



Certificate of Compliance

This certificate is issued for the following:

Polyethylene Pipe and Fittings

<i>Product Designation</i>	<i>O.D., Pipe Size, mm</i>	<i>Pressure Rating, bar (psi)</i>	<i>Remarks</i>
Electrofusion Fittings, PE100, SDR 11			
+GF+ ELGEF Plus Coupler	450, 500	12 (175)	a, b, c

Remarks:

- a. Dimensions refer to the pipe outside diameter. The pipe fits into the socket or the saddle of the fitting, and when electrical energy is applied to the terminal pins, which are integral part of the fitting, the joint is completed.
- b. The manufacturer's electrofusion welding instructions must be strictly adhered to for a proper joint.
- c. The fittings are manufactured of injection molded PE100.

Prepared for:

Georg Fischer Piping Systems Ltd
Ebnatstrasse 111
Schaffhausen, CH-8201
Switzerland

Manufactured at:

Georg Fischer Wavin AG
Industriestrasse 24
Subingen, CH-4552
Switzerland

FM Approvals Class: 1613

Approval Identification: 0003050462

Approval Granted: February 20, 2015

To verify the availability of the Approved product, please refer to www.approvalguide.com

Said Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

A handwritten signature in dark ink, appearing to read 'Richard B. Dunne', is written over a horizontal line.

Richard B. Dunne
Manager of Fire Protection
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062



Member of the FM Global Group



Certificate of Compliance

This certificate is issued for the following:

High Polyethylene Pipe and Fittings

<i>Product Designation</i>	<i>O.D., Pipe Size, mm</i>	<i>Pressure Rating, bar (psi)</i>	<i>Remarks</i>
Spigot Fittings for Electrofusion, PE100, SDR 11			
+GF+ ELGEF Plus End Cap	450, 500	10 (150)	a, b, c
+GF+ ELGEF Plus Flange Adaptor	450, 500	10 (150)	a, b, c

Remarks:

- a. Spigot fittings only to be used with electrofusion couplers.
- b. The manufacturer's electro-fusion welding instructions must be strictly adhered to for a proper joint.
- c. The fittings are manufactured of injection molded PE100.

Prepared for:

Georg Fischer Piping Systems Ltd
Ebnatstrasse 111
Schaffhausen, CH-8201
Switzerland

Manufactured at:

Simona AG
Gewerbestrasse 1-2
Ringsheim, D77975
Germany

FM Approvals Class: 1613

Approval Identification: 0003050462

Approval Granted: February 20, 2015

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Norwood, MA 02062



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This certificate is issued for the following:

High Polyethylene Pipe and Fittings

<i>Product Designation</i>	<i>O.D., Pipe Size, mm</i>	<i>Pressure Rating, bar (psi)</i>	<i>Remarks</i>
Segmented Fittings for Butt Fusion or Electrofusion, PE100, SDR 9			
Segmented 45° Bend	450, 500	10 (150)	a, b, c
Segmented 90° Bend	450, 500	10 (155)	a, b, c
Segmented Equal Tee	450, 500	10 (150)	a, b, c

Remarks:

- a. Segmented fittings are directly connected to pipes by butt fusion or to pipe or fittings by electrofusion couplers.
- b. The manufacturer's electro-fusion welding instructions must be strictly adhered to for a proper joint.
- c. The fittings are manufactured of extruded PE100 pipe.

<i>Product Designation</i>	<i>O.D., Pipe Size, mm</i>	<i>Pressure Rating, bar (psi)</i>	<i>Remarks</i>
Hepworth PME +GF+ PE100 Pipe, SDR 9	450, 500	12 (175)	a, b, c

Remarks:

- a. Dimensions refer to the pipe outside diameter. Pipes and fittings to be connected by electrofusion welding only.
- b. The manufacturer's electrofusion welding instructions must be strictly adhered to for a proper joint.
- c. The colour of the pipe is black or black with blue stripes.



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Certificate of Compliance

Prepared for:

Georg Fischer Piping Systems Ltd.
Ebnatstrasse 111
Schaffhausen, CH-8201
Switzerland

Manufactured at:

Hepworth PME L.L.C.
P.O. Box 2345
Dubai, United Arab Emirates

FM Approvals Class: 1613

Approval Identification: 0003050462

Approval Granted: February 20, 2015

To verify the availability of the Approved product, please refer to www.approvalguide.com

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Manager of Fire Protection
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062



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Certificate of Compliance

This certificate is issued for the following:

High Polyethylene Pipe and Fittings

<i>Product Designation</i>	<i>O.D., Pipe Size, mm</i>	<i>Pressure Rating, bar (psi)</i>	<i>Remarks</i>
Electrofusion Fittings, PE100, SDR 11			
+GF+ ELGEF Plus Coupler	450, 500	12 (175)	a, b, c
+GF+ ELGEF Plus Branch Saddle	500-630/90, 500-630/110, 500-630/125	12 (175)	a, b, c

Remarks:

- a. Dimensions refer to the pipe outside diameter. The pipe fits into the socket or the saddle of the fitting, and when electrical energy is applied to the terminal pins, which are integral part of the fitting, the joint is completed.
- b. The manufacturer's electrofusion welding instructions must be strictly adhered to for a proper joint.
- c. The fittings are manufactured of injection molded PE100.

<i>Product Designation</i>	<i>O.D., Pipe Size, mm</i>	<i>Pressure Rating, bar (psi)</i>	<i>Remarks</i>
Spigot Fittings for Electrofusion, PE100, SDR 11			
+GF+ ELGEF Plus Flange Adaptor	450, 500	10 (150)	a, b, c

Remarks:

- a. Spigot fittings only to be used with electrofusion couplers.
- b. The manufacturer's electro-fusion welding instructions must be strictly adhered to for a proper joint.
- c. The fittings are manufactured of injection molded PE100.



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Certificate of Compliance

Prepared for:

Georg Fischer Piping Systems Ltd.
Ebnatstrasse 111
Schaffhausen, CH-8201
Switzerland

Manufactured at:

Georg Fischer Piping Systems Ltd.
Ebnatstrasse 111
Schaffhausen, CH-8201
Switzerland

FM Approvals Class: 1613

Approval Identification: 0003050462

Approval Granted: February 20, 2015

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Richard B. Dunne
Manager of Fire Protection
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062



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Certificate of Compliance

Polyethylene (PE) Pipe and Fittings for Underground Fire Protection

The following items are FM Approved for:

Georg Fischer Piping Systems Ltd.
Ebnetstrasse 111
8201 Schaffhausen
Switzerland

when manufactured at the plants listed below:

<i>Product Designation</i>	<i>O.D., Pipe Size, mm.</i>	<i>Pressure Rating, bar (psi)</i>	<i>Remarks</i>
Hepworth PME +GF+ PE100 Pipe, SDR 9	90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400	12 (175)	a, b, c

Remarks:

- a. Dimensions refer to the pipe outside diameter. Pipes and fittings to be connected by electrofusion welding only.
- b. The manufacturer's electrofusion welding instructions must be strictly adhered to for a proper joint.
- c. The colour of the pipe is black or black with blue stripes

<i>Product Designation</i>	<i>O.D., Pipe Size, mm.</i>	<i>Pressure Rating, bar (psi)</i>	<i>Remarks</i>
Spigot Fittings for Electrofusion, PE100, SDR 11			
+GF+ ELGEF Plus 45° Elbow	90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315	12 (175)	a, b, c
+GF+ ELGEF Plus 90° Elbow	90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315	12 (175)	a, b, c
+GF+ ELGEF Plus Equal Tee	90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315	12 (175)	a, b, c
+GF+ ELGEF Plus Reducer	110/90, 125/90, 125/110, 140/90, 140/110, 140/125, 160/90, 160/110, 160/125, 160/140, 180/90, 180/110, 180/125, 180/140, 180/160, 200/140, 200/160, 200/180, 225/140, 225/160, 225/180, 225/200, 250/160, 250/180, 250/200, 250/225, 280/200, 280/225, 280/250, 315/200, 315/225, 315/250, 315/280, 355/250, 355/280, 355/315	12 (175)	a, b, c
+GF+ ELGEF Plus End Cap	90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315	12 (175)	a, b, c
+GF+ ELGEF Plus Flange Adaptor	90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315	12 (175)	a, b, c

Remarks:

- a. Dimensions refer to the spigot outside diameter. Spigot fittings only to be connected with electrofusion couplers.
- b. The manufacturer's electrofusion welding instructions must be strictly adhered to for a proper joint.
- c. The fittings are manufactured of injection molded PE100.



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Certificate of Compliance

Product Designation	O.D., Pipe Size, mm.	Pressure Ratings, bar (psi)	Remarks
Electrofusion Fittings, PE100, SDR 11 +GF+ ELGEF Plus Coupler	90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400	12 (175)	a, b, c
+GF+ ELGEF Plus Branch Saddle	110/90, 110/110, 125/90, 125/110, 140/90, 140/110, 160/90, 160/110, 160/125, 180/90, 180/110, 180/125, 200/90, 200/110, 200/125, 225/90, 225/110, 225/125, 250/90, 250/110, 250/125, 280/90, 280/110, 280/125, 315-355/90, 315-355/110, 315-355/125, 400-450/90, 400-450/110, 400-450/125	12 (175)	a, b, c

Remarks:

- a. Dimensions refer to the pipe outside diameter. The pipe fits into the socket or the saddle of the fitting, and when electrical energy is applied to the terminal pins, which are integral part of the fitting, the joint is completed.
- b. The manufacturer's electrofusion welding instructions must be strictly adhered to for a proper joint.
- c. The fittings are manufactured of injection molded PE100.

Manufactured by:

Georg Fischer Piping Systems Ltd,
Ebnatstrasse 111,
8201 Schaffhausen,
Switzerland
Electrofusion fittings

Georg Fischer Wavin AG,
Industriestrasse 24,
Subingen, CH-4553
Switzerland
Spigot fittings up to and including 225mm and Electrofusion fittings

Simona AG,
Gewerbstrasse 1-2,
Kingsheim, D77975,
Germany
Spigot fittings 250mm - 315mm

Hepworth PME LLC,
Dubai,
PO Box 2345
United Arab Emirates
Pipes

FM Approvals confirms that the items have been found to comply with the following standard:

FM Approvals Standard 1613 (February 2006)

Project Identifier:

3032779

Date of Approval:

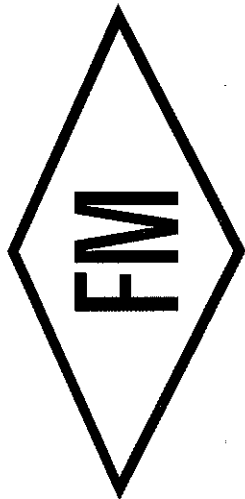
December 18, 2008

Richard B. Dunne
Richard B. Dunne
Group Manager - Hydraulics

February 17, 2009
Date



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APPROVED

Certificate of Compliance

Polyethylene (PE) Pipe and Fittings for Underground Fire Protection

The following items are FM Approved for:

Georg Fischer Piping Systems Ltd.
Ebnatstrasse 111
8201 Scaffhausen
Switzerland

When manufactured at the plants listed below:

Product Designation	O.D., Pipe Size, mm	Pressure Rating, bar (psi)	Remarks
Spigot Fittings for Electrofusion, PE100, SDR 11			
+GF+ ELGEF Plus End Cap	355, 400	10 (150)	a, b, c
+GF+ ELGEF Plus Flange Adaptor	355, 400	10 (150)	a, b, c
+GF+ ELGEF Plus Reducer	400 x 355	10 (150)	a, b, c

Remarks:

- a. Spigot fittings only to be connected with electrofusion couplers.
- b. The manufacturer's electrofusion welding instructions must be strictly adhered to for a proper joint.
- c. The fittings are manufactured of injection molded PE100.

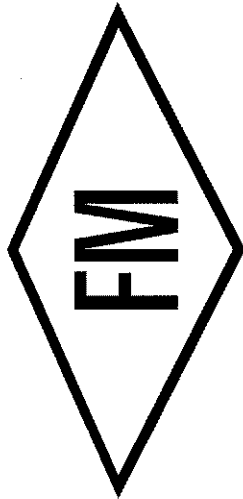
Product Designation	O.D., Pipe Size, mm	Pressure Rating, bar (psi)	Remarks
Segmented Fittings for Butt Fusion or Electrofusion, PE100, SDR 9			
Segmented 45° Bend	355, 400	10 (150)	a, b, c
Segmented 90° Bend	355, 400	10 (150)	a, b, c
Segmented Equal Tee	355, 400	10 (150)	a, b, c

Remarks:

- a. Segmented fittings are directly connected to pipes by butt fusion or to pipes or fittings by electrofusion couplers.
- b. The manufacturer's electrofusion welding instructions must be strictly adhered to for a proper joint.
- c. The fittings are manufactured of extruded PE100 pipe.



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Certificate of Compliance

Manufactured by:

Simona AG
Gewerbestrasse 1-2
D-77975 Ringsheim
Germany

Hepworth PME LLC
Dubai
PO Box 2345
United Arab Emirates

Spigot fittings

Segmented fittings

FM Approvals confirms that the items have been found to comply with the following standard:

FM Approvals Standard 1613 for Polyethylene (PE) Pipe and Fittings for Underground Fire Protection (February 2006)

Project Identifier: 3036505

Date of Approval: October 23, 2009

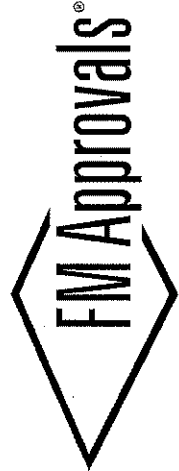
Said Approval is subject to satisfactory field performance, continuing follow-up Facilities and Procedures Audits, and strict conformity to the constructions as shown in the Approval Guide., an online resource of FM Approvals.

For more than 160 years FM Approvals has partnered with business and industry to reduce property losses.

Richard B. Dunne
Manager, Hydraulics Group
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062

Date

October 27, 2009



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