ETA-Danmark A/S
Göteborg Plads 1
DK-2150 Nordhavn
Tel. +45 72 24 59 00
Fax +45 72 24 59 04
Internet www.etadanmark.dk

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

MEMBER OF EOTA

European Technical Assessment ETA-19/0013 of 2025/11/19

I 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:	BT-Spannschloss M12, M16 and M20 connector
Product family to which the above construction product belongs:	Clamping system for connection of concrete members
Manufacturer:	B.T. innovation GmbH Sudenburger Wuhne 60 D-39116 Magdeburg Tel +49 391 7352 60 Fax +49 391 7352 52 Internet www.bt-innovation.de
Manufacturing plant:	B.T. innovation GmbH Production plant 4
This European Technical Assessment contains:	7 pages including 2 annexes 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:	EAD 332001-01-0602-v01 - Clamping system for connection of precast concrete members
This version replaces:	The ETA with the same number issued on 2025-08-30

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 (excepted the confidential Annex(es) referred to above). However, partial reproduction may be made, with the written consent of the issuing Technical Assessment Body. Any partial reproduction has to be identified as such.

II SPECIFIC PART OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of product

General
The clamping system consist of a turnbuckle with corresponding washers.

The turnbuckle is made from malleable iron or stainless steel. See material specification in annex A.

The turnbuckle is fixed to the concrete element via a cast-in anchor with internal threaded socket. Alternatively, the connection can be done with anchor channels and hammer head screw, expansion anchors etc. The assessment of the connection to the concrete element is not covered by this ETA.

The clamping system is available for use with M12, M16 or M20 anchors with minimum length 40 mm.

Annex A shows a description of the product.

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

The clamping system is fastened to anchors embedded in concrete elements.

The precast concrete elements are made with the anchoring system such as cast in anchor with internal threaded socket assessed according to EAD 330012-01-0601, anchor channels assessed according to EAD 330008-02-0601 or expansion anchors and on site the elements are assembled using the turnbuckle.

The clamping system is used for connecting either two or three concrete elements. The connection can be made between precast to precast structures, precast to situ concrete structures or between precast to already existing structures

The provisions for the concrete elements are governed by the conditions given for the anchors. The performance of the clamping system (turnbuckle + washers) given in this ETA shall correspond to an anchoring system of adequate performance.

The general use conditions for which this ETA is valid are given in EN 1992-1-1.

The provisions made in this European Technical Assessment are based on an assumed intended working life of the clamping system of 50 years. The real working life may be, in normal use conditions, considerably longer without major degradation affecting the basic requirements for works

The indications given on the working life cannot be interpreted as a guarantee given by the producer or Assessment Body, 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

Characteristic	Assessment of characteristic
3.1 Mechanical resistance and stability (BWR1)	
Tensile strength in service	See Annex B
Tensile strength during installation (i)	Not relevant
Shear strength (iii)	See Annex B
Compression strength in service (i)	Not relevant
Compression strength during installation (i)	Not relevant
Strength of T-connection (ii)	See Annex B
Functioning under pulsating tension load, C1	See Annex B
Functioning under pulsating shear load, C1	See Annex B
Durability against corrosion (ii)	The turnbuckle, made of malleable cast iron EN GJMB 550-4 has a zinc coating of >5 µm and is used with mortar in place. In this case, the environmental conditions specified in the EAD for class 1 are given in every installation situation. In dry interiors, no mortar is required. On request, the manufacturer can supply hot-dip galvanized turnbuckles >50 µm, if higher demands are made on corrosion protection, e.g. if mortar is not used. These turnbuckles meet the requirements of class 2 as specified in the EAD. The turnbuckle, made of stainless steel is used either with or without mortar to meet requirements for the environmental conditions for class 1 and class 2 specified in the EAD.
Functioning under pulsating tension load, C2	See Annex B
Functioning under pulsating shear load, C2	See Annex B
Functioning under pulsating tension load – T-connection, C2	See Annex B
Assessment of seismic performance C2	See Annex B
3.2 Safety in case of fire (BWR2)	
Reaction to fire	The clamping system is made from steel and is classified as reaction to fire Class A1 as provided for in the Delegated Regulation 2016/364/EC and EN 13501-1

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

4.1 AVCP system

According to the decision Decision 98/214/EC of the European Commission as amended, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) is 2+.

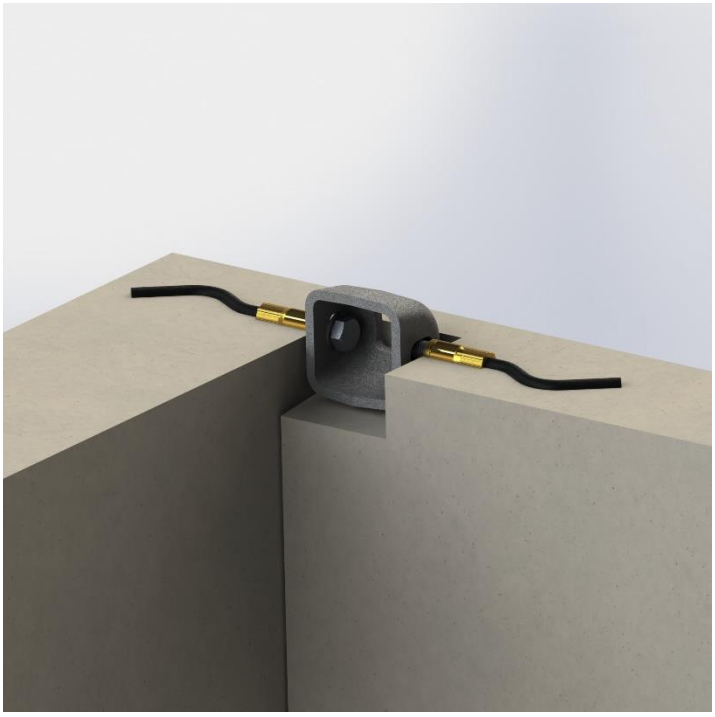
5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

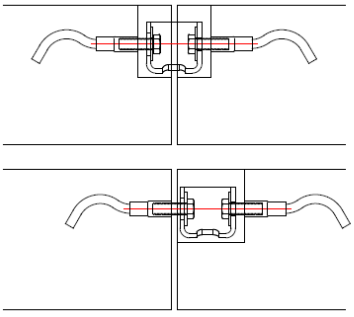
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at ETA-Danmark prior to CE marking.

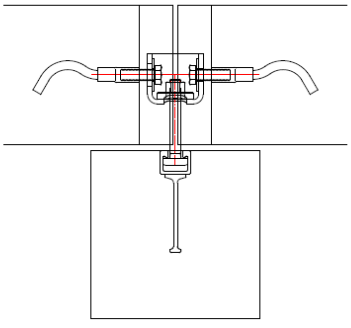
Issued in Copenhagen on 2025-11-19 by

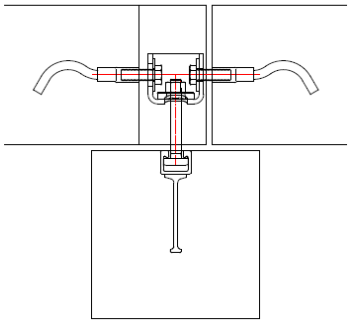
Thomas Bruun
Managing Director, ETA-Danmark

Annex A
Product description









Material specification:

Malleable steel:

	M12	**M16**	**M20**
Turnbuckle	Galvanic zink coating, EN-GJMB-550-4	Galvanic zink coating, EN-GJMB-550-4	Galvanic zink coating, EN-GJMB-550-4
Washer (DIN 125 / ISO 7089)	13 x 24 x 2,5 Form A, 140 HV, galvanized blue	17 x 30 x 3,0 Form A, 140 HV, galvanized blue	21 x 37 x 3,0 Form A, 140 HV, galvanized blue
Hexagon nut (DIN 934 / ISO 4033 / ISO 8673)	SW18 or SW19	SW24	SW30
Hexagon screw (DIN933 / ISO4017)	M12x40* or M12x50 8.8 – SW18 or SW19	M16x40 or M16x50* 8.8 – SW24	M20x40*, M20x50* or M20x60* 8.8 – SW30
Threaded rod	galvanized, 10.9	galvanized, 10.9	galvanized, 10.9
Turnbuckle adapter	hot-dip galvanized	hot-dip galvanized	hot-dip galvanized

* The screw length depends on the anchor type used and its minimum screw-in depth, but is as minimum 40 mm.

Stainless steel:

	M12	**M16**	**M20**
Turnbuckle	Stainless steel 1.4462	Stainless steel 1.4462	Stainless steel 1.4462
Washer DIN 125 ISO 7089	13 x 24 x 2,5 Form A, A4 140 HV A4 200 HV	17 x 30 x 3,0 Form A, A4 140 HV A4 200 HV	21 x 37 x 3,0 Form A, A4 140 HV A4 200 HV
Hexagon Nut DIN 934 or ISO 4033 or ISO 8673	SW18 or SW19	SW24	SW30
Hexagon Screw DIN 933 or ISO4017	M12x40* or M12x50* A4-70 – SW18 or SW19	M16x40* or 16x50* A4-70 – SW24	M20x40*, M20x50* or M20x60* A4-70 – SW30
Threaded Rod	A4-70 or A4-80	A4-70 or A4-80	A4-70 or A4-80

* The screw length depends on the anchor type used and its minimum screw-in depth, but is as minimum 40 mm

Annex B
Performances

	M12	**M16**	**M20**
Characteristic tensile strength	37,5 kN	64,3 kN	75,6 kN
Characteristic shear strength	8,1 kN	16,7 kN	20,6 kN
Characteristic strength of T-connection	59,1 kN	90,6 kN	106,3 kN
Functioning under pulsating tension load (Resistance to connector material failure under compression load)	37,5 kN	64,3 kN	75,6 kN
Functioning under alternating shear load (Resistance to concrete failure under compression load)	8,1 kN	16,7 kN	20,6 kN
Functioning under pulsating tension load, C2	37,5 kN	56,5 kN	75,6 kN
Functioning under pulsating shear load, C2	8,1 kN	16,7 kN	20,6 kN
Functioning under pulsating tension load – T-connection, C2	28,5 kN	43,2 kN	78,7 kN