

S500MC

MICRO-ALLOYED STEEL

STANDARD	EN 10149-2																																																							
IDENTIFICATION NUMBER	1.0984																																																							
CLASSIFICATION	Quality Steel																																																							
TYPE	Alloyed Steel																																																							
ROLLING STATE	AR - Rolling blank																																																							
BRIEF DESCRIPTION	High-yield strength steel for forming, bending, and deep drawing. This is a fine-grain steel with low sulphur content and reduced inclusion content.																																																							
APPLICATIONS	Transport vehicles, containers, tanks, agricultural machinery, profiles.																																																							
STANDARD COIL STOCK RANGE	<table border="1"> <thead> <tr> <th>S500MC black</th> <th>1500</th> <th>2000</th> <th>S500MC dec.</th> <th>1500</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>•</td> <td></td> <td>8</td> <td>•</td> </tr> <tr> <td>3</td> <td>•</td> <td></td> <td>10</td> <td>•</td> </tr> <tr> <td>4</td> <td>•</td> <td>•</td> <td>12</td> <td>•</td> </tr> <tr> <td>5</td> <td>•</td> <td>•</td> <td></td> <td></td> </tr> <tr> <td>6</td> <td>•</td> <td>•</td> <td></td> <td></td> </tr> <tr> <td>8</td> <td>•</td> <td>•</td> <td></td> <td></td> </tr> <tr> <td>10</td> <td>•</td> <td>•</td> <td></td> <td></td> </tr> <tr> <td>12</td> <td>•</td> <td></td> <td></td> <td></td> </tr> <tr> <td>15</td> <td>•</td> <td></td> <td></td> <td></td> </tr> <tr> <td>20</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	S500MC black	1500	2000	S500MC dec.	1500	2	•		8	•	3	•		10	•	4	•	•	12	•	5	•	•			6	•	•			8	•	•			10	•	•			12	•				15	•				20				
S500MC black	1500	2000	S500MC dec.	1500																																																				
2	•		8	•																																																				
3	•		10	•																																																				
4	•	•	12	•																																																				
5	•	•																																																						
6	•	•																																																						
8	•	•																																																						
10	•	•																																																						
12	•																																																							
15	•																																																							
20																																																								
CHEMICAL COMPOSITION	<p>Regulatory standard</p> <table border="1"> <thead> <tr> <th>C (%)</th> <th>Si (%)</th> <th>Mn (%)</th> <th>P (%)</th> <th>S (%)</th> <th>Al (%)</th> <th>Nb (%)</th> <th>Ti (%)</th> <th>V (%)</th> <th>Mo (%)</th> <th>Cu (%)</th> </tr> </thead> <tbody> <tr> <td>≤ 0.120</td> <td>≤ 0.50</td> <td>≤ 1.70</td> <td>≤ 0.025</td> <td>≤ 0.015</td> <td>≥ 0.015</td> <td>≤ 0.090</td> <td>≤ 0.15</td> <td>≤ 0.20</td> <td>≤ 0.150</td> <td></td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Cr (%)</th> <th>Ni (%)</th> <th>N (%)</th> <th>B (%)</th> <th>Nb+Ti+V (%)</th> <th>Cr+Mo+Ni (%)</th> <th>Ni+Cr+Cu+Mo (%)</th> <th>C.E.V. (%)</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td>*</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>* = $(Nb + Ti + V) \leq 0.22$ (%) C.E.V. (%) = $C + (Mn/6) + [(Cr+Mo+V)/5] + [(Ni+Cu)/15]$</p>	C (%)	Si (%)	Mn (%)	P (%)	S (%)	Al (%)	Nb (%)	Ti (%)	V (%)	Mo (%)	Cu (%)	≤ 0.120	≤ 0.50	≤ 1.70	≤ 0.025	≤ 0.015	≥ 0.015	≤ 0.090	≤ 0.15	≤ 0.20	≤ 0.150		Cr (%)	Ni (%)	N (%)	B (%)	Nb+Ti+V (%)	Cr+Mo+Ni (%)	Ni+Cr+Cu+Mo (%)	C.E.V. (%)					*																				
C (%)	Si (%)	Mn (%)	P (%)	S (%)	Al (%)	Nb (%)	Ti (%)	V (%)	Mo (%)	Cu (%)																																														
≤ 0.120	≤ 0.50	≤ 1.70	≤ 0.025	≤ 0.015	≥ 0.015	≤ 0.090	≤ 0.15	≤ 0.20	≤ 0.150																																															
Cr (%)	Ni (%)	N (%)	B (%)	Nb+Ti+V (%)	Cr+Mo+Ni (%)	Ni+Cr+Cu+Mo (%)	C.E.V. (%)																																																	
				*																																																				
MECHANICAL PROPERTIES	<p>According to UNI EN 10149</p> <table border="1"> <thead> <tr> <th>Mechanical characteristics</th> <th>Direction</th> <th>Thicknesses</th> <th>Values</th> </tr> </thead> <tbody> <tr> <td>R_e (MPa)</td> <td>L</td> <td></td> <td>≥ 500</td> </tr> <tr> <td>R_m (MPa)</td> <td>L</td> <td></td> <td>550-700</td> </tr> <tr> <td>A₃₀ (%)</td> <td>L</td> <td>< 3</td> <td>≥ 12</td> </tr> <tr> <td>A₅ (%)</td> <td>L</td> <td>≥ 3</td> <td>≥ 14</td> </tr> <tr> <td>Bend Test 180°</td> <td>T</td> <td></td> <td>≥ 1 t</td> </tr> <tr> <td>KV 20°C (J)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>KV 0°C (J)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>KV -20°C (J)</td> <td>L</td> <td></td> <td>40*</td> </tr> <tr> <td>KV -40°C (J)</td> <td>L</td> <td></td> <td>27*</td> </tr> <tr> <td>KV -50°C (J)</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>* = Standard option L = Tensile testing carried out on longitudinal test pieces t = thickness in mm of the test piece for the bend test T = Bend tests carried out on cross-cut test pieces</p>	Mechanical characteristics	Direction	Thicknesses	Values	R _e (MPa)	L		≥ 500	R _m (MPa)	L		550-700	A ₃₀ (%)	L	< 3	≥ 12	A ₅ (%)	L	≥ 3	≥ 14	Bend Test 180°	T		≥ 1 t	KV 20°C (J)				KV 0°C (J)				KV -20°C (J)	L		40*	KV -40°C (J)	L		27*	KV -50°C (J)														
Mechanical characteristics	Direction	Thicknesses	Values																																																					
R _e (MPa)	L		≥ 500																																																					
R _m (MPa)	L		550-700																																																					
A ₃₀ (%)	L	< 3	≥ 12																																																					
A ₅ (%)	L	≥ 3	≥ 14																																																					
Bend Test 180°	T		≥ 1 t																																																					
KV 20°C (J)																																																								
KV 0°C (J)																																																								
KV -20°C (J)	L		40*																																																					
KV -40°C (J)	L		27*																																																					
KV -50°C (J)																																																								
TOLERANCES	<p>Tolerances on the dimensions and on the shape UNI EN 10051 Surface condition UNI EN 10163-2</p>																																																							
CERTIFICATIONS	EN10204-3.1																																																							