9	13	20	48	100
7535000809000	FM-753 CRACK A4	M8x90	8	70	9	13	20	48	100
7535000811500	FM-753 CRACK A4	M8x115	8	70	9	13	20	48	100
7535000813500	FM-753 CRACK A4	M8x135	8	70	9	13	20	48	100
7535000816500	FM-753 CRACK A4	M8x165	8	70	9	13	20	48	100
7535001009000	FM-753 CRACK A4	M10x90	10	80	12	17	40	60	120
7535001010500	FM-753 CRACK A4	M10x105	10	80	12	17	40	60	120
7535001011500	FM-753 CRACK A4	M10x115	10	80	12	17	40	60	120
7535001013500	FM-753 CRACK A4	M10x135	10	80	12	17	40	60	120
7535001015500	FM-753 CRACK A4	M10x155	10	80	12	17	40	60	120
7535001018500	FM-753 CRACK A4	M10x185	10	80	12	17	40	60	120
7535001211000	FM-753 CRACK A4	M12x110	12	100	14	19	60	72	150
7535001212000	FM-753 CRACK A4	M12x120	12	100	14	19	60	72	150
7535001214500	FM-753 CRACK A4	M12x145	12	100	14	19	60	72	150
7535001217000	FM-753 CRACK A4	M12x170	12	100	14	19	60	72	150
7535001220000	FM-753 CRACK A4	M12x200	12	100	14	19	60	72	150
7535001613000	FM-753 CRACK A4	M16x130	16	115	18	24	120	86	170
7535001615000	FM-753 CRACK A4	M16x150	16	115	18	24	120	86	170

FM-753 CRACK A4

Kotwa mechaniczna A4

Referencje	Product Reference	Wymiary [mm] [mm]	Ø drilling hole [d0] [mm]	Min. drill depth [h1] [mm]	Ø drilling fixture [df] [mm]	Wrench size [SW] [mm]	Installation torque [Tinst] [Nm]	Embedment depth [hef] [mm]	Min. support thickness [hmin] [mm]
7535001618500	FM-753 CRACK A4	M16x185	16	115	18	24	120	86	170
7535001622000	FM-753 CRACK A4	M16x220	16	115	18	24	120	86	170

Spacings and edge distances

Referencje	Product Reference	Wymiary [mm] [mm]	Min. edge distance [cmin] [mm]	Min. spacing [smin] [mm]	Characteristic edge distance [ccr,N] [mm]	Characteristic spacing(5) - Scr,N [scr,N] [mm]
7535000806800	FM-753 CRACK A4	M8x68	50	50	72	144
7535000807500	FM-753 CRACK A4	M8x75	50	50	72	144
7535000809000	FM-753 CRACK A4	M8x90	50	50	72	144
7535000811500	FM-753 CRACK A4	M8x115	50	50	72	144
7535000813500	FM-753 CRACK A4	M8x135	50	50	72	144
7535000816500	FM-753 CRACK A4	M8x165	50	50	72	144
7535001009000	FM-753 CRACK A4	M10x90	50	55	90	180
7535001010500	FM-753 CRACK A4	M10x105	50	55	90	180
7535001011500	FM-753 CRACK A4	M10x115	50	55	90	180
7535001013500	FM-753 CRACK A4	M10x135	50	55	90	180
7535001015500	FM-753 CRACK A4	M10x155	50	55	90	180
7535001018500	FM-753 CRACK A4	M10x185	50	55	90	180
7535001211000	FM-753 CRACK A4	M12x110	60	60	108	216
7535001212000	FM-753 CRACK A4	M12x120	60	60	108	216
7535001214500	FM-753 CRACK A4	M12x145	60	60	108	216
7535001217000	FM-753 CRACK A4	M12x170	60	60	108	216
7535001220000	FM-753 CRACK A4	M12x200	60	60	108	216
7535001613000	FM-753 CRACK A4	M16x130	70	70	129	258
7535001615000	FM-753 CRACK A4	M16x150	70	70	129	258
7535001618500	FM-753 CRACK A4	M16x185	70	70	129	258
7535001622000	FM-753 CRACK A4	M16x220	70	70	129	258

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