



Hydroflow Distributors (Aust) Pty Ltd

PRODUCT APPRAISAL REPORT 1718 Issue 2

SAB PP Compression Fittings for PE Pipe

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

Issue 1 Published: 8 September 2017

Issue 2 Published: 2 November 2022

Document History

The following information indicates the changes made to this document.

Date	Version
15 August 2017	Peer Review
8 September 2017	Publication
22 September 2022	Issue 2 Client Review
2 November 2022	Issue 2 Publication

Peer Reviewers

Name/Title	Organisation	Date
Product Appraisal Technical Advisory Group	WSAA	8 September 2017
WSAA Expert Panel	WSAA	8 September 2017
Carl Radford, Product Appraisal Manager	WSAA	8 September 2017
Peter Pittard, WSAA Consultant	WSAA	22 September 2022
Carl Radford, Product Appraisal Manager	WSAA	2 November 2022

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.

Copyright

This document is copyrighted. Apart from any use as permitted under the Copyright Act 1968, no part of this document may be reproduced or transmitted in any form or by any means, electronically or mechanical, for any purpose, without the express written permission of Water Services Association of Australia Limited.

© Copyright 2022 by WATER SERVICES ASSOCIATION of Australia Limited **All rights reserved.**

CONTENTS

1 EXECUTIVE SUMMARY	5
1.1 Recommendations	5
2 THE APPLICANT	5
2.1 The Supplier	5
2.2 The Manufacturer	5
3 THE PRODUCT	5
4 SCOPE OF THE APPRAISAL	7
5 APPRAISAL CRITERIA	7
5.1 Quality Assurance Requirements	7
5.2 Performance Requirements.....	7
6 COMPLIANCE WITH APPRAISAL CRITERIA.....	7
6.1 Compliance with Quality Assurance Requirements.....	7
6.2 Compliance with Performance Requirements	7
6.2.1 Materials	7
6.2.2 Threads.....	8
6.2.3 Type tests	8
6.2.4 Suitability for contact with water.....	8
7 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION	8
8 PRODUCT MARKING	8
9 PACKAGING AND TRANSPORTATION	8
10 PRODUCT WARRANTY.....	9
11 WATER AGENCY EXPERIENCE WITH THE PRODUCT OR FIELD TESTING REPORT	9
12 DISCUSSION.....	9
13 OUTCOMES OF EXPERT PANEL PRODUCT REVIEW.....	9
14 FUTURE WORKS	9
15 DISCLAIMER.....	10
15.1 Issue of Report	10
15.2 Limits on Reliance on Information and Recommendations.....	10
15.2.1 Disclaimer of liability	10
15.2.2 Intellectual Property and other rights	10
15.2.3 Need for independent assessment	11
15.3 No Updating	11
15.4 No Warranty	11
APPENDIX A – PRODUCT LITERATURE	12
APPENDIX B - QUALITY CERTIFICATIONS	17
APPENDIX C - SUPPLIER CONTACTS.....	22

1 EXECUTIVE SUMMARY

Hydroflow Distributors (Aust) Pty Ltd was established in 2013 and operates a distribution centre located in Altona, Melbourne. It is owned by Hydroflow Distributors Limited, originally established in New Zealand in 1985, a company focussed on distribution of products to the water and gas industries of Australasia through plumbing merchants and specialist resellers. Hydroflow is the exclusive distributor of SAB PP compression fittings for PE pipes within Australia.

SAB S.p.A is an Italian based manufacturer of polyethylene (PE) and polypropylene (PP) fittings for use in the water, gas, irrigation and drainage sectors.

This appraisal is for a range of PN16 SAB Black Nut Blueseal polypropylene compression fittings for PE pipes, manufactured in conformance with AS/NZS 4129:2020 *Fittings for polyethylene (PE) pipes for pressure applications*.

This Issue 2 is to replace the previous issue which had reached its 5-year expiry period.

The range of fittings includes couplings, tees, elbows, adaptors and end plugs in sizes from DN 16 to DN 110. See Section 4 and Appendix A for further details of the range.

There is no need to disassemble the compression joint to join the PE pipe. After loosening the black nut, the PE pipe can be inserted directly to the stop provided and the nut tensioned.

Both Hydroflow and SAB hold ISO 9001:2015 Quality Management System Licences.

The PP compression fittings are covered by an ISO Type 5 C-Mark product certification to AS/NZS 4129:2020 *Fittings for polyethylene (PE) pipes for pressure applications*.

This Appraisal has determined that the SAB range of PP fittings, as detailed in this report, meet the requirements of WSA PS 208 – *Plastics Fittings for Pressure Applications 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 SAB range of PP compression fittings as detailed in this report for use in in drinking and non-drinking water supply and pressure sewerage networks, provided they are designed and installed in accordance with applicable WSAA Codes and the manufacturer's requirements.

2 THE APPLICANT

The Applicant is Hydroflow Distributors (Aust) Pty Ltd.

2.1 The Supplier

Hydroflow Distributors (Aust) Pty Ltd was established in 2013 and operates a distribution centre located in Altona, Melbourne. It is owned by Hydroflow Distributors Limited, established in New Zealand in 1985, a company focussed on distribution of products to the water and gas industries of Australasia through plumbing merchants and specialist resellers.

2.2 The Manufacturer

SAB S.p.A is part of the System Group, a major European conglomerate supplying PE and PE piping systems. SAB specialises in moulding and extrusion of plastics materials for the production of compression and electrofusion fittings for use in the water, gas, irrigation and drainage sectors.

3 THE PRODUCT

This appraisal is for a range of SAB Black Nut Blueseal polypropylene compression fittings for PE pipes, manufactured in conformance with AS/NZS 4129:2020 *Fittings for polyethylene (PE) pipes for pressure applications*.

The SAB Black Nut Blueseal PP compression fittings are suitable for use with PE100 pipes manufactured in accordance with AS/NZS 4130, for conveyance of drinking water, non-drinking water and sewerage in buried and above ground applications. The fittings are suitable for connecting to new PE pipe, repairing damaged PE pipe and for circumstances where fusion jointing is not possible or desirable.

Blue Nut Blueseal fittings and an O-ring seal range of fittings are also manufactured by SAB however are not included in the Scope of this appraisal.

The range of fittings includes straight couplings, reducing couplings, 90° reducing tees, 90° equal tees, 90° female threaded tees, 90° male threaded tees, male adaptors, female adaptors, end plugs, 90° elbows, 90° female threaded elbows and 90° male threaded elbows in sizes from DN 20 to DN 110. The male and female adaptors come with ½" to 4" BSP threaded outlets. The female threaded outlets have a Grade 430 Stainless Steel reinforcing ring for size 1½" to 4" (See Section 12 for further details). The female threaded outlets from ½" to 1¼" do not have any reinforcing ring.

See Appendix A for further details of the fittings range.

The fittings are rated as PN16 at 20°C.

SAB PP compression fittings are removable and suitable for reuse. The nuts of the compression fitting are generally tightened by hand although Hydroflow can supply installation wrenches for easy tightening and loosening.

The SAB Blueseal sealing system incorporates a double lip seal and unique blue jumper ring. The Black nut Blueseal compression fitting is easy and quick to assemble and will provide a seal even on scratched pipes.

The fitting's black body, Blueseal16 spacer ring and black lock nut are moulded from virgin black polypropylene (Grade 8 ASTM D2565) while the white colour grip/lock ring is moulded from polyacetal resin (POM). The conical gasket/O-ring seal is made of nitrile butadiene rubber (NBR), hardness 70, and black in colour.

See Figure 1 for an exploded view of SAB Blueseal sealing system.



FIGURE 1: EXPLODED VIEW OF SAB BLUESEAL SEALING SYSTEM

4 SCOPE OF THE APPRAISAL

The scope of this appraisal is for a range of SAB Black Nut Blueseal polypropylene (PP) compression fittings for PE pipes in sizes DN 16 to DN 110 as detailed in Section 3, Appendix A and included in the ISO Type 5 C-Mark product certification schedule referenced in Appendix B.

5 APPRAISAL CRITERIA

5.1 Quality Assurance Requirements

The WSAA Product Appraisal Technical Advisory Group accepts PP compression fittings for PE pipes 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

SAB PP compression 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 also relevant to this application:

WSA PS 208 – *Plastics Fittings for Pressure Applications with PE Pipe – 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

Hydroflow has submitted the following quality certificates:

- ISO 9001:2015 Certificate of Registration No. 2516 issued to Hydroflow Distributors (Aust) Pty Ltd by Telarc.
- ISO 9001:2015 Certificate of Registration No. IT04/1066 issued to SAB S.p.A. by SGS.
- AS/NZS 4129:2020 C-Mark ISO Type 5 Product Certification Licence No. 3017 issued to SAB S.p.A. by Australian Certification Services.

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 Materials

The fitting body and Blueseal16 spacer or thrust ring is moulded from UV stabilised polypropylene copolymer (PP-B) black, which is included in Table 1.1 of AS/NZS 4129.

Hydroflow Distributors submitted a test report for Issue 1 of this Appraisal to identify the compound as BEC5012 polypropylene copolymer (PP-B) black.

The locking nut is moulded from a UV stabilised black polypropylene copolymer (PP-B).

The grip ring is moulded from Copolymer Polyacetal (POM) resin as listed in AS/NZS 4129.

The conical gasket is manufactured from NBR, hardness 70, material.

The reinforcement ring for female threaded fittings for sizes 1½” to 4” is made of Grade 430 stainless steel. Fittings from ½” to 1¼” do not require a ring.

Grade 430 stainless steel is a low-carbon plain chromium ferritic stainless steel with 17% Cr and has good corrosion resistance in mildly corrosive environments and good resistance to oxidation at elevated temperatures. See Section 12 for additional information.

6.2.2 Threads

The male and female threads comply with ISO 7.1. External threads are tapered and internal threads are parallel.

6.2.3 Type tests

Type test reports were supplied for Issue 1 of this appraisal to demonstrate conformance with the material and joint performance requirements of AS/NZS 4129.

6.2.4 Suitability for contact with water

Test report number SM-ST190025 dated 15 August 2019, undertaken by Standardmark Laboratory Sdn Bhd (SAMM accreditation No. 786), has been submitted to demonstrate compliance of the SAB compression fittings to AS/NZS 4020:2018

7 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION

Assembly instructions are included in Appendix A

8 PRODUCT MARKING

Product marking is in conformance with AS/NZS 4129:2020 as follows:

- (a) Manufacturers name or registered trademark: SAB
- (b) Date or batch code for traceability:
- (c) Nominal size (DN) of the pipe to which the fitting is suited: e.g., DN 110
- (d) Identification, including grade and type of material of the plastics material used for the body of the fitting: PP-B
- (e) Classification in accordance with the pipe classification for which the fitting is to be used: PN16
- (f) Number of the Standard: AS/NZS 4129.

The information of Items (b) to (f) may be provided on the body of the fitting, or provided using a label, pressure sensitive tape, or other suitable means on the product packaging; however, the fitting body is the preferred labelling location.

9 PACKAGING AND TRANSPORTATION

SAB PP compression fittings are packed in transparent protective bags and contained in cartons. Each carton or protective bag clearly indicates its contents. All fittings are packaged to allow use on site without additional cleaning.

Where only one type of product is packaged in a bag or carton, a label showing the manufacturers identification, the description of the product, a line drawing of the product, the relevant size and the quantity is on each package.

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, and details of Hydroflow's warranty is included in their terms and conditions of sale.

11 WATER AGENCY EXPERIENCE WITH THE PRODUCT OR FIELD TESTING REPORT

Polypropylene compression fittings are a widely installed mature product and are approved by many water agencies.

12 DISCUSSION

The Grade 430 stainless steel reinforcing ring used for the female threaded components is regarded as having 'good' corrosion resistance. WSAA nominates Grade 316 stainless steel for buried situations to provide a high level of corrosion resistance. Grade 430 stainless steel will be adequate in most buried situations however agencies should be aware of the ground conditions. SAB PP compression fittings with the stainless-steel reinforcing ring should be installed in conditions that provide a less aggressive environment. A high resistivity sand or granular embedment is recommended to minimise the likelihood of corrosion.

Note: A high resistivity material is defined as one that has a resistivity greater than 50 ohm-meters when tested in accordance with AS 1289.4.4.1:1997 *Methods of testing soils for engineering purposes Soil chemical tests - Determination of the electrical resistivity of a soil - Method for sands and granular materials*.

The purpose of the stainless-steel reinforcement ring used in female threaded outlets is to increase hydraulic and mechanical strength of the thread, especially in the presence of high pressure and mechanical stress of the outlet, e.g., continuous vibration to the threaded connection or an oversized male thread connection. Such rings are not required for compression fittings with female threads of sizes ½" - 1¼" as the plastic thickness of the outlet has the hydraulic and mechanical strength to resist the pressure and mechanical stress. For thread sizes 1½" - 4" a reinforcement ring is important as the plastic thickness is proportionally smaller while the integral pressure stress applied to the thread is greater than the smaller sizes.

PP compression fittings rely on interface pressure being maintained between the elastomeric seal (conical gasket) and the PE pipe surface to maintain a sealed joint. Mechanical fittings, including compression fittings are normally used on PE pipe ≤ DN 110. Mechanical fittings are also normally used for repairs or changes to the pipeline as the pipe surface preparation requirements are less stringent than fusion welding methods (i.e., electrofusion or butt).

The majority of female threaded compression fittings installed by Australian Water Agencies are small sizes (½" - 1¼") which do not require a stainless steel reinforcement ring to cope with hydraulic and mechanical strength needed for the various applications such as smaller reticulation water mains, property service connections, pressure sewerage networks and treatment plants.

13 OUTCOMES OF EXPERT PANEL PRODUCT REVIEW

There are no outstanding issues.

14 FUTURE WORKS

No future works have been identified.

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.

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 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

Neither the Publisher(s) nor any person involved in the preparation of the Report 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 Report or the product appraisal criteria underlying it. This includes (without limitation) any liability for any recommendation or information in the Report or any errors or omissions.

15.2.2 Intellectual Property and other rights

The Water Services Association of Australia Limited does not undertake any assessment of whether the importation, manufacture, sale or use of the Product the subject of this Report infringes the intellectual property rights or proprietary rights of any person. Recipients of the report 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.

From time to time the Water Services Association of Australia Limited and the other Publishers may receive notice of allegations that the importation, manufacture, sale or use of the Product infringes intellectual property rights or other proprietary rights. The Water Services Association of Australia Limited's policy is to not refer to such allegations in its reports or take any other steps to put Recipients on notice of such allegations, unless and

until it is aware that the allegations have been admitted or proved in Court. As such, Recipients acknowledge, agree and accept that the Water Services Association of Australia Limited may have information in its possession about intellectual property rights infringement allegations or other infringement allegations in relation to the Product which are not referred to or disclosed in this Report and which are not otherwise communicated to Recipients.

15.2.3 Need for independent assessment

The information and any recommendation contained (expressly or by implication) in this Report are provided in good faith (and subject to the limitations noted in this Report). 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 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

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

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 – PRODUCT LITERATURE

The complete SAB catalogue is available at the following link or from Hydroflow or WSAA.

<https://www.sabspa.com/wp-content/uploads/2018/05/SAB-WaterGasIrrigation.pdf>



 **WATER**



 **GAS**






 **IRRIGATION**




 **SAB**
cherish your water
 **SYSTEM GROUP**

01.2022

Item	Product Description and Size	Picture
1	<p>Straight Coupling DN16, 20, 25, 32, 40, 50, 63, 75, 90, 110</p>	
2	<p>Reducing Coupling DN20 x 16, DN25 x 16, DN25 x 20, DN32 x 20, DN32 x 25, DN40 x 25, DN40 x 32, DN50 x 32, DN50 x 40, DN63 x 25, DN63 x 32, DN63 x 40, DN63 x 50, DN75 x 50, DN75 x 63, DN90 x 63, DN90 x 75, DN110 x 63, DN110 x 75, DN110 x 90</p>	
3	<p>90° Reducing Tee DN20 x 20 x 16, DN25 x 25 x 20, DN32 x 32 x 25, DN40 x 40 x 32, DN50 x 50 x 32, DN50 x 50 x 40, DN63 x 63 x 32, DN63 x 63 x 50</p>	
4	<p>90° Equal Tee DN16, 20, 25, 32, 40, 50, 63</p>	
5	<p>90° Female Threaded Tee DN16 x 16 x RP½, DN16 x 16 x RP¾, DN20 x 20 x RP½, DN20 x 20 x RP¾, DN25 x 25 x RP½, DN25 x 25 x RP¾, DN32 x 32 x RP½, DN32 x 32 x RP¾, DN32 x 32 x RP1, DN32 x 32 x RP1¼, DN40 x 40 x RP1, DN40 x 40 x RP1¼, DN40 x 40 x RP1½, DN50 x 50 x RP1¼, DN50 x 50 x RP1½, DN50 x 50 x RP2, DN63 x 63 x RP1½, DN63 x 63 x RP2, DN63 x 63 x RP2½</p>	
6	<p>90° Male Threaded Tee DN16 x 16 x R½, DN16 x 16 x R¾, DN20 x 20 x R½, DN20 x 20 x R¾, DN25 x 25 x R½, DN25 x 25 x R¾, DN32 x 32 x R½, DN32 x 32 x R¾, DN32 x 32 x R1, DN32 x 32 x R1¼, DN40 x 40 x R1, DN40 x 40 x R1¼, DN40 x 40 x R1½, DN50 x 50 x R1¼, DN50 x 50 x R1½, DN50 x 50 x R2, DN63 x 63 x R1½, DN63 x 63 x R2, DN63 x 63 x R2½</p>	

Item	Product Description and Size	Picture
7	<p>Male Adaptor</p> <p>DN16 x R½, DN16 x R¾, DN20 x R½, DN20 x R¾, DN20 x R1, DN25 x R½, DN25 x R¾, DN25 x R1, DN32 x R½, DN32 x R¾, DN32 x R1, DN32 x R1¼, DN32 x R1½, DN40 x R1, DN40 x R1¼, DN40 x R1½, DN40 x R2, DN50 x R1¼, DN50 x R1½, DN50 x R2, DN63 x R1¼, DN63 x R1½, DN63 x R2, DN63 x R2½, DN75 x R2, DN75 x R2½, DN75 x R3, DN90 x R2, DN90 x R2½, DN90 x R3, DN90 x R4, DN110 x R2, DN110 x R3, DN110 x R4</p>	
8	<p>End Plug</p> <p>DN16, 20, 25, 32, 40, 50, 63, 75, 90, 110</p>	
9	<p>90° Elbow</p> <p>DN16, 20, 25, 32, 40, 50, 63, 75, 90, 110</p>	
10	<p>Female Adaptor</p> <p>DN16 x RP½, DN16 x RP¾, DN20 x RP½, DN20 x RP¾, DN20 x RP1, DN25 x RP½, DN25 x RP¾, DN25 x RP1, DN32 x RP½, DN32 x RP¾, DN32 x RP1, DN32 x RP1¼, DN32 x RP1½, DN40 x RP1, DN40 x RP1¼, DN40 x RP1½, DN40 x RP2, DN50 x RP1¼, DN50 x RP1½, DN50 x RP2, DN63 x RP1¼, DN63 x RP1½, DN63 x RP2, DN63 x RP2½, DN75 x RP2, DN75 x RP3</p>	 <p>1½" to 4" (reinforcement ring)</p>  <p>½" to 1¼" (no ring)</p>
11	<p>90° Female Threaded Elbow</p> <p>DN16 x RP½, DN16 x RP¾, DN20 x RP½, DN20 x RP¾, DN25 x RP½, DN25 x RP¾, DN25 x RP1, DN32 x RP½, DN32 x RP¾, DN32 x RP1, DN32 x RP1¼, DN40 x RP1, DN40 x RP1¼, DN40 x RP1½, DN50 x RP1¼, DN50 x RP1½, DN50 x RP2, DN63 x RP1½, DN63 x RP2, DN63 x RP2½, DN75 x RP2½</p>	 <p>1½" to 4" (reinforcement ring)</p>  <p>½" to 1¼" (no ring)</p>


Item	Product Description and Size	Picture
12	<p>90° Male Threaded Elbow</p> <p>DN16 x R½, DN16 x R¾, DN20 x R½, DN20 x R¾, DN25 x R½, DN25 x R¾, DN25 x R1, DN32 x R½, DN32 x R¾, DN32 x R1, DN32 x R1¼, DN40 x R1, DN40 x R1¼, DN40 x R1½, DN50 x R1¼, DN50 x R1½, DN50 x R2, DN63 x R1½, DN63 x R2, DN63 x R2½</p>	

ASSEMBLY INSTRUCTIONS

Black Nut Blue Seal (SAB PP Compression fittings)



NOTE: The below figures show the assembly of SAB PP compression fitting using images of a 'Blue Nut' fittings, which is similar to "Black Nut Blue Seal" fitting assessed by this report.

	
<p>1. Cut the pipe square and remove the burrs. Chamfer and clean the pipe ends. Undo the nut to the last thread.</p>	<p>2. Insert the pipe by twisting and pushing to the pipe stop</p>
	
<p>3. Tighten the nut firmly, use a wrench if necessary for final tightening</p>	

APPENDIX B - QUALITY CERTIFICATIONS

Copies of the following Quality Certificates are available from WSAA.

**TABLE B1
HYDROFLOW DISTRIBUTORS (AUST) PTY LTD – MANAGEMENT SYSTEMS**

24 Harcourt Road Altona Vic	
Quality Systems Standard	ISO 9001:2015
Certification Licence No.	2516
Certifying Agency	Telarc
First Date of Certification	5 August 2011
Current Date of Certification	1 September 2020
Expiry Date of Certification	5 August 2023

**TABLE B2
SAB S.P.A. – MANAGEMENT SYSTEMS**

Via Salvo d'Acquisto – Zona Industriale – 61048 S. Angelo in Vado (PU) - Italy	
Quality Systems Standard	ISO 9001:2015
Certification Licence No.	IT04/1066
Certifying Agency	SGS
First Date of Certification	2 November 2004
Current Date of Certification	4 November 2019
Expiry Date of Certification	2 November 2022

**TABLE B3
SAB S.P.A. – PRODUCT CERTIFICATION**

Via Salvo d'Acquisto – Zona Industriale – 61048 S. Angelo in Vado (PU) - Italy	
Product Standard/Spec.	AS/NZS 4129:2020
Certificate No.	3017
Issuing Certification Body	Australian Certification Services
First Date of Certification	31 July 2017
Current Date of Certification	6 November 2020
Expiry Date of Certification	30 July 2022



Telarc.
The Mark of Success

This is to certify that

Hydroflow Distributors Limited and Pipe & Infrastructure Limited

221 Bush Road Albany Auckland New Zealand

having been assessed by Telarc Limited and having been found to operate a quality management system conforming to

ISO 9001:2015
is hereby designated

Telarc Registered
for the following goods and services

No. 2516

The wholesaling & distribution of products covering plumbing, water & gas reticulation, fire protection and streetware from premises in Albany, Christchurch and Melbourne.

Certificate Issued: 1 September 2020

Original Registration: 5 August 2011

Current Registration: 1 September 2020

Expiry Date: 5 August 2023

Chairperson
David Bone

Chief Executive
Philip Cryer



Registered by Telarc Limited 626 Great South Road, Ellerslie, Auckland 1051, Private Bag 28901, Remuera, Auckland 1541, Telephone: 64 9 525 0100 Facsimile: 64 9 525 1900 and subject to the Telarc Limited Terms and Conditions for Certification. While all due care and skill was exercised in carrying out this assessment, Telarc Limited accepts responsibility only for proven negligence. To verify that this certificate is current please refer to the JAS-ANZ register at www.jas-anz.org/register This certificate and its associated schedules remain the property of Telarc Limited and must be returned if registration is withdrawn.



SCHEDULE TO CERTIFICATE OF REGISTRATION

Registration Number: 2516

Certificate Issued: 1 September 2020

Hydroflow Distributors Limited and Pipe & Infrastructure Limited

Site Details:

Organisation	Address	Suburb	City	
Hydroflow Distributors Limited and Pipe & Infrastructure Limited - Head Office (12694)				
<i>Hydroflow Distributors Ltd and Pipe & Infrastructure Ltd - Albany</i>	<i>221 Bush Road</i>	<i>Albany</i>	<i>Auckland</i>	<i>NZ</i>
<i>Hydroflow Distributors Ltd and Pipe & Infrastructure Ltd - Christchurch</i>	<i>48 - 58 Hammersmith Drive</i>	<i>Wigram</i>	<i>Christchurch</i>	<i>NZ</i>
<i>Hydroflow (Aust) Pty Ltd - Melbourne</i>	<i>24 Harcourt Road</i>	<i>Allona</i>	<i>Melbourne</i>	<i>AU</i>

Scope of certification:

The wholesaling & distribution of products covering plumbing, water & gas reticulation, fire protection and streetware from premises in Albany, Christchurch and Melbourne.

Registered by Telarc Limited 626 Great South Road, Ellerslie, Auckland 1051, Private Bag 28901, Remuera, Auckland 1541, Telephone: 64 9 525 0100 Facsimile: 64 9 525 1900 and subject to the Telarc Limited Terms and Conditions for Certification. While all due care and skill was exercised in carrying out this assessment, Telarc Limited accepts responsibility only for proven negligence. To verify that this certificate is current please refer to the JAS-ANZ register at www.jas-anz.org/register This certificate and its associated schedules remain the property of Telarc Limited and must be returned if registration is withdrawn.

This is a translation of certificate N. IT04/1066

The quality management system of

SAB S.p.A.

Via Salvo d'Acquisto - Zona Industriale - 61048 S. Angelo in Vado (PU) - Italy

has been assessed and certified as meeting the requirements of

ISO 9001 / UNI EN ISO 9001:2015

For the following activities

Design and manufacturing of plastic material fittings for water and gas pipeline. Manufacturing of system for collecting rain water and plastic grids for outside paving. Manufacturing and trading of technical items for irrigation.

EA Sector: 14

This certificate is valid from 04/11/2019 until 02/11/2022 and remains valid subject to satisfactory surveillance audits.
Re certification audit due before 02/11/2022.
Issue 8. Certified since 02/11/2004.

The audit leading to this certificate commenced on 29/10/2019.
Previous issue certificate validity date was until 02/11/2019.

Authorized by
Paola Santarelli



ACCREDIA
ISTITUTO ITALIANO DI ACCREDITAMENTO

SGQ N° 0015 A

Membro di MLA EA per gli schemi di accreditamento SGQ, SGA, PRD, PRS, ISP, GHG, LAB, LAT, PTP e RHT, di MLA IAF per gli schemi di accreditamento SGQ, SGA, SSI, FSM, PRD e PRS e di MRA ILAC per gli schemi di accreditamento LAB, MED, LAT, ISP e PTP

Signatory of EA MLA for the accreditation schemes QMS, EMS, PRD, PRS, INSP, GHG, TL, CL, PTP and RMT, of IAF MLA for the accreditation schemes QMS, EMS, ISMS, FSMS, PRD and PRS and of ILAC MRA for the accreditation schemes TL, ML, CL, INSP and PTP

The product schedule consists of 66 pages and has not included in this Appendix. A copy of the schedule may be obtained from Hydroflow or WSAA



PRODUCT CONFORMITY SCHEME – FULL CERTIFICATION

Certification Licence

Australian Certification Services Pty Ltd grants to:

SAB S.p.A.

Trading as SAB S.p.A.

the right to use the Certification Mark as shown above in conjunction with the Certificate No. on product/s as identified in the Schedule and as listed on the Australian Certification Services Website www.certificationservices.com.au and have been shown to comply with the relevant Standard/s referred to below. The Licensee is granted a licence to use the Certification Mark subject to the rules governing the use.

Product Type: Fittings for use with Polyethylene (PE) Pipe to AS/NZS 4130
 Brand: SAB/Supreme/PLASSICOM
 Evaluated to: AS/NZS 4129:2020 Fittings for polyethylene (PE) pipes for pressure applications

Issue Date: 6th November 2020
 Initial Issue Date: 31st July 2017
 Expiry Date: 30th July 2022

Paul Greig
General Manager

Certificate No.: 3017

This certificate remains the property of Australian Certification Services Pty Ltd

The Product Conformity Scheme (PCS) – Full Certification is a conformity assessment scheme based on ISO/IEC 17067 (system 5) and SA HB 18.28



APPENDIX C - SUPPLIER CONTACTS

Hydroflow Distributors (Aust) Pty Ltd

24 Harcourt Road

Altona Vic 3018

Phone: 1300 493359

Email: sales@hydroflowaus.com.au

Website: www.hydroflowaus.com.au



Melbourne Office

Level 8, Suite 8.02
401 Docklands Drive
Docklands VIC 3008

Sydney Office

Level 6, 75 Elizabeth St
Sydney, NSW 2000
Sydney NSW 2000

P +61 (0) 3 8605 7666
email: info@wsaa.asn.au

www.wsaa.asn.au