



Fusion Group Limited

PRODUCT APPRAISAL REPORT PA 1127 Part 1 Issue 4

Fusamatic™ PE100 Electrofusion Fittings for Pressure Applications

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

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Carl Radford, Product Appraisal Manager	WSAA	5 March 2015
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Peter Pittard, WSAA Consultant	WSAA	15 September 2023
Carl Radford, Product Appraisal Manager	WSAA	15 September 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 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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CONTENTS

1 EXECUTIVE SUMMARY	5
1.1 Recommendations	5
2 THE APPLICANT.....	5
2.1 The Manufacturers.....	5
2.2 The Supplier.....	6
3 THE PRODUCT.....	6
4 SCOPE OF THE APPRAISAL.....	8
5 APPRAISAL CRITERIA.....	8
5.1 Quality Assurance Requirements	8
5.2 Performance Requirements	9
6 COMPLIANCE WITH APPRAISAL CRITERIA.....	9
6.1 Compliance with Quality Assurance Requirements	9
6.2 Compliance with performance requirements	9
6.2.1 Materials.....	9
6.2.2 Type testing.....	10
6.2.3 Effect on water.....	10
7 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION	10
8 PRODUCT MARKING	10
9 PACKAGING AND TRANSPORTATION.....	10
10 PRODUCT WARRANTY	11
11 WATER AGENCY EXPERIENCE WITH THE PRODUCT OR FIELD-TESTING REPORT.....	11
12 DISCUSSION	11
13 OUTCOMES OF EXPERT PANEL PRODUCT REVIEW.....	11
14 FUTURE WORKS.....	11
15 DISCLAIMER.....	11
15.1 Issue of Report.....	12
15.2 Limits on Reliance on Information and Recommendations.....	12
15.2.1 Disclaimer of liability.....	12
15.2.2 Intellectual Property and other rights.....	12
15.2.3 Need for independent assessment.....	12
15.3 No Updating	13
15.4 No Warranty.....	13
APPENDIX A – PRODUCT LITERATURE.....	14
APPENDIX B - QUALITY CERTIFICATIONS.....	18
APPENDIX C - SUPPLIER CONTACTS	25

1 EXECUTIVE SUMMARY

Fusion Group Limited is one of the largest manufacturers of electrofusion fittings in the world and is a leading developer of polyethylene pipe jointing technology. Fusion Group is based in Chesterfield, UK and its comprehensive range of products is available globally through the Fusion Group network of wholly owned companies, joint ventures, licensees and distributors. Fusion Group was acquired by AVK in 2017.

Fusamatic™ PE electrofusion fittings are distributed throughout Australia by Fusion Plast Australia Pty Ltd, a member of the Fusion Group companies.

PA 1127 is in two parts; this report is for Part 1 only.

Part 1 Fusamatic PE electrofusion fittings manufactured by Fusion Group Limited, Chesterfield, Derbyshire UK, Ace Plastics, Egypt and GH Fusion Corporation Limited, Zhongshan, Guangdong, China.

Part 2 Fusamatic injection moulded spigot fittings for water supply and sewerage applications manufactured NTG Plastik in Turkey.

This Appraisal is for a range of PN16 Fusamatic PE 100 fittings including couplers, end caps, reducers, elbows, tees, tapping tees and branch saddles in sizes from DN 20 to DN 630, manufactured in conformance with AS/NZS 4129:2020 *Fittings for polyethylene (PE) pipes for pressure applications*.

See Section 3 for details of the range.

This Issue 4 is to include Ace Plastics as a manufacturing source, a Fusion Group subsidiary company based in Egypt.

Issue 3 was a replacement for the previous version of the appraisal which reached its 5-year expiry date in August 2020.

Fusion Group Limited (including both UK and Egypt facilities) and GH Fusion Corporation Limited have ISO 9001 certification.

The fittings are covered by ISO Type 5 ApprovalMark product certifications to AS/NZS 4129:2020.

This Appraisal has determined that the range of Fusamatic PN16 PE 100 electrofusion 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 WSA PS 329 *Tapping Saddles, Electrofusion, for Use with Polyethylene (PE) Mains for 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 Fusion Group range of Fusamatic PN16 PE 100 electrofusion fittings, as detailed in this report, for use in for water supply and sewerage networks provided pipeline design and installation is in accordance with the relevant WSAA Codes and the manufacturer's installation requirements.

2 THE APPLICANT

The Applicant is Fusion Group Limited.

2.1 The Manufacturers

Fusion Group Limited is one of the largest manufacturers of electrofusion fittings in the world and is a leading developer of polyethylene pipe jointing technology. Fusion Group is based in Chesterfield, UK and its comprehensive range of products is available globally through

the Fusion Group network of wholly owned companies, joint ventures, licensees and distributors. Fusion Group was acquired by AVK in 2017.

The Fusamatic principle of electrofusion and its range of automatic butt fusion machines are at the core of their product portfolio. Fusamatic welding is a Fusion Group Limited innovation used by other major companies.

The range of electrofusion fittings are manufactured at three sites:

- Fusion Group located in Derbyshire, United Kingdom.
- Ace Plastics, a subsidiary of Fusion Group company, located in Egypt.
- GH Fusion Corporation Limited, a joint venture company between Fusion Group Limited and The Hong Kong and China Gas Company Limited (Towngas), located in Zhongshan City, Guangdong Province, China.

Each of the manufacturing locations maintain on-site test laboratories with industry leading equipment that provides testing in accordance with relevant international industry standards.

More information is available at the following link: <https://www.fusiongroup.com/en>

2.2 The Supplier

Fusion Plast Australia Pty Ltd is the Australian distribution arm of Fusion Group Limited and is a leading supplier of pipe fittings for the gas, water, mining and power industries. Its products include both electrofusion and spigot fittings, PE ball and butterfly valves, butt fusion and electrofusion jointing equipment and associated ancillary tooling. Fusion Plast has distribution centres in Brisbane and Perth.

More information is available at the following link: <https://www.fusionplast.com.au/>



3 THE PRODUCT









This Appraisal is for a range of Fusamatic PE 100 fittings including couplers, end caps, reducers, elbows, tees, tapping tees and branch saddles in sizes from DN 20 to DN 630, manufactured in conformance with AS/NZS 4129:2020 *Fittings for polyethylene (PE) pipes for pressure applications*.

The fittings are suitable for use with polyethylene (PE) pipes manufactured in accordance with AS/NZS 4130 *Polyethylene (PE) pipes for pressure applications* for the conveyance of drinking water, non-drinking water and sewage in buried and above ground applications.

The range includes couplers, end caps, reducers, elbows, tees, tapping tees and branch saddles in sizes from DN 20 to DN 630. The fittings are rated as PN16. See Table 1 for details.

TABLE 1 FUSAMATIC ELECTROFUSION FITTINGS RANGE

Product Type	DN	Picture
Couplers	20, 25, 32, 40, 50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500, 560, 630.	
End caps	20, 25, 32, 40, 50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400.	

90° Elbows	20, 25, 32, 40, 50, 63, 75, 90, 110, 125, 160, 180, 200, 225, 250.	
45° Elbows	32, 40, 50, 63, 75, 90, 110, 125, 160, 180, 200, 225, 250.	
22.5° Elbows	180.	
Equal Tees	20, 25, 32, 40, 50, 63, 75, 90, 110, 125, 160, 180, 200, 225, 250.	
Reducing Tees	20x20x32, 25x25x32, 50x50x40, 63x63x32, 63x63x40, 63x63x50, 90x90x63, 110x110x63, 110x110x90, 125x125x63, 125x125x90, 125x125x110, 160x160x63, 160x160x90, 160x160x110, 160x160x125, 180x180x63, 180x180x90, 180x180x125.	
Reducers	16x20, 16x25, 16x32, 25x20, 32x20, 32x25, 32x1", 40x32, 50x32, 50x40, 63x32, 63x40, 63x50, 63x2", 75x63, 90x63, 110x63, 110x90, 125x90, 160x90, 110x4", 160x110, 180x125.	
MultiSeal Tapping Tees S/L	40x20, 40x25, 40x32, 50x20, 50x25, 50x32, 63x20, 63x25, 63x32, 63x40, 63x50, 63x63, 75x20, 75x25, 75x32, 75x40, 75x50, 75x63, 90x20, 90x25, 90x32, 90x40, 90x50, 90x63, 110x20, 110x25, 110x32, 110x40, 110x50, 110x63, 125x20, 125x25, 125x32, 125x40, 125x50, 125x63, 160x20, 160x25, 160x32, 160x40, 160x50, 160x63, 180x20, 180x25, 180x32, 180x40, 180x50, 180x63, 200x20, 200x25, 200x32, 200x40, 200x50, 200x63, 225x20, 225x25, 225x32, 225x40, 225x50, 225x63, 250x20, 250x25, 250x32, 250x40, 250x50, 250x63, 280x20, 280x25, 280x32, 280x40, 280x50, 280x63, 315x20, 315x25, 315x32, 315x40, 315x50, 315x63, 355x20, 355x25, 355x32, 355x40, 355x50, 355x63 400-450x63.	
MultiSeal Tapping Tees U/P	40x20, 40x25, 40x32, 50x20, 50x25, 50x32, 63x20, 63x25, 63x32, 63x40, 63x50, 63x63, 75x20, 75x25, 75x32, 75x40, 75x50, 75x63, 90x20, 90x25, 90x32, 90x40, 90x50, 90x63, 110x20, 110x25, 110x32, 110x40, 110x50, 110x63, 125x20, 125x25, 125x32, 125x40, 125x50, 125x63, 160x20, 160x25, 160x32, 160x40, 160x50, 160x63, 180x20, 180x25,	

	180x32, 180x40, 180x50, 180x63, 200x20, 200x25, 200x32, 200x40, 200x50, 200x63, 225x20, 225x25, 225x32, 225x40, 225x50, 225x63.	
Flextee Tapping Tees U/P	40x20, 40x25, 40x32, 50x20, 50x25, 50x32, 63x20, 63x25, 63x32, 75x20, 75x25, 75x32, 90x20, 90x25, 90x32, 110x20, 110x25, 110x32, 125x20, 125x25, 125x32, 160x20, 160x25, 160x32, 180x20, 180x25, 180x32, 200x20, 200x25, 200x32, 225x20, 225x25, 225x32, 250x20, 250x25, 250x32.	
Branch Saddles S/L	250x40, 250x50, 250x63, 280x40, 280x50, 280x63, 315x40, 315x50, 315x63, 355x40, 355x50, 355x63, 400-450x40, 400-450x50, 400-450x63.	
Branch Saddles U/P	40x20, 40x25, 40x32, 63x20, 63x25, 63x32, 63x40, 63x50, 63x63, 75x40, 75x50, 75x63, 90x20, 90x25, 90x32, 90x40, 90x50, 90x63, 90x90, 110x20, 110x25, 110x32, 110x40, 110x50, 110x63, 110x90, 125x20, 125x25, 125x32, 125x40, 125x50, 125x63, 125x90, 160x20, 160x25, 160x32, 160x40, 160x50, 160x63, 160x90, 160x110, 180x20, 180x25, 180x32, 180x40, 180x50, 180x63, 180x90, 180x110, 180x125, 200x20, 200x25, 200x32, 200x40, 200x50, 200x63, 200x90, 225x20, 225x25, 225x32, 225x40, 225x50, 225x63, 225x90, 225x125, 250x90, 250x125, 250x180, 315x110, 315x125, 315x160, 315x180, 315x280, 355x110, 355x125, 355x160, 355x180, 355x280, 400x110, 400x125, 400x160, 400x180, 400x280, 450x180, 450x280, 500x180, 500x280, 630x110, 630x125, 630x160, 630x180.	  

4 SCOPE OF THE APPRAISAL

This Appraisal applies to a range of PN16 Fusamatic PE100 electrofusion fittings in sizes from DN 20 to DN 630 as detailed in Table 1 and included in the ISO Type 5 ApprovalMark Product Certifications included in Appendix B.

5 APPRAISAL CRITERIA

5.1 Quality Assurance Requirements

The WSAA Product Appraisal Technical Advisory Group accepts PE electrofusion fittings 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

The range of Fusamatic PE100 electrofusion fittings has been appraised for compliance with AS/NZS 4129:2020.

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 are also relevant to this application:

- WSA PS 208 *Plastics fittings for Pressure Applications with PE Pipe - Drinking Water, Non-Drinking Water Supply and Sewerage*
- WSA PS 329 *Tapping Saddles, Electrofusion, for Use with Polyethylene (PE) Mains for 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

Fusion Group has submitted the following quality certificates:

- ISO 9001:2015 Certificate of Registration No. FM 597347 issued to Fusion Group Limited by BSI.
- ISO 9001:2015 Certificate of Registration No. CN042071 issued to GH Fusion Corporation Ltd by Bureau Veritas.
- AS/NZS 4129:2020 ISO Type 5 ApprovalMark Product Certification Licence No. AMI 20303 issued to Fusion Group Limited by ApprovalMark International.
- AS/NZS 4129:2020 ISO Type 5 ApprovalMark Product Certification Licence No. AMI 21719 issued to GH Fusion Corporation 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.

Copies of ISO 9001 certificates for suppliers have also been supplied and are retained on file by WSAA.

6.2 Compliance with performance requirements

6.2.1 Materials

Fusion Group has advised that the following PE100 compounds are used for the manufacture of the Fusamatic range of fittings:

- Eltex TUB 121, manufactured by Ineos.
- Borsafe HE3490-IM, manufactured by Borealis.
- Borsafe HE3490-LS, manufactured by Borouge.

- Hostalen CRP 100 Resist CR manufactured by Lyondell Basell.

The above compounds are listed in POP 004 or POP004A as compliant with AS/NZS 4131.

6.2.2 Type testing

AS/NZS 4129 nominates that electrofusion fittings are to be in accordance with ISO 4427-3: *Plastics piping systems for water supply and for drainage and sewerage under pressure - Part 3: Fittings*

Copies of Type Test reports have been submitted to demonstrate compliance with colour, appearance, geometric characteristics, mechanical characteristics and performance requirements. The tests have been completed for products from Fusion Group UK, Ace Plastics, Egypt and GH Fusion Corporation, China. The tests were completed by GH Fusion Corporation Limited Testing Laboratory (CNAS Accreditation No. 4241) and Rise Research Institutes of Sweden (Swedac Accreditation No. 1002).

6.2.3 Effect on water

Fusion Group has submitted copies of test reports undertaken by NSF International Laboratories (UKAS Accreditation No.0626) for each of the compounds listed in Section 6.2.1. The tests undertaken for the UK and China sourced products demonstrates compliance with AS/NZS 4020:2005 whilst the tests undertaken for the Egypt sourced products demonstrates compliance with AS/NZS 4020:2018. Copies of the test reports are held on file by WSAA.

7 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION

WSA 01 *Polyethylene Pipeline Code* is recommended for overall design, installation, pipeline testing and installer training requirements for PE pipeline systems.

Satisfactory completion of a recognised PE pipeline installation training program is a recommended pre-requisite for all PE pipeline installers and supervisors.

The Good Guide to Electrofusion Jointing and *The Good Guide to Large Diameter Electrofusion Jointing* are publications relating to installation and training and are available from Fusion Plast, WSAA or may be downloaded from the following link:

<https://www.fusiongroup.com/en/downloads%20>.

8 PRODUCT MARKING

The Fusamatic range of electrofusion fittings are marked on the fitting or on the product packaging in accordance with the requirements of AS/NZS 4129:2020 as follows:

- Manufacturers Name: Fusion Group and Fusamatic
- Date or batch code:
- Nominal size (DN): e.g., 160mm
- Material grade and type: PE100
- Classification: SDR range 11-21
- Number of the Standard: AS/NZS 4129
- Certification mark: ApprovalMark
- Licence Number: AMI 21719 or AMI 20303

Each product is also labelled with a unique bar code.

9 PACKAGING AND TRANSPORTATION

Fusamatic electrofusion products are individually packaged within 300-gauge transparent bags which are then heat-sealed to eliminate moisture and contamination ingress. The fittings are then boxed, placed onto pallets and secured into place using cardboard support

corners and pallet wrap with a plastic pallet topper sheet to provide extra protection against inclement weather during the loading and unloading process.

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 Fusion Plast's warranty, is included in their terms and conditions of sale.

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

While electrofusion fittings are a mature and widely installed product, the Australian water industry has had varied experience with the performance of these fittings.

Many Water Agencies are cautious about the use of electrofusion fittings due to the lack of confidence in the skill of installers. Due to the history of erratic installation quality, it is imperative that a pre-requisite for all PE pipeline installers includes satisfactory completion of a recognised PE pipeline installation training program. In addition, it is recommended that for PE pipelines where electrofusion fittings are used, an attentive site supervision regime be adopted using qualified, experienced supervisors until the individual installer or contractor can demonstrate competence in all aspects of installation.

Notwithstanding the quality of installation concerns, it is considered that nothing new can be learned from a field installation trial.

12 DISCUSSION

Electrofusion jointing of PE pipelines offers a permanently sealed and jointed system provided the electrofusion process is carried out correctly. The electrofusion jointed PE pipeline has the potential to have life expectancy equal to and in some cases well beyond other pipeline materials and jointing systems. The PE material is corrosion resistant and correctly made joints are permanently fused to provide a high level of joint integrity against leakage and/or infiltration over the long-term. Similar to other plastic pipe systems, PE is susceptible to fatigue from cyclic pressure changes and additional design considerations must be made if used in a pumped pipeline. Refer to WSAA Technical Note TN4 and design material available from Fusion Plast for further information.

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. Further advice is available from Vinidex regarding such installations.

13 OUTCOMES OF EXPERT PANEL PRODUCT REVIEW

No issues have been raised.

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, 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

Selected extracts from available literature are provided below. Complete copies may be downloaded from the following link: <https://www.fusiongroup.com/en/downloads%20>



**GLOBAL PE PRODUCT OFFER
AND GROSS PRICE LIST 2022
FOR GAS, WATER, MINING
AND IRRIGATION APPLICATIONS**



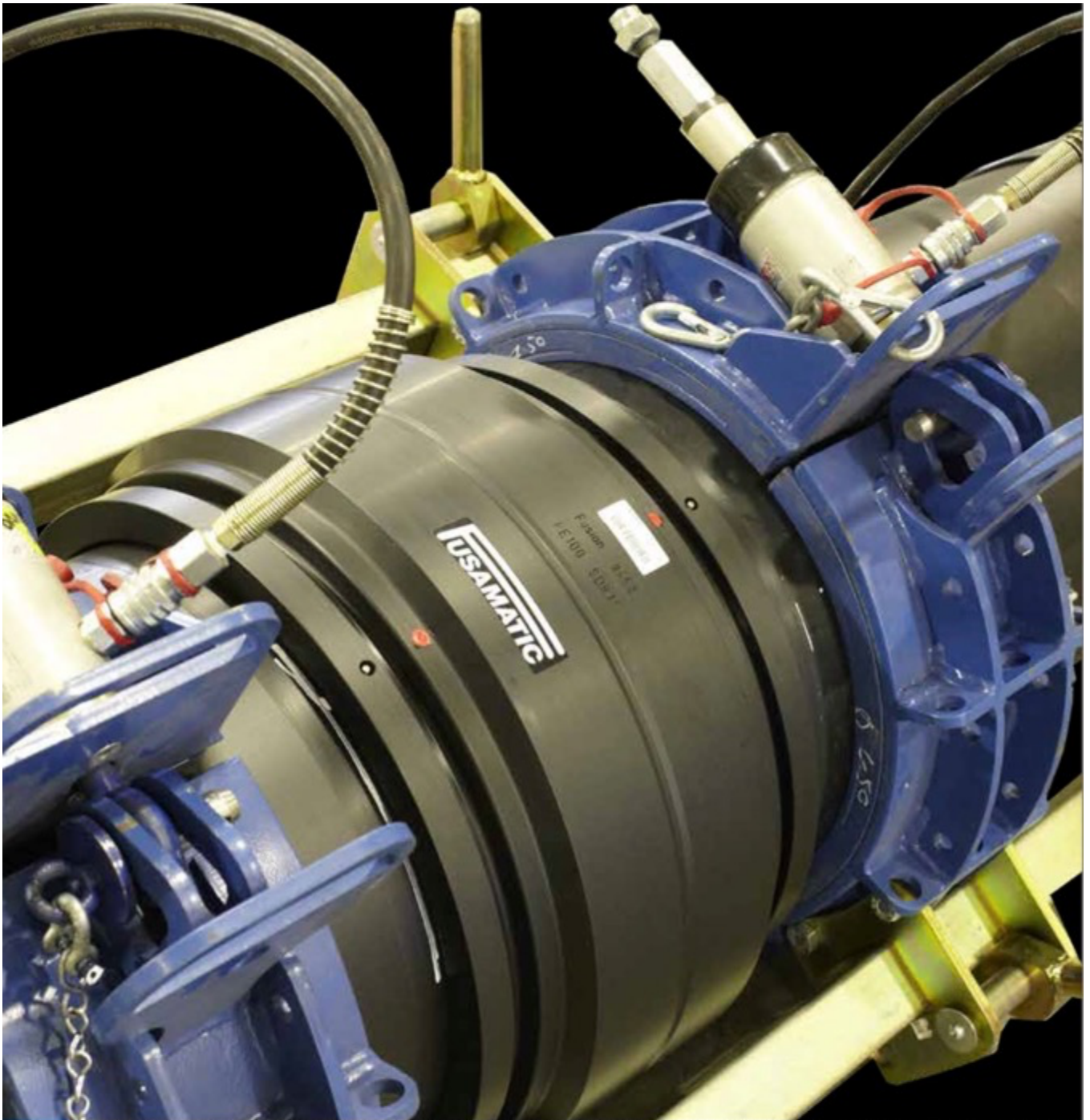
FUSAMATIC™ ELECTROFUSION FITTINGS





THE GOOD GUIDE TO ELECTROFUSION JOINTING





**THE GOOD GUIDE TO
LARGE DIAMETER
ELECTROFUSION JOINTING**



APPENDIX B - QUALITY CERTIFICATIONS

Copies of the following Quality Certificates are available from WSAA.

**TABLE B1
FUSION GROUP LIMITED – MANAGEMENT SYSTEMS**

Smleckley Wood Close Chesterfield UK. A2 3/5/15 Industrial Zone 10 th Ramadan Egypt	
Quality Systems Standard	ISO 9001:2015
Certification Licence No.	FM 597347
Certifying Agency	BSI
First Date of Certification	16 April 2013
Current Date of Certification	6 November 2020
Expiry Date of Certification	5 November 2023

**TABLE B2
GH FUSION CORPORATION LIMITED – MANAGEMENT SYSTEMS**

6 Zhiye Road Zhongshan Guangdong China	
Quality Systems Standard	ISO 9001:2015
Certification Licence No.	CN042071
Certifying Agency	Burea Veritas
First Date of Certification	26 November 2019
Current Date of Certification	19 October 2022
Expiry Date of Certification	25 November 2025

**TABLE B3
FUSION GROUP LIMITED – PRODUCT CERTIFICATION**

Smleckley Wood Close Chesterfield Derbyshire UK	
Product Standard/Spec.	AS/NZS 4129:2020
Certificate No.	AMI 20303
Issuing Certification Body	ApprovalMark International
First Date of Certification	10 January 2013
Current Date of Certification	16 June 2023
Expiry Date of Certification	10 January 2027

TABLE B4
GH FUSION CORPORATION LIMITED – PRODUCT CERTIFICATION

6 Zhiye Road Zhongshan Guangdong China

Product Standard/Spec.	AS/NZS 4129:2020
Certificate No.	AMI 21719
Issuing Certification Body	ApprovalMark International
First Date of Certification	10 January 2013
Current Date of Certification	3 June 2021
Expiry Date of Certification	5 January 2024



Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2015

This is to certify that:

Fusion Group Limited
Smeckley Wood Close
Chesterfield Trading Estate
Chesterfield
S41 9PZ
United Kingdom

Holds Certificate Number:

FM 597347

and operates a Quality Management System which complies with the requirements of ISO 9001:2015 for the following scope:

The design and manufacture of polyethylene electro fusion and spigotted fittings and fabrications for the use in the gas, water, sewerage, petroleum and industrial markets. This registration includes a system to provide lot traceability to raw materials/components. The storage and distribution of multi utility material and associated supply chain management.

For and on behalf of BSI:

Andrew Launn, EMEA Systems Certification Director

Original Registration Date: 2013-04-16

Latest Revision Date: 2020-08-13

Effective Date: 2020-11-06

Expiry Date: 2023-11-05



Page: 1 of 2

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Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies

Certificate No: FM 597347

Location	Registered Activities
Fusion Group Limited Smeckley Wood Close Chesterfield Trading Estate Chesterfield S41 9PZ United Kingdom	Group functions including Compliance, Central Services and Test Laboratory.
Fusion Plastics Limited Fusion House Smeckley Wood Close Chesterfield Trading Estate Chesterfield S41 9PZ United Kingdom	The design and manufacture of polyethylene electro fusion and spigotted fittings and fabrications for the use in the gas, water, sewerage, petroleum and industrial markets. This registration includes a system to provide lot traceability to raw materials/components. The storage and distribution of multi utility material and associated supply chain management.
ACE Plastics A2 3/5/15 Industrial Zone 10th Ramadan Egypt	The manufacture of polyethylene electro fusion and spigotted fittings and fabrications for the use in the gas, water, sewerage, petroleum and industrial markets. This registration includes a system to provide lot traceability to raw materials/components. The storage and distribution of multi utility material and associated supply chain management.

Original Registration Date: 2013-04-16
Latest Revision Date: 2020-08-13

Effective Date: 2020-11-06
Expiry Date: 2023-11-05

Page: 2 of 2

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BUREAU VERITAS

Bureau Veritas Certification

GH-Fusion Corporation Limited

Room 102 of 1/F, Room 202 of 2/F, Room 302 of 3/F and 4/F, No.6 Zhiye Road, Zhongshan Torch Hi-Tech Industry Development Zone, Guangdong Province, China

Unified social credit code:91442000726527389L

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

The design, development and manufacture of polyethylene (PE) fittings for the use in the gas, water, sewerage and industrial markets, and also provides lot traceability to raw materials/components.

Original Cycle Start Date:	26-11-2019
Expiry date of previous cycle:	NA
Certification / Recertification Audit date:	NA
Certification/Recertification Cycle Start Date:	19-10-2022
Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on:	25-11-2025

Certificate No.: CN042071 Version: 1 Issue Date: 19-10-2022



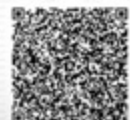
0008

Certification Body Address: 5th Floor, 66 Prescott Street, London, E1 8HG, United Kingdom

Local Office: Rm. 1603, Heye Plaza, No. 486 Kangwang Zhong Road, Liwan District, Guangzhou, China. 510140.

Further clarifications regarding the scope and validity of this certificate, and the applicability of the management system requirements, please call: +86 20 83073822

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).



Product schedules for the ApprovalMark licences may be obtained from Fusion Plast or WSAA.



CERTIFICATE OF CONFORMITY



ApprovalMark International hereby grants:

Fusion Group Limited

Smeckley Wood Close, Chesterfield
Derbyshire
United Kingdom

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 20303

Issued: 16th June 2023

Original Issue: 10th January 2013

Expires: 10th January 2027

John PRASAD

Director

ApprovalMark International Pty Ltd
18/33 Holbeche Road, Arndell Park 2148, Australia
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™



CERTIFICATE OF CONFORMITY



ApprovalMark International hereby grants:

GH Fusion Corporation Limited

Zhiye Road, Zhongshan Torch Hi-Tech Industry,
Development Zone, Zhongshan, Guangdong
CHINA

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 21719

Issued: 3rd June 2021

Original Issue: 10th January 2013

Expires: 5th January 2024

John PRASAD

Director

ApprovalMark International Pty Ltd
20/33 Holbeche Road, Arndell Park 2148, Australia
www.approvalmark.com



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ApprovalMark

APPENDIX C - SUPPLIER CONTACTS

FUSION PLAST AUSTRALIA

25 Wentworth Place

Banyo Qld 4014

Phone: 07 3393 5771

Phone: 07 3277 2822

Email: sales@fusionplast.com.au

Website: <https://www.fusionplast.com.au/>

Western Australia

10 Focal Way

Bayswater WA 6053

Phone: 08 9279 7392

Email: saleswa@fusionplast.com.au



Melbourne Office

Wurundjeri Country
Level 8, Suite 8.02
401 Docklands Drive
Docklands VIC 3008

Sydney Office

Gadigal Country
Level 6 75 Elizabeth Street
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email: info@wsaa.asn.au

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