

# DIN EN ISO 11299-3:2019-04 (E)

## Plastics piping systems for renovation of underground gas supply networks - Part 3: Lining with close-fit pipes (ISO 11299-3 :2018)

---

<b>Contents</b>		<b>Page</b>
<b>European foreword</b> .....		<b>4</b>
<b>Foreword</b> .....		<b>5</b>
<b>Introduction</b> .....		<b>6</b>
<b>1</b>	<b>Scope</b> .....	<b>8</b>
<b>2</b>	<b>Normative references</b> .....	<b>8</b>
<b>3</b>	<b>Terms and definitions</b> .....	<b>9</b>
	3.1 General.....	9
	3.2 Techniques.....	9
	3.3 Characteristics.....	9
	3.4 Materials.....	10
	3.5 Product stages.....	10
	3.6 Service conditions.....	10
	3.7 Joints.....	10
<b>4</b>	<b>Symbols and abbreviated terms</b> .....	<b>11</b>
	4.1 Symbols.....	11
	4.2 Abbreviated terms.....	11
<b>5</b>	<b>Pipes at the “M” stage</b> .....	<b>12</b>
	5.1 Materials.....	12
	5.2 General characteristics.....	12
	5.2.1 Appearance.....	12
	5.2.2 Colour.....	12
	5.3 Material characteristics.....	12
	5.4 Geometric characteristics.....	12
	5.5 Mechanical characteristics.....	12
	5.6 Physical characteristics.....	12
	5.7 Jointing.....	13
	5.8 Marking.....	13
	5.9 Regional requirements for pipes.....	13
<b>6</b>	<b>Fittings at the “M” stage</b> .....	<b>13</b>
	6.1 Requirements.....	13
	6.2 Marking.....	13
	6.3 Regional requirements for fittings.....	13
<b>7</b>	<b>Ancillary components</b> .....	<b>14</b>
	7.1 Requirements.....	14
	7.2 Regional requirements for ancillary components.....	14
<b>8</b>	<b>Fitness for purpose of the installed lining system at the “I” stage</b> .....	<b>14</b>
	8.1 Materials.....	14
	8.2 General characteristics.....	14
	8.3 Material characteristics.....	14
	8.4 Geometric characteristics.....	14
	8.5 Mechanical characteristics.....	15
	8.6 Physical characteristics.....	16
	8.7 Additional characteristics.....	16
	8.8 Sampling.....	16
	8.9 Regional requirements for the installed lining system.....	16

<b>9</b>	<b>Installation practice</b> .....	<b>17</b>
9.1	Preparatory work.....	17
9.2	Storage, handling and transport of pipes and fittings.....	17
9.3	Equipment.....	17
9.3.1	Butt fusion and debanding equipment.....	17
9.3.2	Reduction equipment.....	17
9.3.3	Pipe skids/rollers.....	18
9.3.4	Winching and rod-pulling equipment.....	18
9.3.5	Pipe entry guides.....	18
9.3.6	Reforming equipment.....	18
9.3.7	Electrofusion equipment.....	18
9.3.8	Inspection equipment.....	18
9.3.9	Lifting equipment.....	19
9.4	Installation.....	19
9.5	Process-related inspection and testing.....	19
9.6	Lining termination.....	20
9.7	Reconnection to existing laterals.....	20
9.8	Final inspection and testing.....	20
9.9	Documentation.....	20
	<b>Annex A (normative) Factory-folded heat-reverted polyethylene (PE) pipe —Determination of memory ability</b> .....	<b>21</b>
	<b>Bibliography</b> .....	<b>23</b>