

FM 753 evo-LW

## Pasador de anclaje opción 7 con arandelas anchas

*Los pasadores de anclaje FM 753 LW son fijaciones por expansión sobre soporte de hormigón; estos pasadores se suministran con arandelas anchas premontadas, ideales para uniones de madera sobre hormigón.*

### Características

#### Materia

- Acero electrocincado.

#### Ventajas

- Distancia al borde y entre centros mínima
- Instalación rápida y sencilla: tuerca y arandela premontadas y profundidad de anclaje reducida;
- $\varnothing$  de rosca =  $\varnothing$  de perforación
- Protección de la rosca durante el montaje: punto de impacto reforzado
- Marcado en la cabeza: identificación de las dimensiones del pasador tras la instalación
- Arandela ancha premontada

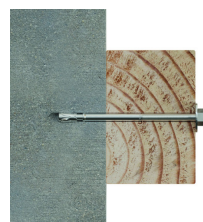
### Aplicaciones

#### Applications

- Timber sill to concrete
- Timber wall plate to concrete

### Campos de aplicación

- Hormigón no fisurado



## Datos técnicos

### Dimensions

Modelo	Type size [d x L] [mm]	ID <sup>1)</sup>	Fixture thickness [t <sub>fix</sub> ] [mm]	Hole diameter [d <sub>o</sub> ] [mm]	Min. hole depth [h <sub>1</sub> ] [mm]	Min. depth of anchorage [h <sub>ef</sub> ] [mm]	Nominal embedment depth [h <sub>nom</sub> ] [mm]	Hole diameter of fixing element [d <sub>f</sub> ] [mm]	Min. support thickness [h <sub>min</sub> ] [mm]	Torque [t <sub>inst</sub> ] [Nm]	Wre [S] [S]
75345B1012300	M10x123	G	50	10	70	50	60	12	100	30	1
75345B1017300	M10x173	I	100	10	70	50	60	12	100	30	1
75345B1214900	M12x149	G	50	12	90	65	78	14	130	50	1
75345B1219900	M12x199	I	100	12	90	65	78	14	130	50	1

\* Short series with reduced embedment depth

\*\* Not covered by CE certification

<sup>1)</sup> Ident. mark, product length

### Design capacities - single anchor - no edge distances

Modelo	Type size [d x L] [mm]	Design capacity - Non-cracked concrete <sup>(3)</sup> [kN]								Bending moment MRd [Nm]
		Tension - NRd <sup>(1)</sup>				Shear - VRd <sup>(1-2)</sup> [kN]				
		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

- 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.
- 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.
- 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/mm<sup>2</sup> can be assumed ( $\sigma_L$  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

Modelo	Type size [d x L] [mm]	Recommended capacity - Non-cracked concrete								Bending moment Mrec <sup>(1-6)</sup> [Nm]
		Tension - Nrec <sup>(1-2)</sup> [kN]				Shear - Vrec <sup>(1-3)</sup> [kN]				
		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 ( $c \leq \max [10 h_{ef,r}; 60d]$ ) 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/mm<sup>2</sup> can be assumed ( $\sigma_L$  equals the tensile stress within the concrete induced by external loads, anchors loads included).

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

Modelo	Type size [d x L] [mm]	Reduced embedment depth [h <sub>ef,r</sub> ]	Characteristic spacing for h <sub>ef,r</sub> <sup>(5)</sup> [S <sub>cr,red</sub> ] [mm]	Characteristic edge distance for h <sub>ef,r</sub> [C <sub>cr,red</sub> ] [mm]	Min. spacing for h <sub>ef,r</sub> [S <sub>min,red</sub> ] [mm]	Min. edge distance for h <sub>ef,r</sub> [C <sub>min,red</sub> ]	Design loads - Tension & Shear - N <sub>Rd</sub> [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

Modelo	Type size [d x L] [mm]	Reduced embedment depth [h <sub>ef,r</sub> ]	Characteristic spacing for h <sub>ef,r</sub> <sup>(5)</sup> [S <sub>cr,red</sub> ] [mm]	Characteristic edge distance for h <sub>ef,r</sub> [C <sub>cr,red</sub> ] [mm]	Min. spacing for h <sub>ef,r</sub> [S <sub>min,red</sub> ] [mm]	Min. edge distance for h <sub>ef,r</sub> [C <sub>min,red</sub> ]	Recommended loads - Tension & Shear - N <sub>rec</sub> [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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## Instalación

Spacing, Edge Distance and Member Thickness

Modelo	Type size [d x L] [mm]	Hole diameter [d <sub>o</sub> ] [mm]	Min. hole depth [h <sub>1</sub> ] [mm]	Hole diameter of fixing element [d <sub>f</sub> ] [mm]	Wrench [SW] [SW]	Torque [t <sub>inst</sub> ] [Nm]	Embedment depth [h <sub>ef</sub> ]	Min. support thickness [h <sub>min</sub> ]	Characteristic spacing <sup>(5)</sup> [scr,N] [mm]	Characteristic edge distance [ccr,N] [mm]	N <sub>sp</sub> [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	!

ZAC des Quatre Chemins - 85400 Sainte Gemme la Plaine - France  
 tél : +33 2 51 28 44 00  
 fax : +33 2 51 28 44 01

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