

Declaration of Performance

According to Annex III of the Regulation (EU) Nr.305/2011
(Construction Products Regulation).

Walraven Drop-in Anchor WDI2L

DoP No. 22/0630-WDI2L

1. Unique identification code of the product-type:

Walraven Drop-in Anchor WDI2L, Item numbers: 6103310625, 6103310830, 6103311040, 6103311250, 6103311665

2. Intended use/es:

Metal anchors for use in concrete according to EN 1992-4 in non-cracked concrete and static or quasi-static loads for fixing and/or supporting to concrete elements, such as lightweight suspended ceilings, as well as installations.

3. Manufacturer:

J. van Walraven Holding B.V., Industrieweg 5, 3641 RK Mijdrecht, The Netherlands

4. System/s of AVCP:

System 1

5. European Assessment Document: EAD 330232-00-0601 "Mechanical Fasteners for use in concrete ", October 2016.

European Technical Assessment: ETA - 22/0630 (30/09/2022).

Technical Assessment Body: Instituto de Ciencias de la Construcción Eduardo Torroja

Notified body: 1219.

6. Declared performance/s:

Essential Characteristic	Performance	Harmonized Technical Specification
Safety in use (BWR 1)		
Characteristic resistance under static or quasi static loading	See Annex C1 to C3, ETA-22/0630	EAD 330232-00-0601
Displacements under tension and shear loads	See Annex C1 and C3, ETA-22/0630	EAD 330232-00-0601
Safety in case of fire (BWR 2)		
Reaction to Fire	Anchors satisfy requirements for Class A1	EN 13501-1

7. Appropriate Technical Documentation and/or Specific Technical Documentation:

N/A

8. The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

Frank Nijdam

Co-CEO

J. van Walraven Holding B.V.

Signature

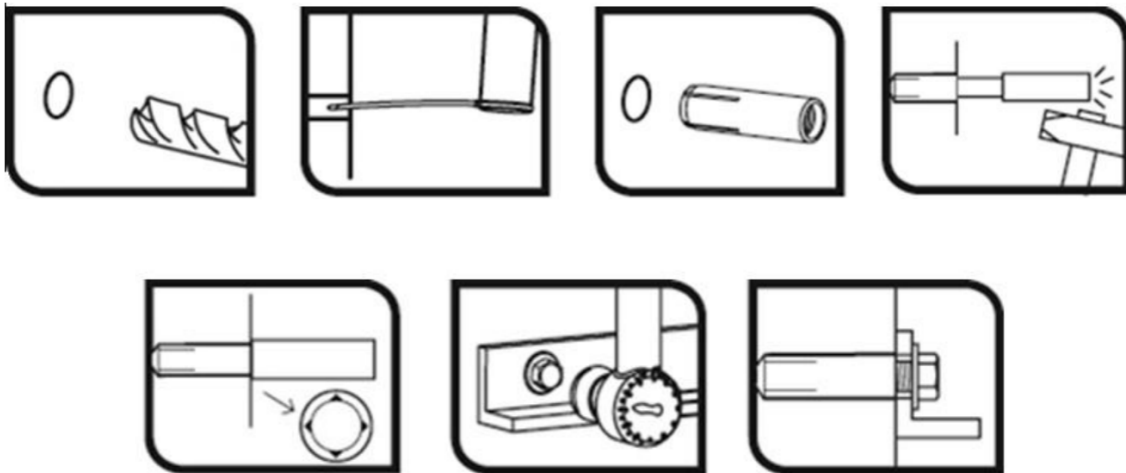
Date 01-04-2025

Place: Mijdrecht

Table C1: Installation parameters for WDI2, WDI2L anchor

Installation parameters			Performances					
			M6	M8	M10	M12	M16	M20
d_o	Nominal diameter of drill bit:	[mm]	8	10	12	15	20	25
D	Thread diameter:	[mm]	M6	M8	M10	M12	M16	M20
d_f	Fixture clearance hole diameter \leq	[mm]	7	9	12	14	18	22
T_{inst}	Maximum installation torque:	[Nm]	4	11	17	38	60	100
$\ell_{s,min}$	Minimum screwing depth:	[mm]	6	8	10	12	16	20
$\ell_{s,max}$	Maximum screwing depth:	[mm]	10	13	17	21	27	34
h_{min}	Minimum thickness of concrete member:	[mm]	100	100	100	100	130	160
h_1	Depth of drilled hole:	[mm]	27	33	43	54	70	86
h_{nom}	Overall anchor embedm. depth in the concrete:	[mm]	25	30	40	50	65	80
h_{ef}	Effective anchorage depth:	[mm]	25	30	40	50	65	80
s_{min}	Minimum allowable spacing:	[mm]	60	60	80	100	130	160
c_{min}	Minimum allowable distance:	[mm]	105	105	140	175	230	280

Installation process



WDI2, WDI2L anchor

Performances

Installation parameters and installation procedure

Annex C1

Table C2: Characteristic values to tension loads of design method A according to EN 1992-4 for WDI2, WDI2L anchor

Characteristic values of resistance to tension loads of design according to design method A			Performances						
			M6	M8	M10	M12	M16	M20	
Tension loads: steel failure									
N _{Rk,s}	Tension steel char. resistance, steel class 4.6:	[kN]	8,0	14,6	23,2	33,7	62,8	98,0	
γ _{Ms} ⁽¹⁾	Partial safety factor:	[-]	2,0	2,0	2,0	2,0	2,0	2,0	
N _{Rk,s}	Tension steel char. resistance, steel class 4.8:	[kN]	8,0	14,6	18,2	33,7	62,8	95,1	
γ _{Ms} ⁽¹⁾	Partial safety factor:	[-]	1,5	1,5	1,5	1,5	1,5	1,5	
N _{Rk,s}	Tension steel char. resistance, steel class 5.6:	[kN]	10,1	18,3	18,2	42,2	78,5	122,5	
γ _{Ms} ⁽¹⁾	Partial safety factor:	[-]	2,0	2,0	1,5	2,0	2,0	2,0	
N _{Rk,s}	Tension steel char. resistance, steel class 5.8:	[kN]	10,1	17,6	18,2	35,1	65,0	95,1	
γ _{Ms} ⁽¹⁾	Partial safety factor:	[-]	1,5	1,5	1,5	1,5	1,5	1,5	
N _{Rk,s}	Tension steel char. resistance, steel class 6.8	[kN]	12,1	17,6	18,2	35,1	65,0	95,1	
γ _{Ms} ⁽¹⁾	Partial safety factor:	[-]	1,5	1,5	1,5	1,5	1,5	1,5	
N _{Rk,s}	Tension steel char. resistance, steel class 8.8	[kN]	13,1	17,6	18,2	35,1	65,0	95,1	
γ _{Ms} ⁽¹⁾	Partial safety factor:	[-]	1,5	1,5	1,5	1,5	1,5	1,5	
Tension loads: pull-out failure in concrete									
N _{Rk,p, ucr:}	Tension characteristic resistance in C20/25 uncracked concrete	[kN]	-- 2)	-- 2)	-- 2)	-- 2)	-- 2)	-- 2)	
ψ _c	Increasing factor for N ⁰ _{Rk,p:}	C30/37	[-]	1,02	1,22	1,15	1,15	1,22	1,19
		C40/50	[-]	1,04	1,41	1,29	1,28	1,41	1,35
		C50/60	[-]	1,05	1,55	1,37	1,37	1,55	1,46
γ _{ins}	Installation safety factor:	[-]	1,2	1,2	1,4	1,4	1,4	1,4	
Tension loads: concrete cone and splitting failure									
h _{ef}	Effective embedment depth:	[mm]	25	30	40	50	65	80	
k _{ucr,N}	Factor for uncracked concrete:	[-]	11.0						
γ _{ins}	Installation safety factor:	[-]	1,2	1,2	1,4	1,4	1,4	1,4	
S _{cr,N}	Concrete cone failure:	[mm]	3 x h _{ef}						
C _{cr,N}		[mm]	1.5 x h _{ef}						
S _{cr,sp}	Splitting failure:	[mm]	150	180	240	300	390	480	
C _{cr,sp}		[mm]	75	90	120	150	195	240	
Displacements under tension loads									
N	Service tension load in uncracked concrete C20/25 to C50/60:	[kN]	2,4	3,4	6,0	7,4	17,8	18,2	
δ _{N0}	Short term displacement under tension loads:	[mm]	0,1	0,1	0,1	0,1	0,1	0,1	
δ _{N∞}	Long term displacement under tension loads:	[mm]	0,3	0,3	0,3	0,3	0,3	0,3	

¹⁾ In absence of other national regulations

²⁾ Pull out failure does not govern

WDI2, WDI2L anchor

Performances

Characteristic values for tension loads

Annex C2

Table C3: Characteristic values to shear loads of design method A according to EN1992-4 for WDI2, WDI2L anchor

Characteristic values of resistance to shear loads of design according to design method A			Performances					
			M6	M8	M10	M12	M16	M20
Shear loads: steel failure without lever arm								
$V_{Rk,s}$	Shear steel char. resistance, steel class 4.6:	[kN]	4,0	7,3	11,6	16,8	31,4	49,0
$\gamma_{Ms}^{(1)}$	Partial safety factor:	[-]	1,67	1,67	1,67	1,67	1,67	1,67
$V_{Rk,s}$	Shear steel char. resistance, steel class 4.8:	[kN]	4,0	7,3	9,1	16,8	31,4	47,5
$\gamma_{Ms}^{(1)}$	Partial safety factor:	[-]	1,25	1,25	1,25	1,25	1,25	1,25
$V_{Rk,s}$	Shear steel char. resistance, steel class 5.6	[kN]	5,0	9,1	9,1	21,1	39,2	61,2
$\gamma_{Ms}^{(1)}$	Partial safety factor:	[-]	1,67	1,67	1,25	1,67	1,67	1,67
$V_{Rk,s}$	Shear steel char. resistance, steel class 5.8	[kN]	5,0	8,8	9,1	17,5	32,5	47,5
$\gamma_{Ms}^{(1)}$	Partial safety factor:	[-]	1,25	1,25	1,25	1,25	1,25	1,25
$V_{Rk,s}$	Shear steel char. resistance, steel class 6.8	[kN]	6,0	8,8	9,1	17,5	32,5	47,5
$\gamma_{Ms}^{(1)}$	Partial safety factor:	[-]	1,25	1,25	1,25	1,25	1,25	1,25
$V_{Rk,s}$	Shear steel char. resistance, steel class 8.8:	[kN]	6,5	8,8	9,1	17,5	32,5	47,5
$\gamma_{Ms}^{(1)}$	Partial safety factor:	[-]	1,25	1,25	1,25	1,25	1,25	1,25
Shear loads: steel failure with lever arm								
$M^0_{Rk,s}$	Characteristic bending moment, steel class 4.6	[Nm]	6,1	15,0	29,9	52,4	133,3	259,8
$\gamma_{Ms}^{(1)}$	Partial safety factor:	[-]	1,67	1,67	1,67	1,67	1,67	1,67
$M^0_{Rk,s}$	Characteristic bending moment, steel class 4.8	[Nm]	6,1	15,0	29,9	52,4	133,3	259,8
$\gamma_{Ms}^{(1)}$	Partial safety factor:	[-]	1,25	1,25	1,25	1,25	1,25	1,25
$M^0_{Rk,s}$	Characteristic bending moment, steel class 5.6	[Nm]	7,6	18,8	37,4	65,5	166,6	324,8
$\gamma_{Ms}^{(1)}$	Partial safety factor:	[-]	1,67	1,67	1,67	1,67	1,67	1,67
$M^0_{Rk,s}$	Characteristic bending moment, steel class 5.8	[Nm]	7,6	18,8	37,4	65,5	166,6	324,8
$\gamma_{Ms}^{(1)}$	Partial safety factor:	[-]	1,25	1,25	1,25	1,25	1,25	1,25
$M^0_{Rk,s}$	Characteristic bending moment, steel class 6.8	[Nm]	9,2	22,5	44,9	78,7	199,9	389,7
$\gamma_{Ms}^{(1)}$	Partial safety factor:	[-]	1,25	1,25	1,25	1,25	1,25	1,25
$M^0_{Rk,s}$	Characteristic bending moment, steel class 8.8	[Nm]	12,2	30,0	59,9	104,9	266,6	519,7
$\gamma_{Ms}^{(1)}$	Partial safety factor: ¹⁾	[-]	1,25	1,25	1,25	1,25	1,25	1,25
Shear loads: concrete pryout failure								
k_8	Pryout factor:	[-]	1,0	1,0	1,0	1,0	2,0	2,0
γ_{ins}	Installation safety factor:	[-]	1,0					
Shear loads: concrete edge failure								
ℓ_f	Effective anchorage depth under shear loads:	[mm]	25	30	40	50	65	80
d_{nom}	Outside anchor diameter:	[mm]	8	10	12	15	20	25
γ_{ins}	Installation safety factor:	[-]	1,0					
Displacements under shear loads								
V	Service shear load in uncracked concrete C20/25 to C50/60:	[kN]	3,8	5,0	5,2	10,1	18,6	27,2
δ_{V0}	Short term displacement under shear loads:	[mm]	2,4	2,4	2,4	1,3	1,0	1,0
$\delta_{V\infty}$	Long term displacement under shear loads:	[mm]	3,5	3,5	3,5	2,0	1,5	1,5

¹⁾ In absence of other national regulations

WDI2, WDI2L anchor

Performances

Characteristic values for shear load.

Annex C3