

MATERIAL DATASHEET

Description	Seamless pipes according to API 5L, grade X52, modified as specified below. Also in compliance with the Norsok Standard Made from carbonsteel with alloying elements giving a very fine grained structure.																																															
Chemical composition	<p>Max. values in weight % (product)</p> <table border="1"> <thead> <tr> <th>C</th> <th>Si</th> <th>Mn</th> <th>P</th> <th>S</th> <th>Ni</th> <th>Cr</th> <th>Mo</th> <th>V</th> <th>Cu</th> <th>Sn</th> <th>Al</th> <th>Ti</th> <th>Nb</th> <th>N</th> <th>B</th> </tr> </thead> <tbody> <tr> <td colspan="3">/ 100</td> <td colspan="2">/ 1000</td> <td colspan="4">/ 100</td> <td colspan="3">/ 1000</td> <td colspan="3">/ 10000</td> </tr> <tr> <td>16</td> <td>50</td> <td>160</td> <td>22</td> <td>5</td> <td>20</td> <td>20</td> <td>8</td> <td>6</td> <td>20</td> <td>20</td> <td>60</td> <td>20</td> <td>40</td> <td>90</td> <td>5</td> </tr> </tbody> </table> <p>The minimum content of Mn is 1,10 % and the average 1,20 to 1,35 % V + Nb max: 0,10 % V + Nb + Ti ≤ 0,12 %</p> $CE = C + \frac{Mn}{6} + \frac{Cr}{5} + \frac{Mo}{15} + V + \frac{Cu}{15} + \frac{Ni}{15} \leq 0,43 \%$	C	Si	Mn	P	S	Ni	Cr	Mo	V	Cu	Sn	Al	Ti	Nb	N	B	/ 100			/ 1000		/ 100				/ 1000			/ 10000			16	50	160	22	5	20	20	8	6	20	20	60	20	40	90	5
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Mechanical values	<p>Yield strength : 360 N/mm² min. Tensile strength : 490 - 620 N/mm² Elongation (2") : acc. to API Yield / tensile ratio : max. 0,85 Hardness : 237 HB max (22HRC max) according to NACE MR-01-75 Testing position : longitudinal ≤ 168,3, transverse ≥ 219,1 OD</p>																																															
Impact test	At - 50 °C to reach min. 36 J average (Charpy V Notch, transverse) or min. 56 J average (longitudinal)																																															
Other tests	<p>Ultrasonic tested for longitudinal defects according to SEP 1915 or API 5L, SR4 with a test notch of 5% of the nominal wallthickness - 0,4 mm min 1,5 mm max. Hydrostatic tested acc. to API with max. 207 bar, holding time 5 seconds. Other tests can be performed in specialised labourites</p>																																															
Tolerances	All tolerances (diameter, wallthickness, out of roundness, etc.) according to API 5L																																															
Condition	<p>Pipes are normalised and/or quenched and tempered. Normalising temperature 850-950 °C. When reached over the entire cross-section pipe will be cooled in still air. Stress relieving temperature is 530-580 °C. When quenched and tempered the pipes are heated to normalising temperature for about half an hour and then cooled in water. Tempering at approx. 640 °C for one hour and then cooled in still air</p>																																															
Certificates	To EN 10204 / 3.1C																																															
Other remarks	Most pipe ends (depending on size/manufacturer) are also MPI tested over a length of 8" (203 mm). Ends of RL's are bevelled. Pipes are suitable for hot and cold forming																																															
Marking	Outside hard-die stamped with heatnumber, producers symbol, quality, US test, symbol of inspectioncompany and API monogram (wherever feasible). Marking will be framed with white paint																																															
Stockprogramm	From 1" x sched 80 up to and including 26" x 1". In double random lengths up to 14 meter. For exact programme see our latest stocklist																																															