

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

**ETA-14/0324**  
**of 28 August 2014**

### General Part

Technical Assessment Body issuing the  
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

Variable concealed multi-axis hinges  
"TECTUS TE 645 3D"

Product family  
to which the construction product belongs

Variable concealed multi-axis hinges  
"TECTUS TE 645 3D"

Manufacturer

SIMONSWERK GmbH  
Bosfelder Weg 5  
33378 Rheda-Wiedenbrück  
DEUTSCHLAND

Manufacturing plant

SIMONSWERK GmbH  
Bosfelder Weg 5  
33378 Rheda-Wiedenbrück  
DEUTSCHLAND

This European Technical Assessment  
contains

5 pages including 1 annex 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) "MULTI-AXIS  
CONCEALED HINGE ASSEMBLIES" 020001-00-04.05

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## Specific part

### 1 Technical description of the product

This European Technical Assessment applies to the variable concealed multi-axis hinges made of aluminium and zinc diecasting with the designation "TECTUS TE 645 3D".

Each product consists of three parts, one part a mounting plate for the door frame, one part a mounting plate for the door leaf with segmented plates connected laterally in such a way as to allow the door to swing freely and to maintain the leaf in the same horizontal and vertical plane during the full operational cycle. Between the two mounting plates provide a variable geometry moving axis within a concealed unsprung hinge assembly.

The system setup of the product is given in Annex 1.

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

The hinges are intended for use on doors of timber and metal. The doors could be made of synthetic materials if there is no requirement on resistance to fire.

They are invisible (concealed) hinges to allow single and double swing door leaves to be mounted flush to its door leaf and frame, forming a flush panel surface when the door is closed, and allowing the door to open to 180°.

The hinges are available for use on doors with door mass up to 250 kg each door leaf.

The verifications and assessment methods on which this European Technical Assessment is based lead the assumption of working life of the hinges of 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.

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

#### 3.1 Mechanical resistance and stability (BWR 1)

Not applicable

#### 3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Resistance to fire	Performance class A1
Reaction to fire	EI <sub>2</sub> 30

#### 3.3 Hygiene, health and the environment (BWR 3)

Not applicable

#### 3.4 Safety and accessibility (BWR 4)

Not applicable

#### 3.5 Protection against noise (BWR 5)

Not applicable

**3.6 Energy economy and heat retention (BWR 6)**

Not applicable

**3.7 Sustainable use of natural resources (BWR 7)**

For the sustainable use of natural resources no performance was investigated for this product.

**3.8 General aspects**

The verification of durability is part of testing the essential characteristics.

Essential characteristic	Performance
Category of use	Grade 4 - light up to severe duty hinges
Durability	Grade 7 - 200.000 Cycles
Test door mass	Grade 9
Fire resistance	Grade A
Safety	Grade 1
Corrosion resistance	Grade 4 - very high resistance
Security	Grade 1
Hinge grade	Grade 16

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

According to Decision of the Commission 1999/93/EC (OJ L 29/51 of 26.01.1999 p. 51), as amended by Decision of the Commission 2011/246/EU (Letter of the European commission of 15/10/2004), the system of assessment and verification of constancy of performance (see Annex V and Article 65 Paragraph 2 to Regulation (EU) No 305/2011) given in the following table applies.

Product	Intended use	Level or class	System
TECTUS TE 645 3D	fire/smoke compartmentation and on escape routes		1

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

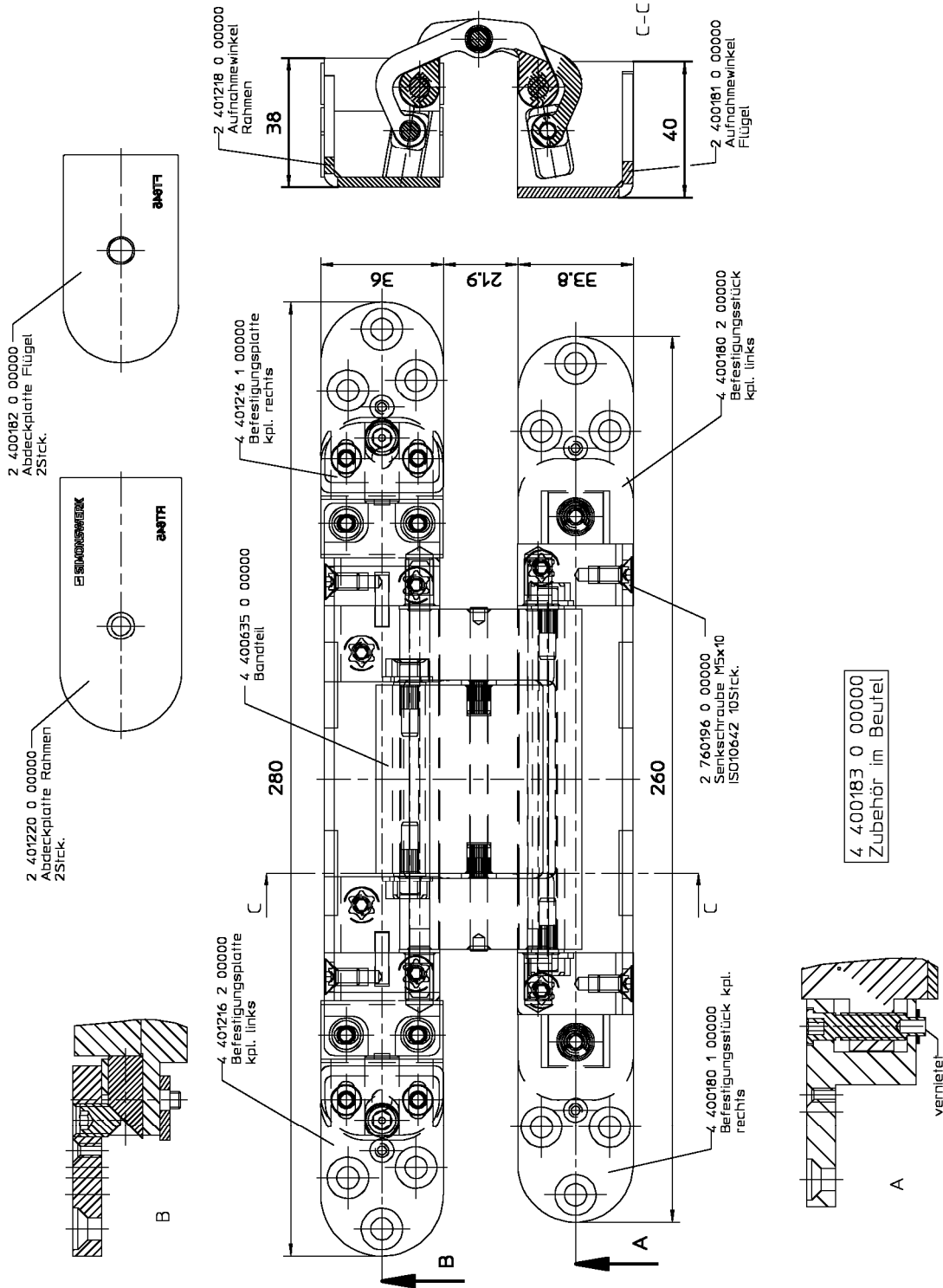
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at Deutsches Institut für Bautechnik.

Issued in Berlin on 28 August 2014 by Deutsches Institut für Bautechnik

Prof. Gunter Hoppe  
Head of department

*beglaubigt:*  
Pritzkow

English translation prepared by DIBt



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"TECTUS TE 645 3D"

Construction

Annex 1