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Authorised and notified according to Article 29 of the Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011

European Technical Assessment ETA-18/0887 of 2018/11/18

General Part

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

Trade name of the construction product:	RomboFix® System
Product family to which the above construction product belongs:	Façade fixing system – plastic bracket for fixing timber or wood based elements to the substructure
Manufacturer:	SIHGA GmbH Gewerbepark Kleinreith 4 A-4694 Ohlsdorf Tel. +49 7612 / 74370 - 0 Fax +49 7612 / 74370 - 10 Internet www.sihga.com
Manufacturing plant:	SIHGA GmbH Gewerbepark Kleinreith 4 A-4694 Ohlsdorf
This European Technical Assessment contains:	8 pages including 1 annex which form an integral part of the document
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of:	European Assessment Document (EAD) no 13082-00-0603 for Façade fixing system – plastic bracket for fixing timber or wood based elements to the substructure.
This version replaces:	-

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II SPECIFIC PART OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of product and intended use

Technical description of the product
The facade fixing system RomboFix® is a fastening system with a polyamide bracket, which is fixed to the timber substructure with screws. The shape of the bracket allows for fastening lamella shaped timber or wood-based façade elements to the substructure

The fastening system is used for building of facades with specially formed wooden or wood-based boards. The boards are horizontally orientated and attached to a wooden substructure by the RomboFix®-System. Only the RomboFix of the lowest row attached first at the bottom are fixed in addition to the upper inclined screw with a second screw introduced perpendicular to the wall.

While building the facade each board is attached to all fixing points of the substructure by using a RomboFix at the upper side of the board, fastened with an inclined screw. The next panel is attached the same way. For a horizontal levelling a compensation clip is available.

By introducing the inclined screws RomboFix support is pulled downwards and so acting with a compression force at the edge of the panel. The wedge of the RomboFix might be deformed.

See annex A for further details.

The inclined screws are either of type L- GoFix MS 4,5 or GoFix HKE in accordance with ETA-11/0425.

The characteristic load carrying capacity of the screws in various substrates are governed by ETA-11/0425

2 Specification of the intended use in accordance with the applicable EAD

The fastening system is intended to be used for fastening lamella shaped timber or wood based façade elements to the substructure, where requirements for safety in use in the sense of the Basic Work Requirements 4 of the Regulation 305/2011 (EU) shall be fulfilled.

The fasteners are intended for use in timber to timber connections, and the assessment does not cover use in alkaline environments

The connectors are intended for use in connections subject to static or quasi static loading.

The fastening system have been assessed as having satisfactory durability and serviceability when used in timber structures using the soft-wood timber species described in Eurocode 5 and subject to the conditions defined by service class 1 and 2.

In combination with screws made of martensitic stainless steel as L- GoFix MS 4,5 or GoFix HKE according to ETA-11/0425 used in structures subject to the conditions defined by the service classes 1, 2 and 3 of EN 1995-1-1 will result in satisfactory durability and serviceability.

The scope of the connectors regarding resistance to corrosion shall be defined according to national provisions that apply at the installation site considering environmental conditions and in conjunction with the admissible service conditions according to EN 1995-1-1 and the admissible corrosivity category as described and defined in EN ISO 12944-2

Assumed working life
The assumed intended working life of the fastening system for the intended use is 25 years, provided that they are subject to appropriate use and maintenance.

The information on the working life should not be regarded as a guarantee provided by the manufacturer or ETA Danmark. An “assumed intended working life” means that it is expected that, when this working life has elapsed, the real working life may be, in normal use conditions, considerably longer without major degradation affecting the essential requirements.

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

Characteristic	Assessment of characteristic
3.2 Safety in case of fire (BWR 2)	
Reaction to fire	RomboFix brackets are classified as Euroclass E in accordance with EN 13501-1 and Delegated Regulation 2016/364
3.3 Safety in use (BWR 4)	
Characteristic load-carrying capacity, stiffness and ductility	**Horizontal loading; wind suction** $R_{k,RomboFix,upload} = 743N$, $\gamma_M = 1{,}3$ $k_{s,mean} = 276\,N/mm$ **Vertical loading** $R_{k,G} = 390N$, with $\gamma_M = 1{,}3$ $k_{s,mean} = 214\,N/mm$
Head-pull-through parameter of the screws with regard to the polyamide	L-GoFix MS: $d_{head} = 7{,}1mm$ GoFix HKE: $d_{head} = 7{,}5mm$ $f_{head,k} = 33{,}0\,N/mm^2$, $\gamma_M = 1{,}3$.
Strength of the polyamide material	See table below
Durability of polyamide	Moisture content is known to have influence on stress strain behaviour of polyamide: with increasing moisture content a decrease of strength and an increase of strains is observed. This effect was taken account of by the upload resistance. For the vertical resistance a reduction is not recommended as RomboFix brackets will be installed in a quite dry condition and vertical loading by self-weight of boards is negligible compared to the corresponding resistance.
3.8 General aspects related to the performance of the product	The fastening system have been assessed as having satisfactory durability and serviceability when used in timber structures using the soft-wood timber species described in Eurocode 5 and subject to the conditions defined by service class 1 and 2. In combination with screws made of martensitic stainless steel as described in ETA-11/0425 use in structures subject to the conditions defined by the service classes 1, 2 and 3 of EN 1995-1-1 will result in satisfactory durability and serviceability.

	Mean value
modulus of elasticity E_t	$2405\,N/mm^2$
yield stress σ_y	$54{,}6\,N/mm^2$
yield strain ϵ_y	3,5 %
ultimate tensile stress σ_M	$54{,}6\,N/mm^2$
ultimate strain ϵ_{tM}	3,3 %
Stress at break σ_B	$39{,}5\,N/mm^2$
strain at break ϵ_{tB}	37,1%

*) See additional information in section 3.9

3.9 General aspects related to the use of the product

RomboFix brackets are used with specially formed planks made of timber species defined in documentation of SIHGA and self-tapping screws specified in SIHGA's ETA-11/0425. These three parts form a kit, it is not allowed to use a different product for any one of these three members. Therefore, the supplier of the planks must have a permission of SIHGA and obey the firm's instructions.

The brackets are manufactured in accordance with the provisions of the European Technical Assessment using the automated manufacturing process and laid down in the technical documentation.

Instructions from SIHGA GmbH should be considered for installation.

4 Assessment and verification of constancy of performance (AVCP)

4.1 AVCP system

According to the decision 97/638/EC of the European Commission1, as amended, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) is 2+.

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

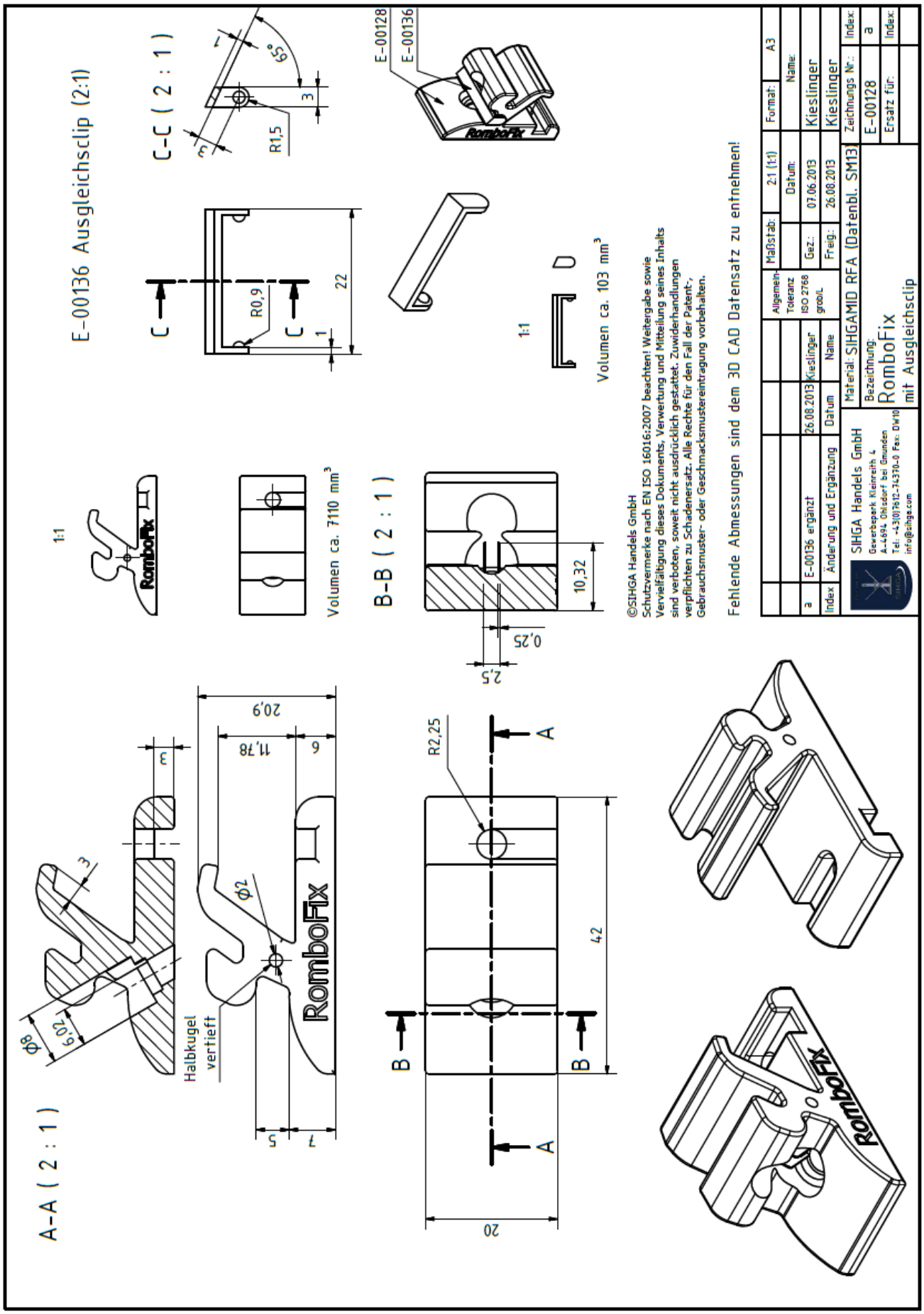
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at ETA-Danmark prior to CE marking

Issued in Copenhagen on 2018-11-18 by

Thomas Bruun
Managing Director, ETA-Danmark

Annex A

Product Specification



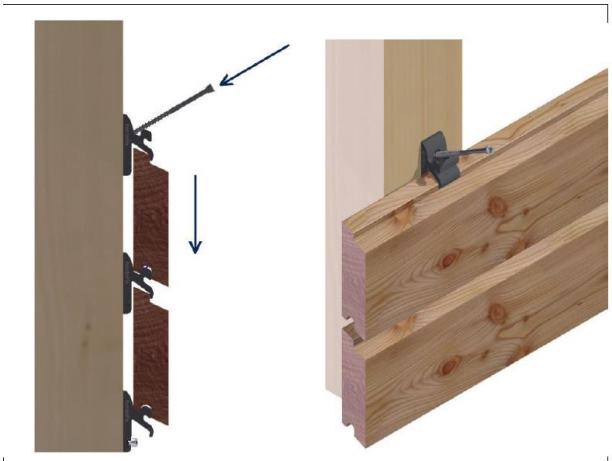


figure 1: RomboFix System

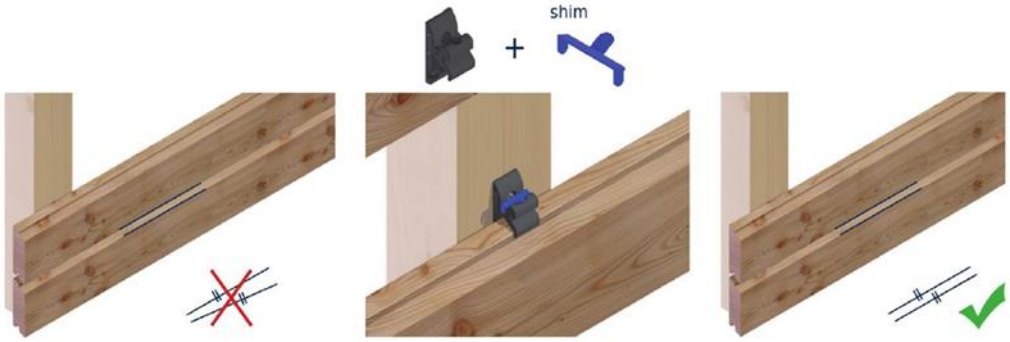


figure 2: adjustment by compensation clip (shim)