Frame Plug, extended expansion area - RDD

Frame plug with Torx screw
RDD TX

Frame plug with hexagonal screw
RDD SK

Frame plug with hexagonal screw and integral washer
RDD SKS
with pre-assembled anchor screw, zinc plated and blue chromated

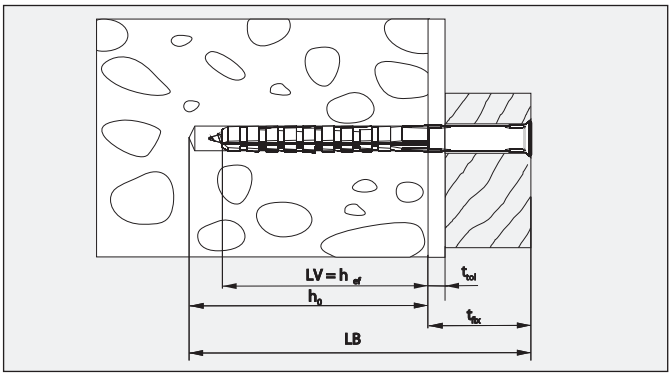
- pre-assembled anchor unit for much safer and faster installation. Plug to be inserted into hole until plug collar is flush with fixture
- approval pending as multiple anchorage of cladding systems

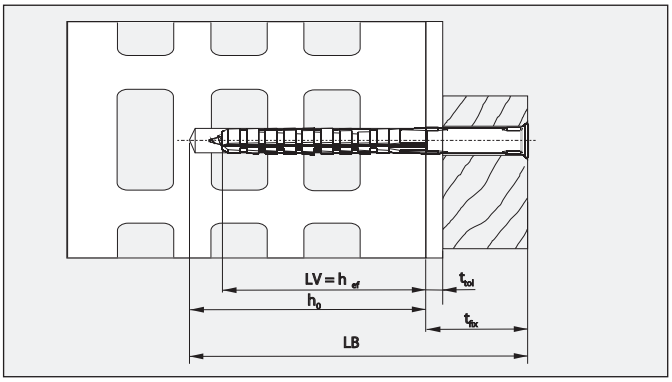
Advice

The frame plug should only be used as through-fixing. The fixture may not be positioned between screw head and plug collar. The maximum load bearing capacity can only be achieved if:

- the drill hole is cleaned (use brush and airpump)
- the drill hole dimensions correspond to those stated by the manufacturer

It is recommended to bore in drilling mode for perforated building materials.





Suitability

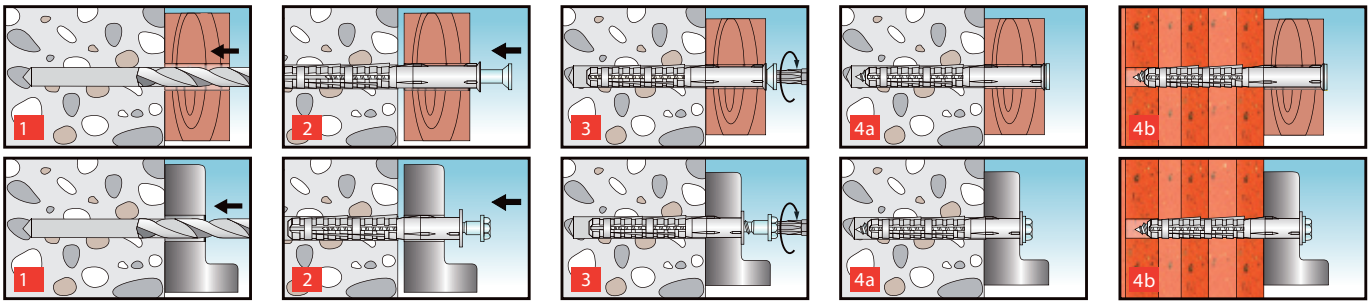
Base materials:
all types of masonry, soft solid materials such as aircrete or light concrete, sand lime perforated brick, vertical and horizontal perforated brick.

For fixing of:
gates, doors, fireproof doors, windows, wall mounted cupboards, wardrobes, battens, claddings, wooden or metal supporting constructions for facade and roof constructions.

Characteristics

- fixing system consisting of a nylon plug with extended expansion area and a special screw
- The extended expansion area ensures a safe anchorage even in soft base material as well as in hollow blocks or bricks
- at choice: special screw with countersunk head and torx drive T40, with hexagon head or with hexagon head and integral washer to anchor metal parts

Installation



Frame Plug, extended expansion area - RDD

Technical Data

RDD TX - with special torx screw, zinc plated

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type	ref.-no.	ØD Ø plug Ø bit [mm]	LD plug length [mm]	LB min. drill depth [m	LV min. an-chorage depth [mm]	S max. fixt. thickn. [mm]	bit/ SW	qty. per box pcs.
RDD 8 x 100/ 20 TX[1]	**36289**	8	100	110	80	20	T30	50
RDD 8 x 120/ 40 TX[1]	**36290**	8	120	130	80	40	T30	50
RDD 8 x 140/ 60 TX[1]	**36291**	8	140	150	80	60	T30	50
RDD 10 x 80/ 10 TX[1]	**36292**	10	80	90	70	10	T40	50
RDD 10 x 100/ 20 TX	**36293**	10	100	110	80	20	T40	50
RDD 10 x 120/ 40 TX	**36294**	10	120	130	80	40	T40	50
RDD 10 x 140/ 60 TX	**36295**	10	140	150	80	60	T40	50
RDD 10 x 160/ 80 TX	**36296**	10	160	170	80	80	T40	50
RDD 10 x 180/100 TX	**36297**	10	180	190	80	100	T40	50
RDD 10 x 200/120 TX	**36298**	10	200	210	80	120	T40	50
RDD 10 x 230/150 TX	**36299**	10	230	240	80	150	T40	50
RDD 10 x 260/180 TX	**36300**	10	260	270	80	180	T40	50

RDD SK -with special hexagonal screw, zinc plated

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RDD 8 x 100/ 20 SK[1]	**36276**	8	100	110	80	20	SW10	50
RDD 8 x 120/ 40 SK[1]	**36277**	8	120	130	80	40	SW10	50
RDD 8 x 140/ 60 SK[1]	**36278**	8	140	150	80	60	SW10	50
RDD 10 x 80/ 10 SK[1]	**36279**	10	80	90	70	10	SW13	50
RDD 10 x 100/ 20 SK	**36280**	10	100	110	80	20	SW13	50
RDD 10 x 120/ 40 SK	**36281**	10	120	130	80	40	SW13	50
RDD 10 x 140/ 60 SK	**36282**	10	140	150	80	60	SW13	50
RDD 10 x 160/ 80 SK	**36283**	10	160	170	80	80	SW13	50
RDD 10 x 180/100 SK	**36284**	10	180	190	80	100	SW13	50
RDD 10 x 200/120 SK	**36285**	10	200	210	80	120	SW13	50
RDD 10 x 230/150 SK	**36286**	10	230	240	80	150	SW13	50
RDD 10 x 260/180 SK	**36287**	10	260	270	80	180	SW13	50

RDD SKS - with cylindrical collar and special hexagonal screw with integral washer, zinc plated, to anchor metal profiles

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RDD 10 x 80/ 10 SKS[1]	**36302**	10	80	90	70	10	SW13/T40	50
RDD 10 x 100/ 20 SKS	**36303**	10	100	110	80	20	SW13/T40	50
RDD 10 x 120/ 40 SKS	**36304**	10	120	130	80	40	SW13/T40	50
RDD 10 x 140/ 60 SKS	**36305**	10	140	150	80	60	SW13/T40	50
RDD 10 x 160/ 80 SKS	**36306**	10	160	170	80	80	SW13/T40	50
RDD 10 x 180/100 SKS	**36307**	10	180	190	80	100	SW13/T40	50
RDD 10 x 200/120 SKS	**36308**	10	200	210	80	120	SW13/T40	50
RDD 10 x 230/150 SKS	**36509**	10	230	240	80	150	SW13/T40	50

Note:
- not pre-assembled from length 230
- more combinations upon request

[1] not part of approval

Technical Data

RDD TX A4 - with special torx screw made of stainless steel A4/316

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type	ref.-no.	ØD Ø plug Ø bit [mm]	LD plug length [mm]	LB min. drill depth [m	LV min. an-chorage depth [mm]	S max. fixt. thickn. [mm]	bit/ SW	qty. per box pcs.
RDD 10 x 80/ 10 TX A4[1]	**36526**	10	80	90	70	10	T40	50
RDD 10 x 100/ 20 TX A4	**36527**	10	100	110	80	20	T40	50
RDD 10 x 120/ 40 TX A4	**36528**	10	120	130	80	40	T40	50
RDD 10 x 140/ 60 TX A4	**36529**	10	140	150	80	60	T40	50
RDD 10 x 160/ 80 TX A4	**36530**	10	160	170	80	80	T40	50
RDD 10 x 180/100 TX A4	**36531**	10	180	190	80	100	T40	50
RDD 10 x 200/120 TX A4	**36532**	10	200	210	80	120	T40	50
RDD 10 x 230/150 TX A4	**36533**	10	230	240	80	150	T40	50
RDD 10 x 260/180 TX A4	**36534**	10	260	270	80	180	T40	50

RDD SK A4 - with special hexagonal screw made of stainless steel A4/31

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RDD 10 x 80/ 10 SK A4[1]	**36514**	10	80	90	70	10	SW13	50
RDD 10 x 100/ 20 SK A4	**36515**	10	100	110	80	20	SW13	50
RDD 10 x 120/ 40 SK A4	**36516**	10	120	130	80	40	SW13	50
RDD 10 x 140/ 60 SK A4	**36517**	10	140	150	80	60	SW13	50
RDD 10 x 160/ 80 SK A4	**36518**	10	160	170	80	80	SW13	50
RDD 10 x 180/100 SK A4	**36519**	10	180	190	80	100	SW13	50
RDD 10 x 200/120 SK A4	**36520**	10	200	210	80	120	SW13	50
RDD 10 x 230/150 SK A4	**36521**	10	230	240	80	150	SW13	50
RDD 10 x 260/180 SK A4	**36522**	10	260	270	80	180	SW13	50

RDD SKS A4 - with cylindrical collar and special hexagonal screw with integral washer, stainless steel A4/ 316, to anchor metal profiles

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RDD 10 x 80/ 10 SKS A4[1]	**36535**	10	80	90	70	10	SW13/T40	50
RDD 10 x 100/ 20 SKS A4	**36536**	10	100	110	80	20	SW13/T40	50
RDD 10 x 120/ 40 SKS A4	**36537**	10	120	130	80	40	SW13/T40	50
RDD 10 x 140/ 60 SKS A4	**36538**	10	140	150	80	60	SW13/T40	50
RDD 10 x 160/ 80 SKS A4	**36539**	10	160	170	80	80	SW13/T40	50
RDD 10 x 180/100 SKS A4	**36540**	10	180	190	80	100	SW13/T40	50
RDD 10 x 200/120 SKS A4	**36541**	10	200	210	80	120	SW13/T40	50
RDD 10 x 230/150 SKS A4	**36542**	10	230	240	80	150	SW13/T40	50

ADK - cover caps for KEW frame plug

type	ref.-no. white	ref.-no. brown	Ø [mm]	to go with	qty. per box pcs.	outer carton pcs.
ADK RD 8 PZ	**34819**	**34820**	13,5	RDD 8 PZ	100	1000
ADK RD 10	**34817**	**34818**	16,0	RDD 10 TX	100	1000

Characteristic and allowable loads

Please consider the entire assessment documents RD/RDD - ETA-08/0191

Specifications for anchoring in concrete and masonry

anchor type			RD 10	RDD 10
drill nominal diameter	$d_0 =$	[mm]	10	10
drill hole depth	$h_1 \geq$	[mm]	60	90
effective anchorage depth	$h_{nom} = h_{ef} \geq$	[mm]	50	80
diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10,5	10,5
characteristic bending resistance[1)]	$M_{Rk,s}$	[Nm]	11,8 / 13,7[2)]	11,8 / 13,7[2)]
allowed bending moment	$M_{Rk,s}$	[Nm]	6,7 / 6,2[2)]	6,7 / 6,2[2)]

component-dimension in concrete

anchor type				RD 10	RDD 10
minimum thickness of member		h_{min}	[mm]	100	110
concrete C12/15 (B15)	characteristic edge distances	$c_{cr,N}$	[mm]	70	100
	minimum edge distances	s_{min}	[mm]	70	105
	minimum spacing distances	c_{min}	[mm]	70	70
concrete ≥ C20/25	characteristic edge distances	$c_{cr,N}$	[mm]	50	70
	minimum edge distances	s_{min}	[mm]	50	75
	minimum spacing distances	c_{min}	[mm]	50	75

Characteristic centric resistance $N_{Rk,p}$[3)]

on a fixing point[7)i] in concrete without edge and spacing influence

anchor type				RD 10	RDD 10
concrete C12/15 (B15)	temperature range	24 °C / 40 °C[5)]	[kN]	2,0	3,5
		50 °C / 80 °C[5)]	[kN]	1,2	3,0
concrete ≥ C20/25 (B25 - B55)	temperature range	24 °C / 40 °C[5)]	[kN]	3,0	5,0
		50 °C / 80 °C[5)]	[kN]	2,0	4,0

allowable centric tension load N_{zul}

on a fixing point[7)]

anchor type				RD 10	RDD 10
concrete C12/15 (B15)	temperature range	24 °C / 40 °C[5)]	[kN]	0,8	1,4
		50 °C / 80 °C[5)]	[kN]	0,5	1,2
concrete ≥ C20/25 (B25 - B55)	temperature range	24 °C / 40 °C[5)]	[kN]	1,2	2,0
		50 °C / 80 °C[5)]	[kN]	0,8	1,6

characteristic shear resistance $V_{Rk,s}$[3)]

on a fixing point[7)i] in concrete without edge and spacing influence[4)]

anchor type		RD 10	RDD 10
concrete ≥ C12/15 (B15)	[kN]	7,1 / 8,3[2)]	7,1 / 8,3[2)]

allowable shear load V_{zul}

on a fixing point[7)i] in concrete without edge and spacing influences[4)]

anchor type		RD 10	RDD 10
concrete ≥ C12/15 (B15)	[kN]	4,0 / 3,8[2)]	4,0 / 3,8[2)]

characteristic resistance F_{Rk}[6)]

of a fastening point[7)] for centrical tension, transverse load or diagonal pull at any angle in the brickwork

base material	min. DF or min. size	bulk density class	minimum compressive strength	temperature range	characteristic resistance F_{Rk}[6)] [kN]	
	(L x W x H)	ρ	f_b			
	[mm]	[kg/dm³]	[N/mm²]		RD	RDD
Clay brick	NF	≥ 1,8	10	24 °C / 40 °C[5)]	1,5	3,0 / 3,5[8)]
MZ 20-1,8-NF	(240x116x71)			50 °C / 80 °C[5)]	1,5	3,0 / 3,5[8)]
according to			20	24 °C / 40 °C[5)]	2,5	4,0 / 5,0[8)]
EN 771-1:2011				50 °C / 80 °C[5)]	2,0	4,0 / 5,0[8)]
Solid sand-lime brick	NF	≥ 1,8	10	24 °C / 40 °C[5)]	2,0	3,0 / 3,5[8)]
KS 12-1,0-2DF	(240x115x70)			50 °C / 80 °C[5)]	1,5	3,0
according to			20	24 °C / 40 °C[5)]	3,0	4,0 / 5,0[8)]
EN 771-2:2011				50 °C / 80 °C[5)]	2,0	4,0

allowable load F_{zul}

of a fastening point[7)] for centrical tension, transverse load or diagonal pull at any angle in the brickwork

base material	min. DF or min. size	bulk density class	minimum compressive strength	temperature range	allowable load F_{zul} [kN]	
	(L x W x H)	ρ	f_b			
	[mm]	[kg/dm³]	[N/mm²]		RD	RDD
Clay brick	NF	≥ 1,8	10	24 °C / 40 °C[5)]	0,4	0,9 / 1,0[8)]
MZ 20-1,8-NF	(240x116x71)			50 °C / 80 °C[5)]	0,4	0,9 / 1,0[8)]
according to			20	24 °C / 40 °C[5)]	0,7	1,1 / 1,4[8)]
EN 771-1:2011				50 °C / 80 °C[5)]	0,6	1,1 / 1,4[8)]
Solid sand-lime brick	NF	≥ 1,8	10	24 °C / 40 °C[5)]	0,6	0,9 / 1,0[8)]
KS 12-1,0-2DF	(240x115x70)			50 °C / 80 °C[5)]	0,4	3,0
according to			20	24 °C / 40 °C[5)]	0,9	1,1 / 1,4[8)]
EN 771-2:2011				50 °C / 80 °C[5)]	0,6	1,1

Frame Plug - RD/RDD

Characteristic and allowable loads

Please consider the entire assessment documents RD/RDD - ETA-08/0191

characteristic resistance F_{Rk} [6]

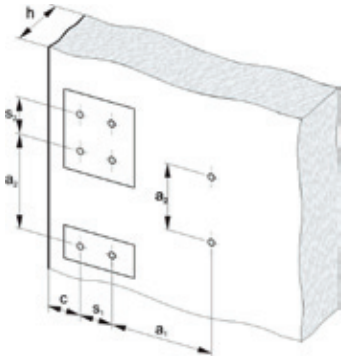
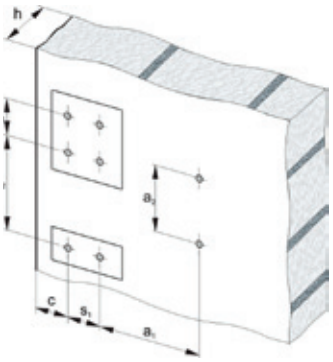
of a fastening point[7] for centrical tension, transverse load or diagonal pull at any angle in the brickwork made of hollow bricks or perforated bricks

base material	min. DF or min. size (L x W x H) [mm]	bulk density class ρ [kg/dm³]	minimum compressive strength f_b [N/mm²]	temperature range	characteristic resistance F_{Rk} [6] [kN] RDD
Clay brick MZ 20-1,8-NF according to EN 771-1:2011	2DF (240x115x115)	≥ 1,0	12	24 °C / 40 °C[5]	1,2
				50 °C / 80 °C[5]	0,9
Solid sand-lime brick KS 12-1,0-2DF according to EN 771-2:2011	8DF (250x240x237)	≥ 1,4	12	24 °C / 40 °C[5]	2,0
				50 °C / 80 °C[5]	1,5

allowable load F_{zul}

of a fastening point[7] for centrical tension, transverse load or diagonal pull at any angle in the brickwork made of hollow bricks or perforated bricks

base material	min. DF or min. size (L x W x H) [mm]	bulk density class ρ [kg/dm³]	minimum compressive strength f_b [N/mm²]	temperature range	allowable load F_{zul} [kN] RDD
Clay brick MZ 20-1,8-NF according to EN 771-1:2011	2DF (240x115x115)	≥ 1,0	12	24 °C / 40 °C[5]	0,3
				50 °C / 80 °C[5]	0,3
Solid sand-lime brick KS 12-1,0-2DF according to EN 771-2:2011	8DF (250x240x237)	≥ 1,4	12	24 °C / 40 °C[5]	0,6
				50 °C / 80 °C[5]	0,4

[1] if there are no other national regulations, the partial safety coefficients γ_{Ms} 1.25 for electrolytically galvanised steel and γ_{Ms} 1.56 for stainless steel A4 have to be observed.
[2] only applies for stainless steel A4
[3] If there are no other national regulations for the calculation of the admissible loads, the partial safety coefficients γ_{Ms} of 1.8 and g_F of 1.4 have to be observed.
[4] Distance from the edge c1; c2 ≥ 160mm and component thickness ≥ 150mm
If tensile force and transverse force are acting simultaneously, the approval document ETA-08/191 and the dimensioning procedure according to ETAG 020, appendix C, must be observed.
[5] At the temperature ranges q = 24 °C / 40 °C and q = 50 °C / 80 °C, the first number indicates the maximum air temperature, and the second one indicates the maximum short-term temperature.

[6] If there are no other national regulations for the calculation of the admissible loads, the partial safety coefficients γ_{Mm} von 2,5 and γ_F von 1,4 have to be observed..
[7] A fastening point can consist of an individual dowel or of a group of dowels, consisting of two dowels s = s or four dowels s = s.
At an axial distance of more than 65 mm for the RD 10, and more than 85 mm at the RDD 10, the dowels in the concrete are considered as individual dowels.
If tensile force and transverse force are acting simultaneously, the approval document ETA-08/191 and the dimensioning procedure according to ETAG 020, appendix C, must be observed.
[8] Only applies for a distance from the edge c =150mm; intermediate values may be interpolated.