

SINTEF confirms that

Eurofast Fastening System

has been found to be fit for use in Norway and to meet the provisions regarding product documentation given in the regulation relating to the marketing of products for construction works (DOK) and regulations on technical requirements for building works (TEK), with the properties, fields of application and conditions for use as stated in this document

1. Holder of the approval

Van Roij Fasteners Europe BV
 Jan Tooropstraat 16
 5753 DK Deume
 Netherlands

2. Product description

Eurofast Fastening System is a system for fastening of roof membranes to an underlay of steel sheets, and consists of a tube washer and a corresponding screw. Eurofast fastening plug TLK Ø45, see fig. 1, is made of injection moulded modified polypropylen.

The tube washer is fastened to the underlay of steel sheets using Eurofast Roofing Screw EDS-B-48, see fig. 2. The screw is made of organic coated steel.

3. Fields of application

Eurofast Fastening System is used for mechanical fastening of bituminous and polymeric roofing membranes on flat, compact roofs with a supporting construction of steel sheets.

4. Properties

Fastening capacity

Table 1 shows the capacities for Eurofast fastening plug TLK Ø45 when fastened in various roofing membranes.
 Table 2 shows the pull-out capacity for Eurofast Roofing Screw EDS-B-48 when fastened in steel sheets.

Corrosion protection

Eurofast Roofing Screw EDS-B-48 has corrosion protection corresponding to application category KLA as defined in Building Research Design Guide no. 544.206 *Mekanisk feste av asfalttakbelegg og takfolie på flate tak*, which corresponds to corrosion protection according to EAD 030351-00-0402, pkt. 2.2.3.4 and Annex 2, A2.4, 15 Kesternich-cycles.

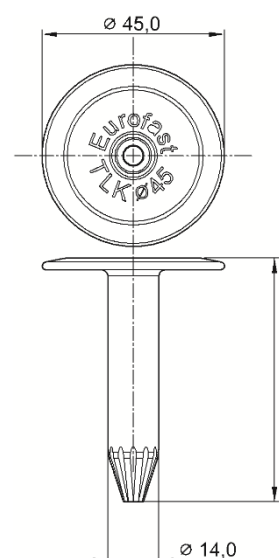


Fig. 1
 Eurofast fastening plug TLK Ø45

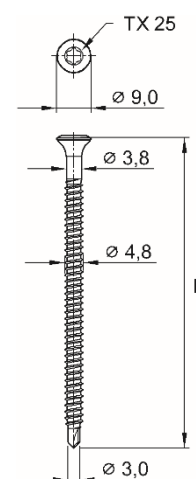


Fig. 2
 Eurofast Roofing Screw EDS-B-48

Table 1

Design axial capacity in ultimate limit state for Eurofast TLK Ø45 when fastened in various roofing membranes¹⁾

Roofing	Design capacity N/fastener
<i>Single layer bituminous membranes</i>	
Phønix Sveiseunderlagsmembran PTM DuraFlex (PF 3500 SBS)	800
Phønix Sveiseunderlagsmembran PTM DuraFlex Kombi (PF/GF 3500 SBS)	850
Icopal Base 511PG (DK) / 500PG	850
Icopal Base 411PG (DK)	850
Icopal Base (Malmø)	850
Icopal Mono PC	750
Binne PF 3000	500
Deboer PF/GF 3000 SBS T/F	800
Derbicolor	650
Derbigum SP FR	650
EshaFlex Top Mono N PG 5000	800
Isola Mestertekk	550
Technoelast K-MS 1 170/3000	550
Technoelast K-YS 5500	650
<i>Double layer bituminous membranes</i>	
Phønix double layer with Sveiseunderlagsmembran PF/GF 3500 SBS	800
Icopal double layer with Icopal Base 511 PG produced in denmark	750
Katepal two-layer system Base layer: K-MS 170/4000 Top Layer: K-PS 170/5000	850
<i>PVC membranes</i>	
Protan SE 1,2 roofing membrane	700
Protan SE 1,2 roofing membrane with flap	1000
Icopal Monarplan FM EM	750

¹⁾ The given design capacities shall be used both when the test results are given according to NT Build 307, EAD 030351-00-0402 and EN 16002 when a national safety factor of 1,3 is used for Norwegian conditions

Table 2

Design capacity in ultimate limit state for Eurofast Roofing Screw EDS-B-48, 4,8 mm plate screw when fastened in steel sheets

Plate thickness mm	Design capacity N/plug
0,75	830

Safety against self-unwinding

Eurofast Roofing Screw EDS-B-48 has been tested for safety against self-unwinding, and is considered to be safe in use.

Application properties

Eurofast Fastening System has been evaluated as being acceptable for use under the following conditions:

- Installation at air temperatures down to -20 °C.
- Oblique loading when fastened at the edge of membrane sheets or at flaps.
- Impact resistance at loads from movements in the membrane.
- Torch-on welding and moderate drying of asphalt roofing membrane
- Durability when applied together with PVC roofing membranes and bituminous roofing membrane.

5. Environmental aspects

Substances hazardous to health and environment

The product contains no hazardous substances with priority in quantities that pose any increased risk for human health and environment. Chemicals with priority include CMR, PBT or vPvB substances.

Waste treatment/recycling

The product shall be sorted as metal or residual waste on the building/demolition site. The product shall be delivered to an authorized waste treatment plant for material recovery or energy recovery.

Environmental declaration

No environmental declaration (EPD) has been worked out for the product.

6. Special conditions for use and installation

Calculation of fastening numbers shall be carried out as shown in Building Research Design Guide no. 544.206 or in "TPF Informer nr. 5" (TPF Informs no. 5), based on the design capacity in Table 1 and 2. The lowest value in Table 1 and 2 shall always be used.

It is in general recommended that the steel sheet thickness is minimum 0,7 mm when the roofing membrane is fastened to steel sheets. In particularly exposed areas, the recommended minimum thickness is 0,8 mm. On site pull-out tests should be performed in cases of re-roofing where it may be difficult to assess the quality of the substructure.

7. Factory production control

The product is produced by Van Roij Fasteners Europe BV, Jan Tooropstraat 16, 5753 DK Deume, Netherlands.

The holder of the approval is responsible for the factory production control in order to ensure that the product is produced in accordance with the preconditions applying to this approval.

The manufacturing of the product is subject to continuous surveillance of the factory production control in accordance with the contract regarding SINTEF Technical Approval.

8. Basis for the approval

Fastening capacity in roofing membranes

The fastening capacity in various roofings is based on test results from wind load tests according to method Nordtest NT Build 307 and EN 16002. The test results are documented in

- SINTEF Building and research institute, report B21965 dated 31.03.2009
- SINTEF Building and research institute report 102000544-2 dated 20.01.2015
- Constructech Sweden AB, report 20190826-240-2, dated 30.08.2019

Fastening capacity in the underlay

Fastening capacity in steel sheets is based on test results according to EAD 030351-00-0402. The test results are documented in

- INTRON Certificatie B.V., report BU2005-23395-RWo dated 29.11.2005

Durability

The corrosion protection for plug and screw has been tested according to EAD 030351-00-0402. The test results are documented in

- INTRON Certificatie B.V., report BU2005-23395-RWo dated 29.11.2005

Eurofast Fastening plug TLK Ø45 has been tested with respect to durability in use together with bitumenous roofing membrane and polymeric roofing membrane, and is documented in

- SINTEF Building and research institute, report B21965 dated 21.11.2008

9. Marking

The fastening plug shall be marked with approval holder's product name. Eurofast Roofing Screw has "EF" headmarking. All packages are marked with product designation and time of manufacture.

The product is CE marked in accordance with ETA 06/0007

The approval mark for SINTEF Technical Approval No. 2607 may also be used.



Approval mark

10. Liability

The holder/manufacture has sole product responsibility according to existing law. Claims resulting from the use of the product cannot be brought against SINTEF beyond the provisions of Norwegian Standard NS 8402

for SINTEF

Hans Boye Skogstad
Approval Manager