

5182 ROAD TANKER SHATE

5182 Road Tanker Shate G1 (5182 RTS G1) is the alloy for the construction of road tankers for storage and transportation of dangerous goods.

5182 RTS G1, developed by Slim Fusina Rolling, is an improved version of the 5182, with properties that meet the latest requirements of the ADR (Agreement for transportation of Dangerous goods by Road) regulations. 5182 RTS G1 fulfills the requirements specified of EN 14286 and vdTUV 545 as conformity guarantee with the intended purposes.

With the R m x A value of 7280, the alloy guarantees excellent quality and improved safety. The high mechanical properties and elongation, together with the minimum gauge prescribed by the ADR norms, these alloys allow the best technical solution in the transportation of the hazardous goods.

TECHNICAL DATA

CHEMICAL COMPOSITION

Chemical Composition (in weight - %)	Element	Sl	Fe	Cu	Mn	Mg	Cr	Zn	Τl	Others each	Others Total
	Min.				0.20	4.0					
	Max.	0.20	0.35	0.15	0.50	5.0	0.10	0.25	0.10	0.05	0.15

DIMENSIONAL RANGE

Discousieural Deuros	Thickness (mm)		Width	ı (mm)	Length (mm)	
Dimensional Range	Min	Min Max		Max	Min	Max
	4,00	4,75	980	2230	1000	14000
	4,75	8,00	980	2500	1000	14000



DIMENSIONAL TOLERANCES

Dimensional tolerances meet the requirements of the norm EN14286. As standard, 5182 RTS is produced with all-plus thickness tolerances. In order to ensure a better homogeneity of the tank walls, thickness variability can be improved upon request, compared to the limits set out in EN 485-4 and EN 14286; those tighter tolerances are reported in the table below.

Dimensional Tolerances	Specified Thickness (mm)		Specified Width (mm)			
	Above	Below or equal to	Below or equal to 1250	Above 1250 and below or equal to 1600	Above 1600 and below or equal to 2000	Above 2000 and below or equal to 2500
	4.0		+ 0.22 / - 0	+ 0.24 / - 0	+ 0.24 / - 0	+ 0.26 / - 0
	5.0	6.0	+ 0.24 / - 0	+ 0.24 / - 0	+ 0.26 / - 0	+ 0.26 / - 0
	6.0	8.0	+ 0.30 / - 0	+ 0.30 / - 0	+ 0.32 / - 0	+ 0.38 / - 0

MECHANICAL PROPERTIES

The following chart compares the minimum tensile values of 5182 RTS G1 to other commonly used products used for Road Tanker manufacture.

Mechanical Properties	Alloy/ Product	Temper	Rm (MPa)	Rp, 02 (MPa)	A2 (%)	Rm X As
	EN AW 5454	0/H111	≥ 215	≥ 85	≥ 19	≥ 4085
	EN AW 5086*	0/H111	≥ 240	≥ 100	≥ 18	≥ 4320
	EN AW 5083*	0/H111	≥ 290	≥ 145	≥ 17	≥ 4930
	EN AW 5186*	0/H111	≥ 275	≥ 125	≥ 26	≥ 7150
	5182 RTS G1	0/H111	≥ 280	≥ 125	≥ 26	≥ 7280

*) Mechanical properties according to EN 14286 : 2008

1) Mechanical properties obtained from tensile testing according to ISO 6892-1

standard at ambient temperature on samples taken on the long transverse.

2) The elongation is measured using an original gauge length (flat sample) which is

calculated with the formula $L = 5,65\sqrt{So}$ (where So is the initial section of the sample).



TYPICAL PHYSICAL PROPERTIES

	Density	2.65 x 103 kg/m3		
Typical Physical Properties	Average Coefficient of Thermal Expansion	24.1 x 10 ⁻ per °C		
	Approximate Melting Range	580 - 640 °C		
	Thermal Conductivity	123 W/m °C (at 25 °C)		
	Modulus of Elasticity	71 GPa		
	Poisson's ratio	0.33		

BENDING CAPABILITIES

5182 RTS, 0/H111 sheets are capable of being bent cold through an angle of 90° or 180°, as applicable, around a pin having a radius equal to k times the thickness (t) of the sheet without cracking (see table below).

Den die e Oer ek ilitier	Product	Thickness (mm)	Minimum bending radii		
Bending Capabilities			180°	90°	
	5182 RTS G1	4.0 - 8.0	1.5 t	1.0 t	

WELDING CAPABILITY

5182 RTS G1 0/H111 is capable of being fusion welded by a variety of methods such as TIG (GTA-W), MIG (GMA-W), Electron Beam and Spot Welding.

Using 5183 filler alloy, mechanical properties in the heat affected zone for butt welds equal the minimum specified in EN 14286:2008 for the parent material.



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