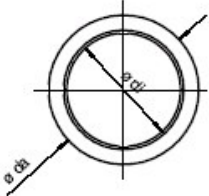
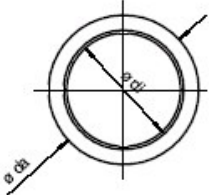


| Twin-wall pipes (coils and bars) according to DIN EN 61386-24 TECHNICAL SPECIFICATION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|------------------|----------------------------|----------------------------|--------------|----------------------------|----------------------------|-----|--------------------|---------------------|------------------|------|------|-----|---------------------|---------------------|------------------|------|------|-----|---------------------|---------------------|------------------|------|------|-----|---------------------|---------------------|------------------|------|------|----|--------------------|--------------------|------------------|------|------|-----|--------------------|---------------------|------------------|------|------|-----|---------------------|---------------------|------------------|------|------|-----|---------------------|---------------------|------------------|------|------|--|--|--|--|
| I. Definition | This technical specification is valid for PE twin-wall cable protection pipes according to EN 61386-24 (latest edition) <ul style="list-style-type: none"> • bars – dimension from DN 110 up to DN 200 • coils – dimension from DN 40 up to DN 160 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| II. Technical Data | 1. Material | Polyethylene according to EN 50086 is used exclusively. The standard version of the pipes is made with an inside layer of PE-HD for bars, resp. PE-LD for coils and an outside layer of PE-HD for both bars and coils. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2. Colouring | inside layer : black, approximately RAL9011 outside layer : black, approximately RAL9011 red, approximately RAL 3020 blue, approximately RAL5015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3. UV-stability | twin-wall pipes meet the requirements of this technical specification as to stiffness and colouring also after outside storage with central european solar radiation as mentioned below: <ul style="list-style-type: none"> • black pipes – at least 2 years for stiffness and colour • coloured pipes – at least 1 year for stiffness light bleaching of the colours possible | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4. Dimensions | The values mentioned in the charts 1 and 2 are valid for the dimensions and tolerances of the items. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | bars  | chart 1 : dimensions and bending radius / bars | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | <table border="1"> <thead> <tr> <th>DN</th> <th>Ø di (mm)</th> <th>Ø da (mm)</th> <th>ovality (mm)</th> <th>bending radius at -5°C (m)</th> <th>bending radius at 25°C (m)</th> </tr> </thead> <tbody> <tr> <td>110</td> <td>93^{+2,0}</td> <td>110^{+2,0}</td> <td>1)¹⁾</td> <td>4,0</td> <td>4,0</td> </tr> <tr> <td>125</td> <td>107^{+2,0}</td> <td>125^{+2,3}</td> <td>1)¹⁾</td> <td>6,0</td> <td>6,0</td> </tr> <tr> <td>160</td> <td>138^{+2,5}</td> <td>160^{+2,3}</td> <td>1)¹⁾</td> <td>8,0</td> <td>8,0</td> </tr> <tr> <td>200</td> <td>173^{+2,5}</td> <td>200^{+3,6}</td> <td>1)¹⁾</td> <td>15,0</td> <td>15,0</td> </tr> </tbody> </table> | DN | Ø di (mm) | Ø da (mm) | ovality (mm) | bending radius at -5°C (m) | bending radius at 25°C (m) | 110 | 93 ^{+2,0} | 110 ^{+2,0} | 1) ¹⁾ | 4,0 | 4,0 | 125 | 107 ^{+2,0} | 125 ^{+2,3} | 1) ¹⁾ | 6,0 | 6,0 | 160 | 138 ^{+2,5} | 160 ^{+2,3} | 1) ¹⁾ | 8,0 | 8,0 | 200 | 173 ^{+2,5} | 200 ^{+3,6} | 1) ¹⁾ | 15,0 | 15,0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DN | Ø di (mm) | Ø da (mm) | ovality (mm) | bending radius at -5°C (m) | bending radius at 25°C (m) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 110 | 93 ^{+2,0} | 110 ^{+2,0} | 1) ¹⁾ | 4,0 | 4,0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 125 | 107 ^{+2,0} | 125 ^{+2,3} | 1) ¹⁾ | 6,0 | 6,0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 160 | 138 ^{+2,5} | 160 ^{+2,3} | 1) ¹⁾ | 8,0 | 8,0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 200 | 173 ^{+2,5} | 200 ^{+3,6} | 1) ¹⁾ | 15,0 | 15,0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | coils  | chart 2 : dimensions and bending radius / coils | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | <table border="1"> <thead> <tr> <th>DN</th> <th>Ø di (mm)</th> <th>Ø da (mm)</th> <th>ovality (mm)</th> <th>bending radius at -5°C (m)</th> <th>bending radius at 25°C (m)</th> </tr> </thead> <tbody> <tr> <td>40</td> <td>30^{+2,0}</td> <td>40^{+0,8}</td> <td>1)¹⁾</td> <td>0,35</td> <td>0,35</td> </tr> <tr> <td>50</td> <td>40^{+2,0}</td> <td>50^{+1,0}</td> <td>1)¹⁾</td> <td>0,35</td> <td>0,35</td> </tr> <tr> <td>63</td> <td>50^{+2,0}</td> <td>63^{+1,2}</td> <td>1)¹⁾</td> <td>0,35</td> <td>0,35</td> </tr> <tr> <td>75</td> <td>60^{+2,0}</td> <td>75^{+1,4}</td> <td>1)¹⁾</td> <td>0,35</td> <td>0,35</td> </tr> <tr> <td>90</td> <td>74^{+2,0}</td> <td>90^{+1,7}</td> <td>1)¹⁾</td> <td>0,40</td> <td>0,40</td> </tr> <tr> <td>110</td> <td>93^{+2,0}</td> <td>110^{+2,0}</td> <td>1)¹⁾</td> <td>0,40</td> <td>0,40</td> </tr> <tr> <td>125</td> <td>105^{+2,5}</td> <td>125^{+2,3}</td> <td>1)¹⁾</td> <td>0,50</td> <td>0,50</td> </tr> <tr> <td>160</td> <td>137^{+2,5}</td> <td>160^{+2,3}</td> <td>1)¹⁾</td> <td>0,65</td> <td>0,65</td> </tr> </tbody> </table> | DN | Ø di (mm) | Ø da (mm) | ovality (mm) | bending radius at -5°C (m) | bending radius at 25°C (m) | 40 | 30 ^{+2,0} | 40 ^{+0,8} | 1) ¹⁾ | 0,35 | 0,35 | 50 | 40 ^{+2,0} | 50 ^{+1,0} | 1) ¹⁾ | 0,35 | 0,35 | 63 | 50 ^{+2,0} | 63 ^{+1,2} | 1) ¹⁾ | 0,35 | 0,35 | 75 | 60 ^{+2,0} | 75 ^{+1,4} | 1) ¹⁾ | 0,35 | 0,35 | 90 | 74 ^{+2,0} | 90 ^{+1,7} | 1) ¹⁾ | 0,40 | 0,40 | 110 | 93 ^{+2,0} | 110 ^{+2,0} | 1) ¹⁾ | 0,40 | 0,40 | 125 | 105 ^{+2,5} | 125 ^{+2,3} | 1) ¹⁾ | 0,50 | 0,50 | 160 | 137 ^{+2,5} | 160 ^{+2,3} | 1) ¹⁾ | 0,65 | 0,65 | | | | |
| DN | Ø di (mm) | Ø da (mm) | ovality (mm) | bending radius at -5°C (m) | bending radius at 25°C (m) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | 30 ^{+2,0} | 40 ^{+0,8} | 1) ¹⁾ | 0,35 | 0,35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | 40 ^{+2,0} | 50 ^{+1,0} | 1) ¹⁾ | 0,35 | 0,35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 63 | 50 ^{+2,0} | 63 ^{+1,2} | 1) ¹⁾ | 0,35 | 0,35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 75 | 60 ^{+2,0} | 75 ^{+1,4} | 1) ¹⁾ | 0,35 | 0,35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 90 | 74 ^{+2,0} | 90 ^{+1,7} | 1) ¹⁾ | 0,40 | 0,40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 110 | 93 ^{+2,0} | 110 ^{+2,0} | 1) ¹⁾ | 0,40 | 0,40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 125 | 105 ^{+2,5} | 125 ^{+2,3} | 1) ¹⁾ | 0,50 | 0,50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 160 | 137 ^{+2,5} | 160 ^{+2,3} | 1) ¹⁾ | 0,65 | 0,65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | ¹⁾ ovality at least 95 % of the inside diameter stated of unrolled coils resp. after having taken it from the pallet (subject to correct storage) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

III. Packaging – Storing

bars

Usually the bars are delivered on pallets (wooden crates) according to the following chart 3.

The standard version – sand tight without profile seal – is supplied with a double connection sleeve mounted on.

If required the pipes can be delivered in watertight version. The water tightness of the connection up to 0,5 bar according to DIN EN 16961 is achieved by mounting one profile seal and afterwards the coupler on the bar.

| chart 3 : packaging bars | | | | | |
|-------------------------------|--------|-------|-------|-------|-------|
| twin wall pipe | DN110 | DN125 | DN160 | DN200 | |
| Number of 6 m-bars per pallet | 75 | 48 | 33 | 20 | |
| Dimension of pallet | B (mm) | 6.100 | 6.100 | 6.130 | 6.170 |
| | H (mm) | 1.350 | 720 | 780 | 750 |
| | T (mm) | 1.110 | 1.150 | 1.220 | 1.230 |

coils

Usually delivered in 50 m-coils as per chart 4. Each coil is manufactured with a draw-in aid.

During transportation, the draw-in aid has to be protected.

A double connection sleeve is mounted on each 50 m-coil, sand tight connection.

If desired, the pipes can be supplied with watertight connection. For this purpose, a profile seal is mounted on both ends of the coils followed by the double connection sleeve. This leads to a tightness of the connection up to 0,5 bar according to standard DIN 16961.

| chart 4 : packaging coils | | | | | | | | |
|-------------------------------|------|------|------|-------|-------|-------|-------|-------|
| twin wall pipe | DN40 | DN50 | DN63 | DN75 | DN90 | DN110 | DN125 | DN160 |
| Inside diameter of coil (mm) | 560 | 600 | 600 | 610 | 700 | 760 | 810 | 850 |
| Outside diameter of coil (mm) | 900 | 950 | 900 | 1.100 | 1.250 | 1.550 | 1.600 | 1.950 |
| Height of coil (mm) | 300 | 370 | 500 | 450 | 650 | 500 | 700 | 750 |