

<b>Description</b>	Longitudinal, submerged arc welded pipes according to EN 10219 from material grade S355J2+N, however impact tested at -40 °C. Made from carbonsteel with alloying elements giving a very fine grained structure.															
<b>Chemical composition</b>	Max. values in weight % (product) :															
	C*)	Si	Mn	P	S	Ni	Cr	Mo	V	Cu	Sn	Al	Ti	Nb	N	B
	/100			/1000		/100			/1000			/10000				
	17	50	160	22	5	25	20	8	6	20	25	60	20	40	90	5
The minimum content of Mn is 1,10% $CE = C + \frac{Mn}{6} + \frac{Cr}{5} + \frac{Mo}{15} + V + \frac{Cu}{15} + \frac{Ni}{15} \leq 0,41 \% *$ *) If wall thickness $\geq 40$ mm, C max 0,18% in stead of 0,17% and CE $\leq 0,45\%$ in stead of 0,41%																
<b>Mechanical values</b>	Yield strength : 360 N/mm <sup>2</sup> min.(385 N/mm <sup>2</sup> if wall thickness. > 40 mm) Tensile strength : 490 - 620 N/mm <sup>2</sup> Elongation (2") : acc. to norm Hardness : max 200 HV10 Testing position : transverse															
<b>Impact test</b>	At - 40 °C to reach min 40 J. average (Charpy V Notch, transverse), both on parent material as well as weld.															
<b>Other tests</b>	Hydrostatic tested according to EN 10208-2, holding time 10 seconds. Other tests can be performed in specialised labourites															
<b>Tolerances</b>	All tolerances (diameter, wall thickness, etc.) acc. to EN 10219-2															
<b>Welding</b>	Submerged Arc Welded (SAW), welding factor V = 1,0. All welds are 100% ultrasonic tested according to EN 10246 / 9 class U2 / U2H. Ends of welds are also X-ray tested over 200 mm according to EN 10246 / 10, class R1.															
<b>Certificates</b>	All pipes are made from "West European" material. Certification EN 10204 - 3.1 in German and/or English															
<b>Other remarks</b>	Condition of parent material is "normalised". All pipes are cold formed, but are suitable for inductive (hot) bending. Lengths are 12 meter with a tolerance of -0 / + 50 mm. Ends are bevelled 30°, but when ordered fix pieces, ends might be square. After fabrication pipes are outside protected against rust by one layer of mill coating but this does not guarantee a surface without any rust.															
<b>Marking</b>	Outside hard-die stamped with heat number and mill-logo and inspection stamp, marked with white paint..															
<b>Stockprogram</b>	OD		Wall thickness													
			10 <sup>0</sup>	12 <sup>5</sup>	16 <sup>0</sup>	17 <sup>5</sup>	19 <sup>1</sup>	20 <sup>0</sup>	25 <sup>4</sup>	31 <sup>8</sup>	38 <sup>1</sup>	50 <sup>8</sup>				
	508	(20")		X	X		X		X	X	X	X				
	559	(22")	X	X	X		X		X	X	X	X				
	610	(24")	X	X	X	X	X		X	X	X	X				
	660	(26")	X	X	X		X		X	X	X	X				
	711	(28")		X	X	X		X	X	X	X					
	762	(30")	X	X	X		X		X	X	X					
	813	(32")		X	X			X	X	X	X					
	914	(36")		X	X		X		X	X						
1016	(40")	X	X				X	X								