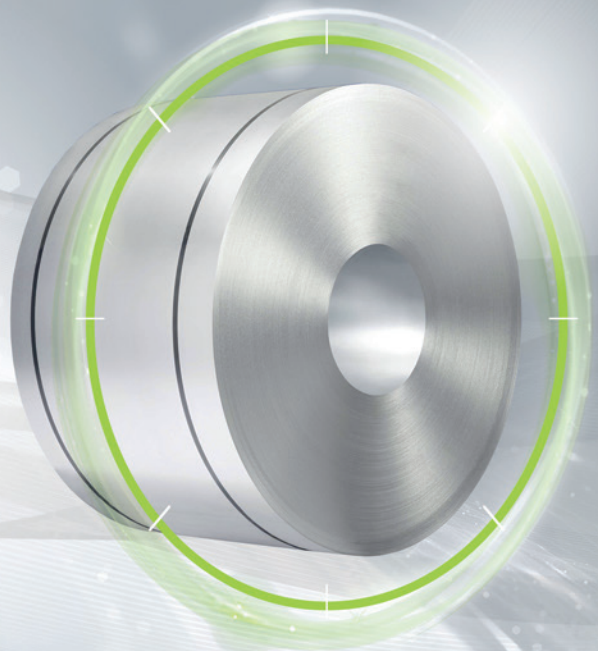


FULLY
PROCESSED

isovac 600-65 A

The perfect solution for direct application

Manufactured in the most modern production lines, this fully processed isovac® grade exhibits highly homogeneous properties across the width and length of the entire strip. The result is excellent and consistent processability in the manufacture of highly efficient electrical components. Upon request, isovac 600-65 A can be supplied with an electrical steel insulation system and can be used directly in as-delivered condition.

Convincing advantages:

- » Best processability through consistent mechanical properties and homogeneous, clean surfaces
- » Excellent stackability resulting from high dimensional accuracy in rolling direction and perpendicular to rolling direction (thickness tolerance)
- » Innovative electrical steel insulation systems upon request

voestalpine supplies isovac 600-65 A, 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 10106		IEC 60404-8-4	JIS C2552	GOST 21427.2	ASTM A677	AISI	IS648	GB/T2521.1
	Material No.	Abbreviation							
isovac 600-65 A	1.0825	M600-65A	M600-65A 5	65A600	2212	-	M-45	65C600	65W600

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®	Yield strength	0.2 %-Yield strength	Tensile strength	Elongation	Hardness
	R _{eH} [MPa]	R _{p0.2} [MPa]	R _m [MPa]	A ₈₀ [%]	HV5 [-]
isovac 600-65 A	350	320	470	34	155

Magnetic properties:

in as-delivered condition (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
	1.0 T P10		1.5 T P15		2500 A/m J25	5000 A/m J50	10000 A/m J100	1.5 T μ _r
	50 Hz [W/kg]	60 Hz [W/lb]	50 Hz [W/kg]	60 Hz [W/lb]	[T]	[T]	[T]	[-]
isovac 600-65 A	2.15	1.27	4.80	2.83	1.64	1.72	1.83	2400

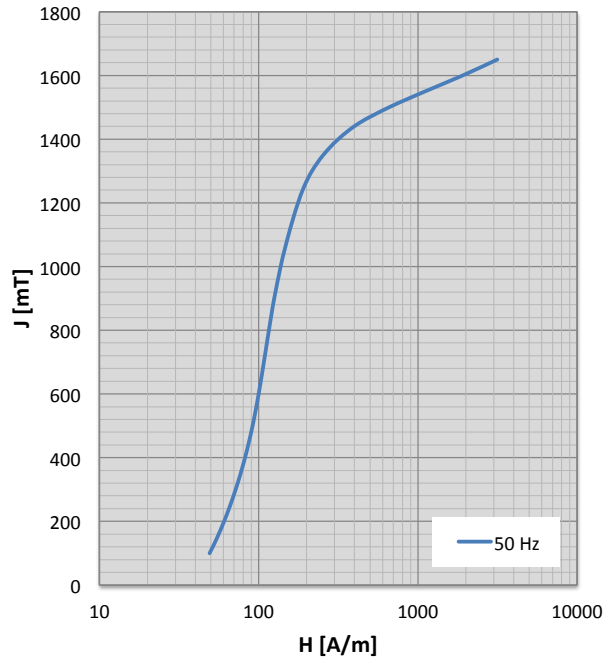
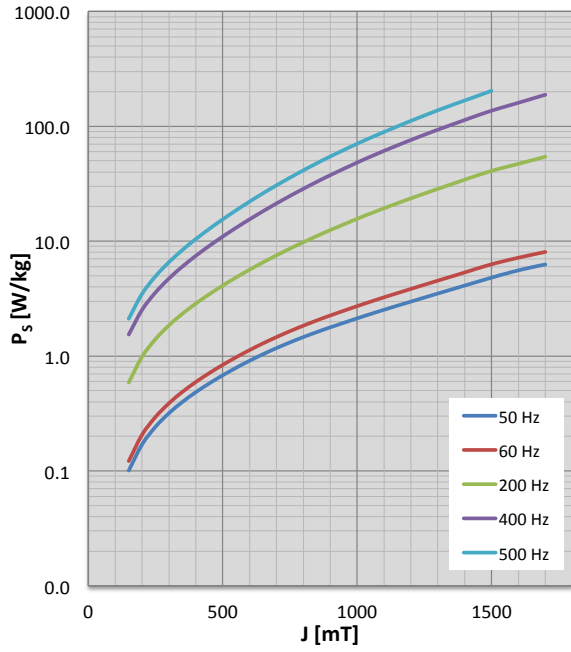
Physical properties:

Typical values

Grade named according to isovac®	Density ρ [g/cm³]	Specific electrical resistance ρ _s [μΩcm]	Thermal conductivity λ [W/mK]
isovac 600-65 A	7.76	35.8	33

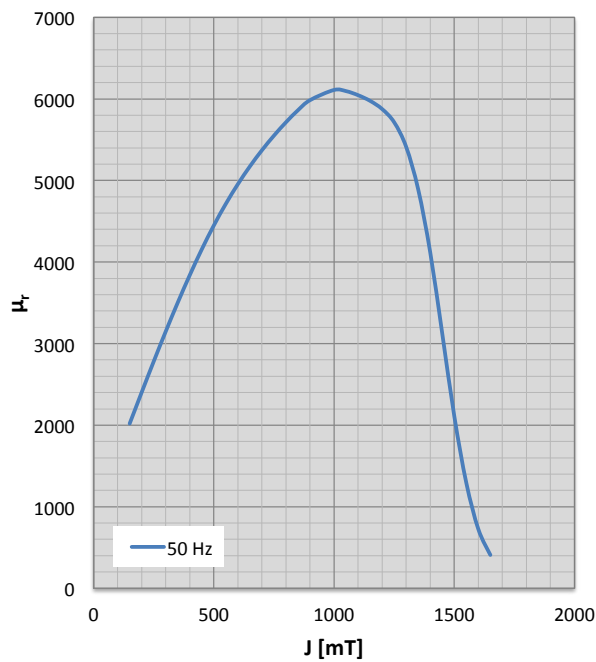
Characteristics P_s/J loss curve and characteristics J/H magnetization curve

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				60 Hz				200 Hz			
J [mT]	H [A/m]	P _s [W/kg]	μ _r [-]	J [mT]	H [A/m]	P _s [W/kg]	μ _r [-]	J [mT]	H [A/m]	P _s [W/kg]	μ _r [-]
100	49	0.03	1630					100	52	0.20	1536
150	55	0.10	2018	150	55	0.12	2016	150	61	0.59	1801
200	61	0.17	2403	200	61	0.21	2372	200	70	0.99	2063
250	66	0.24	2781	250	67	0.30	2722	250	79	1.40	2316
300	72	0.32	3149	300	73	0.39	3064	300	87	1.85	2559
350	77	0.40	3503	350	79	0.49	3394	350	96	2.33	2785
400	82	0.48	3840	400	85	0.59	3708	400	104	2.87	2992
450	87	0.58	4156	450	90	0.71	4005	450	113	3.45	3176
500	92	0.68	4449	500	95	0.84	4281	500	121	4.11	3332
550	96	0.79	4714	550	99	0.98	4534	550	129	4.84	3458
600	100	0.91	4955	600	103	1.13	4764	600	138	5.64	3555
650	104	1.04	5173	650	107	1.29	4970	650	146	6.54	3624
700	108	1.17	5371	700	111	1.46	5152	700	155	7.53	3667
750	112	1.31	5550	750	116	1.65	5311	750	165	8.61	3685
800	116	1.46	5714	800	120	1.84	5448	800	176	9.79	3681
850	120	1.62	5862	850	125	2.04	5561	850	188	11.08	3656
900	125	1.78	5985	900	131	2.25	5649	900	201	12.48	3615
1000	137	2.13	6110	1000	144	2.72	5746	1000	229	15.65	3506
1050	145	2.32	6095	1050	151	2.97	5749	1050	244	17.42	3446
1100	154	2.53	6046	1100	160	3.24	5715	1100	261	19.33	3384
1150	164	2.74	5976	1150	171	3.53	5640	1150	278	21.39	3318
1200	177	2.98	5875	1200	184	3.84	5528	1200	295	23.59	3255
1250	192	3.23	5713	1250	200	4.17	5376	1250	312	25.95	3198
1300	216	3.50	5411	1300	222	4.53	5135	1300	332	28.49	3123
1350	254	3.79	4889	1350	258	4.92	4734	1350	362	31.24	3005
1400	316	4.11	4117	1400	316	5.34	4078	1400	397	34.27	2830
1450	426	4.45	3121	1450	421	5.81	3130	1450	459	37.57	2568
1500	659	4.81	2110	1500	649	6.29	2121	1500	652	40.88	2109
1550	1110	5.19	1292	1550	1099	6.74	1299	1550	1101	43.99	1403
1600	1912	5.57	725	1600	1897	7.17	730	1600	1916	47.13	723
1650	3151	5.93	409	1650	3127	7.61	411	1650	3159	50.57	346
1700	4712	6.27	271	1700	4677	8.06	273	1700	4715	54.26	222

Frequency dependence of magnetic properties

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

400 Hz				500 Hz			
J [mT]	H [A/m]	P _s [W/kg]	μ _r [-]	J [mT]	H [A/m]	P _s [W/kg]	μ _r [-]
100	59	0.58	1357	100	64	0.79	1250
150	70	1.54	1564	150	76	2.11	1436
200	81	2.53	1766	200	88	3.48	1616
250	92	3.58	1959	250	100	4.95	1787
300	104	4.73	2138	300	113	6.56	1944
350	116	6.01	2298	350	126	8.38	2082
400	128	7.46	2435	400	141	10.43	2196
450	141	9.10	2543	450	156	12.79	2281
500	154	10.96	2618	500	172	15.49	2334
550	169	13.09	2657	550	190	18.58	2350
600	184	15.50	2665	600	209	22.11	2336
650	200	18.23	2646	650	230	26.11	2298
700	218	21.30	2607	700	252	30.63	2244
750	237	24.74	2552	750	277	35.70	2180
800	258	28.58	2489	800	303	41.37	2113
850	281	32.84	2421	850	331	47.66	2049
900	306	37.54	2352	900	361	54.61	1988
1000	361	48.33	2215	1000	426	70.46	1875
1050	389	54.45	2152	1050	460	79.42	1820
1100	420	61.08	2091	1100	497	89.18	1766
1150	452	68.23	2033	1150	535	99.82	1713
1200	484	75.97	1976	1200	575	111.43	1663
1250	517	84.35	1922	1250	615	124.04	1615
1300	555	93.31	1868	1300	662	137.64	1563
1350	598	102.88	1814	1350	717	152.17	1506
1400	632	113.34	1765	1400	755	167.68	1477
1450	661	124.83	1704	1450	771	184.47	1479
1500	797	136.62	1518	1500	875	203.78	1366
1550	1175	148.13	1133				
1600	1935	160.16	716				
1650	3163	173.59	444				
1700	4737	188.13	300				

Available Dimensions

Grade named according to isovac®	Delivery form	Width [mm]	Length [mm]
isovac 600-65 A	Wide strip / Slit strip	19 – 1590	-
	Cut-to-length sheets	300 – 1590	300 – 5000

Deliverable coating systems

Grade named according to isovac®	Uncoated	C-3	Backlack	C-5	C-6
isovac 600-65 A	✔	✔	☰	✔	✔

✔ Available ☰ On request

The information and product properties contained in this printed material are non-binding and serve the sole purpose of technical orientation. They do not replace individual advisory services provided by our sales and customer service teams. The product information and characteristics set forth herein shall not be considered as guaranteed properties unless explicitly stipulated in a separate contractual agreement. For this reason, voestalpine shall not grant any warranty nor be held liable for properties and/or specifications other than those subject to explicit agreement. This also applies to the suitability and applicability of products for certain applications as well as to the further processing of materials into final products. All application risks and suitability risks shall be borne by the customer. The General Terms of Sale for Goods and Services of the voestalpine Steel Division shall apply to all materials supplied by the voestalpine Steel Division and can be accessed using the following link: www.voestalpine.com/stahl/en/The-Steel-Division/General-Terms-of-Sale

Technical changes are reserved. Errors and misprints are excepted. No part of this publication may be reprinted without explicit written permission by voestalpine Stahl GmbH.

Please find further information
and downloadable files at
www.voestalpine.com/isovac

