

WDI2L Drop-in Anchors

Standard drop-in anchor for multiple use for non-structural applications

Anchor types



WDI2L M6x25
WDI2L M8x30
WDI2L M10x40
WDI2L M12x50
WDI2L M16x65

- The **WDI2L** drop-in anchors are easy to install and versatile deformation-controlled anchors for medium loads. They are approved for multiple use for non-structural applications in cracked and non-cracked concrete. Lipped drop-in anchors feature a collar with a lip for flush anchor setting at any hole depth.

Features and benefits

- European Technical Assessment according to EAD 330747-00-0601 (May 2018) for fasteners for use in concrete for redundant non-structural systems.
- European Technical Assessment according to EAD 330232-00-0601 (October 2016) for fasteners for use in non-cracked concrete.
- Simple and quick installation procedure
- Medium load capacity
- Fire resistance class R30-R120 for design of anchorages under exposure to fire
- Collar with a lip for flush anchor setting at any hole depth

Approvals and certificates

- European Technical Assessment
- European Technical Assessment
- Fire Test Report

ETA-22/0630, 30 September 2022
ETA-22/0629, 30 January 2025
ETA-22/0629, 30 January 2025



Suitable base materials

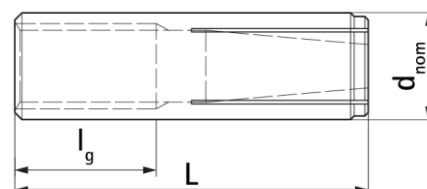
- Reinforced or unreinforced normal weight concrete without fibres according to EN 206-1:2013+A1:2016
- Strength classes C20/25 to C50/60 according to EN 206-1:2013+A1:2016,
- Strength classes C12/15 to C50/60 according to EN 206-1:2013+A1:2016
- Cracked or uncracked concrete,
- Fire-exposed concrete C20/25 to C50/60

Typical applications

- Rail and pipe support systems
- Suspended rail installations
- Ventilation systems and ducts
- Curtain walls
- Racking
- Machinery

Product details

Article	Description	Size	Length	External diameter	Inner thread length
		[-]	[mm]	d_{nom} [mm]	l_g [mm]
6103310625	WDI2L M6x25	M6	25	8	10
6103310830	WDI2L M8x30	M8	30	10	13
6103311040	WDI2L M10x40	M10	40	12	17
6103311250	WDI2L M12x50	M12	50	15	21
6103311665	WDI2L M16x65	M16	65	20	27



Packaging details

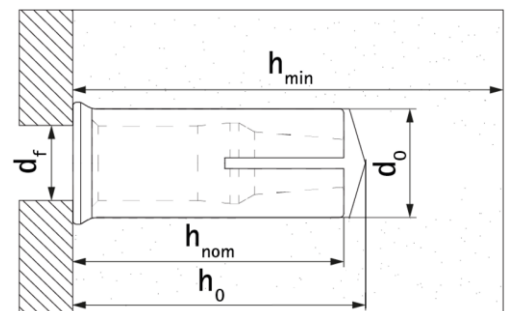
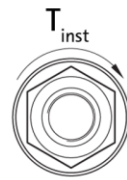
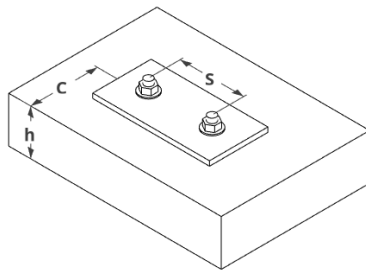
Article	Description	Pack 1		Pack 2	
		[pcs]	EAN13	[pcs]	EAN13
6103310625	WDI2L M6x25	100	8719942156691	3200	8719942156707
6103310830	WDI2L M8x30	100	8719942106528	1600	8719942106535
6103311040	WDI2L M10x40	50	8719942156776	800	8719942156783
6103311250	WDI2L M12x50	50	8719942156813	400	8719942156820
6103311665	WDI2L M16x65	25	8719942156844	200	8719942156851

Mechanical properties

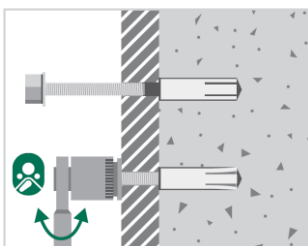
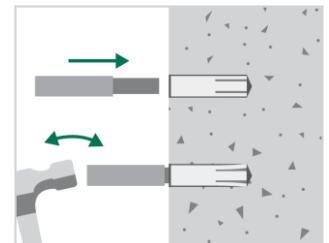
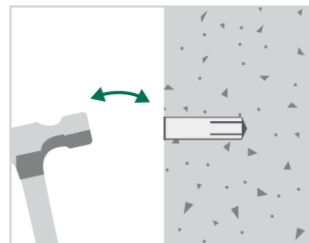
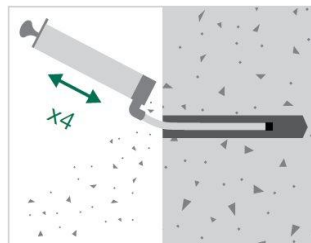
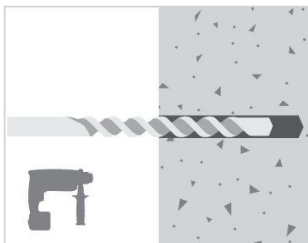
Anchor Type	WDI2L
Material	Carbon steel, zinc plated $\geq 5 \mu\text{m}$ ISO 4042 Zn5/An/T0
Fastener screw or threaded rod material	the bolt or threaded rod to be used shall be property class 4.6, 4.8, 5.6, 5.8, 6.8 or 8.8 according to ISO 898-1

Installation parameters for concrete

Anchor Type			WDI2L				
Anchor size			M6	M8	M10	M12	M16
Anchor length	L	[mm]	25	30	40	50	65
Drill hole diameter	d_0	[mm]	8	10	12	15	20
Depth of drill hole	h_0	[mm]	27	33	43	54	70
Nominal embedment depth	h_{nom}	[mm]	25	30	40	50	65
Effective anchorage depth	h_{ef}	[mm]	25	30	40	50	65
Minimum screwing depth	$l_{s,min}$	[mm]	6	8	10	12	16
Maximum screwing depth	$l_{s,max}$	[mm]	10	13	17	21	27
Installation torque	T_{inst}	[Nm]	4	11	17	38	60
Fixture clearance hole diam. \leq	d_f	[mm]	7	9	12	14	18
Minimum concrete member thickness	h_{min}	[mm]	100	100	100	100	130
Minimum edge distance	C_{min}	[mm]	105	105	140	175	230
Minimum anchor spacing	S_{min}	[mm]	60	60	80	100	130



Instructions for installation in concrete



Recommended loads in C20/25 non-cracked concrete for single anchors¹⁾

Anchor Type			WDI2L				
Anchor size			M6	M8	M10	M12	M16
Recommended tension load	N _{rec}	[kN]	2.44	3.21	4.23	5.92	8.77
Recommended shear load	N _{rec}	[kN]	2.93	3.85	5.20	8.28	18.57

1) Single anchors are anchors not affected by concrete edge and anchor spacing influence.

2) Recommended load includes partial safety factor and an overall partial safety factor for action of 1.4. The partial safety factor for action depends on the type of loading and shall be taken from national regulations. All anchor failure modes and the entire relevant product European Technical Assessment must be considered for anchor design.

3) Values underlined and in italics show steel failure, **bold** values indicate concrete failure and other indicate pull out failure.

Recommended loads for redundant non-structural systems in concrete for single anchors¹⁾

Anchor Type			WDI2L				
Anchor size			M6	M8	M10	M12	M16
Concrete C12/C15							
Recommended load in all directions	F_{rec}	[kN]	0.59	1.19	1.36	2.04	3.06
Concrete C20/25 to C50/C60							
Recommended load in all directions	F_{rec}	[kN]	0.79	1.19	1.70	2.55	4.08
Characteristic edge distance	C_{cr}	[mm]	40	45	60	75	100
Characteristic anchor spacing distance	S_{cr}	[mm]	75	90	120	150	195

1) Single anchors are anchors not affected by concrete edge and anchor spacing influence.

2) Recommended load includes partial safety factor and an overall partial safety factor for action of 1.4. The partial safety factor for action depends on the type of loading and shall be taken from national regulations. All anchor failure modes and the entire relevant product European Technical Assessment must be considered for anchor design.

Characteristic values of resistance under fire exposure in C20/25-C50/C60 concrete¹⁾

Anchor Type				WDI2L				
Anchor size				M6	M8	M10	M12	M16
All load directions								
R30	Characteristic resistance F _{Rk,fi} [kN]			0.2	0.4	0.9	1.7	3.1
R60				0.2	0.3	0.8	1.3	2.4
R90				0.1	0.3	0.6	1.1	2.0
R120				0.1	0.2	0.5	0.8	1.6
R30-R120	Spacing distance	S _{cr,fi}	[mm]	4 x h _{ef}				
	Edge distance	C _{cr,fi}	[mm]	2 x h _{ef} ²⁾				

1) In absence of other national regulations the partial safety factor for resistance under fire exposure $\gamma_{M,fi} = 1,0$ is recommended

2) If fire attack is from more than one side, the design method may be taken if edge distance of the anchor is $c \geq 300$ mm

The definition and requirements of redundant non-structural systems

The definition of multiple use according to the Member States is given in CEN / TR 17079. In the absence of a definition by a Member State the following default values may be taken:

Minimum number of fixing points	Minimum number of anchors per fixing point	Maximum design value of actions per fixing point
$[n_1]$	$[n_2]$	$[n_3]$
3	1	2.0 kN
4	1	3.0 kN

The maximum design value of actions per fixing point might be increased if in the design it is shown that the requirements on the strength and stiffness of the fixture in the serviceability and ultimate states after the failure of one anchor are fulfilled.

Design method for anchorages for redundant non-structural systems

The design of the fixture is such that, in the case of excessive slip or failure of one anchor, the load can be transmitted to neighbouring anchors without significantly violating the requirements on the fixture in the serviceability and ultimate limit state.

For example the design of the fixture may specify the number n_1 of fixing points to fasten the fixture and the number n_2 of anchors per fixing point. Furthermore by specifying the design value of actions N_{Sd} on a fixing point to a value $\leq n_3$ (kN) up to which the strength and stiffness of the fixture are fulfilled and the load transfer in the case of excessive slip or failure of one anchor need not to be taken into account in the design of the fixture.