



# Mako Poly Pty Ltd

## PRODUCT APPRAISAL REPORT 1729 Issue 2

MAKO PE Spigot Fittings

**AS/NZS 4129:2020 Fittings for polyethylene (PE) pipes for  
pressure applications**

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## Document History

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## Peer Reviewers

Name/Title	Organisation	Date
Product Appraisal Technical Advisory Group	WSAA	16 March 2018
Expert Panel	WSAA	16 March 2018
Carl Radford, Product Appraisal Manager	WSAA	22 March 2018
Peter Pittard, WSAA Consultant	WSAA	24 March 2023
Carl Radford, Product Appraisal Manager	WSAA	24 March 2023

## Overview of WSAA

The Water Services Association of Australia (WSAA) is the peak industry body that supports the Australian Urban Water Industry. Its members provide water and sewerage services to approximately 20 million Australians and many of Australia's largest industrial and commercial enterprises.

The Association facilitates collaboration, knowledge sharing, networking and cooperation within the urban water industry. It is proud of the collegiate attitude of its 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 influences, to monitor emerging issues of importance to the urban water industry. WSAA is regularly consulted and its advice sought by decision makers when developing strategic directions for the water industry.

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

The Association's 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

Mako Poly Pty Ltd, established in 2016, is a Melbourne based supplier of polyethylene moulded and fabricated PE fittings for the civil construction, gas, mining, irrigation and plumbing industries.

The MAKO range of PE injection moulded spigot fittings are manufactured by Ningbo Hengyuan Precision Valves Technology Co Ltd in Zhejiang, China.

This Appraisal is for a range of MAKO PE injection moulded spigot fittings manufactured in accordance with AS/NZS 4129:2020 *Fittings for polyethylene (PE) pipes for pressure applications*. The fittings are suitable for butt weld jointing to PE100 pipes.

The range of fittings includes PN10 and PN16 crosses, tees, reducers, end caps, stub flanges and bends in sizes from DN 40 to DN 630 depending on fitting type. See Section 3 for further details.

Mako Poly Pty Ltd and Ningbo Hengyuan Precision Valves Technology Co. Ltd both hold an ISO 9001:2015 Quality Management System Licence.

The PE fittings have ISO Type 5 ApprovalMark Product Certification to AS/NZS 4129:2020 *Fittings for polyethylene (PE) pipes for pressure applications*.

This Appraisal has determined that the MAKO range of PE spigot fittings, as detailed in this report, meet the requirements of WSA PS-208 *Plastics Fittings for Pressure Applications for use with PE Pipe – 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 MAKO range of PE injection moulded spigot fittings, as detailed in this report, for use in drinking and non-drinking water supply and pressure sewer applications, provided they are designed and installed in accordance with applicable WSAA Codes and the manufacturer's requirements.

## 2 THE APPLICANT

The Applicant is Mako Poly Pty Ltd.

### 2.1 The Supplier

Mako Poly Pty Ltd, established in 2016, is a Melbourne based supplier of polyethylene moulded and fabricated PE fittings for the civil construction, gas, mining, irrigation and plumbing industries.

### 2.2 The Manufacturer

Ningbo Hengyuan Precision Valves Technology Co Ltd, based in Ningbo, Zhejiang, China, is a manufacturer of PE pipe fittings and ball valves.

The plant covers a floor space of 49,000m<sup>2</sup> with 30 manufacturing lines comprising plastic injection moulding machines with capacity from 30 kg to 180 kg.

## 3 THE PRODUCT






This Appraisal is for a range of MAKO PE injection moulded spigot fittings manufactured in accordance with AS/NZS 4129:2020 *Fittings for polyethylene (PE) pipes for pressure applications*.

The fittings are suitable for butt weld jointing to PE100 pipes manufactured in accordance with AS/NZS 4130:2018 - *Polyethylene (PE) pipes for pressure applications* for conveyance of drinking and non-drinking water and pressure sewer, in aboveground and below ground applications.

The range of fittings includes PN10 and PN16 crosses, tees, reducers, end caps, stub flanges and bends in sizes from DN 40 to DN 630 depending on fitting type. See Table 1 for details.

**TABLE 1: MAKO PE SPIGOT FITTINGS**

Product	DN	Pressure Class	Picture
Cross	63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400	PN 10 or PN 16	
Equal Tee	40, 50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 250, 280, 315, 355, 400	PN 10 or PN 16	
	450, 500, 560, 630	PN 10	
Reducing Tee	40X32X40; 50X32X50; 50X40X50; 63X32X63; 63X40X63; 63X50X63	PN 16	
	75X40X75; 75X50X75; 75X63X75; 90X32X90; 90X40X90; 90X50X90; 90X63X90; 90X75X90; 110X32X110; 110X40X110; 110X50X110; 110X63X110; 110X75X110; 110X90X110; 125X75X125; 125X90X125; 125X110X125; 160X50X160; 160X63X160; 160X90X160; 160X110X160; 160X125X160; 180X125X180; 200X63X200; 200X90X200; 200X110X200; 200X180X200; 225X110X225; 225X180X225; 250X180X250; 250X225X250; 280X200X280; 280X250X280; 315X110X315; 315X200X315; 315X250X315; 315X280X315; 355X250X355; 355X280X355; 355X315X355; 400X280X400; 400X315X400; 400X355X400	PN 10 or PN 16	
Reducers	40X32; 50X32; 50X40; 63X32; 63X40; 63X50	PN 16	
	75X32; 75X40; 75X50; 75X63; 90X32; 90X40; 90X50; 90X63; 90X75; 110X32; 110X40; 110 X 50; 110X63; 110X75; 110X90; 125X40; 125X50; 125X63; 125X75; 125X90; 125X110; 160X63; 160X75; 160X90; 160X110; 160X125; 180X75; 180X90; 180X110; 180X125; 180X160; 200X90; 200X125; 200X180; 225X125; 225X180; 250X125; 250X180; 250X225; 280X180; 280X200; 280X225; 280X250; 315X110; 315X180; 315X200; 315X225; 315X250; 315X280; 355X180; 355X200; 355X225; 355X250; 355X280; 355X315; 400X200; 400X225; 400X250; 400X280; 400X315; 400X355	PN 10 or PN 16	
	450X315; 450X355; 500X315; 500X355; 500X400; 500X450; 560X315; 560X355; 560X400; 560X450; 560X500; 630X315; 630X355; 630X400; 630X450; 630X500; 630X560	PN 10	

Product	DN	Pressure Class	Picture
End Caps	40; 50; 63; 75; 90	PN 16	
BU40 to BU400	100; 125; 160; 180; 200; 225; 250; 280; 315; 355; 400	PN 10 or PN 16	
Stub Flanges	40; 50; 63	PN 16	
	75; 110; 125; 160; 180; 200; 225; 250; 280; 315; 355; 400	PN 10 or PN 16	
	630; 710; 800; 900; 1000; 1200	PN 10	
90 Degree Bends	40; 50; 63; 75; 90; 110; 125; 160; 180; 200; 225; 250; 280; 315; 355; 400; 450; 500; 560; 630mm	PN 10 or PN 16	
45 Degree Bends	40; 63; 75; 110; 125; 160; 180; 200; 225; 250; 280; 315; 355; 400; 450; 500; 560; 630mm	PN 10 or PN 16	
22.5 Degree Bends	90; 110; 125; 180; 250; 280mm	PN 10 or PN 16	

#### 4 SCOPE OF THE APPRAISAL

The scope of this appraisal is for PN10 and PN16 MAKO PE moulded spigot fittings in sizes DN 40 to DN 630, depending on fitting configuration, as detailed in Section 3 and included in the ISO Type 5 ApprovalMark Product Certification Schedule in Appendix B.

## 5 APPRAISAL CRITERIA

### 5.1 Quality Assurance Requirements

The WSAA Product Appraisal Technical Advisory Group accepts PE moulded fittings for use with polyethylene pipe, manufactured in compliance with AS/NZS 4129:2020 *Fittings for polyethylene (PE) pipes for pressure applications* 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

MAKO PE100 spigot fittings have been appraised for compliance with AS/NZS 4129:2020 *Fittings for polyethylene (PE) pipes for pressure applications*.

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 Specification is relevant to this application:

WSA PS-208 *Plastics Fittings for Pressure Applications for use with PE Pipe – Drinking Water, Non-drinking Water Supply and Sewerage*

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

Mako Poly has submitted the following quality certificates:

- a) ISO 9001:2015 Certificate of Registration No. 2020-9677 issued to Mako Poly by Sustainable Certification.
- b) ISO 9001:2015 Certificate of Registration No. QAIC / CN/ 121454 issued to Ningbo Hengyuan Precision Valves Technology Co Ltd by QA International Certification Ltd.
- c) AS/NZS 4129:2020 ApprovalMark ISO Type 5 Product Certification Licence No. AMI 174724 issued to Mako Poly Pty Ltd by ApprovalMark International.

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

### 6.2 Compliance with Performance Requirements

#### 6.2.1 Polyethylene Material Composition

AS/NZS 4129 requires PE compounds used in the manufacture of injection moulded fittings to comply with AS/NZS 4131.

The fittings are moulded using Borouge BorSafe HE3490-LS (Black) PE100 compound which is listed in PIPA Industry Guidelines POP 004 as complying with AS/NZS 4131.

#### 6.2.2 Effect on Water

Borouge BorSafe HE3490-LS is listed in PIPA Industry Guidelines POP 004 as complying with AS/NZS 4020. The test was completed in June 2022.



### 6.2.3 Type testing

AS/NZS 4129 calls up a range of type tests to demonstrate conformance with the performance requirements.

Mako Poly submitted type test reports for the previous issue of this report to demonstrate compliance with AS/NZS 4129:2008. AS/NZS 4129:2020 references ISO 4227.3 for type test requirements which are the same as AS/NZS 4129:2008. Additional testing is therefore not required for this Appraisal.

The tests, undertaken on a representative range of fittings, were: appearance, spigot dimensions, wall thickness, hydrostatic tests at 20<sup>o</sup>C at 12.4MPa for 100 hours, 80<sup>o</sup>C at 5.4MPa for 165 hours and 80<sup>o</sup>C at 5MPa for 1000 hours and de-cohesive strength at 23<sup>o</sup>C.

## 7 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION

PE spigot fittings are relatively common in pipeline construction with butt fusion welding carried out by trained installers.

Butt fusion welding may be used for joining pipe-to-pipe or fitting to-pipe. All welding shall be performed by welders who have successfully completed training by a Registered Training Organisation, endorsed by the Plastics Industry Pipe Association for the relevant welding method(s).

The Plastics Industry Pipe Association (PIPA) provides technical guidelines in the following document.

- POP003 Butt Fusion Jointing of PE Pipes and Fittings – Recommended Parameters.

A copy of this document can be downloaded from the PIPA website at <http://www.pipa.com.au>.

Polyethylene pipe systems should be installed in accordance with AS/NZS 2033:2008 *Installation of polyethylene pipe systems*.

WSAA recommend for overall design, installation, pipeline testing and installer training requirements for PE pipeline systems water agencies refer to the WSAA Polyethylene Pipeline Code - WSA 01 available from the WSAA web site [www.wsaa.asn.au](http://www.wsaa.asn.au).

## 8 PRODUCT MARKING

MAKO spigot fittings are marked in accordance with AS/NZS 4129 as follows:

- Manufacturer's name: MAKO
- Date or batch code: e.g., 15/03/2023
- Nominal size: e.g., DN 125
- Material type: PE100
- Classification: e.g., SDR: 11

The packaging is labelled with the following information:

- Product description: e.g., stub end
- Nominal size: e.g., 180
- Material type: PE100
- Pressure class: e.g., SDR 11
- Certification Mark: ApprovalMark AMI 74724 AS/NZS 4129

## 9 PACKAGING AND TRANSPORTATION

MAKO fittings are supplied in individually sealed clear polyethylene bags and in standardized cartons depending on fitting type and size.

Fittings should be stored in a cool dry area preferable shelved. They should be stored and transported out of direct sunlight and in the sealed polyethylene bags and cartons.

Up to the point of use the following should be observed:

- a) Ensure that the sealed polyethylene bags remain undamaged to ensure that contaminants do not enter the bags
- b) Ensure that fittings are housed in dry areas that do not have significant temperature fluctuations in order to prevent a build-up of moisture within the bag
- c) Fittings should not be exposed to sunlight for prolonged periods of time prior to use.

Further information is also available in POP005 *Packaging, handling and storage of polyethylene pipe and fittings* at the following link:

<http://www.pipa.com.au/sites/default/files/document/attachment/pop005.pdf>

## 10 PRODUCT WARRANTY

The products are covered by the normal commercial and legal requirements of the Competition and Consumer Act 2010 (Cth), which covers manufacture to the relevant standard. Details of MAKO Poly Pty Ltd warranty is included in their terms and conditions of sale.

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

PE moulded fittings are a widely installed product in the Australian Water Industry and are approved by many water agencies.

## 12 DISCUSSION

Prior to PE pipe and fittings being specified for mains in a pumped system or system otherwise exposed to regular surge / water hammer, the designer is required to verify suitability by applying the relevant design assessment nominated in the WSAA Water Supply Code of Australia.

The methods for design of plastic pipes and fittings for PE pressure pipe and fusion fittings are specified in PIPA Guideline POP010A: *Polyethylene pressure pipes—Design for dynamic stresses* and PIPA Guideline POP010B: *Fusion fittings for use with polyethylene pressure pipes—Design for dynamic stresses*.

PIPA Guidelines may be downloaded from [www.pipa.com.au](http://www.pipa.com.au).

PE pipelines are susceptible to permeation of specific organic chemicals (as are other pipeline systems) and care must be exercised if designing for installation in contaminated ground and/or brownfield sites. Seek further advice from Mako regarding such installations.

The installers should be certified to Nationally Accredited Training as listed in the PIPA website.

<https://www.pipa.com.au/training>

PIPA supports reaccreditation every 2-3 years which should occur to ensure:

- the welder is kept up to date with current industry standards and welding procedures and;
- that high standards are maintained by the welder.

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

There are no outstanding issues.

### **14 FUTURE WORKS**

There are no future work items.

### **15 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).

#### **15.1 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).

By accepting this Report, the Recipient acknowledges and represents to the Publisher(s) and to each person involved in the preparation of the Report that the Recipient has understood and accepted the terms of this Disclaimer.

#### **15.2 Limits on Reliance on Information and Recommendations**

##### **15.2.1 Disclaimer of liability**

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

### **15.3 No Updating**

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### **15.4 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 – TECHNICAL LITERATURE

MAKO PE moulded spigot fittings Product Guide can be obtained from WSAA or downloaded at the following link:

<http://www.makopoly.com.au/wp-content/uploads/2018/01/Mako-Fittings-Brochure.pdf>



## APPENDIX B – QUALITY CERTIFICATIONS

Copies of the following Quality Certification Certificates are available from WSAA

**TABLE B1: MAKO POLY PTY LTD – MANAGEMENT SYSTEM**

1/43 Access Way Carrum Downs Vic 3201	
Quality Systems Standard	ISO 9001:2015
Certification Licence No.	2020-9677
Certifying Agency	Sustainable Certification
Current Date of Certification	18 May 2020
Expiry Date of Certification	7 May 2023

**TABLE B2: NINGBO HENGYUAM PRECISION VALVES TECHNOLOGY CO LTD – MANAGEMENT SYSTEM**

Luojiang Village Hemudu Town Yuyao City Zhejiang Province China	
Quality Systems Standard	ISO 9001:2015
Certification Licence No.	QAIC / CN / 121454
Certifying Agency	QA International Certification Ltd
First Date of Certification	26 September 2012
Current Date of Certification	25 June 2022
Expiry Date of Certification	14 June 2024

**TABLE B3: MAKO POLY PTY LTD – PRODUCT CERTIFICATION**

1/43 Access Way Carrum Downs Vic 3201	
Product Standard/Spec.	AS/NZS 4129:2020
Certificate No.	AMI 74724
Issuing Certification Body	ApprovalMark International Pty Ltd
First Date of Certification	28 September 2017
Current Date of Certification	28 September 2022
Expiry Date of Certification	28 September 2028



## CERTIFICATE OF REGISTRATION

Poly Welding Specialists Pty Ltd T/A PWS Infrastructure  
Mako Poly

43a Access Way  
Carrum Downs  
3201  
VIC  
Australia

has been assessed and certified as meeting the requirements of:

Integrated - 45001:2018/14001:2015/9001:2015

Occupational Health and Safety, Quality & Environmental  
Management System

For the following activities:

Poly welding for the construction industry. Construction, installation and commissioning of water mains. Importation, fabrication and supply of Polyethylene pipe and fittings, and Stainless steel accessories such as Flanges and Backing Rings for supply to Poly Welding Specialists trading as PWS Infrastructure construction operations, and other water industry clients.

Certificate Number: 2020-9677

Certified Date: 18-5-2020

Expiry Date: 7-5-2023

Issue Date: 25-5-2020

This Certificate is valid subject to successful completion of surveillance audits.

Please visit [www.sustainablecertification.com.au/verify](http://www.sustainablecertification.com.au/verify) to verify the validity of this certificate

This is a Single Site Certification



LIC.2020-9677

JAS-ANZ



[www.jas-anz.org/register](http://www.jas-anz.org/register)



Authorised By

Swami Nathan  
Director  
Sustainable Certification Pty Ltd  
Level 5, 326 William Street  
Melbourne 3000  
Australia

# Certificate of Registration



The Governing Board of  
Q.A. International Certification Limited  
hereby grants to:

**Ningbo Hengyuan Precision Valves Technology Co., Ltd.**

Unified Social Credit Code: 91330281744970309K  
Registration No.: QAIC / CN / 121454

*(hereinafter called the Registered Company) the right to be listed in the Directory of Registered Companies in respect of the services listed below. These services shall be offered by the Registered Company at or from only the active business address given below in accordance with the quality management system in compliance with ISO 9001:2015.*

Business License Address:

**Luojiang Village, Hemudu Town, Yuyao City, Zhejiang Province, P.R. China**

Active Business Address to which this Certificate is registered:

**Luojiang Village, Hemudu Town, Yuyao City, Zhejiang Province, P.R. China**

Approved Scope to which this Certificate refers:

**The Manufacture of PE Pipes Fittings, PE Ball Valves, PE-steel Adapter**

(Please note that the above scope represents the certified activity of the named organization and as such, the organization may undertake additional activities that are not covered under this certification).

Signed for and on behalf of the Board

SCHEME MANAGER

Certificate Issue Date : 25th June 2022 - Certificate Renewal Before : 24th June 2023

Date of Initial Registration : 26th September 2012 - Re-Certification Before : 24th June 2024

This Certificate of Registration is granted subject to the Regulations approved by the Board.  
The information of this certificate can be searched on the website of CNCA ([www.cnca.gov.cn](http://www.cnca.gov.cn)).  
The certified organization should apply for regular audit to maintain its qualification.

**QA INTERNATIONAL**

Q.A. International Certification Ltd.  
Dudley Court  
Dudley Road  
Darlington  
United Kingdom  
DL1 4GG

Tel: +44 (0) 1325 384272  
Fax: +44 (0) 1325 460980  
[www.qa.cn.uk](http://www.qa.cn.uk)



The use of the Accreditation Mark indicates accreditation in respect of those activities covered by the accreditation certificate number 040





# CERTIFICATE OF CONFORMITY



*ApprovalMark International* hereby grants:

## MAKO POLY PTY LTD

43a Access Way  
Carrum Downs, VIC 3201  
AUSTRALIA

### ISO Type 5 Certificate of Conformity

Evaluated to:

### AS/NZS 4129:2020 – Fittings for polyethylene (PE) pipes for pressure applications

The ISO Type 5 License shall comply with all the terms and conditions as stipulated by the governance of the operating rules of the ISO Type 5 Scheme and shall comply with the standard requirements at all times including when the standard is amended. The ISO Type 5 License only covers the product which is identified in the attached product schedule.

### Certificate No. AMI 74724

Issued: 28<sup>th</sup> September 2022

Original Issue: 28<sup>th</sup> September 2017

Expires: 28<sup>th</sup> September 2028

### John PRASAD

Director

ApprovalMark International Pty Ltd  
18/33 Holbeche Road, Arndell Park 2148, Australia  
[www.approvalmark.com](http://www.approvalmark.com)



**Registered by:** ApprovalMark International Pty Ltd (ABN 69 143 259 974) Unit 18, 33 Holbeche Road, Arndell Park NSW 2148 Australia. The assessment was carried with appropriate skill and assessment by ApprovalMark International Pty Ltd, however it will only accept its responsibility for proven negligence. The certificate remains the property of ApprovalMark International Pty Ltd.

ApprovalMark™



# Product Schedule

## MAKO POLY PTY LTD

43a Access Way  
Carrum Downs, VIC 3201  
AUSTRALIA

### ISO Type 5 Certificate of Conformity

Evaluated to:

**AS/NZS 4129:2020 – Fittings for polyethylene (PE) pipes for pressure applications**

Model ID	Model Name	Brand Name	Product Description	Endorsement Date
CR63	CR63	MAKO	63MM CROSS T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
CR75	CR75	MAKO	75MM CROSS T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
CR90	CR90	MAKO	90MM CROSS T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
CR110	CR110	MAKO	110MM CROSS T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
CR125	CR125	MAKO	125MM CROSS T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
CR140	CR140	MAKO	140MM CROSS T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
CR160	CR160	MAKO	160MM CROSS T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
CR180	CR180	MAKO	180MM CROSS T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
CR200	CR200	MAKO	200MM CROSS T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
CR225	CR225	MAKO	225MM CROSS T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
CR250	CR250	MAKO	250MM CROSS T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
CR280	CR280	MAKO	280MM CROSS T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
CR315	CR315	MAKO	315MM CROSS T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
CR355	CR355	MAKO	355MM CROSS T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
CR400	CR400	MAKO	400MM CROSS T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
FT40	FT40	MAKO	40MM T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
FT50	FT50	MAKO	50MM T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
FT63	FT63	MAKO	63MM T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
FT75	FT75	MAKO	75MM T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
FT90	FT90	MAKO	90MM T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
FT110	FT110	MAKO	110MM T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
FT120	FT120	MAKO	125MM T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
FT140	FT140	MAKO	140MM T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
FT160	FT160	MAKO	160MM T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
FT180	FT180	MAKO	180MM T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
FT200	FT200	MAKO	200MM T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022



# Product Schedule

Model ID	Model Name	Brand Name	Product Description	Endorsement Date
FT250	FT250	MAKO	250MM T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
FT280	FT280	MAKO	280MM T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
FT315	FT315	MAKO	315MM T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
FT355	FT355	MAKO	355MM T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
FT400	FT400	MAKO	400MM T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
FT450	FT450	MAKO	450MM T, PE100 SDR17	28 <sup>th</sup> September 2022
FT500	FT500	MAKO	500MM T, PE100 SDR17	28 <sup>th</sup> September 2022
FT560	FT560	MAKO	560MM T, PE100 SDR17	28 <sup>th</sup> September 2022
FT630	FT630	MAKO	630MM T, PE100 SDR17	28 <sup>th</sup> September 2022
RT40X32X40	RT40X32X40	MAKO	40X32X40 REDUCING T, PE100 SDR11	28 <sup>th</sup> September 2022
RT50X32X50	RT50X32X50	MAKO	50X32X50 REDUCING T, PE100 SDR11	28 <sup>th</sup> September 2022
RT50X40X50	RT50X40X50	MAKO	50X40X50 REDUCING T, PE100 SDR11	28 <sup>th</sup> September 2022
RT63X32X63	RT63X32X63	MAKO	63X32X63 REDUCING T, PE100 SDR11	28 <sup>th</sup> September 2022
RT63X40X63	RT63X40X63	MAKO	63X40X63 REDUCING T, PE100 SDR11	28 <sup>th</sup> September 2022
RT63X50X63	RT63X50X63	MAKO	63X50X63 REDUCING T, PE100 SDR11	28 <sup>th</sup> September 2022
RT75X40X75	RT75X40X75	MAKO	75X40X75 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT75X50X75	RT75X50X75	MAKO	75X50X75 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT75X63X75	RT75X63X75	MAKO	75X63X75 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT90X32C90	RT90X32C90	MAKO	90X32X90 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT90X40X90	RT90X40X90	MAKO	90X40X90 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT90X50X90	RT90X50X90	MAKO	90X50X90 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT90X63X90	RT90X63X90	MAKO	90X63X90 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT90X75X90	RT90X75X90	MAKO	90X75X90 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT110X32X110	RT110X32X110	MAKO	110X32X110 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT110X40X110	RT110X40X110	MAKO	110X40X110 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT110X50X110	RT110X50X110	MAKO	110X50X110 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT110X63X110	RT110X63X110	MAKO	110X63X110 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT110X75X110	RT110X75X110	MAKO	110X75X110 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT110X90X110	RT110X90X110	MAKO	110X90X110 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022



# Product Schedule

Model ID	Model Name	Brand Name	Product Description	Endorsement Date
RT125X75X125	RT125X75X125	MAKO	125X75X125 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT125X90X125	RT125X90X125	MAKO	125X90X125 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT125X110X110	RT125X110X110	MAKO	125X110X125 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT160X50X160	RT160X50X160	MAKO	160X50X160 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT160X63X160	RT160X63X160	MAKO	160X63X160 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT160X90X160	RT160X90X160	MAKO	160X90X160 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT160X110X160	RT160X110X160	MAKO	160X110X160 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT160X125X160	RT160X125X160	MAKO	160X125X160 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT180X125X180	RT180X125X180	MAKO	180X125X180 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT200X63X200	RT200X63X200	MAKO	200X63X200 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT200X90X200	RT200X90X200	MAKO	200X90X200 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT200X110X200	RT200X110X200	MAKO	200X110X200 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT200X180X200	RT200X180X200	MAKO	200X180X200 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT225X110X225	RT225X110X225	MAKO	225X110X225 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT225X180X225	RT225X180X225	MAKO	225X180X225 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT250X180X250	RT250X180X250	MAKO	250X180X250 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT250X225X250	RT250X225X250	MAKO	250X225X250 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT280X200X280	RT280X200X280	MAKO	280X200X280 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT280X250X280	RT280X250X280	MAKO	280X250X280 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT315X110X315	RT315X110X315	MAKO	315X110X315 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT315X200X315	RT315X200X315	MAKO	315X200X315 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT315X250X315	RT315X250X315	MAKO	315X250X315 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT315X280X315	RT315X280X315	MAKO	315X280X315 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022



# Product Schedule

Model ID	Model Name	Brand Name	Product Description	Endorsement Date
RT355X250X355	RT355X250X355	MAKO	355X250X355 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT355X280X355	RT355X280X355	MAKO	355X280X355 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT355X315X355	RT355X315X355	MAKO	355X315X355 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT400X280X400	RT400X280X400	MAKO	400X280X400 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT400X315X400	RT400X315X400	MAKO	400X315X400 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
RT400X355X400	RT400X355X400	MAKO	400X355X400 REDUCING T, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR40X32	SR40X32	MAKO	40X32 REDUCER, PE100 SDR11	28 <sup>th</sup> September 2022
SR50X32	SR50X32	MAKO	50X32 REDUCER, PE100 SDR11	28 <sup>th</sup> September 2022
SR50X40	SR50X40	MAKO	50X40 REDUCER, PE100 SDR11	28 <sup>th</sup> September 2022
SR63X32	SR63X32	MAKO	63X32 REDUCER, PE100 SDR11	28 <sup>th</sup> September 2022
SR63X40	SR63X40	MAKO	63X40 REDUCER, PE100 SDR11	28 <sup>th</sup> September 2022
SR63X50	SR63X50	MAKO	63X50 REDUCER, PE100 SDR11	28 <sup>th</sup> September 2022
SR75X32X	SR75X32X	MAKO	75X32 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR75X40	SR75X40	MAKO	75X40 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR75X50	SR75X50	MAKO	75X50 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR75X63	SR75X63	MAKO	75X63 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR90X32	SR90X32	MAKO	90X32 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR90X40	SR90X40	MAKO	90X40 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR90X50	SR90X50	MAKO	90X50 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR90X63	SR90X63	MAKO	90X63 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR90X75	SR90X75	MAKO	90X75 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR110X32	SR110X32	MAKO	110X32 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR110X40	SR110X40	MAKO	110X40 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR110 X50	SR110 X50	MAKO	110 X 50 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR110X63	SR110X63	MAKO	110X63 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR110X75	SR110X75	MAKO	110X75 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR110X90	SR110X90	MAKO	110X90 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR125X40	SR125X40	MAKO	125X40 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR125X50	SR125X50	MAKO	125X50 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR125X63	SR125X63	MAKO	125X63 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR125X75	SR125X75	MAKO	125X75 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR125X90	SR125X90	MAKO	125X90 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR125X110	SR125X110	MAKO	125X110 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR160X63	SR160X63	MAKO	160X63 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022



# Product Schedule

Model ID	Model Name	Brand Name	Product Description	Endorsement Date
SR160X75	SR160X75	MAKO	160X75 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR160X90	SR160X90	MAKO	160X90 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR160X110	SR160X110	MAKO	160X110 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR160X125	SR160X125	MAKO	160X125 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR180X75	SR180X75	MAKO	180X75 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR180X90	SR180X90	MAKO	180X90 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR180X110	SR180X110	MAKO	180X110 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR180X 125	SR180X 125	MAKO	180X125 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR180X160	SR180X160	MAKO	180X160 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR200X90	SR200X90	MAKO	200X90 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR200X125	SR200X125	MAKO	200X125 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR200X180	SR200X180	MAKO	200X180 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR225 X125	SR225 X125	MAKO	225X125 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR225 X 180	SR225 X 180	MAKO	225X180 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR250X125	SR250X125	MAKO	250X125 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR250X180	SR250X180	MAKO	250X180 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR250X225	SR250X225	MAKO	250X225 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR280X180	SR280X180	MAKO	280X180 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR280X200	SR280X200	MAKO	280X200 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR280X225	SR280X225	MAKO	280X225 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR280X250	SR280X250	MAKO	280X250 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR315X110	SR315X110	MAKO	315X110 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR315X180	SR315X180	MAKO	315X180 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR315X200	SR315X200	MAKO	315X200 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR315 X225	SR315 X225	MAKO	315X225 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR315X250	SR315X250	MAKO	315X250 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR315X280	SR315X280	MAKO	315X280 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR355X180	SR355X180	MAKO	355X180 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR355X200	SR355X200	MAKO	355X200 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR355X225	SR355X225	MAKO	355X225 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR355X250	SR355X250	MAKO	355X250 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR355X280	SR355X280	MAKO	355X280 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR355X315	SR355X315	MAKO	355X315 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR400X200	SR400X200	MAKO	400X200 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR400X225	SR400X225	MAKO	400X225 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR400X250	SR400X250	MAKO	400X250 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR400X280	SR400X280	MAKO	400X280 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022



# Product Schedule

Model ID	Model Name	Brand Name	Product Description	Endorsement Date
SR400X315	SR400X315	MAKO	400X315 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR400X355	SR400X355	MAKO	400X355 REDUCER, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
SR450X315	SR450X315	MAKO	450X315 REDUCER, PE100 SDR17	28 <sup>th</sup> September 2022
SR450X355	SR450X355	MAKO	450X355 REDUCER, PE100 SDR17	28 <sup>th</sup> September 2022
SR500X315	SR500X315	MAKO	500X315 REDUCER, PE100 SDR17	28 <sup>th</sup> September 2022
SR500X355	SR500X355	MAKO	500X355 REDUCER, PE100 SDR17	28 <sup>th</sup> September 2022
SR500X400	SR500X400	MAKO	500X400 REDUCER, PE100 SDR17	28 <sup>th</sup> September 2022
SR500X450	SR500X450	MAKO	500X450 REDUCER, PE100 SDR17	28 <sup>th</sup> September 2022
SR560X315	SR560X315	MAKO	560X315 REDUCER, PE100 SDR17	28 <sup>th</sup> September 2022
SR560X355	SR560X355	MAKO	560X355 REDUCER, PE100 SDR17	28 <sup>th</sup> September 2022
SR560X400	SR560X400	MAKO	560X400 REDUCER, PE100 SDR17	28 <sup>th</sup> September 2022
SR560X450	SR560X450	MAKO	560X450 REDUCER, PE100 SDR17	28 <sup>th</sup> September 2022
SR560X500	SR560X500	MAKO	560X500 REDUCER, PE100 SDR17	28 <sup>th</sup> September 2022
SR630X315	SR630X315	MAKO	630X315 REDUCER, PE100 SDR17	28 <sup>th</sup> September 2022
SR630X355	SR630X355	MAKO	630X355 REDUCER, PE100 SDR17	28 <sup>th</sup> September 2022
SR630X400	SR630X400	MAKO	630X400 REDUCER, PE100 SDR17	28 <sup>th</sup> September 2022
SR630X450	SR630X450	MAKO	630X450 REDUCER, PE100 SDR17	28 <sup>th</sup> September 2022
SR630X500	SR630X500	MAKO	630X500 REDUCER, PE100 SDR17	28 <sup>th</sup> September 2022
SR630X560	SR630X560	MAKO	630X560 REDUCER, PE100 SDR17	28 <sup>th</sup> September 2022
BU40	BU40	MAKO	40MM BULLET, PE100 SDR11	28 <sup>th</sup> September 2022
BU50	BU50	MAKO	50MM BULLET, PE100 SDR11	28 <sup>th</sup> September 2022
BU63	BU63	MAKO	63MM BULLET, PE100 SDR11	28 <sup>th</sup> September 2022
BU75	BU75	MAKO	75MM BULLET, PE100 SDR11	28 <sup>th</sup> September 2022
BU90	BU90	MAKO	90MM BULLET, PE100 SDR11	28 <sup>th</sup> September 2022
BU110	BU110	MAKO	100MM BULLET, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
BU125	BU125	MAKO	125MM BULLET, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
BU160	BU160	MAKO	160MM BULLET, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
BU180	BU180	MAKO	180MM BULLET, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
BU200	BU200	MAKO	200MM BULLET, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
BU225	BU225	MAKO	225MM BULLET, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
BU250	BU250	MAKO	250MM BULLET, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
BU280	BU280	MAKO	280MM BULLET, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
BU315	BU315	MAKO	315MM BULLET, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
BU355	BU355	MAKO	355MM BULLET, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
BU400	BU400	MAKO	400MM BULLET, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
ST40	ST40	MAKO	40MM STUB FLANGE, PE100 SDR11	28 <sup>th</sup> September 2022
ST50	ST50	MAKO	50MM STUB FLANGE, PE100 SDR11	28 <sup>th</sup> September 2022
ST63	ST63	MAKO	63MM STUB FLANGE, PE100 SDR11	28 <sup>th</sup> September 2022



# Product Schedule

Model ID	Model Name	Brand Name	Product Description	Endorsement Date
ST75	ST75	MAKO	75MM STUB FLANGE, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
ST110	ST110	MAKO	110MM STUB FLANGE, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
ST125	ST125	MAKO	125MM STUB FLANGE, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
ST160	ST160	MAKO	160MM STUB FLANGE, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
ST180	ST180	MAKO	180MM STUB FLANGE, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
ST200	ST200	MAKO	200MM STUB FLANGE, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
ST225	ST225	MAKO	225MM STUB FLANGE, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
ST250	ST250	MAKO	250MM STUB FLANGE, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
ST280	ST280	MAKO	280MM STUB FLANGE, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
ST315	ST315	MAKO	315MM STUB FLANGE, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
ST355	ST355	MAKO	355MM STUB FLANGE, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
ST400	ST400	MAKO	400MM STUB FLANGE, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
ST630	ST630	MAKO	630MM STUB FLANGE, PE100 SDR17	28 <sup>th</sup> September 2022
ST710	ST710	MAKO	710MM STUB FLANGE, PE100 SDR17	28 <sup>th</sup> September 2022
ST800	ST800	MAKO	800MM STUB FLANGE, PE100 SDR17	28 <sup>th</sup> September 2022
ST900	ST900	MAKO	900MM STUB FLANGE, PE100 SDR17	28 <sup>th</sup> September 2022
ST1000	ST1000	MAKO	1000MM STUB FLANGE, PE100 SDR17	28 <sup>th</sup> September 2022
ST1100	ST1100	MAKO	1100MM STUB FLANGE, PE100 SDR17	28 <sup>th</sup> September 2022
ST1200	ST1200	MAKO	1200MM STUB FLANGE, PE100 SDR17	28 <sup>th</sup> September 2022
90B40	90B40	MAKO	40MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
90B50	90B50	MAKO	50MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
90B63	90B63	MAKO	63MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
90B75	90B75	MAKO	75MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
90B110	90B110	MAKO	110MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
90B125	90B125	MAKO	125MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
90B160	90B160	MAKO	160MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022





# Product Schedule

Model ID	Model Name	Brand Name	Product Description	Endorsement Date
90B180	90B180	MAKO	180MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
90B200	90B200	MAKO	200MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
90B225	90B225	MAKO	225MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
90B250	90B250	MAKO	250MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
90B280	90B280	MAKO	280MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
90B315	90B315	MAKO	315MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
90B355	90B355	MAKO	355MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
90B400	90B400	MAKO	400MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
90B450	90B450	MAKO	450MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
90B500	90B500	MAKO	500MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
90B550	90B550	MAKO	550MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
90B630	90B630	MAKO	630MM 90 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
45B40	45B40	MAKO	40MM 45 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
45B63	45B63	MAKO	63MM 45 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
45B675	45B675	MAKO	75MM 45 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
45B110	45B110	MAKO	110MM 45 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
45B125	45B125	MAKO	125MM 45 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
45B160	45B160	MAKO	160MM 45 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
45B180	45B180	MAKO	180MM 45 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
45B200	45B200	MAKO	200MM 45 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
45B225	45B225	MAKO	225MM 45 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
45B250	45B250	MAKO	250MM 45 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
45B280	45B280	MAKO	280MM 45 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022



# Product Schedule

Model ID	Model Name	Brand Name	Product Description	Endorsement Date
45B315	45B315	MAKO	315MM 45 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
45B355	45B355	MAKO	355MM 45 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
45B400	45B400	MAKO	400MM 45 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
45B450	45B450	MAKO	450MM 45 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
45B500	45B500	MAKO	500MM 45 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
45B560	45B560	MAKO	560MM 45 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
45B630	45B630	MAKO	630MM 45 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
22B90	22B90	MAKO	90MM 22.5 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
22B110	22B110	MAKO	110MM 22.5 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
22B125	22B125	MAKO	125MM 22.5 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
22B180	22B180	MAKO	180MM 22.5 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
22B250	22B250	MAKO	250MM 22.5 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022
22B280	22B280	MAKO	280MM 22.5 DEGREE BEND, PE100 SDR11 or SDR17	28 <sup>th</sup> September 2022

*End of record*

**Certificate No. AMI 74724**

*The models identified above in the schedule are endorsed for ISO Type 5 application only.*

## **APPENDIX C – SUPPLIER CONTACTS**

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