

ReidBar™ Optimised Coupler

Quick Start Guide

The re-designed, full-strength
reinforcing connection system
- optimised for the next
generation of construction.





One of the most recognised
brands in concrete construction

Our Commitment to Concrete Construction

Reid™ aims to instill confidence in building with concrete. With high-quality products, expert guidance, and educational resources on offer, Reid™ is an industry leading supply partner throughout Australia and New Zealand.

✓ We leave nothing to chance.

Our products are designed, developed, and thoroughly tested to perform to local conditions and to industry standards. With state of the art, in-house testing facilities and a team of highly skilled and experienced engineers, thorough testing, including in-concrete testing and independent lab assessments, put our performance claims under the microscope. Quality and Compliance are key priorities in ensuring our customers can trust our brands to perform, each and every time.

✓ We behave as trusted advisors

We partner with our customers and the industry as trusted advisors, who are intimately connected to the success and advancement of concrete construction. We work closely with the industry regulators to ensure we provide a best-in-class quality and compliant market offer, in-conjunction with key government legislation and construction regulations & standards. This will ensure Reid™ delivers concrete solutions that last a lifetime and meet higher standards demanded by regulators and industry stakeholders.

✓ Quality & Compliance

We believe the industry should never have to doubt the engineered concrete solutions they choose - the success of our customers' projects is our success. That's why our products are made to high quality standards and subjected to strict independent testing procedures, in conjunction with our own in-house testing centre that plays a critical role in the delivery of concrete solutions that not only meets, but exceeds the standards demanded by the industry.

✓ Research and Development

At Reid™, innovation starts with our customers through our unique customer-back innovation process. We strive to innovate by deeply understanding our customers' needs that result in solutions to meet their specific requirements. With a team of nine R&D experts, we go beyond regulatory compliance to ensure products have been validated through rigorous testing. In addition, our performance claims are verified by chartered registered engineers. So, you can trust that our products will perform as promised!

✓ Local Manufacturing

Reid™ has a significant commitment to Plastic Injection Moulding, Steel Fabrication and Roll Forming. We're working hard every day on ways to improve our operational efficiency whilst creating meaningful and sustainable improvements through the use of recycled materials where appropriate. With safety, quality, and sustainability as our highest priorities, Reid™ prides itself on continued investment to local manufacturing and to provide the capabilities and capacity to meet the needs of the Australian and New Zealand construction industry.

✓ Engineering & Design

Employing over 25 engineers, bank on our value engineering support throughout the life of the construction process. Our team comprises of registered, qualified, experienced engineers across Design Services, Field Engineering, and R&D throughout Australia and New Zealand, providing technical product assistance, on-site support, and value-add design services. We partner with our customers to find the optimal solution, eliminate unnecessary costs & improve productivity - whilst never compromising on safety.

✓ Our Engineering team can offer:

- Concrete lifting designs for precast construction.
- Engineering information and design for the application of Reid and Danley products in unique situations.
- Engineering assessment and testing to find the most optimal solution for your project.

Product Overview

ReidBar™ Optimised Coupler – Cut & Connect Simplicity

The ReidBar™ Coupler connection is a robust, one-piece mechanical splice system designed for fast, simple, and reliable reinforcement continuity.

Engineered for use with ReidBar's unique coarse-thread reinforcing system, it utilises the proven Cut & Connect method—simply cut the bar square, connect the coupler, and tighten to specification.

This straightforward approach eliminates complex assembly steps, streamlining installation and reducing on-site labour. Precision machining and stringent quality control ensure every coupler delivers a secure, high-strength connection that maintains structural integrity under demanding conditions.

The ReidBar™ Coupler is ideal for projects where speed, efficiency, and performance are critical—from infrastructure and high-rise construction to congested reinforcement layouts—providing a dependable connection you can trust for the life of the structure.

Key Features & Advantages



Reliable Thread Connection: Milled coarse thread design supports both horizontal and vertical connections, providing secure slip performance without the risk of crossed threads or on-site threading.



Versatile Applications: Suitable for a wide range of projects, from standard concrete structures to thin concrete sections such as precast wall panels, the ReidBar coupler offers unmatched flexibility in design and functionality.



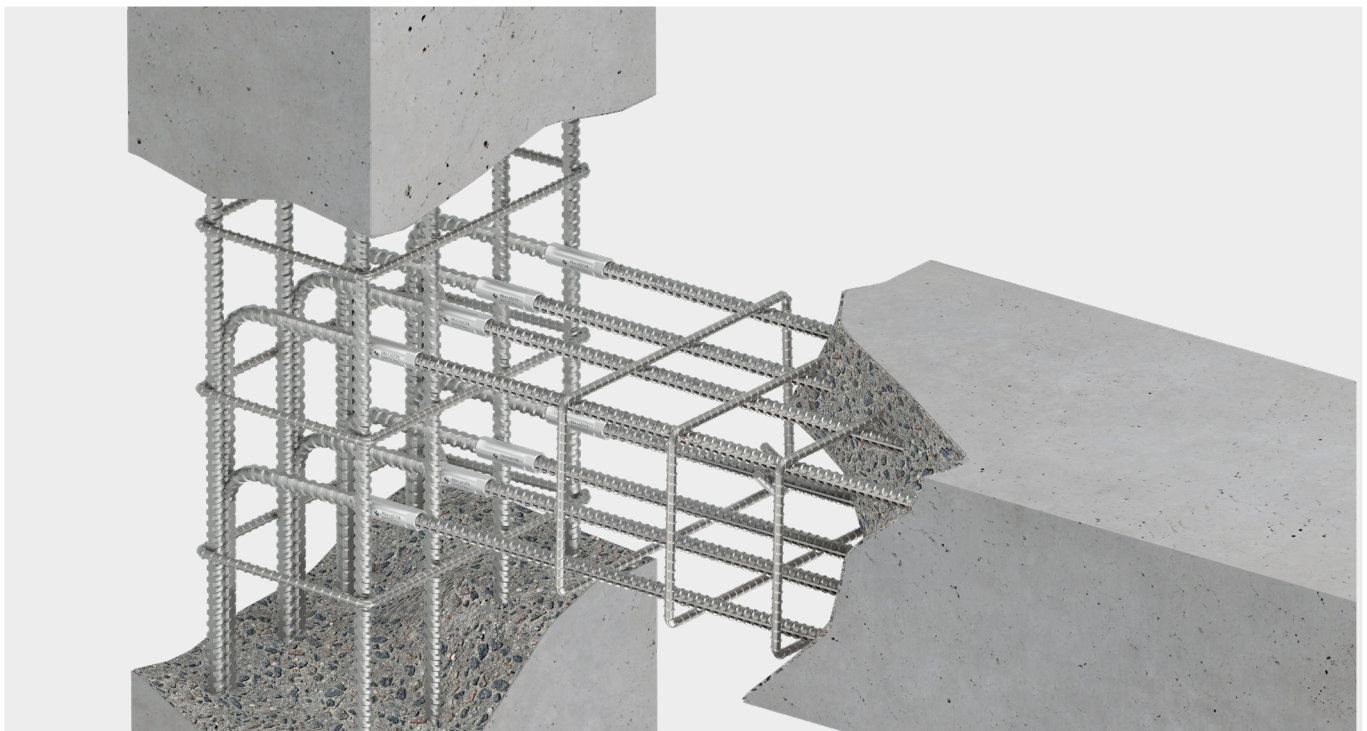
Efficient Joining Mechanism: The Reid™ Coupler enables easy and efficient end-to-end connections between ReidBar reinforcing, eliminating the need for complex splicing methods and ensuring a strong, secure joint.



Efficient Installation: Simple installation process allows for semi-skilled labor, reducing labor costs and supporting faster construction cycles.



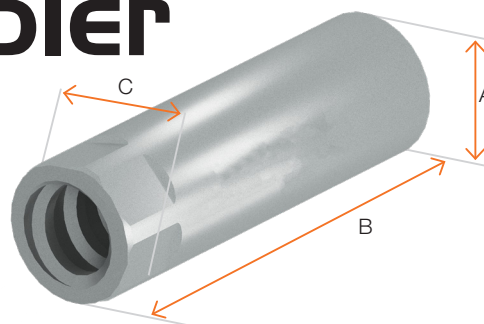
Code Compliance and Structural Integrity: Certified to meet NZS 3101, AS 5100.5, and other industry standards, ensuring reliable, traceable performance for reinforced concrete structures.



ReidBar™ Optimised Coupler

NEW


New Hex location.
For improved installation



Product Specs

Part No.	Description	Finish	Body Diameter (A) (mm)	Length (B) (mm)	Hex A/F (C) (mm)	Min Threaded Depth (mm)
RB12SCPБ	12mm Optimised ReidBar Coupler	Black	22	94	20	39
RB12SCPГ	12mm Optimised ReidBar Coupler	Galvanised	22	94	20	39
RBA16SCPБ	16mm Optimised ReidBar Coupler	Black	26	110	24	45
RBA16SCPГ	16mm Optimised ReidBar Coupler	Galvanised	26	110	24	45
RB20SCPБ	20mm Optimised ReidBar Coupler	Black	32	141	29	60
RB20SCPГ	20mm Optimised ReidBar Coupler	Galvanised	32	141	29	60
RB25SCPБ	25mm Optimised ReidBar Coupler	Black	40	172	36	73
RB25SCPГ	25mm Optimised ReidBar Coupler	Galvanised	40	172	36	73
RB32SCPБ	32mm Optimised ReidBar Coupler	Black	52	184	46	79
RB32SCPГ	32mm Optimised ReidBar Coupler	Galvanised	52	184	46	79

*Additional lead times apply for HDG products

Installation



ReidBar™ Couplers are to be installed utilising Ramset™ ChemSet™ Epcon™ G5 Xtrem™

Typical specification on drawings:
“RB__SCPБ/SCPГ + Ramset
CHEMSET EPCON G5 Xtrem”

Recommended amount of Ramset™ ChemSet™ Epcon™ G5 Xtrem™ injections

Part No.	No of Injections (each side)*	Approx. Fittings/cartridge**
RB12SCPБ/SCPГ	1	55
RBA16SCPБ/SCPГ	1	55
RB20SCPБ/SCPГ	2	27
RB25SCPБ/SCPГ	3	18
RB32SCPБ/SCPГ	5	11

*recommendations are based on the use of mixing nozzle type “ISNE”. Quantities based on full pumps.

**Based on 110 pumps per Ramset™ ChemSet™ Epcon™ G5 XTREM™ Cartridge.

We break concrete, so you don't.

Our products are designed, developed, and thoroughly tested to perform to local conditions and to industry standards.

With state of the art, local testing facilities and a team of highly skilled and experienced engineers, thorough testing, including in-concrete testing and independent lab assessments, put our performance claims under the microscope. Quality and Compliance are key priorities in ensuring our customers can trust ReidBar™ to perform, each and every time.

✓ Quality & Compliance

We believe the industry should never have to doubt the engineered concrete solutions they choose - the success of our customers' projects is our success. That's why our products are made to high quality standards and subjected to strict independent testing procedures, in conjunction with our own in-house testing centre that plays a critical role in the delivery of concrete solutions that not only meets, but exceeds the standards demanded by industry regulators.

✓ ReidBar™ Systems & Components Comply with the requirements of a wide range of the most current standards:

- NZS 3101:2006 (A3) - Concrete Structures Standard
- NZTA Bridge Manual 3rd Edition (A4)
- AS/NZS 4671 Steel for the reinforcement of concrete
- ISO 15835 Steel for the reinforcement of concrete - Reinforcement couplers for mechanical splices of bars - Parts 1, 2 & 3.

Furthermore, ReidBar™ Reinforcing bar is ACRS Certified which is aligned with the requirements of the NCC (National Construction Code) along with the requirements of the New Zealand Bridge Manual - third edition.



Standards Compliance



✓ We leave nothing to chance, we are trusted industry advisors.

Mechanical Splicing

Application Advantages

Mechanical Splicing not only provides superior tensile strength and strain capacity compared to lap splicing, but also enables full load transfer using compact couplers that are both slim and short in design. Mechanical splicing delivers a reliable full capacity connection that enhances the structural stability of reinforced concrete.

Proven Reliability

- Ensures ductility within the system, regardless of the surrounding concrete quality.
- Delivers a 'Bar Break' reinforcement Design, capable of utilising the full capacity of the 500E grade bar
- The strength of the splice is created without reliance on surrounding concrete performance.

Design Friendly

- Enhances the ratio of steel to concrete throughout the structure.
- Minimises the overcrowding of rebar in the connection zone, facilitating better concrete compaction.
- Increases design flexibility and options available.

Economical Benefits

- Lowers material expenses by minimising the amount of reinforcement required.
- Expedites construction timelines, leading to enhanced efficiency and cost savings.
- Ideal for the prefabrication of reinforcement, conserving precious crane time.

Increased Structural Integrity

- By utilising mechanical reinforcement splices, designers & installers can fully utilise the entire capacity of the bar.
- Removes lap splices in areas with high stress, helping to decrease congestion.
- When designing beyond the elastic limit, mechanical splices enhance occupant safety by diminishing the risk of structural failure.



Installation:

ReidBar™ Optimised Coupler

Steps

ReidBar™ Optimised Coupler Installation Guidelines.

1 Side 1

Recommended filler injection quantity pg 5.

Inject the recommended number of pumps of Epcon™ G5 Xtrem™ into one side of the Coupler. Start from the bottom of the thread and draw the nozzle out from the component in a rotating motion as the filler is being injected.

Inject

2

Ensure Epcon™ G5 Xtrem™ is visible at the end of Coupler.

Screw the Coupler onto the first ReidBar™, and tighten the coupler using a wrench to ensure that the ReidBar™ is hard against the stop.

Tighten

3

Remove excess epoxy from around the fitting using a suitable disposable material (e.g. cloth, fabric off-cut, or cardboard)

Complete

4 Side 2

Start from the bottom of the thread and draw the nozzle out from the component in a rotating motion as the filler is being injected.

Recommended filler injection quantity pg 5.

Inject the recommended number of pumps of Epcon™ G5 Xtrem™ into the opposite side of the Steel Coupler.

Inject

5

Ensure Epcon G5 Xtrem™ is visible at the end of Coupler.

Thread the second ReidBar™ into the Coupler, and tighten the bar using a wrench to ensure that the ReidBar™ is hard against the stop.

Tighten

6

Remove excess epoxy from around the fitting using a suitable disposable material (e.g. cloth, fabric off-cut, or cardboard)

Complete

Ensure the appropriate PPE is worn when working with Ramset™ Chemset™ Epcon G5 Xtrem™. Refer to www.ramset.co.nz for Ramset™ Chemset™ Epcon G5 Xtrem™ MSDS Sheet.

Quality & Compliance

ReidBar™ Optimised Coupler

The ReidBar™ Optimised Couplers are used as part of the ReidBar™ Mechanical Splicing System and have achieved the requirements of the subsequent standards table.

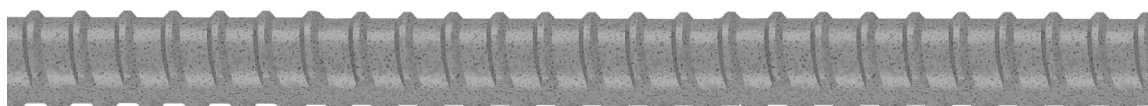
Slip and tensile testing was conducted in accordance with the relevant procedures of ISO 15835-1:2009 Steels for the Reinforcement of Concrete – Reinforcement Couplers for Mechanical Splices of Bars Part 1: Requirements, ISO 15835- 2:2009 Part 2: Test Methods, AS/NZS 4671:2019 Steel for Reinforcement of Concrete and AS 1391-2020 Metallic Materials – Tensile Testing at Ambient Temperature.

Standards Compliance	Testing Criteria	Compliance
NZTA Bridge Manual 3rd Edition - Amendment 4 NZS 3101:2006 Amendment 3 Concrete Structures Standard AS/NZS 4671:2019 Steel for the reinforcement of Concrete ISO 15835 Steels for the reinforcement of concrete — Reinforcement couplers for mechanical splices of bars	Elongation at 0.7fy NZS 3101:2006 A3: CI 8.7.5.2 (b) NZTA Bridge Manual 3rd ed. A4: CI 4.2.1 (f) (i)	
	High Cycle Fatigue Loading NZS 3101:2006 A3: CI 8.7.5.2 (c), 8.9.1.3 (b) NZTA Bridge Manual 3rd ed. A4: CI 4.2.1 (f) (i) Refer to ISO15835-1:2018 for (category F) requirements	
	Alternating Large Strains / Low Cycle Fatigue NZS 3101:2006 A3: CI 8.9.1.3 (a) NZTA Bridge Manual 3rd ed. A4: CI 4.2.1 (f) (i) Refer to ISO15835-1:2018 for (category S1 & S2) requirements	
	Ultimate Tensile Strength NZS 3101:2006 A3: CI 8.6.11.1 & 8.6.11.2 NZTA Bridge Manual 3rd ed. A4: CI 4.2.1 (f) (i)	
	Mode of Failure NZS 3101:2006 A3: CI 8.6.11.1, 8.6.11.2, 8.6.11.3 NZTA Bridge Manual 3rd ed. A4: CI 4.2.1 (f) (i)	
	Resistance to Brittle Fracture NZS 3101:2006 A3: CI 8.6.11.4 NZTA Bridge Manual 3rd ed. A4: CI 4.2.1 (f) (iv) to AS 1544.2 (Charpy V-notch impact resistance) and to AS/NZS 3678 for testing and acceptance respectively.	

ReidBar™ Reinforcing Bar - Technical Data

RB12, RBA16, RB20, RB25, RB32

Grade Seismic 500E Micro Alloyed ReidBar™



Commercial reinforcing (E Class - Seismic) bar to AS/NZS 4671:2019

Product Characteristics	Value
Lower Characteristic yield strength $R_{ek,L}$ (MPa)	≥ 500
Upper Characteristic yield strength $R_{ek,U}$ (MPa)	≤ 600
Characteristic Minimum Ultimate to Yield ratio – R_m/R_e	≥ 1.15
Characteristic Maximum Ultimate to Yield ratio – R_m/R_e	≤ 1.40

High Cycle Fatigue Loading

High Cycle Fatigue testing was successfully completed for ReidBar™ Optimised Couplers on the largest size in accordance with CI 8.7.5.2 (c) & 8.9.1.3 (b) - NZS 3101:2006 A3 & CI 4.2.1 (f) (i) - NZTA Bridge Manual 3rd Edition A4.

Sample	Part No.	No. of Samples Tested	In accordance with ISO 15835-1 & ISO 15835-2					Test report reference
			No. of cycles	Nominal Yield Str. f_y	Cycle upper stress	Cycle lower stress	Results	
				[kN]	[kN]	[kN]		
ReidBar™ Steel Optimised Couplers with Ramset™ ChemSet™ Epcon™ G5 XTREM™								
32mm Coupler Assembly	RB32SCPB	3	2,000,000	402.0	241.2	193.0	Pass	Holmes Solutions 157300- RB32SCPB-iso15835- 2018 Fatigue

The three (3) repeat RB32SCPB spliced bar assemblies successfully achieved 2×10^6 loading cycles without obvious signs of fatigue-related damage, including cracking, disengagement/loosening of components, or other indications.

ReidBar™ Optimised Coupler - Performance Data

ReidBar™ Coupler Assembly Using Commercial reinforcing
(E Class - Seismic) ReidBar™ to AS/NZS 4671 :2019.

Reidbar Assembly	Part No.	No. of Samples Tested	ISO 15835-1:2009 Low-Cycle Fatigue - Couplers of Category S2 (Violent Earthquakes)			Mode of Failure	Test Report Reference
			Max u4 [mm]	Max u8 [mm]	Min. UTS [MPa]		
12mm ReidBar Coupler Assembly	RB12SCPb	3	-0.024	0.005	699.5	Ductile Bar Failure Outside of Coupler	Holmes S. 157300-RB12SCPb-iso15835-2009
20mm ReidBar Coupler Assembly	RB20SCPb	3	-0.014	0.037	704.3	Ductile Bar Failure Outside of Coupler	Holmes S. 157300-RB20SCPb-iso15835-2009
32mm ReidBar Coupler Assembly	RB32SCPb	3	0.074	0.149	674.6	Ductile Bar Failure Outside of Coupler	Holmes S. 157300-RB32SCPb-iso15835-2009
Requirements as per Clause 8.9.1.3 (a) of NZS 3101:2006 A3 and Clause 4.2.1 (f) (i) of NZTA Bridge Manual 3rd Edition A4			ISO u ₄ ≤ 0.3mm	ISO u ₈ ≤ 0.6mm	UTS ≥ 575MPa		

Slip and tensile testing was conducted in accordance with the relevant procedures of ISO 15835-1:2009 Steels for the Reinforcement of Concrete – Reinforcement Couplers for Mechanical Splices of Bars.

ReidBar™ Optimised Coupler - Mechanical Splice Category as designated by ISO 15835-1 & ISO 15835-2

Mechanical Splice Category Designation	Performance Properties Tested	ISO 15835-1 Requirement Subclause	ISO 15835-2 Testing Subclause	Result
B (Basic)	Strength, Ductility & Slip under static forces.	5.2, 5.3	5.1, 5.2, 5.3 + 5.4	
F (Fatigue)	As for 'B' + High Cycle Fatigue	As for B + 5.4	As for B + 5.5	
S2 (Seismic 2 - Violent)	As for B + Violent Low Cycle Loading	As for B + 5.5.2	As for B + 5.6.2	

*ReidBar™ Optimised Couplers have been assessed & successfully tested in accordance with both class F & S2 and can be classified as an FS12 Mechanical Splice (Having passed requirements of both S1 & S2). For Further validation testing & performance data, refer to the Reid Reinforcement Technical Assessment Report (RTA-25/OO16) available at <https://reids.co.nz/>

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