



George Fischer Pty Ltd

PRODUCT APPRAISAL REPORT 1428 Issue 6

Georg Fischer Waga Multi/Joint 3000 Plus Restrained Joint Couplings, End Caps, Bends and PE Adaptors

EN 14525:2022 Ductile iron wide tolerance couplings and flange adaptors for use with pipes of different materials: ductile iron, grey iron, steel, PVC-U, PE, fibre-cement

Issue 1 Published: 12 February 2016

Issue 2 Published: 29 March 2017

Issue 3 Published: 9 April 2021

Issue 4 Published: 7 July 2023

Issue 5 Published: 16 October 2023

Issue 6 Published: 16 May 2024

Document History

The following information indicates the changes made to this document.

Date	Version
22 December 2015	Peer Review
12 February 2016	Issue 1 Publication
15 March 2017	Issue 2 Client Review
29 March 2017	Issue 2 Publication
9 April 2021	Issue 3 Client Review
9 April 2021	Issue 3 Publication
7 July 2023	Issue 4 Client Review
7 July 2023	Issue 4 Publication
11 October 2023	Issue 5 Client Review
16 October 2023	Issue 5 Publication
29 April 2024	Issue 6 Client Review
16 May 2024	Issue 6 Publication

Peer Reviewers

Name/Title	Organisation	Date
Product Appraisal Technical Advisory Group	WSAA	11 February 2016
WSAA Expert Panel	WSAA	11 February 2016
Peter Pittard, WSAA Consultant	WSAA	22 December 2015
Carl Radford, Product Appraisal Manager	WSAA	15 January 2015
Peter Pittard, WSAA Consultant	WSAA	1 March 2017
Carl Radford, Product Appraisal Manager	WSAA	28 March 2017
Peter Pittard, WSAA Consultant	WSAA	27 March 2021
Carl Radford, Product Appraisal Manager	WSAA	9 April 2021
Peter Pittard, WSAA Consultant	WSAA	6 July 2023
Carl Radford, Product Appraisal Manager	WSAA	7 July 2023
Peter Pittard, WSAA Consultant	WSAA	10 October 2023
Carl Radford, Product Appraisal Manager	WSAA	16 October 2023
Peter Pittard, WSAA Consultant	WSAA	24 April 2024
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Overview of WSAA

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

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

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

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

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

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

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1 EXECUTIVE SUMMARY

Georg Fischer Ltd, founded in 1802, is headquartered in Schaffhausen, Switzerland and operates in 33 countries with 140 companies including 57 production facilities and approximately 15,000 employees. The corporation comprises three divisions: GF Piping Systems, GF Casting Solutions and GF Machining Solutions.

GF Piping Systems specialises in plastic piping systems and system solutions for the transportation of water chemicals and gases. Its product portfolio encompasses pipes, fittings, valves, automation solutions and jointing technologies and tools.

Georg Fischer Waga NV is a production company of GF Piping Systems based in Epe, The Netherlands.

This appraisal is for a range of GF Waga Multi/Joint 3000 Plus polymeric coated fittings including ductile iron wide tolerance restrained joint couplings, end caps, bends and PE adaptors manufactured to EN 14525:2022 *Ductile iron wide tolerance couplings and flange adaptors for use with pipes of different materials: ductile iron, grey iron, steel, PVC-U, PE, fibre-cement*.

This Issue 6 is to extend the period for completion of the Future Work Item. See Section 6.2.3 and Section 13.

Issue 5 was to include couplings in sizes greater than DN 600 and up to DN 800.

Issue 4 was to include an option for EPDM or NBR gaskets, to amend the supplier's contact details and clarify details of flange adaptors.

The range of fittings includes sizes from DN 50 to DN 300 with PN16 classification and DN 350 to DN 800 with PN10 classification. See Section 4 for complete details of the range.

GF offer couplings larger than DN 800 however they are not included in EN 14525 and are therefore not included within the scope of this Appraisal.

GF literature and product certification also includes fittings with flanges, including flange adaptors; however, the flange thicknesses do not comply with AS/NZS 4087 and are therefore not included in the scope of this Appraisal. See Section 6.2.6 for further details.

The patented GF Waga socket is a restrained joint intended for coupling various pipe materials including DI, AC, CI, PE, PVC¹ and steel with a wide range of outside diameters. The design of the socket consists of a segmented engineering thermoplastic (POM) ring combined with a thin elastomeric gasket, embedded with grade 316 metal grippers, Uni/Fiksers. Sealing is accomplished by tightening a number of Grade 316 stainless steel fasteners to engage a ductile iron clamp ring onto the socket. The maximum angular deflection of the joint is 8°.

When using the fittings on PE pipes a GF supplied stainless-steel stiffener must be inserted into the end of the pipe prior to installation of the fitting.

Polymeric coatings are applied in accordance with EN 14901 and GSK specification RAL-GZ 662 however it should be noted that there are differences in requirements between the GSK specification and AS/NZS 4158. See Section 6.2.6.

Both George Fisher Pty Ltd (Australia) and Georg Fischer Waga N.V (The Netherlands) have ISO 9001:2015 Quality Management System Licences.

¹ *WSAA does not recommend the use of gripping mechanisms on PVC or GRP pipes, due to the known propensity of failure at points of induced scratches or scores in the pipe wall. Accordingly, the use of Multi/Joint 3000 Plus products on PVC or GRP pipes is not endorsed in this Appraisal.

The range of Multi/Joint 3000 Plus fittings has ISO Type 5 product certification to EN 14525:2022 *Ductile iron wide tolerance couplings and flange adaptors for use with pipes of different materials: ductile iron, grey iron, steel, PVC-U, PE, fibre-cement*.

This Appraisal has determined that the Waga Multi/Joint 3000 Plus fittings, as detailed in this report, meet the requirements of WSA PS 271 *Ductile Iron Wide Tolerance Mechanical Couplings and Flange Adapters, End Thrust Restraint, for Pressure Applications – Drinking Water, Non-Drinking Water Supply and Sewerage* (except that polymeric coatings do not fully comply with AS/NZS 4158 and additional test requirements included in the 2022 revision have not been fully completed at the time of publication of this report- see Section 6.2.3 and 13) and are considered as 'fit for purpose' for use with DI, AC, PE and steel pipes.

1.1 Recommendations

It is recommended that WSAA members and associates consider acceptance/authorisation of GF Waga Multi/Joint 3000 Plus fittings, as detailed in this report, that are relevant to their pressure pipelines in water supply and sewer networks provided pipeline design, installation, acceptance testing and commissioning are in accordance with WSAA Codes and the manufacturer's requirements, where specified.

2 THE APPLICANT

The Applicant is George Fischer Pty Ltd.

2.1 The Supplier

George Fischer Pty Ltd is the Australian sales arm of GF Piping Systems, operating from premises at 100 Belmore Road North, Riverwood, NSW, with sales offices located in Queensland, Victoria and Western Australia.

The Multi/Joint 3000 Plus range of fittings is distributed exclusively in Australia by Reece Australia Pty Ltd through Reece Civil.

2.2 The Manufacturer

Georg Fischer Ltd, founded in 1802, is headquartered in Switzerland and operates in 31 countries with 126 companies, 47 of them production facilities, and approximately 14,100 employees. The corporation comprises three divisions: GF Piping Systems, GF Automotive, and GF Machining Solutions.

GF Piping Systems is a leading supplier of piping systems made of plastics and metal. This division focuses on system solutions and high-quality components for the transport of water and gas for industry, utilities, and building technology. Its product line includes fittings, valves, pipes, automation and jointing technology covering all water cycle applications.

Georg Fischer Waga NV, an operating company of GF Piping Systems, was established in 1957 in Epe, The Netherlands. The company, with a staff of around 30, develops, manufactures and markets jointing technologies for piping systems in gas and water supply. The products include couplings, flange and compression joints as well as adaptor systems for distribution pipelines and house connections. GF Waga supplies jointing solutions for new installations, extensions, maintenance and repair for gas and water networks worldwide. With more than 60,000 products the company services water and gas utilities, water treatment, building technology, energy, marine, chemical process industry, microelectronics and food & beverage cooling.

2.3 The Component Suppliers

WSAA has been supplied with the identity of component suppliers and have sighted their ISO 9001 certifications, however GF has requested that the identity of the suppliers be treated as "commercial in confidence".

3 THE PRODUCT

This appraisal applies to the range of GF Waga Multi/Joint 3000 Plus ductile iron wide tolerance restrained joint couplings, end caps, bends and PE adaptors. Details are provided in Section 4.

The GF Waga product range of polymeric coated Multi/Joint 3000 Plus fittings are manufactured to comply with EN 14525:2022 *Ductile iron wide tolerance couplings and flange adaptors for use with pipes of different materials: ductile iron, grey iron, steel, PVC-U, PE, fibre-cement*.

The range submitted is for sizes from DN 50 to DN 300 with PN16 classification and DN 350 to DN 800 with PN10 classification. GF offer couplings larger than DN 800 however they are not included in EN 14525 and are therefore not included within the scope of this Appraisal.

EPDM or NBR gaskets are available. The product codes for EPDM gaskets and Grade 316 stainless steel fasteners are provided in Tables 1 to 5. Product codes for NBR gaskets with Grade 316 stainless steel fasteners are available from GF.

The patented GF Waga socket is a restrained joint intended for coupling various pipe materials including DI, AC, CI, PE, PVC* and steel with a wide range of outside diameters. The design of the socket consists of a segmented engineering thermoplastic (POM) ring combined with a thin elastomeric gasket, embedded with grade 316 metal grippers, Uni/Fiksers. Sealing is accomplished by tightening a number of Grade 316 stainless steel fasteners to engage the ductile iron clamp ring onto the socket. The maximum joint deflection is 8°.

*WSAA does not recommend the use of gripping mechanisms on PVC or GRP pipes, due to the known propensity of failure at points of induced scratches or scores in the pipe wall. Accordingly, the use of Multi/Joint 3000 Plus products on PVC or GRP pipes is not endorsed in this Appraisal.

When utilising the fittings on PE pipe a GF supplied stainless-steel stiffener must be inserted into the end of the pipe prior to installation of the fitting.

Akzo Nobel Resicoat R4 is the polymeric coating applied to the fittings using the fluidised bed method.

The coatings are applied in accordance with EN 14901 and GSK specification RAL-GZ 662. It should be noted however that there are differences in requirements between the GSK specification and AS/NZS 4158:2003 *Thermal-bonded polymeric coatings on valves for water industry purposes*. These differences are discussed in Section 6.2.6.

EPDM or NBR elastomeric seals comply with EN 681.1.

4 SCOPE OF THE APPRAISAL

The scope of this appraisal includes the range of GF Waga Multi/Joint 3000 Plus polymeric coated ductile iron wide tolerance restrained joint couplings, end caps, bends and PE adaptors included in the Product Certification Licence included in Appendix B and summarised below in Tables 1 to 5.

GF literature and product certification also includes fittings with flanges, including flange adaptors; however, the flange thicknesses do not comply with AS/NZS 4087 and are therefore not included in the scope of this Appraisal. See Section 6.2.6 for further details.



FIGURE 1 GF WAGA MULTI/JOINT 3007 PLUS RESTRAINT COUPLINGS

TABLE 1
MULTI/JOINT 3007 PLUS RESTRAINT COUPLINGS

Product Code EPDM/A4	DN	Reach
709 305 310	50	46-71
709 305 312	65	63-90
709 305 314	80	84-105
709 305 316	100	104-132
709 305 318	125	132-155
709 305 320	150	154-192
709 305 324	200	192-232
709 305 326	225	230-268
709 305 328	250	267-310
709 305 332	300	315-356
709 305 336	350	352-393
709 305 340	400	392-433
709 301 342	425	432-464
709 305 372	450	450-482
709 301 373	475	481-513
709 305 374	500	500-532
709 305 376	550	548-580
709 305 378	600	605-637
709 305 680	625	630-662
709 305 681	675	665-697

709 305 682	700	709-741
709 305 685	750	745-777
709 305 683	800	799-831
709 305 684	825	837-869



FIGURE 2 MULTI/JOINT 3107 PLUS RESTRAINT REDUCER COUPLINGS

TABLE 2
MULTI/JOINT 3107 PLUS RESTRAINT REDUCER COUPLINGS

Product Code EPDM/A4	DN	Reach 1	Reach 2
709 405 318	50-65	46-71	63-90
709 405 320	65-80	63-90	84-105
709 405 324	80-100	84-105	104-132
709 405 332	100-125	104-132	132-155
709 405 336	100-150	104-132	154-192
709 405 338	125-150	132-155	154-192
709 405 348	150-200	154-192	192-232
709 405 378	200-225	192-232	230-268
709 405 381	200-250	192-232	267-310
709 405 382	225-250	230-268	267-310
709 405 386	250-300	267-310	315-356
709 405 388	300-350	315-356	352-393
709 405 389	300-400	315-356	392-433
709 405 390	350-400	352-393	392-433
709 405 393	400-425	392-433	432-464

709 405 392	400-450	392-433	450-482
709 405 395	425-475	432-464	481-513
709 405 394	450-500	450-482	500-532
709 405 396	500-550	500-532	548-580
709 405 397	550-600	548-580	605-637
709 405 698	600-625	605-637	630-662
709 405 699	600-675	605-637	665-697
709 405 700	600-700	605-637	709-741
709 405 691	750-800	745-777	799-831



FIGURE 3 MULTI/JOINT 3207 PLUS RESTRAINT END CAPS

TABLE 3

MULTI/JOINT 3207 PLUS RESTRAINT END CAPS

Product Code EPDM/A4	DN	Reach	Available BSP Tapping
709 375 310	50	46-71	3/4, 1, 1 1/4, 1 1/2, 2"
709 375 312	65	63-90	3/4, 1, 1 1/4, 1 1/2, 2"
709 375 314	80	84-105	3/4, 1, 1 1/4, 1 1/2, 2"
709 375 316	100	104-132	3/4, 1, 1 1/4, 1 1/2, 2"
709 375 318	125	132-155	3/4, 1, 1 1/4, 1 1/2, 2"
709 375 320	150	154-192	3/4, 1, 1 1/4, 1 1/2, 2"
709 375 324	200	192-232	3/4, 1, 1 1/4, 1 1/2, 2"
709 375 326	225	230-268	3/4, 1, 1 1/4, 1 1/2, 2"
709 375 328	250	267-310	3/4, 1, 1 1/4, 1 1/2, 2"
709 375 332	300	315-356	3/4, 1, 1 1/4, 1 1/2, 2"
709 375 334	400	392-433	3/4, 1, 1 1/4, 1 1/2, 2"



FIGURE 4 MULTI/JOINT 3407 PLUS RESTRAINT 90° BENDS

**TABLE 4
MULTI/JOINT 3407 PLUS RESTRAINT 90° BENDS**

Product Code EPDM/A4	DN	Reach
709 475 314	80	84-105
709 475 316	100	104-132
709 475 320	150	154-192



FIGURE 5 MULTI/JOINT 3067 PLUS RESTRAINT PE ADAPTORS

**TABLE 5
MULTI/JOINT 3067 PLUS RESTRAINT PE ADAPTORS**

Product Code EPDM/A4	DN	Reach	PE Outlet OD
709 365 311	65	63-90	63
709 365 312	65	63-90	75
709 365 314	80	84-105	90

709 365 315	80	84-105	110
709 465 316	100	104-132	90
709 365 316	100	104-132	110
709 465 317	100	104-132	125
709 465 318	125	132-155	110
709 365 318	125	132-155	125
709 465 319	125	132-155	140
709 465 321	125	132-155	160
709 365 320	150	154-192	160
709 465 320	150	154-192	180
709 365 324	200	192-232	200
709 465 324	200	192-232	225
709 365 328	250	267-310	250
709 465 328	250	267-310	280
709 365 332	300	315-356	315

5 APPRAISAL CRITERIA

5.1 Quality Assurance Requirements

The WSAA Product Appraisal Technical Advisory Group accepts ductile iron thrust restrained joint mechanical couplings and flanged adaptors manufactured in compliance with EN 14525:2022 *Ductile iron wide tolerance couplings and flange adaptors for use with pipes of different materials: ductile iron, grey iron, Steel, PVC-U, PE, fibre-cement* 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

GF Waga Multi/Joint 3000 Plus wide tolerance restrained joint couplings, end caps, bends and PE adaptors have been appraised for compliance to EN 14525:2022 *Ductile iron wide tolerance couplings and flange adaptors for use with pipes of different materials: ductile iron, grey iron, steel, PVC-U, PE, fibre-cement*.

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 271 *Ductile Iron Wide Tolerance Mechanical Couplings and Flange Adapters, End Thrust Restraint, 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

GF has submitted the following quality certificates:

- ISO 9001:2015 Certificate of Registration No. AMI 101036 issued to George Fischer Pty Ltd by ApprovalMark International.
- ISO 9001:2015 Certificate of Registration No. 10240385 issued to Georg Fischer Waga NV by Lloyd's Register
- EN 14525:2022 ISO Type 5 product certification Licence No. K80741/04 issued to Georg Fischer Waga NV by Kiwa Nederland BV
- Award Certificate and RAL-GZ 662 Quality Mark for coating procedure for application of heavy-duty corrosion protection for valves and fittings issued to Georg Fischer Waga NV by The Quality Association for Heavy Duty Corrosion Protection of Valves and Fittings with Powder Coating (GSK).

Copies of certificates are included in Appendix B and are also available from WSAA.

6.2 Compliance with Performance Requirements

6.2.1 Ductile Iron

EN 14525 Clause 4.3.1 specifies that DI shall be minimum tensile strength of 420MPa and a minimum elongation of 5%.

The KIWA product certification examination report confirms compliance.

6.2.2 Wall thickness

The minimum wall thicknesses specified in EN 14525 is 4mm for fittings less than or equal to DN 200, 5mm for fittings greater than DN 200 and less than or equal to DN 300, 6mm for fittings greater than DN 300 and less than or equal to DN 600 and 7mm for fittings greater than DN 600 and less than or equal to DN 800.

The KIWA product certification examination report confirms compliance.

6.2.3 Socket joint

The patented GF Waga socket is a restrained joint intended for coupling various pipe materials including DI, AC, CI, PE, PVC² and steel with a wide range of outside diameters. The design of the socket consists of a segmented engineering thermoplastic (POM) ring combined with a thin elastomeric gasket, embedded with grade 316 metal grippers, Uni/Fiksers. Sealing is accomplished by tightening a number of Grade 316 stainless steel fasteners to engage the ductile iron clamp ring onto the socket. The maximum joint deflection is $\pm 8^\circ$.

When utilising the fittings on PE pipes, a stainless-steel stiffener, supplied by GF, must be inserted into the end of the pipe prior to installation of the fitting.

² WSAA does not recommend the use of gripping mechanisms on PVC or GRP pipes, due to the known propensity of failure at points of induced scratches or scores in the pipe wall. Accordingly, the use of Multi/Joint 3000 Plus products on PVC or GRP pipes is not endorsed in this Appraisal.

EN 14525 nominates that where the joint design is based on the same design parameters performance type testing carried out on at least one joint in the size ranges DN32 to DN 125, DN 150 to DN 300, DN 350 to DN 600 and DN 710 to DN 800 will qualify all sizes in the nominated range.

The KIWA product certification examination report provides confirmation of satisfactory joint performance type testing for DN100, DN200, DN 400 and DN 800 to EN 14525:2005.

The tests nominate positive pressure tests, negative pressure tests and dynamic pressure tests with 24,000 cycles. The test parameters include testing without external restraint at maximum annulus and are conducted with and without joint deflection. A shear load is applied to the tests undertaken on rigid pipes.

The 2022 revision of EN 14525 included a long-term hydrostatic strength test and a pull-out test as additional type test requirements for restrained joints for use with PE pipes.

GF has satisfactorily conducted the additional tests for DN 100 and DN 200 couplings.

GF has advised that suitable testing facilities for undertaking additional testing requirements for DN 400 and DN 800 couplings are not available within accredited laboratories.

A Future Work requirement has been included in Section 13.

6.2.4 Elastomeric seals

The elastomeric seals are EPDM or NBR. The KIWA product certification examination report confirms compliance to EN 681.1.

6.2.5 Joint gap, depth of engagement and angular deflection

GF has advised that the maximum allowable joint deflection is 8° which exceeds the minimum joint deflection requirements of 3° nominated in EN 14525.

EN 14525 nominates that the maximum allowable joint gap shall not be not less than the values given in Table 6. GF has declared that the values for each size coupling exceed EN 14525 requirements. The minimum and maximum depth of engagement for the Multi/Joint 3000 Plus coupling joints are nominated in Table 7.

TABLE 6
EN 14525 MAXIMUM JOINT GAP

DN	Maximum Joint Gap, mm
	Coupling
≤ 100	20
> 100 ≤ 200	25
> 200 ≤ 300	35
> 300 ≤ 400	55
> 400 ≤ 600	70
>600 ≤ 800	80

TABLE 7
MULTI/JOINT 3000 MINIMUM AND MAXIMUM DEPTH OF ENGAGEMENT

DN	Minimum Depth of Engagement, mm	Maximum Depth of Engagement mm
50	84	95
65 - 80	84	100

100	90	105
125	90	115
150	110	130
200	110	145
225	125	170
250	130	180
300 - 350	130	185
400	135	190
425 - 550	160	225
600	170	235
625 - 825	210	320

6.2.6 Flanged adaptors

GF offers a range of Waga Multi/Joint 3000 flanged adaptors with flanges complying with the physical dimensions of EN 1092.2 PN16 and drilled to match AS/NZS 4087 Fig B5 PN16 or AS 2129 Table D configurations.

EN 1092.2 flanges have minor differences in outside diameter and raised face diameter compared to the AS/NZS flanges, however these differences do not prevent compatibility.

However, the thickness of the flanges incorporated on the fittings, as detailed in Table 8, do not comply with AS/NZS 4087 or EN 1092.2. The range of flanged adaptors have therefore not been included within the Scope of this Appraisal.

TABLE 8 FLANGE THICKNESSES

DN	Minimum Flange Thickness		Nominal Thickness	Nominal Thickness
	AS/NZS 4087 Fig B5 PN16	EN 1092-2 Table 9 PN16		GF Flanged Adaptors PN16
50	19 (AS 2129 T/D)	16	19	13
80	18	16	19	13
100	20	16	19	13
150	23	16	19	13
200	23	17	20	15
225	24	-	-	-
250	24	19	22	15
300	30	21.5	24.5	17
	AS/NZS 4087 Fig B5 PN16	EN 1092-2 Table 9 PN10		GF Flanged Adaptors PN10
350	33	21.5	24.5	18
375	33	-	-	-
400	33	21.5	24.5	19
450	33	22.5	25.5	19

500	35	23.5	26.5	21
600	42	27	30	24

6.2.7 Polymeric coatings

Georg Fischer Multi/Joint 3000 Plus fittings are coated with Akzo Nobel, Resicoat R4 FB HGC07R, a thermosetting epoxy powder coating, applied by the fluidised bed process.

Resicoat R4 has an AS/NZS 4158 ISO Type 5 StandardsMark licence issued by SAI-Global. A copy of the certificate is maintained on file by WSAA.

Polymeric coatings are applied in accordance with EN 14901 and GSK specification RAL-GZ 662/2. An Award Certificate issued by The Quality Association for Heavy Duty Corrosion Protection of Valves and Fittings with Powder Coating (GSK) has been submitted to demonstrate application compliance.

It should be noted that AS/NZS 4158 specifies minimum coating thicknesses for thermoset materials as 350µm for internal surfaces and 300µm for external surfaces, whilst the EN 14901 and GSK specification RAL-GZ 662 requirements are for minimum 250µm for all surfaces.

A copy of GSK specification RAL-GZ 662 is available from WSAA.

There are also differences in test procedures for adhesion and continuity, which are not directly comparable.

Members should be aware that the products appraised in this report have been coated in compliance with European specifications that allows thinner coatings. Whilst this appraisal considers that the product is fit for purpose, life expectancy may need to be taken into account to reflect thinner coatings.

6.2.8 Contact with drinking water

WSAA specification WSA PS 271 requires compliance to AS/NZS 4020. GF has provided copies of Type Test reports issued by Australian Water Quality Centre (NATA Accreditation No.1115) for AS/NZS 4020:2018 compliance as follows:

- Report No 346534 dated 21 June 2022 for DN 50 Multi/Joint Coupling with EPDM seal
- Report No 263585 dated 6 June 2023 for NBR 404-70 Multi/Joint Gasket

7 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION

Georg Fischer maintains an extensive library of literature, covering all aspects of the products submitted for this appraisal, including installation instructions. The literature can be referenced at <https://www.gfps.com/au/en-au/products-solutions/systems/multi-joint.html>

On-site training is also available by arrangement.

8 PRODUCT MARKING

Marking requirements, as specified in EN14525, are as follows:

- Manufacturer's name or mark
- Year of manufacture
- Identification of Ductile Iron
- DN

- e) PN
- f) Reference to EN14525
- g) Range of applicable OD's

In addition, the following information is required to accompany the product:

- Maximum joint gap
- Minimum depth of engagement
- Maximum allowable angular deflection
- Pipe materials compatibility
- Need for supporting sleeves
- Bolt torque
- Jointing instructions



FIGURE 6 METHOD OF MARKING

9 PACKAGING AND TRANSPORTATION

All Multi/Joint 3000 Plus fittings are provided with a plastic cover to prevent in-transit damage and also to avoid ingress of foreign matter to the joint. Fittings less than DN 80 are packaged with one item to a cardboard box whilst larger size fittings are stacked into pallet boxes.



FIGURE 7 PACKING DETAILS

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 George Fischer's warranty is included in their terms and conditions of sale.

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

The products have obtained wide approval within Europe. In Australia, approvals from water agencies include City West Water, South East Water, SA Water and Water Corporation (WA).

12 OUTCOMES OF EXPERT PANEL PRODUCT REVIEW

No issues have been raised.

13 FUTURE WORKS

Sourcing suitable equipment to undertake the additional testing for DN 400 and DN 800 sizes is proving to be a challenge. The requirement has therefore been extended.

Additional tests included in EN 14525:2022 i.e., long-term hydrostatic strength test and pull-out test are to be completed for DN 400 and DN 800 couplings by 1st September 2024.

14 DISCLAIMERS

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.

14.1 Issue of Report

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

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

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.

14.2 Limits on Reliance on Information and Recommendations

14.2.1 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.

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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.

14.2.3 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.

14.3 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.

14.4 No Warranty

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

APPENDIX A – PRODUCT LITERATURE

A comprehensive range of literature can be referenced at <https://www.gfps.com/au/en-au/products-solutions/systems/multi-joint.html>



Georg Fischer Waga N.V.



The connection for all pipe diameters
Restraint - non restraint
DN50 - DN400

MULTI/JOINT®

3000 Plus



Georg Fischer Waga N.V.



A BIG welcome

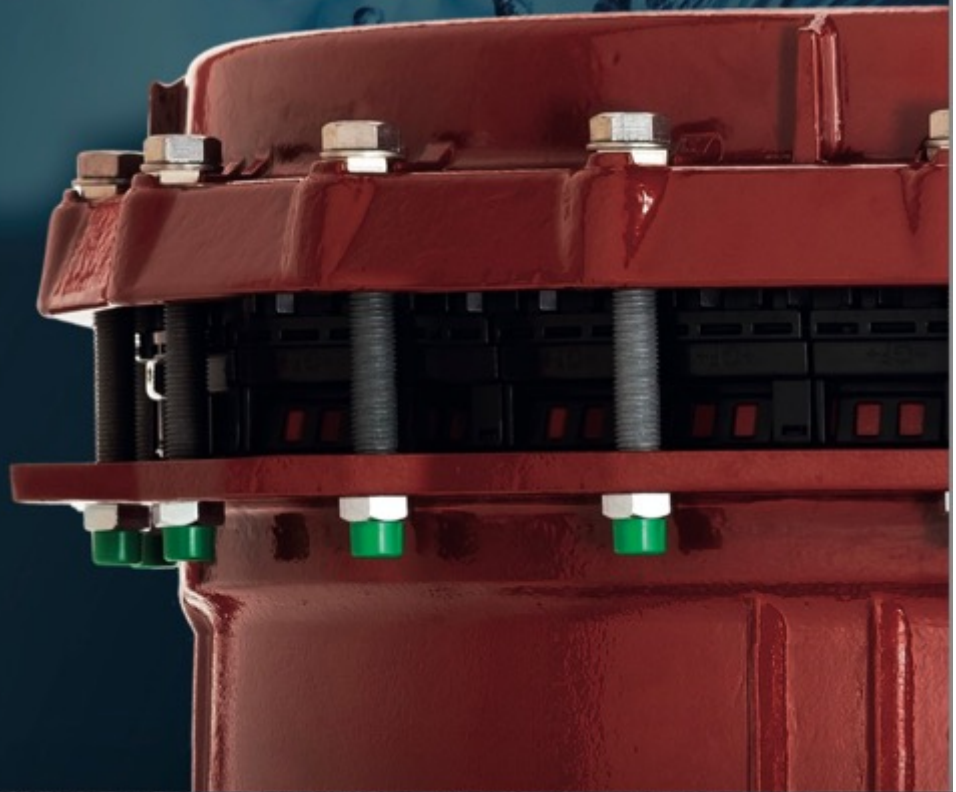
MULTI/JOINT® 3000 Plus DN425 - DN600



+GF+

Product catalogue

MULTI/JOINT® 3000 Plus DN625 - DN825



MULTI/JOINT® The original!

Perfection in every detail MULTI/JOINT® 3000 Plus



kiwa

WRAS
APPROVED
PRODUCT



Uni/Fiks ring

Varioseal:
rubber gasket
(EPDM or NBR)

Body:
ductile cast iron
GGG45 EN-GJS-450-10
with Resicoat® epoxy
powder coating
type RT 9000 R4

Nuts:
stainless steel A2 (AISI 304)
galvanised and passivated
or stainless steel A4 (AISI 316)
galvanised and passivated

Bolts:
stainless steel A2 (AISI 304)
Lubo coated or stainless steel
A4 (AISI 316) Lubo coated

Clamp ring:
ductile cast iron GGG45 EN-GJS-450-10
with Resicoat® epoxy powder coating
type RT 9000 R4

Uni/Fikser:
stainless steel A4 (AISI 316)

Hygiene protection:
Ensures the fitting stays
clean from production
to point of use

[cap in the
picture:
DN50 -
DN400]

Washer:
stainless steel A2 (AISI 304)
or stainless steel A4 (AISI 316)



MULTI/JOINT® 3000 Plus, the original



APPENDIX B - QUALITY CERTIFICATIONS

Copies of the following Quality Certification Certificates are available from WSAA.

TABLE B1
GEORGE FISCHER PTY LTD-MANAGEMENT SYSTEMS

Unit 1, 100 Belmore Road Nth, Riverwood, NSW	
Quality Systems Standard	ISO 9001:2015
Certification Licence No.	AMI-QM 101036
Certifying Agency	ApprovalMark International Pty Ltd
First Date of Certification	16 September 2012
Current Date of Certification	9 March 2022
Expiry Date of Certification	16 September 2024

TABLE B2
GEORG FISCHER WAGA NV-MANAGEMENT SYSTEMS

Lange Veenteweg 19, 8161 PA Epe, The Netherlands	
Quality Systems Standard	ISO 9001:2015
Certification Licence No.	12 100/104/117 61756/17 TMS
Certifying Agency	TUV SUD
First Date of Certification	1 January 2008
Current Date of Certification	28 May 2021
Expiry Date of Certification	27 May 2024

TABLE B3
GEORG FISCHER WAGA NV-PRODUCT CERTIFICATION

Lange Veenteweg 19, 8161 PA Epe, The Netherlands	
Product Standard/Spec.	EN14525:2022
Certificate No.	K80741/08
Issuing Certification Body	Kiwa Nederland BV
First Date of Certification	15 March 2014
Current Date of Certification	1 May 2023
Expiry Date of Certification	None advised on certificate.

TABLE B4
GEORG FISCHER WAGA NV - AWARD CERTIFICATE - COATING

Lange Veenteweg 19, 8161 PA Epe, The Netherlands	
Product Standard/Spec	RAL-GZ 662/2
Certifying agency	GSK
Current date of certification	3 December 2021
Expiry date of certification	31 December 2024

ISO 9001

**CERTIFICATE OF
REGISTRATION**

**ApprovalMark International** hereby grants:

George Fischer Pty Ltd

SITE 1:
Unit 1, 100 Belmore Road North
Riverwood
NSW, 2210
Australia

SITE 2:
18 Kingsbury Street
Brendale
QLD, 4500
Australia

QUALITY MANAGEMENT SYSTEM
Evaluated to: ISO 9001:2015
This covers the following scope
Site 1 - "Warehousing, distribution and supply of quality piping and fitting systems for gas, water and industrial applications."

Site 2 - "Warehousing, fabrication, distribution and supply of quality piping and fitting systems for gas, water and industrial applications."
Certificate No. AMI-QM 101036

Issued: 9 March 2022 **Originally Certified: 16 September 2012**

Expires: 16 September 2024 **Current Certification: 9 March 2022**


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

COPYRIGHT

CERTIFICAT

CERTIFICADO

CERTИФИКАТ

認證證書

CERTIFICATE

ZERTIFIKAT



Management Service

CERTIFICATE

The Certification Body
of TÜV SÜD Management Service GmbH
certifies that



Georg Fischer WAGA NV
Lange Veenteweg 19
8161 PA EPE
Netherlands

has established and applies a
Quality, Environmental, Occupational Health and Safety Management System
for the following scope of application:

**The development, production and distribution of
(repair) fittings and its accessories for water and gas piping systems.**

Performance of audits (Order No. 707125511)
has furnished proof that the requirements under:

ISO 9001:2015
ISO 14001:2015
ISO 45001:2018

are fulfilled.

The certificate is valid in conjunction
with the main certificate from **2021-05-28** until **2024-05-27**.
Certificate Registration No.: **12 100/104/117 61756/17 TMS**.

Head of Certification Body
Munich, 2021-04-19



Page 1 of 1



CERTIFICATE

Product certificate K80741/08

Issued 2023-05-01

Replaces K80741/07

Page 1 of 3



Ductile iron wide tolerance couplings

STATEMENT BY KIWA

With this product certificate, issued in accordance with the Kiwa Regulations for Certification, Kiwa declares that legitimate confidence exists that the products supplied by

Georg Fischer Waga N.V.

as specified in this product certificate and marked with the Kiwa®-mark in the manner as indicated in this product certificate may, on delivery, be relied upon to comply with Kiwa evaluation guideline

BRL-K775: "Nodular cast iron fittings for pipe systems made of nodular cast iron, grey cast iron, steel, PVC-U, PE or fibre-cement for the transport of drinking water": **dated 2018-12-01**.

As well as to

EN 14525: 2022: "Ductile iron and steel wide tolerance couplings and flange adaptors for use with pipes of different materials: ductile iron, Grey iron, steel, PVC-U, PVC-O, PE, fibre-cement".

Ron Scheepers
Kiwa

Publication of this certificate is allowed.

Advice: consult www.kiwa.nl in order to ensure that this certificate is still valid.

Kiwa Nederland B.V.
Sir Winston Churchilllaan 273
Postbus 70
2280 AB RIJSWIJK
The Netherlands
Tel. +31 88 998 44 00
Fax +31 88 998 44 20
NL.Kiwa.info@Kiwa.com
www.kiwa.nl

Company
Georg Fischer Waga N.V.
Lange Veenteweg 19
8161 PA EPE
Tel. 0578-678378
waga.ps@georgfischer.com
www.waga.nl



Certification process
consists of initial and
regular assessment of:

- quality system
- product

Product certificate

K80741/08

page 2 of 3

Ductile iron wide tolerance wide range couplings

PRODUCT SPECIFICATION

The products mentioned below belong to this product certificate

Model numbers ended "0" are non-restraint (PN16)

Model numbers ended "7" restraint (PN 10 of PN16)

MULTI/JOINT® 3000 and 3007 Plus coupling

MULTI/JOINT® 3050 and 3057 Plus flange adaptor

MULTI/JOINT® 3100 and 3107 Plus reduced coupling

MULTI/JOINT® 3150 and 3517 Plus reduced flange adaptor

MULTI/JOINT® 3200 and 3207 Plus end-cap blind

MULTI/JOINT® 3200 and 3207 Plus end-cap threaded

MULTI/JOINT® 3400 and 3407 Plus end cap, bend

MULTI/JOINT® 3450 and 3457 Plus duckfoot

MULTI/JOINT® 3550 and 3557 Plus reduced duckfoot

MULTI/JOINT® 3060 and 3067 Plus PE adaptor

MULTI/JOINT® 3080 and 3087 Plus spigot-end

MULTI/JOINT® 3180 and 3187 Plus reduced spigot-end

To be applied to pipes of:

- Ductile iron
- Grey iron
- Steel
- Fibre cement

DN 50, PN 16

DN 65, PN 16

DN 80, PN 16

DN 100, PN 16

DN 125, PN 16

DN 150, PN 16

DN 200, PN 16

DN 225, PN 16

DN 250, PN 16

DN 300, PN 16

DN 350, PN 16

DN 400, PN 16

DN 425, PN 10

DN 450, PN 10

DN 475, PN 10

DN 500, PN 10

DN 550, PN 10

DN 600, PN 10

DN 625, PN 10

DN 675, PN 10

DN 700, PN 10

DN 800, PN 10

DN 825, PN 10

To be applied in plastic pipes of:

- PVC
- PE

DN 50, PN 6 and PN 16

DN 65, PN 6 and PN 16

DN 80, PN 6 and PN 16

DN 100, PN 6 and PN 16

DN 125, PN 6 and PN 16

DN 150, PN 6 and PN 16

DN 200, PN 6 and PN 16

Product certificate

K80741/08

page 3 of 3

Ductile iron wide tolerance wide range couplings

DN 225, PN 6 and PN 16
DN 250, PN 6 and PN 16
DN 300, PN 6 and PN 16
DN 350, PN 6 and PN 10
DN 400, PN 6 and PN 10
DN 425, PN 6 and PN 10
DN 450, PN 6 and PN 10
DN 475, PN 6 and PN 10
DN 500, PN 6 and PN 10
DN 550, PN 6 and PN 10
DN 600, PN 6 and PN 10
DN 625, PN 6 and PN 10
DN 675, PN 6 and PN 10
DN 700, PN 6 and PN 10
DN 800, PN 10
DN 825, PN 10

Fitness for contact with drinking water

This product is approved on the basis of the requirements for hygienic aspects set in the "Regeling materialen en chemicaliën drink- and warm tapwatervoorziening" ("Materials and chemicals in the supply of drinking water and warm tap water Regulation" dated 01-07-2017; published in the Government Gazette).

These hygienic aspects are based on two main criteria. The product shall permanently comply with:

- The product recipe approved during the assessment procedure. This recipe is not to be changed without prior approval by Kiwa according to the Kiwa approval procedure for the hygienic aspects;
- Specific product requirements for the hygienic aspects.

The recipe and specific product requirements are laid down in the for confidentiality reasons undisclosed 'appendix hygienic aspects' to this certificate.

MARKING

The Kiwa®-mark products are marked with the word mark "KIWA" 

Place of the mark: on the outside of the coupling

Compulsory specifications:

- Manufacturer's name or mark;
- Identification of the year of manufacture;
- Identification of ductile iron;
- DN and PN rating of flanges when applicable;
- Reference to the standard EN 14525;
- An identification of the minimum maximum outside diameters (range of external diameters over which the products works);
- PFA of the coupling of the flange adaptor

Method of marking:

- Non-erasable;
- visible after assembly.

APPLICATION AND USE

The products are intended to be applied in piping systems for the transport of drinking water with a maximum water pressure of 1.6 MPa and water temperature of 30 °C.

RECOMMENDATIONS FOR CUSTOMERS

Check at the time of delivery whether:

- the supplier has delivered in accordance with the agreement;
- the mark and the marking method are correct;
- the products show no visible defects as a result of transport etc.

If you should reject a product on the basis of the above, please contact:

- Georg Fischer Waga N.V.
- and, if necessary,
- Kiwa Nederland B.V.

Consult the supplier's processing guidelines for the proper storage and transport methods.

**Gütegemeinschaft
Schwerer Korrosionsschutz**

von Armaturen und Formstücken durch Pulverbeschichtung e.V.

**Quality Assurance Association for
Heavy-Duty Corrosion Protection**

of Valves and Fittings with Powder Coating (GSK e.V.)

Mitglied bei/Member of:



RAL GÜTEZEICHEN
SCHWERER KORROSIONSSCHUTZ
VON ARMATUREN UND FORMSTÜCKEN

AWARD CERTIFICATE

Production heavy corrosion protection of valves and fittings

The Quality Association for Heavy Duty Corrosion Protection of Valves and Fittings by Powder Coating e.V. (GSK) awards based on the test report of the externally supervising body presented to the Quality Committee and on the resolution of the Executive Committee of GSK for the coating procedure for the production of heavy corrosion protection for valves and fittings and for the product families mentioned in the appendix to the company:

Georg Fischer Waga N.V.
Lange Veenteweg 19, 8161PA Epe, NETHERLAND

the right to use the quality mark with the performance-related addition RAL-GZ 662/2.

The quality mark is certified by the Institute for Quality Assurance and Certification e.V. (RAL) and protected by registration at the German Patent and Trademark Office as a collective trademark (EU trademark 009300138).



The products, which were manufactured according to the quality and test regulations (GPB) of the GSK, are designated as product families by the enterprise to the association's office and listed in the appendix and on the GSK homepage (www.gsk-online.de). They receive the following marking:



GSK-ID:
(four-digit number assigned by the GSK)

This certificate is valid until 31st December 2024

Schwäbisch Gmünd, the 31st December 2021

L. Walther
Managing Director

Not valid without annex

The product families must be listed in the certificate. The holder of the quality mark informs GSK about the inclusion of new products or changes to existing products in the product approval, and GSK in turn informs the testing institutes. The current list of product families manufactured in GSK quality can be found on the GSK website (www.gsk-online.de).

Gütegemeinschaft Schwerer Korrosionsschutz
von Armaturen und Formstücken durch
Pulverbeschichtung e.V.

Quality Assurance Association for Heavy-Duty
Corrosion Protection of Valves and Fittings
with Powder Coating (GSK e.V.)

Alexander-von-Humboldt-Str. 19
D-73529 Schwäbisch Gmünd

Geschäftsführer/
Managing Director:
RA Lars Walther

GSK: +49 7171 1040-840
Fax: +49 7171 1040-850

Mail: info@gsk-online.de
Web: www.gsk-online.de

Commerzbank
IBAN: DE 51 7604 0061 0516 6855 00
BIC: COBADEFFXXX

Ust.IdNr. DE 262341992
Steuer-Nr. 143/216/51152

**Gütegemeinschaft
Schwerer Korrosionsschutz**

von Armaturen und Formstücken durch Pulverbeschichtung e.V.

**Quality Assurance Association for
Heavy-Duty Corrosion Protection**

of Valves and Fittings with Powder Coating (GSK e.V.)

Mitglied bei/Member of:



RAL GÜTEZEICHEN
SCHWERER KORROSIONSSCHUTZ
VON ARMATUREN UND FORMSTÜCKEN

Annex to the certificate of 31st December 2021

The certificate of the company

Georg Fischer Waga N.V.
Lange Veenteweg 19, 8161PA Epe, NETHERLAND

is valid for the following product families

No.	Product	Nominal size
1	Multi/Joint® 3000 Plus System	DN 50 - DN 825

Gütegemeinschaft Schwerer Korrosionsschutz
von Armaturen und Formstücken durch
Pulverbeschichtung e.V.

Quality Assurance Association for Heavy-Duty
Corrosion Protection of Valves and Fittings
with Powder Coating (GSK e.V.)

Alexander-von-Humboldt-Str. 19
D-73529 Schwäbisch Gmünd

Geschäftsführer/
Managing Director:
RA Lars Walther

GSK: +49 7171 1040 -840
Fax: +49 7171 1040 -850

Mail: info@gsk-online.de
Web: www.gsk-online.de

Commerzbank
IBAN: DE 51 7604 0061 0516 6855 00
BIC: COBADEFFXXX

Ust.IdNr. DE 262341992
Steuer-Nr. 143/216/51152

APPENDIX C - SUPPLIER CONTACTS

George Fischer Pty Ltd

Unit 1,100 Belmore Road North,

Riverwood, NSW

Phone: 1300 130 149 or 02 9502 8000

Email: info.au@georgfischer.com

Website: www.gfps.com/au/en-au.html

Reece Civil Stores:

Website store locator: <https://www.reece.com.au/aboutus/contactus>



Melbourne Office

Wurundjeri Country
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Docklands VIC 3008

Sydney Office

Gadigal Country
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GPO Box 915
Sydney NSW 2001

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