



# Certificate of Compliance

This certificate is issued for the following:

**Polyethylene (PE) Pipe and Fittings for Underground Fire Protection Service**

(see attached listing)

**Prepared for:**

Shield Fire Safety and Security Ltd  
Unit 3 Endeavor Drive, Basildon,  
Essex, SS14 3WF, United Kingdom

**Manufactured at:**

Shield Fire Safety and Security Ltd  
Jebel Ali Free Zone, Dubai  
United Arab Emirates

Approval Standard: FM 1613 (February 2017)

Approval Identification: 3041288  
Revision Request: RR237047

Approval Granted: July 6, 2011  
Date Authorized: May 11, 2023

To verify the availability of the Approved product, please refer to [www.approvalguide.com](http://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 black ink that reads 'D.B. Fuller'.

David B Fuller  
VP - Manager of Fire Protection  
FM Approvals  
1151 Boston-Providence Turnpike  
Norwood, MA 02062



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# Certificate of Compliance

## Polyethylene Pipe and Fittings

<i>Product Designation</i>	<i>O.D., Pipe Size, mm</i>	<i>Pressure Rating, Bar (psi)</i>	<i>Remarks</i>
PE100 Pipe, SDR11	50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500	13.8 (200)	a, b, c, f
PE100 Segmented Elbow 1-90°, SDR11	90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500	13.8 (200)	a, b, c, d, f
PE100 Segmented Equal Tee, SDR11	90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500	13.8 (200)	a, b, c, f
PE100 Concentric Reducer SDR11	63x50, 63x40, 63x32, 63x25, 75x63, 75x50, 75x40, 75x32, 90x75, 90x63, 90x50, 90x40, 110x90, 110x75, 110x63, 110x50, 125x110, 125x90, 125x75, 125x63, 140x125, 140x110, 140x90, 140x75, 160x140, 160x125, 160x110, 160x90, 160x75, 180x160, 180x140, 180x125, 180x110, 180x90, 200x180, 200x160, 200x140, 200x125, 200x110, 200x90, 225x200, 225x180, 225x160, 225x140, 225x125, 225x110, 225x90, 250x225, 250x200, 250x180, 250x160, 280x250, 280x225, 280x200, 315x280, 315x250, 315x225, 315x200, 355x315, 355x280, 355x250, 355x225, 400x355, 400x315, 400x280, 450x400, 450x355, 450x315, 500x450, 500x400, 500x355	13.8 (200)	a, b, c, f
PE100 Saddle Reducing Tee, SDR11	315x63, 315x90, 315x110, 355x63, 355x90, 355x110, 355x160, 400x90, 400x110, 400x160, 400x200,	13.8 (200)	a, b, c, f



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<i>Product Designation</i>	<i>O.D., Pipe Size, mm</i>	<i>Pressure Rating, Bar (psi)</i>	<i>Remarks</i>
	450x110, 450x160, 450x200, 450x225, 500x160, 500x200, 500x225, 500x250		
PE100 Stub Flange SDR11	50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500	13.8 (200)	a, b, c, f
PE100 Short Stub Flange SDR11	200, 225, 250, 280, 315, 355, 400, 450, 500	13.8 (200)	a, b, c, f
Steel Back Up Ring SDR11	50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500	13.8 (200)	a, b, c, f
Steel Blind Flange SDR11	50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500	13.8 (200)	a, b, c, f
PE100 Pipe, SDR9	50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500	17.66 (256.25)	a, b, c, f
PE100 Segmented Elbow 1-90°, SDR9	90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500	17.66 (256.25)	a, b, c, d, f
PE100 Segmented Equal Tee, SDR9	90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500	17.66 (256.25)	a, b, c, f
PE100 Concentric Reducer SDR9	63x50, 63x40, 63x32, 63x25, 75x63, 75x50, 75x40, 75x32, 90x75, 90x63, 90x50, 90x40, 110x90, 110x75, 110x63, 110x50, 125x110, 125x90, 125x75, 125x63, 140x125, 140x110, 140x90, 140x75, 160x140, 160x125, 160x110, 160x90, 160x75, 180x160, 180x140, 180x125, 180x110, 180x90 200x180, 200x160, 200x140, 200x125, 200x110, 200x90, 225x200, 225x180, 225x160, 225x140, 225x125, 225x110, 225x90, 250x225, 250x200, 250x180, 250x160, 280x250, 280x225, 280x200, 315x280, 315x250, 315x225, 315x200, 355x315, 355x280, 355x250, 355x225, 400x355, 400x315, 400x280,	17.66 (256.25)	a, b, c, f



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# Certificate of Compliance

<i>Product Designation</i>	<i>O.D., Pipe Size, mm</i>	<i>Pressure Rating, Bar (psi)</i>	<i>Remarks</i>
	450x400, 450x355, 450x315, 500x450, 500x400, 500x355		
PE100 Saddle Reducing Tee, SDR9	315x63, 315x90, 315x110, 355x63, 355x90, 355x110, 355x160, 400x90, 400x110, 400x160, 400x200, 450x110, 450x160, 450x200, 450x225, 500x160, 500x200, 500x225, 500x250	17.66 (256.25)	a, b, c, f
PE100 Stub Flange SDR9	50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500	17.66 (256.25)	a, b, c, f
PE100 Short Stub Flange SDR9	200, 225, 250, 280, 315, 355, 400, 450, 500	17.66 (256.25)	a, b, c, f
Steel Back Up Ring SDR9	50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500	17.66 (256.25)	a, b, c, f
Steel Blind Flange, SDR9	50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500	17.66 (256.25)	a, b, c, f
PE100 Pipe, SDR7.4	50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500	20 (290)	a, b, c, f
PE100 Segmented Elbow 1-90°, SDR7.4	90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500	20 (290)	a, b, c, d, f
PE100 Segmented Equal Tee, SDR7.4	90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500	20 (290)	a, b, c, f
PE100 Saddle Reducing Tee, SDR7.4	315x63, 315x90, 315x110, 355x63, 355x90, 355x110, 355x160, 400x90, 400x110, 400x160, 400x200, 450x110, 450x160, 450x200, 450x225, 500x160, 500x200, 500x225, 500x250	20 (290)	a, b, c, f



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<i>Product Designation</i>	<i>O.D., Pipe Size, mm</i>	<i>Pressure Rating, Bar (psi)</i>	<i>Remarks</i>
PE100 Concentric Reducer SDR7.4	63x50, 63x40, 63x32, 63x25, 75x63, 75x50, 75x40, 75x32, 90x75, 90x63, 90x50, 90x40, 110x90, 110x75, 110x63, 110x50, 125x110, 125x90, 125x75, 125x63, 140x125, 140x110, 140x90, 140x75, 160x140, 160x125, 160x110, 160x90, 160x75, 180x160, 180x140, 180x125, 180x110, 180x90, 200x180, 200x160, 200x140, 200x125, 200x110, 200x90, 225x200, 225x180, 225x160, 225x140, 225x125, 225x110, 225x90, 250x225, 250x200, 250x180, 250x160, 280x250, 280x225, 280x200, 315x280, 315x250, 315x225, 315x200, 355x315, 355x280, 355x250, 355x225, 400x355, 400x315, 400x280, 450x400, 450x355, 450x315, 500x450, 500x400, 500x355	20 (290)	a, b, c, f
PE100 Stub Flange SDR7.4	50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500	20 (290)	a, b, c, f
PE100 Short Stub Flange SDR7.4	200, 225, 250, 280, 315, 355, 400, 450, 500	20 (290)	a, b, c, f
Steel Back Up Ring SDR7.4	50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500	20 (290)	a, b, c, f
Steel Blind Flange SDR7.4	50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500	20 (290)	a, b, c, f

<i>Product Designation</i>	<i>O.D., Pipe Size, inch</i>	<i>Pressure Rating, Bar (psi)</i>	<i>Remarks</i>



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<i>Product Designation</i>	<i>O.D., Pipe Size, inch</i>	<i>Pressure Rating, Bar (psi)</i>	<i>Remarks</i>
PE100 Pipe, DR9	4, 6, 8, 10, 12, 14, 16, 18, 20	17.25 (250)	a, b, c, e
PE100 Segmented Elbow 1-90°, DR9	4, 6, 8, 10, 12, 14, 16, 18, 20	17.25 (250)	a, b, c, d, e
PE100 Segmented Equal Tee, DR9	4, 6, 8, 10, 12, 14, 16, 18, 20	17.25 (250)	a, b, c, e
PE100 Saddle Reducing Tee, DR9	14 x4,14x6,16x6,16x8,18x6,18x8, 20x6, 20x8, 20x10	17.25 (250)	a, b, c, e
PE100 Concentric Reducer, DR9	6x4, 8x6, 10x8, 10x6, 12x10, 12x8, 14x12, 14x10, 14x8, 16x14, 16x12, 16x10, 18x16, 18x14, 18x12, 20x18, 20x16, 20x14	17.25 (250)	a, b, c, e
PE100 Stub Flange, DR9	4, 6, 8, 10, 12, 14, 16, 18, 20	17.25 (250)	a, b, c, e
Steel Back Up Ring, DR9	4, 6, 8, 10, 12, 14, 16, 18, 20	17.25 (250)	a, b, c, e
Steel Blind Flange, DR9	4, 6, 8, 10, 12, 14, 16, 18, 20	17.25 (250)	a, b, c, e
PE100 Pipe, DR7.3	4, 6, 8, 10, 12, 14, 16, 18, 20	21.85 (317)	a, b, c, e
PE100 Segmented Elbow 1-90°, DR7.3	4, 6, 8, 10, 12, 14, 16, 18, 20	21.85 (317)	a, b, c, d, e
PE100 Segmented Equal Tee, DR7.3	4, 6, 8, 10, 12, 14, 16, 18, 20	20 (290)	a, b, c, e
PE100 Saddle Reducing Tee, DR7.3	14 x4,14x6,16x6,16x8,18x6,18x8, 20x6, 20x8, 20x10	20 (290)	a, b, c, e



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<i>Product Designation</i>	<i>O.D., Pipe Size, inch</i>	<i>Pressure Rating, Bar (psi)</i>	<i>Remarks</i>
PE100 Concentric Reducer, DR7.3	6x4, 8x6, 10x8, 10x6, 12x10, 12x8, 14x12, 14x10, 14x8, 16x14, 16x12, 16x10, 18x16, 18x14, 18x12, 20x18, 20x16, 20x14	21.85 (317)	a, b, c, e
PE100 Stub Flange DR7.3	4, 6, 8, 10, 12, 14, 16, 18, 20	21.85 (317)	a, b, c, e
Steel Back Up Ring DR7.3	4, 6, 8, 10, 12, 14, 16, 18, 20	21.85 (317)	a, b, c, e
Steel Blind Flange DR7.3	4, 6, 8, 10, 12, 14, 16, 18, 20	21.85 (317)	a, b, c, e

<i>Product Designation</i>	<i>O.D., Pipe Size</i>	<i>Pressure Rating, Bar (psi)</i>	<i>Remarks</i>
PE100 Molded Elbow, 90°, SDR11	63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250 mm	13.8 (200)	a, b, f
PE100 Molded Elbow, 45°, SDR11	63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250 mm	13.8 (200)	a, b, f
PE100 Molded Equal Tee, SDR11	63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250 mm	13.8 (200)	a, b, f
PE100 Molded Stub Flange, SDR11	63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250 mm	13.8 (200)	a, b, f
PE100 Molded Concentric Reducer, SDR11	75x63, 90x63, 90x75, 110x63, 110x75, 110x90, 125x75, 125x90, 125x110,	13.8 (200)	a, b, f





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<i>Product Designation</i>	<i>O.D., Pipe Size</i>	<i>Pressure Rating, Bar (psi)</i>	<i>Remarks</i>
	160x110, 160x125, 180x110, 180x125, 180x160, 200x125, 200x160, 200x180, 225x160, 225x180, 225x200, 250x160, 250x180, 250x200, 250x225		
PE100, Molded Elbow, 90°, SDR9	63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250 mm	17.66 (256.25)	a, b, f
PE100, Molded Elbow, 45°, SDR9	63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250 mm	17.66 (256.25)	a, b, f
PE100 Molded Equal Tee, SDR9	63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250 mm	17.66 (256.25)	a, b, f
PE100 Molded Stub Flange, SDR9	63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250 mm	17.66 (256.25)	a, b, f
PE100 Molded Concentric Reducer, SDR9	75x63, 90x63, 90x75, 110x63, 110x75, 110x90, 125x75, 125x90, 125x110, 160x110, 160x125, 180x110, 180x125, 180x160, 200x125, 200x160, 200x180, 225x160, 225x180, 225x200, 250x160, 250x180, 250x200, 250x225	17.66 (256.25)	a, b, f



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<i>Product Designation</i>	<i>O.D., Pipe Size</i>	<i>Pressure Rating, Bar (psi)</i>	<i>Remarks</i>
PE100, Molded Elbow, 90°, SDR7.4	63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250 mm	20 (290)	a, b, f
PE100, Molded Elbow 45°, SDR7.4	63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250 mm	20 (290)	a, b, f
PE100 Molded Equal Tee, SDR7.4	63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250 mm	20 (290)	a, b, f
PE100 Molded Stub Flange, SDR7.4	63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250 mm	20 (290)	a, b, f
PE100, Molded Concentric Reducer, SDR7.4	75x63, 90x63, 90x75, 110x63, 110x75, 110x90, 125x75, 125x90, 125x110, 160x110, 160x125, 180x110, 180x125, 180x160, 200x125, 200x160, 200x180, 225x160, 225x180, 225x200, 250x160, 250x180, 250x200, 250x225	20 (290)	a, b, f
PE100 Molded Elbow, 90°, DR9	4, 6, 8, 10 inch	17.25 (250)	a, b, e
PE100 Molded Elbow, 45°, DR9	4, 6, 8, 10 inch	17.25 (250)	a, b, e
PE100 Molded Equal Tee, DR9	4, 6, 8, 10 inch	17.25 (250)	a, b, e
PE100 Molded Elbow, 90°, DR7.3	4, 6, 8, 10 inch	21.85 (317)	a, b, e
PE100 Molded Elbow, 45°, DR7.3	4, 6, 8, 10 inch	21.85 (317)	a, b, e



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<i>Product Designation</i>	<i>O.D., Pipe Size</i>	<i>Pressure Rating, Bar (psi)</i>	<i>Remarks</i>
PE100 Molded Equal Tee, DR7.3	4, 6, 8, 10 inch	21.85 (317)	a, b, e
PE100 Molded Reducer Tee, SDR11	250 X 225, 250 X 200, 250 X 180, 250 X 160, 250 X 125 mm	13.8 (200)	a, b, f
PE100 Molded Reducer Tee, SDR9	250 X 225, 250 X 200, 250 X 180, 250 X 160, 250 X 125 mm	17.66 (256.25)	a, b, f
PE100 Molded Reducer Tee, SDR7.4	250 X 225, 250 X 200, 250 X 180, 250 X 160, 250 X 125 mm	20 (290)	a, b, f

**Remarks:**

- a. Dimensions refer to the pipe outside diameter. Pipes and fittings are connected by Butt Fusion welding process or by other FM Approved fittings. Segmented Fittings are fabricated from extruded PE100 pipe. Molded fittings are made from PE 100 Raw Material.*
- b. The manufacturer's Butt Fusion welding instructions must be strictly adhered to for a proper joint.*
- c. The color of the pipe is black or black with blue or red stripes with white markings.*
- d. Elbows are manufactured using 3 or 5 segments.*
- e. Pipes Manufactured to AWWA C906.*
- f. Pipes Manufactured to ISO4427 and EN 12201.*



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