



## European Technical Assessment

ETA 12/0495  
of 14/07/2020

### General Part

**Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011:**

**Eurofins Expert Services Oy**

**Trade name of the construction product**

**Croco-512 Fastener,  
Croco A-110 Fastener,  
Croco B-110 Fastener,  
Croco A Adjustable Fastener,  
Croco B Adjustable Fastener**

**Product family to which the construction product belongs**

Fasteners for mechanically fastened flexible waterproofing systems

**Manufacturer**

**Vilpe Oy**  
Kauppatie 9  
FI-65610 Mustasaari  
Finland

**Manufacturing plant**

**Vilpe Oy**  
Kauppatie 9  
FI-65610 Mustasaari  
Finland

**This European Technical Assessment contains**

9 pages including 1 Annex which forms an integral part of this assessment.

**This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of**

EAD 030351-00-0402, Systems of mechanically fastened flexible roof waterproofing sheets

**This version replaces**

ETA 12/0495 issued 02/07/2015

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## Specific parts

### 1 Technical description of the product

Croco fasteners are composed of coloured polypropylene plastic washers and VILPE® KLA NO-1 and VILPE® KLA NO-3 steel screws, VILPE® TX25 or 6.5 x 150 concrete screws or VILPE® concrete nails depending on the substrate. Steel screws, concrete nails and concrete screws have zinc or Tufcote/Ruspert coating. The dimensions of the fastener and screw or nail are chosen depending on the thickness of the roof insulation. The length of the fastener can vary between 20 – 700 mm. Figures and dimensions of the products are in Annex 1.

The fastening system is introduced to the market separately from other components of roof waterproofing membrane kit, and this ETA covers only performance characteristics of the fastening systems.

### 2 Specification of the intended use in accordance with the applicable European Assessment Document (hereinafter EAD)

#### 2.1 Intended use

The products are intended to be used for fastening mechanically fastened flexible roof waterproofing and roof insulation to the load bearing roof substrate. The fasteners may be used for bituminous, rubber and plastic membranes.

#### 2.2 Working life

The provisions made in this European Technical Assessment are based on an assumed intended working life of the mechanical fastenings of 10 years, provided that product is subject to appropriate installation and maintenance.

The indication given as to the working life of the construction product cannot be interpreted as a guarantee neither given by the product manufacturer or his representative nor by the Technical Assessment Body issuing this ETA, but is regarded only as a means for expressing the expected economically reasonable working life of the product.

The completed building (the works) shall comply with the building regulations (regulations on the works) applicable in the Member States in which the building is to be constructed. The procedures foreseen in the Member State for demonstrating compliance with the building regulations shall also be followed by the entity held responsible for this act. This ETA does not amend this process in any way.

### 3 Performance of the product and references to the methods used for its assessment

Table 1. Basic requirements for construction works and essential characteristics

Basic requirement and essential characteristics	Assessment of characteristic	
BWR 2. Safety in case of fire		
Reaction to fire	Not assessed	
BWR 4. Safety and accessibility in use		
Fastener axial load	<b>Croco 512 Fastener</b>	
	<ul style="list-style-type: none"> <li>Aerated concrete, 500/4,0 Installation depth 50 mm, drill 12 mm</li> </ul>	0,61 kN
	<b>Croco A-110 Fastener</b> <b>Croco B-110 Fastener</b>	
	<ul style="list-style-type: none"> <li>Steel substrate, 0,72 mm, <math>R_m</math> 495 N/mm<sup>2</sup> VILPE® KLA NO-1 steel screw</li> </ul>	1,68 kN
	<ul style="list-style-type: none"> <li>Steel substrate 1,25 mm <math>R_m</math> 505 N/mm<sup>2</sup> VILPE® KLA NO-3 steel screw</li> </ul>	1,55 kN
	<ul style="list-style-type: none"> <li>Plywood substrate, 18 mm Density 724 kg/m<sup>3</sup> VILPE® KLA NO-1 steel screw Installation depth 15 mm to substrate</li> </ul>	1,59 kN
	<ul style="list-style-type: none"> <li>Concrete substrate, C25/30 VILPE® Concrete nail Installation depth 20 mm to substrate, drill 5 mm</li> </ul>	1,20 kN
	<ul style="list-style-type: none"> <li>Concrete substrate, C25/30 VILPE® Concrete screw TX25 Installation depth 20 mm to substrate, drill 5 mm</li> </ul>	1,45 kN
	<b>Croco A Adjustable Fastener</b> <b>Croco B Adjustable Fastener</b>	
<ul style="list-style-type: none"> <li>Concrete substrate, C25/30 Concrete screw 6.5 x 150 Installation depth 20 mm to substrate, drill 5 mm</li> </ul>	1,63 kN	
Resistance to fastener unwinding	Not assessed	
Mechanical resistance/brittleness of plastic fastener	Drop height 1,7 m	
Resistance to corrosion of metallic fasteners	Meets the requirements for 15 cycles (<15 % surface corrosion)	
Mechanical resistance after heat ageing of plastic fasteners	Drop height 1,7 m	

\* Values counted using  $\alpha=1$ ,  $k= 1,92$  (acc. Table D1 in EN 1990-2002) and 10 test results and the formula  
 $X_m = \alpha \cdot (X_m - k \cdot s)$

### 4 Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

According to the Decision 98/143/EC of the European Commission, the system of assessment and verification of constancy of performance is System 2+.

**5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD**

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at Eurofins Expert Services Oy.

Issued in Espoo on July 14, 2020  
by Eurofins Expert Services Oy

Tiina Ala-Outinen  
Manager, Certification and Inspection

Tiina Tirkkonen  
Senior Expert

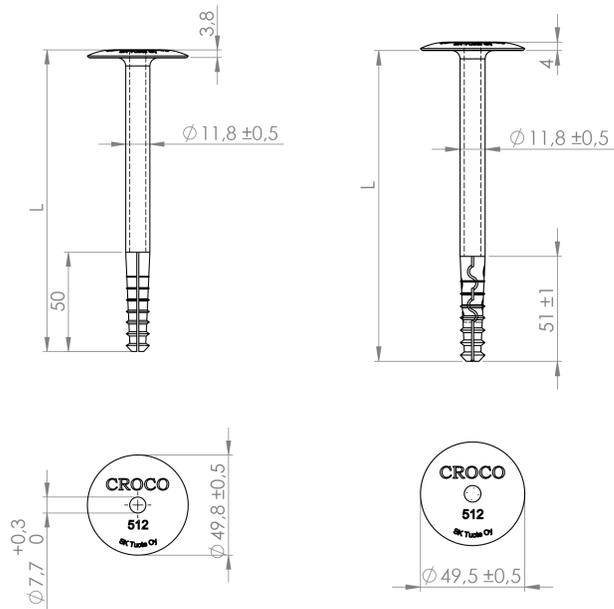


Figure 1 Croco 512 washer

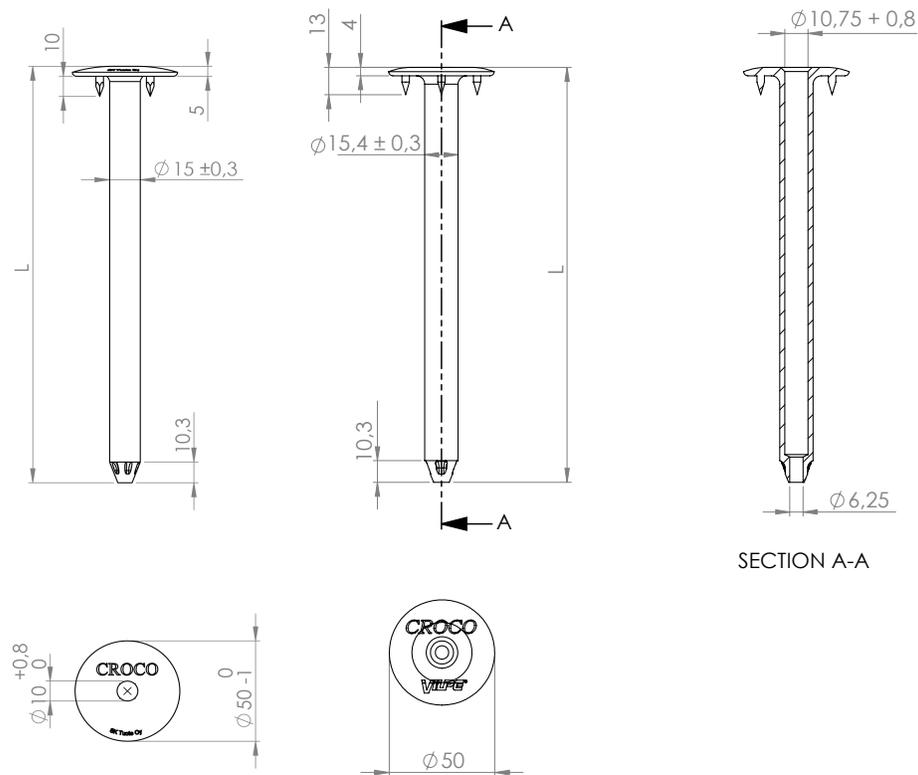
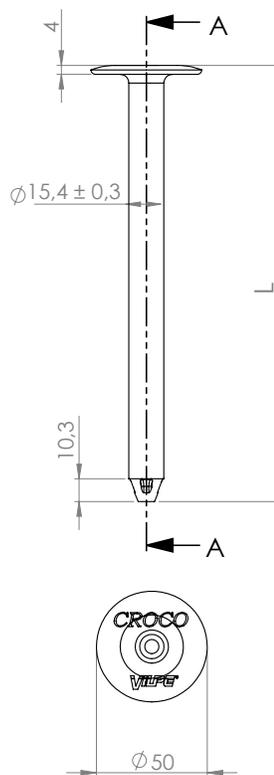
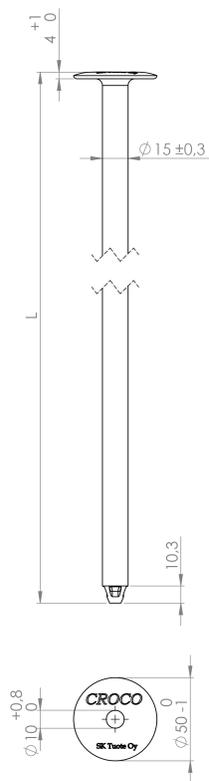


Figure 2. Croco A washer



Figure 3. Croco B washer



SECTION A-A

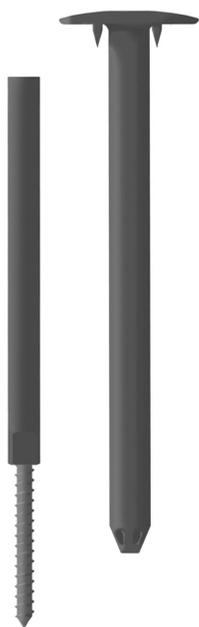
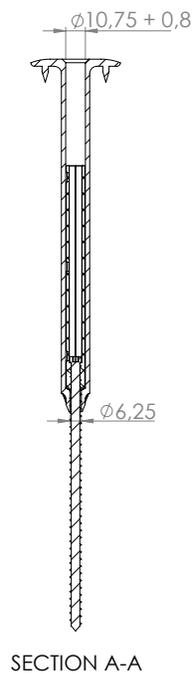
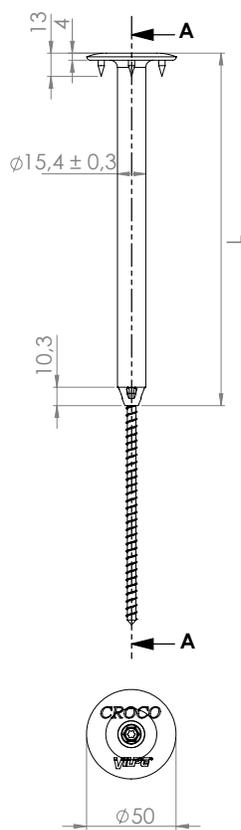


Figure 4. Croco A Adjustable Fastener



SECTION A-A

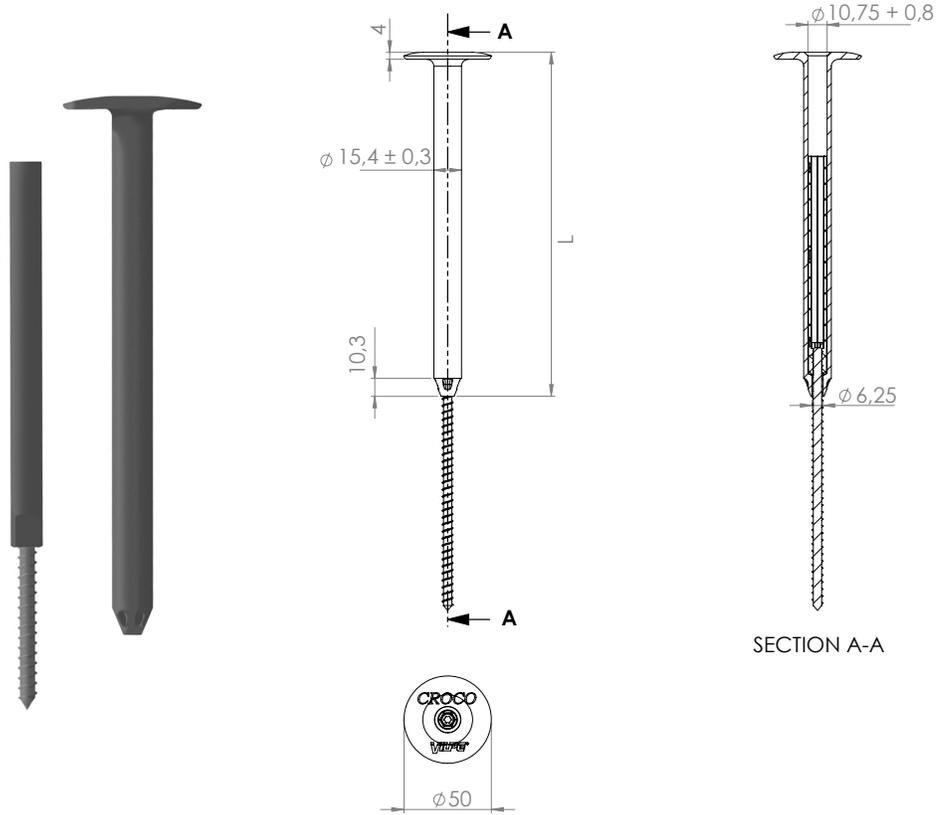


Figure 5. Croco B Adjustable Fastener

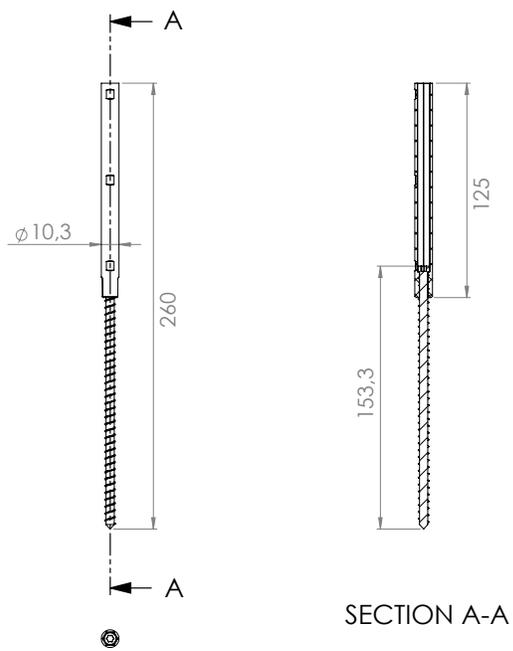


Figure 6. Croco Adjustable adjustment nut

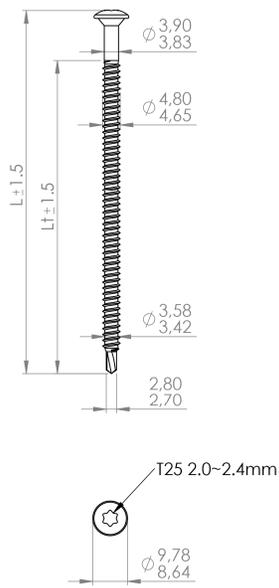


Figure 7. VILPE® KLA NO-1 screw

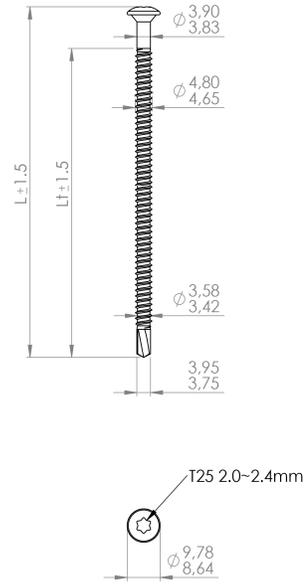


Figure 8. VILPE® KLA NO-3 screw

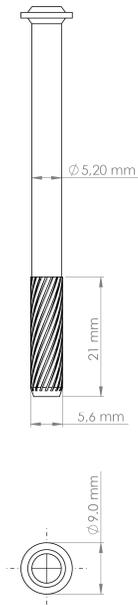


Figure 9. VILPE® Concrete nail

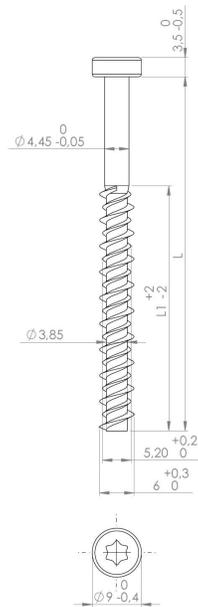


Figure 10. VILPE® Concrete screw TX25

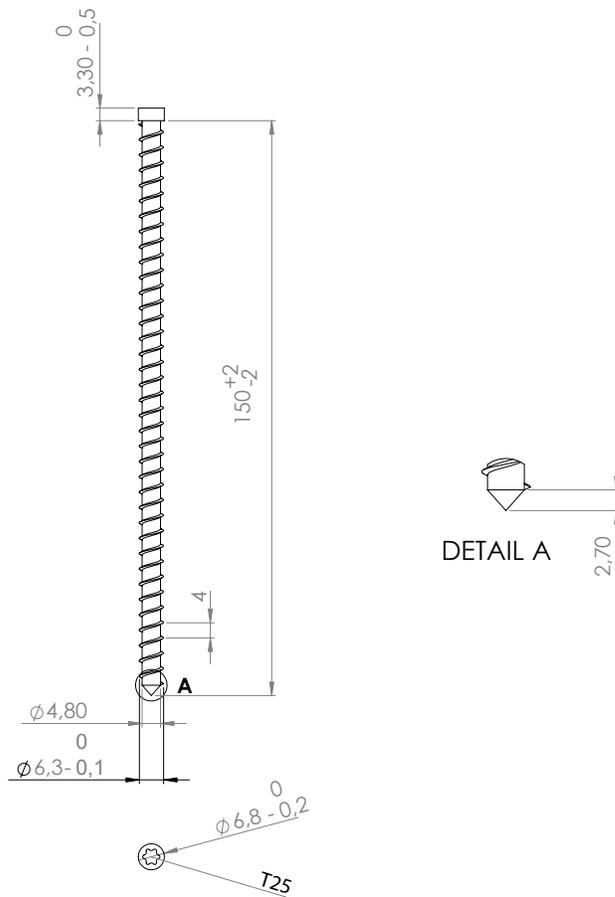


Figure 11. Concrete screw 6.5 x 150