

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-07/0013
of 4 April 2022

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

EJOT Flat Roof Fasteners

Product family
to which the construction product belongs

Fasteners for flexible roof waterproofing membrane
systems

Manufacturer

EJOT SE & Co. KG
MU Construction
In der Stockwiese 35
57334 Bad Laasphe
DEUTSCHLAND

Manufacturing plant

EJOT Factories

This European Technical Assessment
contains

61 pages including 56 annexes which form 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

This version replaces

ETA-07/0013 issued on 17 March 2017

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Specific part

1 Technical description of the product

The products are mechanical fasteners. The fasteners comprise a screw made of coated carbon steel or stainless steel and either a washer with or without integrated sleeve or a bar. The washers without integrated sleeve are made of coated carbon or stainless steel whereas the washers with integrated sleeve are made of plastic materials (polyamide or polyethylene). The bars are made of coated carbon steel.

The fasteners are shown in the Annexes to this ETA.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The fasteners are intended to be used for the fastening of flexible roof waterproofing membranes according to EAD 030351-00-0402. The possible substrates are steel decks, concrete, aerated concrete, light concrete, timber or wood-based material, sheets of steel and aluminium as well as sandwich panels.

The performances given in section 3.2 are only valid if the fasteners are used in compliance with the specifications and conditions given in sections 3.1 and 3.3 and the Annexes to this ETA.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the fasteners of at least 10 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

In order to use the fasteners for systems of mechanically fastened flexible roof waterproofing membranes according to EAD 030351-00-0402 a separate ETA is necessary for the entire roof waterproofing system. The system ETA covers the wind uplift resistance of the entire system as well as the product characteristics of the components of the system.

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

3.1 Characteristics of the product

The fasteners shall correspond to the information given in Annexes 1 to 16.

The material properties, dimensions and tolerances not indicated in Annexes 1 to 16 shall correspond to the information laid down in the technical information¹ to this European technical approval.

¹ The technical documentation is deposited with Deutsches Institut für Bautechnik and as far as relevant for the tasks of the approved bodies involved in the attestation of conformity procedure is handed over to the approved bodies.

3.2 Safety and accessibility in use (BWR 4)

| Essential characteristic | Performance |
|---|---|
| Characteristic tensile loading | See Annexes 1a to 16a |
| Resistance to unwinding | pass |
| Resistance to corrosion of metallic fasteners | pass; ≤ 15 % surface corrosion |
| Impact resistance and brittleness of plastic fasteners (before and after heat ageing) | pass; drop height > 1,0 m |
| Requirements for results of Charpy tests for plastic materials (before and after heat ageing) | pass; not any decline compared to the results before heat ageing |

The thickness and strengths of the materials listed in the tables of characteristic tensile loads (Annexes 1a to 16a) are minimum requirements. The values given are also applicable for materials with higher thickness and strengths.

The values of axial loading shown in Annexes 1a to 16a were determined by axial loading tests according to EAD 030351-00-0402.

The fasteners are deemed to satisfy the requirements of EAD 030351-00-0402 concerning unwinding. This was evaluated on the basis of the existing field experience of the manufacturer.

The durability requirements of EAD 030351-00-0402 (resistance to corrosion of metallic fasteners, impact resistance and brittleness of plastic fasteners before and after heat ageing, requirements for results of Charpy tests for plastic materials before and after heat ageing) are satisfied for the coated carbon steel, stainless steel, polyamide and polyethylene components of the fasteners.

All coated carbon steel components resisted to 15 cycles of the test procedure described in EAD 030351-00-0402 (Kesternich test) and did not show more than 15 % surface corrosion.

The test results of the tests to check the impact resistance and brittleness of the polyamide and polyethylene components showed a drop height of more than 1.0 m before and after heat ageing of these components. Furthermore, the results of the corresponding Charpy tests after heat ageing did not show any decline compared to the results before heat ageing.

3.3 Indications concerning installation

The installation is solely carried out according to the manufacturer's instructions. When assembling the fastener's components, the screw thread penetrating into the substrate shall not be damaged.

The manufacturer hands over the assembly instructions to the assembler. The conformity of the installed fastener with this ETA is attested by the executing company.

It is in the responsibility of the manufacturer to ensure that the information on the specific conditions according to sections 1, 2, 3.1 and 3.2 is given to those who are concerned.

The information may be given by reproduction of the ETA. In addition, all installation data shall be shown clearly on the package and/or on an enclosed instruction sheet, preferably using illustrations.

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

In accordance with EAD 030351-00-0402 the applicable European legal act is: 1998/143/EC.
The system to be applied is: 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 with Deutsches Institut für Bautechnik.

Issued in Berlin on 4 April 2022 by Deutsches Institut für Bautechnik

Andreas Schult
Head of Section

beglaubigt:
Reimuth

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| Screw | Description (Technical data or Washer / Rail-system) | Combination | Annex |
|---|--|-------------|-------|
| SW8-R-4,8xL SW8-RT-4,8xL SW8-ET-4,8xL | Technical data | - | 1 a |
| | HTV 82/40; HTE 82/40; HTV 82/40 F; HTE 82/40 F | 1.1 - 1.12 | 1 b |
| | FP Ø7,0mm; SIKA Sarnabar® Ø6,0mm | 1.13 - 1.18 | 1 c |
| TKR-4,8xL TKE-4,8xL | Technical data | - | 2 a |
| | HTV 82/40 TK; HTE 82/40 TK; HTV 82/40 F; HTE 82/40 F; HTV 40 RU 6,5; HTE 40 RU 6,5 | 2.1 - 2.12 | 2 b |
| | HTK2G 50xL; HTK2G 75xL | 2.13 - 2.16 | 2 c |
| | EcoTek 50xL; EcoTek T 50xL | 2.17 - 2.20 | 2 d |
| | FP Ø7,0mm; FP Ø14,5mm + HTK-S 20xL | 2.21 - 2.24 | 2 e |
| | SIKA Sarnabar® Ø6,0mm | 2.25 - 2.26 | 2 f |
| TKR-4-4,8xL | Technical data | - | 3 a |
| | HTV 82/40 TK; HTE 82/40 TK; HTV 82/40 F; HTE 82/40 F; HTV 40 RU 6,5; HTE 40 RU 6,5 | 3.1 - 3.6 | 3 b |
| | HTK2G 50xL; HTK2G 75xL | 3.7 - 3.8 | 3 c |
| | EcoTek 50xL; EcoTek T 50xL | 3.9 - 3.10 | 3 d |
| | FP Ø7,0mm; FP Ø14,5mm + HTK-S 20xL | 3.11 - 3.12 | 3 e |
| | SIKA Sarnabar® Ø6,0mm | 3.13 | 3 f |
| VHT-R-4,8xL VHT-E-4,8xL | Technical data | - | 4 a |
| | HTV 82/40 TK; HTE 82/40 TK; HTV 82/40 F; HTE 82/40 F; HTV 40 RU 6,5; HTE 40 RU 6,5 | 4.1 - 4.12 | 4 b |
| | HTK2G 50xL; HTK2G 75xL | 4.13 - 4.16 | 4 c |
| | EcoTek 50xL; EcoTek T 50xL | 4.17 - 4.20 | 4 d |
| | FP Ø7,0mm; FP Ø14,5mm + HTK-S 20xL | 4.21 - 4.24 | 4 e |
| | SIKA Sarnabar® Ø6,0mm | 4.25 - 4.26 | 4 f |
| ZTR-2-4,9/6,0xL | Technical data | - | 5 a |
| | HTK2G 50xL; HTK2G 75xL | 5.1 - 5.2 | 5 b |
| | FP Ø14,5mm + HTK-S 20xL | 5.3 | 5 c |
| TKR-ZT6-5,5xL | Technical data | - | 6 a |
| | HTV 82/40 F; HTE 82/40 F; HTV 40 RU 6,5; HTE 40 RU 6,5; FP Ø7,0mm | 6.1 - 6.5 | 6 b |
| | EcoTek 50xL; EcoTek T 50xL | 6.6 - 6.7 | 6 c |
| JT2-ST-2-6,0xL JT3-ST-2-6,0xL | Technical data | - | 7 a |
| | HTV 82/40 F; HTE 82/40 F; HTV 40 RU 6,5; HTE 40 RU 6,5 | 7.1 - 7.8 | 7 b |
| | EcoTek 50xL; EcoTek T 50xL | 7.9 - 7.12 | 7 c |
| | FP Ø7,0mm; SIKA Sarnabar® Ø6,0mm | 7.13 - 7.16 | 7 d |
| JT2-ST-2-6,8xL JT3-ST-2-6,8xL | Technical data | - | 8 a |
| | HTV 82/40 F; HTE 82/40 F; HTV 40 RU 6,5; HTE 40 RU 6,5; FP Ø7,0mm | 8.1 - 8.10 | 8 b |
| | EcoTek 50xL; EcoTek T 50xL | 8.11 - 8.14 | 8 c |
| FBS-R-6,3xL | Technical data | - | 9 a |
| | HTV 82/40 F; HTE 82/40 F; HTV 40 RU 6,5; HTE 40 RU 6,5; FP Ø7,0mm | 9.1 - 9.5 | 9 b |
| | EcoTek 50xL; EcoTek T 50xL | 9.6 - 9.7 | 9 c |

EJOT Flat Roof Fasteners

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Annex I.1

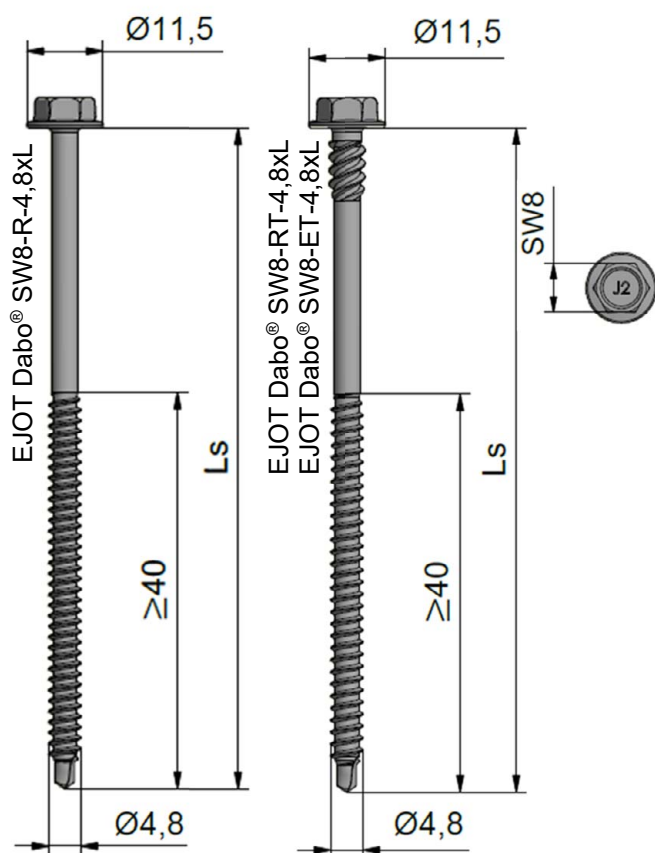
Table of contents:

| Screw | Description (Technical data or Washer / Rail-system) | Combination | Annex |
|---|---|---------------|-------|
| JBS-R-7,5xL JBS-E-7,5xL | Technical data | - | 10 a |
| | HTV 82/40 F; HTE 82/40 F; FP Ø7,0mm | 10.1 - 10.6 | 10 b |
| | EcoTek 50xL; EcoTek T 50xL | 10.7 - 10.10 | 10 c |
| FPS-R-8,0xL FPS-E-8,0xL | Technical data | - | 11 a |
| | HTV 82/40 F; HTE 82/40 F; HTV 40 RU 6,5; HTE 40 RU 6,5 | 11.1 - 11.8 | 11 b |
| | EcoTek 50xL; EcoTek T 50xL | 11.9 - 11.12 | 11 c |
| | FP Ø7,0mm; SIKA Sarnabar® Ø6,0mm | 11.13 - 11.16 | 11 d |
| SDF-S-10HxL-E | Technical data | - | 12 a |
| | FP Ø10,5mm | 12.1 | 12 b |
| SDP-S-10GxL-E | Technical data | - | 13 a |
| | FP Ø10,5mm | 13.1 | 13 b |
| | | | |
| Fastener | Description (Technical data or Figure of construction) | Combination | Annex |
| HTV-RU-40/L-W | Technical data | - | 14 a |
| | Figure of construction | 14.1 | 14 b |
| FDD-Plus-S-50xL-R FDD-Plus-S-50xL-E | Technical data | - | 15 a |
| | Figure of construction | 15.1 - 15.2 | 15 b |
| FDD-Plus-50xL-R FDD-Plus-50xL-E | Technical data | - | 16 a |
| | Figure of construction | 16.1 - 16.4 | 16 b |
| <p>Examples for combinations: Combination 10.1 = JBS-R-7,5xL with HTV 82/40 F Combination 11.8 = FPS-E-8,0xL with HTE 40 RU 6,5</p> | | | |

EJOT Flat Roof Fasteners

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Annex I.2



Screw:

EJOT Dabo® SW8-R-4,8xL
EJOT Dabo® SW8-RT-4,8xL
EJOT Dabo® SW8-ET-4,8xL

Washer / Rail-system:

EJOT® HTV 82/40
EJOT® HTE 82/40
EJOT® HTV 82/40 F
EJOT® HTE 82/40 F
EJOT® FP Ø7,0mm
SIKA Sarnabar® Ø6,0mm

Substrate:

| | | |
|--------------|-------------------------------|------------|
| Steel S320GD | | EN 10346 |
| Timber / C24 | $\rho_{min}=350\text{kg/m}^3$ | EN 338 |
| Plywood | $\rho_{min}=400\text{kg/m}^3$ | EN 12369-2 |
| OSB/3 | $\rho_{min}=550\text{kg/m}^3$ | EN 12369-1 |

Technical data:

| | |
|-------------------------------|-------|
| max. drilling capacity steel: | 1,5mm |
| Screw drive: | SW8 |

Characteristic Values of Axial Pull-Out Resistance [kN] (acc. to Fig. 3 of EAD 030351-00-0402)

| t [mm] | Steel S320GD* | | | | | C24 | Plywood | OSB/3 |
|--------------|---------------|------|------|------|--------|------|---------|-------|
| | 0,63 | 0,70 | 0,75 | 0,80 | ≥ 0,88 | | | |
| SW8-R-4,8xL | 0,96 | 1,20 | 1,38 | 1,48 | 1,51 | 1,62 | 1,87 | 1,12 |
| SW8-RT-4,8xL | 0,96 | 1,20 | 1,38 | 1,48 | 1,51 | 1,62 | 1,87 | 1,12 |
| SW8-ET-4,8xL | 0,96 | 1,20 | 1,38 | 1,48 | 1,51 | 1,62 | 1,87 | 1,12 |

* when using S280GD, the values must be reduced to 92 %

** effective minimum screw-in depth (screw-in depth of the thread), or minimum plate thickness

Characteristic Values of Axial Pull-Through* Resistance [kN]** (acc. to Fig. 4+5 of EAD 030351-00-0402)

| | HTV 82/40 HTE 82/40 | HTV 82/40 F HTE 82/40 F | EJOT® FP Ø7,0mm | SIKA Sarnabar® Ø6,0mm |
|--------------|------------------------|----------------------------|--------------------|--------------------------|
| SW8-R-4,8xL | 4,49 | 1,78 | 3,65 | 3,65 |
| SW8-RT-4,8xL | 4,49 | 1,78 | 3,65 | 3,65 |
| SW8-ET-4,8xL | 4,49 | 1,78 | 3,65 | 3,65 |

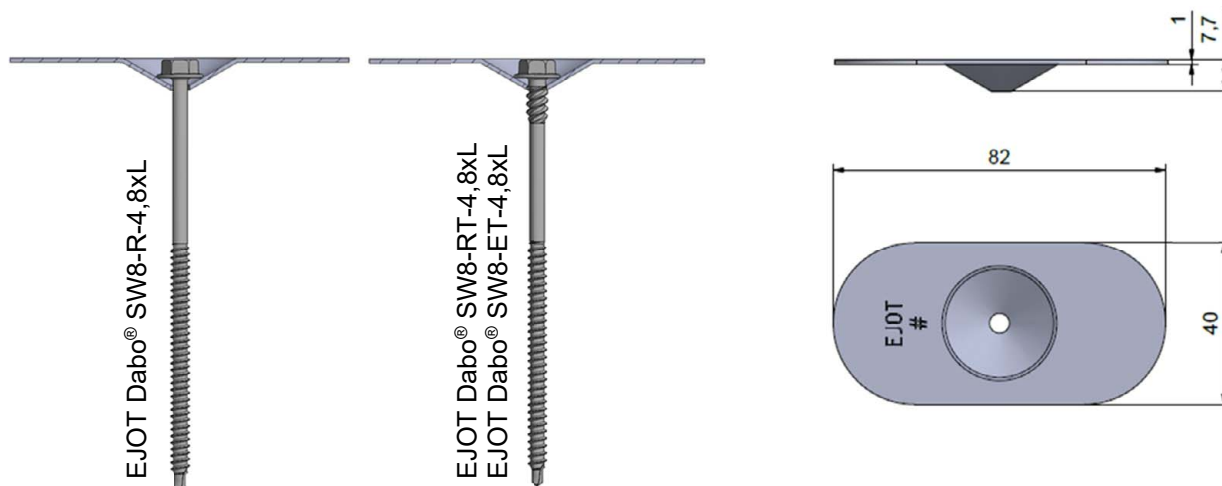
*** "Pull-over" acc. to CEN/TS 17659:2021

EJOT Flat Roof Fasteners

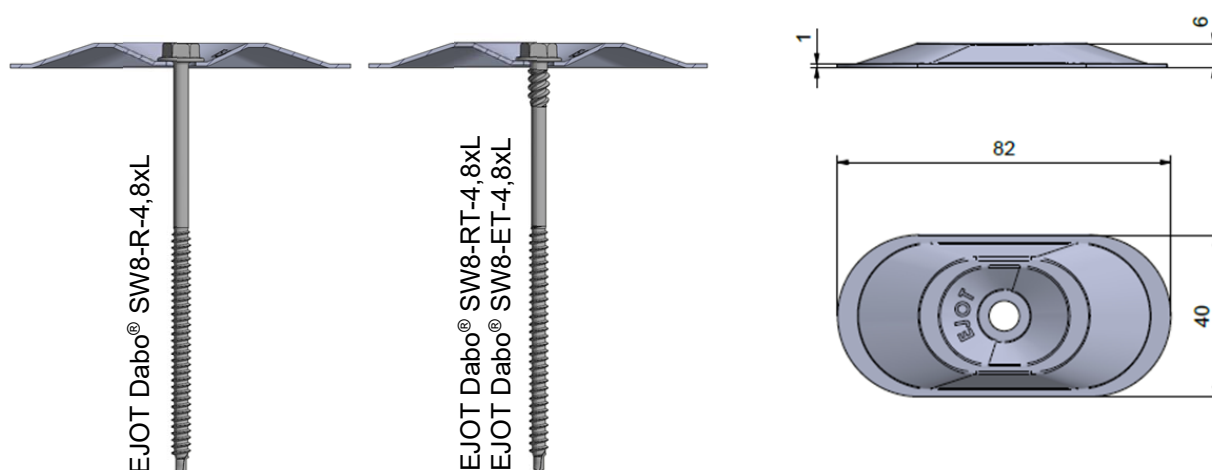
Screw: EJOT Dabo® SW 8 R - 4,8 x Ls
EJOT Dabo® SW 8 RT - 4,8 x Ls
EJOT Dabo® SW 8 ET - 4,8 x Ls

Annex 1 a

EJOT® HTV 82/40 or EJOT® HTE 82/40



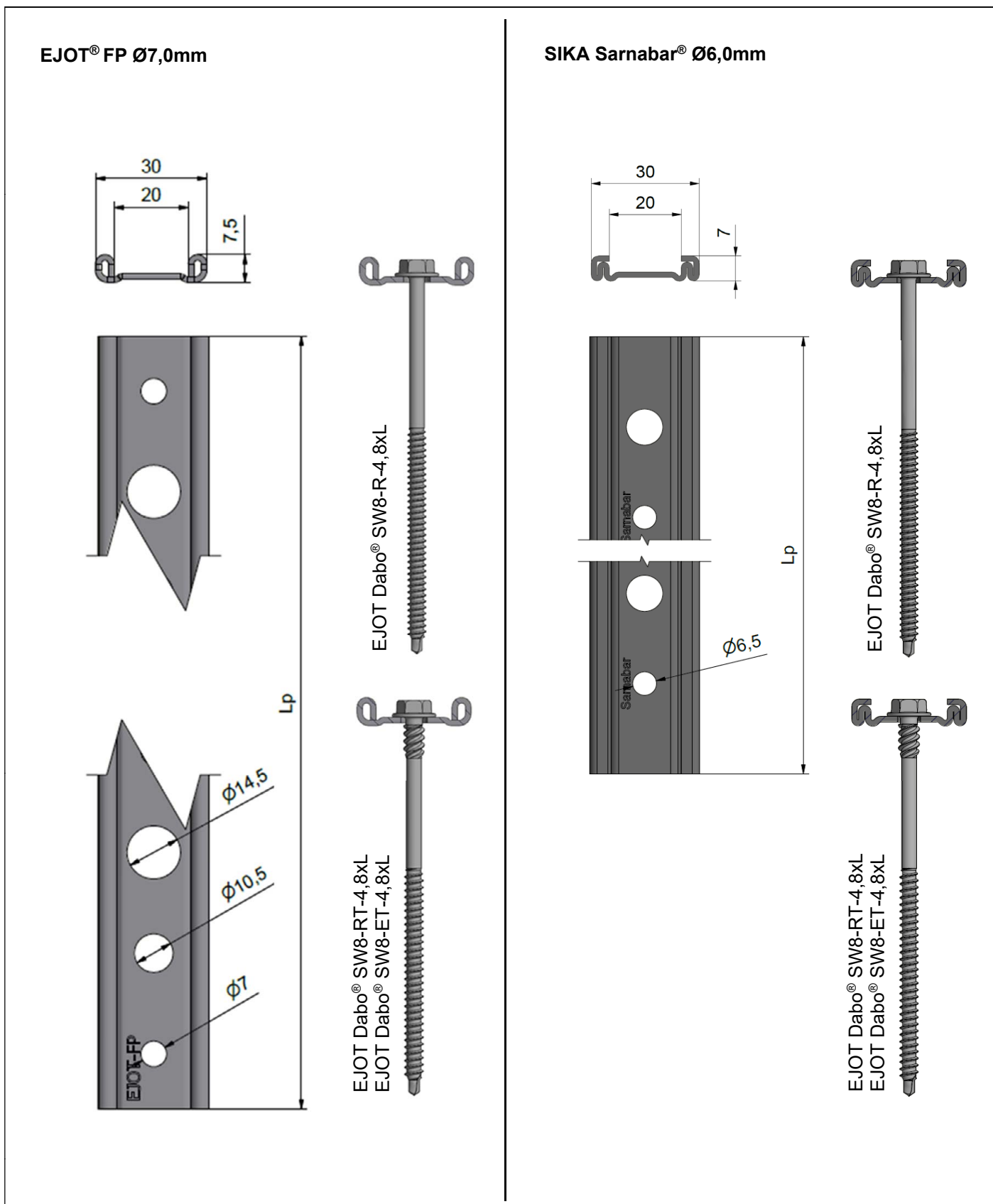
EJOT® HTV 82/40 F or EJOT® HTE 82/40 F



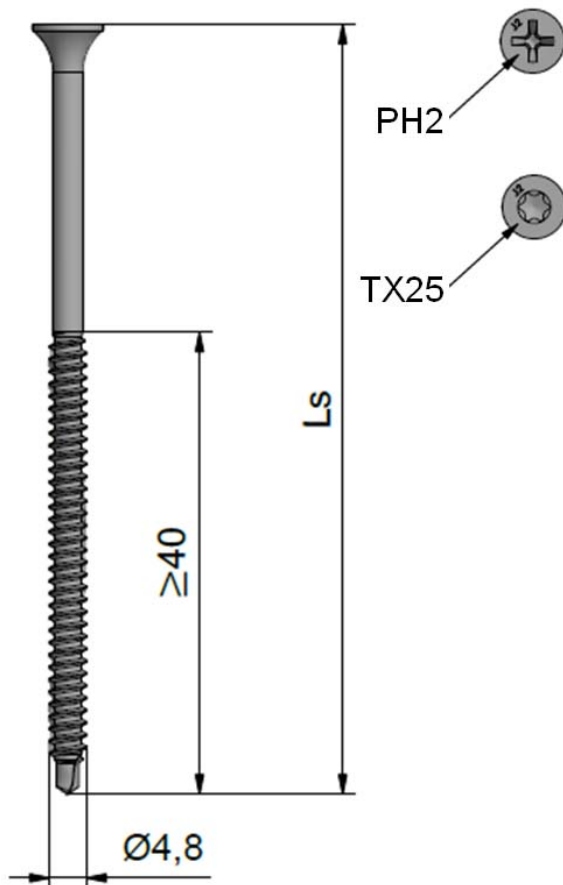
EJOT Flat Roof Fasteners

Combination: 1.1 – 1.12

Annex 1 b



| | |
|--------------------------|-----------|
| EJOT Flat Roof Fasteners | Annex 1 c |
| Combination: 1.13 – 1.18 | |



Screw:

EJOT Dabo® TKR-4,8xL
EJOT Dabo® TKE-4,8xL

Washer / Rail-system:

EJOT® HTV 82/40 TK
EJOT® HTE 82/40 TK
EJOT® HTV 82/40 F
EJOT® HTE 82/40 F
EJOT® HTV 40 RU 6,5mm
EJOT® HTE 40 RU 6,5mm
EJOT® HTK 2G 50xL
EJOT® HTK 2G 75xL
EJOT® EcoTek 50xL
EJOT® EcoTek T 50xL
EJOT® FP Ø7,0mm
/ Ø14,5mm + HTK-S 20xL
SIKA Sarnabar® Ø6,0mm

Substrate:

| | | |
|--------------|--------------------------------|------------|
| Steel S320GD | | EN 10346 |
| Timber / C24 | $\rho_{\min}=350\text{kg/m}^3$ | EN 338 |
| Plywood | $\rho_{\min}=400\text{kg/m}^3$ | EN 12369-2 |
| OSB/3 | $\rho_{\min}=550\text{kg/m}^3$ | EN 12369-1 |

Technical data:

max. drilling capacity steel: 1,5mm
Screw drive: PH2 / TX2

Characteristic Values of Axial Pull-Out Resistance [kN] (acc. to Fig. 3 of EAD 030351-00-0402)

| | Steel S320GD* | | | | | C24 | Plywood | OSB/3 |
|-----------|---------------|------|------|------|------|------|---------|-------|
| | t [mm] | 0,63 | 0,70 | 0,75 | 0,80 | | | |
| TKR-4,8xL | 0,96 | 1,20 | 1,38 | 1,48 | 1,51 | 1,62 | 1,87 | 1,12 |
| TKE-4,8xL | 0,96 | 1,20 | 1,38 | 1,48 | 1,51 | 1,62 | 1,87 | 1,12 |

* when using S280GD, the values must be reduced to 92 %

** effective minimum screw-in depth (screw-in depth of the thread), or minimum plate thickness

Characteristic Values of Axial Pull-Through* Resistance [kN]** (acc. to Fig. 4+5 of EAD 030351-00-0402)

| | HTV 82/40 TK HTE 82/40 TK | HTV 82/40 F HTE 82/40 F | HTV 40 RU 6,5mm HTE 40 RU 6,5mm | HTK 2G 50xL HTK 2G 75xL | EcoTek 50xL EcoTek T 50xL | EJOT® FP Ø7,0mm | EJOT® FP Ø14,5mm + HTK-S 20xL | SIKA Sarnabar® Ø6,0mm |
|-----------|------------------------------|----------------------------|--|----------------------------|------------------------------|--------------------|--|-----------------------------|
| TKR-4,8xL | 3,27 | 1,78 | 1,73 | 1,20 | 1,58 | 3,65 | 2,25 | 3,65 |
| TKE-4,8xL | 3,27 | 1,78 | 1,73 | 1,20 | 1,58 | 3,65 | 2,25 | 3,65 |

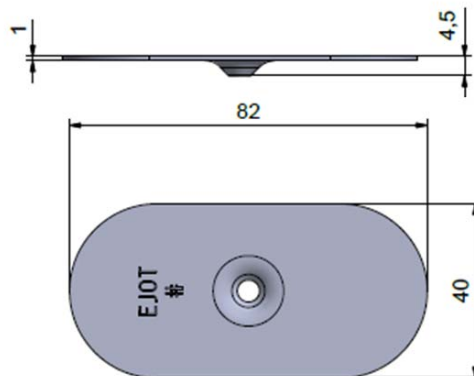
*** "Pull-over" acc. to CEN/TS 17659:2021

EJOT Flat Roof Fasteners

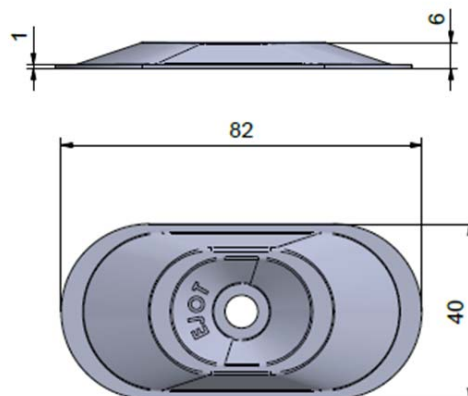
Screw: EJOT Dabo® TKR - 4,8 x Ls
EJOT Dabo® TKE - 4,8 x Ls

Annex 2 a

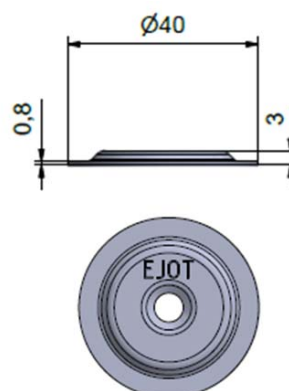
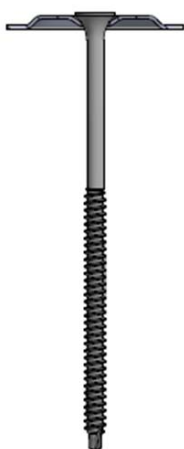
EJOT® HTV 82/40 TK or EJOT® HTE 82/40 TK



EJOT® HTV 82/40 F or EJOT® HTE 82/40 F



EJOT® HTV 40 RU 6,5mm or EJOT® HTE 40 RU 6,5mm

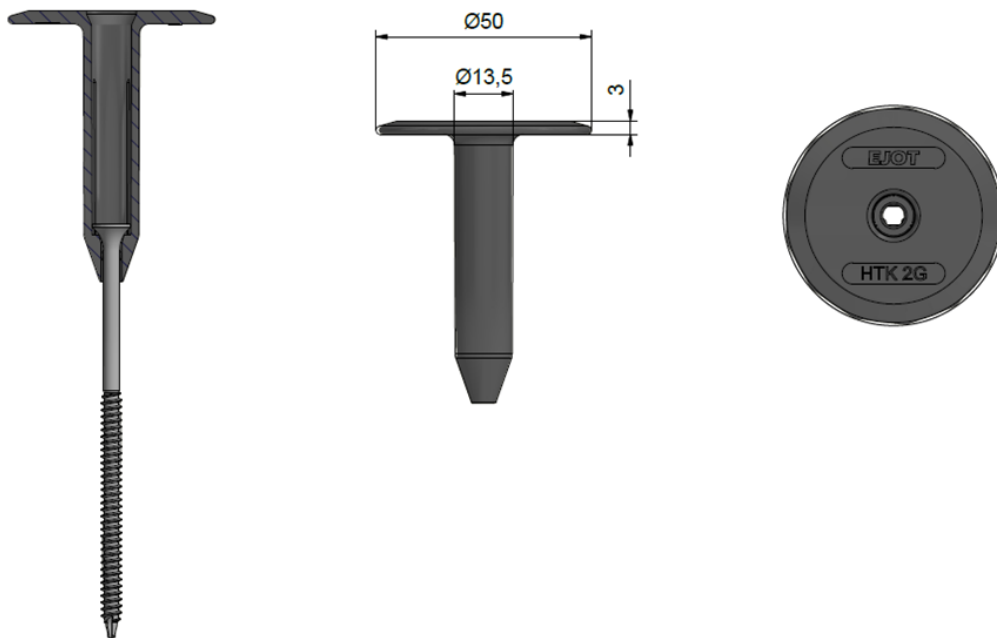


EJOT Flat Roof Fasteners

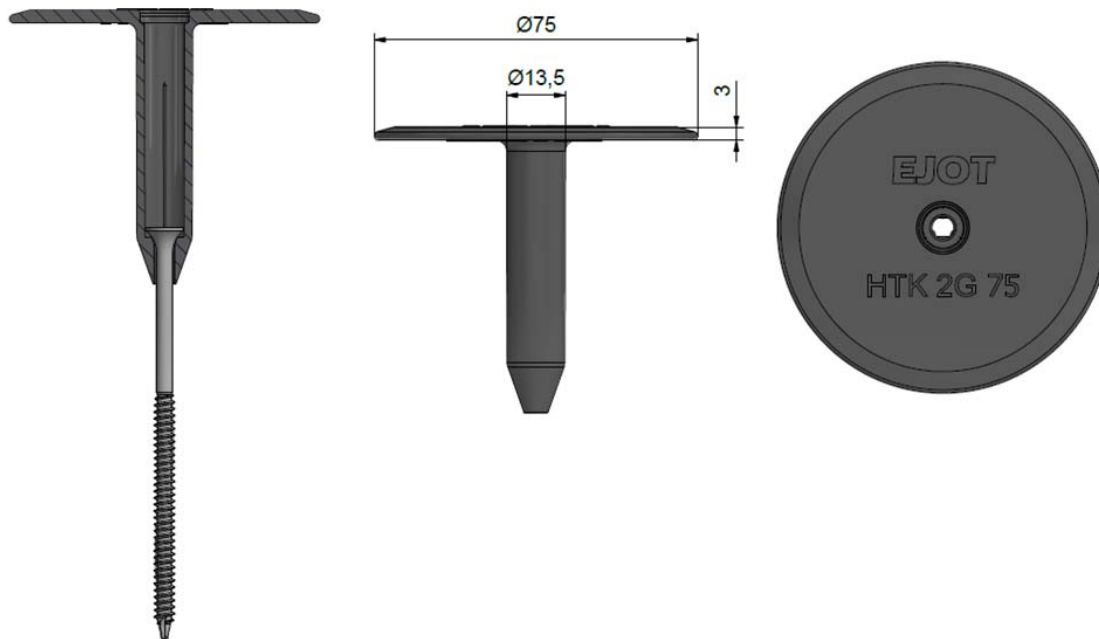
Combination: 2.1 – 2.12

Annex 2 b

EJOT® HTK 2G 50xL



EJOT® HTK 2G 75xL

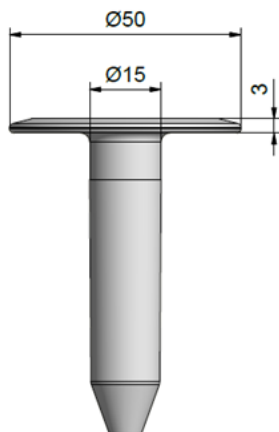
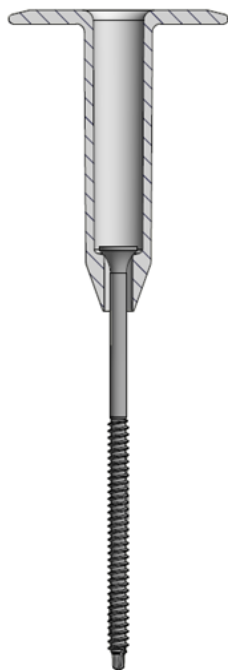


EJOT Flat Roof Fasteners

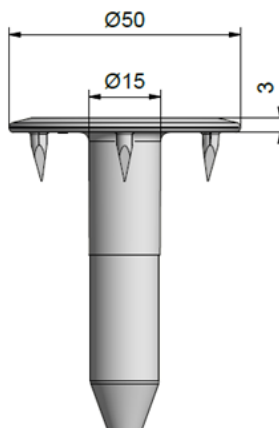
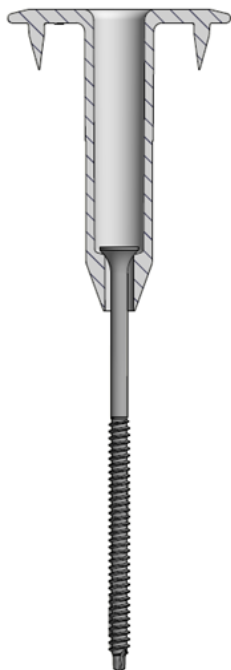
Combination: 2.13 – 2.16

Annex 2 c

EJOT® EcoTek 50xL



EJOT® EcoTek T 50xL

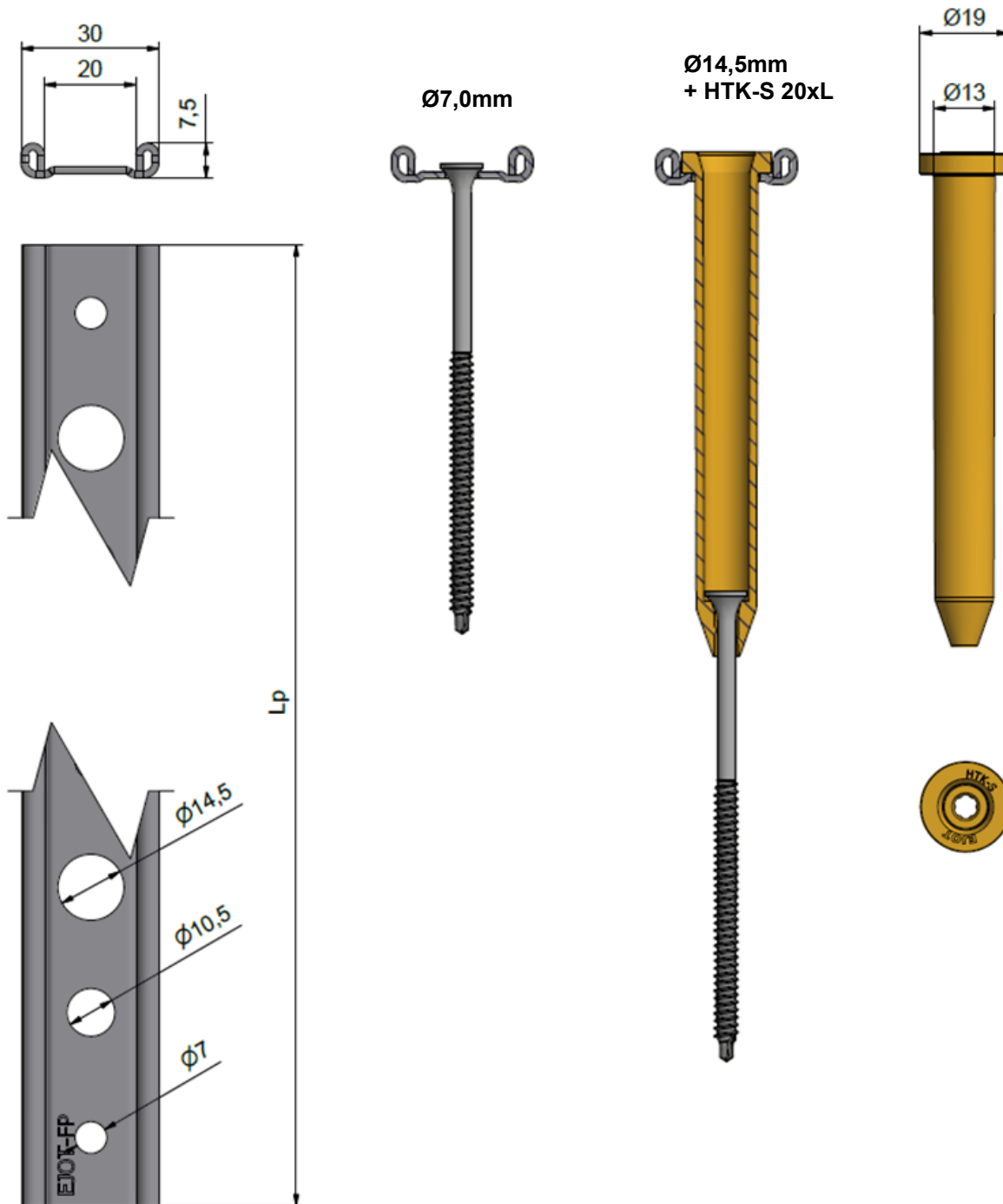


EJOT Flat Roof Fasteners

Combination: 2.17 – 2.20

Annex 2 d

EJOT® FP

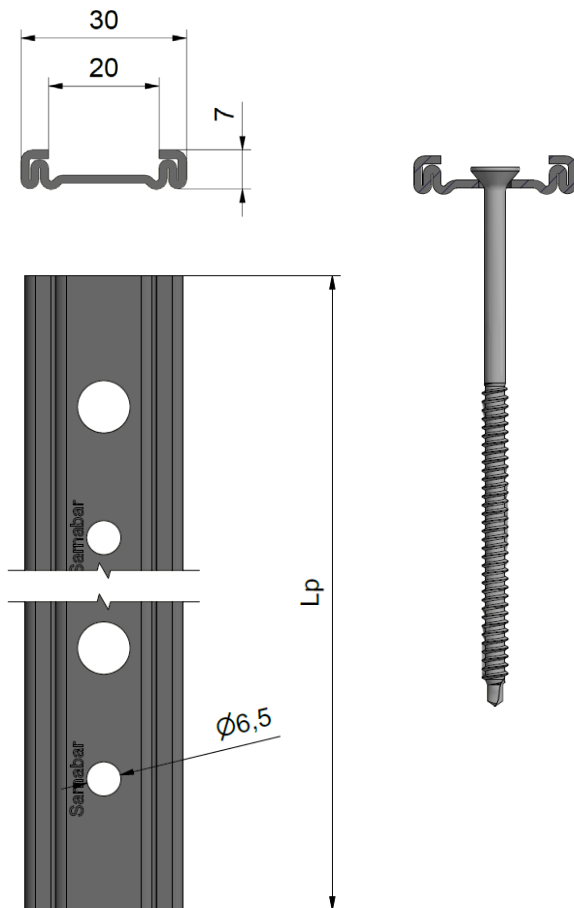


EJOT Flat Roof Fasteners

Combination: 2.21 – 2.24

Annex 2 e

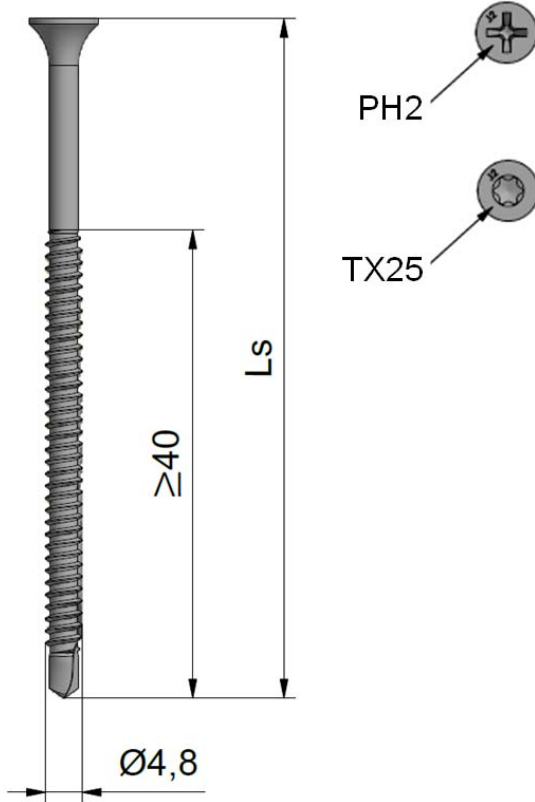
SIKA Sarnabar® Ø6,0mm



EJOT Flat Roof Fasteners

Combination: 2.25 – 2.26

Annex 2 f



Screw:

EJOT Dabo® TKR-4-4,8xL

Washer / Rail-system:

EJOT® HTV 82/40 TK
EJOT® HTE 82/40 TK
EJOT® HTV 82/40 F
EJOT® HTE 82/40 F
EJOT® HTV 40 RU 6,5mm
EJOT® HTE 40 RU 6,5mm
EJOT® HTK 2G 50xL
EJOT® HTK 2G 75xL
EJOT® EcoTek 50xL
EJOT® EcoTek T 50xL
EJOT® FP Ø7,0mm
/ Ø14,5mm + HTK-S 20xL
SIKA Sarnabar® Ø6,0mm

Substrate:

Steel S320GD EN 10346

Technical data:

max. drilling capacity steel: 4mm
Screw drive: PH2 / TX25

Characteristic Values of Axial Pull-Out Resistance [kN] (acc. to Fig. 3 of EAD 030351-00-0402)

| Steel S320GD* | |
|---------------|--------|
| t [mm] | ≥ 1,50 |
| TKR-4-4,8xL | 2,42 |

* when using S280GD, the values must be reduced to 92 %

Characteristic Values of Axial Pull-Through* Resistance [kN]** (acc. to Fig. 4+5 of EAD 030351-00-0402)

| | HTV 82/40 TK HTE 82/40 TK | HTV 82/40 F HTE 82/40 F | HTV 40 RU 6,5mm HTE 40 RU 6,5mm | HTK 2G 50xL HTK 2G 75xL | EcoTek 50xL EcoTek T 50xL | EJOT® FP Ø7,0mm | EJOT® FP Ø14,5mm + HTK-S 20xL | SIKA Sarnabar® Ø6,0mm |
|-------------|------------------------------|----------------------------|--|----------------------------|------------------------------|--------------------|--|-----------------------------|
| TKR-4-4,8xL | 3,27 | 1,78 | 1,73 | 1,20 | 1,58 | 3,65 | 2,25 | 3,65 |

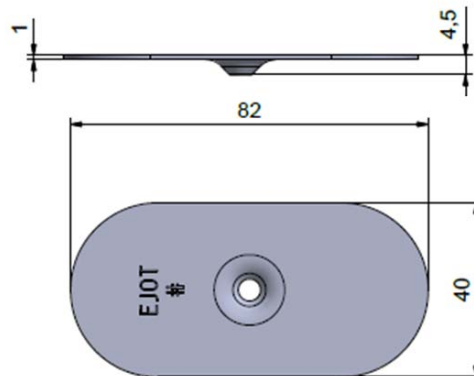
*** "Pull-over" acc. to CEN/TS 17659:2021

EJOT Flat Roof Fasteners

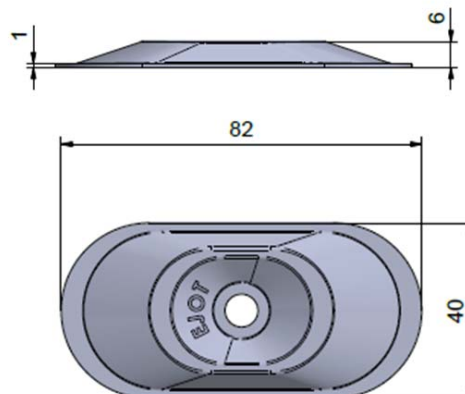
Screw: EJOT Dabo® TKR-4-4,8 x Ls

Annex 3 a

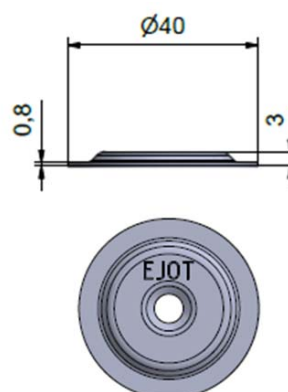
EJOT® HTV 82/40 TK or EJOT® HTE 82/40 TK



EJOT® HTV 82/40 F or EJOT® HTE 82/40 F



EJOT® HTV 40 RU 6,5mm or EJOT® HTE 40 RU 6,5mm

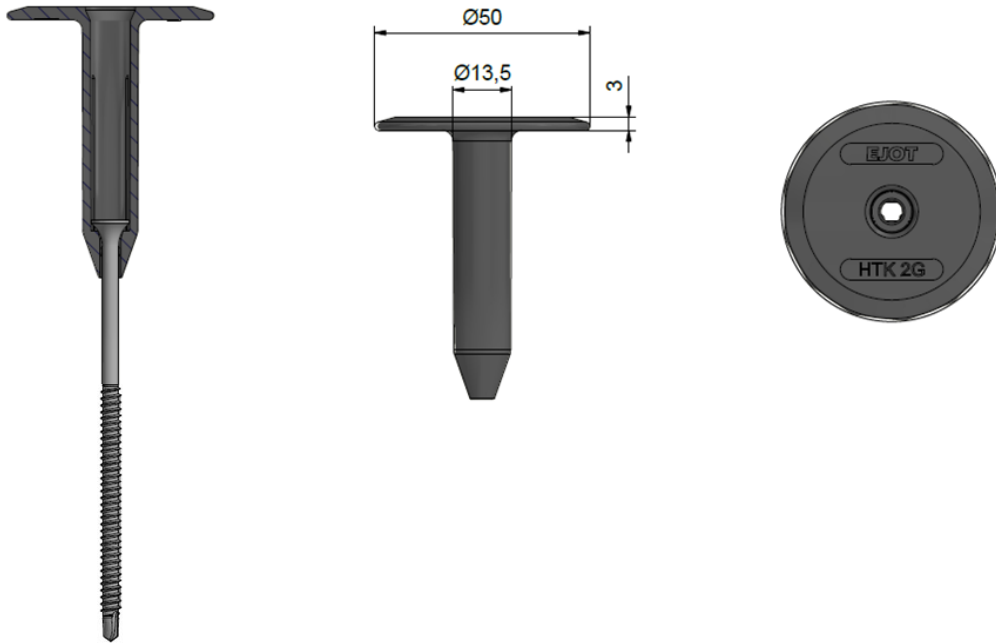


EJOT Flat Roof Fasteners

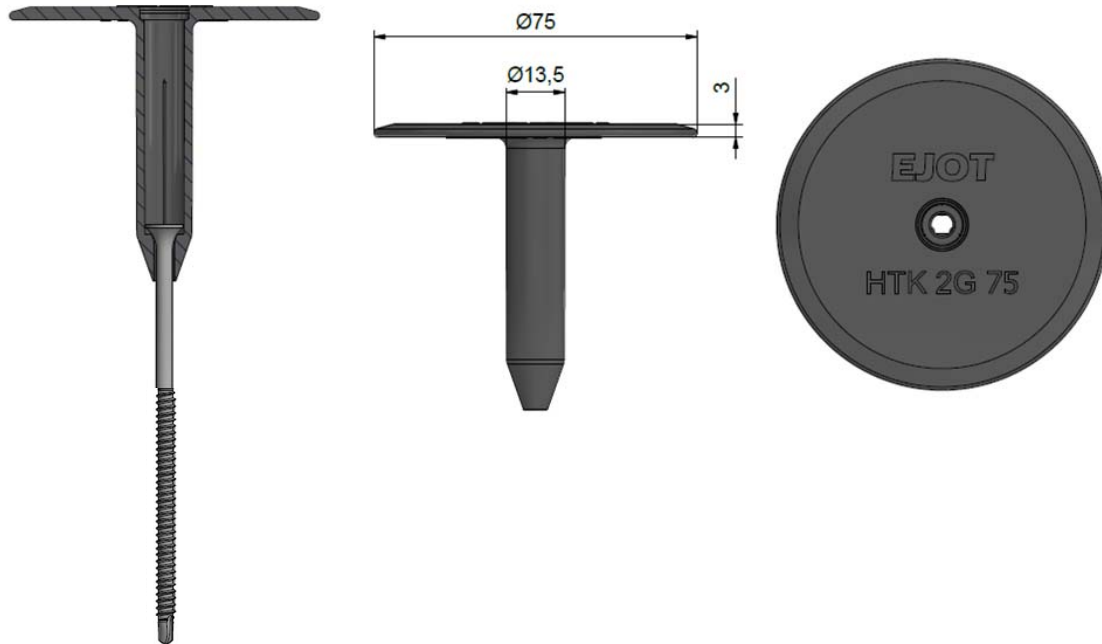
Combination: 3.1 – 3.6

Annex 3 b

EJOT® HTK 2G 50xL



EJOT® HTK 2G 75xL

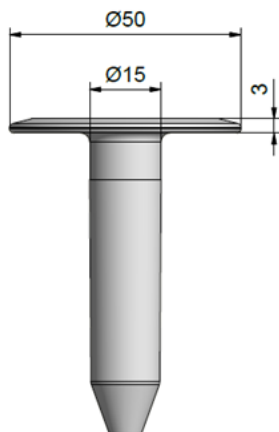
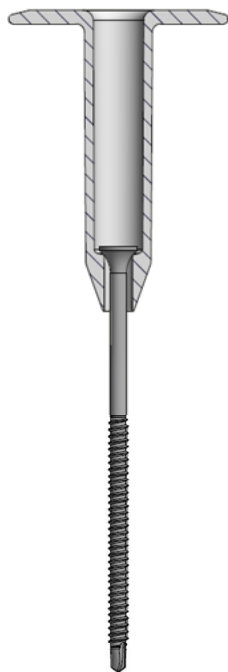


EJOT Flat Roof Fasteners

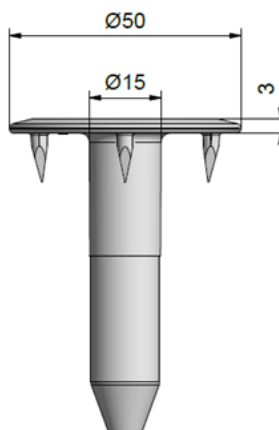
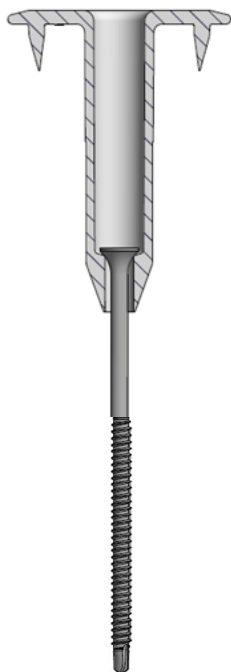
Combination: 3.7 – 3.8

Annex 3 c

EJOT® EcoTek 50xL



EJOT® EcoTek T 50xL

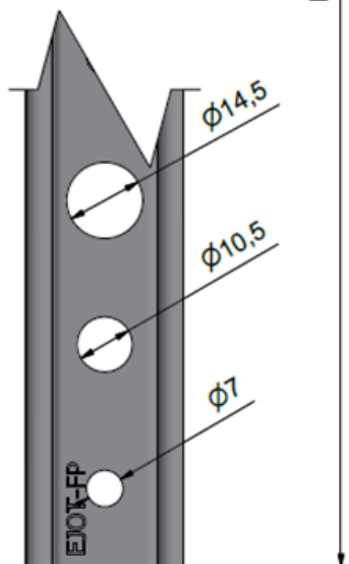
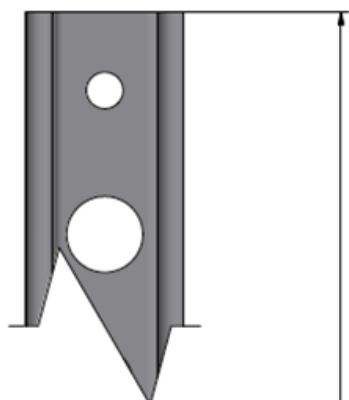
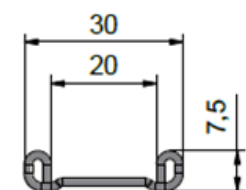


EJOT Flat Roof Fasteners

Combination: 3.9 – 3.10

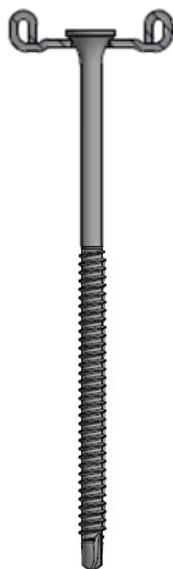
Annex 3 d

EJOT® FP

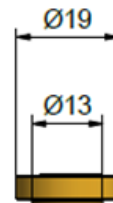


Lp

$\phi 7,0\text{mm}$



$\phi 14,5\text{mm}$
+ HTK-S 20xL

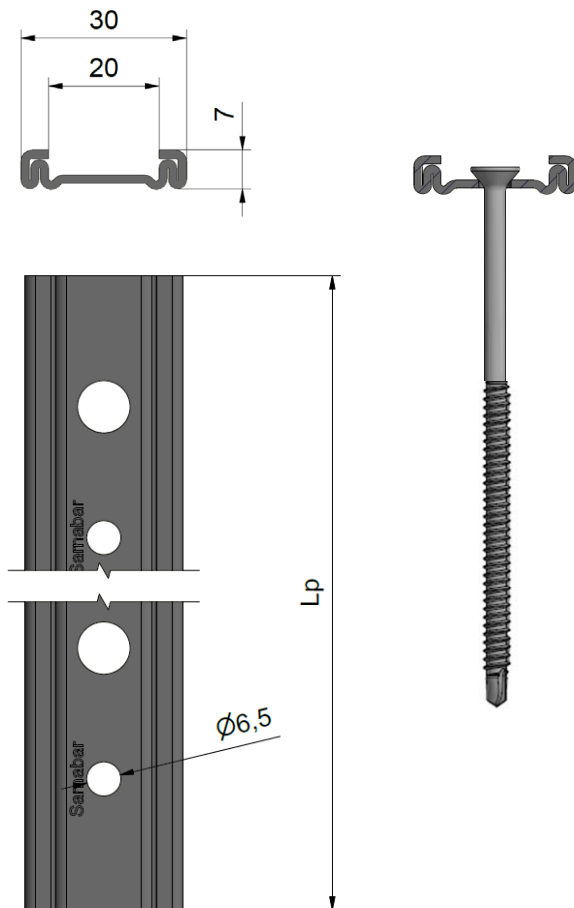


EJOT Flat Roof Fasteners

Combination: 3.11 – 3.12

Annex 3 e

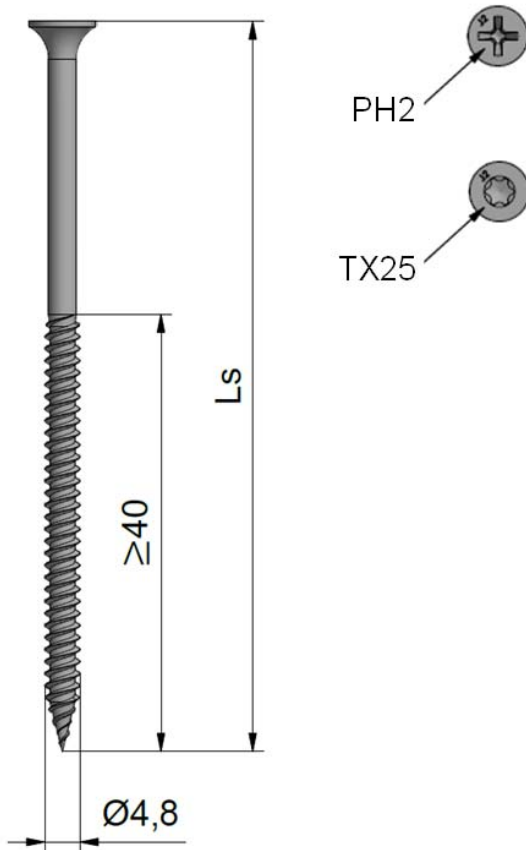
SIKA Sarnabar® Ø6,0mm



EJOT Flat Roof Fasteners

Combination: 3.13

Annex 3 f



Screw:

EJOT Dabo® VHT-R-4,8xL
EJOT Dabo® VHT-E-4,8xL

Washer / Rail-system:

EJOT® HTV 82/40 TK
EJOT® HTE 82/40 TK
EJOT® HTV 82/40 F
EJOT® HTE 82/40 F
EJOT® HTV 40 RU 6,5mm
EJOT® HTE 40 RU 6,5mm
EJOT® HTK 2G 50xL
EJOT® HTK 2G 75xL
EJOT® EcoTek 50xL
EJOT® EcoTek T 50xL
EJOT® FP Ø7,0mm
/ Ø14,5mm + HTK-S 20xL
SIKA Sarnabar® Ø6,0mm

Substrate:

| | | |
|--------------|-------------------------------|------------|
| Steel S320GD | | EN 10346 |
| Aluminium | | EN 485 |
| Timber / C24 | $\rho_{min}=350\text{kg/m}^3$ | EN 338 |
| Chipboard P4 | $\rho_{min}=600\text{kg/m}^3$ | EN 12369-1 |
| Plywood | $\rho_{min}=400\text{kg/m}^3$ | EN 12369-2 |
| OSB/3 | $\rho_{min}=550\text{kg/m}^3$ | EN 12369-1 |

Technical data:

max. drilling capacity steel: 0,88mm
Screw drive: PH2 / TX25

Characteristic Values of Axial Pull-Out Resistance [kN] (acc. to Fig. 3 of EAD 030351-00-0402)

| t [mm] | Steel S320GD* | | | | | | | | | C24 | Chip-board | Ply-wood | OSB/3 |
|--|---------------|------|------|------|-------------|------|------|------|------|------|------------|----------|-------|
| | 0,45 | 0,50 | 0,55 | 0,60 | 0,63 | 0,70 | 0,75 | 0,80 | 0,88 | | | | |
| VHT-R-4,8xL | 0,83 | 0,94 | 1,05 | 1,16 | 1,23 | 1,47 | 1,47 | 1,47 | 1,47 | 0,90 | 1,21 | 2,62 | 1,76 |
| VHT-E-4,8xL | 0,83 | 0,94 | 1,05 | 1,16 | 1,23 | 1,47 | 1,47 | 1,47 | 1,47 | 0,90 | 1,21 | 2,62 | 1,76 |
| Aluminium with $R_m \geq 195\text{N/mm}^2$ | | | | | | | | | | | | | |
| t [mm] | 0,80 | 0,85 | 1,00 | 1,10 | $\geq 1,20$ | | | | | | | | |
| VHT-E-4,8xL | 0,73 | 0,85 | 0,97 | 1,09 | 1,21 | | | | | | | | |

* when using S280GD, the values must be reduced to 92 %

** effective minimum screw-in depth (screw-in depth of the thread), or minimum plate thickness

Characteristic Values of Axial Pull-Through* Resistance [kN]** (acc. to Fig. 4+5 of EAD 030351-00-0402)

| | HTV 82/40 TK HTE 82/40 TK | HTV 82/40 F HTE 82/40 F | HTV 40 RU 6,5mm HTE 40 RU 6,5mm | HTK 2G 50xL HTK 2G 75xL | EcoTek 50xL EcoTek T 50xL | EJOT® FP Ø7,0mm | EJOT® FP Ø14,5mm + HTK-S 20xL | SIKA Sarnabar® Ø6,0mm |
|-------------|------------------------------|----------------------------|--|----------------------------|------------------------------|--------------------|--|-----------------------------|
| VHT-R-4,8xL | 3,82 | 1,78 | 1,73 | 1,30 | 1,58 | 3,65 | 2,25 | 3,65 |
| VHT-E-4,8xL | 3,82 | 1,78 | 1,73 | 1,30 | 1,58 | 3,65 | 2,25 | 3,65 |

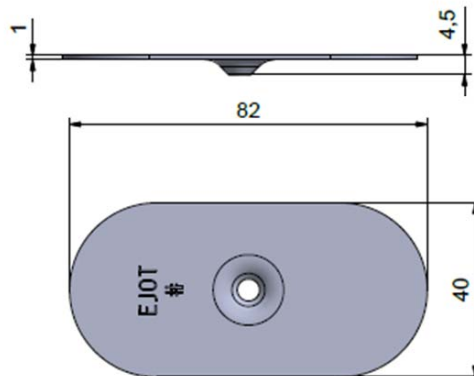
*** "Pull-over" acc. to CEN/TS 17659:2021

EJOT Flat Roof Fasteners

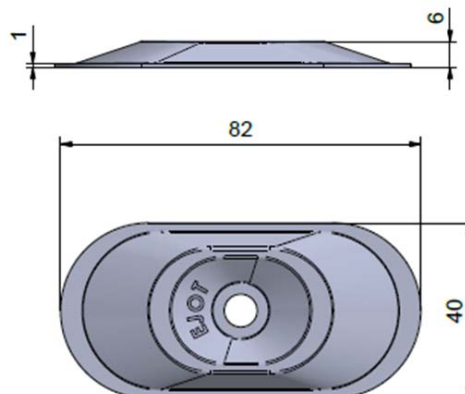
Screw: EJOT Dabo® VHT-R - 4,8 x Ls
EJOT Dabo® VHT-E - 4,8 x Ls

Annex 4 a

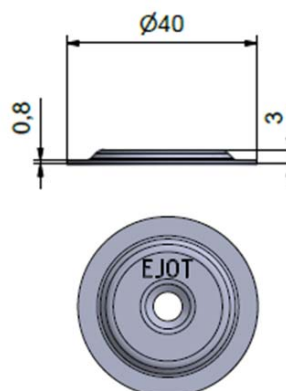
EJOT® HTV 82/40 TK or EJOT® HTE 82/40 TK



EJOT® HTV 82/40 F or EJOT® HTE 82/40 F



EJOT® HTV 40 RU 6,5mm or EJOT® HTE 40 RU 6,5mm

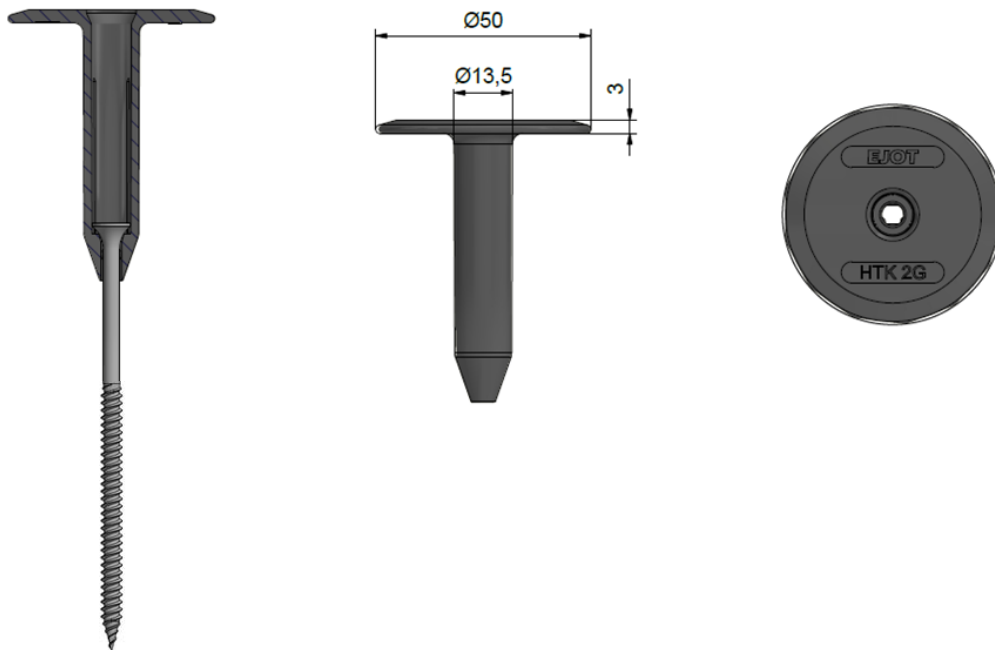


EJOT Flat Roof Fasteners

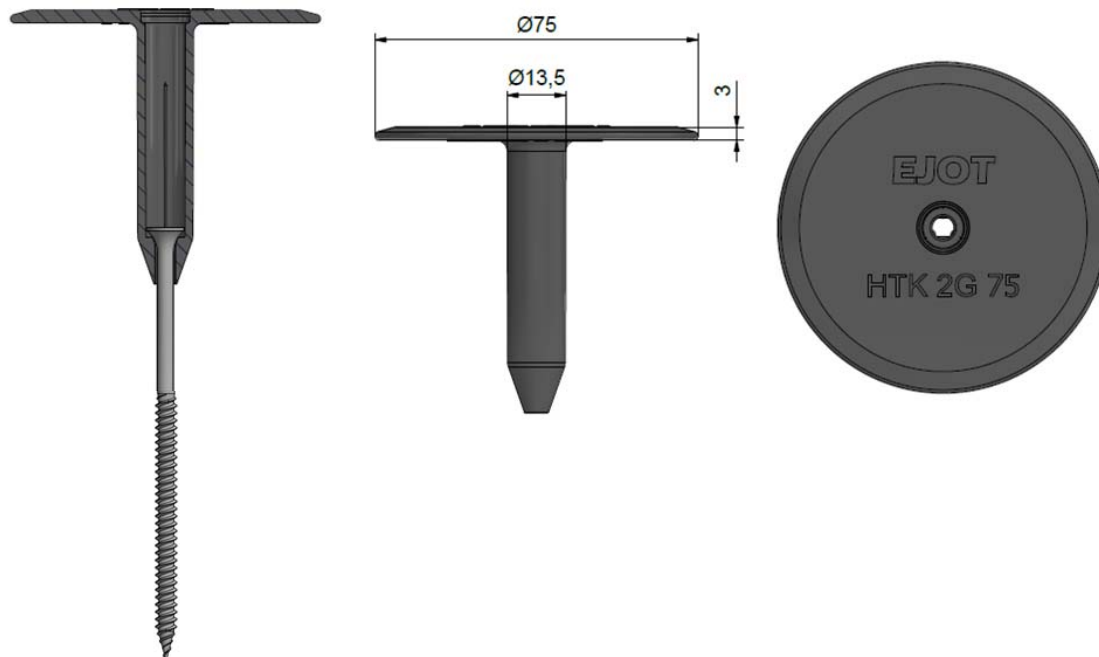
Combination: 4.1 – 4.12

Annex 4 b

EJOT® HTK 2G 50xL



EJOT® HTK 2G 75xL

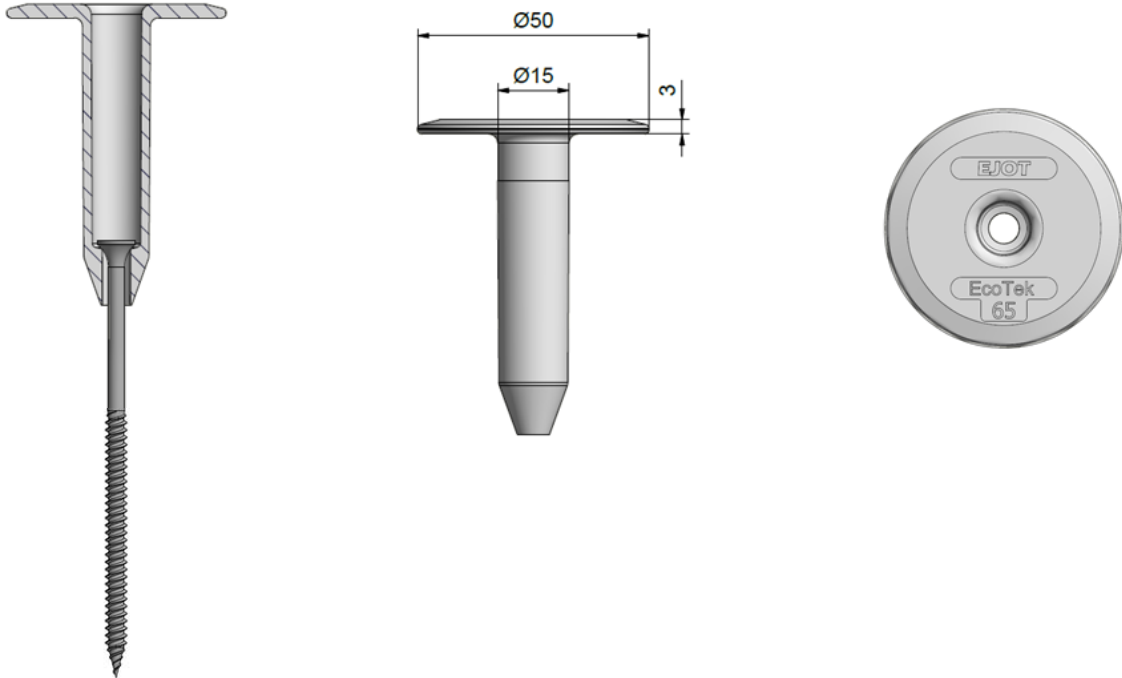


EJOT Flat Roof Fasteners

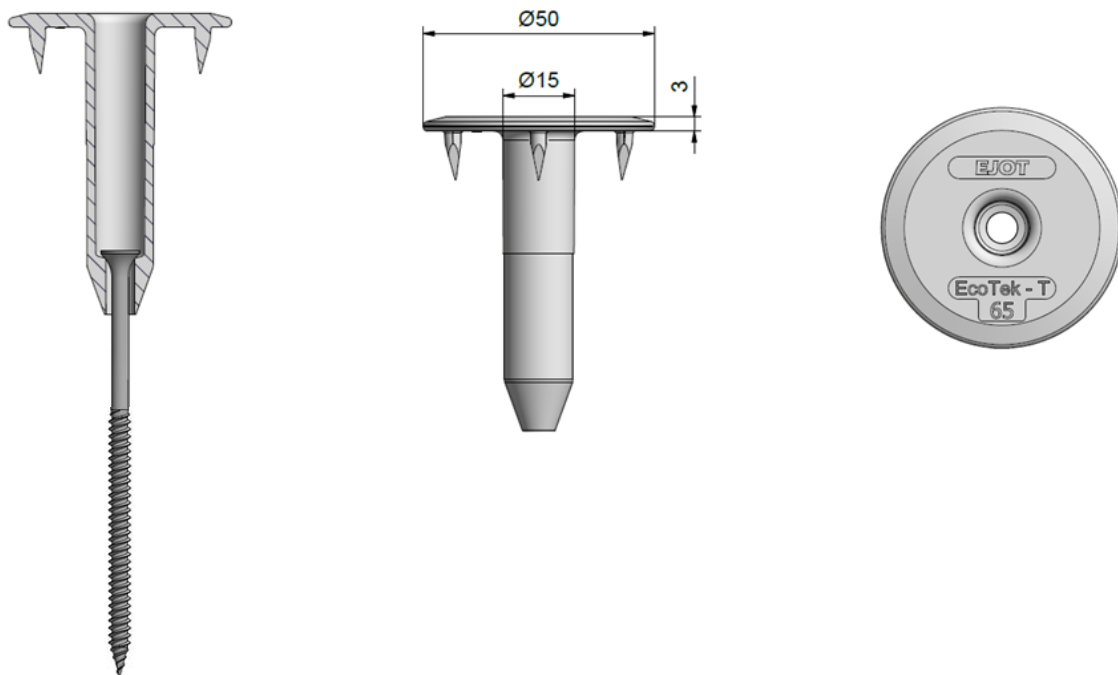
Combination: 4.13 – 4.16

Annex 4 c

EJOT® EcoTek 50xL



EJOT® EcoTek T 50xL

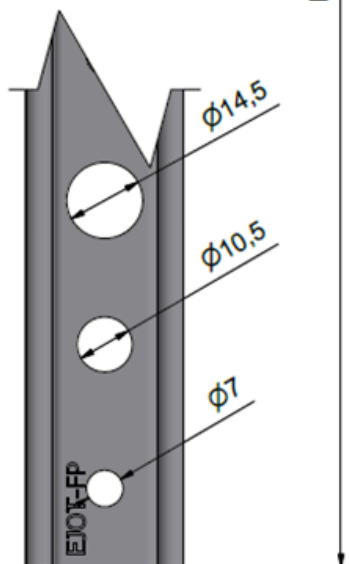
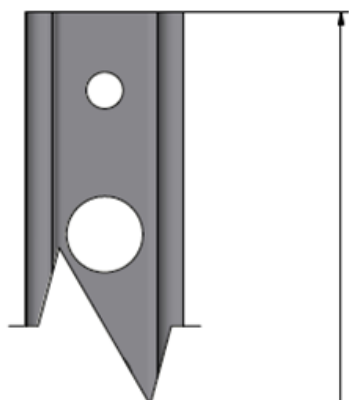
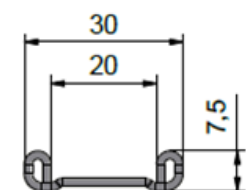


EJOT Flat Roof Fasteners

Combination: 4.17 – 4.20

Annex 4 d

EJOT® FP

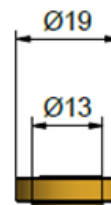
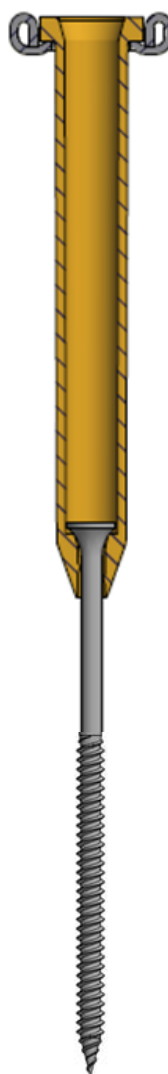


Lp

$\phi 7,0\text{mm}$



$\phi 14,5\text{mm}$
+ HTK-S 20xL

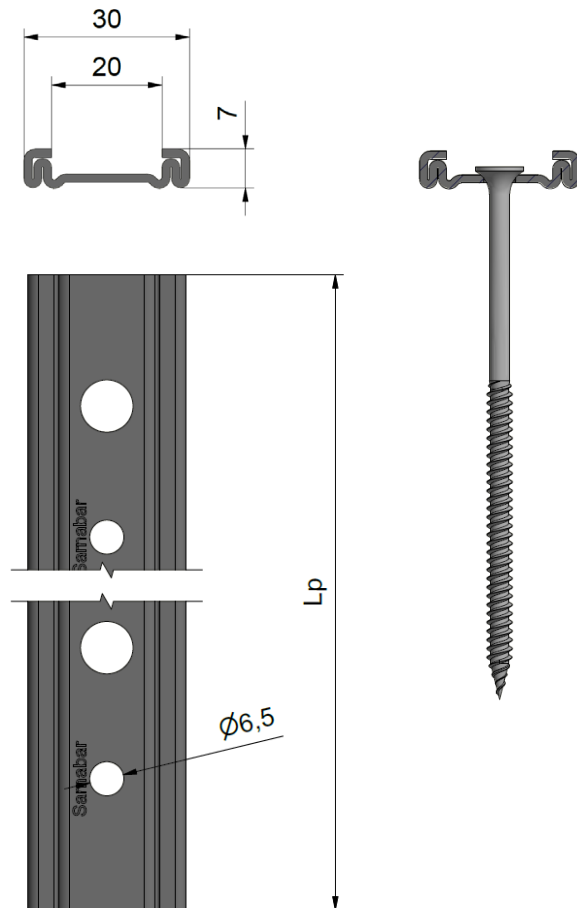


EJOT Flat Roof Fasteners

Combination: 4.21 – 4.24

Annex 4 e

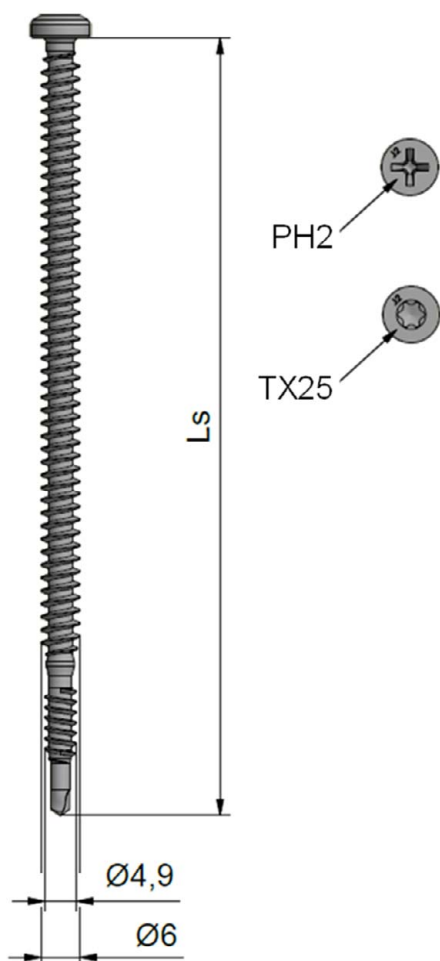
SIKA Sarnabar® Ø6,0mm



EJOT Flat Roof Fasteners

Combination: 4.25 – 4.26

Annex 4 f



Screw:

EJOT Dabo® ZTR-2-4,9/6,0xL

Washer / Rail-system:

EJOT® HTK 2G 50xL
EJOT® HTK 2G 75xL
EJOT® FP Ø14,5mm + HTK-S 20xL

Substrate:

Steel S320GD EN 10346

Technical data:

max. drilling capacity steel: 1,5mm
Screw drive: PH2 / TX25

Characteristic Values of Axial Pull-Out Resistance [kN] (acc. to Fig. 3 of EAD 030351-00-0402)

| | Steel S320GD* | | | | |
|-----------------|---------------|------|------|------|--------|
| t [mm] | 0,63 | 0,70 | 0,75 | 0,80 | ≥ 0,88 |
| ZTR-2-4,9/6,0xL | 0,95 | 1,11 | 1,29 | 1,39 | 1,41 |

* when using S280GD, the values must be reduced to 92 %

Characteristic Values of Axial Pull-Through* Resistance [kN]** (acc. to Fig. 4+5 of EAD 030351-00-0402)

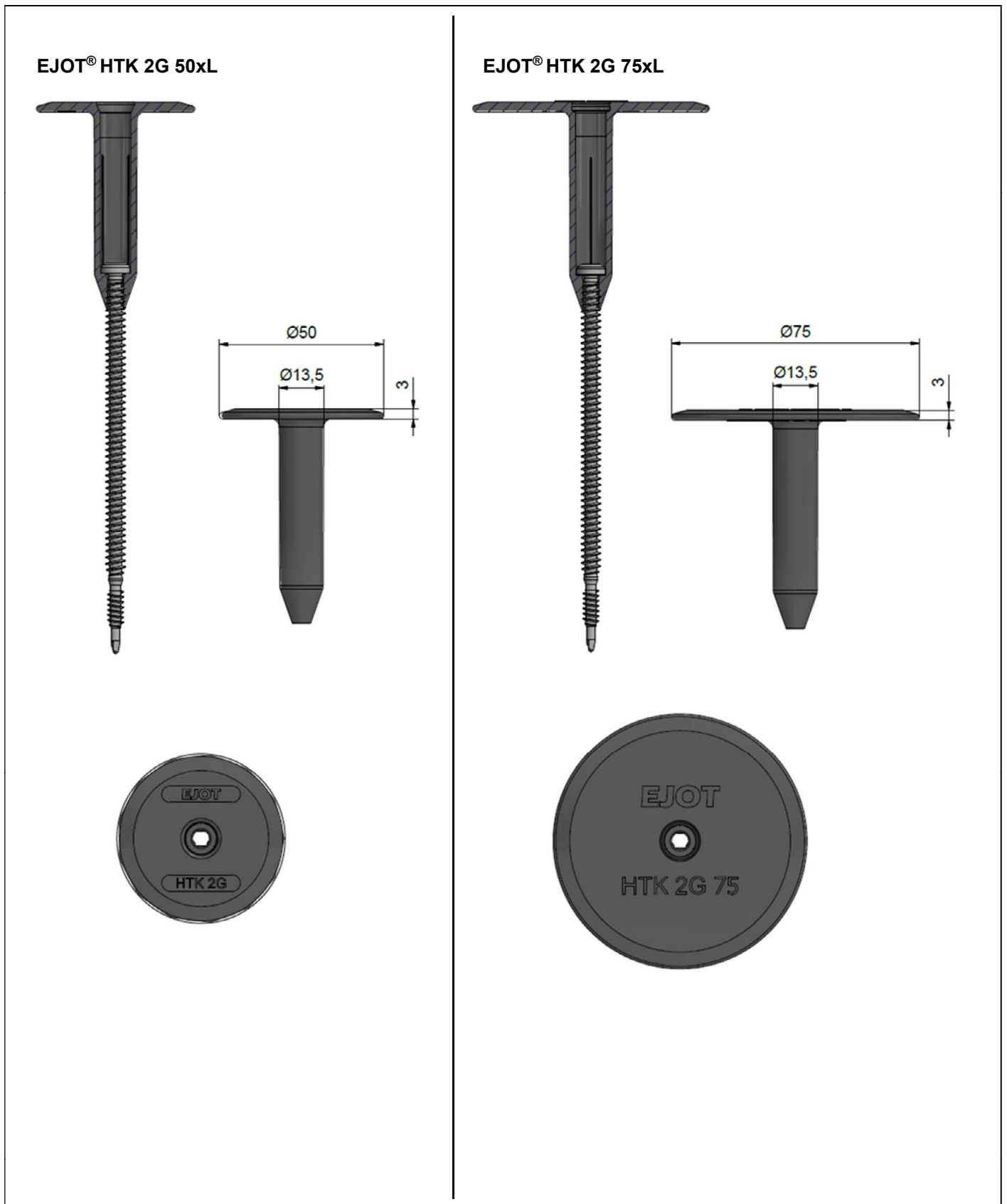
| | HTK 2G 50xL - HTK 2G 75xL | EJOT® FP Ø14,5mm + HTK-S 20xL |
|-----------------|---------------------------------|-------------------------------|
| ZTR-2-4,9/6,0xL | 1,20 | 2,25 |

*** "Pull-over" acc. to CEN/TS 17659:2021

EJOT Flat Roof Fasteners

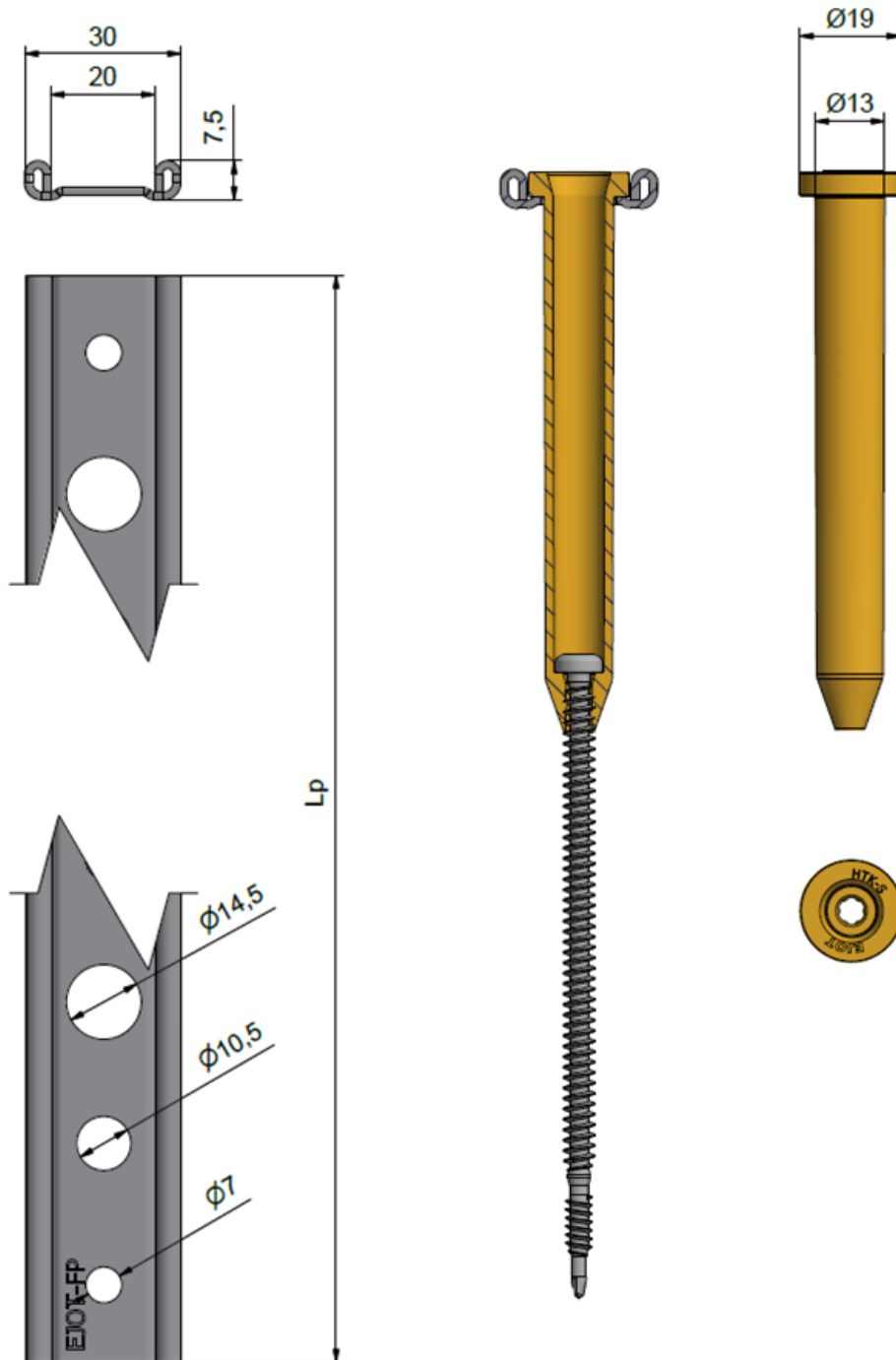
Screw: EJOT Dabo® ZTR - 2- 4,9/6,0 x Ls

Annex 5 a



| | | |
|--------------------------|-----------|-----------|
| EJOT Flat Roof Fasteners | | Annex 5 b |
| Combination: | 5.1 – 5.2 | |

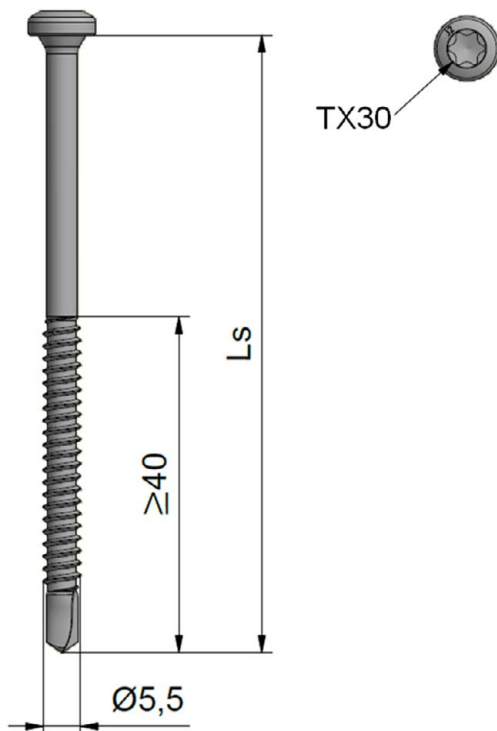
EJOT® FP Ø14,5mm + HTK-S 20xL



EJOT Flat Roof Fasteners

Combination: 5.3

Annex 5 c



Screw:

EJOT Dabo® TKR-ZT6-5,5xL

Washer / Rail-system:

EJOT® HTV 82/40 F
EJOT® HTE 82/40 F
EJOT® HTV 40 RU 6,5mm
EJOT® HTE 40 RU 6,5mm
EJOT® EcoTek 50xL
EJOT® EcoTek T 50xL
EJOT® FP Ø7,0mm

Substrate:

Steel S320GD

EN 10346

Technical data:

max. drilling capacity steel: 6mm
Screw drive: TX30

Characteristic Values of Axial Pull-Out Resistance [kN] (acc. to Fig. 3 of EAD 030351-00-0402)

| Steel S320GD* | |
|-----------------|-------|
| t [mm] | ≥ 3,0 |
| ZTR-2-4,9/6,0xL | 6,29 |

* when using S280GD, the values must be reduced to 92 %

Characteristic Values of Axial Pull-Through* Resistance [kN]** (acc. to Fig. 4+5 of EAD 030351-00-0402)

| | HTV 82/40 F - HTE 82/40 F | HTV 40 RU 6,5mm - HTE 40 RU 6,5mm | EcoTek 50xL - EcoTek T 50xL | EJOT® FP Ø7,0mm |
|-----------------|---------------------------------|---|-----------------------------------|-----------------|
| ZTR-2-4,9/6,0xL | 1,78 | 1,73 | 1,58 | 3,65 |

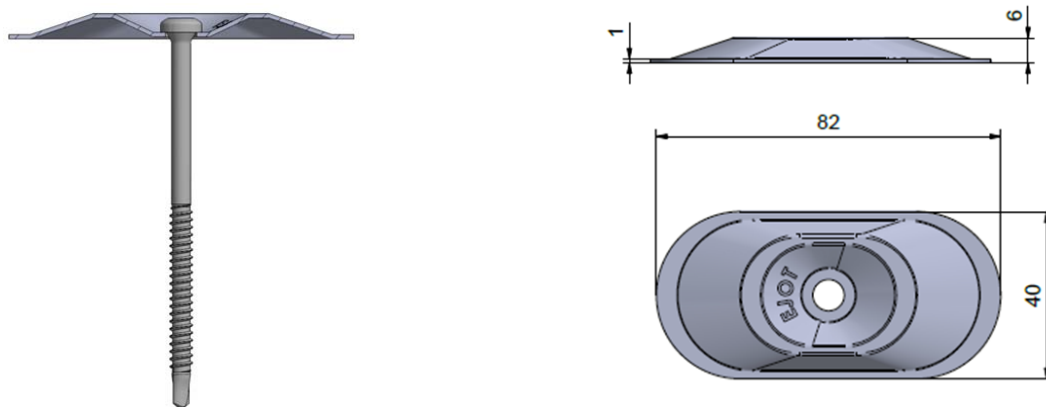
*** "Pull-over" acc. to CEN/TS 17659:2021

EJOT Flat Roof Fasteners

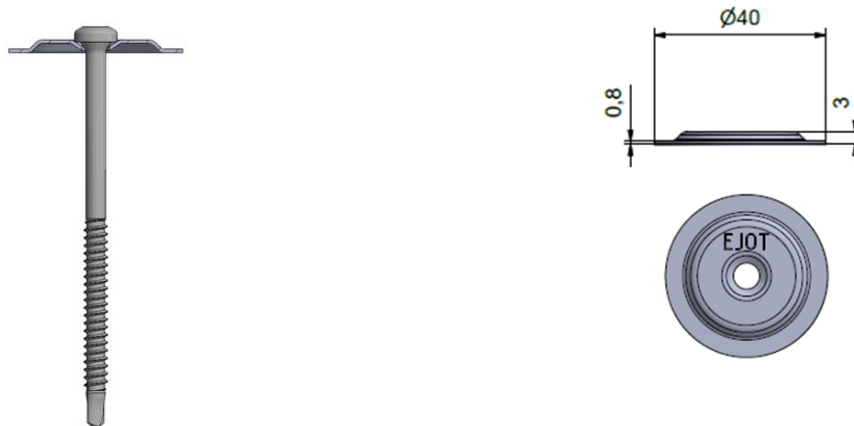
Screw: EJOT Dabo® TKR - ZT6 - 5,5 x Ls

Annex 6 a

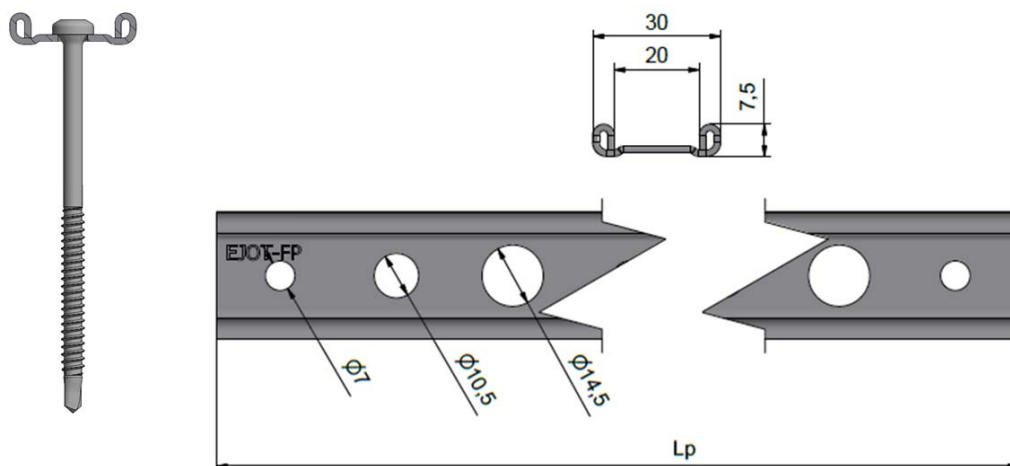
EJOT® HTV 82/40 F or EJOT® HTE 82/40 F



EJOT® HTV 40 RU 6,5mm or EJOT® HTE 40 RU 6,5mm



EJOT® FP Ø7,0

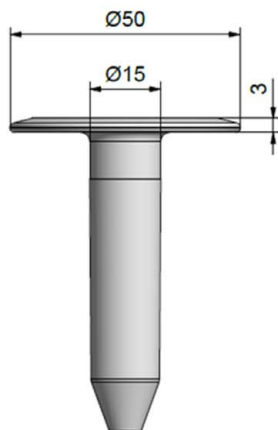
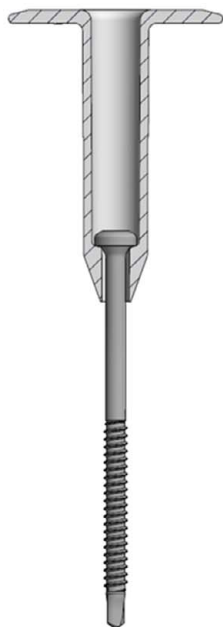


EJOT Flat Roof Fasteners

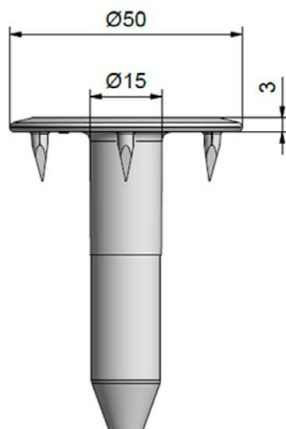
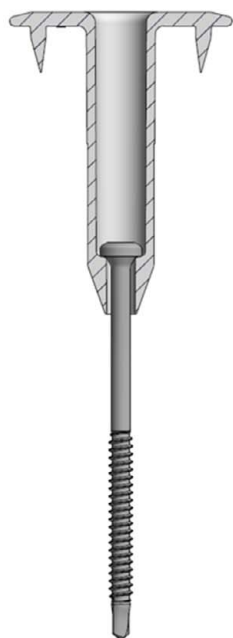
Combination: 6.1 – 6.5

Annex 6 b

EJOT® EcoTek 50xL



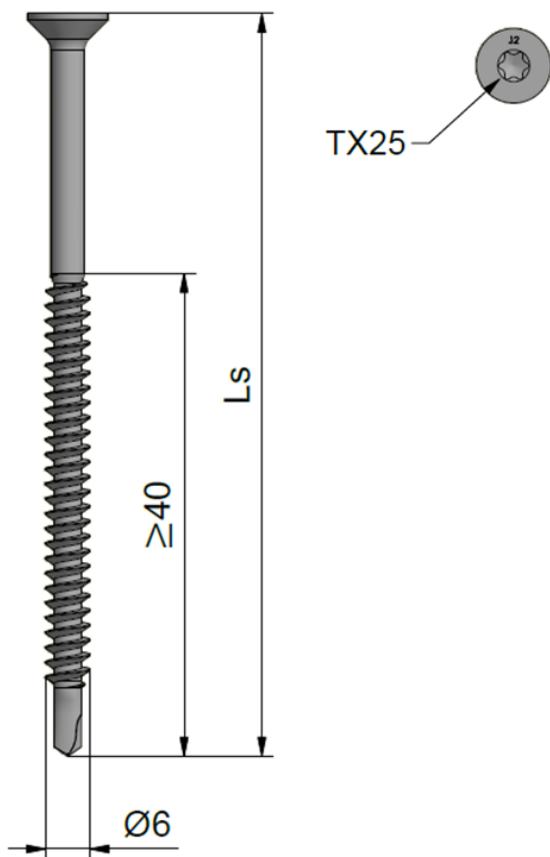
EJOT® EcoTek T 50xL



EJOT Flat Roof Fasteners

Combination: 6.6 – 6.7

Annex 6 c



Screw:

EJOT Dabo® JT2-ST-2-6,0xL
EJOT Dabo® JT3-ST-2-6,0xL

Washer / Rail-system:

EJOT® HTV 82/40 F
EJOT® HTE 82/40 F
EJOT® HTV 40 RU 6,5mm
EJOT® HTE 40 RU 6,5mm
EJOT® EcoTek 50xL
EJOT® EcoTek T 50xL
EJOT® FP Ø7,0mm
SIKA Sarnabar® Ø6,0mm

Substrate:

| | | |
|--------------|--------------------------------|------------|
| Steel S320GD | | EN 10346 |
| Aluminium | | EN 485 |
| Timber / C24 | $\rho_{\min}=350\text{kg/m}^3$ | EN 338 |
| OSB/3 | $\rho_{\min}=550\text{kg/m}^3$ | EN 12369-1 |

Technical data:

| | |
|-------------------------------|-------|
| max. drilling capacity steel: | 2,0mm |
| Screw drive: | TX25 |

Characteristic Values of Axial Pull-Out Resistance [kN] (acc. to Fig. 3 of EAD 030351-00-0402)

| t [mm] | Steel S320GD* | | | | | | | | | C24 | OSB/3 |
|--|---------------|------|------|------|-------|------|------|------|--------|------|-------|
| | 0,45 | 0,50 | 0,55 | 0,60 | 0,63 | 0,70 | 0,75 | 0,80 | ≥ 0,88 | 24** | 18** |
| JT2-ST-2-6,0xL | 0,87 | 0,98 | 1,08 | 1,19 | 1,26 | 1,60 | 1,80 | 1,94 | 1,98 | 1,57 | 1,32 |
| JT3-ST-2-6,0xL | 0,87 | 0,98 | 1,08 | 1,19 | 1,26 | 1,60 | 1,80 | 1,94 | 1,98 | 1,57 | 1,32 |
| Aluminium with $R_m \geq 195\text{N/mm}^2$ | | | | | | | | | | | |
| t [mm] | 0,80 | 0,85 | 1,00 | 1,10 | ≥1,20 | | | | | | |
| JT3-ST-2-6,0xL | 0,52 | 0,61 | 0,70 | 0,83 | 0,95 | | | | | | |

* when using S280GD, the values must be reduced to 92 %

** effective minimum screw-in depth (screw-in depth of the thread), or minimum plate thickness

Characteristic Values of Axial Pull-Through* Resistance [kN]** (acc. to Fig. 4+5 of EAD 030351-00-0402)

| | HTV 82/40 F HTE 82/40 F | HTV 40 RU 6,5mm HTE 40 RU 6,5mm | EcoTek 50xL EcoTek T 50xL | EJOT® FP Ø7,0mm | SIKA Sarnabar® Ø6,0mm |
|----------------|----------------------------|------------------------------------|------------------------------|--------------------|--------------------------|
| JT2-ST-2-6,0xL | 1,78 | 1,73 | 1,58 | 3,65 | 3,65 |
| JT3-ST-2-6,0xL | 1,78 | 1,73 | 1,58 | 3,65 | 3,65 |

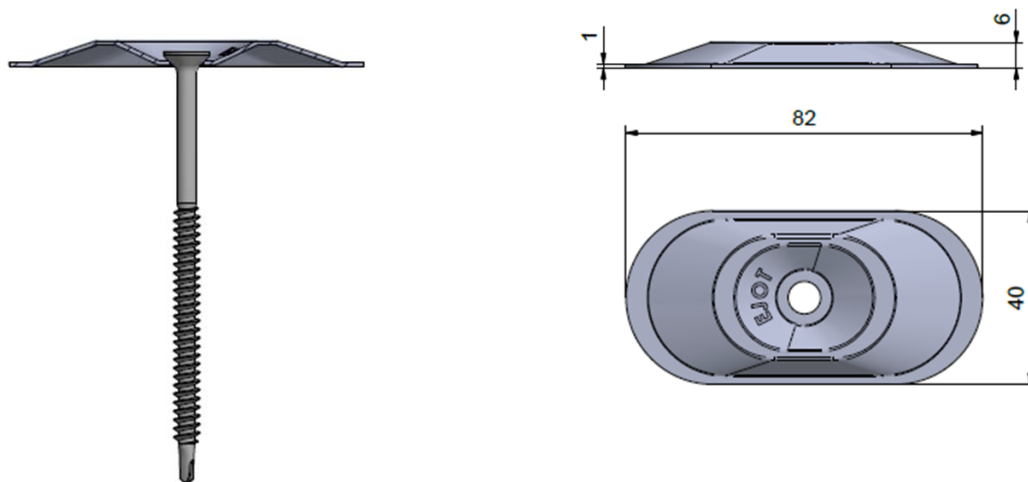
*** "Pull-over" acc. to CEN/TS 17659:2021

EJOT Flat Roof Fasteners

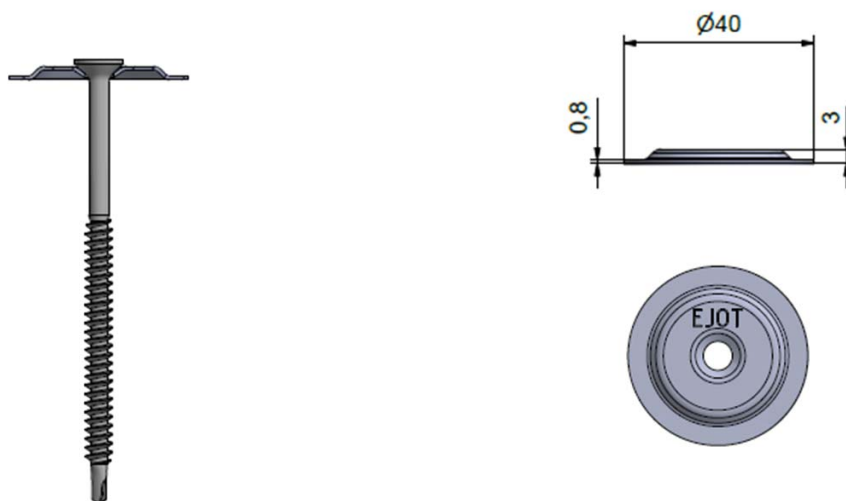
Screw: EJOT Dabo® JT2 – ST - 2- 6,0 x Ls
EJOT Dabo® JT3 – ST - 2- 6,0 x Ls

Annex 7 a

EJOT® HTV 82/40 F or EJOT® HTE 82/40 F



EJOT® HTV 40 RU 6,5mm or EJOT® HTE 40 RU 6,5mm

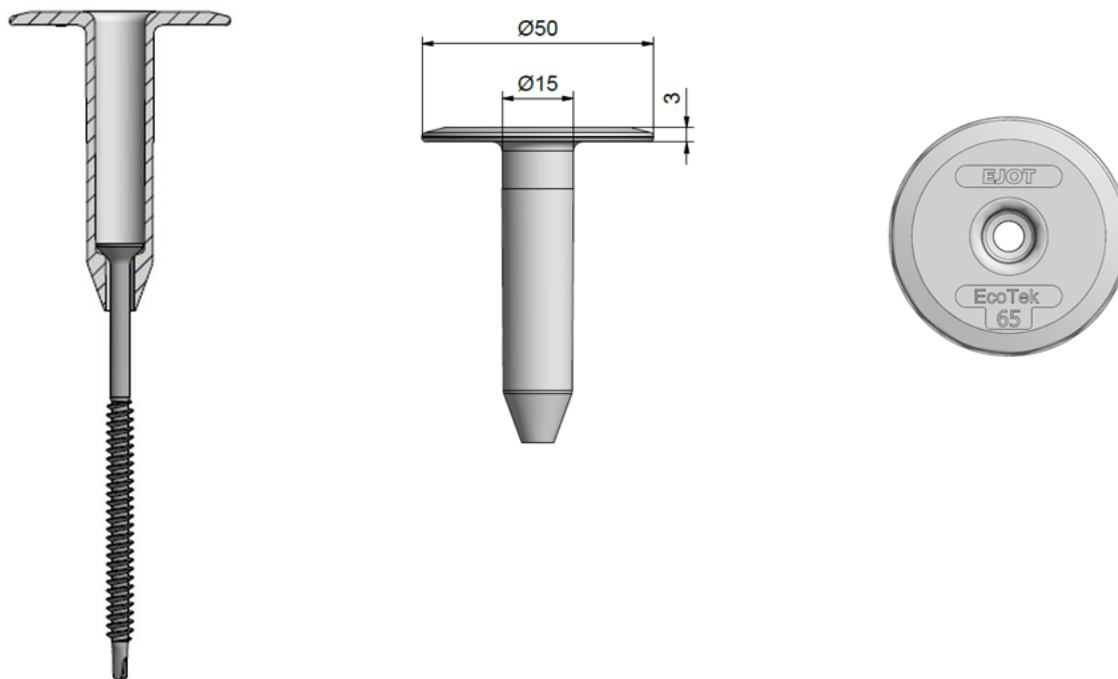


EJOT Flat Roof Fasteners

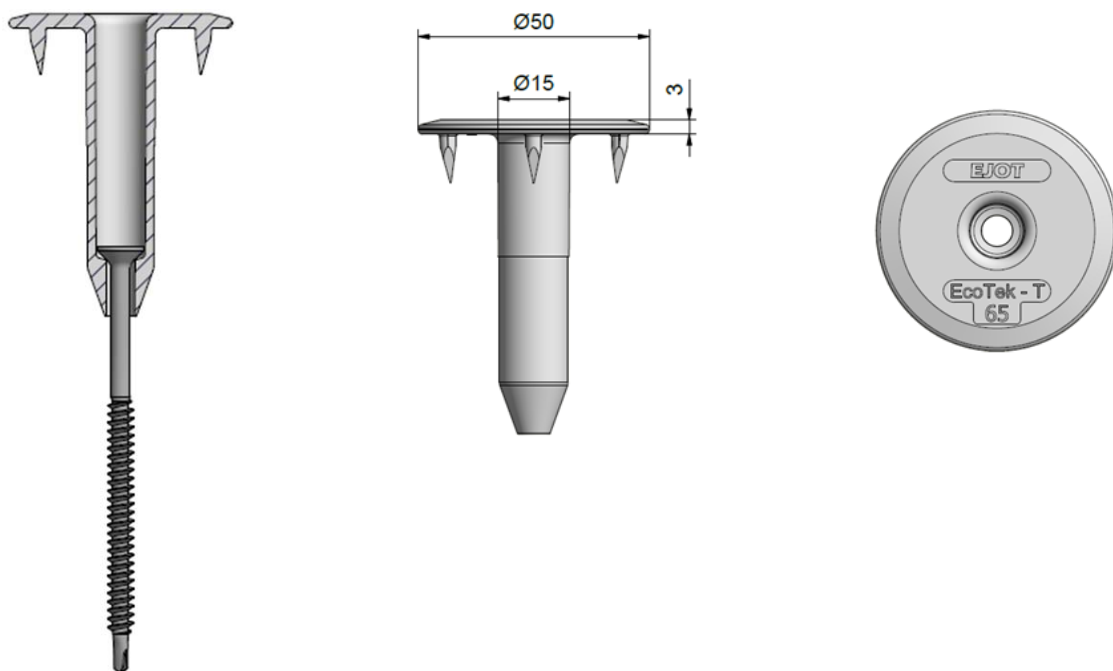
Combination: 7.1 – 7.8

Annex 7 b

EJOT® EcoTek 50xL



EJOT® EcoTek T 50xL

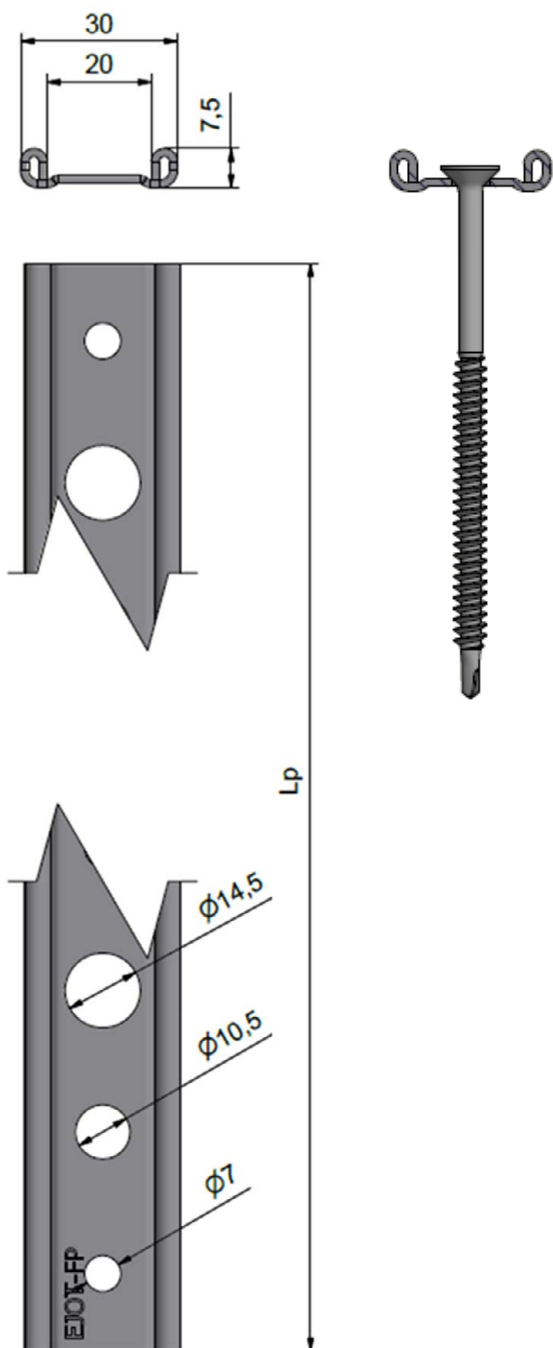


EJOT Flat Roof Fasteners

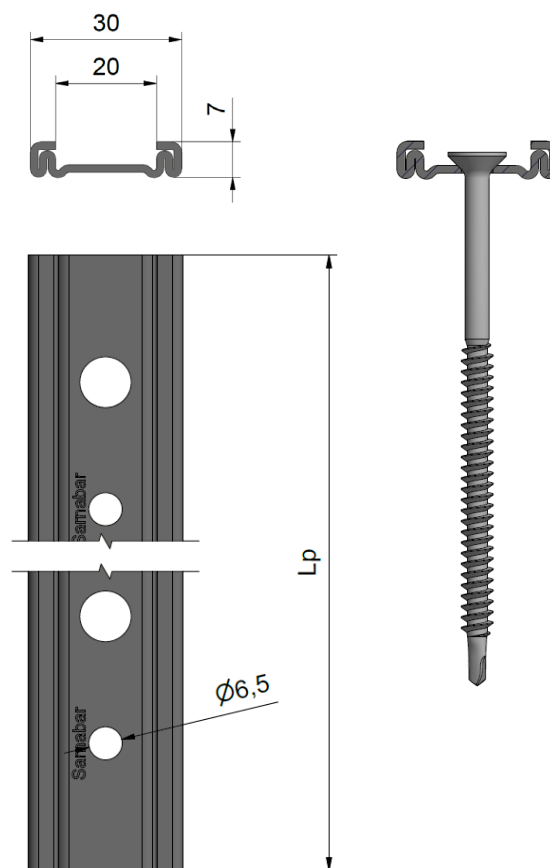
Combination: 7.9 – 7.12

Annex 7 c

EJOT® FP Ø7,0mm



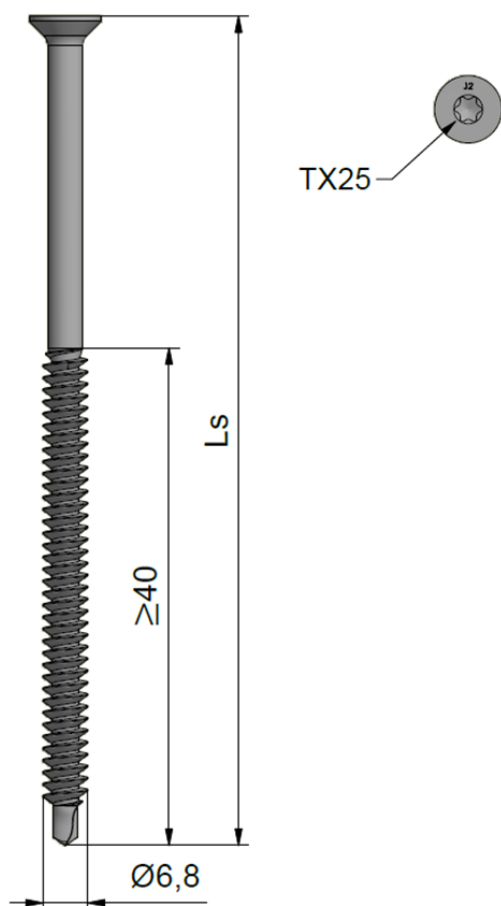
SIKA Sarnabar® Ø6,0mm



EJOT Flat Roof Fasteners

Combination: 7.13 – 7.16

Annex 7 d



Screw:

EJOT Dabo® JT2-ST-2-6,8xL
EJOT Dabo® JT3-ST-2-6,8xL

Washer / Rail-system:

EJOT® HTV 82/40 F
EJOT® HTE 82/40 F
EJOT® HTV 40 RU 6,5mm
EJOT® HTE 40 RU 6,5mm
EJOT® EcoTek 50xL
EJOT® EcoTek T 50xL
EJOT® FP Ø7,0mm

Substrate:

Steel S320GD EN 10346

Technical data:

max. drilling capacity steel: 2,0mm
Screw drive: TX25

Characteristic Values of Axial Pull-Out Resistance [kN] (acc. to Fig. 3 of EAD 030351-00-0402)

| t [mm] | Steel S320GD* | | | | | | | | |
|----------------|---------------|------|------|------|------|------|------|------|--------|
| | 0,45 | 0,50 | 0,55 | 0,60 | 0,63 | 0,70 | 0,75 | 0,80 | ≥ 0,88 |
| JT2-ST-2-6,8xL | 1,17 | 1,29 | 1,42 | 1,54 | 1,62 | 1,97 | 2,18 | 2,34 | 2,38 |
| JT3-ST-2-6,8xL | 1,17 | 1,29 | 1,42 | 1,54 | 1,62 | 1,97 | 2,18 | 2,34 | 2,38 |

* when using S280GD, the values must be reduced to 92 %

** effective minimum screw-in depth (screw-in depth of the thread), or minimum plate thickness

Characteristic Values of Axial Pull-Through* Resistance [kN]** (acc. to Fig. 4+5 of EAD 030351-00-0402)

| | HTV 82/40 F HTE 82/40 F | HTV 40 RU 6,5mm HTE 40 RU 6,5mm | EcoTek 50xL EcoTek T 50xL | EJOT® FP Ø7,0mm |
|----------------|----------------------------|------------------------------------|------------------------------|--------------------|
| JT2-ST-2-6,8xL | 1,78 | 1,73 | 1,58 | 3,65 |
| JT3-ST-2-6,8xL | 1,78 | 1,73 | 1,58 | 3,65 |

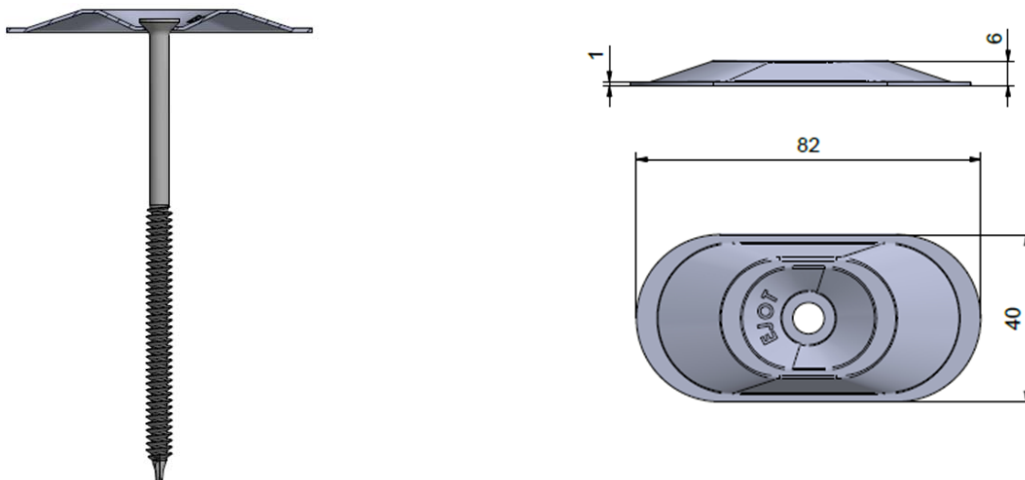
*** "Pull-over" acc. to CEN/TS 17659:2021

EJOT Flat Roof Fasteners

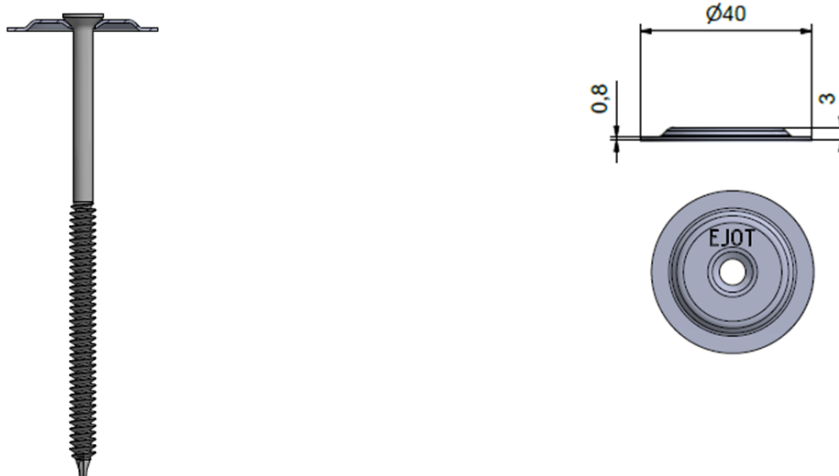
Screw: EJOT Dabo® JT2 – ST - 2- 6,8 x Ls
EJOT Dabo® JT3 – ST - 2- 6,8 x Ls

Annex 8 a

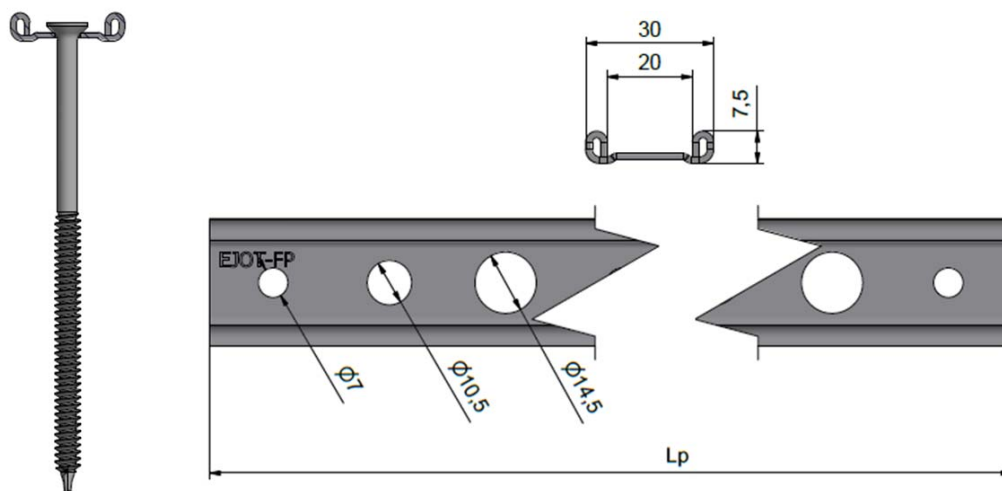
EJOT® HTV 82/40 F or EJOT® HTE 82/40 F



EJOT® HTV 40 RU 6,5mm or EJOT® HTE 40 RU 6,5mm



EJOT® FP Ø7,0

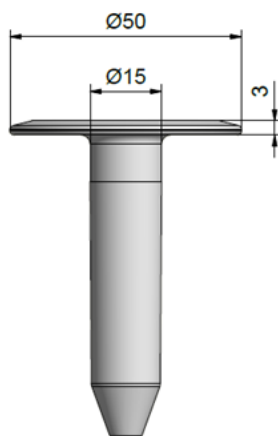
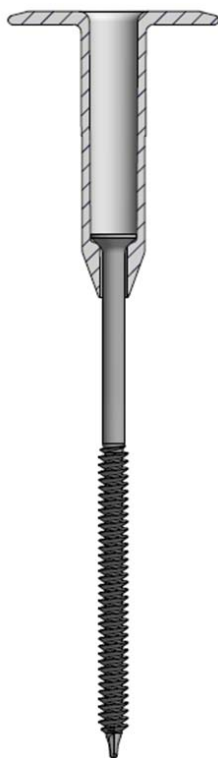


EJOT Flat Roof Fasteners

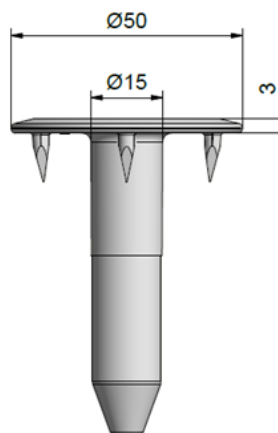
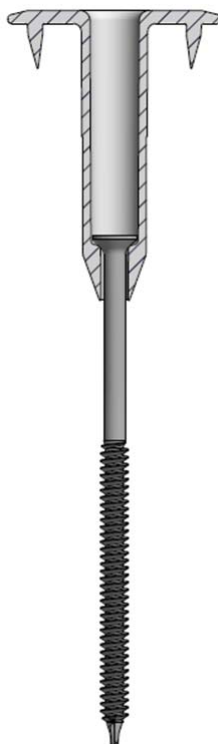
Combination: 8.1 – 8.10

Annex 8 b

EJOT® EcoTek 50xL



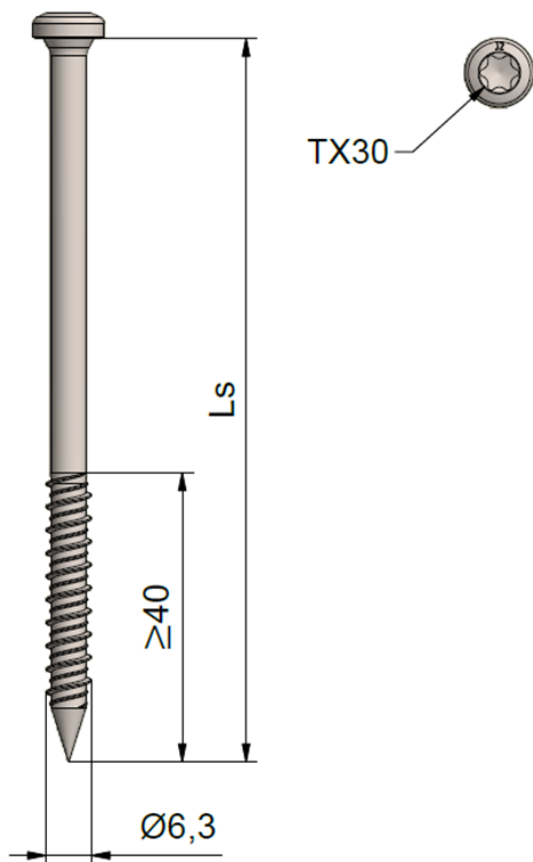
EJOT® EcoTek T 50xL



EJOT Flat Roof Fasteners

Combination: 8.11 – 8.14

Annex 8 c



Screw:

EJOT Dabo® FBS-R-6,3xL

Washer / Rail-system:

EJOT® HTV 82/40 F
EJOT® HTE 82/40 F
EJOT® HTV 40 RU 6,5mm
EJOT® HTE 40 RU 6,5mm
EJOT® EcoTek 50xL
EJOT® EcoTek T 50xL
EJOT® FP Ø7,0mm

Substrate:

Concrete C12/15 EN 206-1

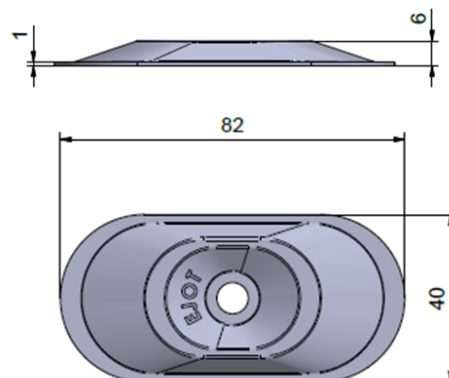
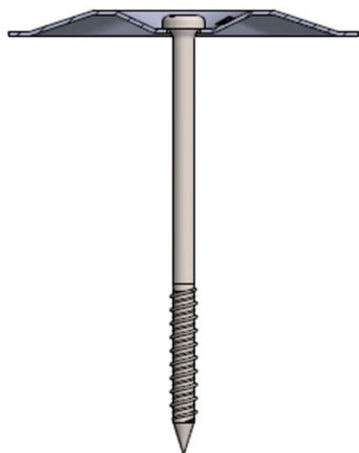
Technical data:

Anchoring depth h_{ef} : ≥ 30 mm
Screw drive: TX30

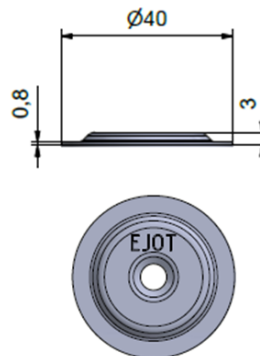
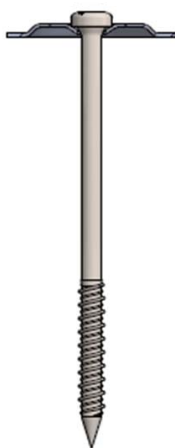
| Characteristic Values of Axial Pull-Out Resistance [kN] (acc. to Fig. 3 of EAD 030351-00-0402) | | | | |
|---|----------------------------|------------------------------------|------------------------------|--------------------|
| Concrete C12/15* | | | | |
| FBS-R-6,3xL | 2,88 | | | |
| * Pre-drilling diameter 5,0mm | | | | |
| Characteristic Values of Axial Pull-Through*** Resistance [kN] (acc. to Fig. 4+5 of EAD 030351-00-0402) | | | | |
| | HTV 82/40 F HTE 82/40 F | HTV 40 RU 6,5mm HTE 40 RU 6,5mm | EcoTek 50xL EcoTek T 50xL | EJOT® FP Ø7,0mm |
| FBS-R-6,3xL | 1,78 | 1,73 | 1,58 | 3,65 |
| *** "Pull-over" acc. to CEN/TS 17659:2021 | | | | |

| | | |
|--------------------------|------------------------------|-----------|
| EJOT Flat Roof Fasteners | | Annex 9 a |
| Screw: | EJOT Dabo® FBS - R- 6,3 x Ls | |

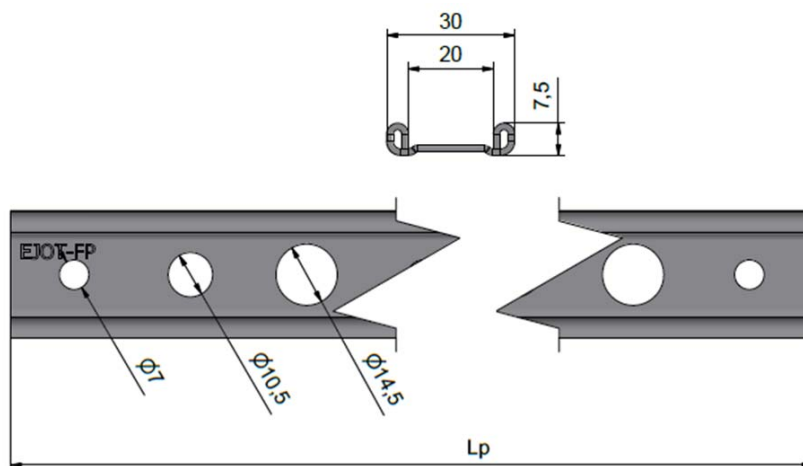
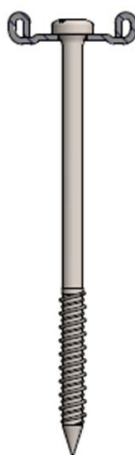
EJOT® HTV 82/40 F or EJOT® HTE 82/40 F



EJOT® HTV 40 RU 6,5mm or EJOT® HTE 40 RU 6,5mm



EJOT® FP Ø7,0

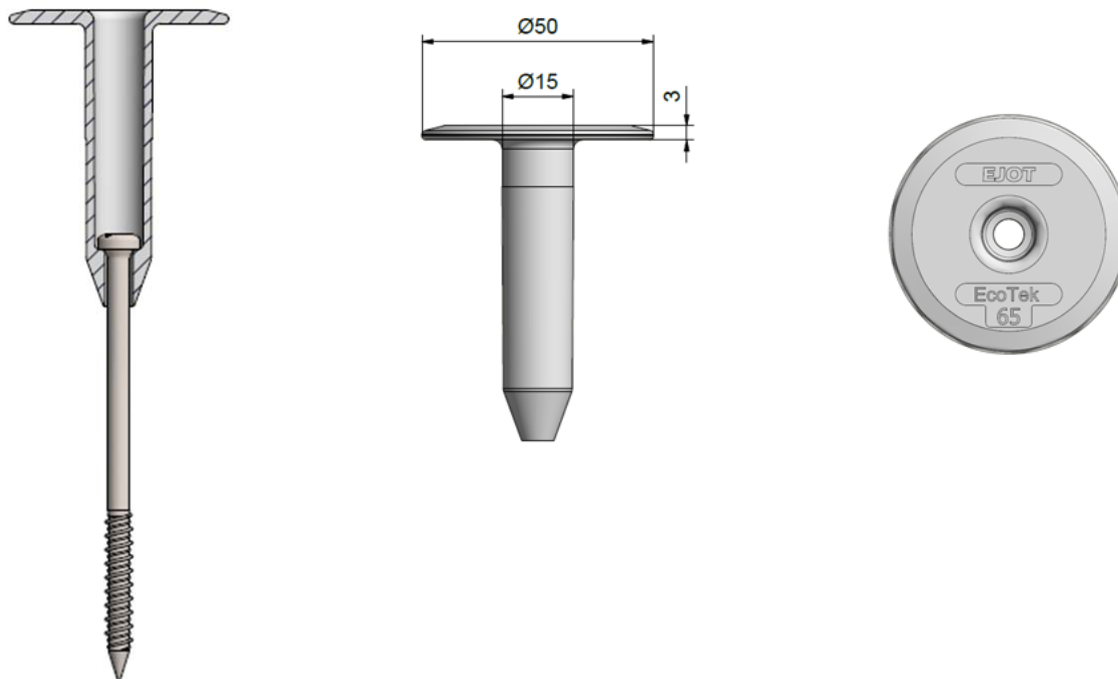


EJOT Flat Roof Fasteners

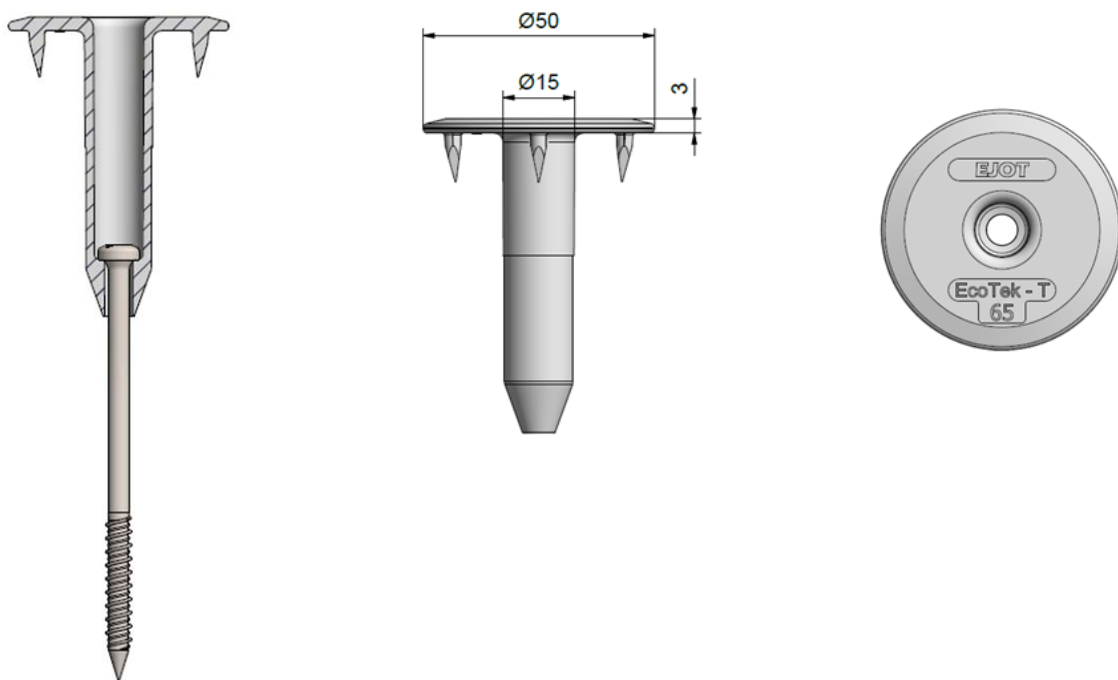
Combination: 9.1 – 9.5

Annex 9 b

EJOT® EcoTek 50xL



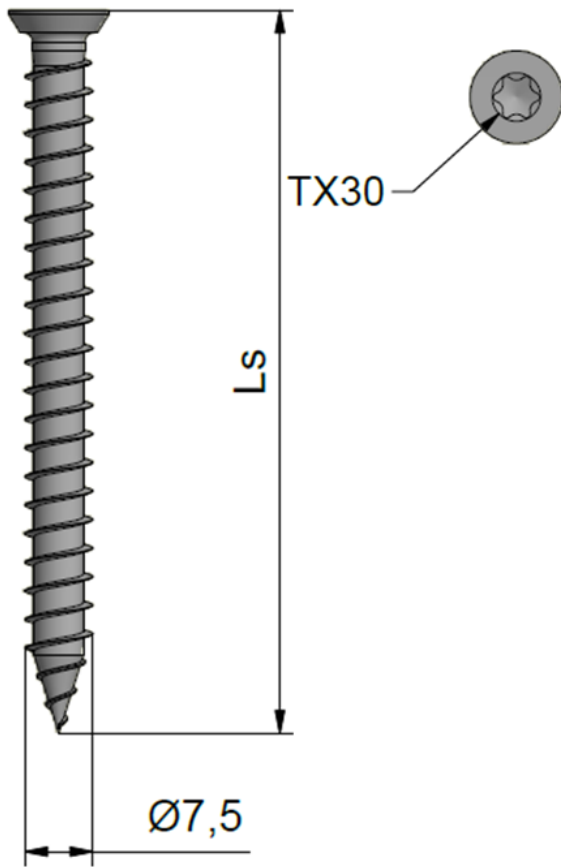
EJOT® EcoTek T 50xL



EJOT Flat Roof Fasteners

Combination: 9.6 – 9.7

Annex 9 c



Screw:

EJOT Dabo® JBS-R-7,5xL
EJOT Dabo® JBS-E-7,5xL

Washer / Rail-system:

EJOT® HTV 82/40 F
EJOT® HTE 82/40 F
EJOT® EcoTek 50xL
EJOT® EcoTek T 50xL
EJOT® FP Ø7,0mm

Substrate:

Concrete C12/15 EN 206-1

Technical data:

Anchoring depth h_{ef}: ≥ 30mm
Screw drive: TX30

Characteristic Values of Axial Pull-Out Resistance [kN] (acc. to Fig. 3 of EAD 030351-00-0402)

Concrete C12/15*

| | |
|-------------|------|
| JBS-R-7,5xL | 1,58 |
| JBS-E-7,5xL | 1,58 |

* Pre-drilling diameter 6,0mm

Characteristic Values of Axial Pull-Through* Resistance [kN]** (acc. to Fig. 4+5 of EAD 030351-00-0402)

| | HTV 82/40 F HTE 82/40 F | EcoTek 50xL EcoTek T 50xL | EJOT® FP Ø7,0mm |
|-------------|----------------------------|------------------------------|-----------------|
| JBS-R-7,5xL | 1,78 | 1,58 | 3,65 |
| JBS-E-7,5xL | 1,78 | 1,58 | 3,65 |

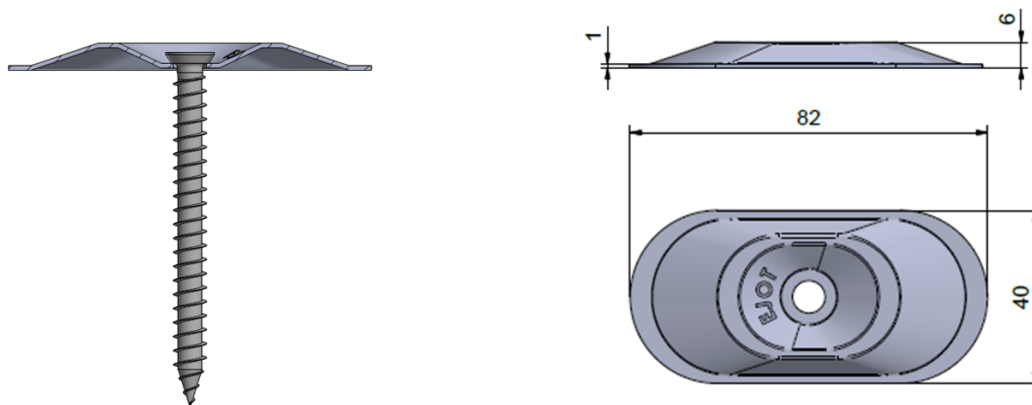
*** "Pull-over" acc. to CEN/TS 17659:2021

EJOT Flat Roof Fasteners

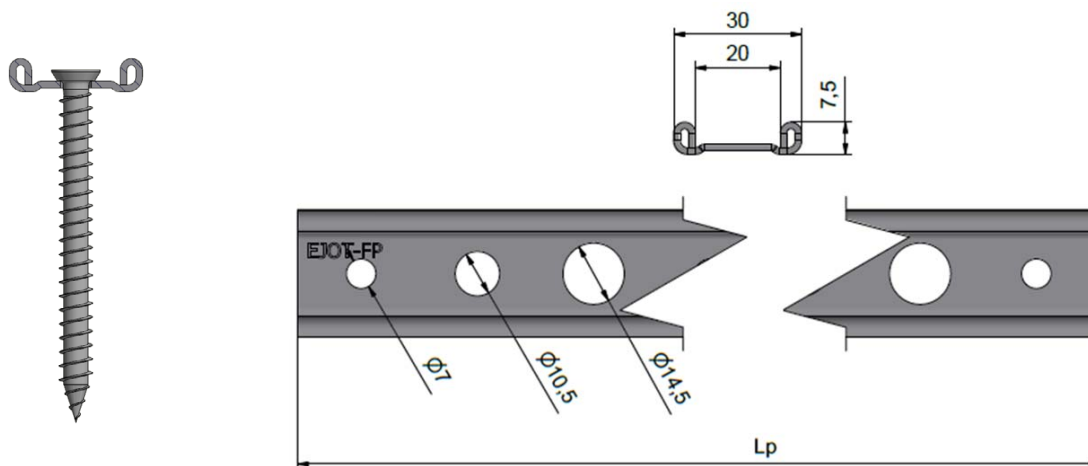
Screw: EJOT Dabo® JBS - R- 7,5 x Ls
EJOT Dabo® JBS - E- 7,5 x Ls

Annex 10 a

EJOT® HTV 82/40 F or EJOT® HTE 82/40 F



EJOT® FP Ø7,0mm

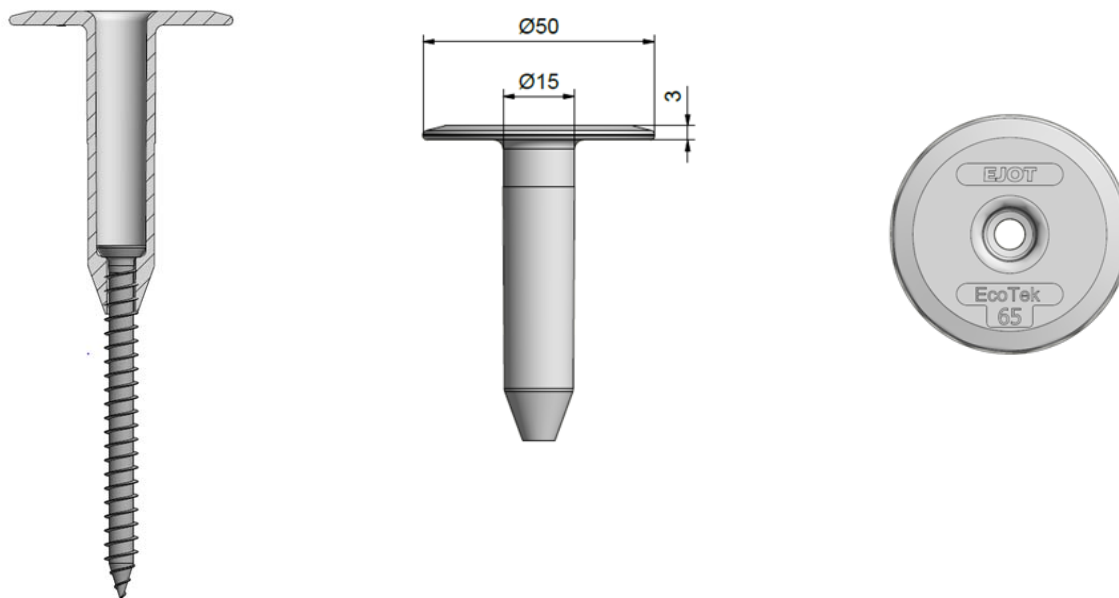


EJOT Flat Roof Fasteners

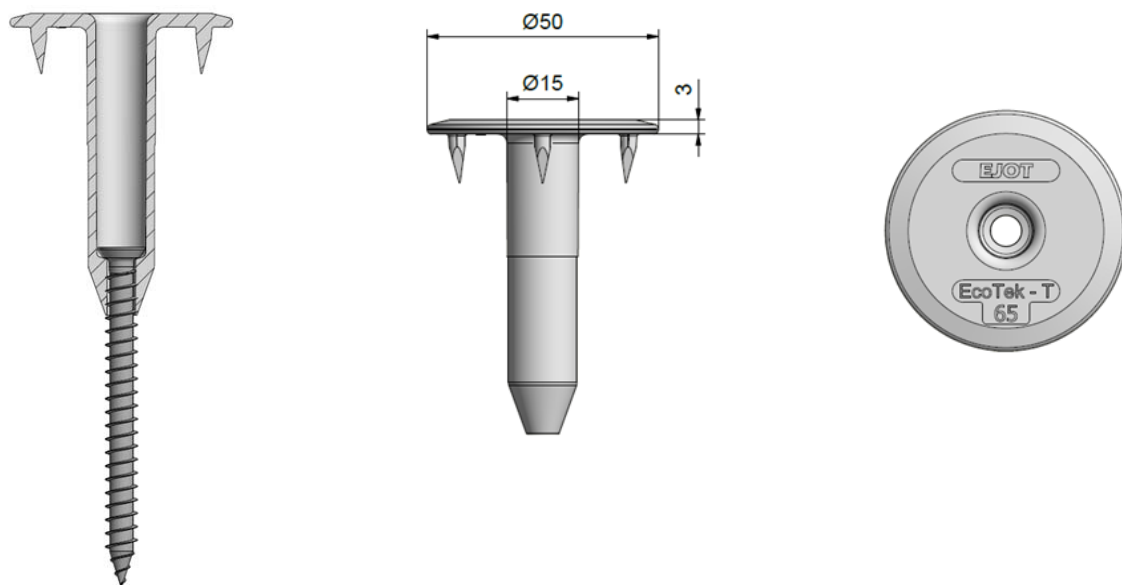
Combination: 10.1 – 10.6

Annex 10 b

EJOT® EcoTek 50xL



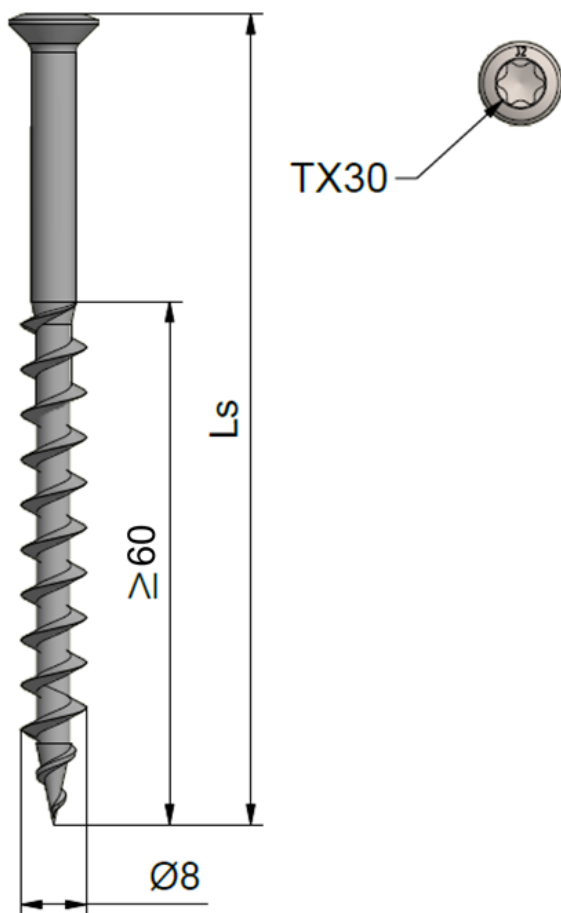
EJOT® EcoTek T 50xL



EJOT Flat Roof Fasteners

Combination: 10.7 – 10.10

Annex 10 c



Screw:

EJOT Dabo® FPS-R-8,0xL
EJOT Dabo® FPS-E-8,0xL

Washer / Rail-system:

EJOT® HTV 82/40 F
EJOT® HTE 82/40 F
EJOT® HTV 40 RU 6,5mm
EJOT® HTE 40 RU 6,5mm
EJOT® EcoTek 50xL
EJOT® EcoTek T 50xL
EJOT® FP Ø7,0mm
SIKA Sarnabar® Ø6,0mm

Substrate:

Aerated concrete
AAC 3,5 - 500 EN 12602

Technical data:

Anchoring depth h_{ef} : ≥ 60 mm
Screw drive: TX30

Characteristic Values of Axial Pull-Out Resistance [kN] (acc. to Fig. 3 of EAD 030351-00-0402)

Aerated concrete AAC 3,5 - 500

| | |
|-------------|------|
| FPS-R-8,0xL | 1,72 |
| FPS-E-8,0xL | 1,72 |

Characteristic Values of Axial Pull-Through* Resistance [kN]** (acc. to Fig. 4+5 of EAD 030351-00-0402)

| | HTV 82/40 F HTE 82/40 F | HTV 40 RU 6,5mm HTE 40 RU 6,5mm | EcoTek 50xL EcoTek T 50xL | EJOT® FP Ø7,0mm | SIKA Sarnabar® Ø6,0mm |
|-------------|----------------------------|------------------------------------|------------------------------|--------------------|--------------------------|
| FPS-R-8,0xL | 1,78 | 1,73 | 1,58 | 3,65 | 3,65 |
| FPS-E-8,0xL | 1,78 | 1,73 | 1,58 | 3,65 | 3,65 |

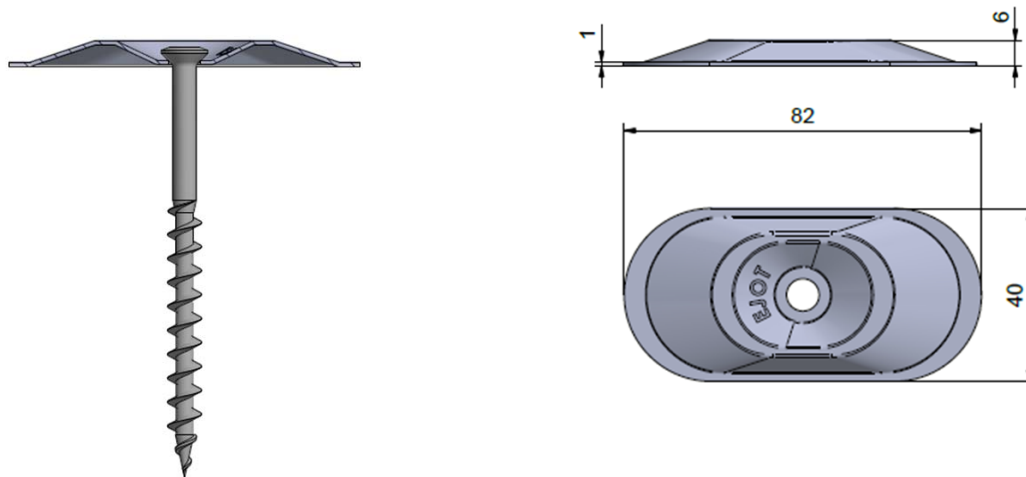
*** "Pull-over" acc. to CEN/TS 17659:2021

EJOT Flat Roof Fasteners

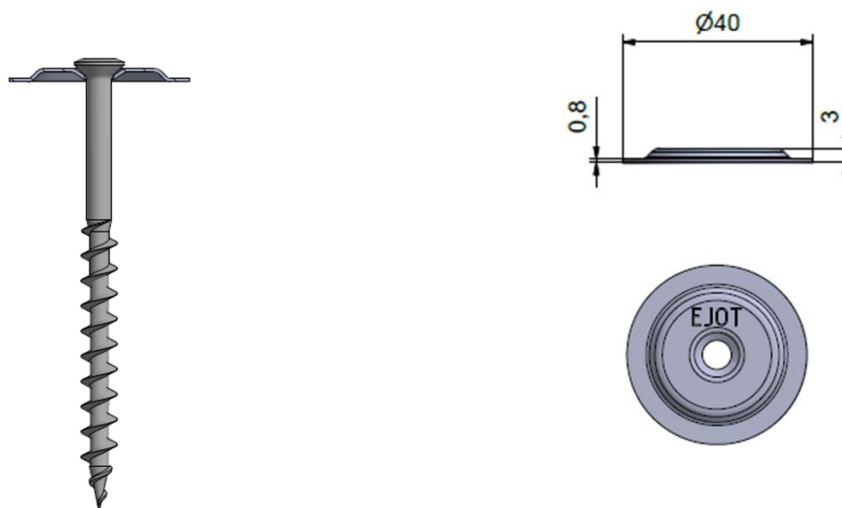
Screw: EJOT Dabo® FPS – R - 8,0 x Ls
EJOT Dabo® FPS – E - 8,0 x Ls

Annex 11 a

EJOT® HTV 82/40 F or EJOT® HTE 82/40 F



EJOT® HTV 40 RU 6,5mm or EJOT® HTE 40 RU 6,5mm

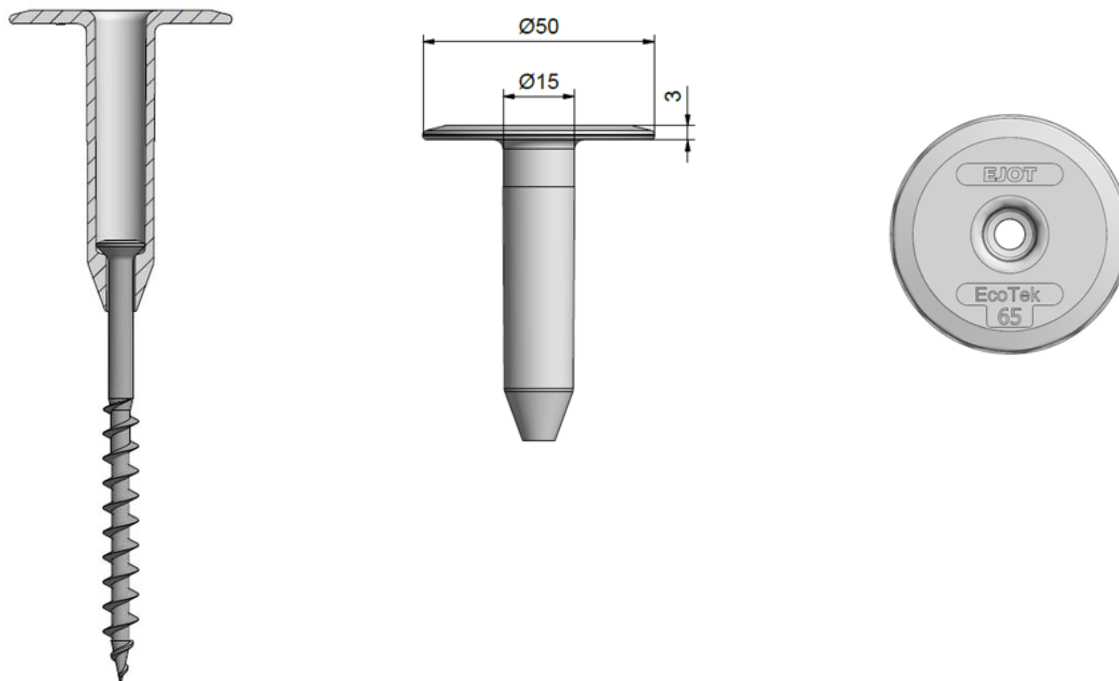


EJOT Flat Roof Fasteners

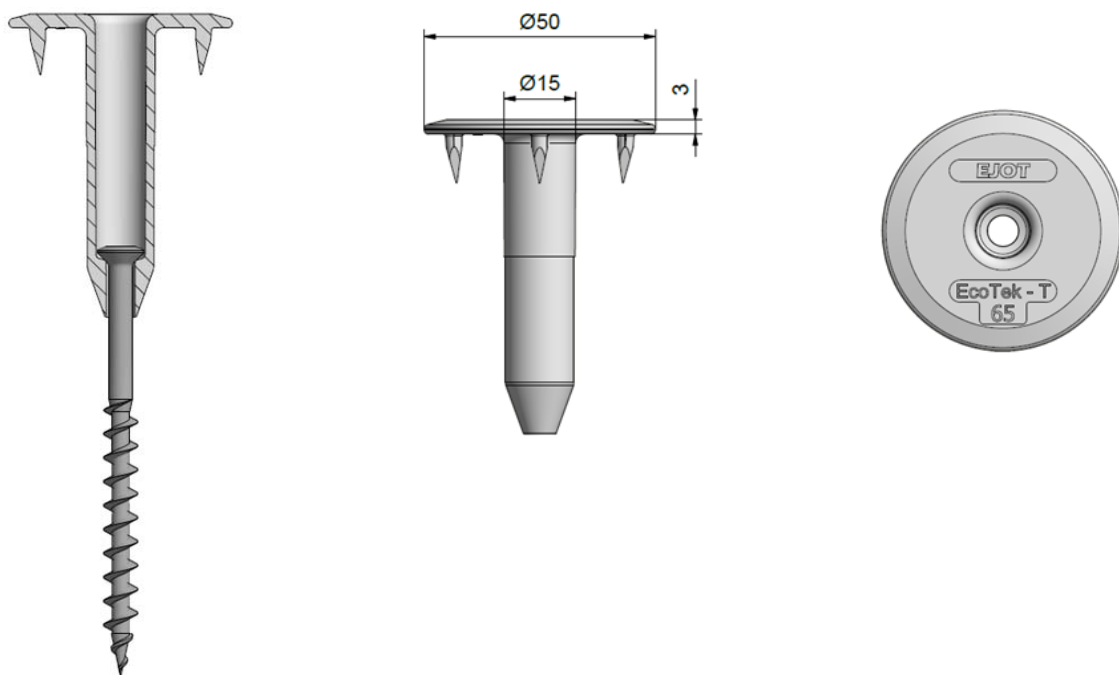
Combination: 11.1 – 11.8

Annex 11 b

EJOT® EcoTek 50xL



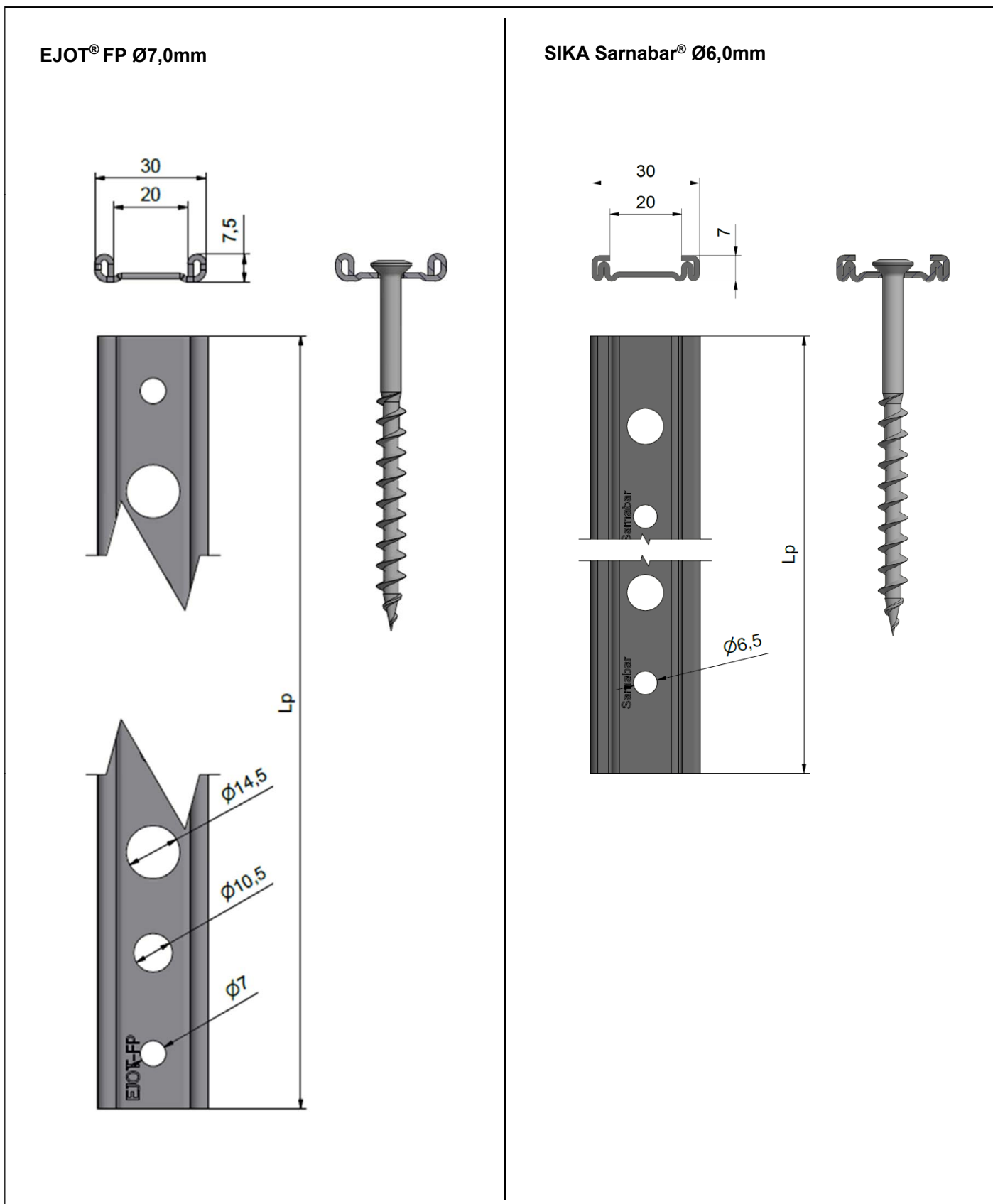
EJOT® EcoTek T 50xL



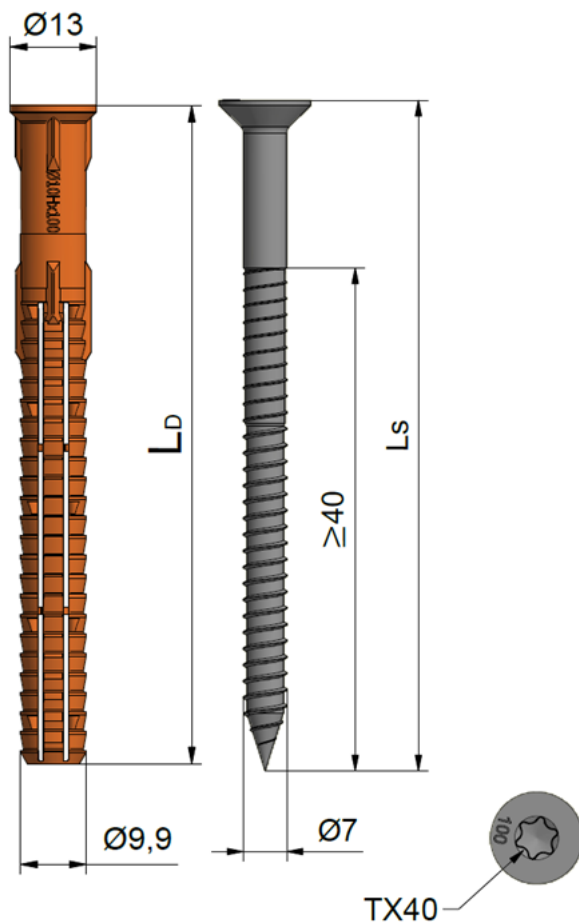
EJOT Flat Roof Fasteners

Combination: 11.9 – 11.12

Annex 11 c



| | |
|----------------------------|------------|
| EJOT Flat Roof Fasteners | Annex 11 d |
| Combination: 11.13 – 11.16 | |



Dowel combination:

SDF-S-10HxL-E

Washer / Rail-system:

EJOT® FP Ø10,5mm

Substrate:

Concrete C12/15

EN 206-1

Technical data:

Anchoring depth h_{ef} :
Screw drive:

≥ 70mm
TX40

Characteristic Values of Axial Pull-Out Resistance [kN] (acc. to Fig. 3 of EAD 030351-00-0402)

Concrete C12/15*

SDF-S-10HxL-E

4,00

* Pre-drilling diameter 10,0mm

Characteristic Values of Axial Pull-Through* Resistance [kN]** (acc. to Fig. 4+5 of EAD 030351-00-0402)

EJOT® FP Ø10,5mm

SDF-S-10HxL-E

5,57

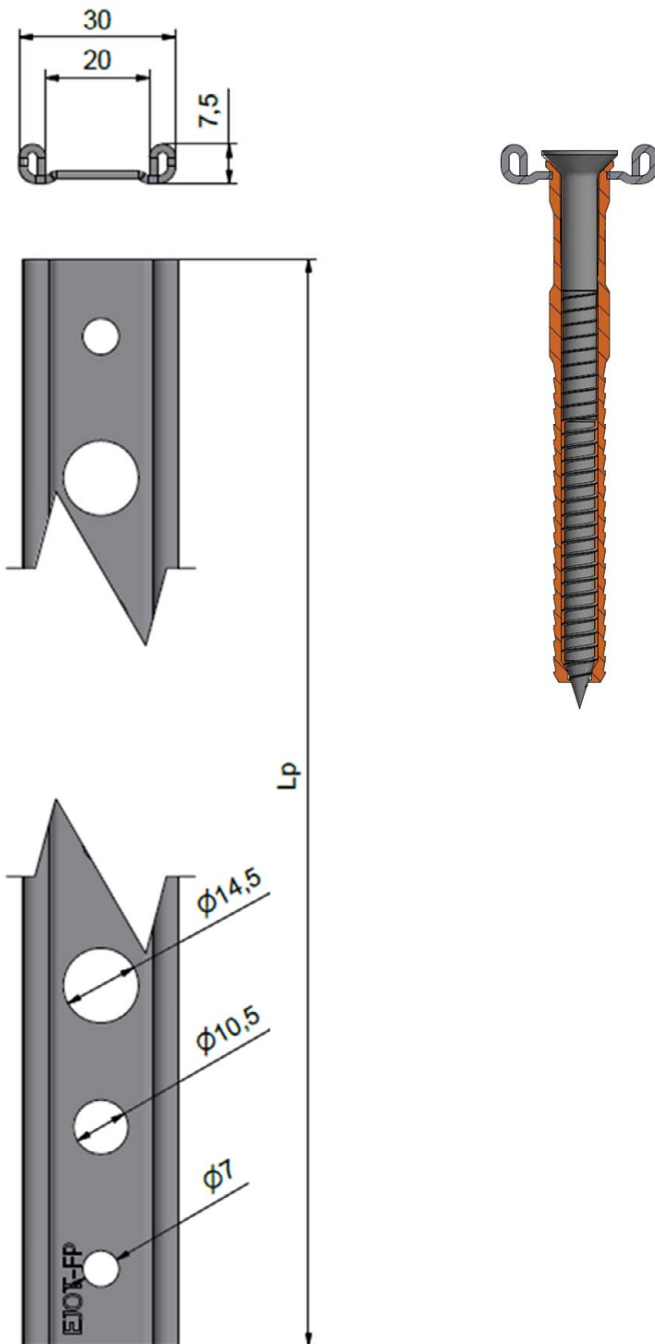
*** "Pull-over" acc. to CEN/TS 17659:2021

EJOT Flat Roof Fasteners

Fastener: EJOT SDF – S – 10H x L – E

Annex 12 a

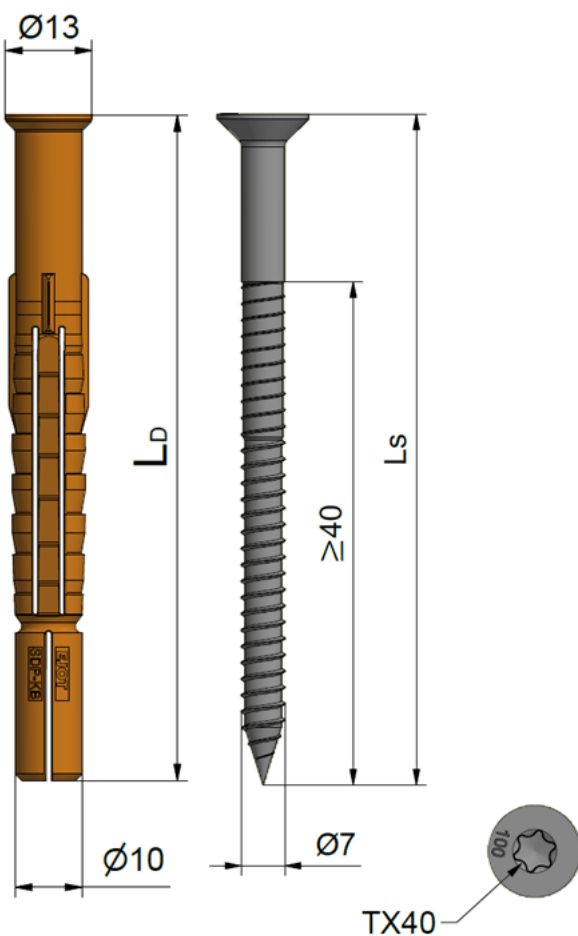
EJOT® FP Ø10,5mm



EJOT Flat Roof Fasteners

Combination: 12.1

Annex 12 b



Dowel combination:

SDP-S-10GxL-E

Washer / Rail-system:

EJOT® FP Ø10,5mm

Substrate:

Aerated concrete
AAC 3,5 - 500

EN 12602

Technical data:

Anchoring depth h_{ef} :
Screw drive:

≥ 70mm
TX40

Characteristic Values of Axial Pull-Out Resistance [kN] (acc. to Fig. 3 of EAD 030351-00-0402)

Aerated concrete AAC 3,5 - 500*

| | |
|---------------|------|
| SDP-S-10GxL-E | 1,31 |
|---------------|------|

* Pre-drilling diameter 10,0mm

Characteristic Values of Axial Pull-Through* Resistance [kN]** (acc. to Fig. 4+5 of EAD 030351-00-0402)

EJOT® FP Ø10,5mm

| | |
|---------------|------|
| SDP-S-10GxL-E | 5,57 |
|---------------|------|

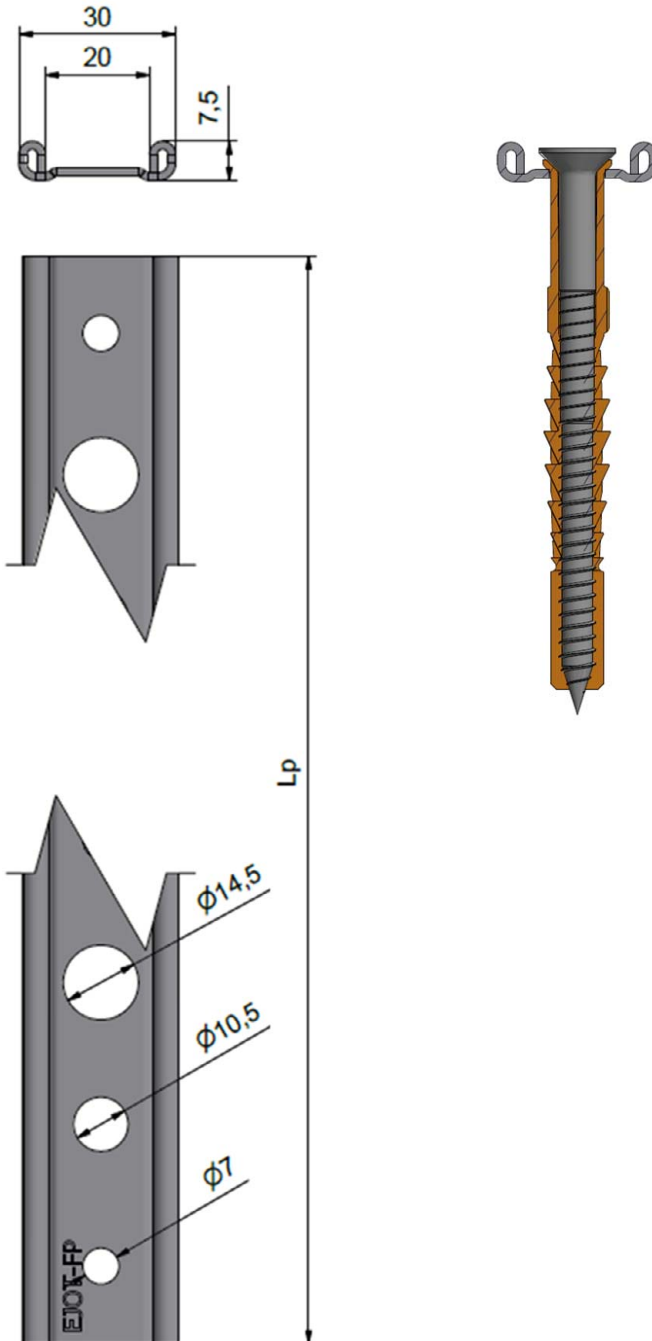
*** "Pull-over" acc. to CEN/TS 17659:2021

EJOT Flat Roof Fasteners

Fastener: EJOT SDP – S – 10G x L – E

Annex 13 a

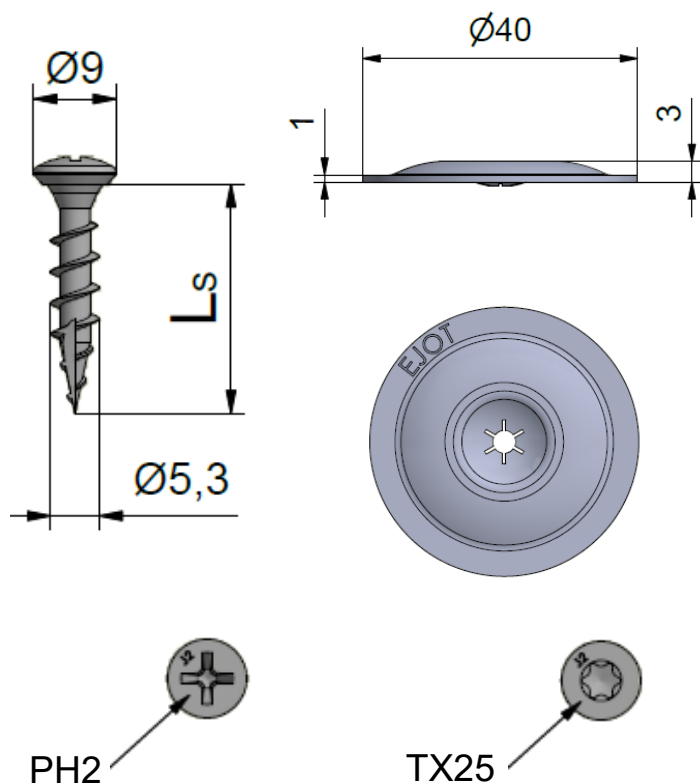
EJOT® FP Ø10,5mm



EJOT Flat Roof Fasteners

Combination: 13.1

Annex 13 b



Fastener combination:

HTV-RU-40/L-W

Washer / Rail-system:

Substrate:

| | | |
|--------------|--------------------------------|------------|
| Timber / C24 | $\rho_{\min}=350\text{kg/m}^3$ | EN 338 |
| Chipboard P4 | $\rho_{\min}=600\text{kg/m}^3$ | EN 12369-1 |
| Plywood | $\rho_{\min}=400\text{kg/m}^3$ | EN 12369-2 |
| OSB/3 | $\rho_{\min}=550\text{kg/m}^3$ | EN 12369-1 |

Technical data:

Screw drive: PH2 / TX25

Characteristic Values of Axial Pull-Out Resistance [kN] (acc. to Fig. 3 of EAD 030351-00-0402)

| | C24 | Chipboard | Plywood | OSB/3 |
|---------------|------|-----------|---------|-------|
| t [mm] | 24** | 19** | 21** | 18** |
| HTV-RU-40/L-W | 1,68 | 1,26 | 1,66 | 1,10 |

** effective minimum screw-in depth (screw-in depth of the thread), or minimum plate thickness

Characteristic Values of Axial Pull-Through* Resistance [kN]** (acc. to Fig. 4+5 of EAD 030351-00-0402)

| | |
|---------------|------|
| HTV-RU-40/L-W | 1,15 |
|---------------|------|

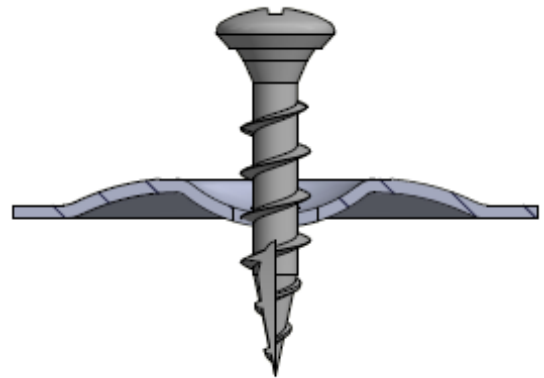
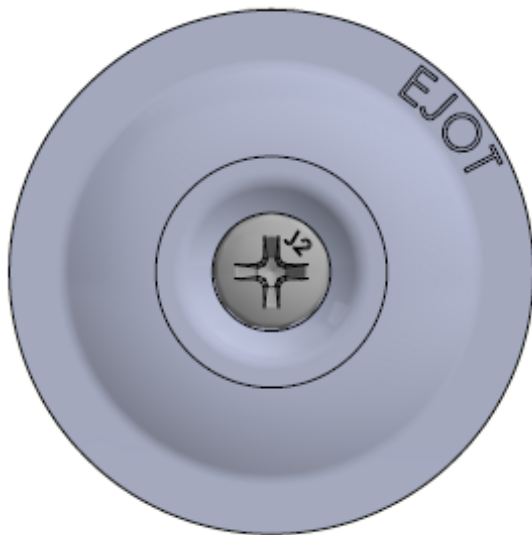
*** "Pull-over" acc. to CEN/TS 17659:2021

EJOT Flat Roof Fasteners

Fastener: EJOT HTV RU 40 / L - W

Annex 14 a

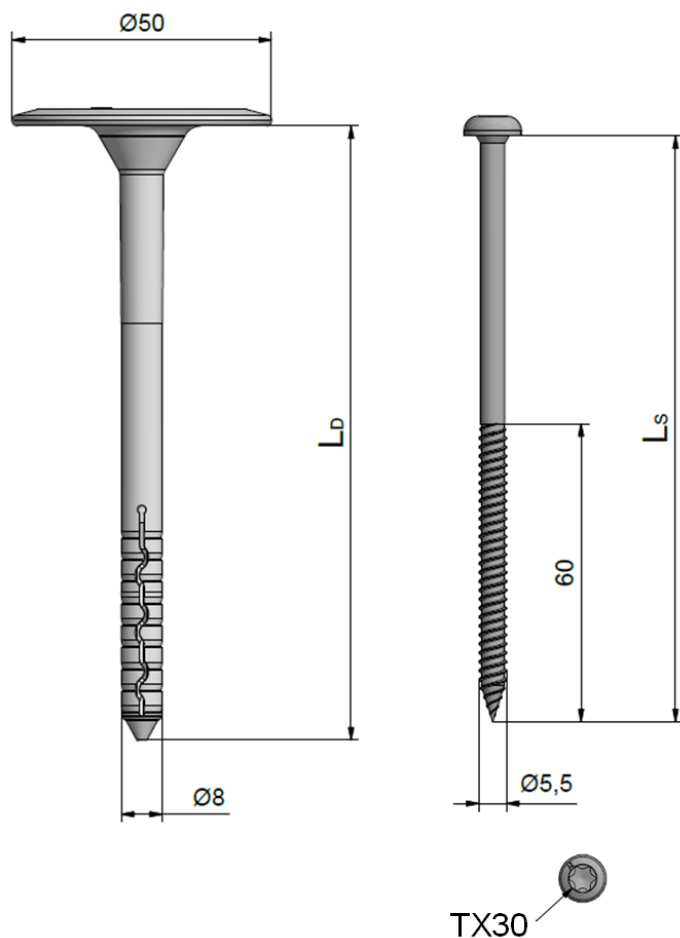
HTV-RU-40/L-W



EJOT Flat Roof Fasteners

Combination: 14.1

Annex 14 b



Dowel combination:

FDD-Plus-S-50xL-R
FDD-Plus-S-50xL-E

Washer / Rail-system:

Substrate:

| | |
|---------------------|----------|
| Concrete C12/15 | EN 206-1 |
| Lightweight LC12/13 | EN 206-1 |
| Aerated concrete | |
| AAC 3,5 - 500 | EN 12602 |

Technical data:

| | |
|----------------------------|--------|
| Anchoring depth h_{ef} : | |
| - Concrete C12/15 | ≥ 30mm |
| - Lightweight LC12/13 | ≥ 30mm |
| - Aerated concrete | ≥ 65mm |

| | |
|--------------|------|
| Screw drive: | TX30 |
|--------------|------|

Characteristic Values of Axial Pull-Out Resistance [kN] (acc. to Fig. 3 of EAD 030351-00-0402)

| | C12/15* | LC12/13* | AAC 3,5 - 500* |
|-------------------|---------|----------|----------------|
| FDD-Plus-S-50xL-R | 1,35 | 1,34 | 1,78 |
| FDD-Plus-S-50xL-E | 1,35 | 1,34 | 1,78 |

* Pre-drilling diameter 8,0mm

Characteristic Values of Axial Pull-Through* Resistance [kN]** (acc. to Fig. 4+5 of EAD 030351-00-0402)

| FDD-Plus-S-50xL-R | 1,92 |
|-------------------|------|
| FDD-Plus-S-50xL-E | 1,92 |

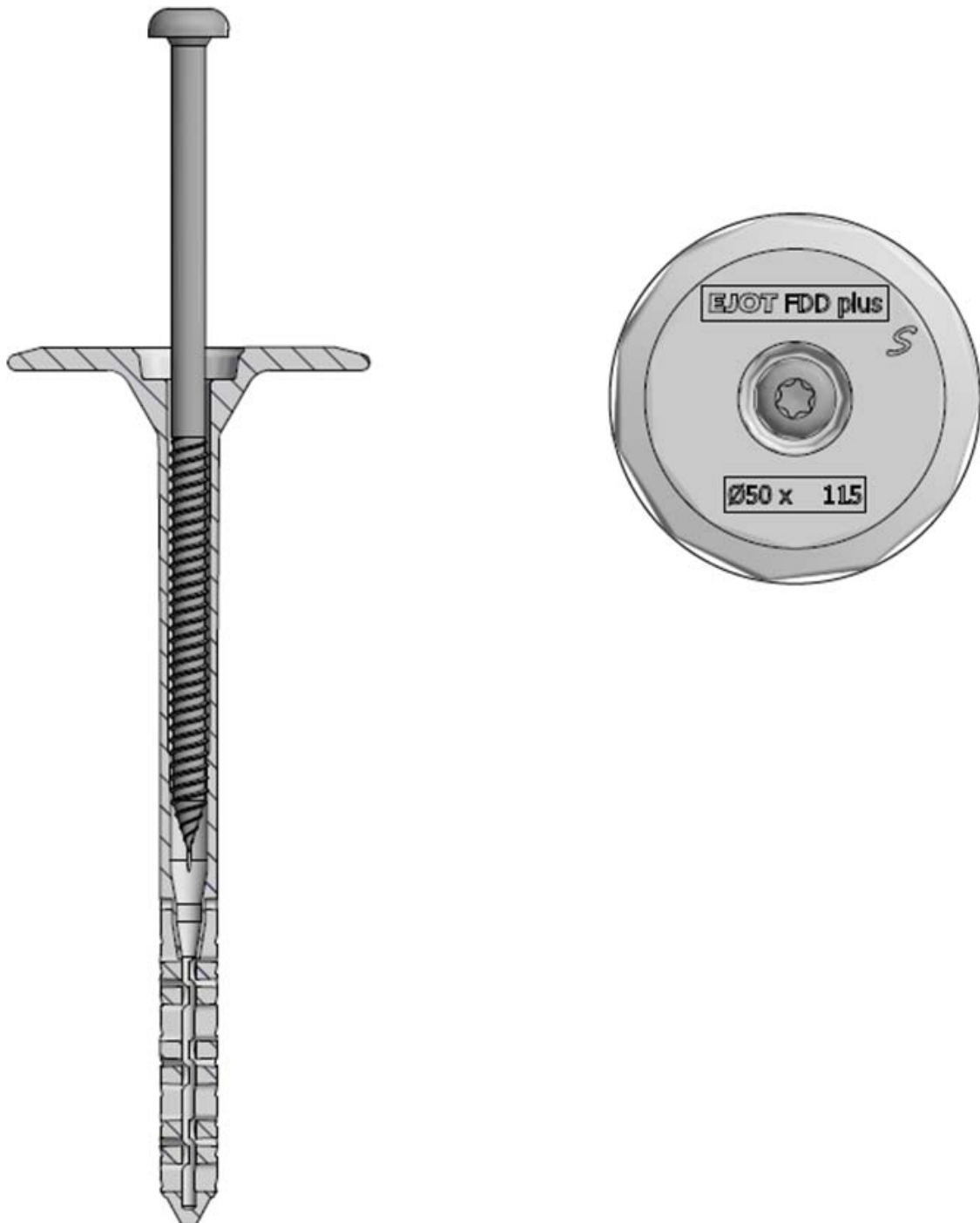
*** "Pull-over" acc. to CEN/TS 17659:2021

EJOT Flat Roof Fasteners

Fastener: FDD-Plus-S-50xL-R
FDD-Plus-S-50xL-E

Annex 15 a

FDD-Plus-S-50xL-R or FDD-Plus-S-50xL-E

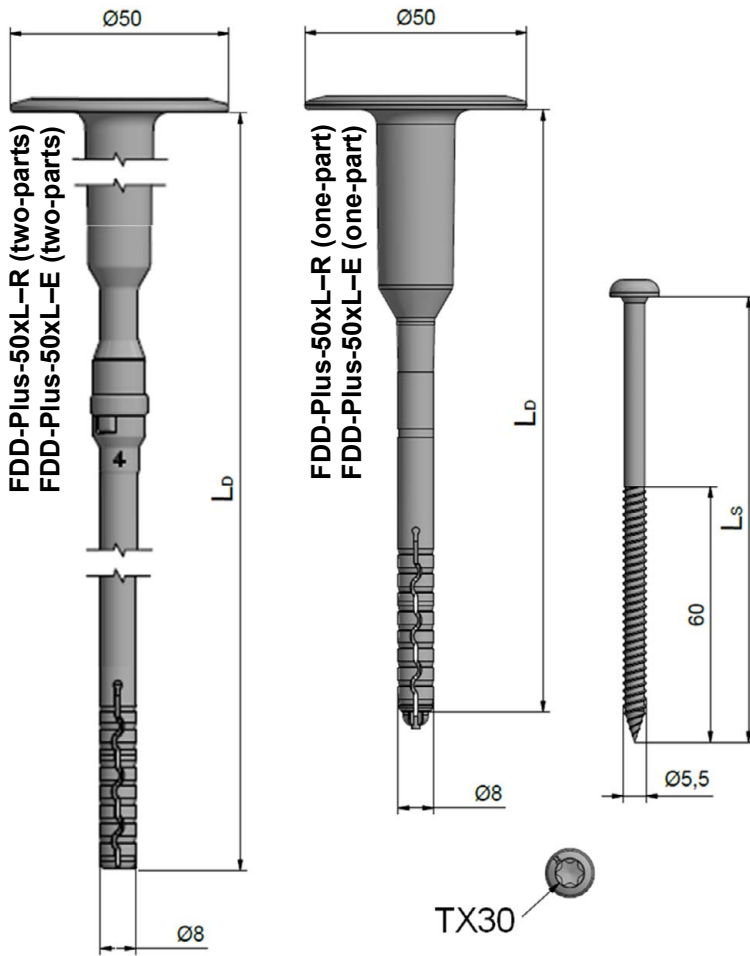


EJOT Flat Roof Fasteners

Combination: 15.1 – 15.2

Annex 15 b

English translation prepared by DIBt



Dowel combination:

FDD-Plus-50xL-R (one-part / two-parts)
FDD-Plus-50xL-E (one-part / two-parts)

Washer / Rail-system:

Substrate:

| | |
|---------------------|----------|
| Concrete C12/15 | EN 206-1 |
| Lightweight LC12/13 | EN 206-1 |
| Aerated concrete | |
| AAC 3,5 - 500 | EN 12602 |

Technical data:

| | |
|----------------------------|--------|
| Anchoring depth h_{ef} : | |
| - Concrete C12/15 | ≥ 30mm |
| - Lightweight LC12/13 | ≥ 30mm |
| - Aerated concrete | ≥ 65mm |
| Screw drive: | TX30 |

Characteristic Values of Axial Pull-Out Resistance [kN] (acc. to Fig. 3 of EAD 030351-00-0402)

| | C12/15* | LC12/13* | AAC 3,5 - 500* |
|--|---------|----------|----------------|
| FDD-Plus-50xL-R (one-part / two-parts) | 1,35 | 1,34 | 1,78 |
| FDD-Plus-50xL-E (one-part / two-parts) | 1,35 | 1,34 | 1,78 |

* Pre-drilling diameter 8,0mm

Characteristic Values of Axial Pull-Through* Resistance [kN]** (acc. to Fig. 4+5 of EAD 030351-00-0402)

| | |
|--|------|
| FDD-Plus-50xL-R (one-part / two-parts) | 1,92 |
| FDD-Plus-50xL-E (one-part / two-parts) | 1,92 |

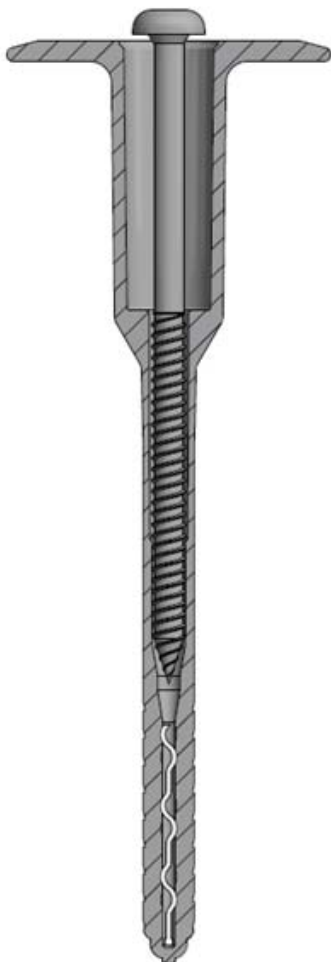
*** "Pull-over" acc. to CEN/TS 17659:2021

EJOT Flat Roof Fasteners

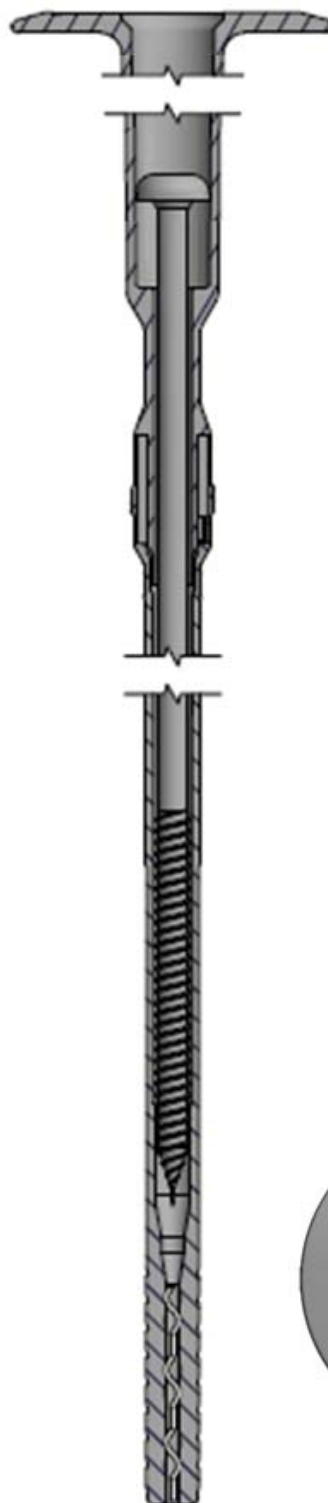
Fastener: FDD-Plus-50xL-R (one-part / two-parts)
FDD-Plus-50xL-E (one-part / two-parts)

Annex 16 a

FDD-Plus-50xL-R (one-part)
FDD-Plus-50xL-E (one-part)



FDD-Plus-50xL-R (two-parts)
FDD-Plus-50xL-E (two-parts)



EJOT Flat Roof Fasteners

Combination: 16.1 – 16.4

Annex 16 b