

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

number  
**122**

**Representative of the fastening item in Finland:**

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

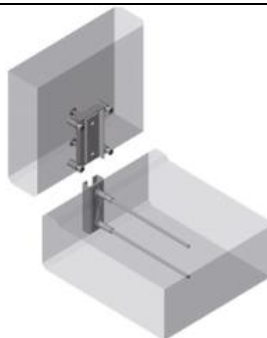
**Manufacturer of the fastening item:**

**Peikko Group Oy**

**Type and identification of the fastening item:**

**P4X Balcony Parapet Connector**

**Figure of the fastening item**



**Function principle of the fastening item:**

Balcony parapet is fixed to Balcony Slab with P4X Balcony Parapet Connector. The Parapet joint is stiffened by tightening the screws against the balcony slab.

## DECISION OF SUOMEN BETONIHDISTYS ry (THE CONCRETE ASSOCIATION OF FINLAND)

The Concrete Association of Finland has processed this product declaration and approved it basing on the available documentation. The declaration provides sufficient explanation of the properties and matters related to the usage of the fastening item in concrete structures, provided that the design is based on Eurocode standards and relevant national amendments.

When the fastening item is used, the following must be considered additionally to the product declaration:

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, and the Installation Instructions manual must be available on the construction site.
3. Correct use of the fastening item.

This product declaration is valid until 9.3.2026 unless no other reasons for withdrawal would be presented.

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

Helsinki March 12<sup>th</sup>, 2021

Suomen Betoniyhdistys ry.

Matti Pentti

Mirva Vuori

Chairman

Managing Director

The Concrete Association of Finland is an independent technoscientific association that promotes the correct use of concrete. The members represent a wide selection of different stakeholders of concrete construction. The association publishes technical instructions, participates in certifying personal competencies in the concrete sector, organizes training and member events; initiates, and steers development projects, and provides consulting services to the Ministry of the Environment.

The applications for product declarations from the Concrete Association of Finland are processed by the Association's divisions, containing independent experts who are nominated by the Association's board. The product declarations are intended for responsible construction professionals who appropriately can apply the guidelines of the product declaration on construction sites and who can understand the restrictions related on using the product while taking responsibility for applying them on their own work.

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

### 1. Operation of the fastening item

P4X Balcony Parapet Connector is used to connect concrete or steel parapets to concrete balcony slab. The connection consists of three different components: Railing Part, Slab Part and Connection Kit

### 2. Manufacturing of the fastening item

#### 21 Components:

Railing Part	Housing, headed studs, plate, threaded couplers, hexagon head screws
Slab Part	Rebars, threaded couplers, fixing plate
C-Rail	
Washer	
Fastening screws	

See manufacturing drawings, annex 2.

#### 22 Manufacturing method

Plates:	Cutting and bending
Rebars:	Cutting
Threads and holes	Machining

#### 23 Welding

Manual and robot welding: 135 MAG- solid wire welding (SFS-EN ISO 4063)  
Welding class C (SFS-EN ISO 5817)

### 3. Dimensions, tolerances, and coating of fastening parts

#### 31 Dimensions

Item:	Dimensions:
RAILING PART	
- Steel plate	8x45x160
- Hexagon Head Screw	M12-30, 4 pcs
CONNECTION KIT	
- Hexagon Socket Head Cap Screw	M12-30, 2 pcs
- Washer	5x40x160
- C-Rail	30x62x170
SLAB PART	
Slab Part	H=160 mm, 2 pcs M12 Threaded Coupler

Other dimensions, see the Technical Manual (annex 1).

#### 32 Tolerances

Manufacturing tolerances are introduced in manufacturing drawings.

#### 33 Coatings

No coatings.

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

Item:	Materials:	Standards:
Rebar, stainless steel	B600XB-1.4301	SFS 1259
Steel plates	1.4301	SFS-EN 10088
Threaded Couplers	1.4301	SFS-EN 10088
Hexagon Head Screw	A2-70	DIN 933 /ISO 4017
Hexagon Socket Head Cap Screw	A2-70	ISO7380
Headed studs	1.4301	SFS-EN 10088, ETA-16/0430

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

Labeling: The products are labeled with

- Certification by Inspecta
- The name of manufacturer Peikko Finland
- Product type
- Manufacturing time (manufacturing year and week)

Packaging:

- The products are packed on pallets.

Storing:

- The products are stored indoors.

## 6. Requirements regulating the concrete structures

61 Strength class and special characteristics of concrete and grouting mortar:

Connection with P4X has been calculated for concrete grade of C30/37.

62 Requirements for aggregates

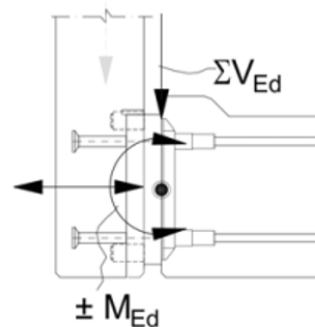
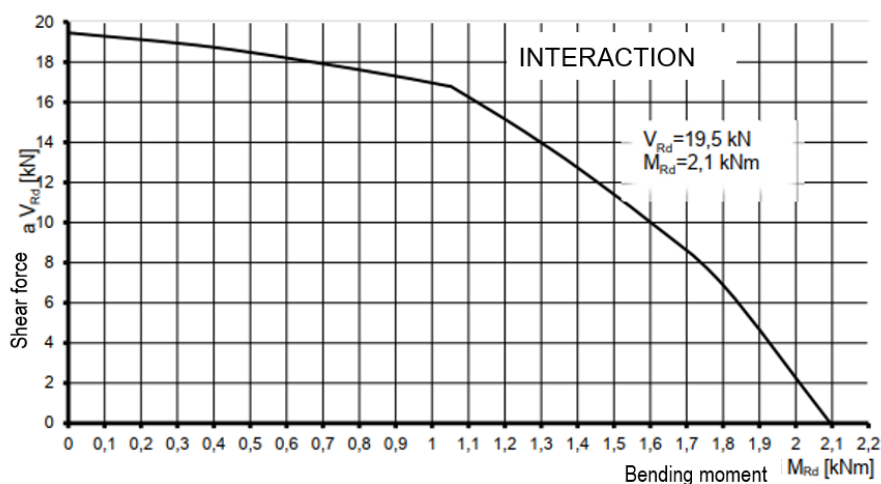
The aggregate quality must be in accordance with the standard SFS-EN 12620.

63 Minimum requirements for edge and center distances

See Technical Manual of P4X Balcony Parapet Connector section 1.2.2 Placing of the P4X.

64 Nominal concrete cover

## 7. Resistances (Table)



$$\text{Additionally: } V_{Ed} \leq V_{Rd} \text{ ja } M_{Ed} \leq M_{Rd}$$

## 8. Installation of the fastening item

P4X Balcony Parapet Connection items can be fixed to wooden mold by nailing, screwing, double-sided tape adhesive or by claps – depending on the options available. See Technical Manual Section Assembling the P4X Balcony Parapet Connector (annex 1).

## 9. Special instructions for ensuring an adequate fastening

The maximum length of the parapet when using two connection parts is 3.8 m, when the maximum thickness of the parapet is 100 mm, the maximum height 1.3 m and the maximum nominal load for wind is 0,6kN/m<sup>2</sup>. If longer than >4m concrete parapets or balcony slabs are used it is necessary to consider restraint forces resulting from changes in temperature and deformation in concrete when designing and placing of the connections.

In case the balcony glazing is not done during the construction phase it is still necessary to design the structure and the connection items according to a later stage glazing and resulting additional loads (vertical and horizontal wind load). The glazing might require increasing the amount of connection points resulting from the significant increase on the surface area prone to wind load.

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

Structural static calculations have been made according to Eurocodes using limit state analysis and considering the Finnish National Annexes. In calculation according to Eurocodes the loads are determined by the standard SFS-EN 1990.

Annex 3: Structural static calculations: Static calculations of Peikko P4X parapet connection; date 19.2.2021

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

TTKK Test Report No 315/95 TTKK Test Report No 1473/06

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

P4X-kaideliitos, FI 02/2021 (Annex 1)

## 13. Quality control

The quality of manufacturing is controlled by Inspecta Sertifiointi Oy, who is delivering the Quality Control Reports to Concrete Association of Finland. Concrete properties and manufacturing is following the standard SFS-EN 206-1.

This product declaration requires an initial inspection of the manufacturers production.

## 14. Other information

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

Annex 2 Manufacturing drawings and a list of manufacturing drawings, dated 4.2.2020

Annex 3 Structural static calculations: Static Calculations of Peikko P4X parapet connection; 19.2.2021

Annex 4 TTKK Test Report No 315/95

Annex 5 TTKK Test Report No 1473/06

## 16. Annexes (annex number, title, and date)

Annex 1 P4X-kaideliitos, Technical Manual, FI 02/2021

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

Lahti February 24<sup>th</sup>, 2021

Signature

Name (printed) Tonja Tynys, 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 incorrect
- An unreasonable decrease in quality or repeated minor decreases in quality are observed in the product Subject to this product declaration

Receipt of signatures

Signatures in SignSpace-service

Date: 2021-03-16



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Has been signed electronically in SignSpace-service

Mirva Vuori

Matti Pentti