

Public-law institution jointly founded by the
federal states and the Federation

European Technical Assessment Body
for construction products



European Technical Assessment

ETA-26/0089
of 27 April 2026

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

ROLLTEC system

Product family
to which the construction product belongs

Couplers for mechanical splices of reinforcing steel bars

Manufacturer

DEXTRA MANUFACTURING Co., Ltd.
Lumpini II Building
247 Sarasin Road
Bangkok 10330
THAILAND

Manufacturing plant

Dextra Manufacturing Co., Ltd.
191 Chalermpkrakiat Ro 9 Soi 48, Dokmai, Prawet,
Bangkok 10250
Thailand

This European Technical Assessment
contains

13 pages including 9 annexes which form an integral part
of this assessment

This European Technical Assessment is
issued in accordance with Article 95(4) of
Regulation (EU) No 2024/3110, on the basis of

EAD 160129-01-0301

The European Technical Assessment is issued by the Technical Assessment Body in its official language. Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and shall be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may only be made with the written consent of the issuing Technical Assessment Body. Any partial reproduction shall be identified as such.

This European Technical Assessment may be withdrawn by the issuing Technical Assessment Body, in particular pursuant to information by the Commission in accordance with Article 36(3) of Regulation (EU) No 2024/3110.

Specific Part

1 Technical description of the product

The ROLLTEC system is used as a mechanical, screwed system for connecting reinforcing bars in reinforced concrete components under static or quasi-static loading, fatigue and low cycle loading.

The product description is given in Annex A.

The characteristic material values, dimensions and tolerances of the ROLLTEC system not indicated in Annex A shall correspond to the respective values laid down in the technical documentation^[1] of this European technical assessment.

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

The performances given in Section 3 are only valid if the ROLLTEC system is used in compliance with the specifications and conditions given in Annex B.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the ROLLTEC system of at least 100 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) ¹

Essential characteristic	Performance
Resistance to static or quasi-static loading	See Annex C
Slip under static or quasi-static load	See Annex C
Slip after static or quasi-static load	See Annex C
Fatigue strength for $N = 2 \cdot 10^6$ load cycles	No performance assessed
Fatigue strength for S-N curve with k_1 and k_2 according to EN 1992-1-1	No performance assessed
Fatigue strength for S-N curve with specific k_1 and k_2	See Annex C
Resistance to low cycle loading (seismic actions)	See Annex C

3.2 Safety in case of fire (BWR 2) ¹

Essential characteristic	Performance
Reaction to fire	Class A1

^[1] The technical documentation of this European technical assessment is deposited at the Deutsches Institut für Bautechnik and, as far as relevant for the tasks of the approved bodies involved in the attestation of conformity procedure, is handed over to the approved bodies.

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

In accordance with EAD 160129-01-0301 the applicable European legal act is: 2000/606/EC.

The system to be applied is: 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 with Deutsches Institut für Bautechnik.

The following technical specifications are referred to in this European Technical Assessment:

EN 1992-1-1:2004 + AC:2010 + A1:2014	Eurocode 2: Design of concrete structures - Part 1-1: General rules and rules for buildings
EN 1998-1:2004 + AC:2009 + A1:2013	Eurocode 8: Design of structures for earthquake resistance – Part 1: General rules, seismic actions and rules for buildings

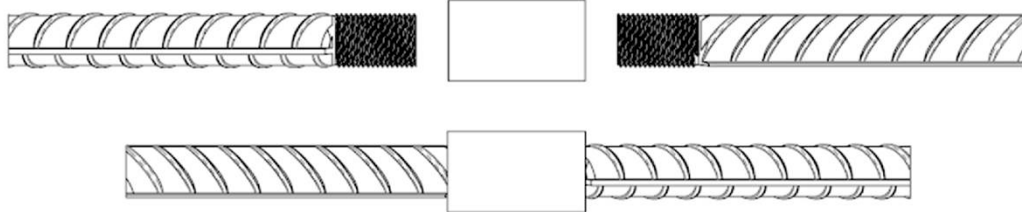
Issued in Berlin on 27 April 2026 by Deutsches Institut für Bautechnik

Dipl.-Ing. Beatrix Wittstock
Head of Section

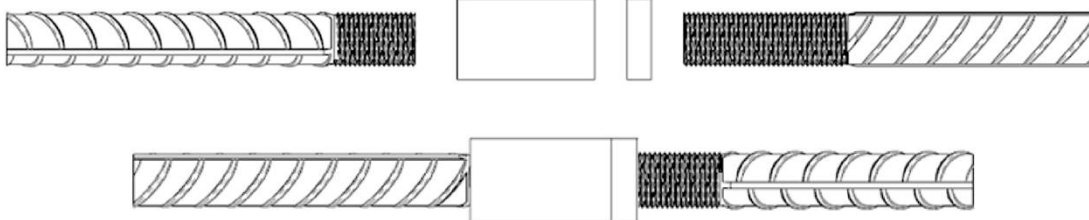
beglaubigt:
Kisan

Type overview Rolltec Connection

Standard Connection



Position Connection Type C



ROLLTEC system

Product description
Rolltec Connection type overview

Annex A1

The table below gives the components to prepare for different types of splices covered within this ETA.







Connection type	Bar End 1	Intermediate components	Bar End 2
Standard	 Type YA	 Standard coupler	 Type YA
Position type C	 Type YA	 Standard coupler Lock nut	 Type YC

Fig. A1: Standard and Position Type C connection details

Table A1: **Rolltec Bar End dimensions for Peeling and Threading length**

Rebar size			12	14	16	18	20	22	25	28	32	
Thread			M13	M15	M17	M19	M21	M24	M26	M29	M33	
Pitch			1,5	1,75	1,75	2,5	2,0	3,0	2,5	3,0	3,0	
YA	Peeling	mm	19,5	22,75	25,75	26,5	31	34	33,5	40	45	
	Thread	Min	mm	15	18	21	21	26	28	28	34	39
		Max	mm	16,5	19,75	22,75	23,5	28	31	30,5	37	42
YC	Peeling	mm	45,5	50,75	58,75	59,5	69	72	75,5	87	99	
	Thread	Min	mm	41	46	54	54	64	66	70	81	93
		Max	mm	42,5	47,75	55,75	56,5	66	69	72,5	84	96

ROLLTEC system

Product description
Rolltec Standard and Position Type C Connection

Annex A2

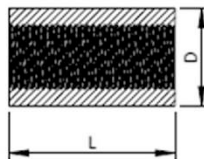


Fig. A2: Rolltec Coupler dimensions

Table A2: Dimension of Rolltec Coupler used for Standard and Position Type C connections

Rebar Size Ø [mm]	Coupler designation	Outer Diameter D [mm]	Length L [mm]	M-Size [mm]
12	RV12	20	30	M13x1,50
14	RV14	24	35	M15x1,75
16	RV16	26	40	M17x1,75
18	RV18	26	40	M19x2,50
20	RV20	31	50	M21x2,00
22	RV22	39	52	M24x3,00
25	RV25	39	54	M26x2,50
28	RV28	44	65	M29x3,00
32	RV32	48	75	M33x3,00

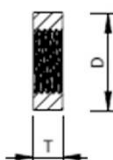


Fig. A3: Lock Nut dimensions

Table A3: Dimension of Lock nuts used for Position Type C connections

Rebar Size Ø [mm]	Lock Nut designation	Outer Diameter D [mm]	Thickness T [mm]	Thread dimensions [mm]
12	LNM13	20	10	M13x1,50
14	LNM15	24	10	M15x1,75
16	LNM17	28	10	M17x1,75
18	LNM19	28	10	M19x2,50
20	LNM21	32	10	M21x2,00
22	LNM24	32	10	M24x3,00
25	LNM26	40	12	M26x2,50
28	LNM29	45	12	M29x3,00
32	LNM33	50	13,5	M33x3,00

ROLLTEC system

Product description

Dimension of Rolltec Couplers and Lock Nuts for Standard and Position Type C connection

Annex A3

Intended Use

ROLLTEC are used as mechanical coupling in accordance with EN 1992-1-1 and EN 1998-1 and annex C for reinforcing steel bars B450C, B500B and B500C with a nominal diameter of 12 to 32 mm in accordance with EN 1992-1-1, clause C.1 for:

- Transmission of static or quasi-static tension and compression loads according to EN 1992-1-1, clauses 8.7 and 8.8(4)
- Limitation of slip according to EN 1992-1-1, clause 7.3
- 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)

The Dextra Rolltec coupler system allows the following splicing variants:

- **Standard Connection:** The Rolltec standard connection is designed for situations where at least one of the two reinforcing bars can be rotated. It features a coupler equipped with Dextra's proprietary threads, enabling the two bars to be securely joined. Both ends of the reinforcing bars are threaded to the same length.
- **Position Connection Type C:** The Rolltec position connection is used when neither of the two reinforcing bars can be rotated due to technical constraints. Similar to the standard connection, it includes a standard coupler and is additionally equipped with a lock nut to lock the continuation bar in position after assembly. The continuation bar end is threaded with an extended length (YC) to ensure full engagement with the coupler during installation stage, while the starter bar end has a standard thread length (YA).

The Dextra Rolltec coupler system is suitable for splicing of reinforcement bars made of carbon steel in accordance with EN1992-1-1, Clause C.1.

ROLLTEC system

Intended use
Specifications and Installation Requirements

Annex B1

Specifications and Installation Requirements



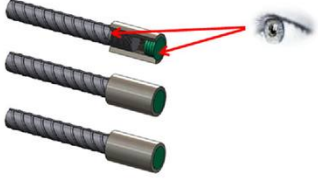

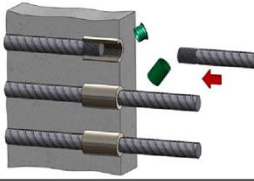

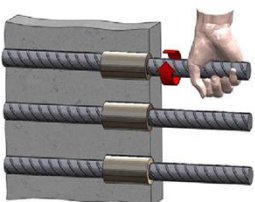


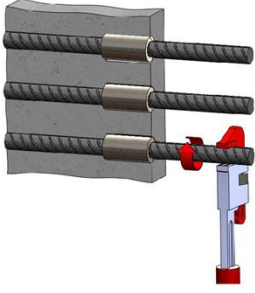
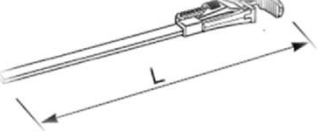

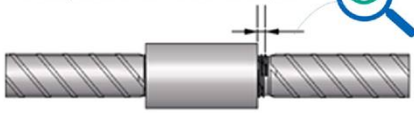
- Splices may be loaded under static and quasi-static tensile and compression load with a maximum of 100% of the non-spliced bar according to EN 1992-1-1, 8.7.2 (4).
- For the concrete cover of the coupler surface and the spacing between the outer edges of adjacent couplers, the same criteria as non-spliced bars according to EN 1992-1-1 shall be applied. The spacing required for the installation shall remain untouched.
- Bends in the bars may only begin at a distance of at least 5 times the nominal rebar diameter from the coupler end. With special equipment used in the manufacturing plant for the bending, the distance may be reduced to 2 times the nominal diameter of the rebar.
- The couplers shall only be installed by trained staff under supervision of the responsible site manager. The installation shall follow the written instructions provided by the manufacturer.
- All threads shall be protected against penetration of concrete deposition, water or other pollution with adequate measures (e.g. plastic cap).
- Prior to installation the regular condition of the inner and outer thread shall be checked. Pollutions of any kind shall be removed.
- ROLLTEC couplers can be installed to the formwork by means of pocket formers or nailing plates during the installation phase.
- Installation of ROLLTEC system according to assembly instruction, see Annex B3 to B4. Tightening of the assembly shall be done using a Stillson or pipe wrench referred from table B1 with no specified torque required.

Table B1: **Wrench size**

Rebar size [mm]	Wrench length [cm]
12	60
14	60
16	60
18	60
20	60
22	60
25	60
28	60
32	60

ROLLTEC system	Annex B2
Intended use Specifications and Installation Requirements	

Table B2: Assembly instruction of Rolltec standard connection



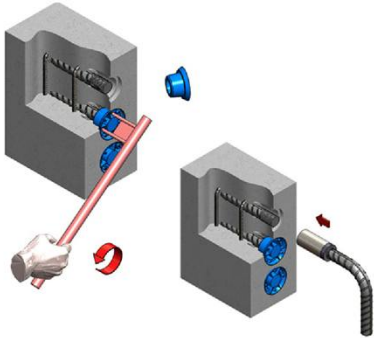
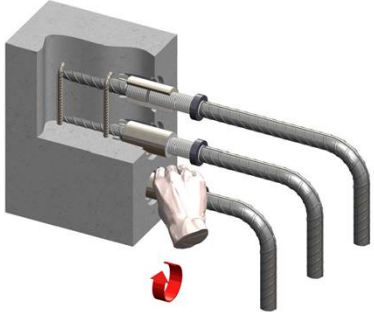
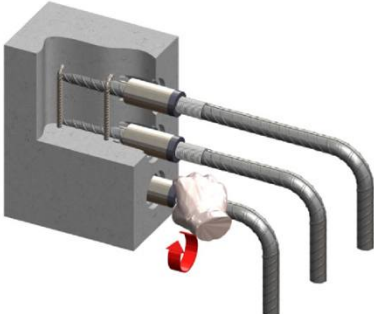
Step	Process	Details	Illustration
1	Prepare the 1 st stage bars	<p> The threaded end of the bars is fully engaged inside the coupler.</p> <p> The coupler cap is correctly fitted.</p>	
2	Concreting 1st stage: Prepare the continuation bars	<p>Remove the plastic cap from the coupler and the thread protection from the continuation bar.</p> <p> Confirm that both caps are of the same colour.</p>	
3	Connect the bars	<p>Hand screw the continuation bar into the coupler. (A wrench may be used if it makes the operation easier).</p> <p> Full engagement of the thread is sufficient to develop the full tensile strength of the splice.</p>	
4	Lock the splice	<p>Use a Stillson or pipe wrench on the continuation bar to lock the splice. No specific torque amount is required.</p> <p> Lock the splice to ensure that the permanent elongation meets the code requirement.</p> <p> Not more than 2 full threads should be visible outside the coupler at the continuation bar end.</p>	  <p>For $\varnothing \leq 32$, $L \geq 60$ cm.</p> <p><i>Max 2 pitches visible outside the coupler</i> </p> 

ROLLTEC system

Intended use
Assembly Instruction of Rolltec Standard Connection

Annex B3

Table B3: **Assembly instruction of Rolltec Position Connection Type C**



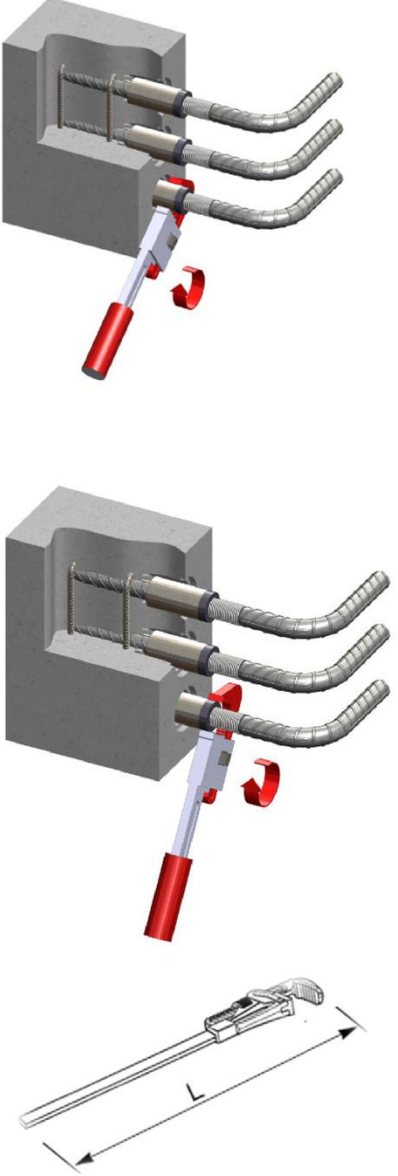
Step	Process	Details	Illustration
1	Prepare the 1 st stage bars	If the bars are going to be completely embedded in concrete, protect their threads with Pocket Formers. (Remove the plastic protections from the bar threads before inserting the Pocket Formers).	
2	Concreting 1st stage: Position the continuation bars	Remove the Pocket Former from the 1st stage bars. Position the continuation bar face to face with the starter bar.  Ensure that the lock nut and the coupler are fully engaged onto the continuation bar.	
3	Connect the bars	Hand screw the coupler out of the continuation bar and onto the first stage bar. (A wrench may be used if it makes the operation easier).	
4	Screw the lock nut	Hand screw the lock nut out of the continuation bar until contact with the coupler.	

ROLLTEC system

Intended use
Assembly Instruction of Rolltec Position Connection Type C

Annex B4

Table B3: Assembly instruction of Rolltec Position Connection Type C (Continued)

Step	Process	Details	Illustration
5	Lock the splice	<p>Use a Stillson or pipe wrench to tighten the coupler and the lock nut. No specific torque amount is required.</p> <p>If the bar is bent and must face a specific direction, orientate it and hold it throughout the tightening and locking operations.</p> <p> Lock the splice to ensure that the permanent elongation meets the code requirement.</p> <p> For the thread side of the starter bar (YA), there should be no full pitch visible outside the coupler after installation</p>	 <p>For $\varnothing \leq 32 \text{ mm}$, $L \geq 60 \text{ cm}$.</p>

ROLLTEC system

Intended use
Assembly Instruction of Rolltec Position Connection Type C

Annex B5

Table C1: Essential characteristics – Standard and Position Type C connections

Connection designation	Resistance to static or quasi-static loading ¹⁾ B450C/ B500B/ B500C $f_{u,min,bar,outside}$ $f_{u,min,bar,inside}$ [N/mm ²]	Elongation at connection failure $A_{gt,act}$ [%]	Slip after static or quasi-static loading s_2 [mm]	Resistance to low-cycle loading (seismic) ²⁾			Fatigue resistance (S-N curve with specific defined k_1 and k_2)			
				U_{20} [mm]	$F_{u,min}$ [kN]			$\Delta\sigma_{Rsk}$ [N/mm ²]	k_1 [-]	k_2 [-]
					B450C	B500B	B500C			
RV12	518/540/575	3	0,1	0,3	58,5	61,1	65,0	68 ($N = 2 \cdot 10^6$)	2,8	4,5
RV14					79,7	83,1	88,5			
RV16					104,0	108,6	115,6			
RV18					131,7	137,4	146,3			
RV20					162,6	169,6	180,6			
RV22					196,7	205,3	218,6			
RV25					254,0	265,1	282,3			
RV28					318,7	332,5	354,1			
RV32					416,2	434,3	462,4			

¹⁾ $f_{u,min,bar,outside} = f_{u,min,bar,inside} = f_{yk} \cdot 1,08$ with $f_{yk}=500$ N/mm² (B500B)

$f_{u,min,bar,outside} = f_{u,min,bar,inside} = f_{yk} \cdot 1,15$ with $f_{yk}=450$ N/mm² (B450C), resp. with $f_{yk}=500$ N/mm² (B500C)

²⁾ $F_{u,min} = (\pi \cdot d^2)/4 \cdot f_{u,min}$

ROLLTEC System

Performance

Essential Characteristics – Rolltec Standard Connection and Position Type C Connection

Annex C