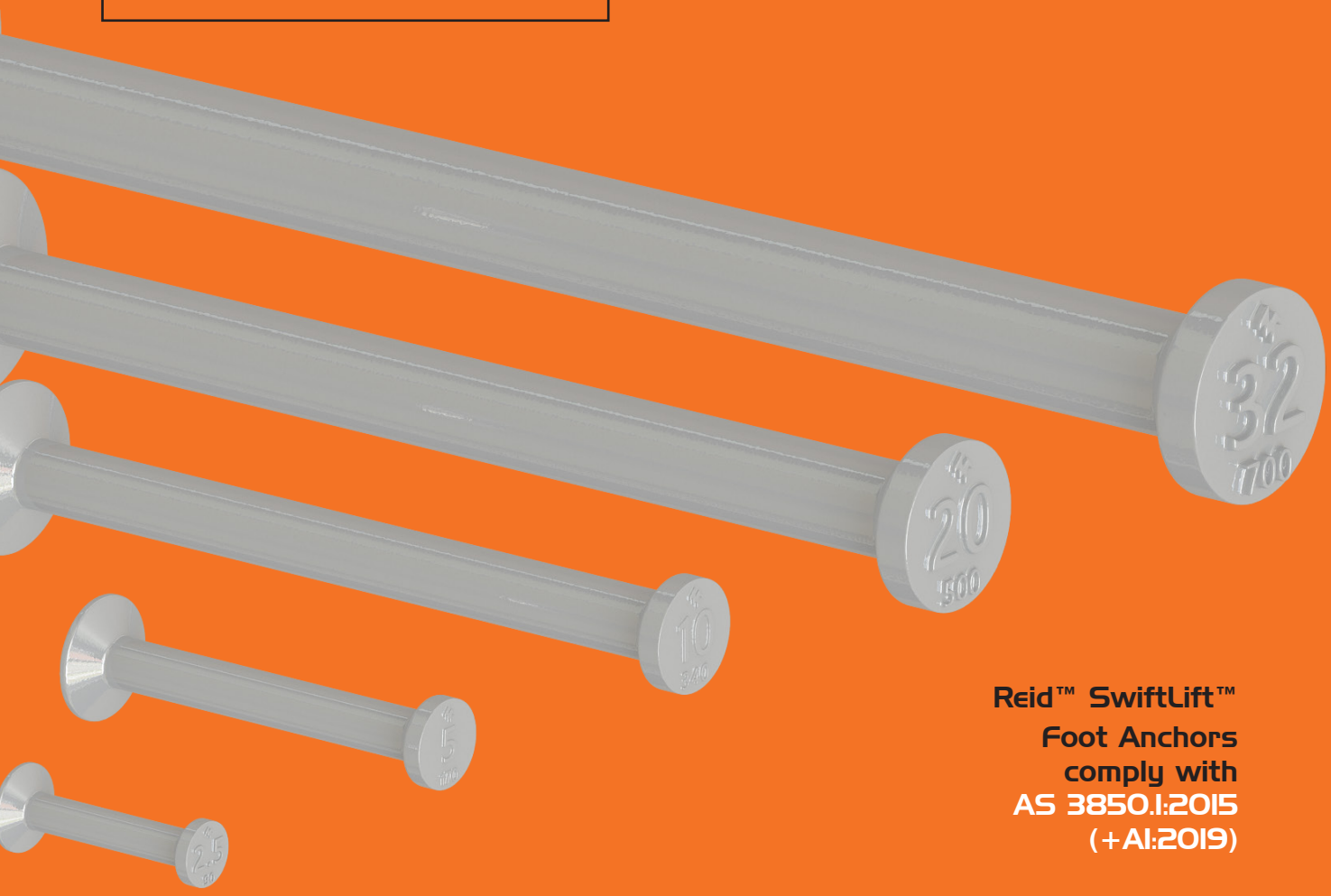
reid™

CHARTERED VERIFIED ENGINEER

February | 2021 AUS

Reid™ SwiftLift™ Foot Anchors

Compliance Document



Reid™ SwiftLift™ Foot Anchors comply with AS 3850.1:2015 (+A1:2019)

SwiftLift™ Foot Anchor

The SwiftLift system utilises a fully engineered approach combining cast-in lifting anchors, recess formers, and custom-fitting lifting clutches. Using the SwiftLift system results in fewer failures, saving time and costs due to damage or construction delays.

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AS 3850.1:2015 (+A1:2019) Compliant

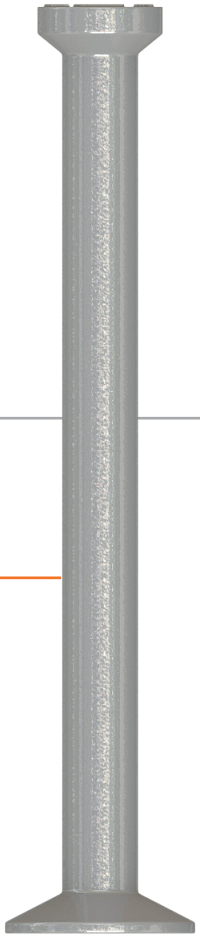
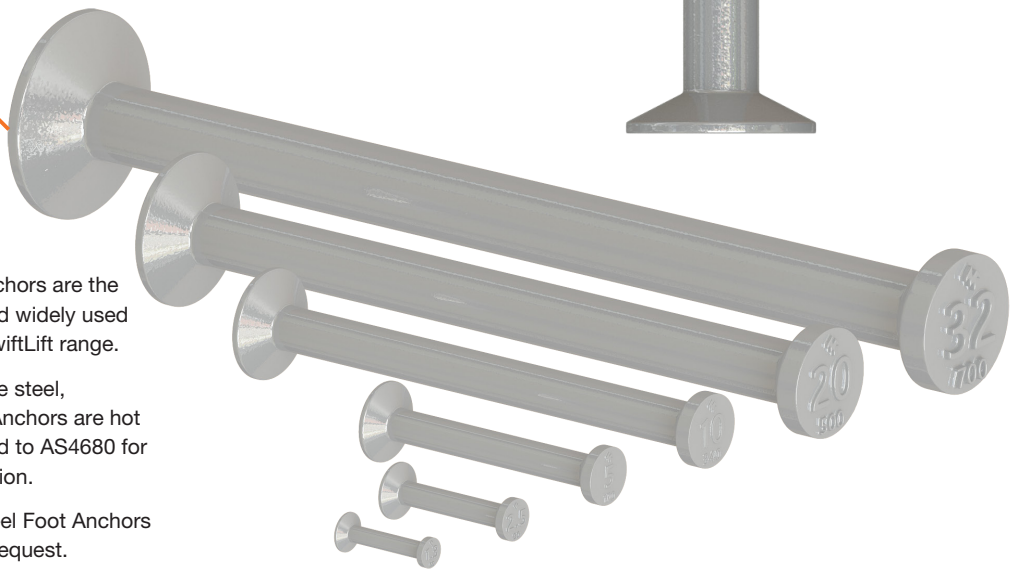


Figure 1:
Reid™ SwiftLift™ Foot Anchor

Foot Anchor size variations



- SwiftLift Foot Anchors are the most versatile and widely used anchors in the SwiftLift range.
- Made from ductile steel, SwiftLift™ Foot Anchors are hot dipped galvanised to AS4680 for corrosion protection.
- 316 Stainless Steel Foot Anchors are available on request.

Compliance Details

Table 1: AS 3850.1:2015 (+A1:2019) Compliance Details

Clause	Requirement	Compliant
2.2	The Working Load Limit has been determined by testing in accordance with Appendix A, using a FOS per Table 2.1.	✓
2.5.1	Manufactured from ductile steel.	✓
2.5.2.1	WLL determined per clause 2.2.	✓
	Manufactured from steel that is fully killed, with a grain size of six or finer & exhibiting not less than 20% elongation.	✓
	When loaded to tensile failure, a ductile failure and plastic deformation is observed and the failure surface is 100% fibrous.	✓
	Insert assembly including void former shall be marked to ensure compatibility with other system components.	✓ Refer Figure 2
A2	Concrete for testing complies with AS 1379, tested per AS 1012.	✓
A3	Testing and recording of results.	✓
A4	Statistical evaluation of test results, using formula A4, Xk=x(1-ksCOV).	✓
A5	Production Validation through testing to confirm compliance of critical speciation requirements (dimensions, material properties and load bearing capacity where appropriate).	✓
A6	Tension testing of the manufactured lifting insert.	✓
A7	Characteristic capacity determined from a comprehensive test program including individual and combined effects per Table A3.	✓

Reid™ SwiftLift™ Foot Anchor comply with AS 3850.1:2015 (+A1:2019) ✓

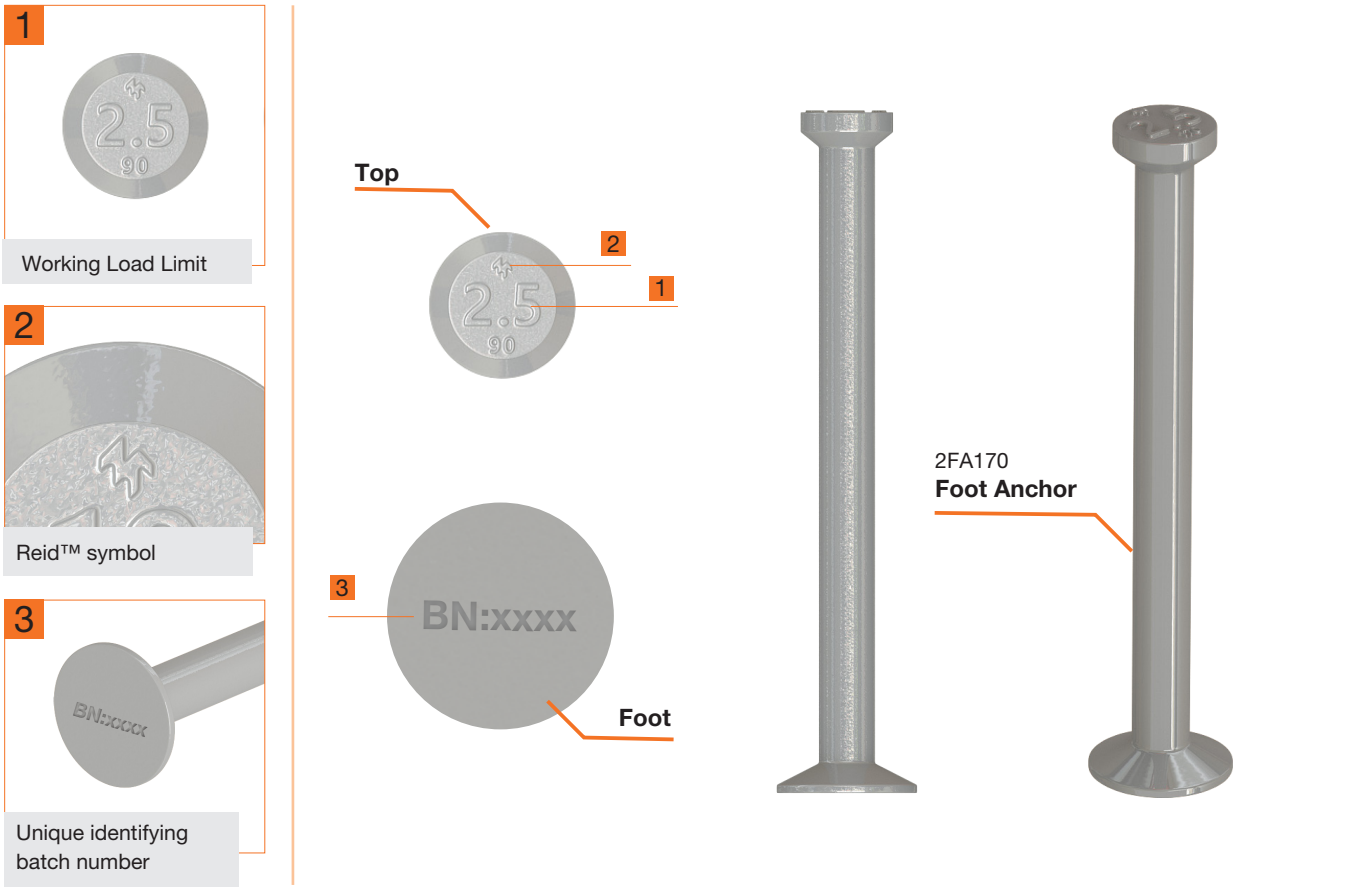
TESTED IN LOCAL CONDITIONS

Reid™ SwiftLift™ Foot Anchor

Consistent with the Reid™ commitment to local testing, SwiftLift™ Foot Anchors have been extensively tested in Australian concrete comprising of over 500 individual tests, and consuming approximately 150 tonnes of concrete.

Analysis of the subsequent test data in accordance with Appendix A results in SwiftLift™ Foot Anchors having Working Load Limit capacities that are far higher and more accurate than those simply calculated using the CCD method.

Figure 2: Reid™ Foot Anchor Markings



Product Specifications

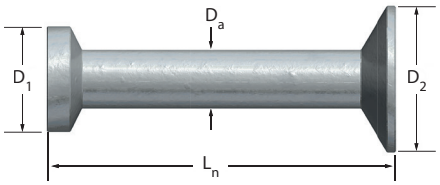


Table 2: Part Numbers & Anchor Dimensions (mm)

Part No.	Description	Shaft Diameter Da (mm)	Head Diameter D1 (mm)	Foot Diamter D2 (mm)	Length Ln (mm)	Clutches	Void Formers	Ring (if required)
	1.3 tonne WLL (Max)	**10**	**19**	**25**		**1LE**		
1FA045	45mm Foot Anchor				45mm			
1FA055	55mm Foot Anchor				55mm		**1RFRO**	**-**
1FA066	66mm Foot Anchor				66mm		**1SRFRO**	**1RR**
1FA085, 1FASS085*	85mm Foot Anchor				85mm		**1SRFROART**	**-**
1FA120, 1FASS120*	120mm Foot Anchor				120mm			
1FA240	240mm Foot Anchor				240mm			
	2.5 tonne WLL (Max)	**14**	**26**	**35**		**2LE**		
2FA055	55mm Foot Anchor				55mm			
2FA075	75mm Foot Anchor				75mm		**2RFRO**	**-**
2FA090	90mm Foot Anchor				90mm		**2SRFRO**	**2RR**
2FA120	120mm Foot Anchor				120mm		**2SRFROART**	**-**
2FA170, 2FASS170*	170mm Foot Anchor				170mm		**2PR**	**-**
	5 tonne WLL (Max)	**20**	**36**	**50**		**5LE**		
5FA075	75mm Foot Anchor				75mm			
5FA095, 5FASS095*	95mm Foot Anchor				95mm		**5RFRO**	**-**
5FA120	120mm Foot Anchor				120mm		**5SRFRO**	**5RR**
5FA170	170mm Foot Anchor				170mm		**5SRFROART**	**-**
5FA240	240mm Foot Anchor				240mm		**5PR**	**-**
	10 tonne WLL (Max)	**28**	**47**	**70**		**10LE**		
10FA150	150mm Foot Anchor				150mm			
10FA200	200mm Foot Anchor				200mm		**10RFRO**	**-**
10FA340	340mm Foot Anchor				340mm			
	20 tonne WLL (Max)	**38**	**70**	**98**		**20LE**		
20FA250	250mm Foot Anchor				250mm			
20FA340	340mm Foot Anchor				340mm		**20RFRO**	**-**
20FA500	500mm Foot Anchor				500mm			
	32 tonne WLL (Max)	**50**	**88**	**135**		**32LE**		
32FA700	700mm Foot Anchor				700mm		**32RFRO**	**-**

NOTE: Load capacity may be limited by concrete strength and will be affected by the close proximity of other anchors or edges. See technical and design information for details. *These anchors are available in 316 Stainless Steel ex-stock.

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Performance Data

SwiftLift Foot Anchors are the most versatile and widely used anchors in the SwiftLift range. Made from ductile steel, SwiftLift™ Foot Anchors are hot dipped galvanised for corrosion protection. 316 Stainless Steel Foot Anchors are available on request.

Table 3: AS 3850.1:2015 (+A1:2019) Tensile and Shear Performance Data (WLL), tonnes

Part No.	Concrete Compressive Strength, MPa				
	15	20	25	32	40
1FA045	0.8	1.0	1.1	1.2	1.3
1FA055	1.1	1.3	1.3	1.3	1.3
1FA065	1.3	1.3	1.3	1.3	1.3
1FA085, 1FASS085*	1.3	1.3	1.3	1.3	1.3
1FA120, 1FASS120*	1.3	1.3	1.3	1.3	1.3
1FA240	1.3	1.3	1.3	1.3	1.3
2FA055	1.2	1.5	1.7	1.9	2.1
2FA075	2.2	2.5	2.5	2.5	2.5
2FA090	2.3	2.5	2.5	2.5	2.5
2FA120	2.5	2.5	2.5	2.5	2.5
2FA170,2FASS170*	2.5	2.5	2.5	2.5	2.5
5FA075	2.1	2.4	2.7	3.0	3.4
5FA095, 5FASS095*	3.2	3.7	4.1	4.7	5.0
5FA120	4.2	4.8	5.0	5.0	5.0
5FA170	5.0	5.0	5.0	5.0	5.0
5FA240	5.0	5.0	5.0	5.0	5.0
10FA150	5.8	6.7	7.5	8.5	9.5
10FA200	8.6	9.9	10.0	10.0	10.0
10FA340	10.0	10.0	10.0	10.0	10.0
20FA250	9.6	11.0	12.3	14.0	15.6
20FA340	14.9	17.2	19.3	20.0	20.0
20FA500	20.0	20.0	20.0	20.0	20.0
32FA700	32.0	32.0	32.0	32.0	32.0

*These anchors are available in 316 Stainless Steel ex-stock. Lead time applies on all other stainless-steel anchors requests.
Capacities highlighted in orange are limited by the system capacity.

Figure 3: 5FA120 Foot Anchor tested close to an edge.

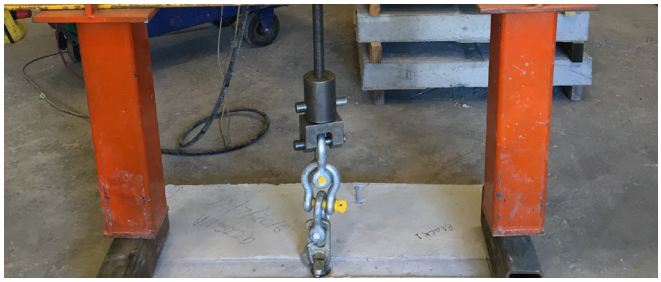

Figure 4: 1FA045 Foot Anchor tested in tension.

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Product Specifications (mm)

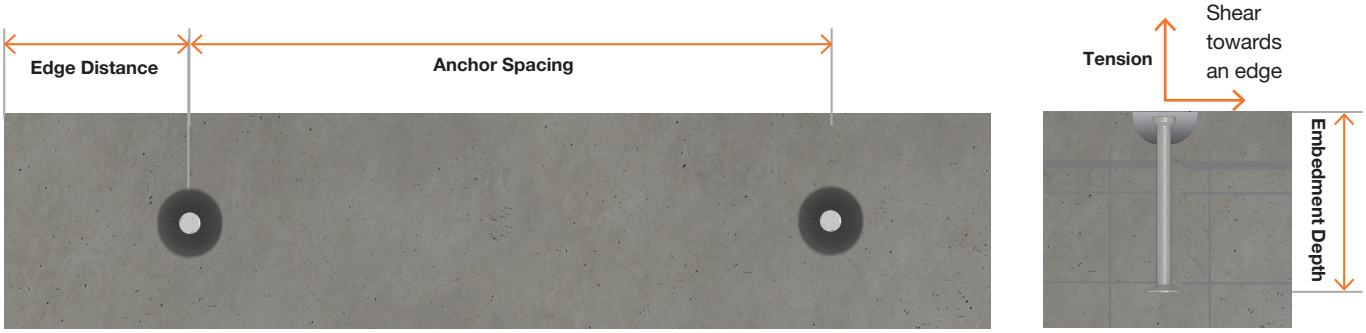

Table 4: Minimum edge and spacing distances required to achieve tensile performances in Table 3

Embedment Depth h_{ef} (mm)	60	130	160	200	300	500	700	1,200
Limiting Edge Distance e_m (mm)	90	195	240	300	450	750	1,050	1,800
Limiting Spacing a_m (mm)	180	390	480	600	900	1,500	2,100	3,600

Table 5: Minimum edge and spacing distances required to achieve WLL in Shear towards an edge.

Load Group (t)		1.3	2.5	5	10	20	32
Limiting Edge Distance e_m (mm)*	15MPa	170	230	330	490	760	1040
	25MPa	140	200	280	430	660	890
Limiting Spacing a_m (mm)*	15MPa	500	700	980	1470	2280	3120
	25MPa	420	590	830	1290	1980	2670

*Note: Limiting Edge Distance and Spacing is based on unreinforced concrete and a Minimum substrate thickness (b_m) of 1.5 x Limiting Edge Distance (e_m) [$b_m = 1.5xe_m$. If conditions are outside these parameters, please contact a ramsetreid™ Engineer.

Terms and Conditions

All Reid™ branded products and all products manufactured at our Melbourne manufacturing facility are designed, manufactured, tested and supplied in compliance with our Quality Management System which has been independently audited and certified by SAI Global to ISO 9001:2015. ramsetreid™ undertake strict quality control processes to ensure performance specifications and metallurgical properties are maintained.

To reflect the progress of the industry and the new innovative uses of precast and tilt-up construction, Australian Standard AS 3850 was updated in 2015 and amended in 2019.. This update included a change in title to AS 3850:2015 Prefabricated Concrete Elements, a widened scope to include all prefabricated elements in Building Construction and splitting of the document into two parts:

- Part 1, called 'General requirements' details the new performance and testing requirements for suppliers of componentry into the industry. These new requirements are significantly different to AS 3850:2003 and should enable the industry to have greater confidence in the products that they are specifying and using;
- Part 2, called 'Building construction', aligns with the 2008 National Code of Practice for Precast, Tilt-Up and Concrete Elements in Building Construction and focuses on the interrelation of the various stages of manufacture, construction, transport and erection.It is specifically for the construction design and documentation of prefabricated concrete elements in building construction and provides guidance for the Erection Designer and highlights the importance of the Erection Design and Documentation.

The new AS 3850.1:2015 (Incorporating Amendment 1 - 2019) is central for the safe, efficient and cost-effective manufacture, construction, transport and erection of prefabricated concrete elements.

customer service

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