



# Stainless Steel Reinforcing Bar Couplers

## Working towards forever.

We work with our customers and partners to create long lasting solutions for the tools of modern life and the world's most critical problems: clean energy, clean water and efficient infrastructure.

Because we believe in a world that lasts forever.

Lapped joints are not always an appropriate or desirable means of connecting rebar. They can lead to greater congestion within the concrete and the production of transverse forces having the effect of trying to push the bars apart. In addition, the length of lap increases the amount of material used, which is of particular concern when stainless steel rebar is specified. Coupling the rebar via a threaded mechanical coupler helps to overcome these problems.

The Highways Agency advice note BA84/02 states that it is not recommended to weld stainless steel reinforcement bar but that it can be anchored or lapped as per any Type 2 deformed rebar. It also allows for the mechanical coupling of stainless steel rebar.

EN 1992-1-1:2004 (Eurocode 2) states that generally bars of 32mm (subject to the national annex) diameter and above should not be lapped.

The required lap length depends on the strength of the concrete used as well as the design conditions. Cost comparisons show that it is more cost effective to use stainless steel couplers to join both 32mm and 40mm diameter bars than it is to lap stainless steel rebar over a length of 40d or greater, where d is the diameter of the stainless steel rebar.

Developed in association with Ancon Building Products Limited, the Outokumpu stainless steel rebar coupler produces a full strength joint, with a bar break failure mode.

The end of each bar to be coupled is enlarged by cold forming and then threaded. Each bar end is then engaged into a threaded coupler. In order to protect the threads prior to site assembly, plastic sheaths are attached to the bar ends. Couplers are usually supplied attached to one bar with a protective end cap used to protect the internal threads at the other end.



Cold forged and threaded bar ends

## Product Availability

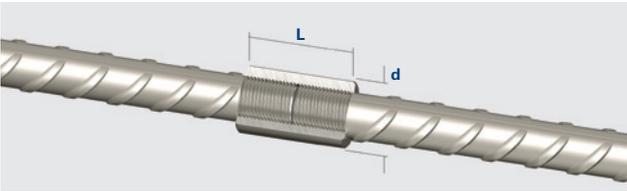
All couplers are manufactured in LDX2101 (1.4162) stainless steel complying with the requirements of BS 6744:2001+A2:2009. Other stainless steel designations are available upon request.

Information on the corrosion performance of LDX2101 in concrete is available from Outokumpu. All couplers are designed to join grade 500 stainless steel rebars, grade 500 carbon steel rebars or stainless steel to carbon steel rebars.

All couplers are fully compatible with normal carbon steel rebar ends processed for the Ancon Bartec system.

## Coupler Dimensions

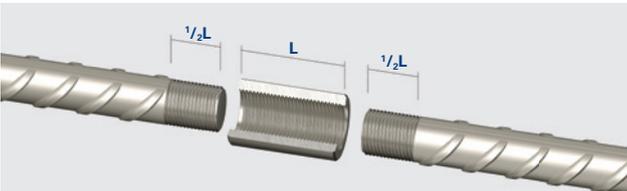
Bar Diameter (mm)	12	16	20	25	32	40
External Diameter d (mm)	21	26	32	40	50	62
Length L (mm)	32	40	48	60	72	90
Thread size	M16	M20	M24	M30	M36	M45



## Coupler Types

### Outokumpu Type A

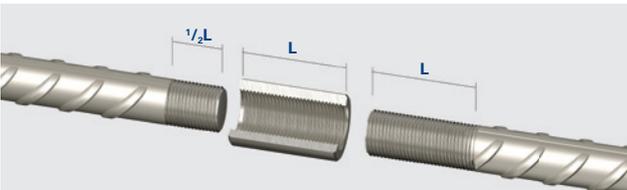
For use where the continuation bar can be rotated into the coupler. The continuation bar should be tightened with a wrench.



### Outokumpu Type B

For use where it is difficult but not impossible to rotate the continuation bar.

The coupler should be screwed fully onto the continuation bar (shown with L thread length), before being rotated back onto the end of the first bar. The continuation bar should then be tightened against the first bar with a wrench.

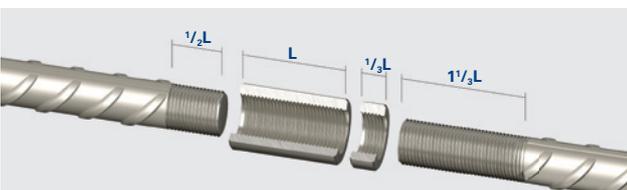


### Outokumpu Type C

For use where the continuation bar cannot be rotated.

The locknut and coupler should be screwed fully onto the continuation bar (shown with  $1\frac{1}{3}L$  thread length). The first bar should be positioned against the coupler, and the coupler and lock nut rotated to engage fully onto the first bar. The locknut should then be tightened with a wrench.

The tightening wrench used should have soft, non-metallic grips to ensure that the stainless steel rebar is not damaged or contaminated with carbon steel.



## Testing and Approval

Outokumpu couplers comply with the requirements of BS 8110.

Also available:

- BS 6744:2001 +A2:2009 straight lengths up to 12m
- Stainless steel fabric mesh to BS 4483 mesh sizes
- Stainless steel dowel bars and sleeves
- Cut & Bend to BS 8666:2005

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