

**PRODUCT DECLARATION BY THE
CONCRETE ASSOCIATION OF FINLAND
TYPE 5B - EC 2 FASTENING ITEM
number
13**

Representative of the fastening item in Finland:

Peikko Finland Oy

P.O. Box 104 (visiting address Voimakatu 3), 15101 LAHTI,
Finland

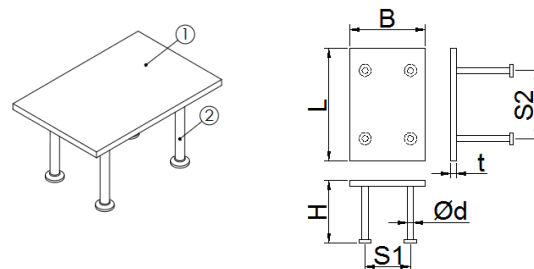
Manufacturer of the fastening item:

Peikko Group Corporation

Type and identification of the fastening item:

WELDA® Fastening Plates: WELDA -/R/Rr/A/Ar
Identifier: WELDA BxL-H, where B = width,
L = length, H = height

Figure of the fastening item



Functioning principles of the fastening item:

WELDA® Fastening Plates are steel parts that are installed when concrete is cast. The fastening plates transfer forces acting on them to the concrete structures. The structural connections are made by welding.

DECISION OF SUOMEN BETONIYHDISTYS R.Y. (THE CONCRETE ASSOCIATION OF FINLAND)

Suomen Betoniyhdistys r.y. (the Concrete Association of Finland) has processed this product declaration and has approved it on the basis of the available documentation. The declaration provides sufficient explanation of the properties and matters related to the usage of the fastening item, which is intended for concrete structures, providing that planning is based on Eurocode standards and relevant National Annexes.

When the fastening item is used, the product declaration should be taken into account along with the following matters:

1. A valid product declaration for the fastening item, as granted by the Concrete Association of Finland, must be available on the manufacturing site.
2. A product declaration for the fastening item, as granted by the Concrete Association of Finland, must be available on the construction site, along with the product's user manual.
3. Usage areas for the fastening item

This product declaration is valid until June 30, 2018 in the absence of any information that would represent grounds for the declaration to be withdrawn.

This declaration has been made in two original copies, one of which is stored at the offices of the Concrete Association of Finland.

Helsinki, Finland

July

[1]

2015

The Concrete Association of Finland

[signed]
Matti Pentti
Chair

[signed]
Tarja Merikallio
Managing Director

The Concrete Association of Finland is an independent technoscientific association that promotes the correct use of concrete. Its members are active in an extensive range of concrete construction areas. The association publishes technical instructions, participates in certifying personal competencies in the concrete sector, organizes training and members' events, initiates and steers development projects, and provides consulting services to the Ministry of the Environment and other bodies.

Applications for product declarations from the Concrete Association of Finland are processed by the Association's divisions, which contain independent experts who are nominated by the Association's board of directors. This product declaration is intended for responsible professionals in the construction sector who are able to appropriately apply the guidance provided in the product declaration on construction sites and who can understand the restrictions related to product usage while taking responsibility for applying them to their own work. Although the Concrete Association of Finland has nominated Finland's foremost independent experts to the divisions that process product declarations, neither the Concrete Association of Finland nor its members or any personnel involved in preparatory work may be held responsible for the guidelines provided in this product declaration.

INFORMATION PROVIDED BY THE MANUFACTURER OR REPRESENTATIVE OF THE FASTENING ITEM:

1. Operation of the fastening item

WELDA® Fastening Plates are steel plates that transfer stresses acting on them to concrete using welded headed anchors. Related structural connections are made by welding directly onto the steel plate. If the edge distances are short, the fastening base must be reinforced.

2. Manufacture of the fastening item

- 21 Components:
Fastening plate, headed anchors, workshop drawings, appendix 2
- 22 Manufacturing method
Plates Flame cutting, mechanical slicing/cutting
- 23 Welding
Drawn arc stud welding (783), manual or robotic MAG welding (135, 138), resistance stud welding (26).
Welding processes are numbered in accordance with SFS-EN ISO 4063:2011.
Welding class C (SFS-EN 25817)

3. Dimensions, tolerances, and coating of fastening items

31 Dimensions

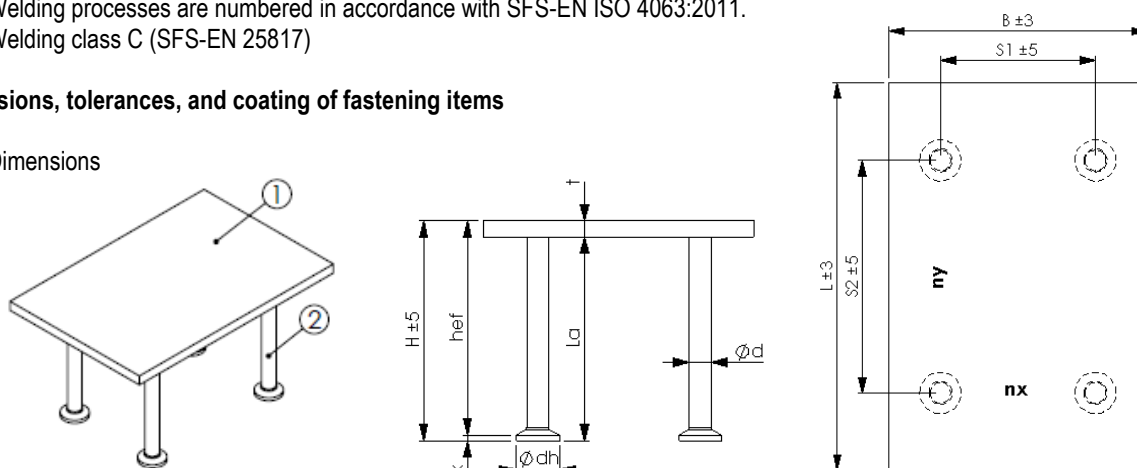


Table 1. Dimensions of WELDA® Fastening Plates (B, L, H, t, s1, s2, Ød), number of anchors (nx, ny), and mass

WELDA B x L - H	B	L	H	t	hef	s1	s2	Ød	nx	ny	Mass
	mm	mm	mm	mm	mm	mm	mm	mm			kg
WELDA 50x100-68	50	100	68	8	61	0	60	10	1	2	0.4
WELDA 100x100-68	100	100	68	8	61	60	60	10	2	2	0.8
WELDA 100x150-70	100	150	70	10	63	60	90	10	2	2	1.4
WELDA 100x200-72	100	200	72	12	63	70	120	13	2	2	2.2
WELDA 100x200-162	100	200	162	12	153	70	120	13	2	2	2.6
WELDA 100x300-162	100	300	162	12	154	70	100	13	2	3	3.9
WELDA 150x150-70	150	150	70	10	64	90	90	10	2	2	2.0
WELDA 150x150-160	150	150	160	10	154	90	90	10	2	2	2.2
WELDA 150x150-162	150	150	162	12	64	90	90	13	2	2	2.9
WELDA 200x200-72	200	200	72	12	154	120	120	13	2	2	4.1
WELDA 200x200-162	200	200	162	12	157	120	120	16	2	2	4.9
WELDA 200x300-165	200	300	165	15	154	120	180	16	2	2	8.2
WELDA 250x250-165	250	250	165	15	157	170	170	16	2	2	8.5
WELDA 300x300-165	300	300	165	15	157	180	180	16	2	2	11.7

Table 2. Dimensions of WELDA® Fastening Plates (B, L, H, t, s1, s2, Ød), number of anchors (nx, ny), and mass

WELDA B x L - H	B	L	H	t	hef	s1	s2	Ød	nx	ny	Mass
	mm	mm	mm	mm	mm	mm	mm	mm			~kg/m
WELDA 100xL1-70	100	L1	70	10	62	70	150	13	2	3-13	8.9
WELDA 150xL1-70	150	L1	70	10	62	90	150	13	2	3-13	12.8
WELDA 200xL1-70	200	L1	70	10	62	100	150	13	2	3-13	16.8
WELDA 150xL2-115	150	L2	115	15	107	90	200	16	2	3-10	19.6
WELDA 200xL2-115	200	L2	115	15	107	100	200	16	2	3-10	25.5
WELDA 300xL2-115	300	L2	115	15	107	200	200	16	2	3-10	37.3
WELDA 400xL2-120	400	L2	120	20	112	200	200	16	2	3-10	64.8

L1 = 450/600/750/900/1050/1200/1350/1500/1650/1800/1950mm

L2 = 600/800/1000/1200/1400/1600/1800/2000mm

32	Tolerances			
	Dimensional accuracy class C, SFS-EN ISO 13920	Incline of the concrete anchors		±3°
	Side dimensions of the plate ±3mm	Relative positions of the concrete anchors		±5mm
	Position of the concrete anchors ±5mm	Overall height of the steel part		±5mm

33 **Coatings**
 The fastening plates are delivered with the plate surface and sides painted with a 40µm layer of protective paint. Special orders can be placed for coatings such as epoxy paint or hot-dip galvanization.

4. Properties of the fastening item's materials (standards, strength values, composition, weldability)

Table 3. Materials:

PLATE	Standard		Identifier
Black/Carbon steel	S355J2+N, S355J2, S355K2+N, S355K2	EN 10025-2	WELDA
Rustproof steel	1.4301, 1.4303, 1.4306, 1.4307	EN 10088-2	WELDA R
Acidproof steel	1.4401, 1.4404, 1.4432, 1.4436, 1.4571	EN 10088-2	WELDA A
ANCHORS			
Black/Carbon steel	SD1 $f_{yk} \geq 350\text{MPa}$, $f_{uk} \geq 450\text{MPa}$	EN ISO 13918	WELDA -/R/A
Rustproof steel	SD3 $f_{yk} \geq 350\text{MPa}$, $f_{uk} \geq 450\text{MPa}$	EN ISO 13918	WELDA Rr/Ar
Acidproof steel	1.4401, 1.4404, 1.4432, 1.4436, 1.4571	EN 10088-3	WELDA Aa

5. Labeling, packaging methods, and storage of the fixing items

Labeling: The products bear a label that includes the Inspecta certification emblem, Peikko Group's emblem, the type of metal part, and the time of manufacture.
 Packing: The products are packed on pallets.
 Storage: The products are to be stored indoors or in a cold outdoor storage area.

6. Requirements regulating the fastening platform

61 **Strength class and special features of concrete**
 The calculations of the durability of WELDA® Fastening Plates presume a concrete strength of C25/30 (cracked, non-reinforced concrete) using partial safety factors for the material in accordance with Appendix A to the SFS-EN 1992-1-1 standard and the Finnish National Annex, in tolerance class 1 and tolerance class 2 (construction site installations) of the SFS-EN 13670 standard.

62 **Aggregate quality**
 The aggregate must correspond to that mentioned in the SFS-EN 12620 standard on concrete aggregate.

63 **Minimum edge distances and spacing required by the procedure.** Table 4.

Nominal anchor diameter [mm]		10	12	13	16	19	20
Anchoring depth	min. h_{ef} [mm]	50	50	50	50	75	75
Min. spacing	s_{min} [mm]	50	70	70	80	100	100
Min. edge distance	c_{min} [mm]	50	50	50	50	70	70
Characteristic spacing value	s_{cr} [mm]	3 h_{ef}					
Characteristic edge distance value	c_{cr} [mm]	1.5 h_{ef}					
Minimum thickness of concrete structure	h_{min} [mm]	$h_{ef} + k + c_{nom} = H + c_{nom}$					
c_{nom} = required thickness of concrete cover							

Markings in accordance with CEN/TS 1992-4-2:2009.

64 **Nominal concrete cover**
 The thickness of the concrete cover is to be determined in accordance with the required fire resistance time, environmental impact class, and planned service life in reference to the SFS-EN 1992-1-1 and SFS-EN 1992-1-2 standards, and the Finnish national amendment.

7. Resistances

See tables 5 and 6 in WELDA Fastening Plates Technical Manual FI 06/2015.

8. Installation of the fastening item

Fastening plates can be installed by attaching them to the reinforcement, nailing them to the mold, screwing them in, gluing them, using double-sided tape, using clamps, or using magnets with steel molds. Upon request, nail holes can be made in the fastening plates.

9. Special instructions for ensuring adequate fastening

If the usage temperature is below -20°C, plates with greater impact strength must be used.

10. Strength calculations (Appendix number, calculation name, and date)

The calculations have been made in accordance with Eurocodes using ultimate limit states, taking into account Finnish National Annexes and CEN/TS 1992-4-1 and CEN/TS 1992-4-2.

Appendix 3: WELDA Fastening Plates, Calculation according to SFS EN, November 25, 2014

11. Acceptance tests performed for the fastening item (Appendix number, investigating institution, investigation report number, and date)

12. Name and publication date of the installation instructions from the manufacturer or representative (Appendix 1)

WELDA® Fastening Plates FI 06/2015, Technical Manual

13. Quality control

The manufacturer's quality control is controlled by Inspecta Certification Ltd, which delivers quality control reports to the Concrete Association of Finland. As regards the properties and manufacturing of concrete, the SFS-EN 206 standard is to be complied with.

14. Other information

15. Supporting material, not public (appendix number, title, and date)

Appendix 2 Workshop drawings

Appendix 3 Strength calculations WELDA Fastening Plates, Calculation according to SFS EN, November 25, 2014

16. Appendices (appendix number, name, and publication date)

Appendix 1 WELDA® Fastening Plates FI 06/2015, Technical Manual

We hereby declare that the information that we have provided is correct

June 10, 2015

Signature [signed]
 Name (printed) Markus Junes, Peikko Group Corporation

This product declaration can be withdrawn at the discretion of the Concrete Association of Finland. Reasons for withdrawal may include:

- The information provided when the application for the product declaration was made is shown to be erroneous
- An unreasonable decrease in quality or repeated minor decreases in quality are observed in the product subject to this product declaration

I hereby declare this English text to be a true and accurate translation of the Finnish document entitled "Betoniyhdistyksen käyttöseloste tyyppi 5B – EC 2 kiintysosa numero 13", whose authenticity I was not able to verify.

Helsinki, Finland, October 1, 2015.

Jonathan Rhodes
 Authorised translator from Finnish to English
 (Laki auktorisoiduista kääntäjistä 1231/2007)