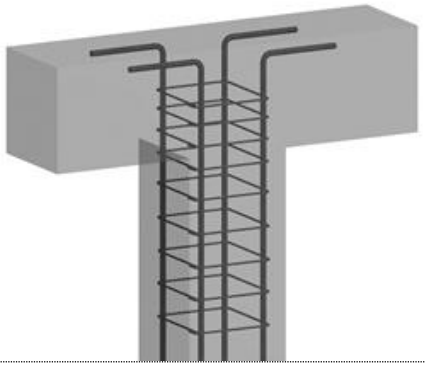
MOUNTING INSTRUCTIONS

REINFORCEMENT SYSTEMS | TEC TERWA END COUPLERS

TERWA END COUPLERS - TEC

The Terwa end coupler represents an efficient alternative to the traditional connections roof-column, beam-column or foundation-column.

TERWA END COUPLER	CLASSIC SOLUTION
The end coupler features the following advantages: • Minimises the length of the rebar and reduces the congestion inside the concrete element. • Eliminates the hooks. • Faster, simpler installation. • Simplifies the structural design. • Better anchorage in the concrete element.	The traditional method consists of a hooked rebar anchorage, which has a series of disadvantages: • Requires longer lengths of anchorage, which increases rebar congestion. • Installation is more labour intensive. • Execution time is longer. • Hidden costs, especially for larger diameters (the lap length grows proportionately to the reinforcement steel diameter). • Decreased safety at construction sites.
Column connection	
	
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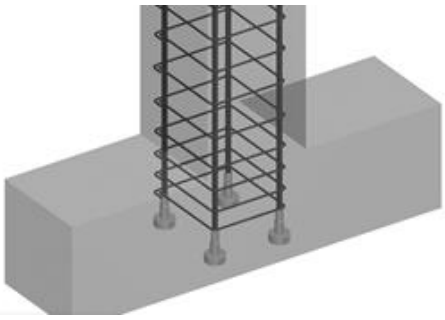
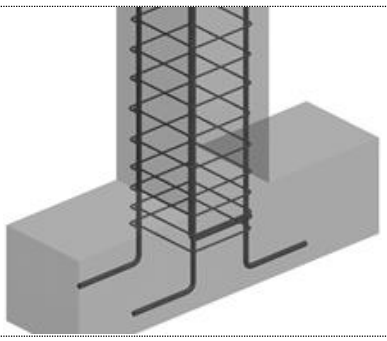
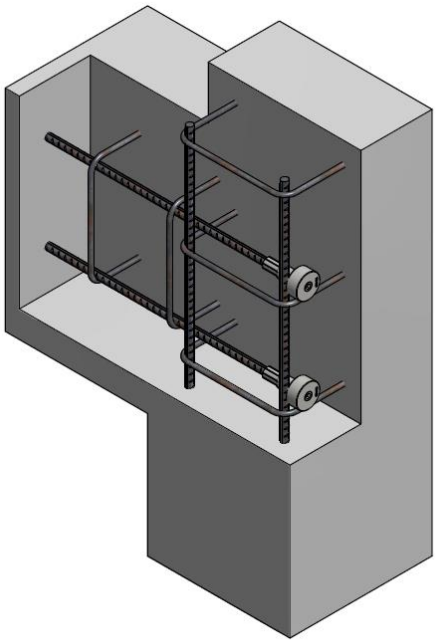
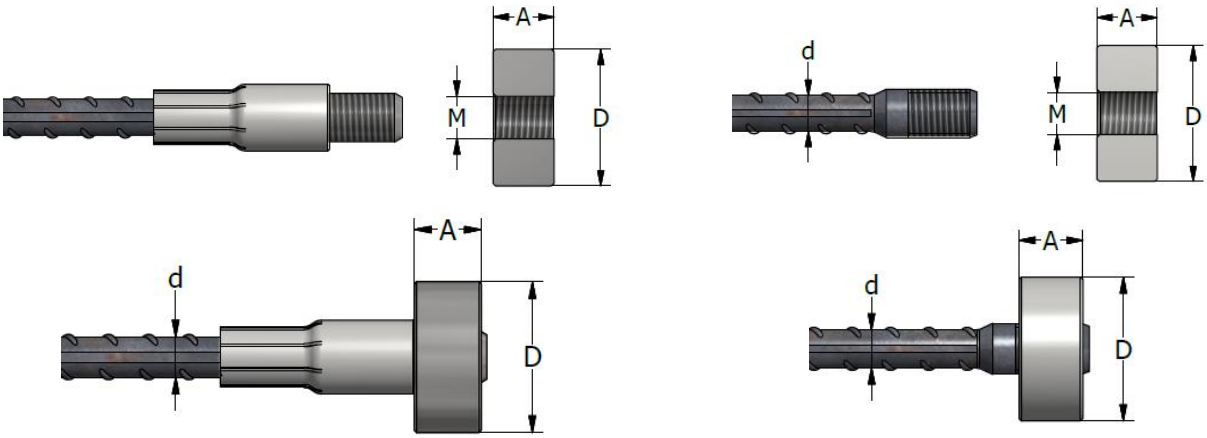
	

Terwa end coupler consists of a threaded round steel plate, which fits the PSA-PSC connection or the TSE connection.
Terwa end couplers meet the ACI 318 and Eurocode 2 concerning the embedding lengths for reinforcement steel. The end coupler is designed and tested to ensure proper embedding in concrete, having a contact area equal to 9 times the rebar cross section area, or a minimum diameter 3 times the rebar diameter.

Beam – Column Connection



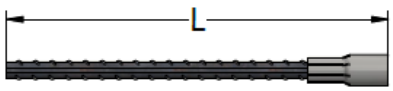
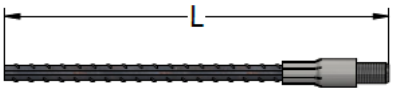
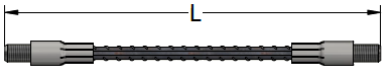
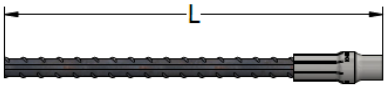
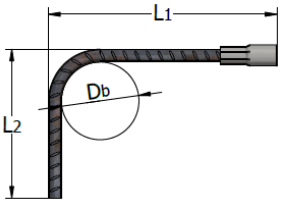
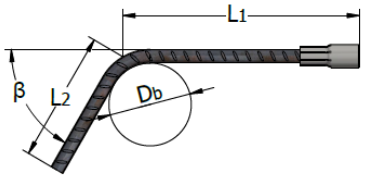
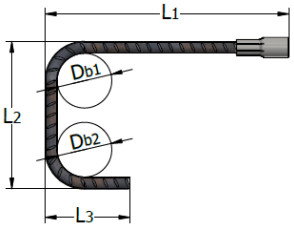
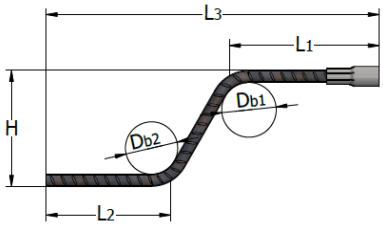
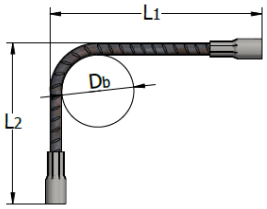
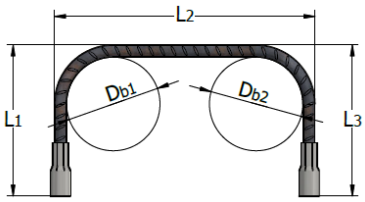
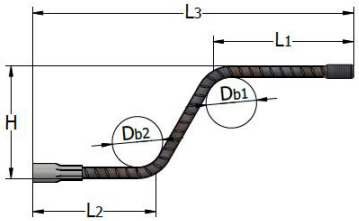
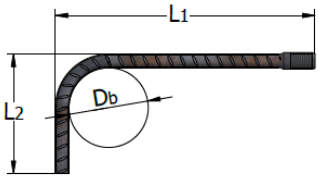
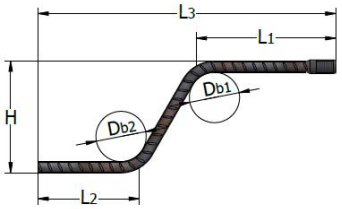
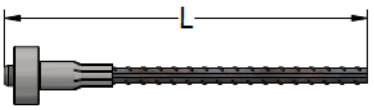


PSA-TEC **TSE-TEC**

Terwa end couplers are available electrolytic galvanised or without coating.

End coupler	Product no.		Thread	Thickness A	D	Rebar diameter (d)	Weight
	Electrolytic galvanised EV	Without coating	Metric	[mm]	[mm]	[mm]	[kg/pc]
TEC-M12	61614	61556	M12	10	38	10	0.084
TEC-M16	61615	61557	M16	12	45	12	0.137
TEC-M20	61616	61558	M20	18	60	16	0.369
TEC-M24	61617	61613	M24	20	75	20	0.644
TEC-M30	61618	61560	M30	27	90	25	1.231
TEC-M36	61619	61561	M36	30	105	28	1.850
TEC-M42	61620	61562	M42	35	120	32	2.804
TEC-M48	61621	61563	M48	40	145	40	4.729

REBAR CONNECTIONS ACCORDING TO CLIENT SPECIFICATIONS

PSA rebar diam-thread - L 	**PSA-PSC rebar diam-thread - L** 	**PSA rebar diam-thread - L** 
PSA rebar diam-thread - L 	**PSA rebar diam-thread - L** 	**PSAD rebar diam-thread – L** 
PSAD rebar diam-thread – L 	**PSAD-2xPSC rebar diam-thread - L** 	**PSA - rebar diam d1/ d2-thread - L** 
PSA-TSE rebar diam-thread – L 	**PSAG rebar diam-thread – L_1 x L_2** 	**PSAG rebar diam-thread – L_1 x L_2 x β** 
PSAGG rebar diam-thread – L_1 x L_2 x L_3 	**PSAGG rebar diam-thread – L_1 x L_2 x L_3 x H** 	**PSAGD rebar diam-thread – L_1 x L_2** 
PSAGG rebar diam-thread – L_1 x L_2 x L_3 	**PSA/TSE GG rebar diam-thread – L_1 x L_2 x L_3 x H** 	**PSAGD rebar diam-thread – L_1 x L_2** 
TSEGG rebar diam-thread – L_1 x L_2 x L_3 x H 	**PSA-TSE rebar diam-thread – L** 	**PSA-TSE rebar diam-thread – L** 

INSTRUCTIONS FOR INSTALLING TERWA REBAR COUPLER

INSTALL PSA COUPLER AND CONNECT TO COUPLER PSA-PSC

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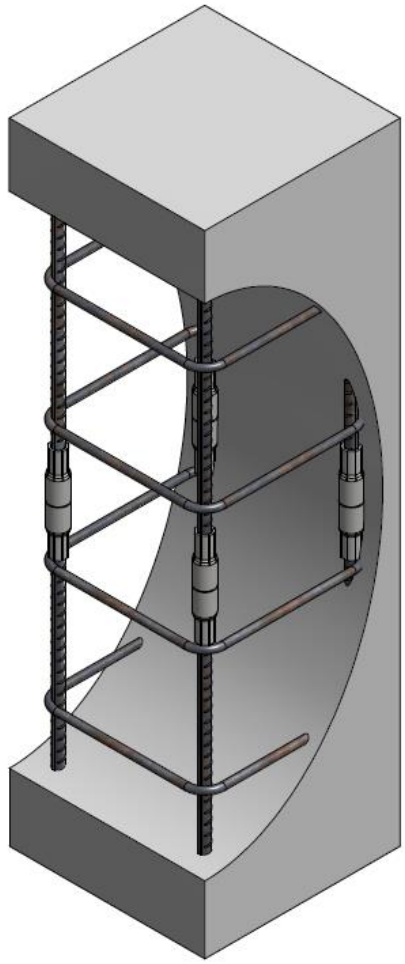
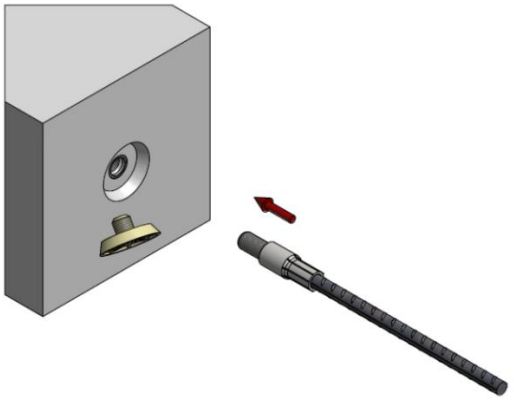
<td rowspan="2">  </td>
<td>  </td>
<td>Place and rotate the PSA-PSC coupler manually until the couplers are fastened.</td>
</tr>
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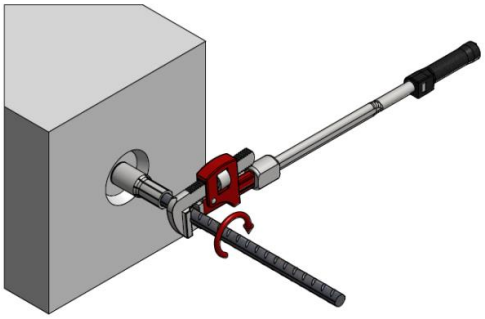
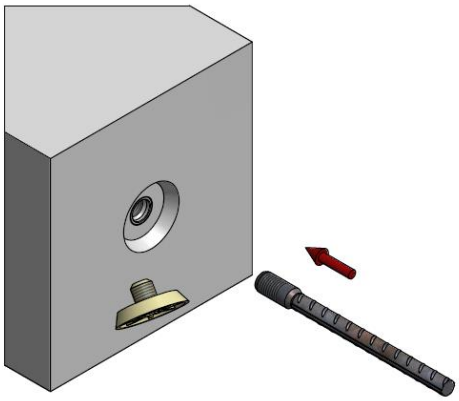
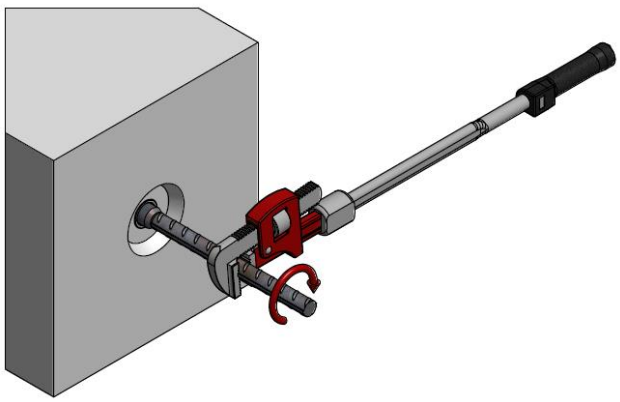
<td>  </td>
<td>Finish the connection using a special TERWA torque wrench to tighten the connection. The connection must be sufficiently tight to prevent movement during concrete placement. The necessary torque for each type of rebar is shown in the table on page 7.</td>
</tr>
</table>

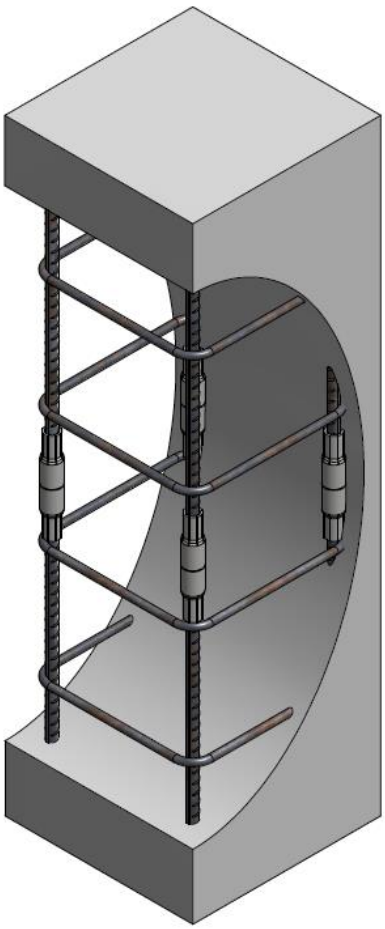
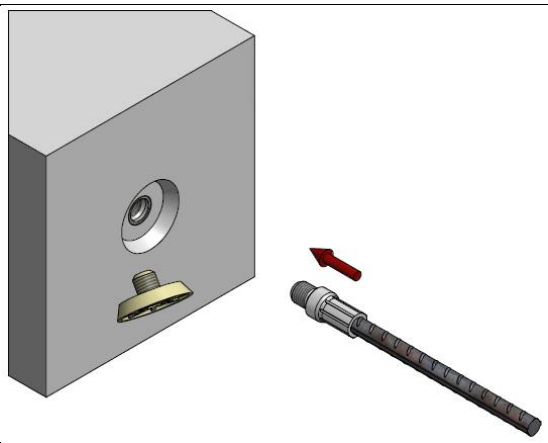
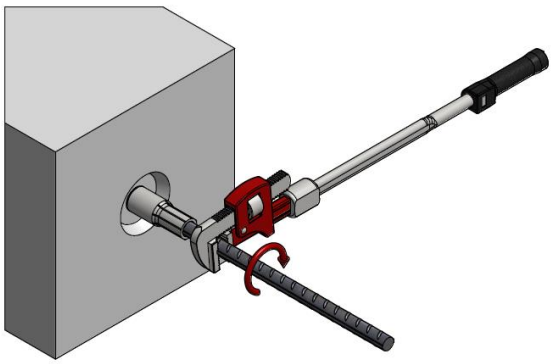
Note: *Make sure both parts of the connecting bars are installed exactly in line with one another, as any misalignment may result in reduced concrete coverage, insufficient bar spacing or may compromise mounting of the connecting element. Corrective bending in the threaded zone of the bar is not allowed.*

INSTALL COUPLER PSA AND CONNECT TO COUPLER TSE

	
Place and rotate TSE coupler manually until the couplers are fastened.	*Finish the connection using a special TERWA torque wrench to tighten the connection. The connection must be sufficiently tight to prevent movement during concrete placement. The necessary torque for each type of rebar is shown on* ***page 7****.*

Note: *Make sure both parts of the connecting bars are installed exactly in line with one another, as any misalignment may result in reduced concrete coverage, insufficient bar spacing or may compromise mounting of the connecting element. Corrective bending in the threaded zone of the bar is not allowed.*

INSTALL PSA COUPLER AND CONNECT TO COUPLER PSA-PSE

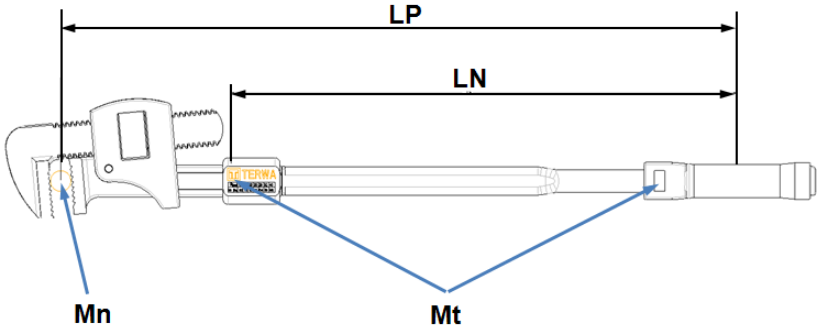
<table>
<tr><td rowspan="2">  </td><td>  </td><td>Place and rotate PSE coupler manually until the couplers are fastened.</td></tr>
<tr><td>  </td><td>Finish the connection using a special TERWA torque wrench to tighten the connection. The connection must be sufficiently tight to prevent movement during concrete placement. The necessary torque for each type of rebar is shown in the table on page 7.</td></tr>
</table>

TERWA TORQUE WRENCH

The Terwa torque wrench is specially designed for correctly mounting the Terwa coupler on site and at the factories. All Terwa wrenches are delivered with a calibration report and work instructions.
The torque values for all rebar diameters are marked on the wrench. The torque values for all Terwa couplers are listed below.

Reinforcement diameter [mm]	Necessary torque for each type of rebar [Nm]	Setting torque using wrench Mt [Nm]
10	50	60
12	60	60
14	70	60
16	80	60
18	90	70
20	100	75
22	110	82
25	125	93
28	140	104
32	160	119
40	200	148

TERWA torque wrench



Mn – required torque
Mt – setting torque using wrench
LP – length to middle of each reinforcement steel
LN – standard length wrench

Mt = Mn x LN/LP

TERWA wrench dimensions

CONTACT

TERWA is the global supplier for precast and construction solutions with multiple offices around the world. Our staff, partners and agents are happy to provide all construction and precast companies who work in the building industry with full service and 100% support.

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