

SPECIFICATIONS

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25

EN

| Specification | | EN10255 | | EN 10217 - 1 | | | | | | | | | | | | | | | | | | | |
|----------------------------|--|----------------------|---|-------------------|---------|---------|---------|---------|---------|----|----|-----|----|-----|----|-----|----|-----|-----------------------------|--|--|--|--|
| | | LIGHT, MEDIUM, HEAVY | P195TR1 | P195TR2 | P235TR1 | P235TR2 | P265TR1 | P265TR2 | | | | | | | | | | | | | | | |
| Classification | | Ordinary Piping | | Pressure Purposes | | | | | | | | | | | | | | | | | | | |
| Application | | Ordinary Piping | | Pressure Purposes | | | | | | | | | | | | | | | | | | | |
| Chemical composition(%) | C(Max.) | 0.2 | 0.13 | 0.13 | 0.16 | 0.16 | 0.2 | 0.2 | | | | | | | | | | | | | | | |
| | Si(Max.) | - | 0.35 | 0.35 | 0.35 | 0.35 | 0.4 | 0.4 | | | | | | | | | | | | | | | |
| | Mn(Max.) | 1.4 | 0.7 | 0.7 | 1.2 | 1.2 | 1.4 | 1.4 | | | | | | | | | | | | | | | |
| | P(Max.) | 0.035 | 0.025 | 0.025 | 0.025 | 0.025 | 0.025 | 0.025 | | | | | | | | | | | | | | | |
| | S(Max.) | 0.03 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | | | | | | | | | | | | | | | |
| | Others | - | - | - | - | - | - | - | | | | | | | | | | | | | | | |
| Mechanical properties | Tensile strength (min.) | PSI | - | - | - | - | - | - | | | | | | | | | | | | | | | |
| | | MPa | 320-520 | 320-440 | 320-440 | 360-500 | 360-500 | 410-570 | 410-570 | | | | | | | | | | | | | | |
| | | kgf/mm ² | | | | | | | | | | | | | | | | | | | | | |
| | Yield point (min.) | PSI | - | - | - | - | - | - | | | | | | | | | | | | | | | |
| | | MPa | 195 | 195 | 195 | 235 | 235 | 265 | 265 | | | | | | | | | | | | | | |
| | kgf/mm ² | | | | | | | | | | | | | | | | | | | | | | |
| Elongation (min.) | | 20 | 27 | 27 | 25 | 25 | 21 | 21 | | | | | | | | | | | | | | | |
| Flattening test | DN Over 50 Welded part H = 0,75D Base metal H = 0,60D Welded part is located at 90 degree | | 0,09 for steel grades P195TR1/TR2 and P235TR1/TR2 0,07 for steel grade P265TR1/TR2 $H = \frac{(1 + C)}{C + (T/D)} \times T$ | | | | | | | | | | | | | | | | | | | | |
| Bending test | DN 10 UP TO 50 90° X BENDING RADIUS <table border="1"> <thead> <tr> <th>DN</th> <th>BENDING RADIUS</th> </tr> </thead> <tbody> <tr><td>10</td><td>50</td></tr> <tr><td>15</td><td>65</td></tr> <tr><td>20</td><td>85</td></tr> <tr><td>25</td><td>100</td></tr> <tr><td>32</td><td>150</td></tr> <tr><td>40</td><td>170</td></tr> <tr><td>50</td><td>220</td></tr> </tbody> </table> | | DN | BENDING RADIUS | 10 | 50 | 15 | 65 | 20 | 85 | 25 | 100 | 32 | 150 | 40 | 170 | 50 | 220 | Only applicabe to SAW pipes | | | | |
| DN | BENDING RADIUS | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 50 | | | | | | | | | | | | | | | | | | | | | | |
| 15 | 65 | | | | | | | | | | | | | | | | | | | | | | |
| 20 | 85 | | | | | | | | | | | | | | | | | | | | | | |
| 25 | 100 | | | | | | | | | | | | | | | | | | | | | | |
| 32 | 150 | | | | | | | | | | | | | | | | | | | | | | |
| 40 | 170 | | | | | | | | | | | | | | | | | | | | | | |
| 50 | 220 | | | | | | | | | | | | | | | | | | | | | | |
| Hydrostatic test | if applicable, 50bar (5s) | | 70bar or $P = 20 \frac{S \times T}{D}$ holding time : 5s(D<= 457) 10s(D>457) | | | | | | | | | | | | | | | | | | | | |
| NDT (Non-Destructive Test) | the test method is specified by the purchaser | | | | | | | | | | | | | | | | | | | | | | |
| Others | | | | | | | | | | | | | | | | | | | | | | | |

ISO

| Specification | | ISO 9330 - 1 | | | | | |
|----------------------------|---|---------------------|---|---------|---------|-------|-----|
| | | TW320 | TW350 | TW410 | TW430 | TW500 | |
| Classification | | Pressure Purposes | | | | | |
| Application | | Pressure Purposes | | | | | |
| Chemical composition(%) | C(Max.) | 0.16 | 0.17 | 0.21 | 0.21 | 0.22 | |
| | Si(Max.) | - | 0.35 | 0.35 | 0.35 | 0.35 | |
| | Mn(Max.) | 0.3-0.7 | 0.3-0.8 | 0.4-1.2 | 0.4-1.2 | <1.6 | |
| | P(Max.) | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | |
| | S(Max.) | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | |
| | Others | - | - | - | - | - | |
| Mechanical properties | Tensile strength (min.) | PSI | - | - | - | - | |
| | | MPa | 515 | 515 | 515 | 515 | 515 |
| | | kgf/mm ² | | | | | |
| | Yield point (min.) | PSI | - | - | - | - | - |
| | | MPa | 195 | 235 | 255 | 275 | 355 |
| | kgf/mm ² | | | | | | |
| Elongation (min.) | | 25 | 25 | 22 | 21 | 21(1) | |
| Flattening test | | | Welded part H = 2 / 3D Base metal H = 1 / 3D | | | | |
| Bending test | | | | | | | |
| Hydrostatic test | 70bar or $P = 20 \frac{S \times T}{D}$ holding time : 5s | | | | | | |
| NDT (Non-Destructive Test) | ultrasonic test | | | | | | |
| Others | | | | | | | |