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## Guideline

**Pipe classes**  
**Specification PN 40**

**Pipe parts catalogue**  
**Pipe class: ZB40C1**

- 1      **Aim**      Aim of this guideline is the specification of pipe parts at defined operating conditions under consideration of the requirements of the guideline 97/23/EC (pressure equipment guideline)
- 2      **Scope**      Air Liquide Deutschland GmbH
- 3      **Material**      1.4541 ( X 6 CrNiTi 18 10 )
- 4      **Pipe class**      Standard pipe class according to AD 2000 leaflet
- 5      **Thick form**      Form B1 according to DIN EN 1092-1
- 6      **Corrosion surcharge**
- 7      **Screws**      Hexagon head screws A2-70 or. A2-50  
Hexagon nuts A2-70 or. A2-50
- 8      **Permitted media**      argon, ethylene, dinitrogenoxide, compressed air, noble gases, natural gas, carbon dioxide, methane, oxygen, nitrogen, hydrogen and its mixtures in gaseous and liquid form, water and steam

- 9      **Operating pressure**      40 bar

- 10      **Operating temperature**      3 K (-270 °C) to 393 K (120 °C)

| DN    | 15   | 20   | 25   | 32   | 40   | 50   | 65   | 80   | 100   | 125   | 150   | 200   | 250 |
|-------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-----|
| da/mm | 21,3 | 26,9 | 33,7 | 42,4 | 48,3 | 60,3 | 76,1 | 88,9 | 114,3 | 139,7 | 168,3 | 219,1 | 273 |
| s/mm  | 1,6  | 1,6  | 2    | 2    | 2    | 2    | 2,3  | 2,3  | 2,6   | 2,6   | 4     | 4,5   | 5   |

| DN    | 300   | 350   | 400   | 500 | 600  |  |  |  |  |  |  |  |  |
|-------|-------|-------|-------|-----|------|--|--|--|--|--|--|--|--|
| da/mm | 323,9 | 355,6 | 406,4 | 508 | 610  |  |  |  |  |  |  |  |  |
| s/mm  | 5,6   | 8     | 8,8   | 11  | 12,5 |  |  |  |  |  |  |  |  |

- 11      **Safety notice**      Oxygen leading pipes must be cleaned of oil, grease, welding beads, processing shaving etc. inside and comply with the standard 06401 before putting into operation.

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## 12 Additional notices

At operating temperatures of  $-200\text{ °C} \leq TS < -10\text{ °C}$  the requirements to be met must be according to account 2000 leaflet W10 ad.

Additionally, when using LH2, the special requirements to the examination of the notched bar impact work have to be met according to notice 2000 leaflet W10, table 1. This is caused by the lowest application temperature of  $-253\text{ °C}$ .

At operating temperatures of  $50\text{ °C} < TS \leq 120\text{ °C}$  flanges of the next higher pressure level must be used.

When using hydrogen, comb defined seals only must be provided for flange joints.

The application fields (medium, pressure, temperature) defined in the standards 4002, 4007 and 4008 must be absolutely adhered to.

Screws from A2-70 or A2-50 are allowed to be used according to AD 2000 leaflet W10 only to  $TS = -200\text{ °C}$ .

| Tube part                   | nom. width |     | iden-<br>tifica-<br>tion | dimension standard /<br>terms of delivery | certificate  |
|-----------------------------|------------|-----|--------------------------|---|--|
|                             | from       | to  |                          |   |  |
| Flat packings               | 15         | 500 | FLD                      | DIN EN 1514-1, Standard 40002             | 2.1 according to DIN EN 1024 concerning purity in accordance with Standard 06401 |
| Fibrous packings            | 15         | 500 | FAD                      | DIN EN 1514-1, Standard 40007             | 2.1 according to DIN EN 1024 concerning purity in accordance with Standard 06401 |
| Caps                        | 15         | 600 | KAP                      | DIN 2617, DIN 2609                        | 3.1.B according to DIN EN 10204  |
| Comb defined seals          | 15         | 500 | KAD                      | DIN 2617, Standard 40008                  | 2.1 according to DIN EN 1024 concerning purity in accordance with Standard 06401 |
| Elbow 90° R=1,5 DA, welded  | 15         | 600 | RB1,5DG                  | DIN 2605-1, DIN 2609                      | 3.1.C or 3.2 according to DIN EN 10204   |
| Elbow 90° R=2,5 DA, welded  | 15         | 600 | RB2,5DG                  | DIN 2605-1, DIN 2609                      | 3.1.C or 3.2 according to DIN EN 10204   |
| Reducer, eccentric, welded  | 20         | 500 | RZEG                     | DIN 2616-1, DIN 2609                      | 3.1.C or 3.2 according to DIN EN 10204   |
| Pipe, welded                | 15         | 600 | RG                       | DIN EN ISO 1127, DIN 17457                | 3.1.C or 3.2 according to DIN EN 10204   |
| Reducer, concentric, welded | 20         | 500 | RZKG                     | DIN 2616-1, DIN 2609                      | 3.1.C or 3.2 according to DIN EN 10204   |
| Tee made of welded pipe     | 15         | 500 | TG                       | DIN 2615-1, DIN 2609                      | 3.1.C or 3.2 according to DIN EN 10204   |
| Welding neck flanges        | 15         | 500 | VF                       | DIN EN 1092-1, DIN EN 1092-1              | 3.1.C or 3.2 according to DIN EN 10204   |
| Blanks                      | 15         | 500 | BSS                      | Unide-Norm 3902-1, DIN 17440              | 3.1.C or 3.2 according to DIN EN 10204   |
| Blind flanges               | 15         | 500 | BF                       | DIN EN 1092-1, DIN EN 1092-1              | 3.1.C or 3.2 according to DIN EN 10204   |
| Hexagon head screws         | 12         | 39  | SKS                      | DIN EN ISO 4014, DIN EN ISO 3506          | 3.1.B according to DIN EN 10204  |
| Hexagon nuts                | 12         | 39  | SKM                      | DIN EN ISO 4032, DIN EN ISO 3506          | 3.1.B according to DIN EN 10204  |

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|           |                                   |  |
|-----------|-----------------------------------|--|
| <b>13</b> | <b>Valid and listed documents</b> | Standard 06401<br>Standard 40002<br>Standard 40007<br>Standard 40008<br>Standard 50006 App. 1 – 15<br>AD 2000-leaflet W10<br>DGRL 97/23/EG<br>DIN 2605-1<br>DIN 2609<br>DIN 2615-1<br>DIN 2616-1<br>DIN 2617<br>DIN 17440<br>DIN 17457<br>DIN EN 1092-1<br>DIN EN 1514-1<br>DIN EN 10204<br>DIN EN ISO 1127<br>DIN EN ISO 3506<br>DIN EN ISO 4014<br>DIN EN ISO 4032<br>Uhde-Norm 3902-1 |
|-----------|-----------------------------------|--|

**Pipe Class  
Specification PN 40**

**pipe parts \* pipe class: ZB40C1  
pipe, welded**

|   |                     |   |
|---|---------------------|---|
| 1 | Pipe class          | ZB40C1  |
| 2 | Part identification | RG  |
| 3 | Pipe class part     | pipe, welded  |
| 4 | Material            | 1.4541 ( X 6 CrNiTi 18 10 )   |
| 5 | Dimension standard  | DIN EN ISO 1127   |
| 6 | Terms of delivery   | DIN 17457   |
| 7 | Certificate         | 3.1.C or 3.2 according to DIN EN 10204  |
| 8 | Identification      | DIN 17457, section 7, across whole length   |
| 9 | Ordering addition   | <p>Pipes at fixed lengths of 6 m</p> <p>Tolerance class D2, T3 according to DIN EN ISO 1127</p> <p>Testing class 2 according to DIN 17457, AD 2000-leaflet W2</p> <p>Inner surfaces free of oil, grease and slip additive<br/>(max.: 300 mg/m<sup>2</sup>)</p> <p>Ends closed with caps</p> <p>Requirements AD 2000-leaflet W2 and W10, table 1,<br/>must be met</p> <p>At wall thicknesses ≤ 10 mm, an inspection certificate<br/>3.1.B is sufficient, if the requirements according to AD<br/>2000-leaf W2, section 6.2.1, are met.</p> |

| Ident-<br>No. | nom. diameter | dimensions         | weights |
|---------------|---------------|--------------------|---------|
|               | ND            | d <sub>a</sub> x s | kg      |
| 18256         | 15            | 21,3 x 1,6         | 0,79    |
| 18257         | 20            | 26,9 x 1,6         | 1,01    |
| 18258         | 25            | 33,7 x 2           | 1,58    |
| 18259         | 32            | 42,4 x 2           | 2,02    |
| 18260         | 40            | 48,3 x 2           | 2,31    |
| 18261         | 50            | 60,3 x 2           | 2,92    |

| Ident-No. | nom. diameter | dimensions         | weights |
|-----------|---------------|--------------------|---------|
|           | ND            | d <sub>a</sub> x s | kg      |
| 18262     | 65            | 76,1 x 2,3         | 4,25    |
| 18263     | 80            | 88,9 x 2,3         | 4,98    |
| 18264     | 100           | 114,3 x 2,6        | 7,27    |
| 18265     | 125           | 139,7 x 2,6        | 8,92    |
| 18266     | 150           | 168,3 x 4          | 16,40   |
| 18267     | 200           | 219,1 x 4,5        | 23,80   |
| 18268     | 250           | 273 x 5            | 33,50   |
| 18269     | 300           | 323,9 x 5,6        | 44,70   |
| 18270     | 350           | 355,6 x 8          | 69,60   |
| 18271     | 400           | 406,4 x 8,8        | 87,60   |
| 18272     | 500           | 508 x 11           | 137,00  |
| 18273     | 600           | 610 x 12,5         | 187,00  |

#### 10 Valid and listed documents

AD 2000-leaflet W2  
AD 2000-leaflet W10  
DIN 17457  
DIN EN 10204  
DIN EN ISO 1127

**Pipe Class  
Specification PN 40**

pipe parts \* pipe class: **ZB40C1**  
Elbow 90° R=1,5 DA, welded

**AIR LIQUIDE**

|   |                     |  |
|---|---------------------|--|
| 1 | Pipe class          | ZB40C1   |
| 2 | Part identification | RB1,5DG  |
| 3 | Pipe class part     | Elbow 90° R=1,5 DA, welded   |
| 4 | Material            | 1.4541 ( X 6 CrNiTi 18 10 )  |
| 5 | Dimension standard  | DIN 2605-1   |
| 6 | Terms of delivery   | DIN 2609   |
| 7 | Certificate         | 3.1.C or 3.2 according to DIN EN 10204   |
| 8 | Identification      | DIN 2609, section 6  |
| 9 | Ordering addition   | <p>Elbow 90°, type 3, with decreased utilization factor,<br/>made of welded pipe according to DIN 17457</p> <p>Type d2 / k2 according to DIN 17457, table 6</p> <p>Weld preparation according to DIN 2559-1 and DIN 2559-3</p> <p>Testing class 2 according to DIN 17457, AD 2000-leaflet W2</p> <p>Inner surfaces free of oil, grease and slip additive<br/>(max.: 300 mg/m<sup>2</sup>)</p> <p>Ends closed with caps</p> <p>Requirements AD 2000-leaflet W2 and W10, table 1,<br/>must be met</p> <p>An inspection certificate 3.1.C is required as proof, if the<br/>manufacturer does not meet the requirements<br/>according to AD 2000-leaflet W4, section 2.2</p> <p>At wall thicknesses ≤ 10 mm, an inspection certificate<br/>3.1.B is sufficient, if the requirements according to AD<br/>2000-sheet W2, section 6.2.1, are met.</p> |

| Ident-<br>No. | nom.<br>diameter | dimensions         | weights | pipe connection<br>wall thickness |
|---------------|------------------|--------------------|---------|-----------------------------------|
|               | ND               | d <sub>a</sub> x s | kg      | s <sub>R</sub>                    |
| 18274         | 15               | 21,3 x 1,6         | 0,03    | 1,60                              |
| 18275         | 20               | 26,9 x 1,6         | 0,05    | 1,60                              |
| 18276         | 25               | 33,7 x 2           | 0,09    | 2,00                              |
| 18277         | 32               | 42,4 x 2           | 0,15    | 2,00                              |

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| Ident-No. | nom.<br>diameter | dimensions         | weights | pipe connection<br>wall thickness |
|-----------|------------------|--------------------|---------|-----------------------------------|
|           | ND               | d <sub>a</sub> x s | kg      | s <sub>R</sub>                    |
| 18278     | 40               | 48,3 x 2           | 0,21    | 2,00                              |
| 18279     | 50               | 60,3 x 2           | 0,35    | 2,00                              |
| 18280     | 65               | 76,1 x 2,3         | 0,63    | 2,30                              |
| 18281     | 80               | 88,9 x 2,3         | 0,89    | 2,30                              |
| 18282     | 100              | 114,3 x 2,6        | 1,74    | 2,60                              |
| 18283     | 125              | 139,7 x 4          | 4,06    | 2,60                              |
| 18284     | 150              | 168,3 x 4          | 5,90    | 4,00                              |
| 18285     | 200              | 219,1 x 4,5        | 11,40   | 4,50                              |
| 18286     | 250              | 273 x 6,3          | 25,14   | 5,00                              |
| 18287     | 300              | 323,9 x 7,1        | 40,40   | 5,60                              |
| 18288     | 350              | 355,6 x 8          | 58,27   | 8,00                              |
| 18289     | 400              | 406,4 x 8,8        | 83,94   | 8,80                              |
| 18290     | 500              | 508 x 11           | 163,98  | 11,00                             |
| 18291     | 600              | 610 x 12,5         | 268,48  | 12,50                             |

## 10 Valid and listed documents

AD 2000-leaflet W2  
 AD 2000-leaflet W10  
 DIN 2559-1  
 DIN 2559-3  
 DIN 2605-1  
 DIN 2609  
 DIN 17457  
 DIN EN 10204

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**Pipe Class  
Specification PN 40**

pipe parts \* pipe class: **ZB40C1**  
Elbow 90° R=2,5 DA, welded

**AIR LIQUIDE**

|   |                     |  |
|---|---------------------|--|
| 1 | Pipe class          | ZB40C1   |
| 2 | Part identification | RB2,5DG  |
| 3 | Pipe class part     | Elbow 90° R=2,5 DA, welded   |
| 4 | Material            | 1.4541 ( X 6 CrNiTi 18 10 )  |
| 5 | Dimension standard  | DIN 2605-1   |
| 6 | Terms of delivery   | DIN 2609   |
| 7 | Certificate         | 3.1.C or 3.2 according to DIN EN 10204   |
| 8 | Identification      | DIN 2609, section 6  |
| 9 | Ordering addition   | <p>Elbow 90°, type 5, with decreased utilization factor,<br/>made of welded pipe according to DIN 17457</p> <p>Type d2 / k2 according to DIN 17457, table 6</p> <p>Weld preparation according to DIN 2559-1 and DIN 2559-3</p> <p>Testing class 2 according to DIN 17457, AD 2000-leaflet W2</p> <p>Inner surfaces free of oil, grease and slip additive<br/>(max.: 300 mg/m<sup>2</sup>)</p> <p>Ends closed with caps</p> <p>Requirements AD 2000-leaflet W2 and W10, table 1,<br/>must be met</p> <p>An inspection certificate 3.1.C is required as proof, if the<br/>manufacturer does not meet the requirements<br/>according to AD 2000-leaflet W4, section 2.2</p> <p>At wall thicknesses ≤ 10 mm, an inspection certificate<br/>3.1.B is sufficient, if the requirements according to AD<br/>2000-sheet W2, section 6.2.1, are met.</p> |

| Ident-<br>No. | nom.<br>diameter | dimensions         | weights | pipe connection<br>wall thickness |
|---------------|------------------|--------------------|---------|-----------------------------------|
|               | ND               | d <sub>a</sub> x s | kg      | s <sub>R</sub>                    |
| 18292         | 15               | 21,3 x 1,6         | 0,05    | 1,60                              |
| 18293         | 20               | 26,9 x 1,6         | 0,09    | 1,60                              |
| 18294         | 25               | 33, 7 x 2          | 0,18    | 2, 00                             |
| 18295         | 32               | 42,4 x 2           | 0,29    | 2,00                              |

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| Ident-No. | nom.<br>diameter | dimensions         | weights | pipe connection<br>wall thickness |
|-----------|------------------|--------------------|---------|-----------------------------------|
|           | ND               | d <sub>a</sub> x s | kg      | s <sub>R</sub>                    |
| 18296     | 40               | 48,3 x 2           | 0,39    | 2,00                              |
| 18297     | 50               | 60,3 x 2           | 0,62    | 2,00                              |
| 18298     | 65               | 76,1 x 2, 3        | 1,17    | 2, 30                             |
| 18299     | 80               | 88,9 x 2,3         | 1,60    | 2,30                              |
| 18300     | 100              | 114,3 x 2,6        | 3,08    | 2,60                              |
| 18301     | 125              | 139,7 x 4          | 7,05    | 2,60                              |
| 18302     | 150              | 168,3 x 4          | 10,05   | 4,00                              |
| 18303     | 200              | 219,1 x 4,5        | 19,07   | 4,50                              |
| 18304     | 250              | 273 x 6,3          | 42,88   | 5,00                              |
| 18305     | 300              | 323,9 x 7,1        | 68,54   | 5,60                              |
| 18306     | 350              | 355,6 x 8          | 92,93   | 8,00                              |
| 18307     | 400              | 406,4 x 8,8        | 133,47  | 8,80                              |
| 18308     | 500              | 508 x 11           | 267,92  | 11,00                             |
| 18309     | 600              | 610 x 12,5         | 447,95  | 12,50                             |

#### 10 Valid and listed documents

AD 2000-leaflet W2  
 AD 2000-leaflet W10  
 DIN 2559-1  
 DIN 2559-3  
 DIN 2605-1  
 DIN 2609  
 DIN 17457  
 DIN EN 10204

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**Pipe Class  
Specification PN 40**

pipe parts \* pipe class: ZB40C1  
Tee made of welded pipe

**AIR LIQUIDE**

|   |                     |   |
|---|---------------------|---|
| 1 | Pipe class          | ZB40C1  |
| 2 | Part identification | TG  |
| 3 | Pipe class part     | Tee made of welded pipe   |
| 4 | Material            | 1.4541 ( X 6 CrNiTi 18 10 )   |
| 5 | Dimension standard  | DIN 2615-1  |
| 6 | Terms of delivery   | DIN 2609  |
| 7 | Certificate         | 3.1.C or 3.2 according to DIN EN 10204  |
| 8 | Identification      | DIN 2609, section 6   |
| 9 | Ordering addition   | <p>Tee with decreased utilization factor, made of welded pipe according to DIN 17457</p> <p>Style of execution d2 / k2 according to DIN 2559-1 and DIN 2559-3</p> <p>Weld preparation according to DIN 2559-1 and DIN 2559-3</p> <p>Testing class 2 according to DIN 17457, AD 2000-sheet W2</p> <p>Inner surfaces free of oil, grease and slip additive (max.: 300 mg/m<sup>2</sup>)</p> <p>Ends closed with caps</p> <p>Requirements AD 2000-sheet W2 and W10, table 1, must be met</p> <p>At wall thicknesses ≤ 10 mm, an inspection certificate 3.1.B is sufficient, if the requirements according to AD 2000-sheet W2, section 6.2.1, are met.</p> |

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| Ident-Nr. | Nom. width |     | dimensions |            | weights | Pipe connection wall thickness |      |
|-----------|------------|-----|------------|------------|---------|--------------------------------|------|
|           | DN1        | DN2 | d1 x s1    | d2 x s2    | kg      | *R1                            | *R2  |
| 18421     | 15         | 15  | 21,3 x 1,6 | 21,3 x 1,6 | 0,05    | 1,60                           | 1,60 |
| 18422     | 20         | 15  | 26,9 x 1,6 | 21,3 x 1,6 | 0,07    | 1,60                           | 1,60 |
| 18423     | 20         | 20  | 26,9 x 1,6 | 26,9 x 1,6 | 0,07    | 1,60                           | 1,60 |

| Ident-Nr. | Nom. width |     | dimensions |            | weights | Pipe connection wall thickness |      |
|-----------|------------|-----|------------|------------|---------|--------------------------------|------|
|           | DN1        | DN2 | d1 x s1    | d2 x s2    | kg      | *R1                            | *R2  |
| 18424     | 25         | 15  | 33,7 x 2   | 21,3 x 1,6 | 0,14    | 2,00                           | 1,60 |
| 18425     | 25         | 20  | 33,7 x 2   | 26,9 x 1,6 | 0,15    | 2,00                           | 1,60 |
| 18426     | 25         | 25  | 33,7 x 2   | 33,7 x 2   | 0,15    | 2,00                           | 2,00 |
| 18427     | 32         | 15  | 42,4 x 2   | 21,3 x 1,6 | 0,22    | 2,00                           | 1,60 |
| 18428     | 32         | 20  | 42,4 x 2   | 26,9 x 1,6 | 0,23    | 2,00                           | 1,60 |
| 18429     | 32         | 25  | 42,4 x 2   | 33,7 x 2   | 0,24    | 2,00                           | 2,00 |
| 18430     | 32         | 32  | 42,4 x 2   | 42,4 x 2   | 0,25    | 2,00                           | 2,00 |
| 18431     | 40         | 20  | 48,3 x 2   | 26,9 x 1,6 | 0,31    | 2,00                           | 1,60 |
| 18432     | 40         | 25  | 48,3 x 2   | 33,7 x 2   | 0,33    | 2,00                           | 2,00 |
| 18433     | 40         | 32  | 48,3 x 2   | 42,4 x 2   | 0,34    | 2,00                           | 2,00 |
| 18434     | 40         | 40  | 48,3 x 2   | 48,3 x 2   | 0,34    | 2,00                           | 2,00 |
| 18435     | 50         | 20  | 60,3 x 2,9 | 26,9 x 2,3 | 0,58    | 2,00                           | 1,60 |
| 18436     | 50         | 25  | 60,3 x 2,9 | 33,7 x 2,6 | 0,60    | 2,00                           | 2,00 |
| 18437     | 50         | 32  | 60,3 x 2,9 | 42,4 x 2,6 | 0,63    | 2,00                           | 2,00 |
| 18438     | 50         | 40  | 60,3 x 2,9 | 48,3 x 2,6 | 0,64    | 2,00                           | 2,00 |
| 18439     | 50         | 50  | 60,3 x 2,9 | 60,3 x 2,9 | 0,68    | 2,00                           | 2,00 |
| 18440     | 65         | 25  | 76,1 x 2,9 | 33,7 x 2,6 | 0,73    | 2,30                           | 2,00 |
| 18441     | 65         | 32  | 76,1 x 2,9 | 42,4 x 2,6 | 0,76    | 2,30                           | 2,00 |
| 18442     | 65         | 40  | 76,1 x 2,9 | 48,3 x 2,6 | 0,77    | 2,30                           | 2,00 |
| 18443     | 65         | 50  | 76,1 x 2,9 | 60,3 x 2,9 | 0,98    | 2,30                           | 2,00 |
| 18444     | 65         | 65  | 76,1 x 2,9 | 76,1 x 2,9 | 1,01    | 2,30                           | 2,30 |
| 18445     | 80         | 32  | 88,9 x 3,2 | 42,4 x 2,6 | 1,30    | 2,30                           | 2,00 |
| 18446     | 80         | 40  | 88,9 x 3,2 | 48,3 x 2,6 | 1,33    | 2,30                           | 2,00 |
| 18447     | 80         | 50  | 88,9 x 3,2 | 60,3 x 2,9 | 1,37    | 2,30                           | 2,00 |
| 18448     | 80         | 65  | 88,9 x 5,6 | 76,1 x 5   | 2,37    | 2,30                           | 2,30 |
| 18449     | 80         | 80  | 88,9 x 5,6 | 88,9 x 5,6 | 2,46    | 2,30                           | 2,30 |

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| Ident-Nr. | Nom. width      |                 | dimensions                      |                                 | weights | Pipe connection wall thickness |                 |
|-----------|-----------------|-----------------|---------------------------------|---------------------------------|---------|--------------------------------|-----------------|
|           | DN <sub>1</sub> | DN <sub>2</sub> | d <sub>1</sub> x s <sub>1</sub> | d <sub>2</sub> x s <sub>2</sub> | kg      | *R <sub>1</sub>                | *R <sub>2</sub> |
| 18450     | 100             | 40              | 114,3 x 3,6                     | 48,3 x 2,6                      | 2,28    | 2,60                           | 2,00            |
| 18451     | 100             | 50              | 114,3 x 3,6                     | 60,3 x 2,9                      | 2,34    | 2,60                           | 2,00            |
| 18452     | 100             | 65              | 114,3 x 6,3                     | 76,1 x 5                        | 4,10    | 2,60                           | 2,30            |
| 18453     | 100             | 80              | 114,3 x 6,3                     | 88,9 x 5,6                      | 4,22    | 2,60                           | 2,30            |
| 18454     | 100             | 100             | 114,3 x 6,3                     | 114,3 x 3,6                     | 4,41    | 2,60                           | 2,60            |
| 18455     | 125             | 50              | 139,7 x 6,3                     | 60,3 x 4,5                      | 5,67    | 2,60                           | 2,00            |
| 18456     | 125             | 65              | 139,7 x 6,3                     | 76,1 x 5                        | 5,83    | 2,60                           | 2,30            |
| 18457     | 125             | 80              | 139,7 x 6,3                     | 88,9 x 5,6                      | 6,00    | 2,60                           | 2,30            |
| 18458     | 125             | 100             | 139,7 x 6,3                     | 114,3 x 6,3                     | 6,23    | 2,60                           | 2,60            |
| 18459     | 125             | 125             | 139,7 x 6,3                     | 139,7 x 6,3                     | 6,35    | 2,60                           | 2,60            |
| 18460     | 150             | 65              | 168,3 x 7,1                     | 76,1 x 5                        | 8,92    | 4,00                           | 2,30            |
| 18461     | 150             | 80              | 168,3 x 7,1                     | 88,9 x 5,6                      | 9,11    | 4,00                           | 2,30            |
| 18462     | 150             | 100             | 168,3 x 7,1                     | 114,3 x 6,3                     | 9,42    | 4,00                           | 2,60            |
| 18463     | 150             | 125             | 168,3 x 7,1                     | 139,7 x 6,3                     | 9,59    | 4,00                           | 2,60            |
| 18464     | 150             | 150             | 168,3 x 7,1                     | 168,3 x 7,1                     | 9,86    | 4,00                           | 4,00            |
| 18465     | 200             | 80              | 219,1 x 8                       | 88,9 x 5,6                      | 12,70   | 4,50                           | 2,30            |
| 18466     | 200             | 100             | 219,1 x 8                       | 114,3 x 6,3                     | 12,95   | 4,50                           | 2,60            |
| 18467     | 200             | 125             | 219,1 x 8                       | 139,7 x 6,3                     | 13,22   | 4,50                           | 2,60            |
| 18468     | 200             | 150             | 219,1 x 8                       | 168,3 x 7,1                     | 13,52   | 4,50                           | 4,00            |
| 18469     | 200             | 200             | 219,1 x 12,5                    | 219,1 x 12,5                    | 27,10   | 4,50                           | 4,50            |
| 18470     | 250             | 100             | 273 x 8,8                       | 114,3 x 6,3                     | 27,32   | 5,00                           | 2,60            |
| 18471     | 250             | 125             | 273 x 14,2                      | 139,7 x 10                      | 43,70   | 5,00                           | 2,60            |
| 18472     | 250             | 150             | 273 x 14,2                      | 168,3 x 11                      | 44,50   | 5,00                           | 4,00            |
| 18473     | 250             | 200             | 273 x 14,2                      | 219,1 x 12,5                    | 45,70   | 5,00                           | 4,50            |
| 18474     | 250             | 250             | 273 x 14,2                      | 273 x 14,2                      | 47,10   | 5,00                           | 5,00            |

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| Ident-Nr. | Nom. width      |                 | dimensions                      |                                 | weights | Pipe connection wall thickness |                 |
|-----------|-----------------|-----------------|---------------------------------|---------------------------------|---------|--------------------------------|-----------------|
|           | DN <sub>1</sub> | DN <sub>2</sub> | d <sub>1</sub> x s <sub>1</sub> | d <sub>2</sub> x s <sub>2</sub> | kg      | *R <sub>1</sub>                | *R <sub>2</sub> |
| 18475     | 300             | 125             | 323,9 x 16                      | 139,7 x 10                      | 67,42   | 5,60                           | 2,60            |
| 18476     | 300             | 150             | 323,9 x 16                      | 168,3 x 11                      | 68,50   | 5,60                           | 4,00            |
| 18477     | 300             | 200             | 323,9 x 16                      | 219,1 x 12,5                    | 70,30   | 5,60                           | 4,50            |
| 18478     | 300             | 250             | 323,9 x 16                      | 273 x 14,2                      | 72,30   | 5,60                           | 5,00            |
| 18479     | 300             | 300             | 323,9 x 16                      | 323,9 x 16                      | 74,00   | 5,60                           | 5,60            |
| 18480     | 350             | 150             | 355,6 x 17,5                    | 168,3 x 11                      | 89,40   | 8,00                           | 4,00            |
| 18481     | 350             | 200             | 355,6 x 17,5                    | 219,1 x 12,5                    | 91,50   | 8,00                           | 4,50            |
| 18482     | 350             | 250             | 355,6 x 17,5                    | 273 x 14,2                      | 93,76   | 8,00                           | 5,00            |
| 18483     | 350             | 300             | 355,6 x 17,5                    | 323,9 x 16                      | 96,00   | 8,00                           | 5,60            |
| 18484     | 350             | 350             | 355,6 x 17,5                    | 355,6 x 17,5                    | 97,66   | 8,00                           | 8,00            |
| 18485     | 400             | 150             | 406,4 x 20                      | 168,3 x 11                      | 125,83  | 8,80                           | 4,00            |
| 18486     | 400             | 200             | 406,4 x 20                      | 219,1 x 12,5                    | 128,45  | 8,80                           | 4,50            |
| 18487     | 400             | 250             | 406,4 x 20                      | 273 x 14,2                      | 131,52  | 8,80                           | 5,00            |
| 18488     | 400             | 300             | 406,4 x 20                      | 323,9 x 16                      | 134,45  | 8,80                           | 5,60            |
| 18489     | 400             | 350             | 406,4 x 20                      | 355,6 x 17,5                    | 136,90  | 8,80                           | 8,00            |
| 18490     | 400             | 400             | 406,4 x 20                      | 406,4 x 20                      | 137,80  | 8,80                           | 8,80            |
| 18491     | 500             | 200             | 508 x 25                        | 219,1 x 12,5                    | 244,10  | 11,00                          | 4,50            |
| 18492     | 500             | 250             | 508 x 25                        | 273 x 14,2                      | 248,46  | 11,00                          | 5,00            |
| 18493     | 500             | 300             | 508 x 25                        | 323,9 x 16                      | 253,10  | 11,00                          | 5,60            |
| 18494     | 500             | 350             | 508 x 25                        | 355,6 x 17,5                    | 256,78  | 11,00                          | 8,00            |
| 18495     | 500             | 400             | 508 x 25                        | 406,4 x 20                      | 259,95  | 11,00                          | 8,80            |
| 18496     | 500             | 500             | 508 x 25                        | 508 x 25                        | 268,78  | 11,00                          | 11,00           |

#### 10 Valid and listed documents

AD 2000-leaflet W2  
 AD 2000-leaflet W10  
 DIN 2559-1  
 DIN 2559-3  
 DIN 2615-1  
 DIN 2609  
 DIN 17457  
 DIN EN 10204

**Pipe Class  
Specification PN 46**
**pipe parts \* pipe class: ZB40C1  
Reducer, concentric, welded**

|   |                     |   |
|---|---------------------|---|
| 1 | Pipe class          | ZB40C1  |
| 2 | Part identification | RZKG  |
| 3 | Pipe class part     | Reducer, concentric, welded   |
| 4 | Material            | 1.4541 ( X 6 CrNiTi 18 10 )   |
| 5 | Dimension standard  | DIN 2616-1  |
| 6 | Terms of delivery   | DIN 2609  |
| 7 | Certificate         | 3.1.C or 3.2 according to DIN EN 10204  |
| 8 | Identification      | DIN 2609, section 6   |
| 9 | Ordering addition   | <p>Reducer, concentric, with decreased utilization factor, made of welded pipe according to DIN 17457</p> <p>Type d2 /k2 according to DIN 17457, table 6</p> <p>Weld preparation according to DIN 2559-1 and DIN 2559-3</p> <p>Testing class 2 according to DIN 17457, AD 2000-leaflet W2</p> <p>Inner surfaces free of oil, grease and slip additive (max.: 300 mg/m<sup>2</sup>)</p> <p>Ends closed with caps</p> <p>Requirements AD 2000-sheet W2 and W10, must be met</p> <p>At wall thicknesses ≤ 10 mm, an inspection certificate 3.1.B is sufficient, if the requirements according to AD 2000-sheet W2, section 6.2.1, are met.</p> |

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| Ident-No. | nom. width      |                 | dimensions                      |                                 | weights | pipe connection wall thickness |                 |
|-----------|-----------------|-----------------|---------------------------------|---------------------------------|---------|--------------------------------|-----------------|
|           | ND <sub>1</sub> | ND <sub>2</sub> | d <sub>1</sub> x s <sub>1</sub> | d <sub>2</sub> x s <sub>2</sub> | kg      | s <sub>R1</sub>                | s <sub>R2</sub> |
| 18192     | 20              | 15              | 26,9 x 1,6                      | 21,3 x 1,6                      | 0,03    | 1,60                           | 1,60            |
| 18193     | 25              | 15              | 33,7 x 2                        | 21,3 x 1,6                      | 0,06    | 2,00                           | 1,60            |
| 18194     | 25              | 20              | 33,7 x 2                        | 26,9 x 1,6                      | 0,07    | 2,00                           | 1,60            |

| Ident-No. | nom. width      |                 | dimensions                      |                                 | weights | pipe connection wall thickness |                 |
|-----------|-----------------|-----------------|---------------------------------|---------------------------------|---------|--------------------------------|-----------------|
|           | ND <sub>1</sub> | ND <sub>2</sub> | d <sub>1</sub> x s <sub>1</sub> | d <sub>2</sub> x s <sub>2</sub> | kg      | S <sub>R1</sub>                | S <sub>R2</sub> |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18195     | 32              | 15              | 42,4 x 2                        | 21,3 x 1,6                      | 0,08    | 2,00                           | 1,60            |
| 18196     | 32              | 20              | 42,4 x 2                        | 26,9 x 1,6                      | 0,08    | 2,00                           | 1,60            |
| 18197     | 32              | 25              | 42,4 x 2                        | 33,7 x 2                        | 0,09    | 2,00                           | 2,00            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18198     | 40              | 20              | 48,3 x 2                        | 26,9 x 1,6                      | 0,12    | 2,00                           | 1,60            |
| 18199     | 40              | 25              | 48,3 x 2                        | 33,7 x 2                        | 0,13    | 2,00                           | 2,00            |
| 18200     | 40              | 32              | 48,3 x 2                        | 42,4 x 2                        | 0,14    | 2,00                           | 2,00            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18201     | 50              | 20              | 60,3 x 2                        | 26,9 x 1,6                      | 0,16    | 2,00                           | 1,60            |
| 18202     | 50              | 25              | 60,3 x 2                        | 33,7 x 2                        | 0,17    | 2,00                           | 2,00            |
| 18203     | 50              | 32              | 60,3 x 2                        | 42,4 x 2                        | 0,19    | 2,00                           | 2,00            |
| 18204     | 50              | 40              | 60,3 x 2                        | 48,3 x 2                        | 0,20    | 2,00                           | 2,00            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18205     | 65              | 25              | 76,1 x 2,3                      | 33,7 x 2                        | 0,27    | 2,30                           | 2,00            |
| 18206     | 65              | 32              | 76,1 x 2,3                      | 42,4 x 2                        | 0,30    | 2,30                           | 2,00            |
| 18207     | 65              | 40              | 76,1 x 2,3                      | 48,3 x 2                        | 0,31    | 2,30                           | 2,00            |
| 18208     | 65              | 50              | 76,1 x 2,3                      | 60,3 x 2                        | 0,34    | 2,30                           | 2,00            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18209     | 80              | 32              | 88,9 x 2,3                      | 42,4 x 2                        | 0,33    | 2,30                           | 2,00            |
| 18210     | 80              | 40              | 88,9 x 2,3                      | 48,3 x 2                        | 0,35    | 2,30                           | 2,00            |
| 18211     | 80              | 50              | 88,9 x 2,3                      | 60,3 x 2                        | 0,38    | 2,30                           | 2,00            |
| 18212     | 80              | 65              | 88,9 x 2,3                      | 76,1 x 2,3                      | 0,42    | 2,30                           | 2,30            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18213     | 100             | 40              | 114,3 x 3,6                     | 48,3 x 2,6                      | 0,52    | 2,60                           | 2,00            |
| 18214     | 100             | 50              | 114,3 x 2,6                     | 60,3 x 2                        | 0,55    | 2,60                           | 2,00            |
| 18215     | 100             | 65              | 114,3 x 2,6                     | 76,1 x 2,3                      | 0,61    | 2,60                           | 2,30            |
| 18216     | 100             | 80              | 114,3 x 2,6                     | 88,9 x 2,3                      | 0,65    | 2,60                           | 2,30            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18217     | 125             | 50              | 139,7 x 4                       | 60,3 x 2,9                      | 1,23    | 2,60                           | 2,00            |
| 18218     | 125             | 65              | 139,7 x 4                       | 76,1 x 2,9                      | 1,33    | 2,60                           | 2,30            |
| 18219     | 125             | 80              | 139,7 x 4                       | 88,9 x 3,2                      | 1,41    | 2,60                           | 2,30            |
| 18220     | 125             | 100             | 139,7 x 2,6                     | 114,3 x 2,6                     | 1,03    | 2,60                           | 2,60            |



| Ident-No. | nom. width      |                 | dimensions                      |                                 | weights | pipe connection wall thickness |                 |
|-----------|-----------------|-----------------|---------------------------------|---------------------------------|---------|--------------------------------|-----------------|
|           | ND <sub>1</sub> | ND <sub>2</sub> | d <sub>1</sub> x s <sub>1</sub> | d <sub>2</sub> x s <sub>2</sub> | kg      | S <sub>R1</sub>                | S <sub>R2</sub> |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18221     | 150             | 65              | 168,3 x 4                       | 76,1 x 2,9                      | 1,67    | 4,00                           | 2,30            |
| 18222     | 150             | 80              | 168,3 x 4                       | 88,9 x 3,2                      | 1,80    | 4,00                           | 2,30            |
| 18223     | 150             | 100             | 168,3 x 4                       | 114,3 x 3,6                     | 2,00    | 4,00                           | 2,60            |
| 18224     | 150             | 125             | 168,3 x 4                       | 139,7 x 4                       | 2,10    | 4,00                           | 2,60            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18225     | 200             | 80              | 219,1 x 6,3                     | 88,9 x 3,2                      | 3,60    | 4,50                           | 2,30            |
| 18226     | 200             | 100             | 219,1 x 6,3                     | 114,3 x 3,6                     | 3,90    | 4,50                           | 2,60            |
| 18227     | 200             | 125             | 219,1 x 6,3                     | 139,7 x 4                       | 4,20    | 4,50                           | 2,60            |
| 18228     | 200             | 150             | 219,1 x 4,5                     | 168,3 x 4                       | 3,25    | 4,50                           | 4,00            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18229     | 250             | 100             | 273 x 8,8                       | 114,3 x 6,3                     | 7,30    | 5,00                           | 2,60            |
| 18230     | 250             | 125             | 273 x 8,8                       | 139,7 x 6,3                     | 7,80    | 5,00                           | 2,60            |
| 18231     | 250             | 150             | 273 x 6,3                       | 168,3 x 4,5                     | 6,10    | 5,00                           | 4,00            |
| 18232     | 250             | 200             | 273 x 5                         | 219,1 x 4,5                     | 5,40    | 5,00                           | 4,50            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18233     | 300             | 125             | 323,9 x 10                      | 139,7 x 6,3                     | 11,37   | 5,60                           | 2,60            |
| 18234     | 300             | 150             | 323,9 x 10                      | 168,3 x 7,1                     | 12,10   | 5,60                           | 4,00            |
| 18235     | 300             | 200             | 323,9 x 7,1                     | 219,1 x 6,3                     | 9,56    | 5,60                           | 4,50            |
| 18236     | 300             | 250             | 323,9 x 7,1                     | 273 x 6,3                       | 10,60   | 5,60                           | 5,00            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18237     | 350             | 150             | 355,6 x 8                       | 168,3 x 4,5                     | 16,90   | 8,00                           | 4,00            |
| 18238     | 350             | 200             | 355,6 x 8                       | 219,1 x 6,3                     | 18,52   | 8,00                           | 4,50            |
| 18239     | 350             | 250             | 355,6 x 8                       | 273 x 6,3                       | 20,30   | 8,00                           | 5,00            |
| 18240     | 350             | 300             | 355,6 x 8                       | 323,9 x 7,1                     | 21,96   | 8,00                           | 5,60            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18241     | 400             | 150             | 406,4 x 12,5                    | 168,3 x 7,1                     | 30,84   | 8,80                           | 4,00            |
| 18242     | 400             | 200             | 406,4 x 8,8                     | 219,1 x 6,3                     | 23,90   | 8,80                           | 4,50            |
| 18243     | 400             | 250             | 406,4 x 8,8                     | 273 x 6,3                       | 26,00   | 8,80                           | 5,00            |
| 18244     | 400             | 300             | 406,4 x 8,8                     | 323,9 x 7,1                     | 27,95   | 8,80                           | 5,60            |
| 18245     | 400             | 350             | 406,4 x 8,8                     | 355,6 x 8                       | 29,15   | 8,80                           | 8,00            |

| Ident-No. | nom. width      |                 | dimensions                      |                                 | weights | pipe connection wall thickness |                 |
|-----------|-----------------|-----------------|---------------------------------|---------------------------------|---------|--------------------------------|-----------------|
|           | ND <sub>1</sub> | ND <sub>2</sub> | d <sub>1</sub> x s <sub>1</sub> | d <sub>2</sub> x s <sub>2</sub> | kg      | s <sub>R1</sub>                | s <sub>R2</sub> |
| 18246     | 500             | 200             | 508 x 11                        | 219,1 x 6,3                     | 49,67   | 11,00                          | 4,50            |
| 18247     | 500             | 250             | 508 x 11                        | 273 x 6,3                       | 53,43   | 11,00                          | 5,00            |
| 18248     | 500             | 300             | 508 x 11                        | 323,9 x 7,1                     | 57,00   | 11,00                          | 5,60            |
| 18249     | 500             | 350             | 508 x 11                        | 355,6 x 8                       | 59,10   | 11,00                          | 8,00            |
| 18250     | 500             | 400             | 508 x 11                        | 406,4 x 8,8                     | 62,60   | 11,00                          | 8,80            |
| 18251     | 600             | 250             | 610 x 17,5                      | 273 x 8,8                       | 95,35   | 12,50                          | 5,00            |
| 18252     | 600             | 300             | 610 x 17,5                      | 323,9 x 10                      | 100,10  | 12,50                          | 5,60            |
| 18253     | 600             | 350             | 610 x 12,5                      | 355,6 x 8                       | 75,14   | 12,50                          | 8,00            |
| 18254     | 600             | 400             | 610 x 12,5                      | 406,4 x 8,8                     | 79,10   | 12,50                          | 8,80            |
| 18255     | 600             | 500             | 610 x 12,5                      | 508 x 11                        | 87,01   | 12,50                          | 11,00           |

#### 10 Valid and listed documents

AD 2000-leaflet W2  
 AD 2000-leaflet W10  
 DIN 2559-1  
 DIN 2559-3  
 DIN 2616-1  
 DIN 2609  
 DIN 17457  
 DIN EN 10204

**Pipe Class  
Specification PN 40**
**pipe parts \* pipe class: ZB40C1  
Reducer, eccentric, welded**

|   |                     |  |
|---|---------------------|--|
| 1 | Pipe class          | ZB40C1   |
| 2 | Part identification | RZEG   |
| 3 | Pipe class part     | Reducer, eccentric, welded   |
| 4 | Material            | 1.4541 ( X 6 CrNiTi 18 10 )  |
| 5 | Dimension standard  | DIN 2616-1   |
| 6 | Terms of delivery   | DIN 2609   |
| 7 | Certificate         | 3.1.C or 3.2 according to DIN EN 10204   |
| 8 | Identification      | DIN 2609, section 6  |
| 9 | Ordering addition   | <p>Reducer, eccentric, with decreased utilization factor, made of welded pipe according to DIN 17457</p> <p>Type d2 / k2 according to DIN 17457, table 6</p> <p>Weld preparation according to DIN 2559-1 and DIN 2559-3</p> <p>Testing class 2 according to DIN 17457, AD 2000-leaflet W2</p> <p>Inner surfaces free of oil, grease and slip additive (max.: 300 mg/m<sup>2</sup>)</p> <p>Ends closed with caps</p> <p>Requirements AD 2000-sheet W2 and W10, table 1, must be met</p> <p>At wall thicknesses ≤ 10 mm, an inspection certificate 3.1.B is sufficient, if the requirements according to AD 2000-sheet W2, section 6.2.1, are met.</p> |

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| Ident-No. | nom. width      |                 | dimensions                      |                                 | weights | pipe connection wall thickness |                 |
|-----------|-----------------|-----------------|---------------------------------|---------------------------------|---------|--------------------------------|-----------------|
|           | ND <sub>1</sub> | ND <sub>2</sub> | d <sub>1</sub> x s <sub>1</sub> | d <sub>2</sub> x s <sub>2</sub> | kg      | s <sub>R1</sub>                | s <sub>R2</sub> |
| 18128     | 20              | 15              | 26,9 x 1,6                      | 21,3 x 1,6                      | 0,03    | 1,60                           | 1,60            |
| 18129     | 25              | 15              | 33,7 x 2                        | 21,3 x 1,6                      | 0,06    | 2,00                           | 1,60            |
| 18130     | 25              | 20              | 33,7 x 2                        | 26,9 x 1,6                      | 0,07    | 2,00                           | 1,60            |

| Ident-No. | nom. width      |                 | dimensions                      |                                 | weights | pipe connection wall thickness |                 |
|-----------|-----------------|-----------------|---------------------------------|---------------------------------|---------|--------------------------------|-----------------|
|           | ND <sub>1</sub> | ND <sub>2</sub> | d <sub>1</sub> x s <sub>1</sub> | d <sub>2</sub> x s <sub>2</sub> | kg      | S <sub>R1</sub>                | S <sub>R2</sub> |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18131     | 32              | 15              | 42,4 x 2                        | 21,3 x 1,6                      | 0,08    | 2,00                           | 1,60            |
| 18132     | 32              | 20              | 42,4 x 2                        | 26,9 x 1,6                      | 0,08    | 2,00                           | 1,60            |
| 18133     | 32              | 25              | 42,4 x 2                        | 33,7 x 2                        | 0,09    | 2,00                           | 2,00            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18134     | 40              | 20              | 48,3 x 2                        | 26,9 x 1,6                      | 0,12    | 2,00                           | 1,60            |
| 18135     | 40              | 25              | 48,3 x 2                        | 33,7 x 2                        | 0,13    | 2,00                           | 2,00            |
| 18136     | 40              | 32              | 48,3 x 2                        | 42,4 x 2                        | 0,14    | 2,00                           | 2,00            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18137     | 50              | 20              | 60,3 x 2                        | 26,9 x 1,6                      | 0,16    | 2,00                           | 1,60            |
| 18138     | 50              | 25              | 60,3 x 2                        | 33,7 x 2                        | 0,17    | 2,00                           | 2,00            |
| 18139     | 50              | 32              | 60,3 x 2                        | 42,4 x 2                        | 0,19    | 2,00                           | 2,00            |
| 18140     | 50              | 40              | 60,3 x 2                        | 48,3 x 2                        | 0,20    | 2,00                           | 2,00            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18141     | 65              | 25              | 76,1 x 2,3                      | 33,7 x 2                        | 0,27    | 2,30                           | 2,00            |
| 18142     | 65              | 32              | 76,1 x 2,3                      | 42,4 x 2                        | 0,30    | 2,30                           | 2,00            |
| 18143     | 65              | 40              | 76,1 x 2,3                      | 48,3 x 2                        | 0,31    | 2,30                           | 2,00            |
| 18144     | 65              | 50              | 76,1 x 2,3                      | 60,3 x 2                        | 0,34    | 2,30                           | 2,00            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18145     | 80              | 32              | 88,9 x 2,3                      | 42,4 x 2                        | 0,33    | 2,30                           | 2,00            |
| 18146     | 80              | 40              | 88,9 x 2,3                      | 48,3 x 2                        | 0,35    | 2,30                           | 2,00            |
| 18147     | 80              | 50              | 88,9 x 2,3                      | 60,3 x 2                        | 0,38    | 2,30                           | 2,00            |
| 18148     | 80              | 65              | 88,9 x 2,3                      | 76,1 x 2,3                      | 0,42    | 2,30                           | 2,30            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18149     | 100             | 40              | 114,3 x 3,6                     | 48,3 x 2,6                      | 0,52    | 2,60                           | 2,00            |
| 18150     | 100             | 50              | 114,3 x 2,6                     | 60,3 x 2                        | 0,55    | 2,60                           | 2,00            |
| 18151     | 100             | 65              | 114,3 x 2,6                     | 76,1 x 2,3                      | 0,61    | 2,60                           | 2,30            |
| 18152     | 100             | 80              | 114,3 x 2,6                     | 88,9 x 2,3                      | 0,65    | 2,60                           | 2,30            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18153     | 125             | 50              | 139,7 x 4                       | 60,3 x 2,9                      | 1,23    | 2,60                           | 2,00            |
| 18154     | 125             | 65              | 139,7 x 4                       | 76,1 x 2,9                      | 1,33    | 2,60                           | 2,30            |
| 18155     | 125             | 80              | 139,7 x 4                       | 88,9 x 3,2                      | 1,41    | 2,60                           | 2,30            |
| 18156     | 125             | 100             | 139,7 x 2,6                     | 114,3 x 2,6                     | 1,03    | 2,60                           | 2,60            |

| Ident-No. | nom. width      |                 | dimensions                      |                                 | weights | pipe connection wall thickness |                 |
|-----------|-----------------|-----------------|---------------------------------|---------------------------------|---------|--------------------------------|-----------------|
|           | ND <sub>1</sub> | ND <sub>2</sub> | d <sub>1</sub> x s <sub>1</sub> | d <sub>2</sub> x s <sub>2</sub> | kg      | S <sub>R1</sub>                | S <sub>R2</sub> |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18157     | 150             | 65              | 168,3 x 4                       | 76,1 x 2,9                      | 1,67    | 4,00                           | 2,30            |
| 18158     | 150             | 80              | 168,3 x 4                       | 88,9 x 3,2                      | 1,80    | 4,00                           | 2,30            |
| 18159     | 150             | 100             | 168,3 x 4                       | 114,3 x 3,6                     | 2,00    | 4,00                           | 2,60            |
| 18160     | 150             | 125             | 168,3 x 4                       | 139,7 x 4                       | 2,10    | 4,00                           | 2,60            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18161     | 200             | 80              | 219,1 x 6,3                     | 88,9 x 3,2                      | 3,60    | 4,50                           | 2,30            |
| 18162     | 200             | 100             | 219,1 x 6,3                     | 114,3 x 3,6                     | 3,90    | 4,50                           | 2,60            |
| 18163     | 200             | 125             | 219,1 x 6,3                     | 139,7 x 4                       | 4,20    | 4,50                           | 2,60            |
| 18164     | 200             | 150             | 219,1 x 4,5                     | 168,3 x 4                       | 3,25    | 4,50                           | 4,00            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18165     | 250             | 100             | 273 x 8,8                       | 114,3 x 6,3                     | 7,30    | 5,00                           | 2,60            |
| 18166     | 250             | 125             | 273 x 8,8                       | 139,7 x 6,3                     | 7,80    | 5,00                           | 2,60            |
| 18167     | 250             | 150             | 273 x 6,3                       | 168,3 x 4,5                     | 6,10    | 5,00                           | 4,00            |
| 18168     | 250             | 200             | 273 x 5                         | 219,1 x 4,5                     | 5,40    | 5,00                           | 4,50            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18169     | 300             | 125             | 323,9 x 10                      | 139,7 x 6,3                     | 11,37   | 5,60                           | 2,60            |
| 18170     | 300             | 150             | 323,9 x 10                      | 168,3 x 7,1                     | 12,10   | 5,60                           | 4,00            |
| 18171     | 300             | 200             | 323,9 x 7,1                     | 219,1 x 6,3                     | 9,56    | 5,60                           | 4,50            |
| 18172     | 300             | 250             | 323,9 x 7,1                     | 273 x 6,3                       | 10,60   | 5,60                           | 5,00            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18173     | 350             | 150             | 355,6 x 8                       | 168,3 x 4,5                     | 16,90   | 8,00                           | 4,00            |
| 18174     | 350             | 200             | 355,6 x 8                       | 219,1 x 6,3                     | 18,52   | 8,00                           | 4,50            |
| 18175     | 350             | 250             | 355,6 x 8                       | 273 x 6,3                       | 20,30   | 8,00                           | 5,00            |
| 18176     | 350             | 300             | 355,6 x 8                       | 323,9 x 7,1                     | 21,96   | 8,00                           | 5,60            |
|           |                 |                 |                                 |                                 |         |                                |                 |
| 18177     | 400             | 150             | 406,4 x 12,5                    | 168,3 x 7,1                     | 30,84   | 8,80                           | 4,00            |
| 18178     | 400             | 200             | 406,4 x 8,8                     | 219,1 x 6,3                     | 23,90   | 8,80                           | 4,50            |
| 18179     | 400             | 250             | 406,4 x 8,8                     | 273 x 6,3                       | 26,00   | 8,80                           | 5,00            |
| 18180     | 400             | 300             | 406,4 x 8,8                     | 323,9 x 7,1                     | 27,95   | 8,80                           | 5,60            |
| 18181     | 400             | 350             | 406,4 x 8,8                     | 355,6 x 8                       | 29,15   | 8,80                           | 8,00            |

| Ident-No. | nom. width      |                 | dimensions                      |                                 | weights | pipe connection wall thickness |                 |
|-----------|-----------------|-----------------|---------------------------------|---------------------------------|---------|--------------------------------|-----------------|
|           | ND <sub>1</sub> | ND <sub>2</sub> | d <sub>1</sub> x s <sub>1</sub> | d <sub>2</sub> x s <sub>2</sub> | kg      | s <sub>R1</sub>                | s <sub>R2</sub> |
| 18182     | 500             | 200             | 508 x 11                        | 219,1 x 6,3                     | 49,67   | 11,00                          | 4,50            |
| 18183     | 500             | 250             | 508 x 11                        | 273 x 6,3                       | 53,43   | 11,00                          | 5,00            |
| 18184     | 500             | 300             | 508 x 11                        | 323,9 x 7,1                     | 57,00   | 11,00                          | 5,60            |
| 18185     | 500             | 350             | 508 x 11                        | 355,6 x 8                       | 59,10   | 11,00                          | 8,00            |
| 18186     | 500             | 400             | 508 x 11                        | 406,4 x 8,8                     | 62,60   | 11,00                          | 8,80            |
| 18187     | 600             | 250             | 610 x 17,5                      | 273 x 8,8                       | 95,35   | 12,50                          | 5,00            |
| 18188     | 600             | 300             | 610 x 17,5                      | 323,9 x 10                      | 100,10  | 12,50                          | 5,60            |
| 18189     | 600             | 350             | 610 x 12,5                      | 355,6 x 8                       | 75,14   | 12,50                          | 8,00            |
| 18190     | 600             | 400             | 610 x 12,5                      | 406,4 x 8,8                     | 79,10   | 12,50                          | 8,80            |
| 18191     | 600             | 500             | 610 x 12,5                      | 508 x 11                        | 87,01   | 12,50                          | 11,00           |

#### 10 Valid and listed documents

AD 2000-leaflet W2  
 AD 2000-leaflet W10  
 DIN 2559-1  
 DIN 2559-3  
 DIN 2616-1  
 DIN 2609  
 DIN 17457  
 DIN EN 10204

**Pipe Class  
Specification PN 40**
**pipe parts \* pipe class: ZB40C1  
Caps**

|   |                     |  |
|---|---------------------|--|
| 1 | Pipe class          | ZB40C1   |
| 2 | Part identification | KAP  |
| 3 | Pipe class part     | Caps   |
| 4 | Material            | 1.4541 ( X 6 CrNiTi 18 10 )  |
| 5 | Dimension standard  | DIN 2617   |
| 6 | Terms of delivery   | DIN 2609   |
| 7 | Certificate         | 3.1.B according to DIN EN 10204  |
| 8 | Identification      | DIN 2609, section 6  |
| 9 | Ordering addition   | <p>Cap to weld in, made of sheet steel, forging or bar stock</p> <p>Weld preparation according to DIN 2559-1 and DIN 2559-3</p> <p>Inner surfaces free of oil, grease and slip additive<br/>(max.: 300 mg/m<sup>2</sup>)</p> <p>Ends closed with caps</p> <p>Requirements AD 2000-sheet W2 and W10, table 1,<br/>must be met</p> |

| Ident-No. | nom.<br>diameter | dimensions         | weights | pipe connection<br>wall thickness |
|-----------|------------------|--------------------|---------|-----------------------------------|
|           | DN               | d <sub>a</sub> x s | kg      | s <sub>R</sub>                    |
| 18110     | 15               | 21,3 x 1,6         | 0,02    | 1,60                              |
| 18111     | 20               | 26,9 x 1,6         | 0,03    | 1,60                              |
| 18112     | 25               | 33,7 x 2           | 0,06    | 2,00                              |
| 18113     | 32               | 42,4 x 2           | 0,08    | 2,00                              |
| 18114     | 40               | 48,3 x 2           | 0,10    | 2,00                              |
| 18115     | 50               | 60,3 x 2           | 0,12    | 2,00                              |
| 18116     | 65               | 76,1 x 2,3         | 0,18    | 2,30                              |
| 18117     | 80               | 88,9 x 2,3         | 0,29    | 2,30                              |

| Ident-No. | nom.<br>diameter | dimensions         | weights | pipe connection<br>wall thickness |
|-----------|------------------|--------------------|---------|-----------------------------------|
|           | DN               | d <sub>a</sub> x s | kg      | s <sub>R</sub>                    |
| 18118     | 100              | 114,3 x 2,6        | 0,53    | 2,60                              |
| 18119     | 125              | 139,7 x 2,6        | 0,77    | 2,60                              |
| 18120     | 150              | 168,3 x 4          | 1,66    | 4,00                              |
| 18121     | 200              | 219,1 x 4,5        | 2,84    | 4,50                              |
| 18122     | 250              | 273 x 5            | 4,95    | 5,00                              |
| 18123     | 300              | 323,9 x 5,6        | 7,89    | 5,60                              |
| 18124     | 350              | 355,6 x 8          | 13,29   | 8,00                              |
| 18125     | 400              | 406,4 x 8,8        | 18,21   | 8,80                              |
| 18126     | 500              | 508 x 11           | 36,48   | 11,00                             |
| 18127     | 600              | 610 x 12,5         | 58,42   | 12,50                             |

#### 10 Valid and listed documents

AD 2000-leaflet W2  
 AD 2000-leaflet W10  
 DIN 2559-1  
 DIN 2559-2  
 DIN 2609  
 DIN 2617  
 DIN EN 10204



**Pipe Class  
Specification PN 40**
**pipe parts \* pipe class: ZB40C1  
Blanks**

|   |                     |   |
|---|---------------------|---|
| 1 | Pipe class          | ZB40C1  |
| 2 | Part identification | BSS   |
| 3 | Pipe class part     | Blanks  |
| 4 | Material            | 1.4541 ( X 6 CrNiTi 18 10 )   |
| 5 | Dimension standard  | Uhde- Norm 3902-1   |
| 6 | Terms of delivery   | DIN 17440   |
| 7 | Certificate         | 3.1.C or 3.2 according to DIN EN 10204  |
| 8 | Identification      |   |
| 9 | Ordering addition   | <p>Two-part figure-eight blank for DIN-flange with flat seal, made of hot-rolled flat steel according to DIN EN 10029, class A</p> <p>Inner surfaces free of oil, grease and slip additive (max.: 300 mg/m<sup>2</sup>)</p> <p>Packed in PE-bags, diameter 200 and above shrink-wrapped in PE-foil</p> <p>Requirements AD 2000-sheet W2 and W10, table 1, must be met</p> <p>At wall thicknesses ≤ 30 mm, an inspection certificate 3.1.B is sufficient</p> |

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| Ident-Nr. | nom. width | diameter | diameter | thickness | weights |
|-----------|------------|----------|----------|-----------|---------|
|           | ND         | d1       | d2       | s1        | kg      |
| 18042     | 15         | 40,00    | 20,00    | 10        | 0,00    |
| 18043     | 20         | 60,00    | 25,00    | 10        | 0,00    |
| 18044     | 25         | 70,00    | 30,00    | 10        | 0,00    |
| 18045     | 32         | 81,00    | 40,00    | 10        | 0,00    |
| 18046     | 40         | 91,00    | 45,00    | 10        | 0,00    |
| 18047     | 50         | 106,00   | 57,00    | 10        | 0,00    |
| 18048     | 65         | 126,00   | 73,00    | 10        | 0,00    |

| Ident-Nr. | nom. width | diameter       | diameter       | thickness      | weights |
|-----------|------------|----------------|----------------|----------------|---------|
|           | ND         | d <sub>1</sub> | d <sub>2</sub> | s <sub>1</sub> | kg      |
| 18049     | 80         | 141,00         | 85,00          | 10             | 0,00    |
| 18050     | 100        | 167,00         | 110,00         | 15             | 0,00    |
| 18051     | 125        | 193,00         | 135,00         | 15             | 0,00    |
| 18052     | 150        | 223,00         | 160,00         | 20             | 0,00    |
| 18053     | 200        | 289,00         | 210,00         | 25             | 0,00    |
| 18054     | 250        | 351,00         | 262,00         | 30             | 0,00    |
| 18055     | 300        | 416,00         | 312,00         | 40             | 0,00    |
| 18056     | 350        | 473,00         | 342,00         | 40             | 0,00    |
| 18057     | 400        | 545,00         | 390,00         | 50             | 0,00    |
| 18058     | 500        | 627,00         | 498,00         | 50             | 0,00    |

**10 Valid and listed documents**

AD 2000-leaflet W2  
AD 2000-leaflet W10  
DIN 17440  
DIN EN 10029-A  
DIN EN 10204  
Uhde-Norm 3902-1

**Pipe Class  
Specification PN 40**
**pipe parts \* pipe class: ZB40C1  
Welding neck flanges**

|          |                            |   |
|----------|----------------------------|---|
| <b>1</b> | <b>Pipe class</b>          | ZB40C1  |
| <b>2</b> | <b>Part identification</b> | VF  |
| <b>3</b> | <b>Pipe class part</b>     | Welding neck flanges                                  |
| <b>4</b> | <b>Material</b>            | 1.4541 ( X 6 CrNiTi 18 10 )                           |
| <b>5</b> | <b>Dimension standard</b>  | DIN EN 1092-1   |
| <b>6</b> | <b>Terms of delivery</b>   | DIN EN 1092-1   |
| <b>7</b> | <b>Certificate</b>         | 3.1.C or 3.2 according to DIN EN 10204                |
| <b>8</b> | <b>Identification</b>      | AD 2000-leaflet W9, section 5                         |
| <b>9</b> | <b>Ordering addition</b>   | Forged welding neck flanges with flat seal (shape B1) |

free of oil, grease and slip additive  
(max.: 300 mg/m<sup>2</sup>)

Ends closed with caps

Requirements AD 2000-Merkblatt W2, W9 and W10,  
table 1, must be met

At forged pieces with wall thicknesses ≤ 250 mm, an  
inspection certificate 3.1.B is sufficient according to AD  
2000-leaf W2, table 6.2

| Ident-No. | nom. diameter | dimensions | weights |
|-----------|---------------|------------|---------|
|           | ND            | ND x ØA    | kg      |
| 18497     | 15            | 15 x 21,3  | 1,00    |
| 18498     | 20            | 20 x 26,9  | 1,00    |
| 18499     | 25            | 25 x 33,7  | 1,00    |
| 18500     | 32            | 32 x 42,4  | 2,00    |
| 18501     | 40            | 40 x 48,3  | 2,00    |
| 18502     | 50            | 50 x 60,3  | 3,00    |

| Ident-No. | nom. diameter | dimensions  | weights |
|-----------|---------------|-------------|---------|
|           | ND            | ND x ØA     | kg      |
| 18503     | 65            | 65 x 76,1   | 4,00    |
| 18504     | 80            | 80 x 88,9   | 5,00    |
| 18505     | 100           | 100 x 114,3 | 6,50    |
| 18506     | 125           | 125 x 139,7 | 9,00    |
| 18507     | 150           | 150 x 168,3 | 11,50   |
| 18508     | 200           | 200 x 219,1 | 21,00   |
| 18509     | 250           | 250 x 273   | 34,00   |
| 18510     | 300           | 300 x 323,9 | 47,50   |
| 18511     | 350           | 350 x 355,6 | 69,00   |
| 18512     | 400           | 400 x 406,4 | 98,00   |
| 18513     | 500           | 500 x 508   | 130,50  |

#### 10 Valid and listed documents

AD 2000-leaflet W2  
AD 2000-leaflet W9  
AD 2000-leaflet W10  
DIN EN 1092-1  
DIN EN 10204

**Pipe Class  
Specification PN 40**
**pipe parts \* pipe class: ZB40C1  
blind flanges**

|   |                     |   |
|---|---------------------|---|
| 1 | Pipe class          | ZB40C1  |
| 2 | Part identification | BF  |
| 3 | Pipe class part     | Blind flanges   |
| 4 | Material            | 1.4541 ( X 6 CrNiTi 18 10 )   |
| 5 | Dimension standard  | DIN EN 1092-1   |
| 6 | Terms of delivery   | DIN EN 1092-1   |
| 7 | Certificate         | 3.1.C or 3.2 according to DIN EN 10204  |
| 8 | Identification      | AD 2000-sheet W9, section 5   |
| 9 | Ordering addition   | <p>blind flanges with flat seal (shape A)</p> <p>free of oil, grease and slip additive<br/>(max.: 300 mg/m<sup>2</sup>)</p> <p>Packed in PE-bags, diameter 200 and above shrink-<br/>wrapped in PE-foil</p> <p>Requirements AD 2000-Merkblatt W2, W9 and W10,<br/>must be met</p> <p>At forged pieces with wall thicknesses ≤ 250 mm, an<br/>inspection certificate 3.1.B is sufficient according to AD<br/>2000-leaf W2, table 6.2</p> |

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| Ident-No. | nom. diameter | weights |
|-----------|---------------|---------|
|           | ND            | kg      |
| 18025     | 15            | 1, 00   |
| 18026     | 20            | 1,00    |
| 18027     | 25            | 1,50    |
| 18028     | 32            | 2,00    |
| 18029     | 40            | 2,50    |
| 18030     | 50            | 3,00    |

| Ident-No. | nom. diameter | weights |
|-----------|---------------|---------|
|           | ND            | kg      |
| 18031     | 65            | 4,50    |
| 18032     | 80            | 5,50    |
| 18033     | 100           | 7,50    |
| 18034     | 125           | 11, 00  |
| 18035     | 150           | 14,50   |
| 18036     | 200           | 29,00   |
| 18037     | 250           | 44,50   |
| 18038     | 300           | 64,00   |
| 18039     | 350           | 89,50   |
| 18040     | 400           | 127,00  |
| 18041     | 500           | 188,00  |

**10 Valid and listed documents**

AD 2000-leaflet W2  
AD 2000-leaflet W9  
AD 2000-leaflet W10  
DIN 1092-1  
DIN EN 10204

**Pipe Class  
Specification PN 40**
**pipe parts \* pipe class: ZB40C1  
Hexagon head screws**

|          |                            |   |
|----------|----------------------------|---|
| <b>1</b> | <b>Pipe class</b>          | ZB40C1  |
| <b>2</b> | <b>Part identification</b> | SKS   |
| <b>3</b> | <b>Pipe class part</b>     | Tee made of welded pipe   |
| <b>4</b> | <b>Material</b>            | A2-70 resp. A2-50   |
| <b>5</b> | <b>Dimension standard</b>  | DIN EN ISO 4014   |
| <b>6</b> | <b>Terms of delivery</b>   | DIN EN ISO 3506   |
| <b>7</b> | <b>Certificate</b>         | 3.1.B according to DIN EN 10204   |
| <b>8</b> | <b>Identification</b>      | DIN EN ISO 3506-1, section 3  |
| <b>9</b> | <b>Ordering addition</b>   | <p>Product class A (minimum value from thread <math>\leq</math> M24 and nominal length <math>\leq</math> 10d or 150 mm)</p> <p>Product class B (minimum value from thread <math>&gt;</math> M24 or nominal length <math>&gt;</math> 10d or 150 mm)</p> <p>A2/A4-70 at diameters <math>\leq</math> M24</p> <p>A2/A4-70 at diameters <math>&gt;</math> M24</p> <p>Requirements AD 2000-leaflet W2 and W10, table 1, must be met</p> |

| Ident-No. | thread x length | weights |
|-----------|-----------------|---------|
|           |                 | kg      |
| 18355     | M 12 x 55       | 0,06    |
| 18356     | M 12 x 65       | 0,07    |
| 18357     | M 16 x 60       | 0,12    |
| 18358     | M 16 x 70       | 0,14    |
| 18359     | M 16 x 80       | 0,16    |
| 18360     | M 20 x 80       | 0,26    |
| 18361     | M 20 x 90       | 0,28    |
| 18362     | M 24 x 90       | 0,43    |
| 18363     | M 24 x 100      | 0,48    |

| Ident-No. | thread x<br>length | weights |
|-----------|--------------------|---------|
|           |                    | kg      |
| 18364     | M 24 x 110         | 0,50    |
| 18365     | M 27 x 100         | 0,60    |
| 18366     | M 27 x 130         | 0, 72   |
| 18367     | M 30 x 110         | 0,82    |
| 18368     | M 30 x 120         | 0,88    |
| 18369     | M 30 x 140         | 0,98    |
| 18370     | M 30 x 160         | 1,09    |
| 18371     | M 33 x 130         | 1,15    |
| 18372     | M 33 x 180         | 1,48    |
| 18373     | M 36 x 140         | 1,47    |
| 18374     | M 36 x 200         | 1,95    |
| 18375     | M 39 x 150         | 1, 74   |
| 18376     | M 39 x 200         | 2,20    |

#### 10 Valid and listed documents

AD 2000-leaflet W2  
 AD 2000-leaflet W10  
 DIN EN ISO 3506  
 DIN EN ISO 3506-1  
 DIN EN ISO 4014  
 DIN EN 10204



**Pipe Class  
Specification PN 40**
**pipe parts \* pipe class: ZB40C1  
Hexagon head nuts**

|          |                            |  |
|----------|----------------------------|--|
| <b>1</b> | <b>Pipe class</b>          | ZB40C1   |
| <b>2</b> | <b>Part identification</b> | SKM  |
| <b>3</b> | <b>Pipe class part</b>     | Hexagon head nuts  |
| <b>4</b> | <b>Material</b>            | A2-70 resp. A2-50  |
| <b>5</b> | <b>Dimension standard</b>  | DIN EN ISO 4032  |
| <b>6</b> | <b>Terms of delivery</b>   | DIN EN ISO 3506  |
| <b>7</b> | <b>Certificate</b>         | 3.1.B according to DIN EN 10204  |
| <b>8</b> | <b>Identification</b>      | DIN EN ISO 3506-2, section 3   |
| <b>9</b> | <b>Ordering addition</b>   | Product class A ( ≤ M16)<br>Product class B ( > M16)<br>A2/A4-70 at diameters ≤ M24<br>A2/A4-50 at diameters > M24<br>Requirements AD 2000-leaflet W2 and W10, table 1,<br>must be met |

| Ident-No. | thread | weights |
|-----------|--------|---------|
|           |        | kg      |
| 18328     | M 12   | 0,02    |
| 18329     | M 16   | 0,03    |
| 18330     | M 20   | 0,06    |
| 18331     | M 24   | 0,11    |
| 18332     | M 27   | 0,17    |
| 18333     | M 30   | 0,22    |
| 18334     | M 33   | 0,29    |
| 18335     | M 36   | 0,39    |
| 18336     | M 39   | 0,50    |

**10 Valid and listed documents**

 AD 2000-leaflet W2  
 AD 2000-leaflet W10  
 DIN EN ISO 3506  
 DIN EN ISO 3506-2  
 DIN EN ISO 4032  
 DIN EN 10204

**Pipe Class  
Specification PN 40**
**pipe parts \* pipe class: ZB40C1  
Comb defined seals**

|   |                     |   |
|---|---------------------|---|
| 1 | Pipe class          | ZB40C1  |
| 2 | Part identification | KAD   |
| 3 | Pipe class part     | Comb defined seals  |
| 4 | Material            | 1.4541 ( X 6 CrNiTi 18 10 - Graphite )  |
| 5 | Dimension standard  |   |
| 6 | Terms of delivery   | Standard 40008  |
| 7 | Certificate         | 2.1 according to DIN EN 10204 concerning purity in accordance with Standard 06401 |
| 8 | Identification      | According to Standard 40008   |
| 9 | Ordering addition   | Qualification certificate according to standard 40008                             |

| Ident-No. | nom. width | diameter       | diameter       | thickness      | weights |
|-----------|------------|----------------|----------------|----------------|---------|
|           | ND         | d <sub>3</sub> | d <sub>2</sub> | d <sub>1</sub> | kg      |
| 18093     | 15         | 51,00          | 42,00          | 26,00          | 5,00    |
| 18094     | 20         | 61,00          | 47,00          | 31,00          | 5,00    |
| 18095     | 25         | 71,00          | 52,00          | 36,00          | 5,00    |
| 18096     | 32         | 82,00          | 62,00          | 46,00          | 5,00    |
| 18097     | 40         | 92,00          | 69,00          | 53,00          | 5,00    |
| 18098     | 50         | 107,00         | 81,00          | 65,00          | 5,00    |
| 18099     | 65         | 127,00         | 100,00         | 81,00          | 5,00    |
| 18100     | 80         | 142,00         | 115,00         | 95,00          | 5,00    |
| 18101     | 100        | 168,00         | 138,00         | 118,00         | 5,00    |
| 18102     | 125        | 194,00         | 162,00         | 142,00         | 5,00    |
| 18103     | 150        | 224,00         | 190,00         | 170,00         | 5,00    |
| 18104     | 200        | 290,00         | 240,00         | 220,00         | 5,00    |
| 18105     | 250        | 352,00         | 290,00         | 270,00         | 5,00    |

| Ident-No. | nom. width | diameter       | diameter       | thickness      | weights |
|-----------|------------|----------------|----------------|----------------|---------|
|           | ND         | d <sub>3</sub> | d <sub>2</sub> | d <sub>1</sub> | kg      |
| 18106     | 300        | 417,00         | 340,00         | 320,00         | 5,00    |
| 18107     | 350        | 474,00         | 395,00         | 375,00         | 5,00    |
| 18108     | 400        | 546,00         | 450,00         | 426,00         | 5,00    |
| 18109     | 500        | 628,00         | 560,00         | 530,00         | 5,00    |

- 10    **Valid and listed documents**    Standard 06401  
    Standard 40008  
    DIN EN 10204

**Pipe Class  
Specification PN 40**
**pipe parts \* pipe class: ZB40C1  
Flat packings**

|   |                     |   |
|---|---------------------|---|
| 1 | Pipe class          | ZB40C1  |
| 2 | Part identification | FLD   |
| 3 | Pipe class part     | Flat packings   |
| 4 | Material            | Graphite with CrNi-insert   |
| 5 | Dimension standard  | DIN EN 1514-1   |
| 6 | Terms of delivery   | Standard 40002  |
| 7 | Certificate         | 2.1 according to DIN EN 10204 concerning purity in accordance with standard 06401 |
| 8 | Identification      | According to standard 40002   |
| 9 | Ordering addition   | Type according to standard 40002  |

| Ident-<br>No. | nom.<br>diameter | diameter       | diameter       | thickness |
|---------------|------------------|----------------|----------------|-----------|
|               | DN               | d <sub>2</sub> | d <sub>1</sub> | s         |
| 18076         | 15               | 50,00          | 22,00          | 2,00      |
| 18077         | 20               | 60,00          | 28,00          | 2,00      |
| 18078         | 25               | 70,00          | 35,00          | 2,00      |
| 18079         | 32               | 82,00          | 43,00          | 2,00      |
| 18080         | 40               | 92,00          | 49,00          | 2,00      |
| 18081         | 50               | 107,00         | 61,00          | 2,00      |
| 18082         | 65               | 127,00         | 77,00          | 2,00      |
| 18083         | 80               | 142,00         | 90,00          | 2,00      |
| 18084         | 100              | 168,00         | 115,00         | 2,00      |
| 18085         | 125              | 195, 00        | 141, 00        | 2, 00     |
| 18086         | 150              | 225,00         | 169,00         | 2,00      |
| 18087         | 200              | 292,00         | 220,00         | 2,00      |
| 18088         | 250              | 353,00         | 274,00         | 2,00      |

| Ident-<br>No. | nom.<br>diameter | diameter       | diameter       | thickness |
|---------------|------------------|----------------|----------------|-----------|
|               | DN               | d <sub>2</sub> | d <sub>1</sub> | s         |
| 18089         | 300              | 418,00         | 325,00         | 2,00      |
| 18090         | 350              | 475,00         | 368,00         | 2,00      |
| 18091         | 400              | 547,00         | 420,00         | 2,00      |
| 18092         | 500              | 628,00         | 520,00         | 2,00      |

**10 Valid and listed documents**

Standard 06401  
Standard 40002  
DIN 1514-1  
DIN EN 10204

**Pipe Class  
Specification PN 40**

**pipe parts \* pipe class: ZB40C1  
fibrous packings**

|   |                     |   |
|---|---------------------|---|
| 1 | Pipe class          | ZB40C1  |
| 2 | Part identification | FAD   |
| 3 | Pipe class part     | fibrous packings  |
| 4 | Material            | asbestos-free laminate made of aramide fiber, bound with NBR                      |
| 5 | Dimension standard  | DIN EN ISO 1514-1   |
| 6 | Terms of delivery   | Standard 40007  |
| 7 | Certificate         | 2.1 according to DIN EN 10204 concerning purity in accordance with standard 06401 |
| 8 | Identification      |   |
| 9 | Ordering addition   | Type according to standard 40007  |

| Ident-No. | nom.<br>diameter | diameter       | diameter       | thickness |
|-----------|------------------|----------------|----------------|-----------|
|           | ND               | d <sub>2</sub> | d <sub>1</sub> | s         |
| 18059     | 15               | 50,00          | 22,00          | 2,00      |
| 18060     | 20               | 60,00          | 28,00          | 2,00      |
| 18061     | 25               | 70,00          | 35,00          | 2,00      |
| 18062     | 32               | 82,00          | 43,00          | 2,00      |
| 18063     | 40               | 92,00          | 49,00          | 2,00      |
| 18064     | 50               | 107,00         | 61,00          | 2,00      |
| 18065     | 65               | 127,00         | 77,00          | 2,00      |
| 18066     | 80               | 142,00         | 90,00          | 2,00      |
| 18067     | 100              | 168,00         | 115,00         | 2,00      |
| 18068     | 125              | 195,00         | 141,00         | 2,00      |
| 18069     | 150              | 225,00         | 169,00         | 2,00      |
| 18070     | 200              | 292,00         | 220,00         | 2,00      |
| 18071     | 250              | 353,00         | 274,00         | 2,00      |

| Ident-No. | nom.<br>diameter | diameter       | diameter       | thickness |
|-----------|------------------|----------------|----------------|-----------|
|           | ND               | d <sub>2</sub> | d <sub>1</sub> | s         |
| 18072     | 300              | 418,00         | 325,00         | 2,00      |
| 18073     | 350              | 475,00         | 368,00         | 2,00      |
| 18074     | 400              | 547,00         | 420,00         | 2,00      |
| 18075     | 500              | 628,00         | 520,00         | 2,00      |

**10 Valid and listed documents**

Standard 06401  
Standard 40007  
DIN EN 1514-1  
DIN EN 10204