

ELECTRICAL-SHEET STEEL

Isotropic Electrical Sheet Steel under GOST 21427.2-83, ASTM A677/A677M-89, EN 10106-96

To be applied in magnetic circuits of electric machines, apparatus and instruments.

Electrical insulating coating

Type of coating	Coating Identification	Coefficient of Resistance, Ohm x cm ² , min.	Heat Resistance	Adhesion	Effect on Stamping Ability	Coating Base
TSh	«TYPE 5»	1.0	700°C, 1.5 h in protective atmosphere	No exfoliation after bending test	Improving	semiorganic

TSh – Heat-resistant electrical insulating coating to improve stamping ability.

Magnetic and mechanical properties of electrical sheet steel

Standard	Steel Grade	Thickness, mm	Magnetic Properties					Mechanical Properties				
			Specific magnetic losses, max. P _{1,5/50} , W/kg	Magnetic induction, min., T, for 2500A/m magnetic intensity	Magnetic anisotropy, max., T	Anisotropy factor of specific magnetic losses, max., %	Aging factor, Kaging, max., %	Ultimate strength σ_B , N/mm ²	Relative elongation, δ^4 , %	Hardness HV5	Bending number, min.	Fill factor, min.
GOST 21427.2-83	2216	0.5	4.0	1.60	0.13	±12	6	300-450	20-35	120-145	3	0.96
	2215		4.5	1.64								
	2214		4.8	1.62								
	2213		5.0	1.65								
	2212		5.0	1.60								
	2211		5.5	1.56								
	2112		6.0	1.62								
	2111		7.0	1.60								
	2011	8.0	1.60	±10	8	290-490	15-35	120-160	-	0.97		
As agreed with a customer	2216	0.65	5.0	1.58	0.13	±12	6	300-450	20-35	120-145	3	0.96
	2215		5.5	1.59								
	2212		6.3	1.60								
	2211		7.0	1.56								
EN 10106-96	M470-50A	0.5	4.7	1.54	0.13	±10					10	0.97
	M530-50A		5.3	1.56								
	M600-50A		6.0	1.57								
	M530-65A	0.65	5.3	1.54		±12					5	
	M600-65A		6.0	1.56		±10				10		
	M700-65A		7.0	1.57								
ASTM A677/A677M-89	47F240	0.47	5.29								25	0.95-0.98
	47F280		6.17									
	64F320	0.64	7.50								24	

Electrical (Relay) Unalloyed Steel Sheet under GOST 3836-83

Chemical composition:

Carbon, max.: 0.4%,

Silicon, max.: 0.3%,

Manganese, max.: 0.3%.

Steel Grades and Properties

Steel Grade	Thickness, mm	Coercive Force, max., A/m	Maximal Magnetic Permeability, MH/m	Magnetic Induction, min., T, for Magnetic Intensity, A/m						Delivery
				500	1000	2500	5000	10000	30000	
10895 20895	0.5-2.0	95	3.8	1.38	1.50	1.62	1.71	1.81	2.05	No heat treatment
10880 20880	0.5-2.0	80	5.0	1.38	1.50	1.62	1.71	1.81	2.05	
10860 20860	0.5-2.0	60	5.6	1.38	1.50	1.62	1.71	1.81	2.05	

Electrical (relay) unalloyed sheet shall be delivered in sheet. Sheet shape, dimensions and tolerances are to comply with the requirements of GOST 19903-74 and GOST 19904-74.

For cold-rolled sheet the following surface defects shall be admitted within $\frac{1}{2}$ thickness tolerances depending on the surface group:

1st surface group: pitted surface, roll marks, dents, scratches;

2nd surface group: pitted surface, roll marks, dents, scratches, individual small slivers and cavities.

For hot-rolled sheet the following surface defects shall be admitted: general pitted surface, roll marks within sheet thickness tolerances, small scratches, slivers.

Rolled products can be delivered with indication of ultrasonic test results.

Description of Packaging for Electrical Sheet Steel

Internal Diameter of Coil:	600 \pm 20 mm
Outer Diameter of Coil:	900 to 2100 mm
Coil Mass:	4 to 6 t

Two paper labels are to be stuck to and two steel tags to be fixed at each coil.

Cold-rolled strip can be slit into mulds (without separation) in width as follows (mm): 55, 90, 100, 107, 127, 128, 130, 138, 140, 175, 187, 190, 215, 226, 250, 300, 322, 330, 375, 430, 445, 500, 540, 600, 670, 750, 905.