Representative of the fastening item in Finland: Peikko Finland Oy
PL 104 (visiting address Voimakatu 3), 15101 LAHTI

Manufacturer of the fastening item: Peikko Construction Accessories (Zhangjiagang) Co., Ltd
No. 3 Dongqu Av.South Area of Economic Development Zone Zhangjiagang Jiangsu Province 215600 Tel.+86 512 58166601 Fax.+86 512 58166602

Type and identification of the fastening item: PVL 60, PVL 80, PVL 100, PVL 120, PVL 140 and PVL SOLO connecting loops

Figure of the fastening item

Function principle of the fastening item: PVL® Connecting Loops consist of a recess box (1) and a wire loop (2). Connecting loops are used in concrete grout joints as reinforcement against shear forces. Forces are transferred by intended surface and wire loop.

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is valid until 9.9.2021 in the absence of any information that would represent grounds for the declaration to be withdrawn.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 September 9th, 2016
Suomen Betoniyhdistys ry.

Matti Pentti Tarja Merikallio Tarja Merikallio Tarja Merikallio
Chair Managing Director Managing Director 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.
1. **Operation of the fastening item**

Connecting loops are used in concrete grout joints as reinforcement against shear forces. The indented arrangement of the joint develops a strut-and-tie model in the connection, where compression is transferred by concrete strut and tension is transferred by wire loop tie.

2. **Manufacture of the fastening item**

21 **Components:**
- Box
- Wire
- Steel ferrule
- Covering tape

See manufacturing drawings, annex 2.

22 **Manufacturing method**

Steel box is pressed from hot dip galvanized sheet. Wires are cut with mechanical cutter and bended to loops. The loop is guided through the holes in the bottom of the box. Wire loop end is attached with a steel ferrule. Wire loop is bended and pressed inside the box. Box is sealed with a tape.

23 **Welding**

No welds.

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

31 **Dimensions**

Outer dimensions are introduced in the technical manual.

32 **Tolerances**

- Wire length: ±2 mm
- Box dimensions: ±2 mm

33 **Coatings**

Box is manufactured of hot dip galvanized sheet metal.

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

<table>
<thead>
<tr>
<th>Component</th>
<th>Materials:</th>
<th>Standards:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Box; 0.7 mm hot dip galvanized</td>
<td>SGCC</td>
<td>JIS G 3302-2010</td>
</tr>
<tr>
<td>sheet metal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel wire with a stiff core,</td>
<td>6x19+SCW</td>
<td>GB/T 20118-2006</td>
</tr>
<tr>
<td>1770 N/mm²</td>
<td></td>
<td>EN 12385-2</td>
</tr>
<tr>
<td>Steel ferrule</td>
<td>20#</td>
<td>GB/T 8162-2018</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EN 13411-3</td>
</tr>
<tr>
<td>Cover tape</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. **Labeling, packaging methods, and storage of the fastening items**

Labeling: To the connecting loop box is stamped:
- The name of manufacturer
- Product code and type
- Number of the product declaration
- Direction of installation
- Batch number.

Package:
- The products are packed in boxes marked with product identification.

Storage:
- The products are stored indoors.

6. **Requirements regulating the concrete structures**

61 **Strength class and special characteristics of concrete and grout**

Both precast and grouting concrete strength class must be at least C25/30.

62 **Aggregate quality**

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

63 **Minimum edge distances and spacing required by the procedure**

See PVL® Connecting Loop technical manual section 1.2.3 Positioning of the PVL® Connecting Loop.

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. See also technical manual section 2.4 Fire resistance.

7. **Resistances**

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

8. **Installation of the fastening item**

Connecting loop is attached to wooden mold by nailing and to steel mold by appropriate magnet, glue, or double-sided tape. Covering tape is removed and wire loop is bended out of the box after concreting.

9. **Special instructions for ensuring adequate fastening**

Wire loop must be perpendicular to box when concreting.

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

Annex 3 Static Calculation rev2 PVL EN + NA of Finland, 2.1.2019

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**

Annex 1 PVL® Connecting Loop, Technical Manual, 05/2019
13. Quality control

Peikko Finland Oy delivers content of quality control to Concrete Association of Finland. Peikko Finland Oy has given permission to deliver quality control records to Concrete Association of Finland.

14. Other information

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

   Annex 2   Manufacturing drawings 1.2.2019
   Annex 3   Static Calculation rev2 PVL EN + NA of Finland, 2.1.2019

16. Annexes (annex number, name, and publication date)

   Annex 1 PVL® Connecting Loop, Technical Manual, 05/2019

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

Lahti                     April 16th, 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