Declaration of Performance

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

Walraven WB300

DoP No. 23/0311-WB300

1. **Unique identification code of the product-type:**
   Walraven Injection Anchor WB300, Item numbers: 6099030E, 6099030W, 6099031E, 6099040W

2. **Intended use/es:**
   For fixing and/or supporting concrete structural elements or heavy units such as cladding and suspended ceilings.

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 330087-01-0601 "Systems for post-installed rebar connections with mortar", December 2020.
   European Technical Assessment: ETA - 23/0311 (28/11/2024).
   Technical Assessment Body: Technical and Test Institute for Construction Prague
   Notified body: 1020.

6. **Declared performance/s:**

Essential Characteristic	Performance	Harmonized Technical Specification
Mechanical resistance and stability (BWR 1)		
Bond strength of post-installed rebar	See Annex C 1, C 2, ETA-23/0311	EAD 330087-01-0601
Reduction factor	See Annex C 1, C 2, ETA-23/0311	EAD 330087-01-0601
Amplification factor for minimum anchorage length	See Annex C 1, C 2, ETA-23/0311	EAD 330087-01-0601
Safety in case of fire (BWR 2)		
Reaction to Fire	Rebars satisfy requirements for Class A1	EAD 330087-01-0601
Resistance to fire	See Annex C 3, ETA-023/0311	EAD 330087-01-0601

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 19-02-2025
Place: Mijdrecht

Design bond strength of post-installed rebar $f_{bd,PIR}$ and $f_{bd,PIR,100y}$ for working life 50 and 100 years

$f_{bd,PIR} = k_b \cdot f_{bd}$
k_b = reduction factor
f_{bd} = design bond strength of cast-in rebar according to EN 1992-1-1

Table C1: Values of the design bond strength of post installed rebar $f_{bd,PIR} = f_{bd,PIR,100y}$ with reduction factor $k_b = k_{b,100y}$ for hammer drilling or dustless drilling methods for good bond conditions

Rebar Ø 8 to 12									
Concrete class	**C12/15**	**C16/20**	**C20/25**	**C25/30**	**C30/37**	**C35/45**	**C40/50**	**C45/55**	**C50/60**
k_b [-]	1,0	1,0	1,0	1,0	1,0	0,90	0,82	0,76	0,71
$f_{bd,PIR}$ [N/mm²]	**1,6**	**2,0**	**2,3**	**2,7**	**3,0**				
Rebar Ø 14 to 16									
Concrete class	**C12/15**	**C16/20**	**C20/25**	**C25/30**	**C30/37**	**C35/45**	**C40/50**	**C45/55**	**C50/60**
k_b [-]	1,0	1,0	1,0	1,0	0,89	0,90	0,82	0,76	0,71
$f_{bd,PIR}$ [N/mm²]	**1,6**	**2,0**	**2,3**	**2,7**		**3,0**			
Rebar Ø 18									
Concrete class	**C12/15**	**C16/20**	**C20/25**	**C25/30**	**C30/37**	**C35/45**	**C40/50**	**C45/55**	**C50/60**
k_b [-]	1,0	1,0	1,0	1,0	0,89	0,80	0,73	0,76	0,71
$f_{bd,PIR}$ [N/mm²]	**1,6**	**2,0**	**2,3**	**2,7**				**3,0**	
Rebar Ø 20 to 25									
Concrete class	**C12/15**	**C16/20**	**C20/25**	**C25/30**	**C30/37**	**C35/45**	**C40/50**	**C45/55**	**C50/60**
k_b [-]	1,0	1,0	1,0	1,0	0,89	0,80	0,73	0,67	0,63
$f_{bd,PIR}$ [N/mm²]	**1,6**	**2,0**	**2,3**	**2,7**					

Tabulated values are valid for good bond conditions according to EN 1992-1-1.
For all other bond conditions multiply the values by 0,7.

Table C2: Amplification factor for minimum anchorage length

Rebar	**Amplification factor**	**Concrete class**								
		C12/15	**C16/20**	**C20/25**	**C25/30**	**C30/37**	**C35/45**	**C40/50**	**C45/55**	**C50/60**
Ø 8	$\alpha_{lb} = \alpha_{lb,100y}$	1,0	1,0	1,0	1,0	1,1	1,0	1,0	1,0	1,0
Ø 10		1,0	1,0	1,0	1,0	1,1	1,0	1,0	1,0	1,0
Ø 12		1,0	1,0	1,0	1,0	1,1	1,1	1,0	1,0	1,0
Ø 14		1,0	1,0	1,0	1,0	1,0	1,1	1,0	1,0	1,0
Ø 16		1,0	1,0	1,0	1,0	1,0	1,1	1,1	1,0	1,0
Ø 18		1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
Ø 20		1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
Ø 22		1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
Ø 24		1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
Ø 25		1,0	1,0	1,0	1,1	1,0	1,0	1,0	1,0	1,0

WB300, WB300W, WB300T for rebar connection	**Annex C 1**
Performances Design values of the ultimate bond strength for hammer or dustless drilling	

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Design bond strength of post-installed rebar $f_{bd,PIR}$ and $f_{bd,PIR,100y}$ for working life 50 and 100 years

$f_{bd,PIR} = k_b \cdot f_{bd}$
k_b = reduction factor
f_{bd} = design bond strength of cast-in rebar according to EN 1992-1-1

Table C3: Values of the design bond strength of post installed rebar $f_{bd,PIR} = f_{bd,PIR,100y}$ with reduction factor $k_b = k_{b,100y}$ for diamond core drilling methods for good bond conditions

Rebar Ø 8 to 10									
Concrete class	**C12/15**	**C16/20**	**C20/25**	**C25/30**	**C30/37**	**C35/45**	**C40/50**	**C45/55**	**C50/60**
k_b [-]	1,0	1,0	1,0	1,0	1,0	1,0	0,91	0,84	0,79
$f_{bd,PIR}$ [N/mm²]	**1,6**	**2,0**	**2,3**	**2,7**	**3,0**	**3,4**			
Rebar Ø 12									
Concrete class	**C12/15**	**C16/20**	**C20/25**	**C25/30**	**C30/37**	**C35/45**	**C40/50**	**C45/55**	**C50/60**
k_b [-]	1,0	1,0	1,0	1,0	1,0	0,90	0,82	0,76	0,71
$f_{bd,PIR}$ [N/mm²]	**1,6**	**2,0**	**2,3**	**2,7**	**3,0**				
Rebar Ø 14									
Concrete class	**C12/15**	**C16/20**	**C20/25**	**C25/30**	**C30/37**	**C35/45**	**C40/50**	**C45/55**	**C50/60**
k_b [-]	1,0	1,0	1,0	1,0	0,89	0,90	0,82	0,76	0,71
$f_{bd,PIR}$ [N/mm²]	**1,6**	**2,0**	**2,3**	**2,7**		**3,0**			
Rebar Ø 16									
Concrete class	**C12/15**	**C16/20**	**C20/25**	**C25/30**	**C30/37**	**C35/45**	**C40/50**	**C45/55**	**C50/60**
k_b [-]	1,0	1,0	1,0	1,0	0,89	0,80	0,73	0,67	0,63
$f_{bd,PIR}$ [N/mm²]	**1,6**	**2,0**	**2,3**	**2,7**					
Rebar Ø 18									
Concrete class	**C12/15**	**C16/20**	**C20/25**	**C25/30**	**C30/37**	**C35/45**	**C40/50**	**C45/55**	**C50/60**
k_b [-]	1,0	1,0	1,0	0,86	0,89	0,80	0,73	0,67	0,63
$f_{bd,PIR}$ [N/mm²]	**1,6**	**2,0**	**2,3**		**2,7**				
Rebar Ø 20									
Concrete class	**C12/15**	**C16/20**	**C20/25**	**C25/30**	**C30/37**	**C35/45**	**C40/50**	**C45/55**	**C50/60**
k_b [-]	1,0	1,0	1,0	0,86	0,76	0,69	0,63	0,58	0,54
$f_{bd,PIR}$ [N/mm²]	**1,6**	**2,0**	**2,3**						
Rebar Ø 22									
Concrete class	**C12/15**	**C16/20**	**C20/25**	**C25/30**	**C30/37**	**C35/45**	**C40/50**	**C45/55**	**C50/60**
k_b [-]	1,0	1,0	0,86	0,86	0,76	0,69	0,63	0,58	0,54
$f_{bd,PIR}$ [N/mm²]	**1,6**	**2,0**		**2,3**					
Rebar Ø 24									
Concrete class	**C12/15**	**C16/20**	**C20/25**	**C25/30**	**C30/37**	**C35/45**	**C40/50**	**C45/55**	**C50/60**
k_b [-]	1,0	1,0	0,86	0,74	0,66	0,59	0,54	0,58	0,54
$f_{bd,PIR}$ [N/mm²]	**1,6**	**2,0**						**2,3**	
Rebar Ø 25									
Concrete class	**C12/15**	**C16/20**	**C20/25**	**C25/30**	**C30/37**	**C35/45**	**C40/50**	**C45/55**	**C50/60**
k_b [-]	1,0	1,0	0,86	0,74	0,66	0,59	0,54	0,50	0,47
$f_{bd,PIR}$ [N/mm²]	**1,6**	**2,0**							

Tabulated values are valid for good bond conditions according to EN 1992-1-1.
For all other bond conditions multiply the values by 0,7.

Table C4: Amplification factor for minimum anchorage length

Rebar	**Amplification factor**	**Concrete class**								
		C12/15	**C16/20**	**C20/25**	**C25/30**	**C30/37**	**C35/45**	**C40/50**	**C45/55**	**C50/60**
Ø 8 to 25	$\alpha_{lb} = \alpha_{lb,100y}$	1,0	1,0	1,0	1,0	1,1	1,0	1,0	1,0	1,0

WB300, WB300W, WB300T for rebar connection

Performances
Design values of the ultimate bond strength
for diamond core drilling

Annex C 2

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Design values of the bond strength $f_{bk,fi}$ and $f_{bk,fi,100y}$ under fire exposure for hammer or dustless drilling for working life 50 and 100 years

The design value of the bond strength $f_{bd,fi} = f_{bd,fi,100y}$ under fire exposure has to be calculated according the following equation:

$$f_{bd,fi}(\theta) = f_{bd,fi,100}\ (\theta) = k_{b,fi}(\theta) \cdot f_{bd,PIR} \cdot \frac{\gamma_c}{\gamma_{M,fi}}$$

where: $\theta \leq 308{,}9°C$ $k_{b,fi}(\theta) = 31898 \cdot \theta^{-2{,}006} / (f_{bd,PIR} \cdot 4{,}3) \leq 1$

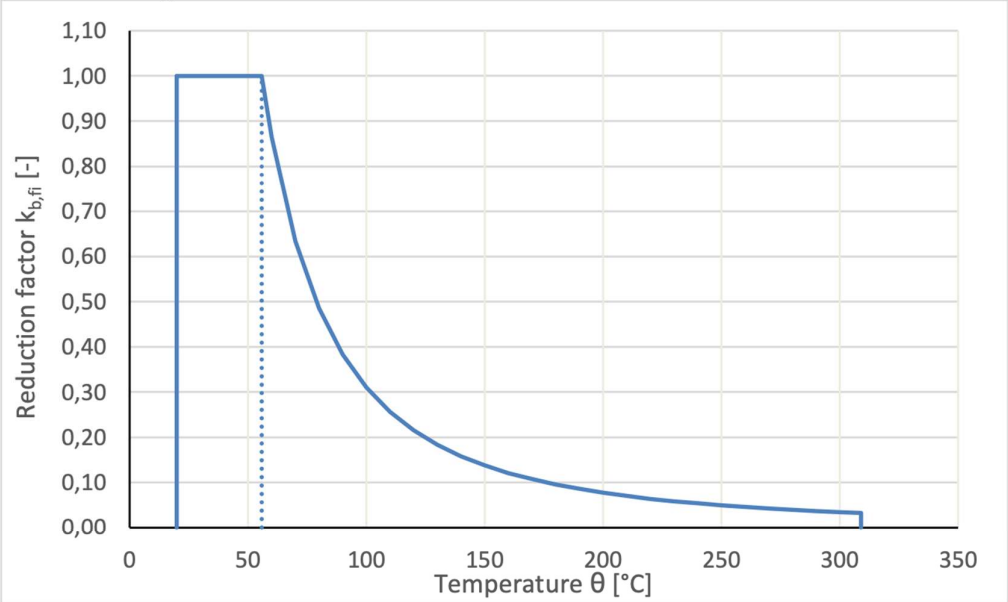
$\theta > 308{,}9°C$ $k_{b,fi}(\theta) = 0$

with:

$k_{b,fi}(\theta)$	reduction factor in case of fire
(θ)	temperature in °C in the mortar layer
$f_{bd,PIR}$	design value of the bond strength in N/mm² according to Table C1 considering the concrete class, the rebar diameter, the drilling method and the bond conditions according to EN 1992-1-1:2004+AC:2010
γ_c	partial safety factor according to EN 1992-1-1:2004+AC:2010
$\gamma_{M,fi}$	partial safety factor according to EN 1992-1-2:2004+AC:2008+A1:2019

The anchorage length shall be determined in accordance with EN 1992-1-1:2004+AC:2010 equation (8.3) using the bond strength $f_{bd,fi}(\theta)$.

Figure C1: Example of the graph of reduction factor $k_{fi}(\theta)$ for concrete strength class C20/25 for good bond conditions



WB300, WB300W, WB300T for rebar connection	**Annex C 3**
Performances Design values of the bond strength under fire exposure for hammer or dustless drilling	

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