



Carbon and Graphite Felt Insulation

Morgan AM&T's premium rayon-based carbon and graphite felt insulation products are designed for resistance and induction furnaces that operate under either vacuum or inert gas conditions. Furnaces that incorporate our insulation can achieve service temperatures of up to 350° C in oxidizing environments or 3000° C under inert or vacuum environments.

Graphite Felt grade WDF is the ideal choice for vacuum furnaces or process temperatures above 2000° C due to its low shrinkage and negligible gas evolution below 3000° C. Grade WDF also features enhanced oxidation resistance and is processed to a minimum of 2500° C. For demanding applications, grade WDF can be purified to less than 5 ppm total ash content.

Carbon Felt grade VDG is a premium quality material with low gas evolution and higher oxidation resistance than most commercially available carbon felt grades. It is a lower-cost alternative to grade WDF for applications where chemical purity is not as critical. Grade VDG has been processed to a minimum temperature of 1400° C.

Morgan AM&T offers a range of thicknesses from 0.125" to 1" and custom cuts are available upon request. Cylinders can be provided pre-rolled and stitched with graphite yarn.





When it comes to high-temperature solutions, there is no better provider than Morgan AM&T. We were the first company in the world to process carbon cloth. Today, we continue to lead the industry's innovation in high-temperature felts, structural insulations, hardware and components for the global high temperature market.

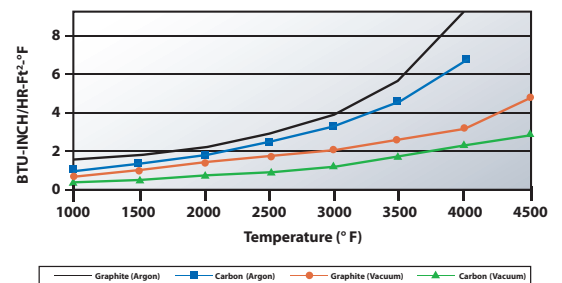
Felt Insulation Typical Physical Properties

Property	Units	Measurement Temp. (° C)	Grade VDG	Grade WDF
Density	g/cc	20	0.09	0.08
Linear Shrinkage ¹	%	20	1	negligible
Water Absorption	Weight %	20	1	negligible
Min. Carbon Assay	%	-	99.0	99.9
Ash	%	-	0.25	0.02
Specific Heat	J/g ^o C	20	0.71	0.71
Mean Specific Heat	J/g ^o C	1400	1.67	1.67
Emissivity	-	-	0.99	0.99
Sublimation Temp.	° C	-	3600	3600
Surface Area (Nitrogen)	m ² /g	20	0.6	0.7
Thermal Conductivity ²	W/m/K	1000 1400	0.25	0.43
Vapor Pressure	microns	2270 2440 2620	1 10 100	1 10 100
Min. Process Temp.	° C	-	1400	2500

¹ Measured after heating to 3000° C

² Measured in Nitrogen

Thermal Conductivity of Felt



Nominal Dimensional Data

Nominal Thickness			Nominal Width		Nominal Length		Typical Weight/Yard		Typical Roll Weight	
Size	Inches	mm	Min Inches	Typical Inches	Min Yards	Typical Yards	VDG Pounds	WDF Pounds	VDG Pounds	WDF Pounds
1/8"	0.11	2.8	41	42	16	52	0.57	0.53	29.6	27.3
5mm	0.20	5.1	41	42	16	34	1.17	1.12	39.8	38.1
			47	48	16	34	1.34	1.29	45.6	43.9
1/4"	0.22	5.6	41	42	16	34	1.19	1.15	40.5	39.1
			47	48	16	34	1.37	1.32	46.6	44.9
10mm	0.39	10.0	41	42	8	17	2.29	2.15	38.9	36.6
			47	48	8	17	2.60	2.45	44.2	41.7
1/2"	0.44	11.2	41	42	8	17	2.39	2.24	40.6	38.1
			47	48	8	17	2.69	2.55	45.7	43.4
1"	0.88	22.4	41	42	4	8	4.73	4.49	37.8	35.9

Note: While every care is taken in compiling the data listed above, all values are typical values and do not constitute a specification.



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ISO 9001



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