



# Electra Exports NZ Limited

## PRODUCT APPRAISAL REPORT 1813 Issue 2

Ductile Iron Pipeline Fittings

**AS/NZS 2280:2020 Ductile iron pipes and fittings**

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## Peer Reviewers

Name/Title	Organisation	Date
Product Appraisal Technical Advisory Group	WSAA	7 October 2019
WSAA Expert Panel	WSAA	7 October 2019
Peter Pittard, WSAA Consultant	WSAA	5 May 2019
Carl Radford, Product Appraisal Manager	WSAA	9 October 2019
Peter Pittard, WSAA Consultant	WSAA	28 August 2023
Carl Radford, Product Appraisal Manager	WSAA	28 August 2023

## Overview of WSAA

The Water Services Association of Australia (WSAA) is the peak industry body representing the urban water industry. Our members provide water and sewerage services to over 20 million customers in Australia and New Zealand and many of Australia's largest industrial and commercial enterprises.

Based around our vision of 'customer driven, enriching life', WSAA facilitates collaboration, knowledge sharing, networking and cooperation within the urban water industry. We are proud of the collegiate attitude of our members which has led to industry-wide approaches to national water issues.

WSAA can demonstrate success in the standardisation of industry performance monitoring and benchmarking, as well as many research outcomes of national significance. The WSAA Executive retains strong links with policy makers and legislative bodies and their influencers, to monitor emerging issues of importance to the urban water industry.

WSAA was formed in 1995 as a non-profit organisation to foster the exchange of information between industry, government and the community, and to promote sustainable water resource management.

The urban water industry is committed to anchoring its services to customers' values, and to enrich communities where water services have broad economic, environmental and social values. In line with this our main activities focus on four areas:

1. influencing national and state policies on the provision of urban water services and sustainable water resource management
2. promoting debate on environmentally sustainable development and management of water resources and the community health requirements of public water supplies
3. improving industry performance and establishing benchmarks and industry leading practices for water service processes; and
4. fostering the exchange of information on education, training, research, water and wastewater management and treatment and other matters of common interest.

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## 1 EXECUTIVE SUMMARY

Electra Exports NZ Ltd was established in New Zealand in 2008 with an aim to export products to the Pacific Islands. Products include building materials and various items for the hospitality, electrical and civil construction sectors.

Ductile fittings offered by Electra are manufactured by Liaoning Ever Metal Forming Tech Co Ltd located in China.

This appraisal is for a range of flanged and spigotted ductile iron fittings from DN 80 to DN 600 manufactured in accordance with AS/NZS 2280:2020 *Ductile iron pipes and fittings*.

This Issue 2 is to update the quality certifications.

Flanges comply with AS/NZS 4087 Figure B5 PN16.

The fittings are fully coated and lined with a thermal-bonded polymeric coating.

Liaoning Ever Metal Forming Tech Co Ltd holds an ISO 9001:2015 Quality Management System Licence.

The ductile iron fittings have ISO Type 5 StandardsMark Product Certification to AS/NZS 2280:2020 *Ductile iron pipes and fittings*.

This Appraisal has determined that Ever brand ductile iron fittings, as detailed in this report, meet the requirements of WSA PS 201 *Ductile Iron Fittings (CIOD) for Pressure and Non-Pressure Applications – Drinking Water, Non-Drinking Water Supply and Sewerage* and are considered as 'fit-for-purpose'.

### 1.1 Recommendations

It is recommended that WSAA members, subject to any specific requirements of the member, accept or authorise the range of Ever ductile iron fittings in sizes from DN 80 to DN 600, as detailed in this report, for use in water supply and sewerage pressure pipelines, provided they are installed in accordance with applicable WSAA Codes and the manufacturer's requirements, where specified.

## 2 THE APPLICANT

The applicant is Electra Exports NZ Limited.

### 2.1 The Supplier

Electra Exports NZ Ltd was established in New Zealand in 2008 with an aim to export products to the Pacific Islands. Products include building materials and various items for the hospitality, electrical and civil construction sectors. The company currently supplies products to the Pacific Islands.

### 2.2 The Manufacturer

Liaoning Ever Metal Forming Tech Co Ltd, originally established in 2002 as Liaoning Ever Foundry Co Ltd, is located in Gaizhou City in Liaoning Province, China.

The foundry employs more than 200 people and utilises the lost foam casting process for the manufacture of ductile iron fittings.

The site includes facilities for machining, testing and coating application.

## 3 THE PRODUCT

### 3.1 General

This appraisal is for a range of Ever branded flanged and spigotted ductile iron pipeline fittings from DN 80 to DN 600, manufactured in accordance with AS/NZS 2280:2020 *Ductile iron pipes and fittings*.

The range of fittings are manufactured with PN35 wall thicknesses in accordance with Appendix H of AS/NZS 2280. The fittings incorporate PN 16 flanges to AS/NZS 4087 Fig B5.

All fittings are fully coated and lined with a thermal-bonded polymeric coating.

#### 4 SCOPE OF THE APPRAISAL

This appraisal applies to a range of Ever branded PN16 polymeric coated ductile iron fittings as summarized in Table 1 and detailed in Appendix A. Note that the StandardsMark product schedule includes DN 50 fittings that are not specified in AS/NZS 2280 and are therefore not included in the Scope of this Appraisal.

**TABLE 1 EVER DI FITTINGS RANGE**

Fitting	Ends	DN
Bends	FL - FL	80 to 600
Tees	FL x FL	100 to 600
Tees	SP x FL	80 to 600
Connectors	FL - SP	80 to 600
Tapers	FL - FL	100 to 600

#### 5 APPRAISAL CRITERIA

##### 5.1 Quality Assurance Requirements

The WSAA Product Appraisal Technical Advisory Group accepts ductile iron pipeline fittings manufactured in compliance with AS/NZS 2280:2020 *Ductile iron pipes and fittings* and duly certified by means of an ISO Type 5 product certification scheme undertaken by a JAS-ANZ accredited Conformity Assessment Body (CAB) or by an international accreditation system recognised by JAS-ANZ.

The manufacturer is generally expected to have a production management and control system that has been duly accredited in accordance with AS/NZS ISO 9001 as a prerequisite to undergoing a product certification audit.

The ISO Type 5 Product Certification Scheme shall meet the criteria described in WSA TN-08.

##### 5.2 Performance Requirements

Ever ductile iron fittings have been appraised for compliance with AS/NZS 2280:2020 *Ductile iron pipes and fittings*.

Appraisal criteria are also determined by the WSAA Product Appraisal Technical Advisory Group and regularly reviewed to ensure that the criteria reflect the requirements of WSAA members.

The following Product Specifications is relevant to this application:

- WSA PS 201 *Ductile Iron Fittings (CIOD) for Pressure and Non-Pressure Applications – Drinking Water, Non-Drinking Water Supply and Sewerage*

A copy of the Product Specification is available at the following link:

<https://www.wsaa.asn.au/shop/product/60961>

## **6 COMPLIANCE WITH APPRAISAL CRITERIA**

### **6.1 Compliance with Quality Assurance Requirements**

The following Quality certificates have been submitted by Electra.

- ISO 9001:2015 Certificate of Registration No. CNBJ322178-UK issued to Liaoning Ever Metal Forming Tech Co Ltd by Bureau Veritas.
- AS/NZS 2280:2020 StandardsMark ISO Type 5 Product Certification Licence No SMK 140538 issued to Electra Exports NZ Limited by SAI-Global

Copies of the Quality Assurance and Product Certification licences have been included in Appendix B and are also available from WSAA.

Copies of Quality Assurance certificates have also been supplied for the component suppliers.

### **6.2 Compliance with Performance Requirements**

#### **6.2.1 Material requirements**

##### **6.2.1.1 Ductile iron**

AS/NZS 2280 requires DI fittings to conform to a minimum tensile strength of 400 MPa and minimum elongation of 12%. Ever has submitted copies of typical test results to demonstrate compliance with this requirement.

##### **6.2.1.2 Wall thickness**

The wall thicknesses for all fittings complies with Appendix H of AS/NZS 2280:2020.

#### **6.2.2 Polymeric coatings**

AS/NZS 2280 requires that thermal bonded polymeric coatings on fittings comply with AS/NZS 4158.

The coating is Akzo Nobel Resicoat R4 Fusion Bonded Epoxy, coloured blue, which has ISO Type 5 StandardsMark Product Certification to AS/NZS 4158:2003, issued by SAI Global. A copy of the current certificate is held on file by WSAA.

The coatings are applied in house by Ever. Copies of coating procedures and typical test results have been submitted to demonstrate compliance to AS/NZS 4158. In addition, the coating processes are audited in conjunction with the regular AS/NZS 2280 StandardsMark surveillance audits undertaken by SAI-Global.

#### **6.2.3 Flanges**

The flanges on Ever fittings are PN 16 complying with AS/NZS 4087 Figure B5.

#### **6.2.4 Contact with drinking water**

Water is only in contact with the polymeric coating.

WSAA maintains a copy of the AS/NZS 4020 certificate of conformity No PST20165 issued by SAI-Global on 19th September 2022 to demonstrate compliance of Akzo Nobel Resicoat R4 to AS/NZS 4020:2018.

## **7 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION**

Ductile iron fittings are considered a mature pipeline product with well-established installation procedures.

## **8 PRODUCT MARKING**

Ever fittings have the following marking moulded on to the fittings in accordance with AS/NZS 2280:

- Manufacturer's name or mark: EVER
- Nominal size: e.g., DN100
- DI
- Where applicable, the angle of the bend cast on the fitting. e.g., 90°
- Classification of fitting: e.g., PN16
- The number of the standard: AS/NZS 2280.
- Product certification mark: StandardsMark



**FIGURE 1 EXAMPLE OF MARKING**

## **9 PACKAGING AND TRANSPORTATION**

Electra has advised that the DI fittings are wrapped separately and packed into wooden crates, using cardboard liners between the layers to prevent damage to the coating during transportation. The crates are then loaded into shipping containers.

## **10 PRODUCT WARRANTY**

Details of product warranty should be obtained directly from Electra.

## **11 WATER AGENCY EXPERIENCE WITH THE PRODUCT OR FIELD-TESTING REPORT**

Electra has been supplying Ever brand ductile iron fittings to various clients including the Water Authority of Fiji (WAF). WAF has recently adopted a policy of requiring their suppliers to obtain a WSAA Appraisal as a pre-requisite for Approval.

## **12 OUTCOMES OF EXPERT PANEL PRODUCT REVIEW**

No issues have been raised.

## **13 FUTURE WORKS**

No future works have been identified for this Appraisal.

## **14 DISCLAIMER**

This Product Appraisal Report (Report) is issued by the Water Services Association of Australia Limited on the understanding that:

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



To maintain the recommendations of this Report any such changes shall be detailed and notified to the Product Appraisal Manager for consideration and review of the Report 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. Appraisal reports will be reviewed and reissued at regular intervals not exceeding five (5) years.

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

Any enquiries regarding this report should be directed to the Program Manager, Carl Radford, Phone: 03 8605 7601 email [carl.radford@wsaa.asn.au](mailto:carl.radford@wsaa.asn.au).

#### **14.1 Issue of Report**

This Report has been published and/or prepared by the Water Services Association of Australia Limited and nominated Project Manager and peer group of technical specialists (the Publishers).

The Report has been prepared for use within Australia only by technical specialists that have expertise in the function of products such as those appraised in the Report (the Recipients).

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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 Report, 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.

### **14.3 No Updating**

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### **14.4 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 Report, or the accuracy, completeness or reasonableness of any recommendation in this Report.

## APPENDIX A – PRODUCT LITERATURE

<b>EVER PN16 POLYMERIC COATED FITTINGS</b>		
<b><i>Nominal Size (DN)</i></b>	<b><i>Product Type</i></b>	<b><i>Joint Designation</i></b>
80	Connectors	Flange-Spigot
100	Connectors	Flange-Spigot
150	Connectors	Flange-Spigot
200	Connectors	Flange-Spigot
250	Connectors	Flange-Spigot
300	Connectors	Flange-Spigot
375	Connectors	Flange-Spigot
450	Connectors	Flange-Spigot
500	Connectors	Flange-Spigot
600	Connectors	Flange-Spigot
80x80	Tees	Spigot-Flange
100x80	Tees	Spigot-Flange
100x100	Tees	Spigot-Flange
150x80	Tees	Spigot-Flange
150x100	Tees	Spigot-Flange
150x150	Tees	Spigot-Flange
200x80	Tees	Spigot-Flange
200x100	Tees	Spigot-Flange
200x150	Tees	Spigot-Flange
200x200	Tees	Spigot-Flange
250x80	Tees	Spigot-Flange
250x100	Tees	Spigot-Flange
250x150	Tees	Spigot-Flange
250x200	Tees	Spigot-Flange
250x250	Tees	Spigot-Flange
300x80	Tees	Spigot-Flange
300x100	Tees	Spigot-Flange
300x150	Tees	Spigot-Flange
300x200	Tees	Spigot-Flange
300x250	Tees	Spigot-Flange
300x300	Tees	Spigot-Flange
375x80	Tees	Spigot-Flange
375x100	Tees	Spigot-Flange
375x200	Tees	Spigot-Flange
375x250	Tees	Spigot-Flange
375x300	Tees	Spigot-Flange
375x375	Tees	Spigot-Flange

450x80	Tees	Spigot-Flange
450x100	Tees	Spigot-Flange
450x250	Tees	Spigot-Flange
450x300	Tees	Spigot-Flange
450x375	Tees	Spigot-Flange
450x450	Tees	Spigot-Flange
500x80	Tees	Spigot-Flange
500x100	Tees	Spigot-Flange
500x250	Tees	Spigot-Flange
500x300	Tees	Spigot-Flange
500x375	Tees	Spigot-Flange
500x450	Tees	Spigot-Flange
500x500	Tees	Spigot-Flange
600x80	Tees	Spigot-Flange
600x100	Tees	Spigot-Flange
600x300	Tees	Spigot-Flange
600x375	Tees	Spigot-Flange
600x450	Tees	Spigot-Flange
600x500	Tees	Spigot-Flange
600x600	Tees	Spigot-Flange
100x80	Tees	Flange-Flange
100x100	Tees	Flange-Flange
150x80	Tees	Flange-Flange
150x100	Tees	Flange-Flange
150x150	Tees	Flange-Flange
200x80	Tees	Flange-Flange
200x100	Tees	Flange-Flange
200x150	Tees	Flange-Flange
200x200	Tees	Flange-Flange
250x200	Tees	Flange-Flange
250x250	Tees	Flange-Flange
300x100	Tees	Flange-Flange
300x150	Tees	Flange-Flange
300x200	Tees	Flange-Flange
300x250	Tees	Flange-Flange
300x300	Tees	Flange-Flange
375x80	Tees	Flange-Flange
375x200	Tees	Flange-Flange
375x250	Tees	Flange-Flange
375x300	Tees	Flange-Flange
375x375	Tees	Flange-Flange

450x250	Tees	Flange-Flange
450x300	Tees	Flange-Flange
450x375	Tees	Flange-Flange
450x450	Tees	Flange-Flange
500x250	Tees	Flange-Flange
500x300	Tees	Flange-Flange
500x375	Tees	Flange-Flange
500x450	Tees	Flange-Flange
500x500	Tees	Flange-Flange
600x375	Tees	Flange-Flange
600x450	Tees	Flange-Flange
600x500	Tees	Flange-Flange
600x600	Tees	Flange-Flange
80	Bend 90degree	Flange-Flange
100	Bend 90degree	Flange-Flange
150	Bend 90degree	Flange-Flange
200	Bend 90degree	Flange-Flange
250	Bend 90degree	Flange-Flange
300	Bend 90degree	Flange-Flange
375	Bend 90degree	Flange-Flange
450	Bend 90degree	Flange-Flange
500	Bend 90degree	Flange-Flange
600	Bend 90degree	Flange-Flange
100	Bend 45degree	Flange-Flange
150	Bend 45degree	Flange-Flange
200	Bend 45degree	Flange-Flange
250	Bend 45degree	Flange-Flange
300	Bend 45degree	Flange-Flange
375	Bend 45degree	Flange-Flange
450	Bend 45degree	Flange-Flange
500	Bend 45degree	Flange-Flange
600	Bend 45degree	Flange-Flange
100	Bend 22.5degree	Flange-Flange
150	Bend 22.5degree	Flange-Flange
200	Bend 22.5degree	Flange-Flange
250	Bend 22.5degree	Flange-Flange
300	Bend 22.5degree	Flange-Flange
375	Bend 22.5degree	Flange-Flange
450	Bend 22.5degree	Flange-Flange
500	Bend 22.5degree	Flange-Flange
600	Bend 22.5degree	Flange-Flange

100	Bend 11.25degree	Flange-Flange
150	Bend 11.25degree	Flange-Flange
200	Bend 11.25degree	Flange-Flange
250	Bend 11.25degree	Flange-Flange
300	Bend 11.25degree	Flange-Flange
375	Bend 11.25degree	Flange-Flange
450	Bend 11.25degree	Flange-Flange
500	Bend 11.25degree	Flange-Flange
600	Bend 11.25degree	Flange-Flange
100x80	Taper	Flange-Flange
150x50	Taper	Flange-Flange
150x80	Taper	Flange-Flange
150x100	Taper	Flange-Flange
200x100	Taper	Flange-Flange
200x150	Taper	Flange-Flange
250x100	Taper	Flange-Flange
250x150	Taper	Flange-Flange
250x200	Taper	Flange-Flange
300x100	Taper	Flange-Flange
300x150	Taper	Flange-Flange
300x200	Taper	Flange-Flange
300x250	Taper	Flange-Flange
375x200	Taper	Flange-Flange
375x250	Taper	Flange-Flange
375x300	Taper	Flange-Flange
450x250	Taper	Flange-Flange
450x300	Taper	Flange-Flange
450x375	Taper	Flange-Flange
500x250	Taper	Flange-Flange
500x300	Taper	Flange-Flange
500x375	Taper	Flange-Flange
500x450	Taper	Flange-Flange
600x300	Taper	Flange-Flange
600x375	Taper	Flange-Flange
600x450	Taper	Flange-Flange
600x500	Taper	Flange-Flange

## APPENDIX B - QUALITY CERTIFICATIONS

Copies of the following Quality Certificates are available from WSAA.

**TABLE B1  
LIAONING EVER METAL FORMING TECH CO LTD - MANAGEMENT SYSTEMS**

No 7 Shifu Ave Gaizhou City Liaoning Province China	
Quality Systems Standard	ISO 9001:2015
Certification Licence no.	CNBJ322178-UK
Certifying agency	Bureau Veritas
Originally certified	16 October 2014
Current date of certification	16 October 2020
Expiry date of certification	15 October 2023

**TABLE B2  
ELECTRA EXPORTS NZ LIMITED – PRODUCT CERTIFICATION**

25 St Edmund Crescent Tawa New Zealand	
Product Certification Licence	AS/NZS 2280-2020
Licence No	SMK 40538
Certifying agency	SAI-Global
Originally Certified:	3 March 2017
Current date of certification	1 July 2022
Expiry date of certification	2 March 2027



**BUREAU VERITAS**  
Certification



## LIAONING EVER METAL FORMING TECH CO.,LTD

NO.7 SHIFU AVENUE GAIZHOU CITY, LIAONING PROVINCE, THE PEOPLE'S  
REPUBLIC ,P.R.CHINA

Unified social credit code: 91210881068342373D

*Bureau Veritas Certification Holding SAS - UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below*

### ISO 9001:2015

*Scope of certification*

#### Production of Ductile Iron Pipe Fittings

Original cycle start date:	<b>16-10-2014</b> (By UCC)
Expiry date of previous cycle:	<b>NA</b>
Certification / Recertification audit date:	<b>NA</b>
Certification / Recertification cycle start date:	<b>16-10-2020</b>

Subject to the continued satisfactory operation of the organisation's Management System, this certificate expires on: **15-10-2023**

Certificate No. : **CNBJ322178-UK**

Version: **No.1**, Revision date: **13-10-2020**

*Signed on behalf of BVCH SAS UK Branch*



0008

Certification body address: 5<sup>th</sup> Floor, 66 Prescott Street, London E1 8HG, United Kingdom

Local office address: F22, Tower B, Beijing Global Trade Center, 36 North Third Ring Road East, Dongcheng District, Beijing, China. 100013.

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.

To check this certificate validity please call: (+86 10 59683888)

Certified organisation has to accept and pass regular surveillance audits, then this certificate can be continuously valid. Information of this certificate may be obtained by visiting CNCA website ([www.cnca.gov.cn](http://www.cnca.gov.cn)).





# STANDARDSMARK LICENCE

**SAI Global hereby grants**

## **Electra Exports NZ Limited**

25 St Edmund Crescent, Tawa, New Zealand

### **StandardsMark Licence**

Manufactured to:

**AS/NZS 2280:2020 - Ductile iron pipes and fittings**

"the StandardsMark Licensee" the right to use the STANDARDSMARK as shown below only in respect of the goods described and detailed in the Schedule which are produced by the Licensee or on behalf of the Licensee\* and which comply with the appropriate Standard referred to above as from time to time amended. The Licence is granted subject to the rules governing the use of the STANDARDSMARK and the Terms and Conditions for certification and licence. The Licensee covenants to comply with all the Rules and Terms and Conditions.

**Certificate No:SMK40538**

**Issued: 1 July 2022**

**Expires: 2 March 2027**

**Originally Certified: 3 March 2017**

**Current Certification: 1 July 2022**

Calin Moldovean  
President, Business Assurance  
SAI Global Assurance



**\* For details of manufacture, refer to the licensee**

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A more comprehensive version of the product schedule is available at:

<https://register.saiglobal.com/client/schedule.aspx?setID=SF01&custID=AS408118&appCertNo=SMK40538>

## SCHEDULE TO STANDARDSMARK LICENCE

**SAI Global hereby grants**

### **Electra Exports NZ Limited**

25 St Edmund Crescent, Tawa, New Zealand

#### **StandardsMark Licence**

Manufactured to:

**AS/NZS 2280:2020 - Ductile iron pipes and fittings**

Model identification of the goods on which the STANDARDSMARK may be used:

Nominal Size (DN)	DN Offtake / Angle / Length	Model Identification	Nominal Pressure (PN)	Date Endorsed
DN300 x DN300 DN80	Offtake DN80	TDSF30080LI-A	PN16	29 Jun 2022
DN300 x DN300 DN80	Offtake DN80	TDSF30080-A	PN16	29 Jun 2022
100	Angle 11.25degree	BDF10011-A	PN16	29 Jun 2022
100	Angle 22.5degree	BDF10022-A	PN16	29 Jun 2022
100	Angle 45degree	BDF10045-A	PN16	29 Jun 2022
100	Angle 90degree	BDF10090-A	PN16	29 Jun 2022
100	Length 205mm	FS100-A	PN16	29 Jun 2022
100x100	Offtake DN100	TAF100-A	PN16	29 Jun 2022
100x100	Offtake DN100	TDSF100-A	PN16	29 Jun 2022
100x50	Offtake DN50	TDSF10050-A	PN16	29 Jun 2022
100x50	Length 165mm	RDF10050-A	PN16	29 Jun 2022
100x80	Length 165mm	RDF10080-A	PN16	29 Jun 2022
100x80	Offtake DN80	TDSF10080-A	PN16	29 Jun 2022
100x80	Offtake DN80	TAF10080-A	PN16	29 Jun 2022
150	Angle 11.25degree	BDF15011-A	PN16	29 Jun 2022
150	Angle 22.5degree	BDF15022-A	PN16	29 Jun 2022
150	Angle 45degree	BDF15045-A	PN17	29 Jun 2022
150	Angle 90degree	BDF15090-A	PN16	29 Jun 2022
150	Length 205mm	FS150-A	PN16	29 Jun 2022
150x100	Length 235mm	RDF150100-A	PN16	29 Jun 2022
150x100	Offtake DN100	TAF150100-A	PN16	29 Jun 2022
150x100	Offtake DN100	TDSF150100-A	PN16	29 Jun 2022
150x150	Offtake DN150	TAF150-A	PN16	29 Jun 2022

Certificate No: SMK40538

Issued Date: 1 July 2022

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## SCHEDULE TO STANDARDSMARK LICENCE

Nominal Size (DN)	DN Offtake / Angle / Length	Model Identification	Nominal Pressure (PN)	Date Endorsed
150x150	Offtake DN150	TDSF150-A	PN16	29 Jun 2022
150x50	Length 298mm	RDF15050-A	PN16	29 Jun 2022
150x80	Length 298mm	RDF15080-A	PN16	29 Jun 2022
150x80	Offtake DN80	TDSF15080-A	PN16	29 Jun 2022
150x80	Offtake DN80	TAF15080-A	PN16	29 Jun 2022
200	Angle 11.25degree	BDF20011-A	PN16	29 Jun 2022
200	Angle 22.5degree	BDF20022-A	PN16	29 Jun 2022
200	Angle 45degree	BDF20045-A	PN18	29 Jun 2022
200	Angle 90degree	BDF20090-A	PN16	29 Jun 2022
200	Length 230mm	FS200-A	PN16	29 Jun 2022
200x100	Length 368mm	RDF200100-A	PN16	29 Jun 2022
200x100	Offtake DN100	TDSF200100-A	PN16	29 Jun 2022
200x100	Offtake DN100	TAF200100-A	PN16	29 Jun 2022
200x150	Length 248mm	RDF200150-A	PN16	29 Jun 2022
200x150	Offtake DN150	TDSF200150-A	PN16	29 Jun 2022
200x150	Offtake DN150	TAF200150-A	PN16	29 Jun 2022
200x200	Offtake DN200	TDSF200-A	PN16	29 Jun 2022
200x200	Offtake DN200	TAF200-A	PN16	29 Jun 2022
200x80	Offtake DN80	TDSF20080-A	PN16	29 Jun 2022
200x80	Offtake DN80	TAF20080-A	PN16	29 Jun 2022
250	Angle 11.25degree	BDF25011-A	PN16	29 Jun 2022
250	Angle 22.5degree	BDF25022-A	PN16	29 Jun 2022
250	Angle 45degree	BDF25045-A	PN19	29 Jun 2022
250	Angle 90degree	BDF25090-A	PN16	29 Jun 2022
250	Length 230mm	FS250-A	PN16	29 Jun 2022
250x100	Length 495mm	RDF250100-A	PN16	29 Jun 2022
250x100	Offtake DN100	TAF250100-A	PN16	29 Jun 2022
250x100	Offtake DN100	TDSF250100-A	PN16	29 Jun 2022
250x150	Length 375mm	RDF250150-A	PN16	29 Jun 2022
250x150	Offtake DN150	TDSF250150-A	PN16	29 Jun 2022
250x150	Offtake DN150	TAF250150-A	PN16	29 Jun 2022
250x200	Length 254mm	RDF250200-A	PN16	29 Jun 2022
250x200	Offtake DN200	TDSF250200-A	PN16	29 Jun 2022
250x200	Offtake DN200	TAF250200-A	PN16	29 Jun 2022
250x250	Offtake DN250	TAF250-A	PN16	29 Jun 2022
250x250	Offtake DN250	TDSF250-A	PN16	29 Jun 2022
250x80	Offtake DN80	TAF25080-A	PN16	29 Jun 2022
250x80	Offtake DN80	TDSF25080-A	PN16	29 Jun 2022

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## SCHEDULE TO STANDARDSMARK LICENCE

Nominal Size (DN)	DN Offtake / Angle / Length	Model Identification	Nominal Pressure (PN)	Date Endorsed
300	Angle 11.25degree	BDF30011-A	PN16	29 Jun 2022
300	Angle 22.5degree	BDF30022-A	PN16	29 Jun 2022
300	Angle 45degree	BDF30045-A	PN20	29 Jun 2022
300	Angle 90degree	BDF30090-A	PN16	29 Jun 2022
300	Length 255mm	FS300-A	PN16	29 Jun 2022
300x100	Length 629mm	RDF300100-A	PN16	29 Jun 2022
300x100	Offtake DN100	TDSF300100-A	PN16	29 Jun 2022
300x100	Offtake DN100	TAF300100-A	PN16	29 Jun 2022
300x150	Length 508mm	RDF300150-A	PN16	29 Jun 2022
300x150	Offtake DN150	TDSF300150-A	PN16	29 Jun 2022
300x150	Offtake DN150	TAF300150-A	PN16	29 Jun 2022
300x200	Length 387mm	RDF300200-A	PN16	29 Jun 2022
300x200	Offtake DN200	TAF300200-A	PN16	29 Jun 2022
300x200	Offtake DN200	TDSF300200-A	PN16	29 Jun 2022
300x250	Length 457mm	RDF300250-A	PN16	29 Jun 2022
300x250	Offtake DN250	TAF300250-A	PN16	29 Jun 2022
300x250	Offtake DN250	TDSF300250-A	PN16	29 Jun 2022
300x300	Offtake DN300	TAF300-A	PN16	29 Jun 2022
300x300	Offtake DN300	TDSF300-A	PN16	29 Jun 2022
300x80	Offtake DN80	TDSF30080-A	PN16	29 Jun 2022
375	Angle 11.25degree	BDF37511-A	PN16	29 Jun 2022
375	Angle 22.5degree	BDF37522-A	PN16	29 Jun 2022
375	Angle 45degree	BDF37545-A	PN21	29 Jun 2022
375	Angle 90degree	BDF37590-A	PN16	29 Jun 2022
375	Length 280mm	FS375-A	PN16	29 Jun 2022
375x100	Offtake DN100	TDSF375100-A	PN16	29 Jun 2022
375x200	Length 337mm	RDF375200-A	PN16	29 Jun 2022
375x200	Offtake DN200	TAF375200-A	PN16	29 Jun 2022
375x200	Offtake DN200	TDSF375200-A	PN16	29 Jun 2022
375x250	Length 337mm	RDF375250-A	PN16	29 Jun 2022
375x250	Offtake DN250	TAF375250-A	PN16	29 Jun 2022
375x250	Offtake DN250	TDSF375250-A	PN16	29 Jun 2022
375x300	Length 337mm	RDF375300-A	PN16	29 Jun 2022
375x300	Offtake DN300	TAF375300-A	PN16	29 Jun 2022
375x300	Offtake DN300	TDSF375300-A	PN16	29 Jun 2022
375x375	Offtake DN375	TDSF375-A	PN16	29 Jun 2022
375x375	Offtake DN375	TAF375-A	PN16	29 Jun 2022
375x80	Offtake DN80	TAF37580-A	PN16	29 Jun 2022

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Nominal Size (DN)	DN Offtake / Angle / Length	Model Identification	Nominal Pressure (PN)	Date Endorsed
375x80	Offtake DN80	TDSF37580-A	PN16	29 Jun 2022
450	Angle 11.25degree	BDF45011-A	PN16	29 Jun 2022
450	Angle 22.5degree	BDF45022-A	PN16	29 Jun 2022
450	Angle 45degree	BDF45045-A	PN22	29 Jun 2022
450	Angle 90degree	BDF45090-A	PN16	29 Jun 2022
450	Length 280mm	FS450-A	PN16	29 Jun 2022
450x100	Offtake DN100	TDSF450100-A	PN16	29 Jun 2022
450x250	Length 660mm	RDF450250-A	PN16	29 Jun 2022
450x250	Offtake DN250	TAF450250-A	PN16	29 Jun 2022
450x250	Offtake DN250	TDSF450250-A	PN16	29 Jun 2022
450x300	Length 540mm	RDF450300-A	PN16	29 Jun 2022
450x300	Offtake DN300	TDSF450300-A	PN16	29 Jun 2022
450x300	Offtake DN300	TAF450300-A	PN16	29 Jun 2022
450x375	Length 356mm	RDF450375-A	PN16	29 Jun 2022
450x375	Offtake DN375	TDSF450375-A	PN16	29 Jun 2022
450x375	Offtake DN375	TAF450375-A	PN16	29 Jun 2022
450x450	Offtake DN450	TDSF450-A	PN16	29 Jun 2022
450x450	Offtake DN450	TAF450-A	PN16	29 Jun 2022
450x80	Offtake DN80	TDSF45080-A	PN16	29 Jun 2022
500	Angle 11.25degree	BDF50011-A	PN16	29 Jun 2022
500	Angle 22.5degree	BDF50022-A	PN16	29 Jun 2022
500	Angle 45degree	BDF50045-A	PN23	29 Jun 2022
500	Angle 90degree	BDF50090-A	PN16	29 Jun 2022
500	Length 305mm	FS500-A	PN16	29 Jun 2022
500x100	Offtake DN100	TDSF500100-A	PN16	29 Jun 2022
500x250	Length 660mm	RDF500250-A	PN16	29 Jun 2022
500x250	Offtake DN250	TAF500250-A	PN16	29 Jun 2022
500x250	Offtake DN250	TDSF500250-A	PN16	29 Jun 2022
500x300	Length 540mm	RDF500300-A	PN16	29 Jun 2022
500x300	Offtake DN300	TAF500300-A	PN16	29 Jun 2022
500x300	Offtake DN300	TDSF500300-A	PN16	29 Jun 2022
500x375	Length 356mm	RDF500375-A	PN16	29 Jun 2022
500x375	Offtake DN375	TAF500375-A	PN16	29 Jun 2022
500x375	Offtake DN375	TDSF500375-A	PN16	29 Jun 2022
500x450	Length 305mm	RDF500450-A	PN16	29 Jun 2022
500x450	Offtake DN450	TDSF500450-A	PN16	29 Jun 2022
500x450	Offtake DN450	TAF500450-A	PN16	29 Jun 2022
500x500	Offtake DN500	TDSF500-A	PN16	29 Jun 2022

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Nominal Size (DN)	DN Offtake / Angle / Length	Model Identification	Nominal Pressure (PN)	Date Endorsed
500x500	Offtake DN500	TAF500-A	PN16	29 Jun 2022
500x80	Offtake DN80	TDSF50080-A	PN16	29 Jun 2022
600	Angle 11.25degree	BDF60011-A	PN16	29 Jun 2022
600	Angle 22.5degree	BDF60022-A	PN16	29 Jun 2022
600	Angle 45degree	BDF60045-A	PN24	29 Jun 2022
600	Angle 90degree	BDF60090-A	PN16	29 Jun 2022
600	Length 330mm	FS600-A	PN16	29 Jun 2022
600x100	Offtake DN100	TDSF600100-A	PN16	29 Jun 2022
600x300	Length 934mm	RDF600300-A	PN16	29 Jun 2022
600x300	Offtake DN300	TDSF600300-A	PN16	29 Jun 2022
600x375	Length 934mm	RDF600375-A	PN16	29 Jun 2022
600x375	Offtake DN375	TAF600375-A	PN16	29 Jun 2022
600x375	Offtake DN375	TDSF600375-A	PN16	29 Jun 2022
600x450	Length 934mm	RDF600450-A	PN16	29 Jun 2022
600x450	Offtake DN450	TAF600450-A	PN16	29 Jun 2022
600x450	Offtake DN450	TDSF600450-A	PN16	29 Jun 2022
600x500	Length 934mm	RDF600500-A	PN16	29 Jun 2022
600x500	Offtake DN500	TAF600500-A	PN16	29 Jun 2022
600x500	Offtake DN500	TDSF600500-A	PN16	29 Jun 2022
600x600	Offtake DN600	TDSF600-A	PN16	29 Jun 2022
600x600	Offtake DN600	TAF600-A	PN16	29 Jun 2022
600x80	Offtake DN80	TDSF60080-A	PN16	29 Jun 2022
80	Angle 90degree	BDF08090-A	PN16	29 Jun 2022
80	Length 180mm	FS80-A	PN16	29 Jun 2022
80x50	Length 200mm	RDF8050-A	PN16	29 Jun 2022
80x80	Offtake DN80	TDSF8080-A	PN16	29 Jun 2022
DN50	Length 180mm	FS50-A	PN16	29 Jun 2022
DN80	Angle 45degree	BDF8045-A	PN16	29 Jun 2022
DN80	Angle 90degree	BDF8090D-A	PN16	29 Jun 2022

End of Record

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## **APPENDIX C - SUPPLIER CONTACTS**

### **Electra Exports NZ Ltd**

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