

# DIN EN ISO 15494:2021-05 (E)

Plastics piping systems for industrial applications - Polybutene (PB), polyethylene (PE), polyethylene of raised temperature resistance (PE-RT), crosslinked polyethylene (PE-X), polypropylene (PP) - Metric series for specifications for components and the system (ISO 15494:2015 + Amd 1:2020) (includes Amendment :2020)

---

## Contents

Page

European foreword .....	4
<b>A1</b> European foreword to Amendment <b>A1</b> .....	5
Annex ZA (informative) Relationship between this European Standard and the essential requirements of Directive 2014/68/EU for pressure equipment aimed to be covered .....	6
Foreword .....	7
<b>A1</b> Foreword to Amendment <b>A1</b> .....	8
Introduction .....	9
<b>1</b> Scope .....	<b>10</b>
<b>2</b> Normative references .....	<b>11</b>
<b>3</b> Terms and definitions .....	<b>13</b>
3.1 Geometrical definitions .....	13
3.2 Material definitions .....	14
3.3 Definitions related to material characteristics .....	15
3.4 Definitions related to service conditions .....	15
<b>4</b> Symbols and abbreviated terms .....	<b>16</b>
4.1 Symbols .....	16
4.2 Abbreviated terms .....	17
<b>5</b> Material .....	<b>18</b>
5.1 General .....	18
5.2 Hydrostatic strength properties .....	18
5.3 Material characteristics .....	18
5.4 Reprocessable and recyclable material .....	18
5.5 Materials for components not made from PB, PE, PE-RT, PE-X, or PP .....	18
5.5.1 General .....	18
5.5.2 Metallic materials .....	19
5.5.3 Sealing materials .....	19
5.5.4 Other materials .....	19
<b>6</b> General characteristics .....	<b>19</b>
6.1 Appearance .....	19
6.2 Colour .....	19
6.3 Influence of UV radiation .....	19
<b>7</b> Geometrical characteristics .....	<b>19</b>
7.1 General .....	19
7.2 Mean outside diameters, out-of-roundness (ovality), and tolerances .....	20
7.3 Wall thicknesses and related tolerances .....	20
7.4 Angles .....	20
7.5 Laying lengths .....	20
7.6 Threads .....	20
7.7 Mechanical fittings .....	20
7.8 Joint dimensions of valves .....	20

<b>8</b>	<b>Mechanical characteristics</b> .....	<b>20</b>
8.1	Resistance to internal pressure of components .....	20
8.2	Calculation of the test pressure for components .....	21
8.2.1	Pipes .....	21
8.2.2	Fittings .....	21
8.2.3	Valves .....	21
8.2.4	Resistance to rapid crack propagation, RCP .....	21
<b>9</b>	<b>Physical characteristics</b> .....	<b>21</b>
<b>10</b>	<b>Chemical characteristics</b> .....	<b>22</b>
10.1	Effects on the component material(s) .....	22
10.2	Effects on the fluids .....	22
<b>11</b>	<b>Electrical characteristics</b> .....	<b>22</b>
<b>12</b>	<b>Performance requirements</b> .....	<b>22</b>
12.1	General .....	22
12.2	Fusion compatibility .....	22
<b>13</b>	<b>Classification of components</b> .....	<b>22</b>
<b>14</b>	<b>Design and installation</b> .....	<b>23</b>
<b>15</b>	<b>Declaration of conformity</b> .....	<b>23</b>
<b>16</b>	<b>Marking</b> .....	<b>23</b>
16.1	General .....	23
16.2	Minimum required marking of pipes .....	23
16.3	Minimum required marking of fittings .....	24
16.4	Minimum required marking of valves .....	24
<b>Annex A</b>	<b>(normative) Specific characteristics and requirements for industrial piping systems made from polybutene (PB)</b> .....	<b>25</b>
<b>Annex B</b>	<b>(normative) Specific characteristics and requirements for industrial piping systems made from polyethylene (PE)</b> .....	<b>38</b>
<b>Annex C</b>	<b>(normative) Specific characteristics and requirements for industrial piping systems made from polyethylene of raised temperature resistance (PE-RT)</b> .....	<b>65</b>
<b>Annex D</b>	<b>(normative) Specific characteristics and requirements for industrial piping systems made from crosslinked polyethylene (PE-X)</b> .....	<b>72</b>
<b>Annex E</b>	<b>(normative) Specific characteristics and requirements for industrial piping systems made from polypropylene (PP)</b> .....	<b>82</b>
<b>Annex F</b>	<b>(informative) Design and installation</b> .....	<b>108</b>
<b>Bibliography</b>	.....	<b>109</b>