

isovac 1000-65 K

The perfect solution for individually customized subsequent annealing and highest polarization

Production in modern continuous annealing lines ensures that this semi-processed isovac® grade exhibits homogeneous mechanical and magnetic properties. High dimensional accuracy and defined degrees of roughness guarantee best punchability and further processing. As a result of its optimized alloy design, isovac 1000-65 K is magnetically characterized by high polarization and high saturation polarization. Additionally the thermal conductivity is excellent.

Subsequent annealing at the customer for the purpose of adjusting optimum magnetic properties completely eliminates any mechanical damage introduced to the material during the punching process.

Convincing advantages:

- » High motor performance resulting from high polarization
- » Best processability through consistent mechanical properties and homogeneous, clean surfaces with defined roughness
- » Excellent stackability resulting from high dimensional accuracy (thickness tolerance)

voestalpine supplies isovac 1000-65 K, an electrical steel of the highest quality. We offer you a customer-focused overall package of products, service and logistics in addition to all the advantages of our integrated metallurgical facility and Steel Service Centers.

Grade named according to conventional international standards:

Grade named according to isovac®	DIN EN 10341		DIN EN 10126 DIN EN 10165	IEC/CEI 60404-8-3	ASTM A 683 M	ASTM A 683	AISI	IS15391
	Material No.	Abbreviation						
isovac 1000-65 K	1.0365	M 1000-65 K	M 1000-65 D	1000-65 K5	-	-	-	65-SP-1000 E5

Mechanical properties:

Tensile test according to DIN EN ISO 6892-1 and hardness according to DIN EN ISO 6507-1 (Typical values);
Test direction: Transverse

Grade named according to isovac®	0.2 %-Yield strength $R_{p0.2}$ [MPa]	Tensile strength R_m [MPa]	Elongation A_{80} [%]	Hardness HV5 [-]
isovac 1000-65 K	315	365	33	135

Magnetic properties:

after final annealing according to EN 10341 (Typical values);
Test direction: Mean value from longitudinal and transverse measurements at 50 Hz (60 Hz), single-sheet test

Grade named according to isovac®	Specific total loss				Magnetic polarization			Relative permeability 1.5 T μ_r [-]
	1.0 T P10		1.5 T P15		2500 A/m J25	5000 A/m J50	10000 A/m J100	
	50 Hz [W/kg]	60 Hz [W/lb]	50 Hz [W/kg]	60 Hz [W/lb]	[T]	[T]	[T]	
isovac 1000-65 K	3.00	1.77	7.40	4.37	1.66	1.74	1.86	3000

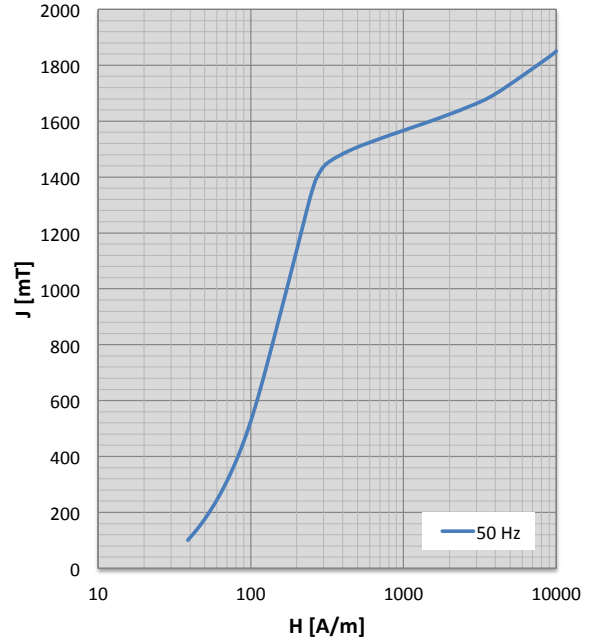
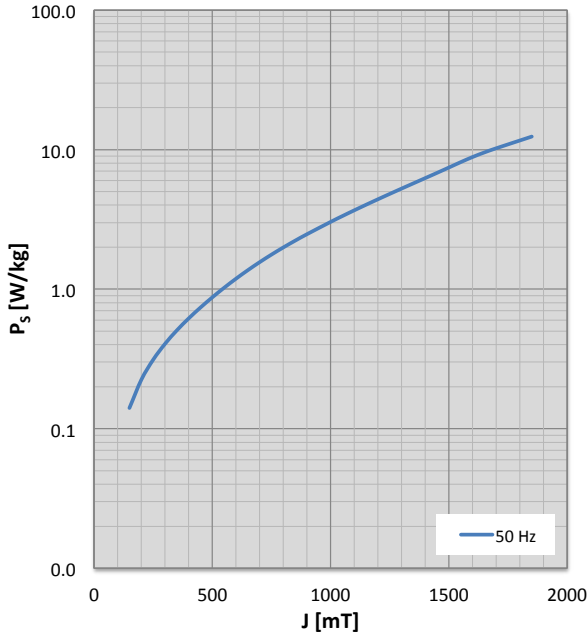
Physical properties:

Typical values

Grade named according to isovac®	Density ρ [g/cm ³]	Specific electrical resistance ρ_s [$\mu\Omega\text{cm}$]	Thermal conductivity λ [W/mK]
isovac 1000-65 K	7.85	15.0	69

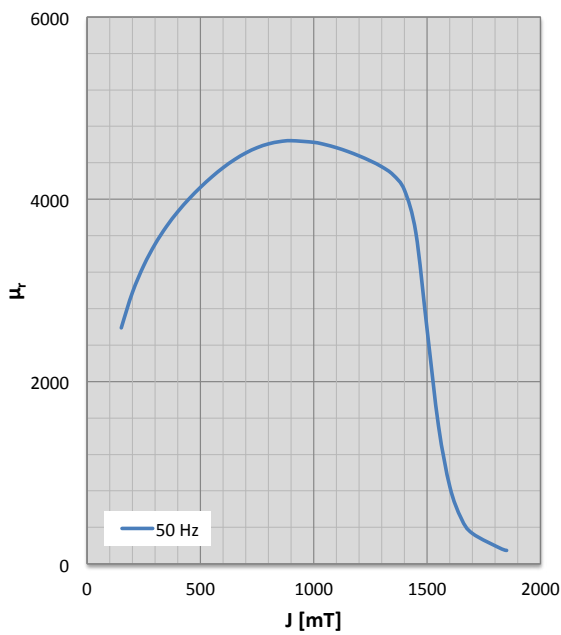
Characteristics P_s/J loss curve and characteristics J/H magnetization curve

Test direction: Mean value from longitudinal and transverse measurements at indicated frequencies, single-sheet test



Characteristics μ_r/J permeability curve

Test direction: Mean value from longitudinal and transverse measurements at 50 Hz, single-sheet test



Frequency dependence of magnetic properties

Test direction: Mean value longitudinal and transverse at indicated frequencies and polarizations, single-sheet test

— 50 Hz			
J [mT]	H [A/m]	P _s [W/kg]	μ _r [-]
100	39	0.06	2057
150	46	0.14	2591
200	53	0.22	2979
250	61	0.31	3274
300	68	0.41	3509
350	75	0.51	3701
400	82	0.62	3864
450	89	0.74	4006
500	96	0.87	4131
550	103	1.02	4245
600	110	1.19	4347
650	117	1.37	4435
700	124	1.56	4508
750	131	1.77	4566
800	138	1.99	4608
850	146	2.23	4633
900	154	2.48	4643
1000	172	3.03	4625
1050	182	3.34	4600
1100	192	3.67	4566
1150	202	4.03	4524
1200	213	4.41	4476
1250	225	4.82	4421
1300	237	5.26	4356
1350	252	5.73	4267
1400	272	6.25	4099
1450	318	6.82	3634
1500	466	7.44	2564
1550	816	8.13	1512
1600	1505	8.85	846
1650	2625	9.55	500
1700	4064	10.23	333
1830	9000	12.08	162
1850	10000	12.41	147

Available Dimensions

Grade named according to isovac®	Delivery form	Width [mm]	Length [mm]
isovac 1000-65 K	Wide strip / Slit strip	19 – 1600	-
	Cut-to-length sheets	300 – 1600	300 – 5000

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