

PRODUCT DECLARATION BY THE CONCRETE ASSOCIATION OF FINLAND TYPE 5B - EC 2 FASTENING ITEM number 95

Representative of the fastening item in Finland:

Peikko Finland Oy
PL 104 (visiting address Voimakatu 3),
15101 LAHTI

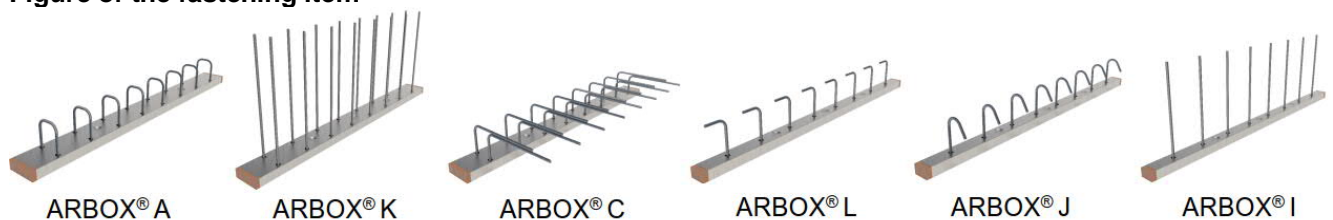
Manufacturer of the fastening item:

Peikko Group Oy

Type and identification of the fastening item:

ARBOX® Joint Reinforcement, models:
ARBOX® A, ARBOX® K, ARBOX® C, ARBOX® L,
ARBOX® J, ARBOX® I

Figure of the fastening item



Function principle of the fastening item:

ARBOX® Joint Reinforcement is designed to transfer shear loads acting longitudinally or transversely to the joint into concrete.

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

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 amendments.

When the fastening item is used, the product declaration should be considered 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is valid until 20.6.2024 in the absence of any information that would represent grounds for the declaration to be withdrawn.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 June 20th, 2019
Suomen Betoniyhdistys ry.

Matti Pentti
Chair

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. 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. 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 best 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

ARBOX® Joint Reinforcement is a system for creating connections between concrete elements. It enables longitudinal and transverse tensile forces and shear forces to be transferred to the joint. Pre-bent rebars are installed into a galvanized steel box which is attached to formwork. Rebars are straightened after hardening of the concrete and the connection is created by overlap with main reinforcement.

2. Manufacture of the fastening item

21 Components: Rebars, box, cover sheet, wooden or polystyrene block in the ends of box.

22 Manufacturing method

Box, cover	Mechanical cut and bending
Rebars	Mechanical cut and bending

23 Welding

No welds.

3. Dimensions, tolerances, and coating of fastening parts

31 Dimensions

Dimensions of the different models of ARBOX® are introduced in the technical manual section 1.3, Materials and dimensions.

32 Tolerances

Box length	±2 mm
Box width and height	±1 mm
Rebar dimensions	±10 mm

33 Coatings

Box and cover are manufactured from galvanized sheet metal.

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

Component	Materials	Standards
Box and cover; 0,5 mm galvanized sheet metal	DX51D+Z100MA	EN 10346/EN 10143/GOST 9045
Rebars	B500B	SFS 1300/EN 10080
Blocks (in the ends of box)	Wood, polystyrene	

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

Labeling: The products bear a label with the following information:

- Inspecta certification label
- Peikko Group's emblem
- The type of the metal component
- The date of manufacture.

Package:

- The products are packed on pallets.

Storage:

- The products are stored indoors.

6. Requirements regulating the concrete structures

- 61 Strength class and special characteristics of concrete and grout
Resistances are defined to concrete with strength class C20/25 or higher. Steel box surface is assumed to be very smooth.
- 62 Aggregate quality
The aggregate quality must be in accordance with SFS-EN 12620.
- 63 Minimum edge distances and spacing required by the procedure
ARBOX® Joint Reinforcements are installed into position while keeping required minimum concrete cover.
- 64 Nominal concrete cover
The thickness of the concrete cover is determined by the required fire resistance time, environmental exposure class, and planned service life in accordance with standards SFS-EN 206, SFS-EN 1992-1-1, SFS-EN 1992-1-2 and the national annex of Finland.

7. Resistances

Resistances are introduced in the technical manual section 2, Resistances.

8. Installation of the fastening item

ARBOX® Joint Reinforcement is fixed in the planned position by nailing it onto the wooden formwork or connecting it to the existing reinforcement. The formwork is removed after hardening of the concrete, steel box cover is removed, and the bars are straightened using an appropriate re-bending tool.

9. Special instructions for ensuring adequate fastening

The precast columns and beams must be manufactured in accordance with the SFS-EN 13225 'Precast concrete products. Linear structural elements.' and SFS-EN 13369 'Common rules for precast concrete products.'. Installation on site follows SFS-EN 13670 'Execution of concrete structures' and its complementary standard SFS 5975, and SFS-EN 1992-1-1 'Design of concrete structures' and the national annex of Finland. SFS-EN 206 needs to be considered in the concrete performance and production.

10. Structural static calculations (Annex number, calculation name, and date)

Annex 2 ARBOX Joint Reinforcement Static calculation EN + NA of Finland, 16.8.2018

11. Acceptance tests performed for the fastening item (Annex number, test body, test report number, and date)

12. Name and publication date of the installation instructions from the manufacturer or representative ARBOX® Joint Reinforcement, Technical manual, 02/2019 (English version)

13. Quality control

The manufacturer has a quality control agreement with an accredited external body. Quality control body delivers quality reports to the Concrete Association of Finland. This product declaration by the Concrete Association of Finland requires an approved initial inspection for each manufacturer.

14. Other information

15. Additional information, not public (annex number, title, and date)

Annex 2 ARBOX Joint Reinforcement Static calculation EN + NA of Finland, 16.8.2018

Annex 3 Manufacturing drawings, dated 20.3.2019

Annex 4 Locations of manufacture

16 Annexes (annex number, title, and date)

Annex 1 ARBOX® Joint Reinforcement, Technical manual, 02/2019 (English version)

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

Lahti May 6th, 2019

Signature

Name (printed) Ilkka Kaipainen Peikko Finland Oy

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