

# WSAA PRODUCT APPRAISAL CERTIFICATE

## Daemco Australia Pty Ltd Norma Connect Stainless Steel Repair Clamps

This appraisal is for a range of Norma Connect stainless steel repair clamps in sizes DN 80 to DN 300.

This Issue 2 is a replacement for the previous version of the appraisal which had reached its 5-year expiry date. Issue 3 is a replacement for the previous version of this appraisal which was amended to correct the expiry date on this certificate.

The repair clamps incorporate Grade 316 stainless steel body and fasteners. The elastomeric seals are EPDM. The clamps are rated as PN16.

Each clamp has a reach of approximately 10mm to accommodate a range of pipe outside diameters and are available in various lengths. All sizes are designated as Type R to suit rigid pipes including DI, steel, copper and AC. Some sizes are also designated as Type F to suit flexible pipes including Series 2 PVC-O, PVC-M, PVC-U and GRP.

A complete listing of Quality and Product Certification Certificates and details of products are included in the attached Schedules A and B.

<b>Product Category</b>	Repair Clamps
<b>PA Number:</b>	PA 1621 Issue 3
<b>Supplier</b>	Daemco Australia Pty Ltd
<b>Brand</b>	Norma Connect
<b>Standards</b>	AS 4181-2013 <i>Repair and off-take clamps for water industry purposes.</i>
<b>WSAA Product Specification</b>	WSA PS 313 - <i>Repair and Off-take Clamps for Pressure Applications – Drinking Water and Non-Drinking Water Supply</i>
<b>Other Specifications</b>	
<b>Issue date</b>	11 August 2022
<b>Expiry date</b>	10 August 2027
<b>Recommendations</b>	It is recommended that WSAA members, subject to any specific requirements of the member, accept or authorise DN 80 to DN 300 Norma Connect stainless steel repair clamps for repair of water and sewerage pipes, other than PE, provided they are installed in accordance with WSAA Codes and the manufacturers requirements, where specified.
<b>Disclaimer</b>	The disclaimer on Page 2 explains a number of very important limits on your ability to rely on the information in this Product Appraisal Certificate and the assessment criteria used to underlay it. Please read it carefully and take it into account when considering the content in this Certificate.

## **1. Disclaimer**

This Product Appraisal Certificate (Certificate) is issued by WSAA on the understanding that:

This Certificate applies to the product(s) as submitted in Schedule A. Any changes to the product(s) either minor or major shall void this Certificate.

To maintain the recommendations of this Certificate any such changes shall be detailed and notified to the Product Appraisal Manager for consideration and review of the Certificate including the product appraisal criteria underlying it and appropriate action. Appraisals and their recommendations will be the subject of continuous review dependent upon the satisfactory performance of products.

WSAA reserves the right to undertake random audits of product manufacture and installation. Where products fail to maintain appraised performance requirements the appraisal and its recommendations may be modified and reissued. Certificates will be reviewed and reissued at regular intervals not exceeding five (5) years.

WSAA reserves the right to withdraw this Certificate at any time in its sole and absolute discretion for any reason.

The following information explains a number of very important limits on your ability to rely on the information in this Certificate. Please read it carefully and take it into account when considering the contents of this Certificate.

Any enquiries regarding this Certificate should be directed to the Product Appraisal Manager Phone: 03 8605 7601 email carl.radford@wsaa.asn.au.

### **1.1. Issue of Certificate**

This Certificate has been published and/or prepared by WSAA and nominated Project Manager and peer group of technical specialists (the Publishers).

The Certificate and the underlying product appraisal criteria have been prepared for use within Australia only by technical specialists that have expertise in the function of products such as those appraised in the Certificate (the Recipients).

By accepting this Certificate, the Recipient acknowledges and represents to the Publisher(s) and each person involved in the preparation of the Certificate and product appraisal criteria underlying it that the Recipient has understood and accepted the terms of this Disclaimer.

### **1.2. Limits on Reliance on Information and Recommendations**

#### **1.2.1. Disclaimer of liability**

Neither the Publisher(s) nor any person involved in the preparation of the Certificate and product appraisal criteria underlying it accept(s) any liability for any loss or damage suffered by any person however caused (including negligence or the omission by any person to do anything) relating in any way to the Certificate or the product appraisal criteria underlying it. This includes (without limitation) any liability for any recommendation or information in the Certificate or any errors or omissions.

#### **1.2.2. Intellectual Property and other rights**

WSAA does not undertake any assessment of whether the importation, manufacture, sale or use of the Product the subject of this Certificate infringes the intellectual property rights or proprietary rights of any person. Recipients of the Certificate should undertake their own assessment of whether (as relevant) the importation, manufacture, sale or use of the relevant Products infringe the intellectual property rights or other proprietary rights of any person. If the Product infringes intellectual property rights or other proprietary rights there is potential for the supply of the Products to be interrupted.

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#### **1.2.3. Need for independent assessment**

The information and any recommendation contained (expressly or by implication) in this Certificate are provided in good faith (and subject to the limitations noted in this Certificate). However, you should treat the information as indicative only. You should not rely on that information or any such recommendation except to the extent that you reach an agreement to the contrary with the Publisher(s).

This Certificate does not contain all information that a person might require for the purposes of assessing any product discussed or appraised within it. The product appraisal criteria used in preparing this Certificate may not address all relevant aspects of the Product.

Recipients should seek independent evidence of any matter which is material to their decisions in connection with an assessment of the Product and consult their own advisers for any technical information required. Any decision to use the Product should take into account the reliability of that independent evidence obtained by the Recipient regarding the Product. Recipients should also independently verify and assess the appropriateness of any recommendation in the Certificate, especially given that any recommendation will not take into account a Recipient's particular needs or circumstances.

WSAA has not evaluated the extent of the product liability and professional indemnity insurance that the provider of the product maintains. Recipients should ensure that they evaluate the allocation of liability for product defects and any professional advice obtained in relation to the product or its specification including the requirements for product liability and professional indemnity insurance.

### **1.3. No Updating**

Neither the Publisher(s) nor any person involved in the preparation of this Certificate or the product appraisal criteria underlying it [has] [have] any obligation to notify you of any change in the information contained in this Certificate or of any new information concerning the Publisher(s) or the Product or any other matter.

### **1.4. No Warranty**

The Publisher(s) do[es] not, in any way, warrant that steps have been taken to verify or audit the accuracy or completeness of the information in this Certificate, or the accuracy, completeness or reasonableness of any recommendation in this Certificate.

**QUALITY AND PRODUCT CERTIFICATIONS**

Copies of the following Quality Certificates are available from WSAA.

**TABLE A1  
DAEMCO AUSTRALIA PTY LTD - MANAGEMENT SYSTEMS**

65 Assembly Drive Tullamarine Vic	
Quality Systems Standard	ISO 9001:2015
Certification Licence No.	87603136670Q
Certifying Agency	Best Practice Certification
First Date of Certification	8 August 2016
Current Date of Certification	21 July 2022
Expiry Date of Certification	7 August 2025

**TABLE A2  
DALIAN RELIABLE INDUSTRIAL CO LTD – MANAGEMENT SYSTEMS**

158 Youhao Road Zhongshan District Dalian Liaoning China	
Quality Systems Standard	ISO 9001:2015
Certification Licence No.	01 100 039053
Certifying Agency	TUV Rheinland
First Date of Certification	2005
Current Date of Certification	17 January 2020
Expiry Date of Certification	16 January 2023

**TABLE A3  
DAEMCO AUSTRALIA PTY LTD – PRODUCT CERTIFICATION**

65 Assembly Drive Tullamarine Vic	
Product Standard/Spec.	AS 4181:2013
Certificate No.	OMK30057
Issuing Certification Body	IAPMO R&T Oceana
First Date of Certification	13 October 2016
Current Date of Certification	21 July 2022
Expiry Date of Certification	12 October 2026

## SS REPAIR CLAMPS

REPAIR COUPLINGS



A quick, easy and permanent repair solution for most pipes that have cracks or are damaged. Designed for Australian and New Zealand conditions and manufactured to the highest standards, the NORMAConnect Stainless Steel Repair Clamps provide you with the confidence of a full seal around your pipe. Provided the pipe is in good condition, the NORMAConnect Repair Clamps save you the time and money of replacing entire sections of pipe and are an effective means of reinforcing old pipe or sealing decommissioned service connections. With a variance in OD Range, our repair clamps can adapt to any pipe OD within that variable range – reducing your stocking requirements.

### ADVANTAGES

- Lightweight 316 stainless steel body.
- Smooth band edges for safe installation.
- Flexible contact.
- Safe and reliable.
- Anti-corrosive.
- Instant and convenient.
- Suitable for various pipe types & sizes.
- Available in 150mm, 200mm, 300mm, 400mm & 600mm lengths.
- Manufacturing plant certified to the ISO 9001 quality standard.
- Available with flanged or threaded offtakes.

### TECHNICAL SPECIFICATIONS

- **Maximum Working Pressure:** 1600kPa (16bar).
- **Temperature Range:** -10°C to + 60°C.
- **Size Range:** DN 40 – DN 800.
- **Rubber Insert:** EPDM.

### STANDARDS

- **Product Certification:** OceanaMark™ OMK30057
- **WSAA Product Appraisal:** PA1621



## SS REPAIR CLAMPS

### NORMA INNOVATION

#### PIPE DIAMETRICAL DEFLECTION

##### PROBLEM

Over tightening of clamps on flexible pipes results in pipe system failure both in the short and long term.

##### FEATURES

Our clamp has incorporated a positive stop feature and independently verified installation torque settings.

##### BENEFITS

Prevents over-tightening of flexible pipe during installation. Reduces short and long term stress on the pipe. Improved longevity of the pipeline system.

#### IMPROVED SEALING

##### PROBLEM

Pipeline systems experience surge pressures that can exceed a clamps designed operating pressure capability which results in failure and leakage. The current safety factor is 1.2 x PN (1.2 x 1600kPa = 1920kPa) for a minimum of 2 hours.

##### FEATURES

Our design can withstand pressures 1.5 x PN (1.5 x 1600kPa = 2400kPa) for a minimum of 2 hours without leakage or deformity and independently verified.

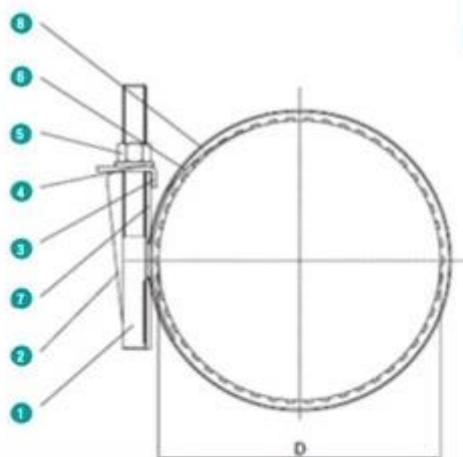
##### BENEFITS

Prevents leakage during a sustained surge pressure condition. Improved safety factor in pipelines known to have surge conditions. This is a 25% safety factor improvement.

### REPAIR CLAMP ASSEMBLY

#### ASSEMBLY CHART

ITEM	DESCRIPTION	MATERIAL	STANDARD
1	BOLTS	SS316	ASTM A276
2	PLATE	SS316	ASTM A276
3	COVER	SS316	ASTM A276
4	WASHER	SS316	ASTM A276
5	NUTS	SS316	ASTM A276
6	RUBBER SEAL GASKET	EPDM	EN681
7	CONNECT PLATE	SS316	ASTM A276
8	BAND COVER	SS316	ASTM A276





## SS REPAIR CLAMPS

REPAIR COUPLINGS

### INSTALLATION INSTRUCTIONS

#### IMPORTANT

- These SS Clamps do not provide axial pipe restraint.
- Not to be used as pipe joiners.
- Not to be used where circumferential crack separation has occurred.
- Not suitable for use on PE Pipe.

Refer to the NORMAConnect FGR Range for solutions to the above.

#### PARTS REQUIRED FOR INSTALLATION

1. Torque/Tension wrench (0 to 250 Nm)
2. M16 Long Socket
3. SS Clamp
4. Lubricant

#### TORQUE SETTINGS

DN	Toque (Tension)
DN80 up to and including DN150	80 Nm
DN200 up to and including DN300	160 Nm



#### SELECTING THE CLAMP LENGTH

Formula for calculating the correct clamp length:

$$\text{Minimum Clamp Length} = \text{Damage Length} + (2 \times A)$$

NOMINAL PIPE DIAMETER (DN)	MINIMUM SEAL LENGTH 'A'	STANDARD CLAMP LENGTH
40-80	50mm	150mm
100-200	65mm	200mm
225-300	100mm	300mm

For example:

1. Damage length is 20mm
2. Pipe OD to repair is Series 2, pipe outside diameter is 122mm
3. Minimum Clamp Length =  $20 + (2 \times 65) = 180\text{mm}$
4. Therefore the clamp length to use is 200mm

#### PART NUMBER EXPLANATION

The formula behind our product codes:

Example: NCR4555-150

	NC	R	4555	-	150
NC	= Clamp Code				
R	= Offtake (R-Repair/F-Flanged/B-BSP)				
4555	= O.D Range: 45-55mm				
-	= Glyph				
150	= Length				



## SS REPAIR CLAMPS

### INSTALLATION INSTRUCTIONS

#### INSTALLATION (STEP BY STEP)

- 1 Clean the pipe from dirt, dust, mud and any other debris
- 2 Mark the two ends of the clamp on the pipe centrally in line with the area to repair
- 3 Apply a suitable lubricant smoothly on the whole pipe area to be covered by the clamp
- 4 Open the clamp by loosening the nuts to the end of the bolts (do not remove the nuts)
- 5 Wrap the clamp around the pipe and engage the washer plate/s behind the receiver plate/s
- 6 Position the sides of the clamp to line up with the marks you made
- 7 Ensure the gasket forms fully around the pipe and there are no folds
- 8 Position the bolts at 45 degrees to pipe repair area, tighten nuts to recommended torque
- 9 Tighten the bolts evenly and make sure the gasket does not hook or fold
- 10 The gasket should fit smoothly around the pipe
- 11 Always retention nuts after 20 to 30 minutes to compensate any loss in initial tension
- 12 Installation completed

**NOTE:** Contaminated soils and/or other corrosive environments, such as soils with chloride content in excess of 1000ppm, can have a detrimental effect on Stainless Steel. Hence if the product is intended for use in such environments, additional advice should be sought.





SS REPAIR CLAMPS

REPAIR COUPLINGS

SELECTION CHART - PIPE COMPATIBILITY

DN	RANGE	WIDTHS	TYPE		PIPE COMPATIBILITY													
			R / F		DICL		MSCL	GW	MPCV	OPVC	GRP	CU	CI/CL		AC		RC	
			F	R	AS/NZS 2280	EN545 IS02531	AS 1579	AS 1074	AS/NZS 4765	AS/NZS 4441	AS 3571	AS 1432	AS 1724 Class B	AS 2544 Class C	AS 1711 Class AB	AS 1711 Class CD		
80	88-98	150, 200, 300, 400, 600	✓	✓	✓			✓										
80	95-104	150, 200, 300, 400, 600	✓	✓	✓	✓						✓						
100	104-113	150, 200, 300, 400, 600	✓	✓														
100	113-120	150, 200, 300, 400, 600	✓	✓	✓	✓	✓											
100	121-130	150, 200, 300, 400, 600	✓	✓	✓				✓	✓	✓		✓	✓	✓	✓	✓	
100	126-136	150, 200, 300, 400, 600	✓	✓								✓						
100	130-140	150, 200, 300, 400, 600	✓	✓				✓										
100	145-155	150, 200, 300, 400, 600	✓	✓														
150	151-161	150, 200, 300, 400, 600	✓	✓								✓						
150	167-176	150, 200, 300, 400, 600	✓	✓	✓	✓	✓											
150	176-183	150, 200, 300, 400, 600	✓	✓	✓				✓	✓	✓		✓	✓	✓	✓	✓	
150	179-189	150, 200, 300, 400, 600	✓	✓														
150	189-199	150, 200, 300, 400, 600	✓	✓														
150	196-205	200, 300, 400, 600	✓	✓														✓
200	202-212	200, 300, 400, 600	✓	✓								✓						
200	218-228	200, 300, 400, 600	✓	✓	✓	✓	✓											
200	231-238	200, 300, 400, 600	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	
200	236-245	200, 300, 400, 600	✓	✓														
225	248-257	300, 400, 600	✓	✓			✓											
225	258-265	300, 400, 600	✓	✓	✓				✓	✓	✓		✓	✓	✓	✓	✓	
250	271-281	300, 400, 600	✓	✓	✓	✓	✓											✓
250	285-290	300, 400, 600	✓	✓	✓				✓	✓	✓		✓	✓	✓	✓	✓	
250	288-298	300, 400, 600	✓	✓														
250	298-309	300, 400, 600	✓	✓														
250	304-314	300, 400, 600	✓	✓														
300	312-322	300, 400, 600	✓	✓														
300	322-331	300, 400, 600	✓	✓	✓	✓	✓											
300	332-342	300, 400, 600	✓	✓								✓			✓			
300	344-355	300, 400, 600	✓	✓	✓				✓	✓	✓		✓		✓		✓	
300	356-366	300, 400, 600	✓	✓			✓											

SS REPAIR CLAMPS

Customer Value through Innovation

NORMA Group



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