

EUROPEAN TECHNICAL ASSESSMENT

ETA 23/0097

Version 01

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UBAtc Assessment Operator:
Belgian Construction Certification Association
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Technical Assessment Body issuing the European Technical Assessment: UBAtc.
UBAtc has been designated according to Article 29 of Regulation (EU) No 305/2011
and is member of EOTA (European Organisation for Technical Assessment)

**Trade name of the
construction product:**

BARTEC Group / LINXION

**Product family to which the
construction product belongs:**

16 - REINFORCING AND PRESTRESSING STEEL FOR
CONCRETE (AND ANCILLARIES)

Manufacturer:

BARTEC GROUP
355 avenue Henri Schneider
69330 Meyzieu
France

Manufacturing plant(s):

BARTEC production plant 01

Website:

www.bartec.eu

**This European Technical
Assessment is issued in
accordance with Regulation
(EU) No 305/2011, on the
basis of:**

European Assessment Document (EAD):
EAD 160129-00-0301

**This European Technical
Assessment contains:**

7 pages, including 3 annexes, which form an integral part
of the document.

European Organisation for Technical Assessment

Legal bases and general conditions

- 1 This European Technical Assessment is issued by UBAtc (Union belge pour l'Agrément technique de la construction, i.e. Belgian Union for technical Approval in construction), in accordance with:
 - Regulation (EU) No 305/2011¹ of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC
 - Commission Implementing Regulation (EU) No 1062/2013² of 30 October 2013 on the format of the European Technical Assessment for construction products
 - European Assessment Document: EAD 160129-00-0301: Couplers for mechanical splices of reinforcing steel bars.
- 2 Under the provisions of Regulation (EU) No 305/2011, UBAtc is not authorized to check whether the provisions of this European Technical Assessment are met once the ETA has been issued.
- 3 The responsibility for the conformity of the performances of the products with this European Technical Assessment and the suitability of the products for the intended use remains with the holder of the European Technical Assessment.
- 4 Depending on the applicable Assessment and verification of constancy of performance (AVCP) system, (a) notified body(ies) may carry out third-party tasks in the process of assessment and verification of constancy of performance under this Regulation once the European Technical Assessment has been issued.
- 5 This European Technical Assessment allows the manufacturer of the construction product covered by this ETA to draw up a declaration of performance for the construction product.
- 6 CE marking should be affixed to all construction products for which the manufacturer has drawn up a declaration of performance.
- 7 This European Technical Assessment is not to be transferred to other manufacturers, agents of manufacturers, or manufacturing plants other than those indicated on page 1 of this European Technical Assessment.
- 8 The European Technical Assessment holder confirms to guarantee that the product(-s) to which this assessment relates, is/are produced and marketed in accordance with and comply with all applicable legal and regulatory provisions, including, without limitation, national and European legislation on the safety of products and services. The ETA-holder shall notify the UBAtc immediately in writing of any circumstance affecting the aforementioned guarantee. This assessment is issued under the condition that the aforementioned guarantee by the ETA-holder will be continuously observed.
- 9 According to Article 11(6) of Regulation (EU) No 305/2011, when making a construction product available on the market, the manufacturer shall ensure that the product is accompanied by instructions and safety information in a language determined by the Member State concerned which can be easily understood by users. These instructions and safety information should fully correspond with the technical information about the product and its intended use, which the manufacturer has submitted to the responsible Technical Assessment Body for the issuing of the European Technical Assessment.
- 10 Pursuant to Article 11(3) of Regulation (EU) No 305/2011, manufacturers shall adequately take into account changes in the product-type and in the applicable harmonised technical specifications. Therefore, when the contents of the issued European Technical Assessment do not any longer correspond to the product-type, the manufacturer should refrain from using this European Technical Assessment as the basis for their declaration of performance.
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- 13 Subject to the application introduced, this European Technical Assessment is issued in English and may be issued by the UBAtc in its official languages. The translations correspond fully to the English reference version circulated in EOTA.
- 14 This European Technical Assessment was first issued by UBAtc on 24 April 2023.

¹ OJEU, L 88 of 2011/04/04

² OJEU, L 289 of 2013/10/31

Technical Provisions

1 Technical description of the product

BARTEC / LINXION couplers are standard couplers for mechanical splices of reinforcing steel bars with sizes ranging from 12 to 40 mm. The couplers are designed such that:

$$A_{s,nom,bar} \cdot R_{e,nom,bar} \leq A_{s,nom,coupler} \cdot R_{e,nom,coupler}$$

The load bearing parts of the couplers are completely made of steel.

The BARTEC / LINXION couplers are designed to be used in those cases where the connection bar can rotate to be coupled (Bartec connection method "LS").

An overview of the types of BARTEC / LINXION couplers covered by this ETA can be found in Annex II.

2 Specification of the intended use(s) in accordance with the applicable EAD

2.1 Intended uses

The couplers are intended to be used for mechanical splices of reinforcing steel bars for concrete structures designed according to EN 1992-1-1 for:

- Transfer of axial tension and/or compression forces of the connected bars according to EN 1992-1-1, Clause 8.7 and 8.8(4);
- Limitation of slip according to EN 1992-1-1, Clause 7.3.

The couplers have not been assessed for design according to EN 1998-1 for:

- Resistance to high-cycle fatigue loading according to EN 1992-1-1, Clause 6.8.4;
- Resistance to low-cycle seismic loading according to EN 1998-1, Clause 5.6.3(2).

This ETA covers the following specifications of the intended use:

- Connection between reinforcing bars avoiding lapped splicing;
- Mechanical splices of reinforcing steel bars B500B according to EN 1992-1-1, Clause C.1;
- Mechanical splices of reinforcing steel bars positioned such that the concrete cover complies with the provisions according to EN 1992-1-1, Clause 4.4.1.

2.2 Assumptions

2.2.1 Manufacturing directives

This European Technical Assessment is issued for BARTEC / LINXION couplers on the basis of agreed data/information, deposited with the UBAtc, which identifies the product that has been assessed. Changes to the product/production process which could result in the deposited data/information being incorrect should be notified to the UBAtc before the changes are introduced.

2.2.2 Installation

The BARTEC / LINXION couplers shall be installed according to the manufacturer's instructions which are also part of the agreed information, deposited with the UBAtc. It is the manufacturer's responsibility to provide correct information about the application to the users.

Minimum requirements for satisfactory installing of the product in respect of training, competence and experience are identified in the installation and application instructions. The manufacturer imposes a technical training to customers and provides instructions and trainings for the installers on the building site.

General installation instructions can be found in Annex III.

2.2.3 Recommendations on packaging, transport and storage

BARTEC / LINXION couplers are packaged in carton boxes. The amount of couplers per box depends on the coupler type. On each box the content is identified with the following information:

- Coupler type name;
- Quantity;
- The batch number;
- Address of manufacturer;
- Reference to ETA 23/0097.

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

3.1 Mechanical resistance and stability (BWR1)

3.1.1 Resistance to static or quasi-static loading

The resistance to static or quasi-static loading of the couplers was assessed by testing according to the provisions given in Annex A.3 of EAD 160129-00-0301, taking also into account the provisions given in Annex A.1 of the EAD. Tests were conducted on couplers with the smallest diameter (12 mm), the largest diameter (40 mm) and an intermediate diameter (20 mm). Specimens were prepared in conformity with Annex A.2 of EAD 160129-00-0301.

The assessed minimum force at failure due to tension loading is given in Annex II.

3.1.2 Slip under and after static or quasi-static loading

Slip under and after static or quasi-static loading of the couplers was assessed by testing according to the provisions given in Annex A.4 of EAD 160129-00-0301, taking also into account the provisions given in Annex A.1 of the EAD.

The same test specimens were used as for the assessment of the resistance to static or quasi-static loading (see clause 3.1.1).

The assessed slip at specific load levels for the assessed products is given in Annex II.

3.1.3 Resistance to high-cycle fatigue loading

No performance assessed.

3.1.4 Resistance to low-cycle loading (seismic actions)

No performance assessed.

3.2 Safety in case of fire (BWR 2)

3.2.1 Reaction to fire

The product is considered to satisfy the requirements for performance class A1 of the characteristic reaction to fire in accordance with the Commission Decision 96/603/EC, as amended by Commission Decisions 2000/605/EC and 2003/424/EC, without the need for testing on the basis of it fulfilling the conditions set out in that Decision and its intended use being covered by that Decision.

Therefore, the performance of the product is class A1.

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

For the products covered by EAD 160129-00-0301 the applicable European legal act is Commission Decision 2000/606/EC.

The AVCP system is 1+.

5 Technical details necessary for the implementation of the AVCP system, as foreseen in EAD 160129-00-0301

5.1 Tasks for the manufacturer

The cornerstones of the actions to be undertaken by the manufacturer of the product in the procedure of assessment and verification of constancy of performance are laid down in Table 3.1 of EAD 160129-00-0301, clause 3.2 and are translated in a control plan deposited with UBAtc.

5.2 Tasks for the notified body

The cornerstones of the actions to be undertaken by the notified body in the procedure of assessment and verification of constancy of performance for couplers for mechanical splices of reinforcing steel bars are laid down in Table 3.2 of EAD 160129-00-0301, clause 3.3 and are translated in a control plan deposited with UBAtc.

5.3 Determination of the product

The assessment tests will have been conducted by the UBAtc or under its responsibility (which may include a proportion conducted by an independent laboratory or by the ETA-applicant, witnessed by the UBAtc). The UBAtc will have assessed the results of these tests in accordance with chapter 3 of this ETA, as part of the ETA issuing procedure.

The results of assessment testing shall be used by notified bodies (cf. Regulation (EU) 305/2011, Annex V, clause 1.6).

UBAtc asbl is a non-profit organization according to Belgian law. It is a Technical Assessment Body notified by the Belgian notifying authority, the Federal Public Services Economy, SMEs, Self-Employed and Energy, on 17 July 2013 in the framework of Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC and is member of the European Organisation for Technical Assessment, EOTA (www.eota.eu).

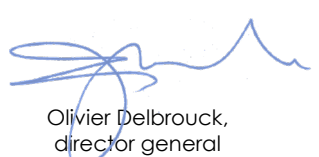
This European Technical Assessment has been issued by UBAtc asbl, in Sint-Stevens-Woluwe, on the basis of the technical work carried out by the Assessment Operator, BCCA.

On behalf of UBAtc asbl,

On behalf of the Assessment Operator, BCCA,
responsible for the technical content of the
ETA,


Eric Winnepeninckx
secretary general


Benny De Blaere,
director


Olivier Delbrouck,
director general

The most recent version of this European Technical Assessment may be consulted on the UBAtc website (www.butgb-ubatc.be).

Annexes

Annex I: References

Reference number EAD 160129 00 0301:2020

Document title Couplers for mechanical splices of reinforcing steel bars

Reference number EN 1992-1-1:2005+A1:2015

Document title Eurocode 2: Design of concrete structures - Part 1-1: General rules and rules for buildings

Reference number EN 1998-1+A1:2015

Document title Eurocode 8: Design of structures for earthquake resistance - Part 1: General rules, seismic actions and rules for buildings (Consolidated version, including AC:2009 and A1:2013)

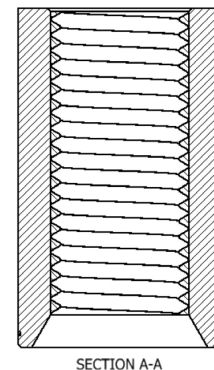
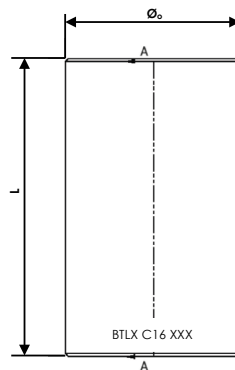
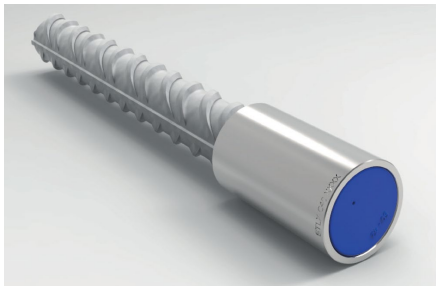
NOTE: The editions of reference documents given above are those which have been adopted by the UBAtc for its specific use when establishing this ETA. When new editions become available, these supersede the editions mentioned only when confirmed by the UBAtc.

Annex II: BARTEC / LINXION couplers – dimensions & assessed characteristics

Product name	colour	Inner diameter	Outer diameter	Length	Resistance to static or quasi-static loading	Slip value under static or quasi-static loading	Slip value after static or quasi-static loading
		\varnothing_i	\varnothing_o	L	$F_{u,min,bar,outside}^{(1)(2)}$	s_1	s_2
		mm	mm	mm	N/mm ²	mm	mm
BTLX C12	Yellow	12	20	33	540	0,01	0,01
BTLX C14	Green	14	22	37	540	0,02	0,02
BTLX C16	Blue	16	25	46	540	0,02	0,02
BTLX C18	White	18	30	50	540	0,02	0,02
BTLX Pi20	Red	20	30	55	540	0,02	0,02
BTLX C22	Black	22	36	56	540	0,13	0,13
BTLX C24	Black	24	36	60	540	0,13	0,13
BTLX C26	Orange	25 – 26	39	68	540	0,13	0,13
BTLX Pi28	Yellow	28	43	73	540	0,13	0,13
BTLX C32	Purple	30 – 32	47	81	540	0,13	0,13
BTLX C40	Pink	40	59	100	540	0,13	0,13

(1): $f_{u,min,bar,outside} = 1,08 \cdot f_{yk}$, with $f_{yk} = 500 \text{ N/mm}^2$ (B500B)

(2): Only bar breakage outside of the mechanical splice was observed.



The rebars shall be threaded in accordance to the specification of ISO 724, ISO 965-1, ISO 965-3 and ISO 1502.

Annex III: Installation guidelines



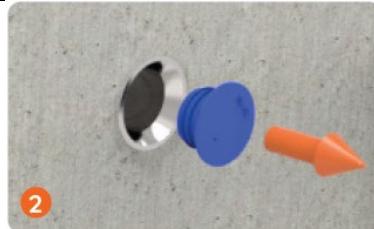
Positioning reinforcement bar in 1st phase



1

The threaded end of the bar is fully screwed into the coupler. The plug is firmly in place on the coupler.

Installing of concrete in 1st phase



2

Remove the plug from the coupler.



3

Remove the protection from the 2nd Phase bar.

Ensuring the connection by installing the 2nd phase reinforcement bar



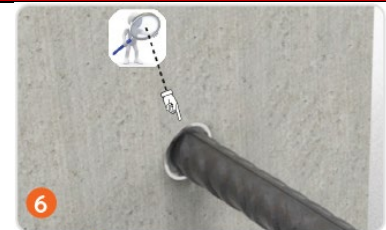
4

Move the bar towards the coupler and screw it on.



5

Use a standard torque key to fasten. For $\varnothing 25$ and above: $L = 0.80$ m minimum



6

Visual inspection: When the installation is complete, no part of the bar thread shall be visible on the outside of the coupler.