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European Technical Assessment

ETA-11/0135
 of 21.12.2021

General part

Technical Assessment Body issuing the European Technical Assessment

Österreichisches Institut für Bautechnik (OIB)
 Austrian Institute of Construction Engineering

Trade name of the construction product

SIHGA HobaFix

Product family to which the construction product belongs

Beam hanger for timber-to-timber connections

Manufacturer

SIHGA GmbH
 Gewerbepark Kleinreith 4
 4694 Ohlsdorf
 Austria

Manufacturing plant

Manufacturing plant 1

This European Technical Assessment contains

30 pages including 5 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

European Assessment Document (EAD) 130186-00-0603 "Three-dimensional nailing plates".

This European Technical Assessment replaces

European Technical Assessment ETA-11/0135 of 21.10.2016.

Remarks

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may be made with the written consent of Austrian Institute of Construction Engineering. Any partial reproduction has to be identified as such.

Specific parts

1 Technical description of the product

1.1 General

This European Technical Assessment (ETA)¹ applies to the beam hanger SIHGA HobaFix to be used in load-bearing timber to timber connections. The beam hanger SIHGA HobaFix consists of two parts which are inserted into each other. A fixing screw is used to mount the two parts. Installation of the two parts of the beam hanger into the timber is carried out with special screws.

SIHGA HobaFix and the components for its manufacturing correspond to the specifications given in the Annexes 1, 2 and 4. The material characteristics, dimensions and tolerances of SIHGA HobaFix, not indicated in these Annexes, are given in the technical file² of the European Technical Assessment.

1.2 Beam hanger

SIHGA HobaFix is made of extruded aluminium EN AW 6063 according to EN 573-2³. Aluminium with the same or higher strength may be used. There are six sizes of the beam hanger, type HF 70, HF 100, HF 135, HF 170, HF 200, HF 240 which are identical in shape as well as type HF Fassade. The seven types together with their most important dimensions are shown in Annex 2.

1.3 Screws

The screws for installation of the two parts of the beam hanger into the timber are described in Annex 1. They are made of hardened carbon steel.

1.4 Fixing screws

The fixing screws used to mount the two parts of the beam hanger are described in Annex 1. They are made of steel for quenching and tempering according to EN ISO 683-1 or EN ISO 683-2.

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

2.1 Intended use

The beam hangers are intended to be used in load bearing connections of timber structures as end-grain to side-grain connections, e.g. between beams, in solid timber of softwood of strength class C24 or better according to EN 338.

The typical installation of the beam hangers is shown in Annex 2.

¹ The ETA-11/0135 was firstly issued in 2011 as European technical approval with validity from 21.10.2011, amended in 2012 with validity from 08.02.2012, amended and converted in 2016 to the European Technical Assessment ETA-11/0135 of 21.10.2016 and amended in 2021 to European Technical Assessment ETA-11/0135 of 21.12.2021.

² The technical file of the European Technical Assessment is deposited at Österreichisches Institut für Bautechnik and, in so far as is relevant to the tasks of the notified factory production control certification body involved in the assessment and verification of constancy of performance procedure, is handed over to the notified factory production control certification body.

³ Reference documents are listed in Annex 5.

The beam hangers shall be subjected to static and quasi static actions only.

The beam hangers are intended to be used in service classes 1 and 2 according to EN 1995-1-1.

2.2 General assumptions

SIHGA HobaFix is manufactured in accordance with the provisions of the European Technical Assessment using the manufacturing process as identified in the inspection of the manufacturing plant by Österreichisches Institut für Bautechnik and laid down in the technical file.

The manufacturer shall ensure that the requirements in accordance with the Clauses 1, 2 and 3 as well as with the Annexes of the European Technical Assessment are made known to those who are concerned with design and execution of the works.

Design

The European Technical Assessment only applies to the manufacture and use of SIHGA HobaFix. Verification of stability of the works including application of loads on the product is not subject to the European Technical Assessment.

The following conditions shall be observed:

- Design of connections with beam hangers is carried out under the responsibility of an engineer experienced in timber structures.
- Design of the works shall account for the protection of the connections to maintain service class 1 or 2 according to EN 1995-1-1.
- The beam hangers are installed correctly.
- For the forces F_1 to F_4 according to Annex 3 it shall be checked in accordance with EN 1995-1-1 that splitting will not occur.

Design of connections with beam hangers may be according to EN 1995-1-1 taking into account the Annexes of the European Technical Assessment. Standards and regulations in force at the place of use shall be considered.

Packaging, transport, storage, maintenance, replacement and repair

Concerning product packaging, transport, storage, maintenance, replacement and repair it is the responsibility of the manufacturer to undertake the appropriate measures and to advise his clients on the transport, storage, maintenance, replacement and repair of the product as he considers necessary.

Installation

It is assumed that the product will be installed according to the manufacturer's instructions or (in absence of such instructions) according to the usual practice of the building professionals.

The beam hangers shall be screwed as specified in Annex 2 and mounted with fixing-screws.

The structural members which are connected with the beam hangers shall be

- Restrained against rotation; see Annex 3
- Strength class C24 or better;
- Free from wane under the beam hanger;
- The timber members shall have plane surfaces against the beam hangers;
- Minimum spacing and edge distances are in accordance with EN 1995-1-1.

2.3 Assumed working life

The provisions made in the European Technical Assessment (ETA) are based on an assumed intended working life of SIHGA HobaFix of 50 years, when installed in the works, provided that the product is subject to appropriate installation, use and maintenance (see Clause 2.2). These provisions are based upon the current state of the art and the available knowledge and experience⁴.

The indications 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 EOTA nor by the Technical Assessment Body, but are regarded only as a means for choosing the appropriate products in relation to the expected economically reasonable working life of the works.

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

3.1 Essential characteristics of the product

Table 1: Essential characteristics of the product and product performance

No	Essential characteristic	Product performance
Basic requirement for construction works 1: Mechanical resistance and stability		
1	Joint strength	3.1.1
2	Joint stiffness	No performance assessed.
3	Joint ductility	No performance assessed.
4	Resistance to seismic actions	No performance assessed.
5	Resistance to corrosion and deterioration	3.1.2
Basic requirement for construction works 2: Safety in case of fire		
4	Reaction to fire	3.1.3
5	Resistance to fire	No performance assessed.

3.1.1 Joint strength

The characteristic load bearing capacities of the beam hangers are determined by testing. The beam hangers are installed with a defined number of screws with respective nominal diameter and mounted with fixing screws as specified in Annex 1 and Annex 2. Kinematic boundary conditions are defined in Annex 3.

The values of the characteristic load bearing capacities for the loading directions F_1 to F_4 as defined in Annex 3 are given in Annex 4.

⁴ The real working life of a product incorporated in a specific works depends on the environmental conditions to which that works is subject, as well as on the particular conditions of the design, execution, use and maintenance of that works. Therefore, it cannot be excluded that in certain cases the real working life of the product can also be shorter than the assumed working life.

3.1.2 Resistance to corrosion and deterioration

The product is intended to be used in service classes 1 and 2 according to EN 1995-1-1. The product and each member of the connection should at least be suitable for service classes 1 and 2, but not for service class 1 only.

The beam hangers are made of extruded aluminium according to EN 573-2. The screws for installation and the fixing screws are made of hardened carbon steel and steel for quenching and tempering, respectively. Installation screws, as well as, fixing screws are zinc coated.

3.1.3 Reaction to fire

The beam hangers are made of aluminium and the screws and fixing screws are made of steel, all classified as Euroclass A1 in accordance with Commission Decision 96/603/EC as amended.

3.2 Assessment methods

3.2.1 General

The assessment of the essential characteristics in Clause 3.1 of SIHGA HobaFix for the intended use, and in relation to the requirements for mechanical resistance and stability and for safety in case of fire in the sense of the basic requirements for construction works № 1 and 2 of Regulation (EU) № 305/2011 has been made in accordance with the European Assessment Document EAD 130186-00-0603 "Three-dimensional nailing plates".

3.2.2 Identification

The European Technical Assessment for SIHGA HobaFix is issued on the basis of agreed data that identify the assessed product. Changes to materials, to composition, to characteristics of the product, or to the production process could result in these deposited data being incorrect. Österreichisches Institut für Bautechnik should be notified before the changes are implemented, as an amendment of the European Technical Assessment is possibly necessary.

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

4.1 System of assessment and verification of constancy of performance

According to Commission Decision 97/638/EC the system of assessment and verification of constancy of performance to be applied to the SIHGA HobaFix is System 2+. System 2+ is detailed in Commission Delegated Regulation (EU) № 568/2014 of 18 February 2014, Annex, 1.3, and provides for the following items

(a) The manufacturer shall carry out:

- (i) an assessment of the performance of the construction product carried out on the basis of testing (including sampling), calculation, tabulated values or descriptive documentation of that product;
- (ii) factory production control;
- (iii) testing of samples taken at the manufacturing plant by the manufacturer in accordance with a prescribed test plan⁵.

⁵ The prescribed test plan has been deposited with Österreichisches Institut für Bautechnik and is handed over only to the notified factory production control certification body involved in the procedure for the assessment and verification of constancy of performance. The prescribed test plan is also referred to as control plan.

- (b) The notified factory production control certification body shall decide on the issuing, restriction, suspension or withdrawal of the certificate of conformity of the factory production control on the basis of the outcome of the following assessments and verifications carried out by that body:
- (i) initial inspection of the manufacturing plant and of factory production control;
 - (ii) continuing surveillance, assessment and evaluation of factory production control.

4.2 AVCP for construction products for which a European Technical Assessment has been issued

Manufacturers undertaking tasks under Systems 2+ shall consider the European Technical Assessment issued for the construction product in question as the assessment of the performance of that product. Manufacturers shall therefore not undertake the tasks referred to in point 4.1 (a)(i).

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable European Assessment Document

5.1 Tasks for the manufacturer

5.1.1 Factory production control

In the manufacturing plant the manufacturer shall establish and continuously maintain a factory production control. All procedures and specification adopted by the manufacturer shall be documented in a systematic manner. The factory production control shall ensure the constancy of performances of the product with regard to the essential characteristics.

The manufacturer shall only use raw materials supplied with the relevant inspection documents as laid down in the control plan. The incoming raw materials shall be subject to controls by the manufacturer before acceptance. Check of incoming materials shall include control of inspection documents presented by the manufacturer of the raw materials.

The frequencies of controls and tests conducted during manufacturing and on the assembled product are defined by taking account of the manufacturing process of the product and are laid down in the control plan.

The results of factory production control are recorded and evaluated. The records include at least the following data:

- Designation of the product, basic materials and components
- Type of control or test
- Date of manufacture of the product and date of testing of the product or basic materials or components
- Results of controls and tests and, if appropriate, comparison with requirements
- Name and signature of person responsible for factory production control

The records shall be presented to the notified factory production control certification body involved in continuous surveillance. On request the records shall be presented to Österreichisches Institut für Bautechnik.

5.1.2 Declaration of performance

The manufacturer is responsible for preparing the declaration of performance. When all the criteria of the assessment and verification of constancy of performance are met, including the certificate of conformity of the factory production control issued by the notified factory production control certification body, the manufacturer shall draw up a declaration of performance.

5.2 Tasks for the notified factory production control certification body

5.2.1 Initial inspection of the manufacturing plant and of factory production control

The notified factory production control certification body shall verify the ability of the manufacturer for a continuous and orderly manufacturing of the SIHGA HobaFix according to the European Technical Assessment. In particular the following items shall be appropriately considered.

- Personnel and equipment
- The suitability of the factory production control established by the manufacturer
- Full implementation of the control plan

5.2.2 Continuous surveillance, assessment and evaluation of factory production control

The notified factory production control certification body shall visit the factory at least once a year for routine inspection. In particular the following items shall be appropriately considered.

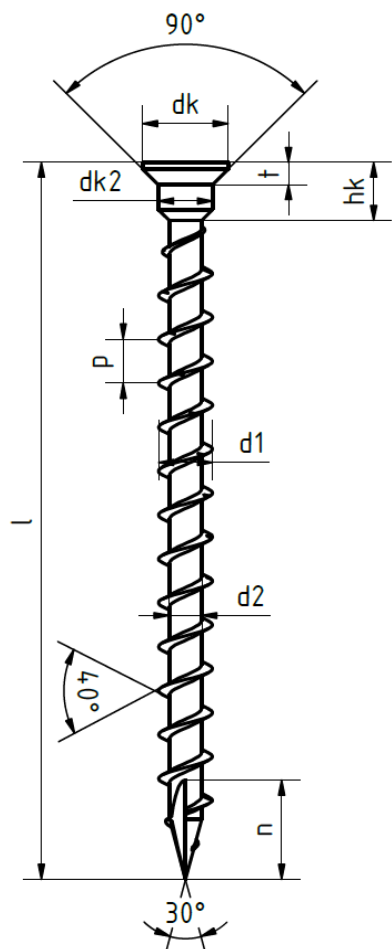
- The manufacturing process including personnel and equipment
- The factory production control
- The implementation of the control plan

The results of continuous surveillance are made available on demand by the notified factory production control certification body to Österreichisches Institut für Bautechnik. When the provisions of the European Technical Assessment and the control plan are no longer fulfilled, the certificate of conformity of the factory production control is withdrawn by the notified factory production control certification body.

Issued in Vienna on 21.12.2021
by Österreichisches Institut für Bautechnik

The original document is signed by:

Rainer Mikulits
Managing Director



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ET +0,2	1,80	1,90	2,20
dk1 ±0,25	5,50	8,05	9,50
dk2 ±0,2	4,00	5,00	6,00
hk ±0,2	4,20	5,60	6,70
t ±0,2	1,80	2,00	2,50
d1 ±0,2	4,00	5,00	6,00
d2 ±0,2	2,45	3,25	3,95
P ±10%	2,50	3,10	4,90
n ±0,5	5,00	10,00	12,00
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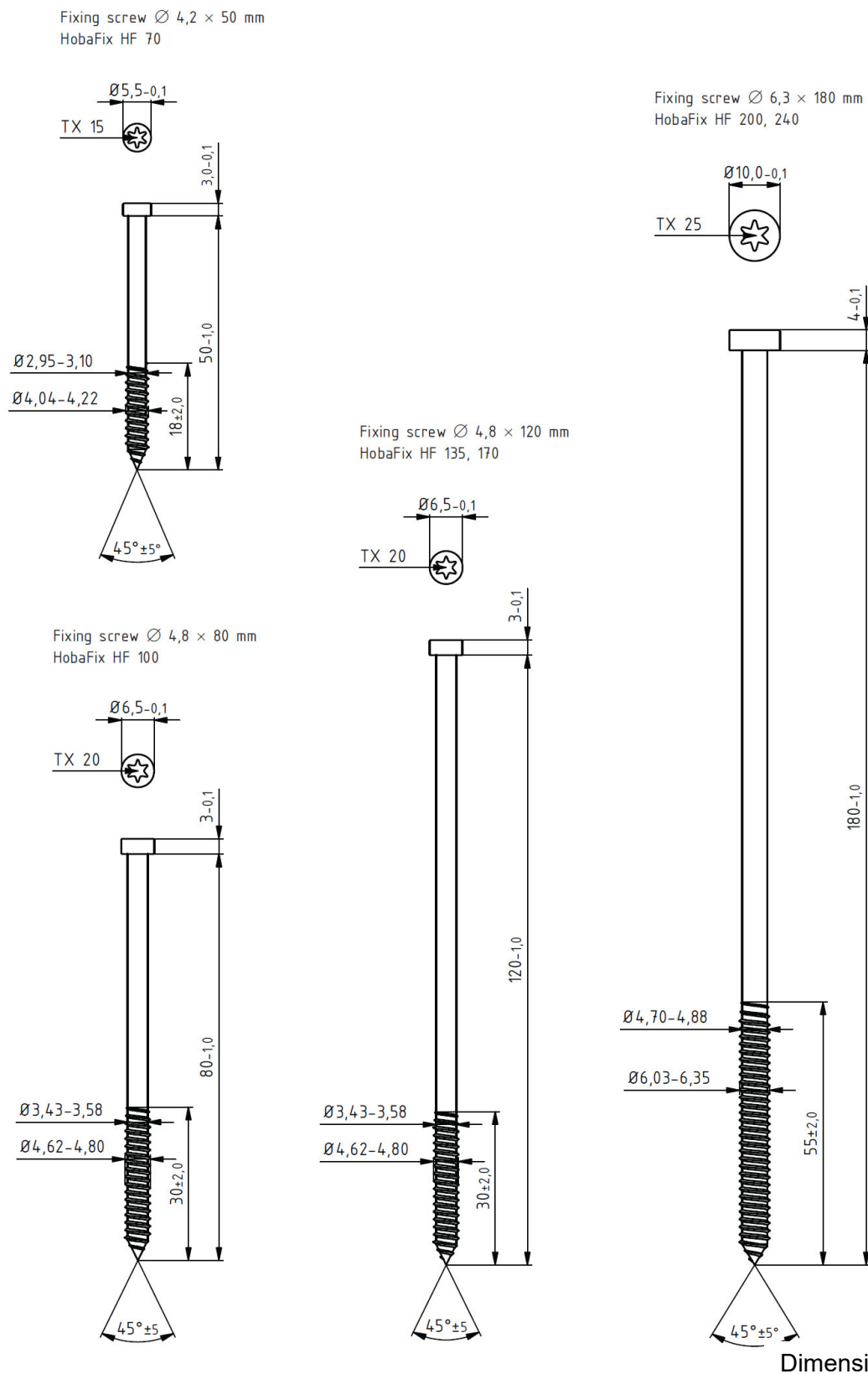
Dimensions in mm

SIHGA HobaFix

Annex 1

Fastener specification – screws

of European Technical Assessment
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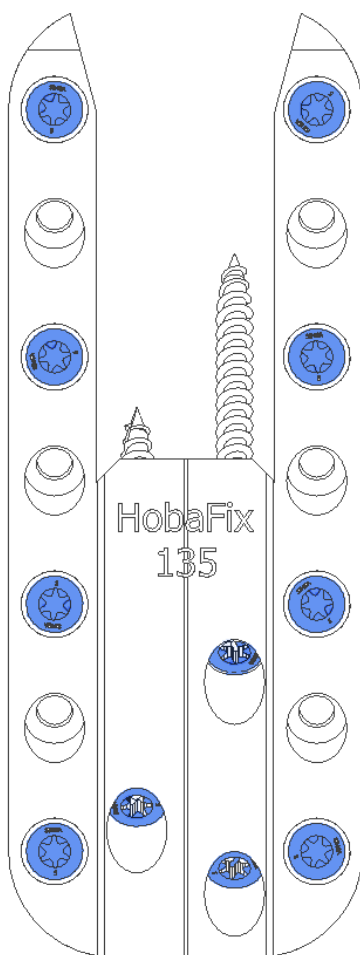
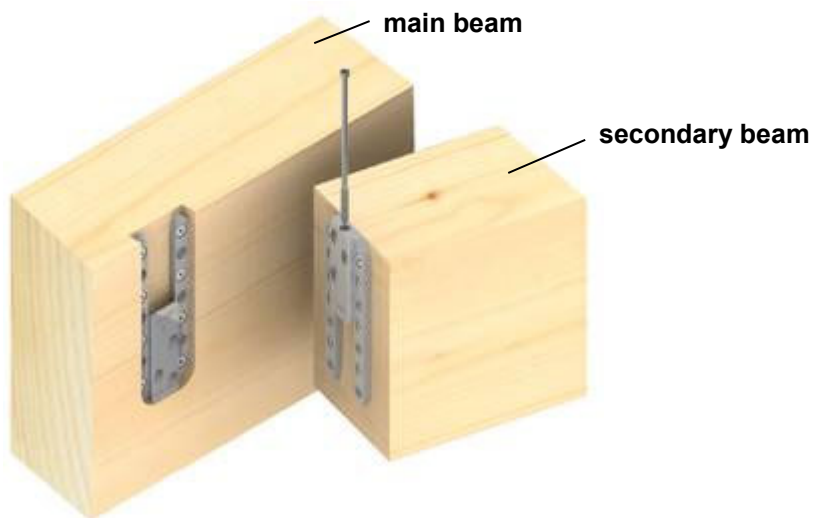
SIHGA HobaFix

Annex 1

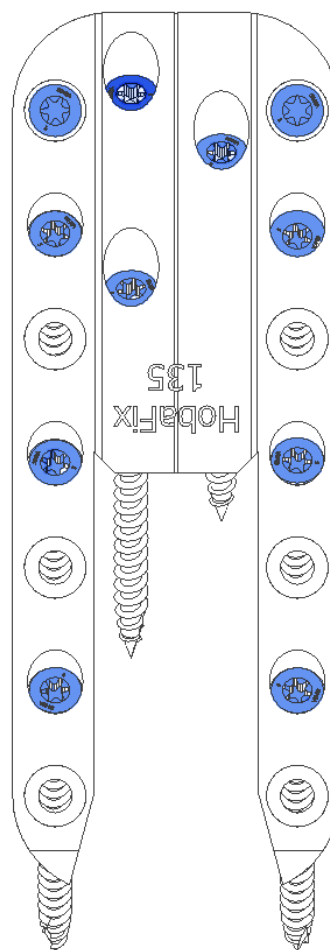
Fastener specification – fixing screws

of European Technical Assessment
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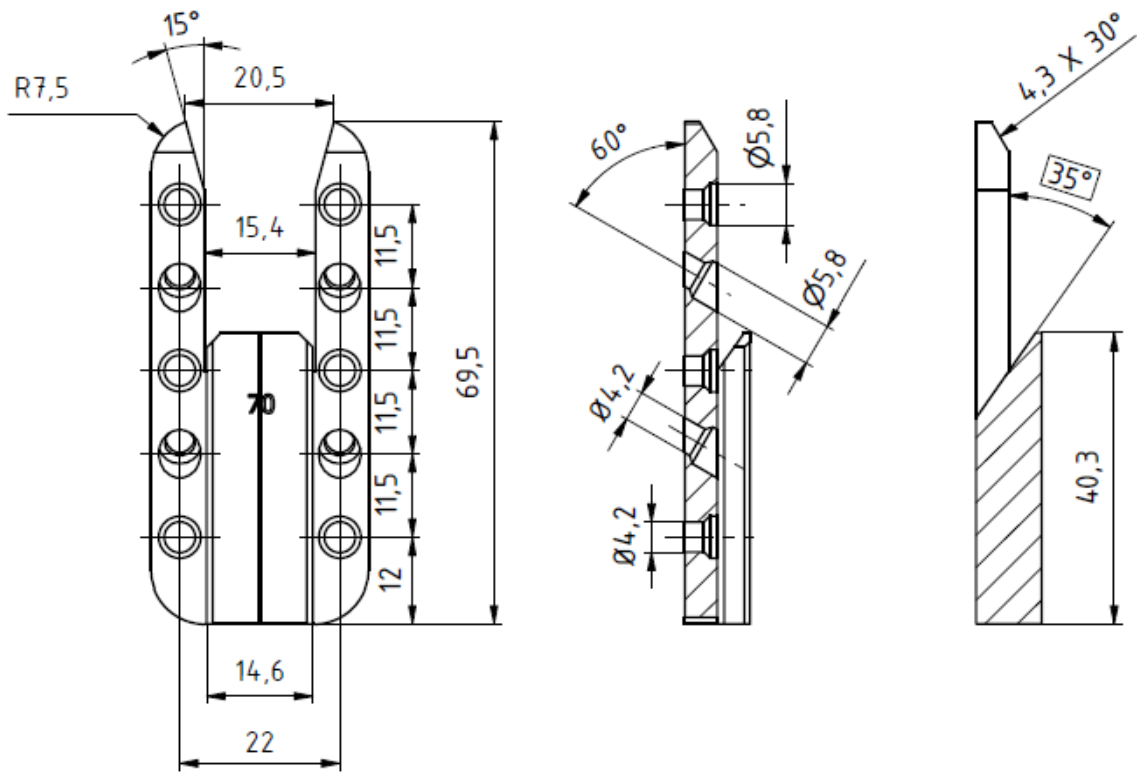
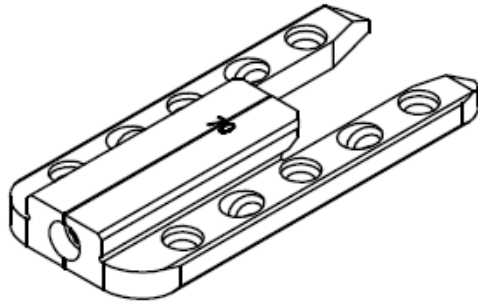
Screw pattern for main beam



Screw pattern for secondary beam

SIHGA HobaFix	Annex 2
Product details: typical installation of the beam hangers HF 70 to HF 240	of European Technical Assessment ETA-11/0135 of 21.12.2021

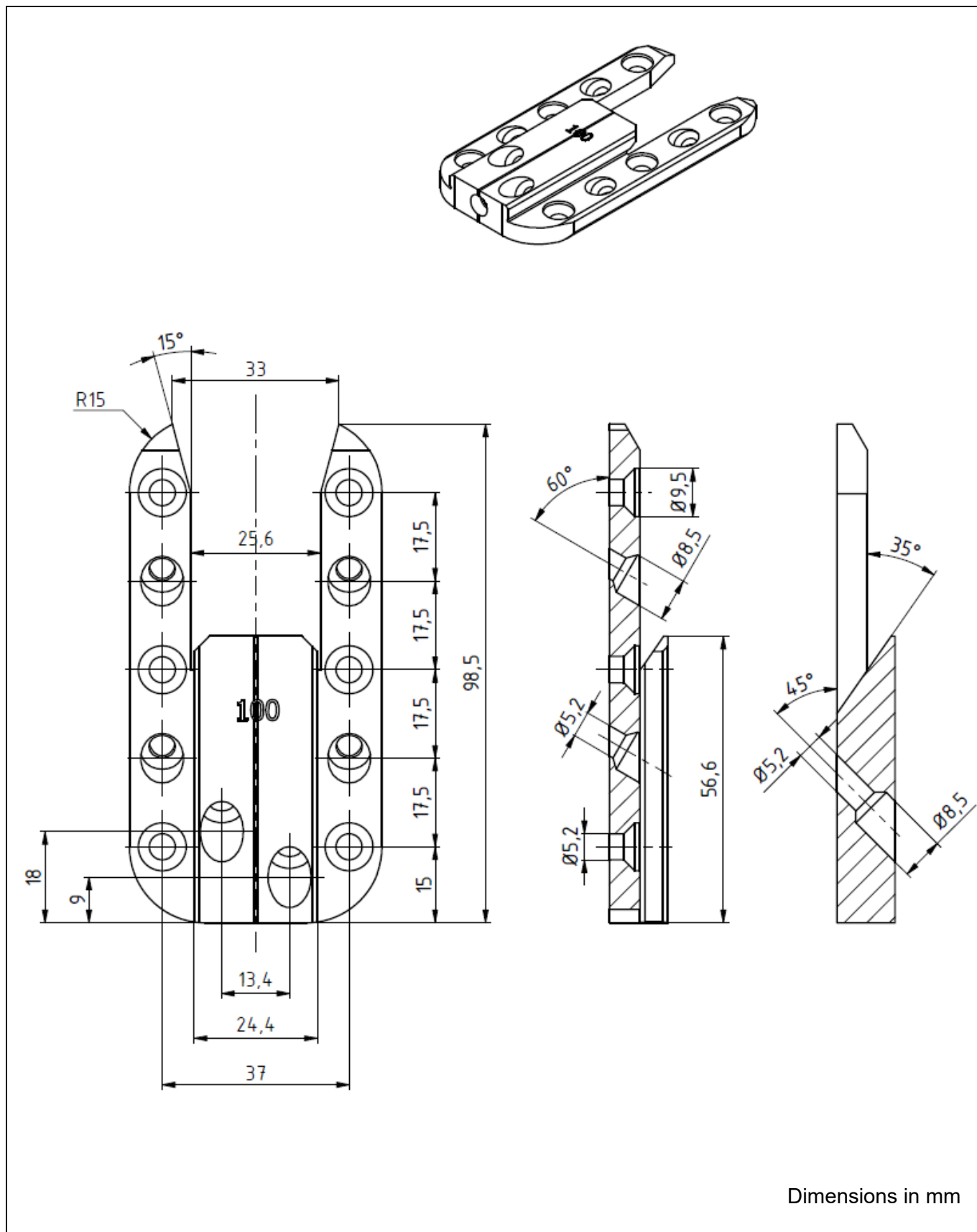
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Dimensions in mm

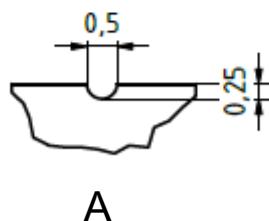
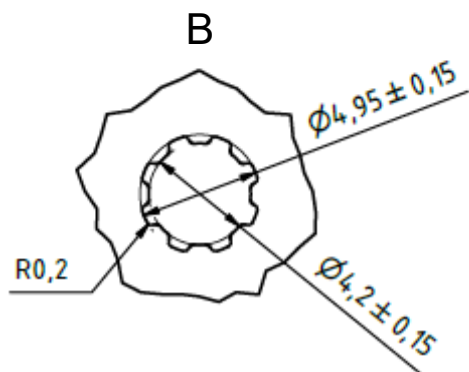
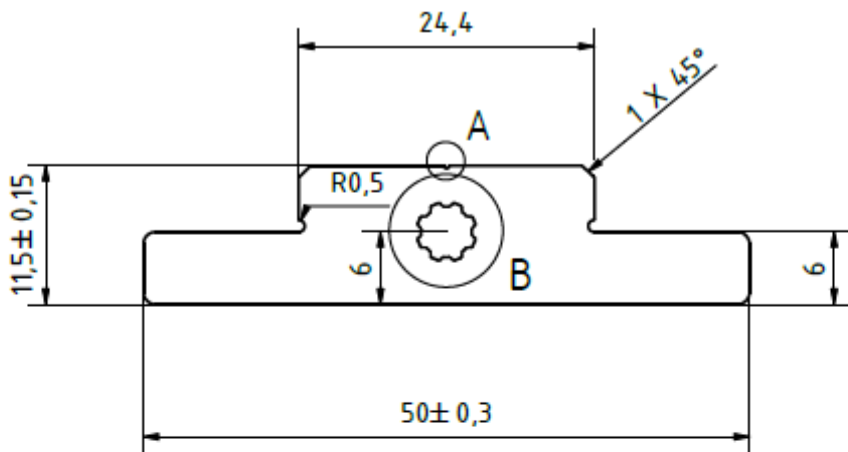
SIHGA HobaFix	Annex 2 of European Technical Assessment ETA-11/0135 of 21.12.2021
Product details: Type HF 70 – Nominal dimensions	

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Dimensions in mm

SIHGA HobaFix	Annex 2 of European Technical Assessment ETA-11/0135 of 21.12.2021
Product details: Type HF 100 – Nominal dimensions	



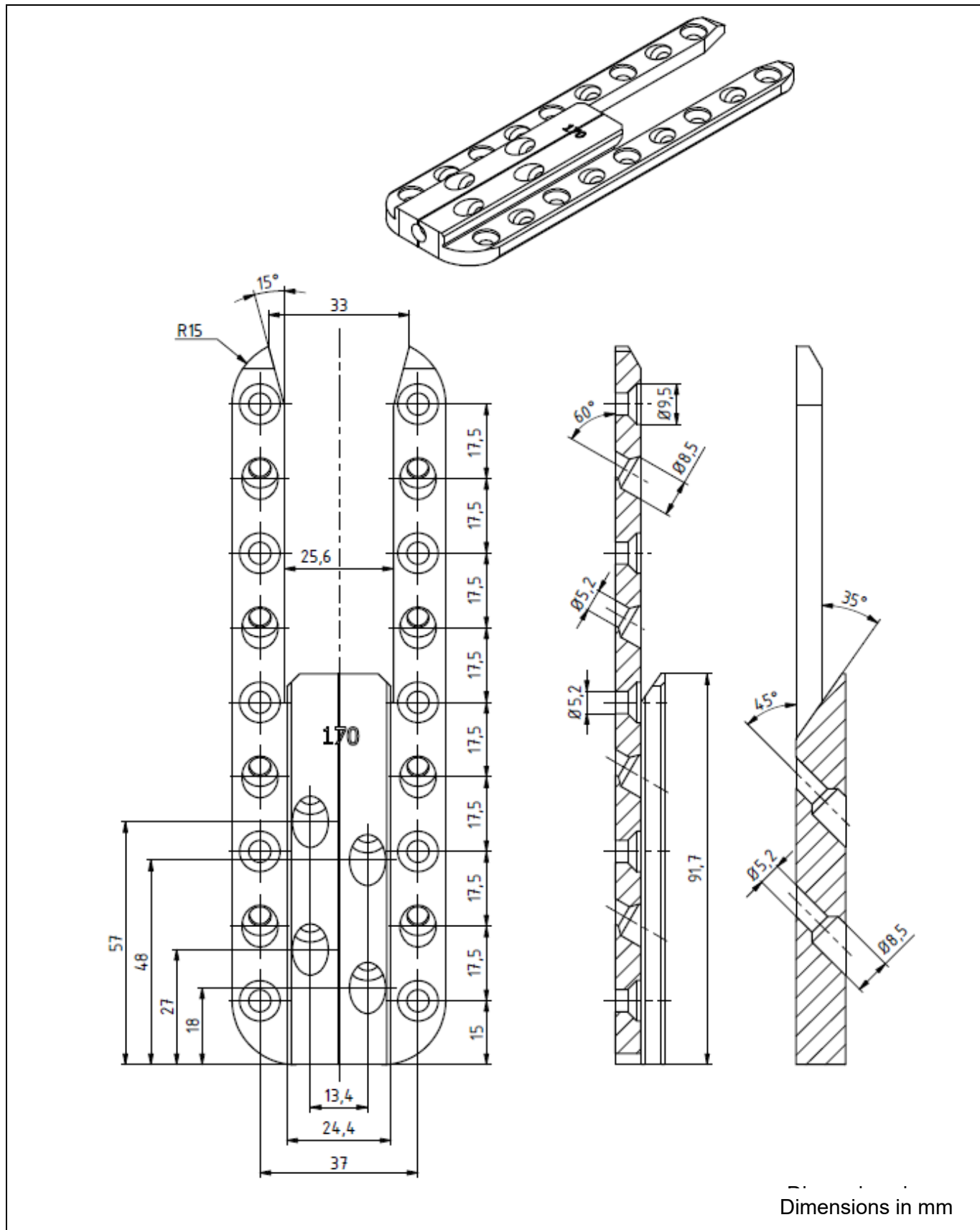
For radii without dimensions R = 1 applies.

Dimensions in mm

<p>SIHGA HobaFix</p>	<p>Annex 2</p>
<p>Product details: Type HF 100 – Nominal dimensions</p>	<p>of European Technical Assessment ETA-11/0135 of 21.12.2021</p>

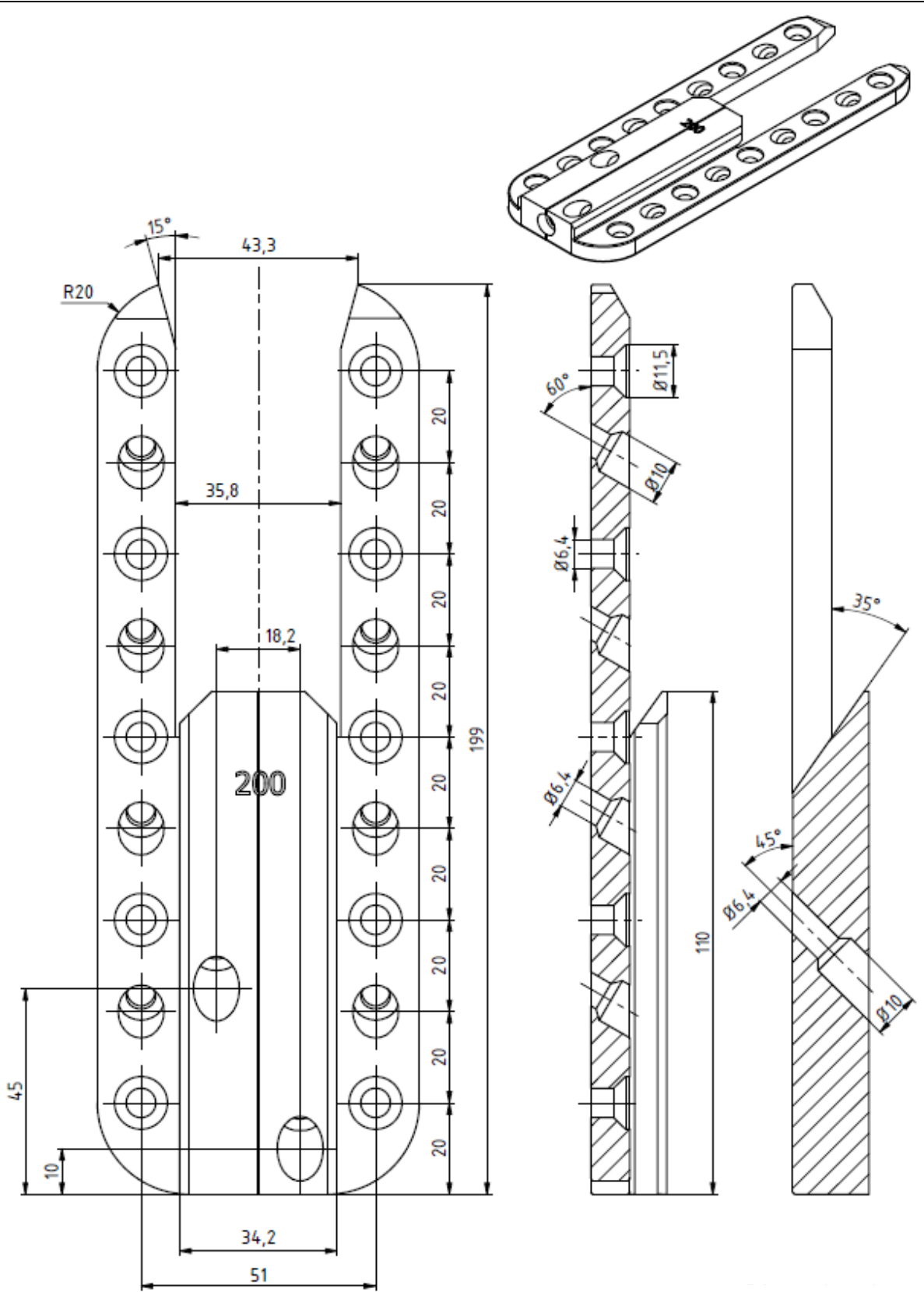
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Dimensions in mm

<p>SIHGA HobaFix</p>	<p>Annex 2</p>
<p>Product details: Type HF 170 – Nominal dimensions</p>	<p>of European Technical Assessment ETA-11/0135 of 21.12.2021</p>



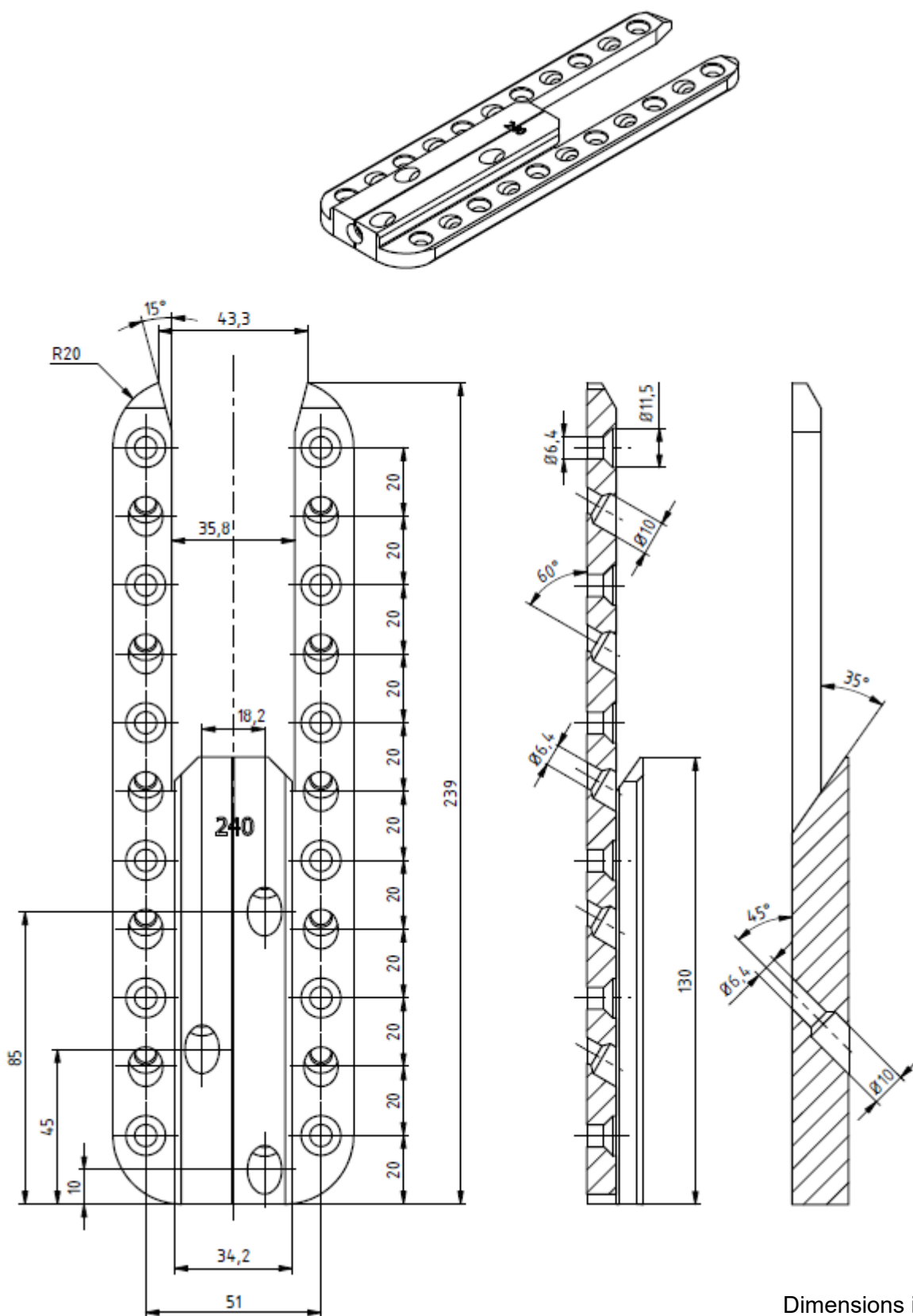
Dimensions in mm

SIHGA HobaFix

Annex 2

Product details:
 Type HF 200 – Nominal dimensions

of European Technical Assessment
 ETA-11/0135 of 21.12.2021



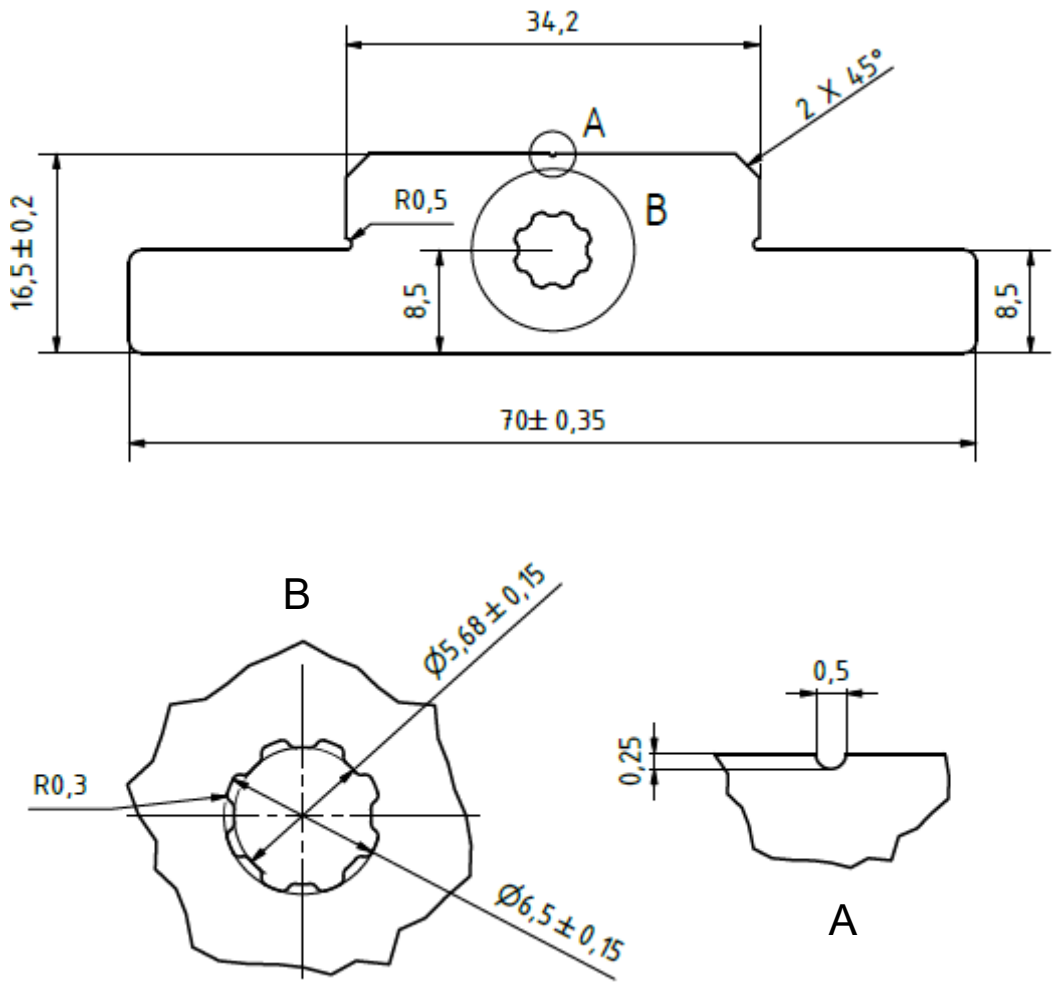
Dimensions in mm

SIHGA HobaFix

Product details:
 Type HF 240 – Nominal dimensions

Annex 2

of European Technical Assessment
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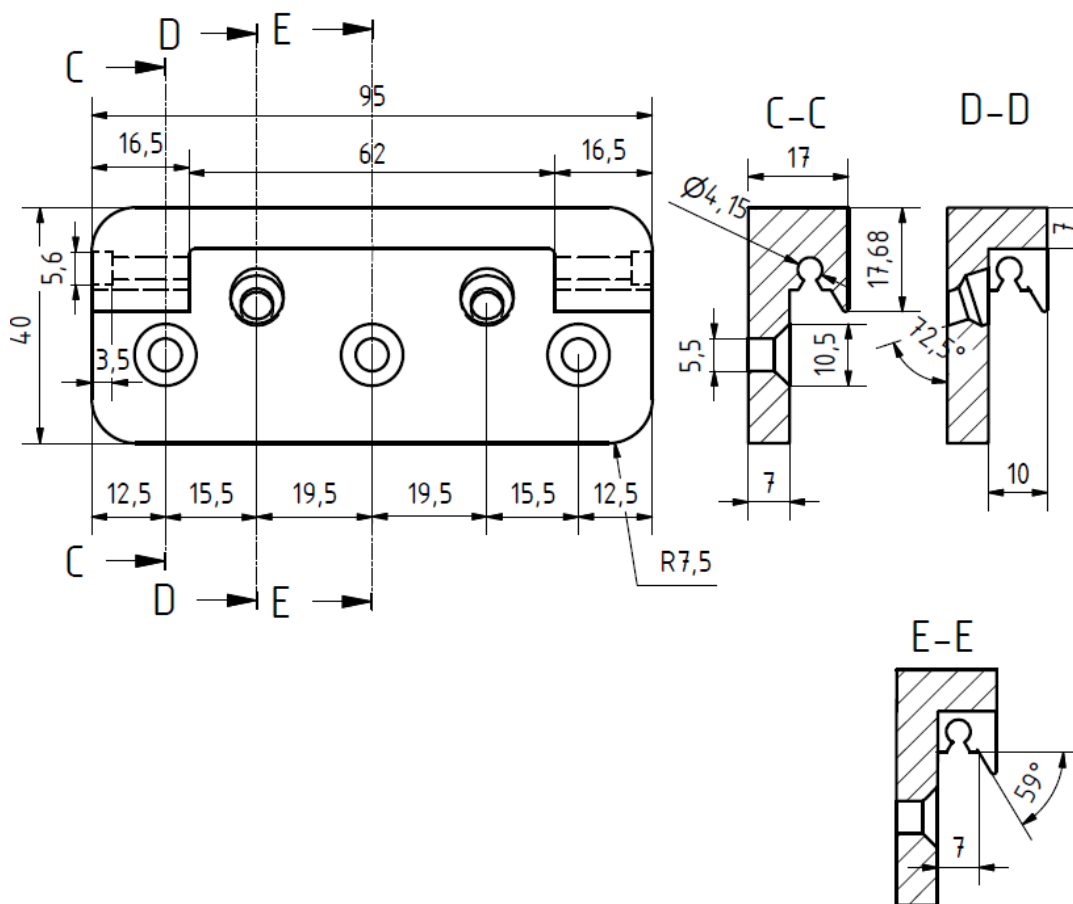
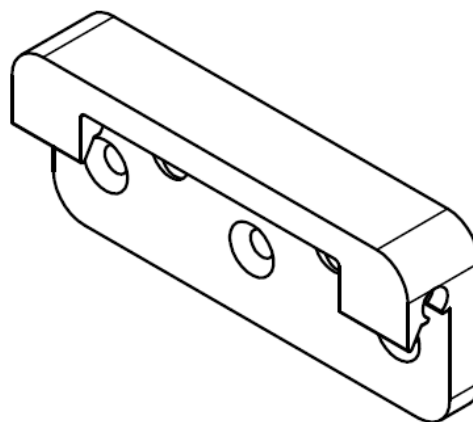
For radii without dimensions R = 1 applies.

Dimensions in mm

<p>SIHGA HobaFix</p>	<p>Annex 2</p>
<p>Product details: Type HF 240 – Nominal dimensions</p>	<p>of European Technical Assessment ETA-11/0135 of 21.12.2021</p>

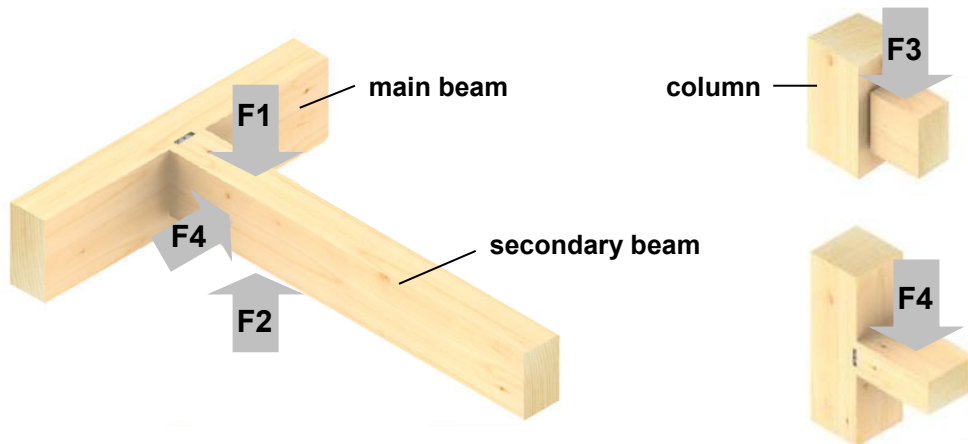
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Dimensions in mm

SIHGA HobaFix	Annex 2 of European Technical Assessment ETA-11/0135 of 21.12.2021
Product details: Type HF Fassade – Nominal dimensions	



Wooden structural components

Beam, solid wood, strength class C24 according to EN 338.

Forces and their directions

- F₁ Force acting in direction of insertion. Connection of main beam and secondary beam. The members shall be prevented from rotation.
- F₂ Force acting against direction of insertion. Connection of main beam and secondary beam. The members shall be prevented from rotation.
- F₃ Force acting in direction of insertion. Connection of column and secondary beam. The members shall be prevented from rotation.
- F₄ Force acting perpendicular to direction of insertion. Connection of main beam and secondary beam or column and secondary beam. The members shall be prevented from rotation.

SIHGA HobaFix	Annex 3
Definition of forces and their directions	of European Technical Assessment ETA-11/0135 of 21.12.2021

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