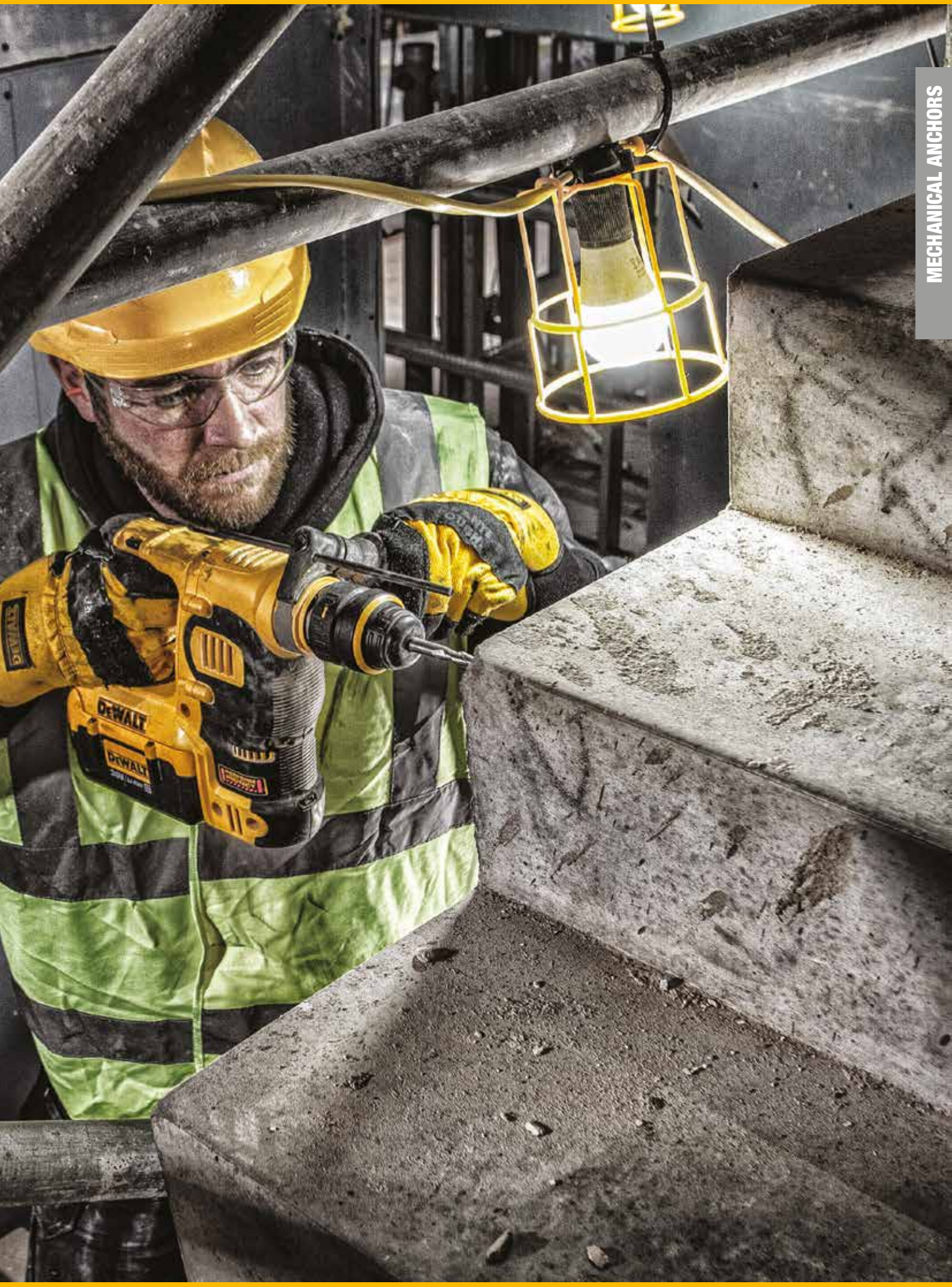
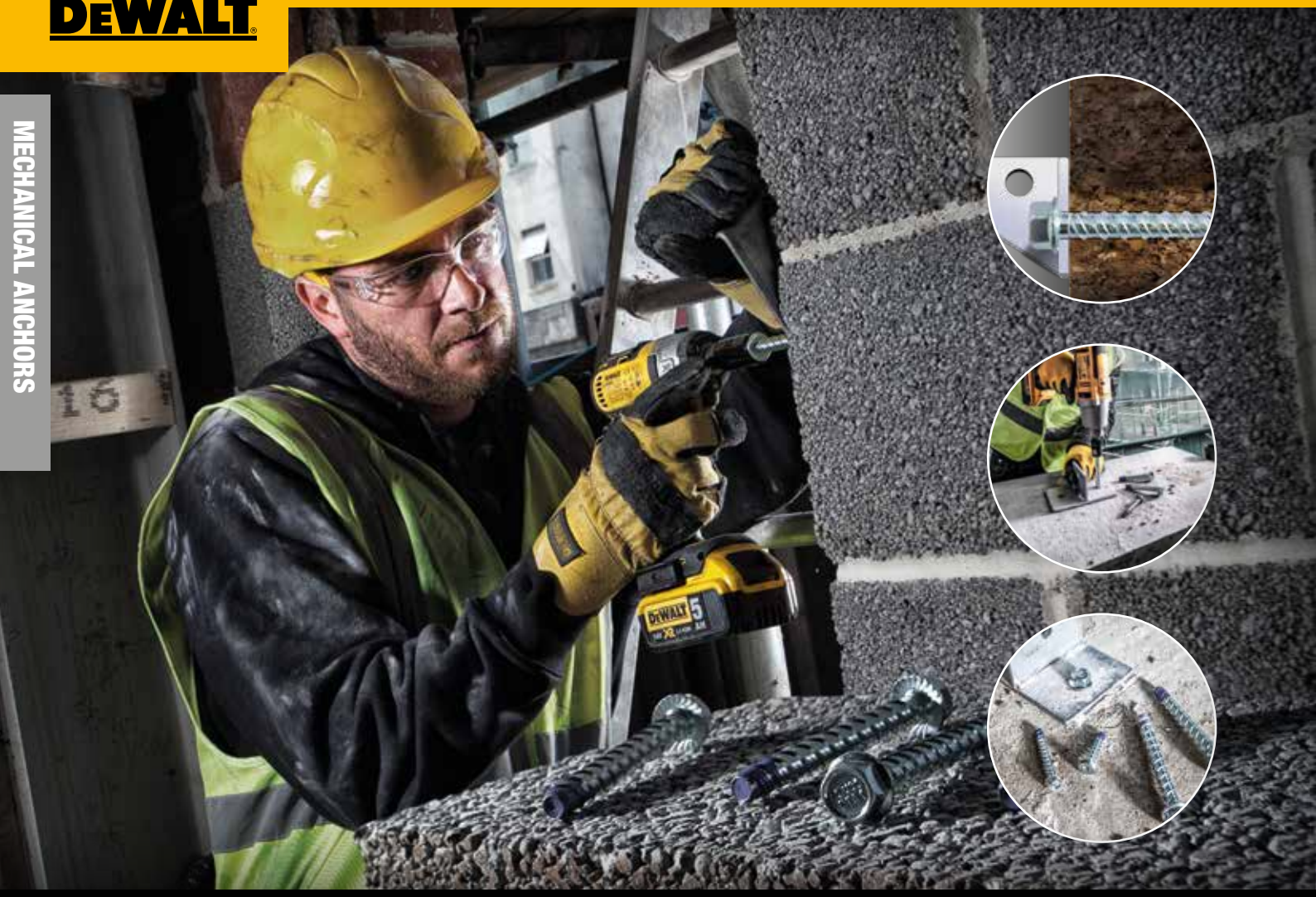
MECHANICAL ANCHORS
CONCRETE


DEWALT
DEWALT
DEWALT



BLUE-TIP SCREWBOLTS™

ONE PIECE DESIGN WITH IMMEDIATE HIGH STRENGTH LOADING.

Our **Blue-Tip Screwbolts™** are one-piece heavy duty concrete screws with ETA Option 1 approval*.

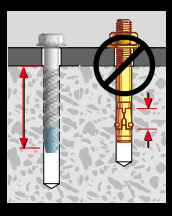
They are simple to install and provide a strong, secure hold for high load applications and small edge distances, making it the preferred choice for a fast, reliable installation into a variety of substrates.

The anchors are designed with a dust relief thread that allows for low installation torque, are fully removable and are designed to resist structural and non-structural loading in cracked and uncracked concrete.

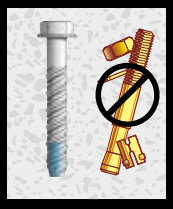
The range includes four different head types in lengths from 30-280 mm making it an extremely versatile mechanical anchoring system.

- ETA Option 1 approved for cracked and uncracked concrete*
- One piece design for easy installation
- Approved for small edge distances
- Dust relief thread allows for low installation torque

*diameter 10 mm to 16 mm, hex head and countersunk



Grips over the total anchor length



One piece design

HEX HEAD

DOME HEAD

PAN HEAD

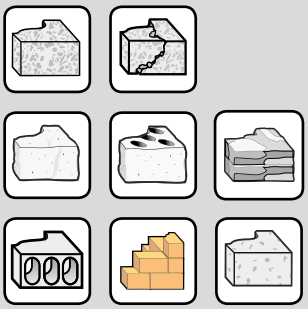
COUNTERSUNK

BLUE-TIP SCREWBOLTS™

APPLICATIONS

- Racking and shelving
- Temporary supports
- Fencing
- Railings and handrails
- Stadium seating
- Fastening steel and metal base plates to concrete

MATERIALS



See front cover foldout for details.

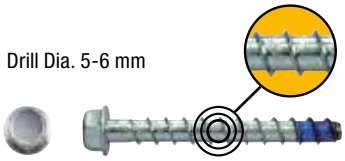
APPROVALS

EUROPEAN TECHNICAL ASSESSMENT

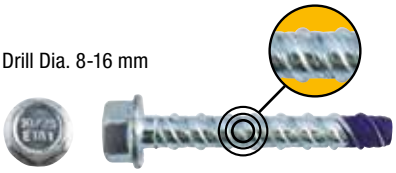
ETAG 001 - Option 1
ETA-12/0607

PRODUCT OVERVIEW - HEX HEAD ZINC PLATED

Drill Dia. 5-6 mm



Drill Dia. 8-16 mm



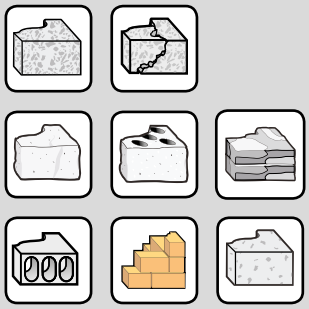
Cat No.	ETA	Drill Dia. [mm]	Length [mm]	Head Size [mm]	Max t_{fix} [mm]	Box	Blister Pack	Pack Qty
DFM1410000		5 x 50		7	15	•		100
DFM1410030		6 x 30		10	5	•		100
DFM140003P		6 x 30		10	5		•	4
DFM1410050		6 x 50		10	15	•		100
DFM141007S		6 x 60		10	25	•		50
DFM1410070		6 x 60		10	25	•		100
DFM140006P		6 x 60		10	25		•	4
DFM1410090		6 x 80		10	35	•		50
DFM140008P		6 x 80		10	35		•	4
DFM141011S		6 x 100		10	55	•		50
DFM140010P		6 x 100		10	55		•	4
DFM1410130		6 x 120		10	75	•		100
DFM1410180		8 x 50		13	5	•		50
DFM1410210		8 x 75		13	10	•		50
DFM140021P		8 x 75		13	10		•	4
DFM141024S		8 x 100		13	35	•		25
DFM1410240		8 x 100		13	35	•		50
DFM140026P		8 x 100		13	35		•	4
DFM1410280	•	10 x 60		17	5	•		50
DFM140040P	•	10 x 60		17	5		•	2
DFM141032S	•	10 x 75		17	20	•		25
DFM1410320	•	10 x 75		17	20	•		50
DFM140044P	•	10 x 75		17	20		•	2
DFM141036S	•	10 x 100		17	45	•		25
DFM1410360	•	10 x 100		17	45	•		50
DFM140047P	•	10 x 100		17	45		•	2
DFM1410430	•	10 x 120		17	65	•		25
DFM140051P	•	10 x 120		17	65		•	2
DFM1410450	•	10 x 140		17	85	•		25
DFM1410480	•	10 x 160		17	105	•		20
DFM1410510	•	10 x 200		17	145	•		20
DFM1410540	•	10 x 240		17	185	•		20
DFM1410580	•	10 x 280		17	225	•		20
DFM1410650	•	12 x 75		19	5	•		25
DFM140064P	•	12 x 75		19	5		•	2
DFM1410680	•	12 x 100		19	30	•		25
DFM140065P	•	12 x 100		19	30		•	2
DFM1410710	•	12 x 150		19	80	•		20
DFM140071P	•	12 x 150		19	80		•	2
DFM1410770	•	16 x 100		23	20	•		20
DFM1410800	•	16 x 130		23	50	•		10
DFM1410830	•	16 x 150		23	70	•		10
DFM1410860	•	16 x 200		23	120	•		10
DFM1410890	•	16 x 240		23	160	•		10

BLUE-TIP SCREWBOLTS™

APPLICATIONS

- Suitable for applications where there is demand for higher corrosion resistance
- Extreme outdoor environments

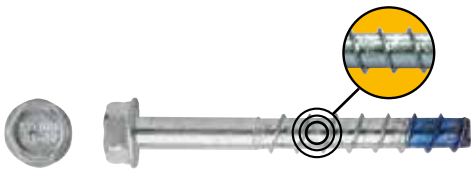
MATERIALS



See front cover foldout for details.

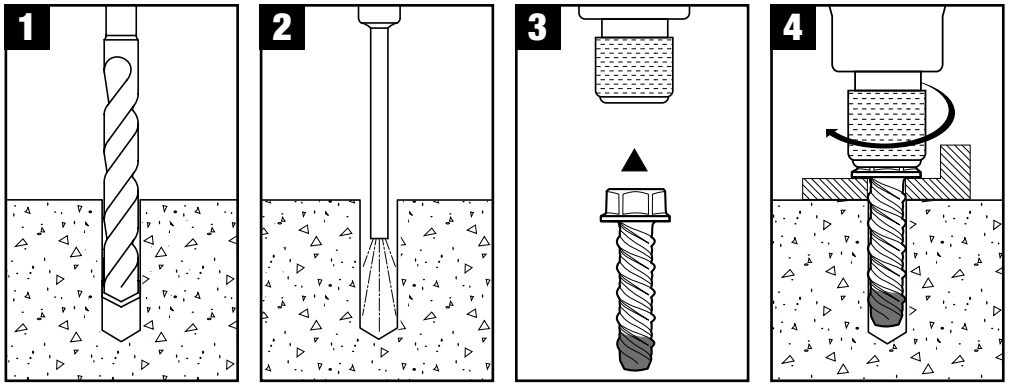
PRODUCT OVERVIEW - HEX HEAD STAINLESS STEEL

NEW

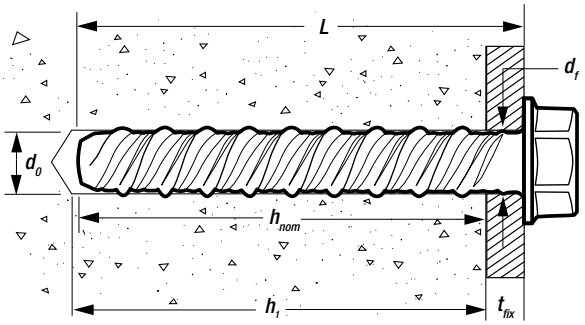


Cat No.	ETA	Drill Dia. [mm]	Length [mm]	Head Size [mm]	Max t_{fix} [mm]	Box	Blister Pack	Pack Qty
DFM1420070		6 x 45		10	1	•		100
DFM1420072		6 x 60		10	5	•		100
DFM1420074		10 x 85		17	5	•		50
DFM1420076		10 x 100		17	20	•		50

INSTALLATION INSTRUCTIONS



TECHNICAL INFORMATION



N_{rec}/ N_{all}

1 kN = 100kg

V_{rec}/V_{all}

RECOMMENDED LOADS - UNCRACKED CONCRETE - BLUE-TIP HEX HEAD ZINC PLATED

$$\frac{N_{Rk}}{\gamma_M \cdot \gamma_F} = N_{rec}$$

$\gamma_M = 2.1$ $\gamma_f = 1.4$

Size - d_0 x L [mm]	h_{nom} [mm]	h_1 [mm]	d_f [mm]	t_{fix} [mm]	N_{rec} [kN]	V_{rec} [kN]
5 x 50	35	45	7	15	0.8	1.0
6 x 30	25	35	7	5	0.5	1.2
6 x 50	35	45	8	15	0.8	1.6
6 x 60	35	45	8	25	0.8	1.6
6 x 80	45	55	8	35	1	1.6
6 x 100	45	55	8	55	1	1.6
6 x 120	45	55	8	75	1	1.6
8 x 50	45	55	10	5	1.4	3.2
8 x 75	65	75	10	10	2.1	3.4
8 x 100	65	75	10	35	2.1	3.4

BLUE-TIP SCREWBOLTS™

ALLOWABLE LOADS - UNCRACKED CONCRETE - BLUE-TIP HEX HEAD ZINC PLATED

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{all}$$

$\gamma_f = 1.4$

Size - d_o x L [mm]	h_{nom} [mm]		h_1 [mm]		d_f [mm]	t_{fix} [mm]		N_{all} [kN]		V_{all} [kN]	
	min	max	min	max		min h_{nom}	max h_{nom}	min	max	min	max
10 x 60	55		65		12	5		2.6		6.1	
10 x 75	55		65		12	20		2.6		6.1	
10 x 100	55	75	65	85	12	45	25	2.6	4.1	6.1	10.3
10 x 120	55	75	65	85	12	65	45	2.6	4.1	6.1	10.3
10 x 140	55	75	65	85	12	85	65	2.6	4.1	6.1	10.3
10 x 160	55	75	65	85	12	105	85	2.6	4.1	6.1	10.3
10 x 200	55	75	65	85	12	145	125	2.6	4.1	6.1	10.3
10 x 240	55	75	65	85	12	185	165	2.6	4.1	6.1	10.3
10 x 280	55	75	65	85	12	225	205	2.6	4.1	6.1	10.3
12 x 75	70		80		14	5		4.1		8.8	
12 x 80	70		80		14	10		4.1		8.8	
12 x 100	70	85	80	95	14	30	15	4.1	5.4	8.8	17
12 x 150	70	85	80	95	14	80	65	4.1	5.4	8.8	17
16 x 100	80		90		19	20		6.3		20.8	
16 x 130	80	110	90	125	19	50	20	6.3	9.9	20.8	26.2
16 x 150	80	110	90	125	19	70	40	6.3	9.9	20.8	26.2
16 x 200	80	110	90	125	19	120	90	6.3	9.9	20.8	26.2
16 x 240	80	110	90	125	19	160	130	6.3	9.9	20.8	26.2

ALLOWABLE LOADS - CRACKED CONCRETE - BLUE-TIP HEX HEAD ZINC PLATED

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{all}$$

$\gamma_f = 1.4$

Size - d_o x L [mm]	h_{nom} [mm]		h_1 [mm]		d_f [mm]	t_{fix} [mm]		N_{all} [kN]		V_{all} [kN]	
	min	max	min	max		min h_{nom}	max h_{nom}	min	max	min	max
10 x 60	55		65		12	5		1.0		4.3	
10 x 75	55		65		12	20		1.0		4.3	
10 x 100	55	75	65	85	12	45	25	1.0	2.0	4.3	7.4
10 x 120	55	75	65	85	12	65	45	1.0	2.0	4.3	7.4
10 x 140	55	75	65	85	12	85	65	1.0	2.0	4.3	7.4
10 x 160	55	75	65	85	12	105	85	1.0	2.0	4.3	7.4
10 x 200	55	75	65	85	12	145	125	1.0	2.0	4.3	7.4
10 x 240	55	75	65	85	12	185	165	1.0	2.0	4.3	7.4
10 x 280	55	75	65	85	12	225	205	1.0	2.0	4.3	7.4
12 x 75	70		80		14	5		1.4		6.3	
12 x 80	70		80		14	10		1.4		6.3	
12 x 100	70	85	80	95	14	30	15	1.4	1.7	6.3	17
12 x 150	70	85	80	95	14	80	65	1.4	1.7	6.3	17
12 x 200	70	85	80	95	14	130	115	1.4	1.7	6.3	17
16 x 100	80		90		19	20		3.0		14.8	
16 x 130	80	110	90	125	19	50	20	3.0	4.8	14.8	25.8
16 x 150	80	110	90	125	19	70	40	3.0	4.8	14.8	25.8
16 x 200	80	110	90	125	19	120	90	3.0	4.8	14.8	25.8
16 x 240	80	110	90	125	19	160	130	3.0	4.8	14.8	25.8

RECOMMENDED LOADS - UNCRACKED CONCRETE - BLUE-TIP HEX HEAD STAINLESS STEEL

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{rec}$$

$\gamma_M = 2.1$ $\gamma_f = 1.4$

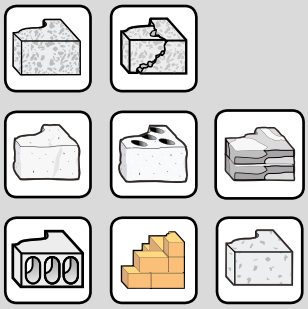
Size - d_o x L [mm]	h_{nom} [mm]	h_1 [mm]	d_f [mm]	t_{fix} [mm]	N_{rec} [kN]	V_{rec} [kN]
6 x 45	45	55	8	1	1.7	1.6
6 x 60	55	65	8	5	2.0	1.6
10 x 85	80	90	12	5	4.1	6.1
10 x 100	80	90	12	20	4.1	6.1

BLUE-TIP SCREWBOLTS™

APPLICATIONS

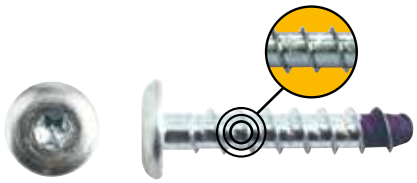
- Fencing
- Handrails
- Ornamental steelwork

MATERIALS



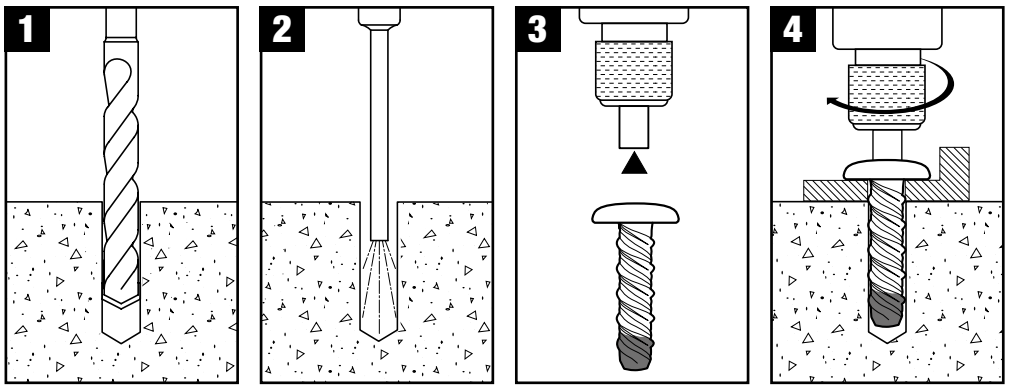
See front cover foldout for details.

PRODUCT OVERVIEW - DOME HEAD ZINC PLATED

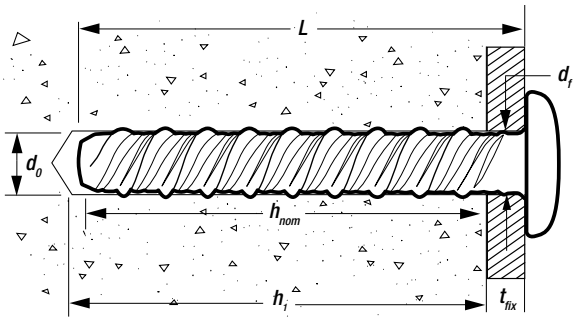


Cat No.	ETA	Drill Dia. [mm]	Length [mm]	Head Size [mm]	Fitment [mm]	Max t_{fix} [mm]	Box	Blister Pack	Pack Qty
DFM1420000		6 x 40		16	T30	10	•		100
DFM142001P		6 x 40		16	T30	10		•	4
DFM1420030		6 x 50		16	T30	15	•		100
DFM142004P		6 x 65		16	T30	20		•	4
DFM1420060		6 x 65		16	T30	20	•		100

INSTALLATION INSTRUCTIONS



TECHNICAL INFORMATION



Nrec

Vrec

1 kN = 100kg

RECOMMENDED LOADS - UNCRACKED CONCRETE - BLUE-TIP DOME HEAD ZINC PLATED

$$\frac{N_{Rk}}{\gamma_M \cdot \gamma_F} = N_{rec}$$

$\gamma_M = 2.1$ $\gamma_f = 1.4$

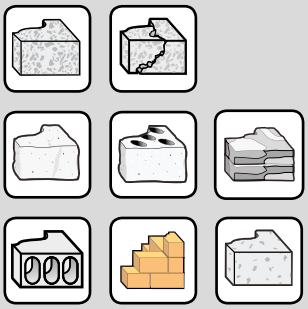
Size - d_0 x L [mm]	h_{nom} [mm]	h_1 [mm]	d_f [mm]	t_{fix} [mm]	N_{rec} [kN]	V_{rec} [kN]
6 x 40	30	40	8	10	0.5	1.2
6 x 50	35	45	8	15	0.8	1.6
6 x 65	45	55	8	20	1	1.6

BLUE-TIP SCREWBOLTS™

APPLICATIONS

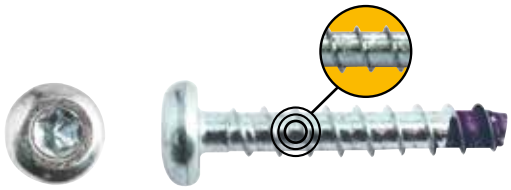
- Fencing
- Handrails
- Ornamental steelwork
- Channel support systems

MATERIALS



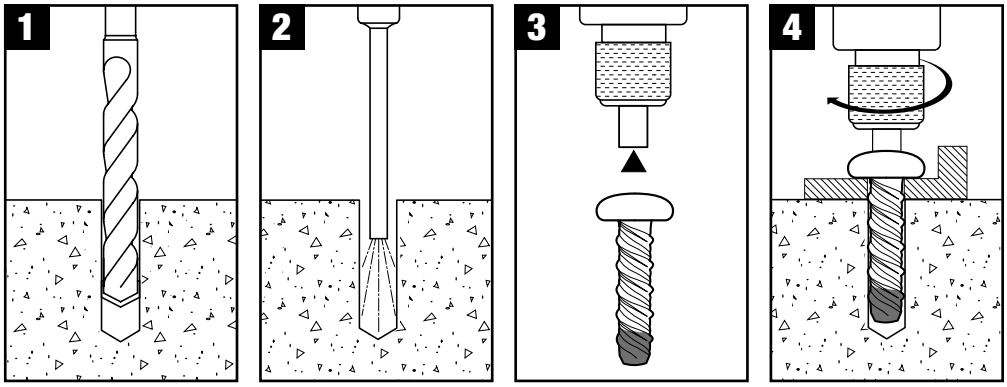
See front cover foldout for details.

PRODUCT OVERVIEW - PAN HEAD ZINC PLATED

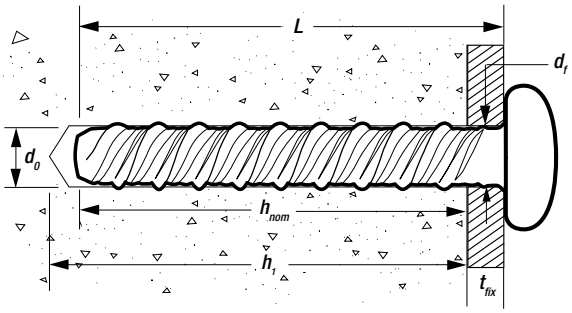


Cat No.	ETA	Drill Dia. [mm]	Length [mm]	Head Size [mm]	Fitment [mm]	Max t_{fix} [mm]	Box	Blister Pack	Pack Qty
DFM1420090		6 x 45		13	T40	10	•		100
DFM142014P		6 x 45		13	T40	10		•	4

INSTALLATION INSTRUCTIONS



TECHNICAL INFORMATION



Nrec

Vrec

1 kN = 100kg

RECOMMENDED LOADS - UNCRACKED CONCRETE - BLUE-TIP PAN HEAD ZINC PLATED

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{rec}$$

$\gamma_M = 2.1$ $\gamma_f = 1.4$

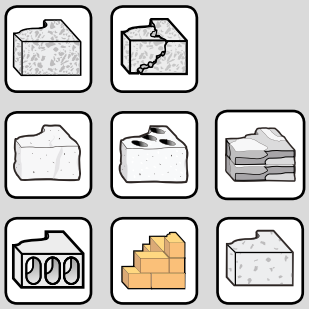
Size - d_0 x L [mm]	h_{nom} [mm]	h_1 [mm]	d_f [mm]	t_{fix} [mm]	N_{rec} [kN]	V_{rec} [kN]
6 x 45	35	45	8	10	0.8	1.6
6 x 50	35	45	8	15	0.8	1.6
6 x 60	35	45	8	25	0.8	1.6

BLUE-TIP SCREWBOLTS™

APPLICATIONS

- Temporary supports
- Window and door frame installations
- Mounting fixtures on walls
- Fixing wood to concrete and masonry

MATERIALS



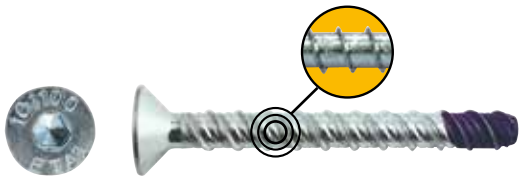
See front cover foldout for details.

APPROVALS

EUROPEAN TECHNICAL ASSESSMENT

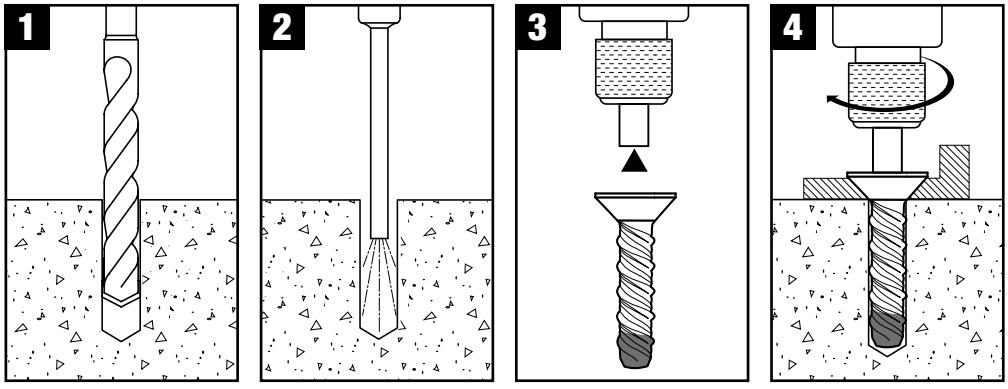
ETAG 001 - Option 1
ETA-12/0607

PRODUCT OVERVIEW - COUNTERSUNK ZINC PLATED



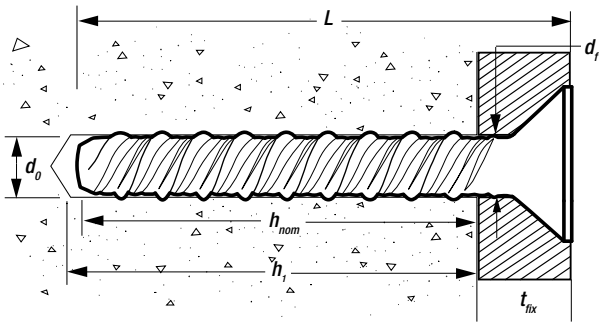
Cat No.	ETA	Drill Dia. [mm]	Length [mm]	Fitment [mm]	Max t_{fix} [mm]	Box	Blister Pack	Pack Qty
DFM142017P		6 x 50		T40	15		•	4
DFM142022P		6 x 75		T40	15		•	4
DFM142025P		6 x 100		T40	55		•	4
DFM1420330		6 x 100		T40	55	•		50
DFM142038P		8 x 100		6mm	35		•	4
DFM1420420		8 x 100		6mm	35	•		50
DFM1420480	•	10 x 75		8mm	15	•		50
DFM142044P	•	10 x 75		8mm	15		•	2
DFM1420510	•	10 x 100		8mm	45	•		50
DFM142047P	•	10 x 100		8mm	45		•	2
DFM1420570	•	12 x 100		10mm	30	•		25
DFM1420600	•	12 x 150		10mm	80	•		20

INSTALLATION INSTRUCTIONS



BLUE-TIP SCREWBOLTS™

TECHNICAL INFORMATION



Nrec/ Nall

Vrec/Vall

1 kN = 100kg

RECOMMENDED LOADS - UNCRACKED CONCRETE - BLUE-TIP COUNTERSUNK ZINC PLATED

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{rec}$$

$\gamma_M = 2.1$ $\gamma_f = 1.4$

Size - d_0 x L [mm]	h_{nom} [mm]	h_1 [mm]	d_f [mm]	t_{fix} [mm]	N_{rec} [kN]	V_{rec} [kN]
6 x 40	35	45	8	5	0.8	1.6
6 x 50	35	45	8	15	0.8	1.6
6 x 100	45	55	8	55	1	1.6
8 x 50	45	55	10	5	1.4	3.2
8 x 75	65	75	10	10	2.1	3.4
8 x 85	65	75	10	20	2.1	1.6
8 x 100	65	75	10	35	2.1	3.4

ALLOWABLE LOADS - UNCRACKED CONCRETE - BLUE-TIP COUNTERSUNK ZINC PLATED

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{all}$$

$\gamma_f = 1.4$

Size - d_0 x L [mm]	h_{nom} [mm]		h_1 [mm]		d_f [mm]	t_{fix} [mm]		N_{all} [kN]		V_{all} [kN]	
	min	max	min	max		min h_{nom}	max h_{nom}	min	max	min	max
10 x 60	55		65		12	5		2.6		6.1	
10 x 75	55		65		12	20		2.6		6.1	
10 x 100	55	75	65	85	12	45	25	2.6	4.1	6.1	10.3
12 x 75	70		80		14	5		4.1		8.8	
12 x 100	70	85	80	95	14	30	15	4.1	5.4	8.8	17
12 x 150	70	85	80	95	14	80	65	4.1	5.4	8.8	17

ALLOWABLE LOADS - CRACKED CONCRETE - BLUE-TIP COUNTERSUNK ZINC PLATED

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{all}$$

$\gamma_f = 1.4$

Size - d_0 x L [mm]	h_{nom} [mm]		h_1 [mm]		d_f [mm]	t_{fix} [mm]		N_{all} [kN]		V_{all} [kN]	
	min	max	min	max		min h_{nom}	max h_{nom}	min	max	min	max
10 x 60	55		65		12	5		1.0		4.3	
10 x 75	55		65		12	20		1.0		4.3	
10 x 100	55	75	65	85	12	45	25	1.0	2 .0	4.3	7.4
12 x 75	70		80		14	5		1.4		6.3	
12 x 100	70	85	80	95	14	30	15	1.4	1.7	6.3	17
12 x 150	70	85	80	95	14	80	65	1.4	1.7	6.3	17

PB-PRO HEAVY DUTY ANCHOR

DESCRIPTION

- For immediate high strength loading in different base materials and high shear loads
- ETA option 1 with C1 approval for seismic load applications
- Heavy duty washer for optimal clamp down
- Plastic compression ring ensures perfect expansion
- High strength sleeve for extreme shear loads with tfix indicator

APPLICATIONS

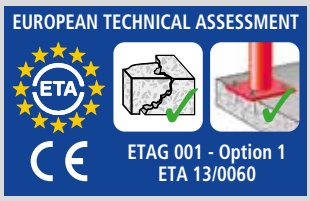
All concrete applications where high strength loading or high sheer loads are expected:

- Gates
- Steel Plates
- Machines
- Steel constructions

MATERIALS

See front cover foldout for details.

APPROVALS

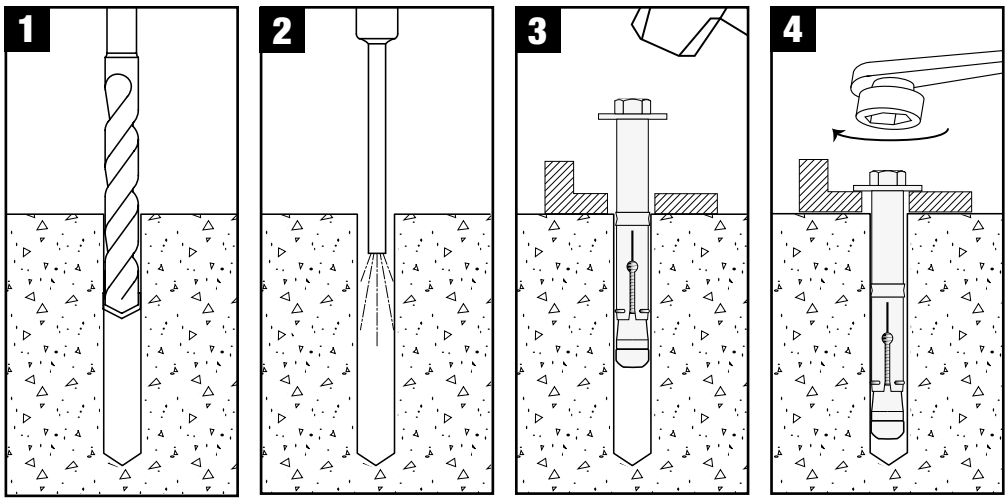


PRODUCT OVERVIEW - HEX HEAD ZINC PLATED

NEW

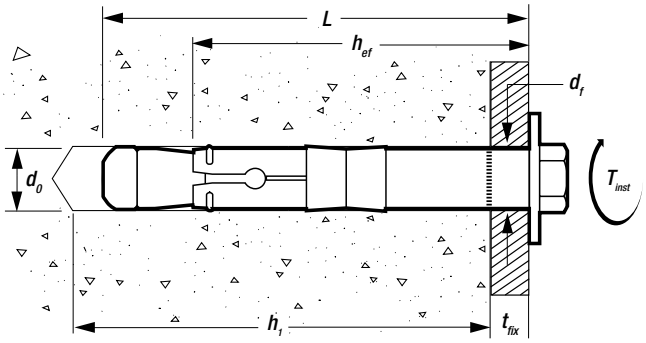
Cat No.	ETA	Drill Dia. [mm]	Diameter [mm]	Length [mm]	Head Size [mm]	Max t_{fix} [mm]	Box	Blister Pack	Pack Qty
DFM1220150	•	15 x M10 x 95			17	5	•		25
DFM1220200	•	15 x M10 x 115			17	25	•		25
DFM1220400	•	18 x M12 x 106			19	5	•		10
DFM1220650	•	24 x M16 x 148			24	20	•		5
DFM1220700	•	24 x M16 x 178			24	50	•		5

INSTALLATION INSTRUCTIONS



PB-PRO HEAVY DUTY ANCHOR

TECHNICAL INFORMATION



Nall

Vall

1 kN = 100kg

ALLOWABLE LOADS - UNCRACKED CONCRETE - PB-PRO HEX HEAD ZINC PLATED

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{all}$$

$\gamma_f = 1.4$

Size - d_0 x Thread x L [mm]	h_{ef} [mm]	h_1 [mm]	d_f [mm]	t_{fix} [mm]	T_{inst} [Nm]	N_{all} [kN]	V_{all} [kN]
12 x M8 x 84	60	80	14	10	30	5.7	18.7
12 x M8 x 124	60	80	14	50	30	5.7	18.7
15 x M10 x 95	70	95	17	5	45	11.9	28.1
15 x M10 x 115	70	95	17	25	45	11.9	28.1
18 x M12 x 106	80	110	20	5	90	14.3	34.3
18 x M12 x 136	80	110	20	35	90	14.3	34.3
24 x M16 x 148	100	135	26	20	130	16.7	48
24 x M16 x 178	100	135	26	50	130	16.7	48

ALLOWABLE LOADS - CRACKED CONCRETE - PB-PRO HEX HEAD ZINC PLATED

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{all}$$

$\gamma_f = 1.4$

Size - d_0 x Thread x L [mm]	h_{ef} [mm]	h_1 [mm]	d_f [mm]	t_{fix} [mm]	T_{inst} [Nm]	N_{all} [kN]	V_{all} [kN]
12 x M8 x 84	60	80	14	10	30	5.7	15.9
12 x M8 x 124	60	80	14	50	30	5.7	15.9
15 x M10 x 95	70	95	17	5	45	7.6	20.1
15 x M10 x 115	70	95	17	25	45	7.6	20.1
18 x M12 x 106	80	110	20	5	90	9.5	24.5
18 x M12 x 136	80	110	20	35	90	9.5	24.5
24 x M16 x 148	100	135	26	20	130	14.3	34.3
24 x M16 x 178	100	135	26	50	130	14.3	34.3

PTB-PRO HEAVY DUTY THROUGHBOLTS

CRACKED CONCRETE THROUGHBOLT APPROVED FOR FLEXIBLE EMBEDMENTS.

The PTB-PRO throughbolt is a fully threaded, torque controlled, wedge expansion anchor designed for consistent performance in cracked and uncracked concrete.

The anchor is easy to install and suitable for a variety of base materials with a nominal drill bit size the same as the anchor diameter. The wide range of available PTB-PRO anchor sizes also covers all common capacity demands with a superior load-displacement response that qualifies the PTB-PRO throughbolt for both standard and adverse loading conditions.

- ETA Option 1 approval for cracked and uncracked concrete*
- Approved for seismic load applications (M8-M16** C1 approved and M12* C2 approved)
- Two approved embedment depths (M12 and M16)*
- Long thread for flexibility in fixture thicknesses
- Special cone angle for quick installation
- Fire resistance*

* PTB-PRO zinc plated and stainless steel ** PTB-PRO zinc plated

ZINC PLATED

STAINLESS STEEL

HOT DIP GALVANISED

PTB-PRO HEAVY DUTY THROUGHBOLTS

APPLICATIONS

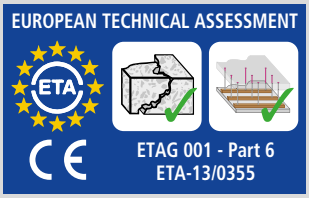
- Piping and heating supports
- Heating pumps
- Ventilation systems and air conditioning
- Safety barriers
- Fire escapes

MATERIALS

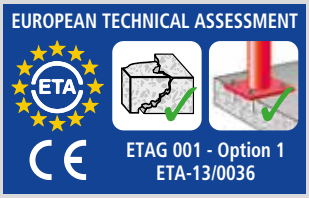
See front cover foldout for details.

APPROVALS

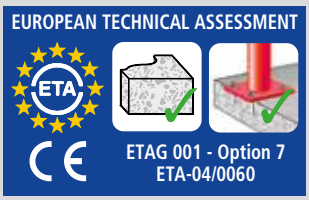
1



2



3



A

B

PRODUCT OVERVIEW - PTB-PRO ZINC PLATED

Cat No.	1	2	3	A	B	Thread Size [mm]	Length [mm]	Head Size [mm]	Max t_{fix} [mm]	Box	Blister Pack	Pack Qty
DFM1110010						M6 x 40		10	2	•		100
DFM1110000	•			•		M6 x 55		10	5	•		100
DFM111000P	•			•		M6 x 55		10	5		•	4
DFM1110020	•			•		M6 x 60		10	10	•		100
DFM1110040	•			•		M6 x 85		10	35	•		100
DFM111004P	•			•		M6 x 85		10	35		•	4
DFM1110050						M8 x 50		13	5	•		100
DFM1110060		•		•	•	M8 x 60		13	5	•		100
DFM111006P		•		•	•	M8 x 60		13	5		•	4
DFM1110080		•		•	•	M8 x 65		13	10	•		100
DFM1110100		•		•	•	M8 x 75		13	20	•		100
DFM111010P		•		•	•	M8 x 75		13	20		•	4
DFM1110120		•		•	•	M8 x 85		13	30	•		100
DFM1110140		•		•	•	M8 x 95		13	40	•		100
DFM111014P		•		•	•	M8 x 95		13	40		•	4
DFM1110160		•		•	•	M8 x 105		13	50	•		100
DFM1110180		•		•	•	M8 x 130		13	75	•		50
DFM1110200		•		•	•	M8 x 155		13	100	•		50
DFM1110220		•		•	•	M8 x 205		13	150	•		50
DFM1110230						M10 x 60		17	5	•		50
DFM111023P						M10 x 60		17	5		•	2
DFM1110260		•		•	•	M10 x 85		17	5	•		50
DFM1110280		•		•	•	M10 x 90		17	10	•		50
DFM1110320		•		•	•	M10 x 100		17	20	•		50
DFM111032P		•		•	•	M10 x 100		17	20		•	2
DFM1110340		•		•	•	M10 x 110		17	30	•		50
DFM1110360		•		•	•	M10 x 120		17	40	•		50
DFM1110400		•		•	•	M10 x 130		17	50	•		50
DFM111040P		•		•	•	M10 x 130		17	50		•	2
DFM1110440		•		•	•	M10 x 160		17	80	•		50
DFM1110460		•		•	•	M10 x 180		17	100	•		25
DFM1110480		•		•	•	M10 x 220		17	140	•		25
DFM1110520		•		•	•	M12 x 90		19	5	•		50
DFM111052P		•		•	•	M12 x 90		19	5		•	2
DFM1110540		•		•	•	M12 x 95		19	10	•		50
DFM1110560		•		•	•	M12 x 100		19	15	•		50
DFM1110580		•		•	•	M12 x 105		19	20	•		25
DFM111058P		•		•	•	M12 x 105		19	20		•	2
DFM1110600		•		•	•	M12 x 115		19	30	•		25
DFM1110620		•		•	•	M12 x 120		19	35	•		25
DFM1110640		•		•	•	M12 x 135		19	50	•		25
DFM111064P		•		•	•	M12 x 135		19	50		•	2
DFM1110660		•		•	•	M12 x 165		19	80	•		25
DFM1110680		•		•	•	M12 x 175		19	90	•		25
DFM1110700		•		•	•	M12 x 185		19	100	•		25
DFM1110720		•		•	•	M12 x 220		19	135	•		10
DFM1110740		•		•	•	M16 x 115		24	5	•		25
DFM1110760		•		•	•	M16 x 125		24	15	•		20
DFM1110780		•		•	•	M16 x 135		24	25	•		20
DFM1110800		•		•	•	M16 x 150		24	40	•		20
DFM1110810		•		•	•	M16 x 160		24	50	•		10
DFM1110830		•		•	•	M16 x 210		24	100	•		10
DFM1110870						M20 x 125		30	5	•		10
DFM1110880		•		•		M20 x 160		30	5	•		10
DFM1110900		•		•		M20 x 170		30	15	•		10
DFM1110920		•		•		M20 x 175		30	20	•		10
DFM1110940		•		•		M20 x 185		30	30	•		10
DFM1110960		•		•		M20 x 200		30	45	•		10
DFM1110980		•		•		M20 x 215		30	60	•		10

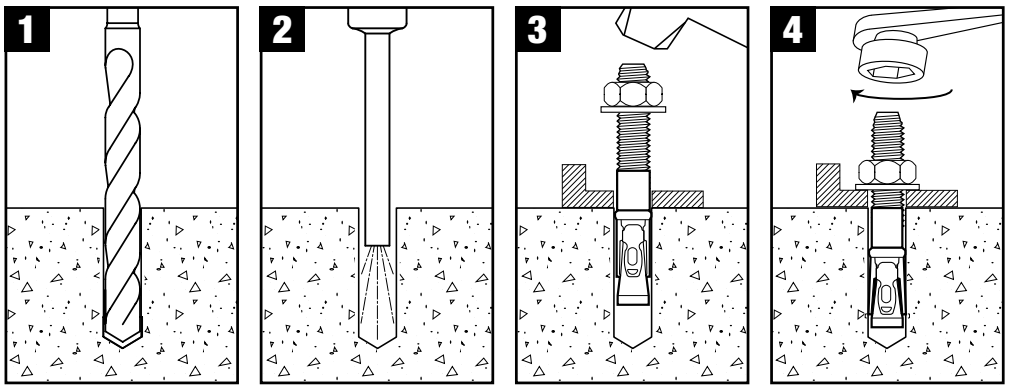
PTB-PRO HEAVY DUTY THROUGHBOLTS

APPLICATIONS

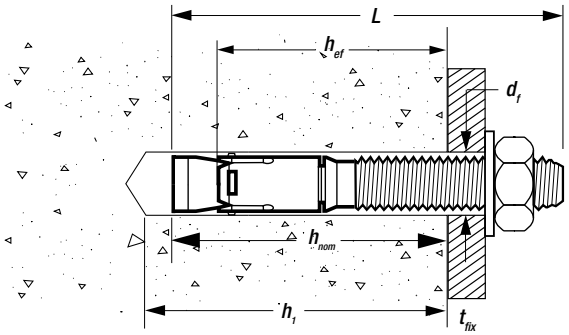
- Piping and heating supports
- Heating pumps
- Ventilation systems and air conditioning
- Safety barriers
- Fire escapes

MATERIALS

INSTALLATION INSTRUCTIONS



TECHNICAL INFORMATION



N_{rec}/N_{all}

V_{rec}/V_{all}

1 kN = 100kg

RECOMMENDED LOADS - UNCRACKED CONCRETE - PTB-PRO ZINC PLATED

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{rec}$$

$\gamma_{M = 2.1}$ $\gamma_{f = 1.4}$

Size - Thread x L [mm]	h_{nom} [mm]		h_1 [mm]		d_f [mm]	t_{fix} [mm]	T_{inst} [Nm]	N_{rec} [kN]		V_{rec} [kN]
	min	max	min	max				min	max	min & max
M6 x 40	25		35		7	2	10	0.8		0.8
M8 x 50	30		40		9	5	25	2.3		2.8
M10 x 60	35		50		12	5	45	3.4		3.5
M20 x 125	75		115		22	5	200	11.9		22.3

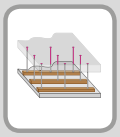
PTB-PRO HEAVY DUTY THROUGHBOLTS

ALLOWABLE LOADS - UNCRACKED CONCRETE - PTB-PRO ZINC PLATED


C20/25

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{all}$$

$\gamma_{f=1.4}$


M6


M8-M20

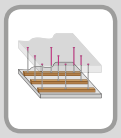
Size - Thread x L [mm]	h_{nom} [mm]		h_1 [mm]		d_f [mm]	t_{fix} [mm]		T_{inst} [Nm]	N_{all} [kN]		V_{all} [kN]
	min	max	min	max		min h_{nom}	max h_{nom}		min	max	min & max
M6 x 55	35		45		7	5		10	1.4		1.4
M6 x 60	35		45		7	10		10	1.4		1.4
M6 x 85	35		45		7	35		10	1.4		1.4
M8 x 60	40		55		9	5		25	3.6		5.7
M8 x 65	40		55		9	10		25	3.6		5.7
M8 x 75	40		55		9	20		25	3.6		5.7
M8 x 85	40		55		9	30		25	3.6		5.7
M8 x 95	40		55		9	40		25	3.6		5.7
M8 x 105	40		55		9	50		25	3.6		5.7
M8 x 130	40		55		9	75		25	3.6		5.7
M8 x 155	40		55		9	100		25	3.6		5.7
M8 x 205	40		55		9	150		25	3.6		5.7
M10 x 85	60		75		12	5		45	7.6		8.9
M10 x 90	60		75		12	10		45	7.6		8.9
M10 x 100	60		75		12	20		45	7.6		8.9
M10 x 110	60		75		12	30		45	7.6		8.9
M10 x 120	60		75		12	40		45	7.6		8.9
M10 x 130	60		75		12	50		45	7.6		8.9
M10 x 160	60		75		12	80		45	7.6		8.9
M10 x 180	60		75		12	100		45	7.6		8.9
M10 x 220	60		75		12	140		45	7.6		8.9
M12 x 90	60		75		14	5		70	11.2		12
M12 x 95	60		75		14	10		70	11.2		12
M12 x 100	60	80	75	95	14	15	1	70	11.2	14.3	12
M12 x 105	60	80	75	95	14	20	5	70	11.2	14.3	12
M12 x 115	60	80	75	95	14	30	10	70	11.2	14.3	12
M12 x 120	60	80	75	95	14	35	15	70	11.2	14.3	12
M12 x 135	60	80	75	95	14	50	30	70	11.2	14.3	12
M12 x 165	60	80	75	95	14	80	60	70	11.2	14.3	12
M12 x 175	60	80	75	95	14	90	70	70	11.2	14.3	12
M12 x 185	60	80	75	95	14	100	80	70	11.2	14.3	12
M12 x 220	60	80	75	95	14	135	115	70	11.2	14.3	12
M16 x 115	80		100		18	5		120	14.3		21.1
M16 x 125	80		100		18	15		120	14.3		21.1
M16 x 135	80	100	100	120	18	25	5	120	14.3	24	21.1
M16 x 150	80	100	100	120	18	40	20	120	14.3	24	21.1
M16 x 160	80	100	100	120	18	50	30	120	14.3	24	21.1
M16 x 210	80	100	100	120	18	100	80	120	14.3	24	21.1
M20 x 160	110		150		22	5		200	19.8		30.9
M20 x 170	110		150		22	15		200	19.8		30.9
M20 x 185	110		150		22	30		200	19.8		30.9
M20 x 200	110		150		22	45		200	19.8		30.9
M20 x 215	110		150		22	60		200	19.8		30.9

PTB-PRO HEAVY DUTY THROUGHBOLTS

ALLOWABLE LOADS - CRACKED CONCRETE - PTB-PRO ZINC PLATED

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{all}$$

$\gamma_{f = 1.4}$


M6


M8-M20

Size - Thread x L [mm]	h_{nom} [mm]		h_1 [mm]		d_f [mm]	t_{fix} [mm]		T_{inst} [Nm]	N_{all} [kN]		V_{all} [kN]
	min	max	min	max		min h_{nom}	max h_{nom}		min	max	min & max
M6 x 55	35		45		7	5		10	1.4		1.4
M6 x 60	35		45		7	10		10	1.4		1.4
M6 x 85	35		45		7	35		10	1.4		1.4
M8 x 60	40		55		9	5		25	1.6		4.3
M8 x 65	40		55		9	10		25	1.6		4.3
M8 x 75	40		55		9	20		25	1.6		4.3
M8 x 85	40		55		9	30		25	1.6		4.3
M8 x 95	40		55		9	40		25	1.6		4.3
M8 x 105	40		55		9	50		25	1.6		4.3
M8 x 130	40		55		9	75		25	1.6		4.3
M8 x 155	40		55		9	100		25	1.6		4.3
M8 x 205	40		55		9	150		25	1.6		4.3
M10 x 85	60		75		12	5		45	3.6		8.9
M10 x 90	60		75		12	10		45	3.6		8.9
M10 x 100	60		75		12	20		45	3.6		8.9
M10 x 110	60		75		12	30		45	3.6		8.9
M10 x 120	60		75		12	40		45	3.6		8.9
M10 x 130	60		75		12	50		45	3.6		8.9
M10 x 160	60		75		12	80		45	3.6		8.9
M10 x 180	60		75		12	100		45	3.6		8.9
M10 x 220	60		75		12	140		45	3.6		8.9
M12 x 90	60		75		14	5		70	4.8		12
M12 x 95	60		75		14	10		70	4.8		12
M12 x 100	60		75		14	15		70	4.8		12
M12 x 105	60	80	75	95	14	20	5	70	4.8	4.8	12
M12 x 115	60	80	75	95	14	30	10	70	4.8	4.8	12
M12 x 120	60	80	75	95	14	35	15	70	4.8	4.8	12
M12 x 135	60	80	75	95	14	50	30	70	4.8	4.8	12
M12 x 165	60	80	75	95	14	80	60	70	4.8	4.8	12
M12 x 175	60	80	75	95	14	90	70	70	4.8	4.8	12
M12 x 185	60	80	75	95	14	100	80	70	4.8	4.8	12
M12 x 220	60	80	75	95	14	135	115	70	4.8	4.8	12
M16 x 115	80		100		18	5		120	9.9		21.1
M16 x 125	80		100		18	15		120	9.9		21.1
M16 x 135	80	100	100	120	18	25	5	120	9.9	9.9	21.1
M16 x 150	80	100	100	120	18	40	20	120	9.9	9.9	21.1
M16 x 160	80	100	100	120	18	50	30	120	9.9	9.9	21.1
M16 x 210	80	100	100	120	18	100	80	120	9.9	9.9	21.1
M20 x 160	110		150		22	5		200	7.9		30.9
M20 x 170	110		150		22	15		200	7.9		30.9
M20 x 185	110		150		22	30		200	7.9		30.9
M20 x 200	110		150		22	45		200	7.9		30.9
M20 x 215	110		150		22	60		200	7.9		30.9

PTB-PRO HEAVY DUTY THROUGHBOLTS

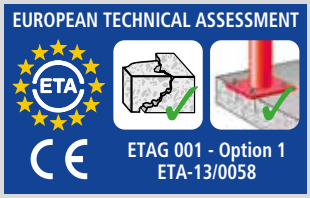
APPLICATIONS

- Steel constructions
- Safety barriers
- Ventilation systems and air conditioning
- Machines
- Fire escapes
- Gates
- Façades
- Approved for outside use

MATERIALS

See front cover foldout for details.

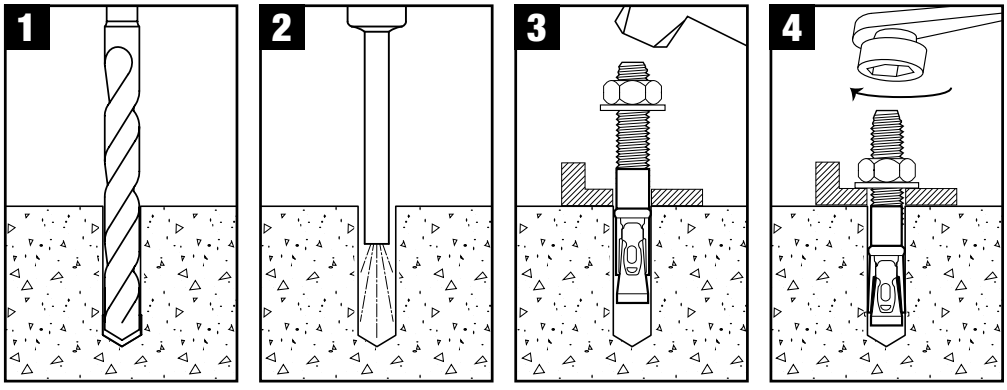
APPROVALS



PRODUCT OVERVIEW - PTB-SS-ETA1-PRO A4 STAINLESS STEEL

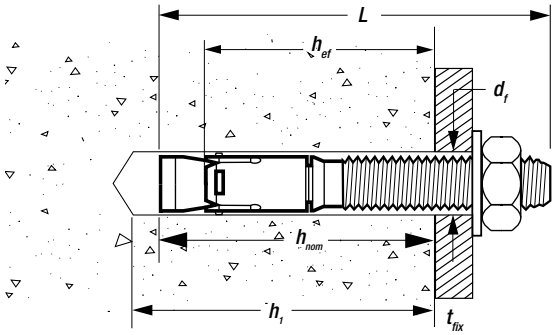
Cat No.	ETA	Thread Size [mm]	Length [mm]	Head Size [mm]	Max t_{fix} [mm]	Box	Blister Pack	Pack Qty
DFM1140000		M6 x 55		10	5	•		200
DFM1140020		M6 x 85		10	30	•		200
DFM1140050		M8 x 50		13	5	•		200
DFM1140190	•	M8 x 65		13	10	•		100
DFM1140200	•	M8 x 75		13	20	•		100
DFM1140220	•	M8 x 85		13	30	•		100
DFM1140250	•	M8 x 95		13	40	•		100
DFM1140270	•	M8 x 105		13	50	•		100
DFM1140300	•	M8 x 120		13	65	•		50
DFM1140310	•	M8 x 130		13	75	•		50
DFM1140350		M10 x 60		17	5	•		100
DFM1140360	•	M10 x 80		17	1	•		50
DFM1140400	•	M10 x 85		17	5	•		50
DFM1140430	•	M10 x 90		17	10	•		50
DFM1140450	•	M10 x 100		17	20	•		50
DFM1140480	•	M10 x 110		17	30	•		50
DFM1140500	•	M10 x 130		17	50	•		50
DFM1140530	•	M10 x 160		17	80	•		50
DFM1140550	•	M10 x 180		17	100	•		25
DFM1140600		M12 x 80		17	10	•		50
DFM1140700	•	M12 x 100		19	15	•		100
DFM1140750	•	M12 x 125		19	40	•		25
DFM1140800	•	M12 x 135		19	50	•		25
DFM1140850		M16 x 100		24	5	•		25
DFM1140870	•	M16 x 125		24	15	•		20
DFM1140900	•	M16 x 150		24	40	•		20
DFM1140930		M20 x 120		30	5	•		10
DFM1140950		M20 x 160		30	25	•		10

INSTALLATION INSTRUCTIONS



PTB-PRO HEAVY DUTY THROUGHBOLTS

TECHNICAL INFORMATION



Nrec/Nall

Vrec/Vall

1 kN = 100kg

RECOMMENDED LOADS - UNCRACKED CONCRETE - PTB-PRO A4 STAINLESS STEEL

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{rec}$$

$\gamma_{f=1.4}$

Size - Thread x L [mm]	h_{nom} [mm]	h_1 [mm]	d_f [mm]	t_{fix} [mm]	T_{inst} [Nm]	N_{rec} [kN]	V_{rec} [kN]
M6 x 55	35	55	7	5	5	0.6	1.3
M6 x 85	40	60	7	30	5	0.8	1.3
M8 x 50	30	45	9	5	25	2.3	3.9
M10 x 60	35	50	12	5	45	2.5	4.9
M12 x 80	40	55	14	10	70	3.9	6.1
M20 x 120	80	100	22	5	180	8	12.3
M20 x 160	100	110	22	25	180	12	17.1

ALLOWABLE LOADS - UNCRACKED CONCRETE - PTB-SS-ETA1-PRO A4 STAINLESS STEEL

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{all}$$

$\gamma_{f=1.4}$

Size - Thread x L [mm]	h_{ef} [mm]		h_1 [mm]		d_f [mm]	t_{fix} [mm]		T_{inst} [Nm]	N_{all} [kN]		V_{all} [kN]
	min	max	min	max		min h_{ef}	max h_{ef}		min	max	min & max
M8 x 65	40		55		9	10		25	3.6		4.9
M8 x 75	40		55		9	20		25	3.6		4.9
M8 x 85	40		55		9	30		25	3.6		4.9
M8 x 95	40		55		9	40		25	3.6		4.9
M8 x 105	40		55		9	50		25	3.6		4.9
M8 x 120	40		55		9	65		25	3.6		4.9
M8 x 130	40		55		9	75		25	3.6		4.9
M10 x 80	60		75		12	1		45	5.7		8
M10 x 85	60		75		12	5		45	5.7		8
M10 x 90	60		75		12	10		45	5.7		8
M10 x 100	60		75		12	20		45	5.7		8
M10 x 110	60		75		12	30		45	5.7		8
M10 x 130	60		75		12	50		45	5.7		8
M10 x 160	60		75		12	80		45	5.7		8
M10 x 180	60		75		12	100		45	5.7		8
M12 x 100	60		75		14	15		70	7.1		11.6
M12 x 125	60	80	75	95	14	40	20	70	7.1	9.5	11.6
M12 x 135	60	80	75	95	14	50	30	70	7.1	9.5	11.6
M16 x 125	80		100		18	15		120	9.5		21.9
M16 x 150	80	100	100	120	18	40	20	120	9.5	14.3	21.9

PTB-PRO HEAVY DUTY THROUGHBOLTS

ALLOWABLE LOADS - CRACKED CONCRETE - PTB-SS-ETA1-PRO A4 STAINLESS STEEL

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{all}$$

$\gamma_{f = 1.4}$

Size - Thread x L [mm]	h_{ef} [mm]		h_1 [mm]		d_f [mm]	t_{fix} [mm]		T_{inst} [Nm]	N_{all} [kN]		V_{all} [kN]
	min	max	min	max		min h_{ef}	max h_{ef}		min	max	min & max
M8 x 65	40		55		9	10		25	1.2		4.3
M8 x 75	40		55		9	20		25	1.2		4.3
M8 x 85	40		55		9	30		25	1.2		4.3
M8 x 95	40		55		9	40		25	1.2		4.3
M8 x 105	40		55		9	50		25	1.2		4.3
M8 x 120	40		55		9	65		25	1.2		4.3
M8 x 130	40		55		9	75		25	1.2		4.3
M10 x 80	60		75		12	1		45	3		8
M10 x 85	60		75		12	5		45	3		8
M10 x 90	60		75		12	10		45	3		8
M10 x 100	60		75		12	20		45	3		8
M10 x 110	60		75		12	30		45	3		8
M10 x 130	60		75		12	50		45	3		8
M10 x 160	60		75		12	80		45	3		8
M10 x 180	60		75		12	100		45	3		8
M12 x 100	60		75		14	15		70	4.8		11.6
M12 x 125	60	80	75	95	14	40	20	70	4.8	4.8	11.6
M12 x 135	60	80	75	95	14	50	30	70	4.8	4.8	11.6
M16 x 125	80		100		18	15		120	7.9		21.9
M16 x 150	80	100	100	120	18	40	20	120	7.9	7.9	21.9

PTB-PRO HEAVY DUTY THROUGHBOLTS

APPLICATIONS

- Piping and heating supports
- Heating pumps
- Ventilation systems and air conditioning
- Safety barriers
- Fire escapes
- Railings
- Suitable for applications where there is a demand for higher corrosion resistance

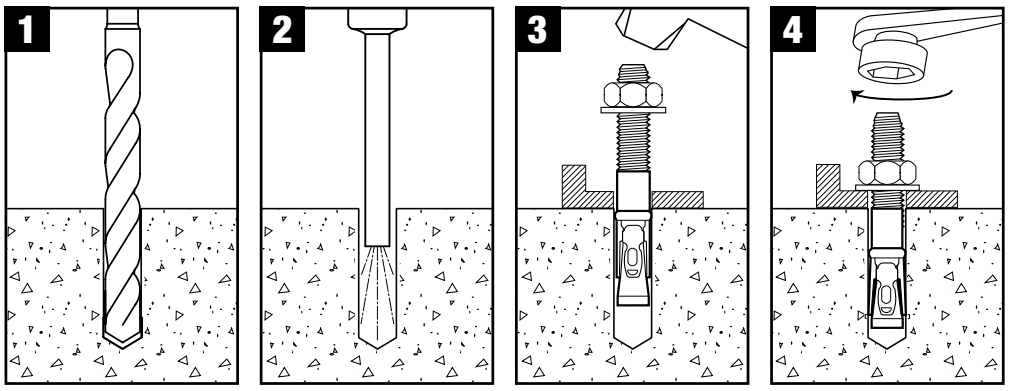
MATERIALS

See front cover foldout for details.

PRODUCT OVERVIEW - PTB-G HOT DIPPED GALVANIZED

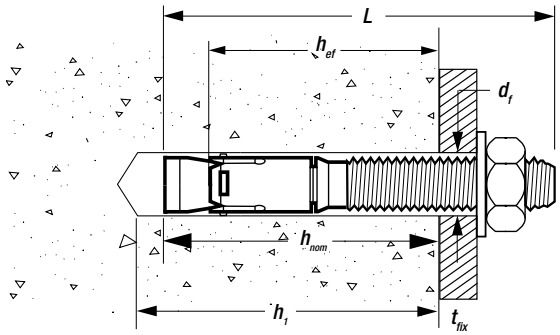
Cat No.	Thread Size [mm]	Length [mm]	Head Size [mm]	Max t_{fix} [mm]	Box	Blister Pack	Pack Qty
DFM1150050	M8 x 50		13	5	•		100
DFM115005P	M8 x 50		13	5		•	6
DFM1150080	M8 x 65		13	10	•		100
DFM1150120	M8 x 85		13	30	•		100
DFM1150160	M8 x 105		13	50	•		100
DFM1150230	M10 x 60		17	5	•		100
DFM1150280	M10 x 90		17	10	•		50
DFM1150320	M10 x 100		17	20	•		50
DFM1150360	M10 x 120		17	40	•		50
DFM1150440	M10 x 160		17	80	•		50
DFM1150250	M12 x 80		19	5	•		50
DFM1150580	M12 x 105		19	20	•		25
DFM1150620	M12 x 120		19	35	•		25
DFM1150640	M12 x 135		19	50	•		25
DFM1150660	M12 x 165		19	80	•		25
DFM1150680	M12 x 175		19	90	•		25
DFM1150730	M16 x 100		24	5	•		25
DFM1150780	M16 x 135		24	25	•		20
DFM1150810	M16 x 160		24	50	•		10
DFM1150830	M16 x 210		24	100	•		10
DFM1150860	M20 x 120		30	5	•		10
DFM1150850	M20 x 170		30	35	•		10

INSTALLATION INSTRUCTIONS



PTB-PRO HEAVY DUTY THROUGHBOLTS

TECHNICAL INFORMATION



1 kN = 100kg

RECOMMENDED LOADS - UNCRACKED CONCRETE - PTB-G HOT DIPPED GALVANIZED

$$\frac{N_{Rk}}{\gamma_M \cdot \gamma_F} = N_{rec}$$

$\gamma_M = 2.1$ $\gamma_f = 1.4$

Size - Thread x L [mm]	h_{ef} [mm]		h_1 [mm]		d_f [mm]	t_{fix} [mm]		T_{inst} [Nm]	N_{rec} [kN]		V_{rec} [kN]
	min	max	min	max		min h_{ef}	max h_{ef}		min	max	min & max
M8 x 50	30		45		9	5		25	1.4		2.8
M8 x 65	40		55		9	10		25	2.1		3.0
M8 x 85	40		55		9	30		25	2.1		3.0
M8 x 105	40		55		9	50		25	2.1		3.0
M10 x 60	35		50		12	5		45	1.4		3.5
M10 x 90	60		75		12	10		45	3.1		5.6
M10 x 100	60		75		12	20		45	3.1		5.6
M10 x 120	60		75		12	40		45	3.1		5.6
M10 x 160	60		75		12	80		45	3.1		5.6
M12 x 80	35		50		14	5		70	2		3.5
M12 x 105	60	80	75	95	14	20	5	70	4.6	6.8	7.1
M12 x 120	60	80	75	95	14	35	25	70	4.6	6.8	7.1
M12 x 135	60	80	75	95	14	50	30	70	4.6	6.8	7.1
M12 x 165	60	80	75	95	14	80	60	70	4.6	6.8	7.1
M12 x 175	60	80	75	95	14	90	70	70	4.6	6.8	7.1
M16 x 100	45		65		18	15		120	3.9		5.1
M16 x 135	80	100	100	120	18	25	5	120	11.0	12.9	12.0
M16 x 160	80	100	100	120	18	50	30	120	11.0	12.9	12.0
M16 x 210	80	100	100	120	18	100	80	120	11.0	12.9	12.0
M20 x 120	75		110		22	5		180	7.9		15.4
M20 x 170	100		135		22	35		180	12.2		15.4

VTB UNIVERSAL THROUGHBOLTS

APPLICATIONS

- Cost-effective installation where higher loadings aren't required
- Suitable for a variety of base materials e.g limestone and red brick

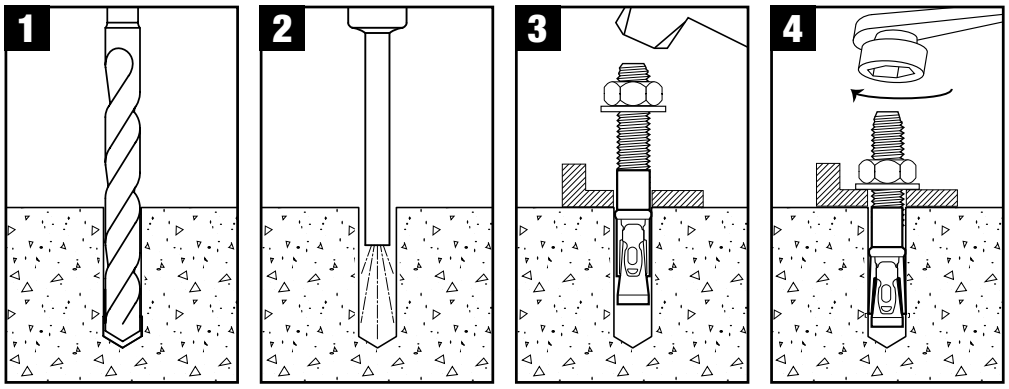
MATERIALS

See front cover foldout for details.

PRODUCT OVERVIEW - VTB-CS ZINC PLATED

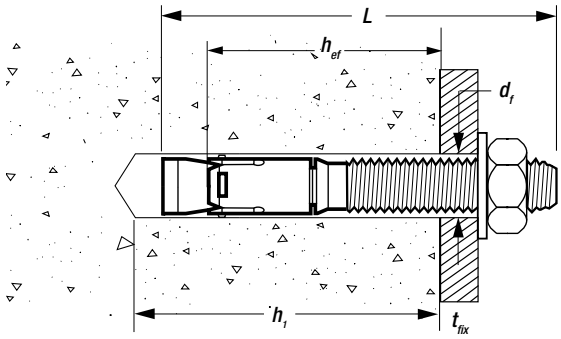
Cat No.	Thread Size [mm]	Length [mm]	Head Size [mm]	Max t_{fix} [mm]	Box	Blister Pack	Pack Qty
DFM1110030	M8 X 100		13	50	•		50
DFM111003P	M8 X 100		13	50		•	4
DFM1110090	M10 X 90		17	25	•		50
DFM111009P	M10 X 90		17	25		•	2
DFM1110110	M10 X 100		17	35	•		50
DFM111011P	M10 X 100		17	35		•	2
DFM1110130	M12 X 100		19	25	•		25
DFM111013P	M12 X 100		19	25		•	2
DFM1110150	M12 X 110		19	35	•		25
DFM1110170	M12 X 120		19	45	•		25
DFM111017P	M12 X 120		19	45		•	2
DFM1110190	M12 X 150		19	75	•		25
DFM111019P	M12 X 150		19	75		•	2
DFM1110210	M16 X 120		24	30	•		20
DFM1110240	M16 X 140		24	50	•		20

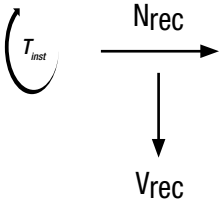
INSTALLATION INSTRUCTIONS



VTB UNIVERSAL THROUGHBOLTS

TECHNICAL INFORMATION





1 kN = 100kg

RECOMMENDED LOADS - UNCRACKED CONCRETE - VTB-CS ZINC PLATED

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{rec}$$

$\gamma_M = 2.1$ $\gamma_f = 1.4$

Size - Thread x L [mm]	h_{ef} [mm]		h_1 [mm]		d_f [mm]	t_{fix} [mm]		T_{inst} [Nm]	N_{rec} [kN]		V_{rec} [kN]
	min	max	min	max		min h_{ef}	max h_{ef}		min	max	
M8 x 100	30	40	50	60	9	50	40	15	2	3	3.8
M10 x 90	40	50	70	80	12	25	15	30	3.5	3.6	6.3
M10 x 100	40	50	70	80	12	35	25	30	3.5	3.6	6.3
M12 x 100	50	66	80	95	14	20	4	50	4.7	6.2	9.7
M12 x 110	50	66	80	95	14	30	14	50	4.7	6.2	9.7
M12 x 120	50	66	80	95	14	40	24	50	4.7	6.2	9.7
M12 x 150	50	66	80	95	14	70	54	50	4.7	6.2	9.7
M16 x 120	64	79	100	115	18	16	1	100	8.4	10	16
M16 x 140	64	79	100	115	18	36	21	100	8.4	10	16

FHS FIXED HEAD SLEEVE ANCHORS

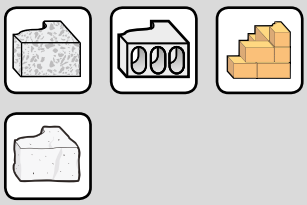
DESCRIPTION

- Light sleeve anchor for push-through installation
- 4.8 grade steel
- Available from 45-100mm length

APPLICATIONS

- Piping and heating supports
- Timber framing
- Heavy duty doors and security shutters

MATERIALS

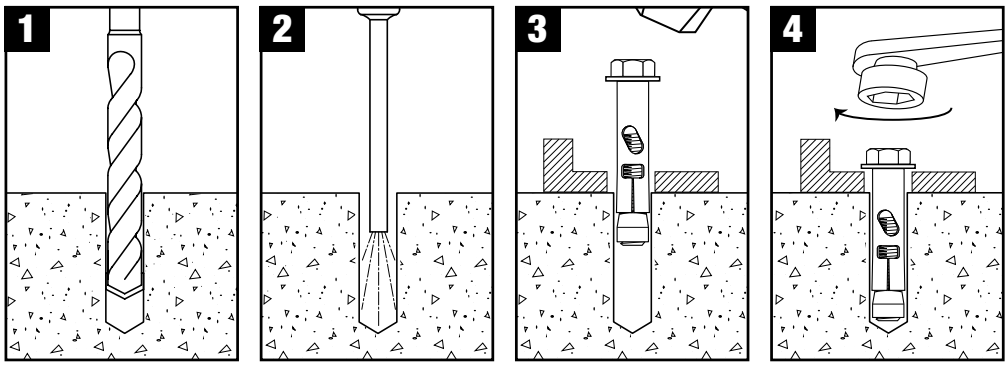


See front cover foldout for details.

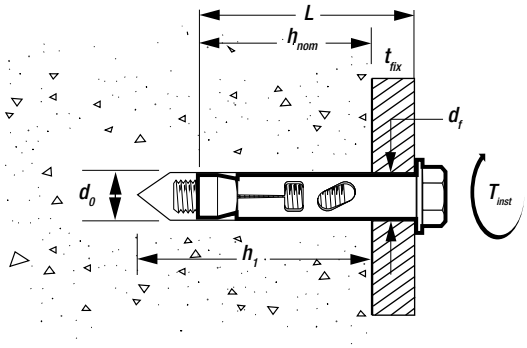
PRODUCT OVERVIEW - FHS ZINC PLATED

Cat No.	Drill Dia. [mm]	Length [mm]	Head Size [mm]	Thread Size [mm]	Max t_{fix} [mm]	Box	Blister Pack	Pack Qty
DFM1210390	8 x 45		10	6	1	•		100
DFM121039P	8 x 45		10	6	1		•	4
DFM1210450	10 x 55		13	8	5	•		50
DFM121045P	10 x 55		13	8	5		•	2
DFM1210480	10 x 80		13	8	30	•		50
DFM1210510	10 x 100		13	8	50	•		25
DFM121051P	10 x 100		13	8	50		•	2
DFM1210540	12 x 65		16	10	5	•		25
DFM1210570	12 x 80		16	10	20	•		25

INSTALLATION INSTRUCTIONS



TECHNICAL INFORMATION



Nrec

Vrec

1 kN = 100kg

RECOMMENDED LOADS - UNCRACKED CONCRETE - FHS ZINC PLATED

C20/25

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{rec}$$

$\gamma_M = 2.1$ $\gamma_f = 1.4$

Size - d_0 x L [mm]	h_{nom} [mm]	h_1 [mm]	d_f [mm]	t_{fix} [mm]	T_{inst} [Nm]	N_{rec} [kN]	V_{rec} [kN]
8 x 45	35	50	10	1	6	1.6	1.5
10 x 55	40	60	12	5	11	3.0	3.0
10 x 80	40	60	12	30	11	3.0	3.0
10 x 100	40	60	12	50	11	3.0	3.0
12 x 65	50	70	14	5	22	3.7	3.7
12 x 80	50	70	14	20	22	3.7	3.7

TW TIE WIRE HANGERS

DESCRIPTION

- Medium duty anchor with eye

APPLICATIONS

- Suspended ceilings

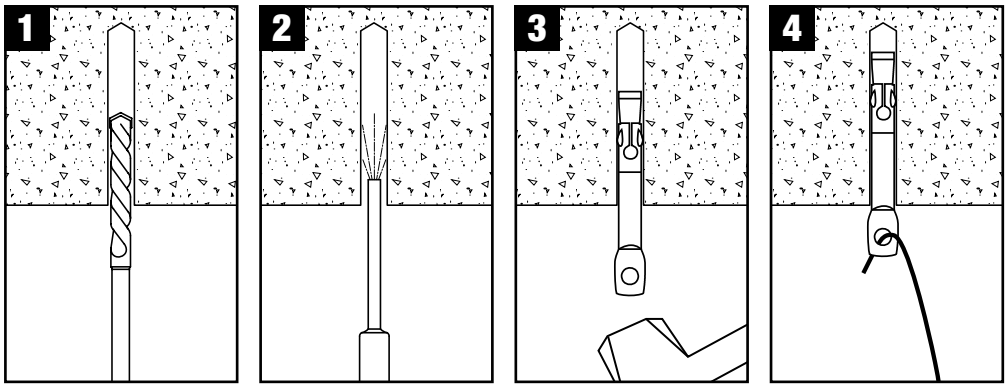
MATERIALS

See front cover foldout for details.

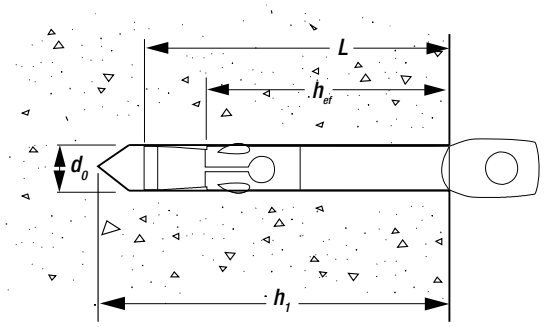
PRODUCT OVERVIEW - TW ZINC PLATED

Cat No.	Drill Dia. [mm]	Length [mm]	Eye Diameter [mm]	Box	Blister Pack	Pack Qty
DFM1210600	6 x 55		6	•		100

INSTALLATION INSTRUCTIONS



TECHNICAL INFORMATION



Nrec

Vrec

1 kN = 100kg

RECOMMENDED LOADS - UNCRACKED CONCRETE - TW ZINC PLATED

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{rec}$$

$\gamma_M = 2.1$ $\gamma_f = 1.4$

Size - d_0 x L [mm]	h_{ef} [mm]	h_1 [mm]	N_{rec} [kN]
6 x 55	25	40	0.4

SNAKE-PRO SELF-TAPPING ANCHORS

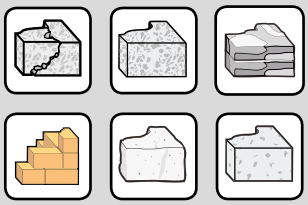
DESCRIPTION

- Patented (EP1455098B1), internal thread self-tapping anchor with ETA option 1 approval for cracked and uncracked concrete
- Approved for very small edge distances
- Complete grip over total anchor length
- Up to 6 times faster installation in comparison with drop-in anchors
- Each box comes with a drill bit and setting tool

APPLICATIONS

- Suspending conduit
- Cable trays
- Pipe supports
- Fire sprinklers
- Suspended lighting

MATERIALS



See front cover foldout for details.

APPROVALS

EUROPEAN TECHNICAL ASSESSMENT

ETAG 001 - Option 1
ETA-13/0054

A

B

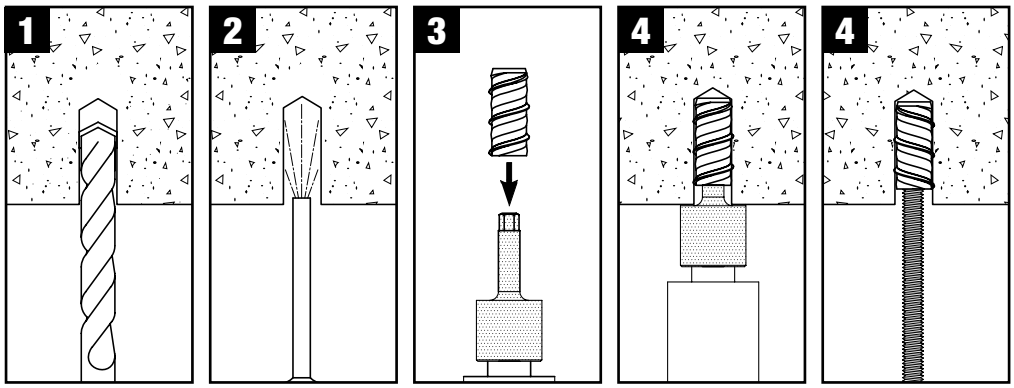
ICC ES

PRODUCT OVERVIEW - SNAKE-PRO ZINC PLATED

Cat No.	ETA	A	B	Thread Size [mm]	Length [mm]	Drill Dia. [mm]	Box	Blister Pack	Pack Qty
DFM2310050*	•		•	M8 x 31		12.7	•		50
DFM2310000*	•	•	•	M10 x 31		12.7	•		50
DFM2310100*				M12 x 42		19.1	•		50

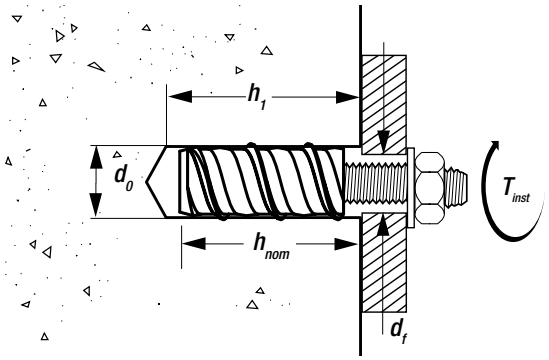
*Each box comes with a drill bit and setting tool

INSTALLATION INSTRUCTIONS



SNAKE-PRO SELF-TAPPING ANCHORS

TECHNICAL INFORMATION



Nrec/Nall

Vrec/Vall

1 kN = 100kg

RECOMMENDED LOADS - UNCRACKED CONCRETE - SNAKE-PRO ZINC PLATED

$$\frac{N_{Rk}}{\gamma_M \cdot \gamma_F} = N_{rec}$$

$\gamma_M = 2.1$ $\gamma_f = 1.4$

Size - Thread x L [mm]	d_o [mm]	h_{nom} [mm]	h_1 [mm]	T_{inst} [Nm]	N_{rec} [kN]	V_{rec} [kN]
M12 x 42	19.1	54	60	15	2.5	2.5

ALLOWABLE LOADS - UNCRACKED CONCRETE - SNAKE-PRO ZINC PLATED

$$\frac{N_{Rk}}{\gamma_M \cdot \gamma_F} = N_{all}$$

$\gamma_f = 1.4$

Size - Thread x L [mm]	d_o [mm]	h_{nom} [mm]	h_1 [mm]	T_{inst} [Nm]	N_{all} [kN]	V_{all} [kN]
M8 x 31	12.7	41	50	10	2.0	2.4
M10 x 31	12.7	41	50	10	2.0	2.4

ALLOWABLE LOADS - CRACKED CONCRETE - SNAKE-PRO ZINC PLATED

$$\frac{N_{Rk}}{\gamma_M \cdot \gamma_F} = N_{all}$$

$\gamma_f = 1.4$

Size - Thread x L [mm]	d_o [mm]	h_{nom} [mm]	h_1 [mm]	T_{inst} [Nm]	N_{all} [kN]	V_{all} [kN]
M8 x 31	12.7	41	50	10	1.2	1.4
M10 x 31	12.7	41	50	10	1.2	1.4

DM-PRO® DROP-IN ANCHORS

DESCRIPTION

- Zinc plated internally threaded expansion anchor
- Easy to install anchor with ETA Option 7 approval for uncracked concrete and part 6 approval for cracked concrete
- Fire resistance approval*
- DM-PRO® (version without lip) is designed for invisible coverage with mortar after use

APPLICATIONS

- Electrical fittings and conduit
- Ventilation
- Air conditioning systems
- Suspended ceilings
- Seating
- Barriers and rails

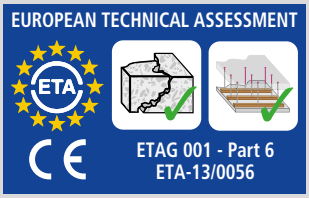
MATERIALS

max. M8

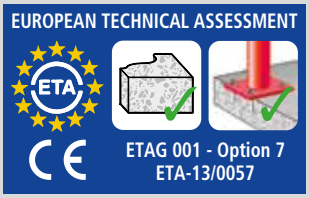
See front cover foldout for details.

APPROVALS

1 EUROPEAN TECHNICAL ASSESSMENT



2 EUROPEAN TECHNICAL ASSESSMENT



*

*M8 - M12 only

PRODUCT OVERVIEW - DM-LIP-PRO ZINC PLATED

Cat No.	1	2	Thread Size [mm]	Length [mm]	Drill Dia. [mm]	Box	Blister Pack	Pack Qty
DFM2110000	•		M6 x 25		8	•		100
DFM211010S	•	•	M8 x 30		10	•		50
DFM2110100	•	•	M8 x 30		10	•		100
DFM211015S	•	•	M10 x 40		12	•		50
DFM2110150	•	•	M10 x 40		12	•		100
DFM211020S	•	•	M12 x 50		16	•		50
DFM2110200	•	•	M12 x 50		16	•		100
DFM2110300		•	M16 x 65		20	•		25
DFM2110250			M20 x 80		25	•		25

PRODUCT OVERVIEW - DM-PRO® ZINC PLATED

Cat No.	1	2	Thread Size [mm]	Length [mm]	Drill Dia. [mm]	Box	Blister Pack	Pack Qty
DFM2110500	•		M6 x 25		8	•		100
DFM211055S	•	•	M8 x 30		10	•		50
DFM2110550	•	•	M8 x 30		10	•		100
DFM211060S	•	•	M10 x 40		12	•		50
DFM2110600	•	•	M10 x 40		12	•		100
DFM211065S	•	•	M12 x 50		16	•		50
DFM2110650	•	•	M12 x 50		16	•		100
DFM2110700		•	M16 x 65		20	•		25
DFM2110750			M20 x 80		25	•		25

DM-PRO® DROP-IN ANCHORS

DESCRIPTION

- Internally threaded expansion anchor
- Easy to install anchor with ETA Option 7 approval for uncracked concrete and part 6 approval for cracked concrete (zinc plated and stainless steel only)
- Fire resistance approval*
- Approved for applications where there is a demand for higher corrosion resistance

APPLICATIONS

- Electrical fittings and conduit
- Ventilation
- Air conditioning systems
- Suspended ceilings
- Seating
- Barriers and rails

MATERIALS

max. M8

See front cover foldout for details.

APPROVALS

1 EUROPEAN TECHNICAL ASSESSMENT
ETAG 001 - Part 6
ETA-13/0056

2 EUROPEAN TECHNICAL ASSESSMENT
ETAG 001 - Option 7
ETA-13/0057

*

*M8 - M12 only

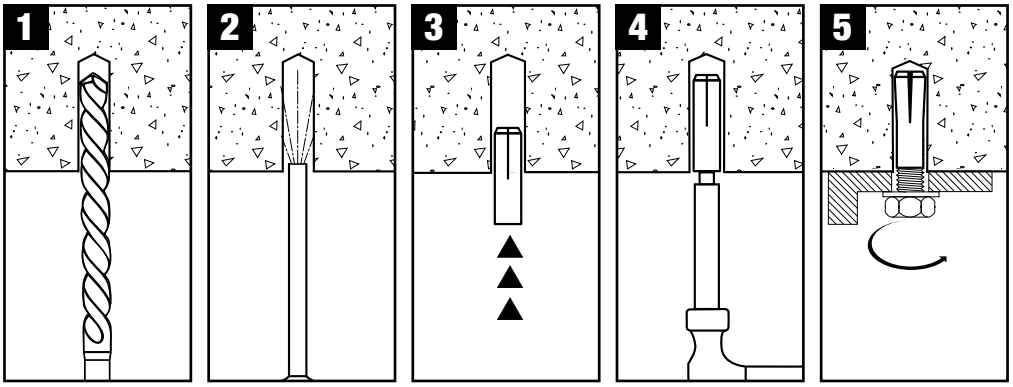
PRODUCT OVERVIEW - DM-SS-PRO A4 STAINLESS STEEL

Cat No.	1	2	Thread Size [mm]	Length [mm]	Drill Dia. [mm]	Box	Blister Pack	Pack Qty
DFM2120000	•		M6 x 25		8	•		100
DFM2120050	•	•	M8 x 30		10	•		100
DFM2120100	•	•	M10 x 40		12	•		100
DFM2120150	•	•	M12 x 50		16	•		100
DFM2120200		•	M16 x 65		20	•		25
DFM2120250			M20 x 80		25	•		25

PRODUCT OVERVIEW - SETTING TOOLS

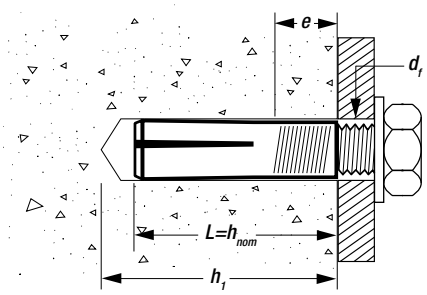
Cat No.	Anchor Size [mm]	Box	Blister Pack	Pack Qty
DFM2100010	M6	•		1
DFM2100060	M8	•		1
DFM2100110	M10	•		1
DFM2100160	M12	•		1
DFM2100210	M16	•		1
DFM2100260	M20	•		1

INSTALLATION INSTRUCTIONS



DM-PRO® DROP-IN ANCHORS

TECHNICAL INFORMATION



N_{rec}/N_{all}

V_{rec}/V_{all}

1 kN = 100kg

RECOMMENDED LOADS - UNCRACKED CONCRETE - DM-PRO®

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{rec}$$

$\gamma_M = 2.1$ $\gamma_f = 1.4$

Size - Thread x L [mm]	d_f [mm]	h_1 [mm]	e [mm]	N_{rec} [kN]	V_{rec} [kN]
DM-LIP-PRO - ZINC PLATED					
M20 x 80	22	85	32	10.2	17.8
DM-PRO® - ZINC PLATED					
M20 x 80	22	85	32	10.2	17.8
DM-SS-PRO - A4 - STAINLESS STEEL					
M20 x 80	22	85	32	10.2	17.8

ALLOWABLE LOADS - UNCRACKED CONCRETE - DM-PRO®

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{all}$$

$\gamma_f = 1.4$

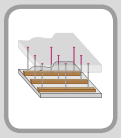
Size - Thread x L [mm]	d_f [mm]	h_1 [mm]	e [mm]	N_{all} [kN]	V_{all} [kN]
DM-LIP-PRO - ZINC PLATED					
M8 x 30	9	32	13	3.9	3.1
M10 x 40	12	42	17	3.6	4.2
M12 x 50	14	53	22	4.1	5.7
M16 x 65	18	68	30	4.1	11.4
DM-PRO® - ZINC PLATED					
M8 x 30	9	32	13	3.9	3.1
M10 x 40	12	42	17	3.6	4.2
M12 x 50	14	53	22	4.1	5.7
M16 x 65	18	68	30	4.1	11.4
DM-SS-PRO - A4 - STAINLESS STEEL					
M8 x 30	9	32	13	3.9	3.5
M10 x 40	12	42	17	3.6	4.5
M12 x 50	14	53	22	4.1	5.7
M16 x 65	18	68	30	4.1	11.4

DM-PRO® DROP-IN ANCHORS

ALLOWABLE LOADS - CRACKED CONCRETE - DM-PRO®

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{all}$$

$\gamma_f = 1.4$



Size - Thread x L [mm]	d_f [mm]	h_1 [mm]	e [mm]	N_{all} [kN]	V_{all} [kN]
DM-LIP-PRO - ZINC PLATED					
M6 x 25	7	26	11	0.6	0.6
M8 x 30	9	32	13	0.6	0.6
M10 x 40	12	42	17	1.4	1.4
M12 x 50	14	53	22	1.7	1.7
DM-PRO® - ZINC PLATED					
M6 x 25	7	26	11	0.6	0.6
M8 x 30	9	32	13	0.6	0.6
M10 x 40	12	42	17	1.4	1.4
M12 x 50	14	53	22	1.7	1.7
DM-SS-PRO - A4 - STAINLESS STEEL					
M6 x 25	7	26	11	0.6	0.6
M8 x 30	9	32	13	0.6	0.6
M10 x 40	12	42	17	1.4	1.4
M12 x 50	14	53	22	1.7	1.7

SPIKE™ MUSHROOM HEAD

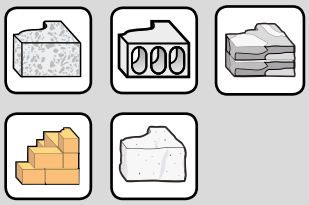
DESCRIPTION

- One-piece, tamper-proof vibration resistant anchor in 8.2 grade steel with mushroom head
- Pre-expanded anchor design allows for easy installation

APPLICATIONS

- Railings
- Lattice work
- Street furniture
- Metal track attachments
- Cable trays and struts

MATERIALS

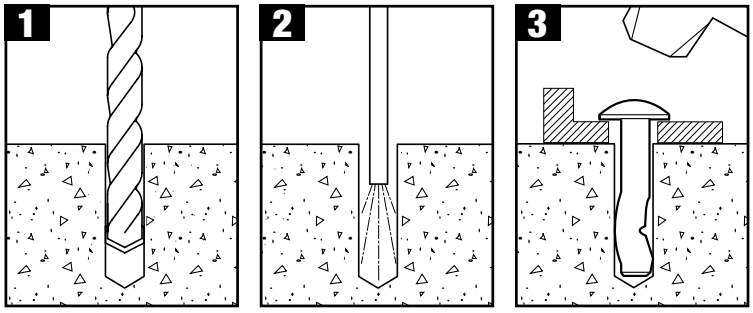


See front cover foldout for details.

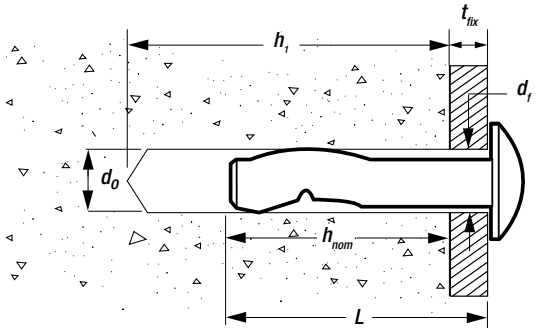
PRODUCT OVERVIEW - SPIKE™ ZINC PLATED AND STAINLESS STEEL

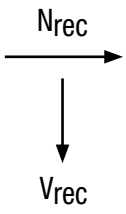
Cat No.	Drill Dia. [mm]	Length [mm]	Max t_{fix} [mm]	Box	Blister Pack	Pack Qty
ZINC PLATED						
DFM3110240	5 x 32		10	•		100
DFM3110280	5 x 38		16	•		100

INSTALLATION INSTRUCTIONS



TECHNICAL INFORMATION





1 kN = 100kg

RECOMMENDED LOADS - UNCRACKED CONCRETE - SPIKE™ ZINC PLATED AND STAINLESS STEEL

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{rec}$$

$\gamma_{M = 2.1}$ $\gamma_{f = 1.4}$

Size - d_o x L [mm]	h_{nom} [mm]	t_{fix} [mm]	h_1 [mm]	d_f [mm]	N_{rec} [kN]	V_{rec} [kN]
ZINC PLATED						
5 x 32	22	10	32	6	0.5	0.5
5 x 38	22	16	32	6	0.5	0.5

SPIKE™ TIE WIRE

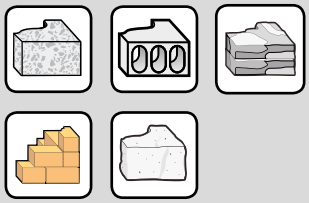
DESCRIPTION

- One-piece, vibration resistant anchor in 8.2 grade steel with eye
- Pre-expanded anchor design allows for easy installation

APPLICATIONS

- Suspended ceilings
- Wire hangers

MATERIALS

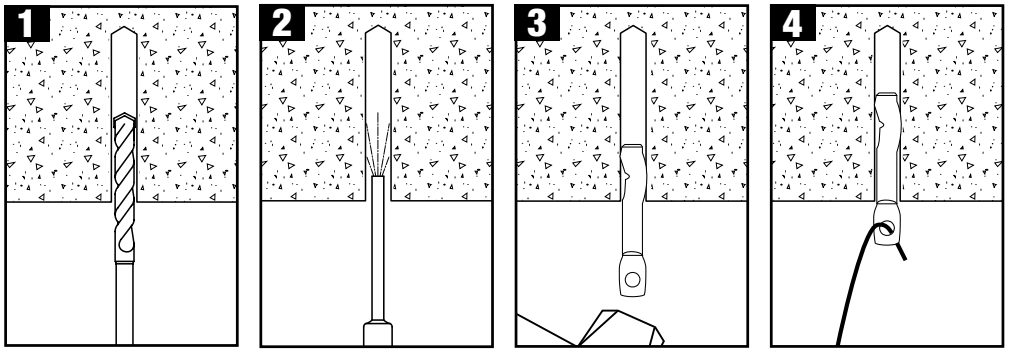


See front cover foldout for details.

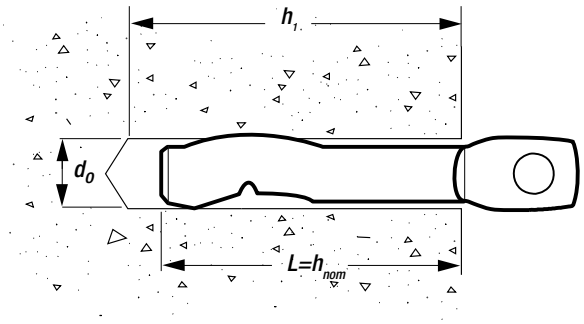
PRODUCT OVERVIEW - SPIKE™ ZINC PLATED

Cat No.	Drill Dia. [mm]	Length [mm]	Eye Diameter [mm]	Box	Blister Pack	Pack Qty
DFM3110000	5 x 30		6	•		100

INSTALLATION INSTRUCTIONS



TECHNICAL INFORMATION



Nrec

Vrec

1 kN = 100kg

RECOMMENDED LOADS - UNCRACKED CONCRETE - SPIKE™ ZINC PLATED

C20/25

$$\frac{N_{Rk}}{\gamma_M \cdot \gamma_F} = N_{rec}$$

$\gamma_M = 2.1$ $\gamma_f = 1.4$

Size - d_o x L [mm]	h_{nom} [mm]	h_1 [mm]	N_{rec} [kN]
5 x 30	30	40	0.4

PBZ STEEL WEDGE NAILS

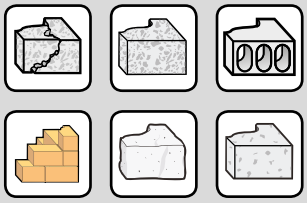
DESCRIPTION

- Steel wedge nail with ETA part 6 approval for redundant systems
- Fire resistance approved
- Hammer set anchor for push through installation

APPLICATIONS

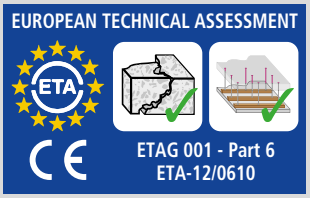
- Metal profiles
- Suspended ceiling brackets
- Angle brackets

MATERIALS



See front cover foldout for details.

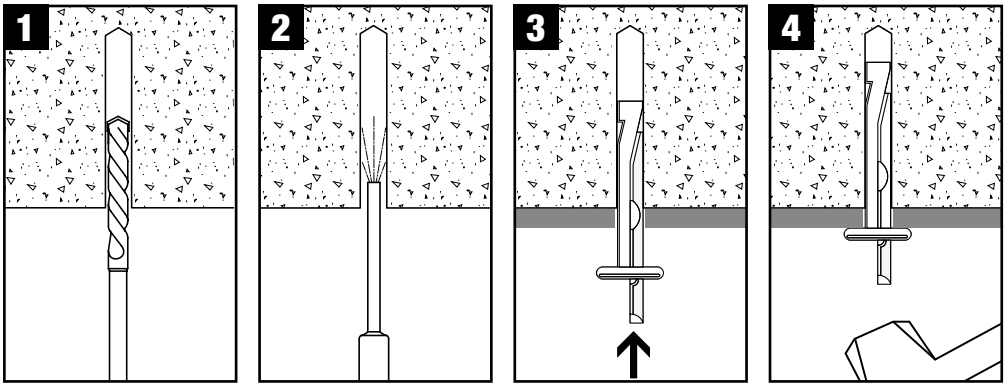
APPROVALS



PRODUCT OVERVIEW - BSC-PBZ-PRO

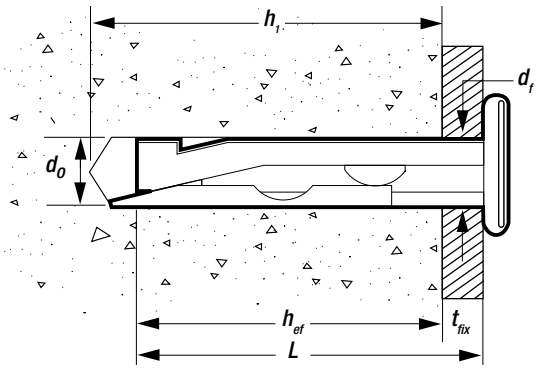
Cat No.	ETA	Drill Dia. [mm]	Length [mm]	Max t_{fix} [mm]	Box	Blister Pack	Pack Qty
DFM3310000	•	6 x 35		5	•		200
DFM3310050	•	6 x 65		35	•		100

INSTALLATION INSTRUCTIONS



PBZ STEEL WEDGE NAILS

TECHNICAL INFORMATION



Nall

Vall

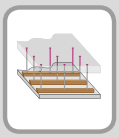
1 kN = 100kg

ALLOWABLE LOADS - CRACKED CONCRETE - BSC-PBZ-PRO

C20/25

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{all}$$

$\gamma_{f = 1.4}$



Size - d_o x L [mm]	h_{ef} [mm]	h_1 [mm]	d_f [mm]	t_{fix} [mm]	N_{all} & V_{all} [kN]
6 x 35	30	40	7	5	1.4
6 x 65	30	40	7	35	1.4

AERATED CONCRETE ANCHORS

DESCRIPTION

- Removeable tension-free fastening for lightweight block
- Spiral thread cuts a positive fit into the block with no spalling of the plastered surface
- The interrupted thread ensures removal of waste material for easier installation
- Simple and quick to install with allen keys
- Flexible screw choice - suitable for both wood and metric screws
- Approved for use in Thermalite™, Celcon™, Thomas Armstrong®, and Lignacite™ blocks

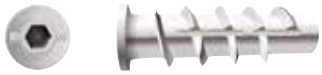
APPLICATIONS

- Pictures
- Shelves
- Letter boxes
- Motion sensors
- Lighting
- Mirror cabinets
- Signs
- Cable and pipe clamps

MATERIALS

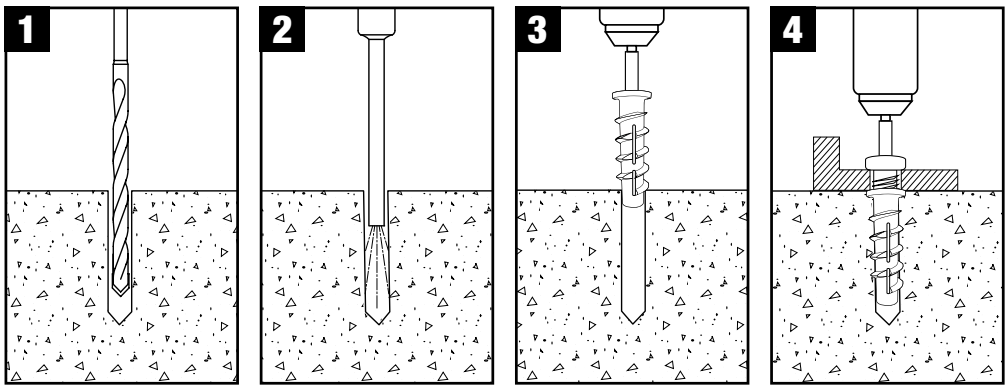
See front cover foldout for details.

PRODUCT OVERVIEW

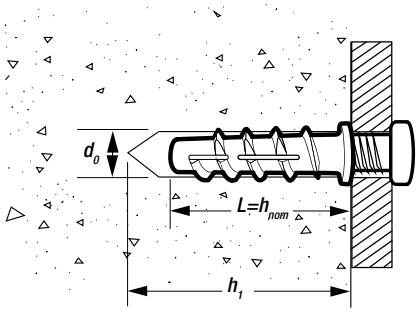


Cat No.	Thread Size [mm]	Screw Dia. [mm]	Drill Dia. [mm]	Length [mm]	Allen Key [mm]	Box	Blister Pack	Pack Qty
DFM3450100	M6 x 5-6 x 10			50	6	•		50
DFM345010P	M6 x 5-6 x 10			50	6		•	4
DFM3450200	M8 x 8 x 12			60	8	•		50
DFM345020P	M8 x 8 x 12			60	8		•	4
DFM3450300	M10 x 8-10 x 14			70	10	•		40
DFM345030P	M10 x 8-10 x 14			70	10		•	4

INSTALLATION INSTRUCTIONS



TECHNICAL INFORMATION



N_{rec}

V_{rec}

1 kN = 100kg

RECOMMENDED LOADS - AERATED CONCRETE ANCHOR

$$\frac{N_{Rk}}{\gamma_M \bullet \gamma_F} = N_{rec}$$

$\gamma_{M=2.1}$ $\gamma_{f=1.4}$

Size -Thread x Screw dia x d_o [mm]	h_1 [mm]	h_{nom} [mm]	N_{rec} & V_{rec} [kN]
M6 x 5-6 x 10	60	50	0.2
M8 x 8 x 12	70	60	0.3
M10 x 8-10 x 14	80	70	0.4