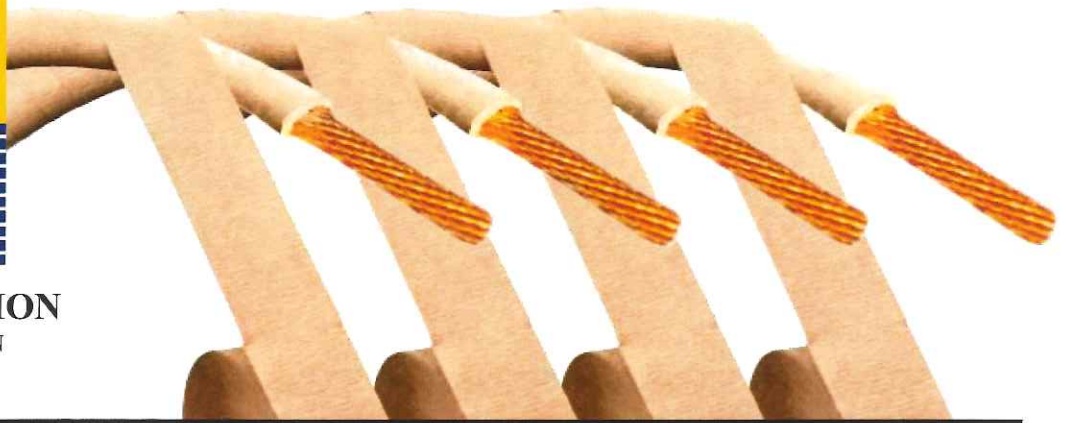


ELECTRICAL INSULATION PAPERS

INSULSTRETCH® HAND TAPE

CINDUS CORPORATION
CREPED TECHNICAL DIVISION
CINCINNATI, OHIO



These products are used for a variety of end uses such as secondary lead insulation, lead wire connection tape, and coil separation sheets.

The base paper used is either 3 or 5 mil high density or low density stock. The stretch and thickness is varied to meet the needs of the end user. Thermal upgrading at 2% nitrogen is standard for all high density (H) grades, and available on other grades if requested. Laminate grades of 510H are available for specific needs.

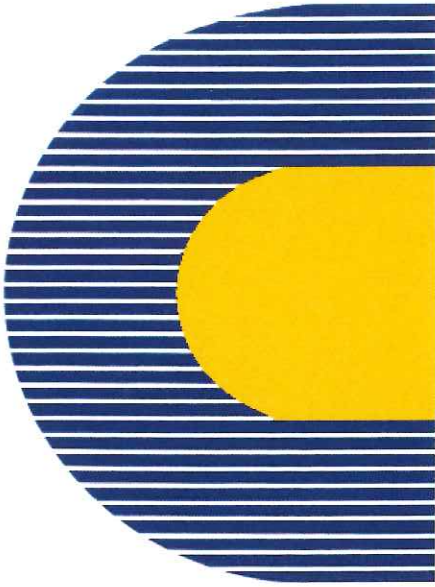
Either high or low density grades can be calendered to precise thicknesses.

X-Crepe (Thermoflex®) is used where greater flexibility is needed for convolute wire wraps that must endure extreme radius bending.

	Elongation	Tensile Strength (lbs./in.)	Yield (lbs./sq.ft.)	Thickness (mils)
Hi Density				
35H	50	30	0.022	13
35HC	50	45	0.023	6 To 8
310H	100	30	0.03	23
310HC	100	45	0.029	10 To 15
55H	50	50	0.041	21
55HC	50	60	0.039	10 To 12
510H	100	45	0.058	29
510HC	100	45	0.037	12 To 15
Low Density				
35	50	25	0.019	12
310	100	25	0.024	18
52	20	40	0.02	16
55	50	40	0.0258	18
510	100	40	0.041	21
510C	100	40	0.037	12 To 14
Thermoflex®	30	45	0.05	20

High Density	35H	35HC	310H	310HC	55H	55HC	510	510HC
Roll Width	½" 1"	½" 1"	½" 1"	½" 1"	½" 1"	½" 1"	½" 1"	½" 1"
Ft./Lb.	1042 521	1042 521	782 391	782 391	630 315	630 31	474 23	474 237

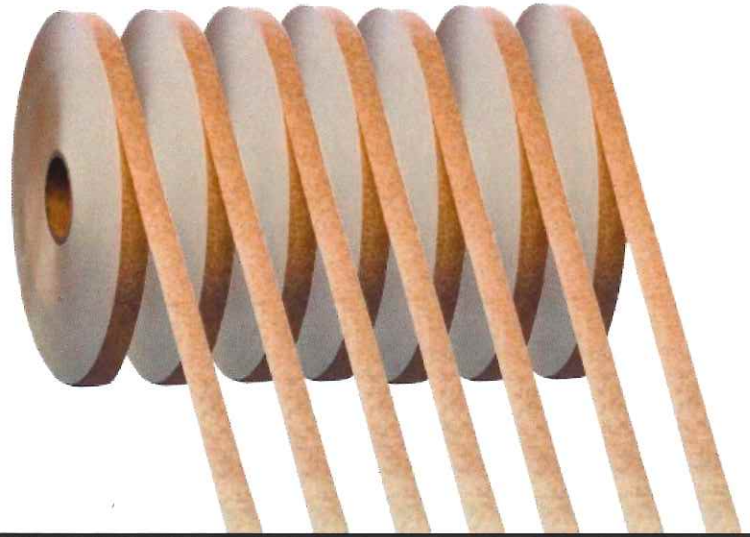
Low Density	35	310	52	55	510	510C
Roll Width	½" 1"	½" 1"	½" 1"	½" 1"	½" 1"	½" 1"
Ft./Lb.	1333 667	1000 500	1091 546	867 434	655 32	655 328



ELECTRICAL INSULATION PAPERS

INSULSTRETCH® 42HCF, 22HCF

MAGNET WIRE INSULATION



CINDUS CORPORATION
TECHNICAL CREPED PRODUCTS DIVIS
CINCINNATI, OHIO

Insulstretch® 42HCF is a 3 mil, highly densified, thermally upgraded, creped/calendered electrical paper with 15–30 percent MD elongation. This grade exhibits very high tensile strength with precision thickness and density. This premium magnet wire insulation is well suited for high speeds and tensions in wire wrapping operations. After the wire is wrapped, this grade will give the maximum amount of protection for small radius bends in the coil winding process for single wire & CTC. Cindus grade 42HCF has proven to be a superior creped / calendered magnet wire insulation.

Insulstretch® 22HCF is a 2 mil, highly densified, thermally upgraded, creped/calendered electrical paper with 15–30 percent elongation. This grade is offered to accommodate different insulation systems that call for space saving 2 mil thickness. This grade also supplies excellent mechanical and insulating characteristics comparable to 42HCF.

The densification process at Cindus Corporation can achieve densities well in excess of 1.0 to provide higher impulse strengths. Cindus can customize the above grades to varying densities by altering the finished thickness.

The thermal upgrading to 2% nitrogen is standard in all magnet wire grades.

MECHANICAL PROPERTIES:

	<u>42HCF</u>	<u>22HCF</u>
Caliper (inches)	2.9 to 3.4	1.9 to 2.3
Elongation (percent)	20	20
Apparent Density (gms/cc)	1.05	1.10
Tensile Strength (lbs/in)	45	35
Edge Tear (lbs-5/8" width)	25	15
Toughness, T.E.A. (lbs-ft/ft ²)	35	50
Basis Weight (lbs/3000 ft ²)	50	35
Moisture (Percent)	5.0	5.0

INSULSTRETCH[®] DATA SHEET (STANDARD)

Insulstretch Grade	Base Paper Weight (lbs/3000ft ²)	Elongation (Percent)	Tensile		Thickness (mils)	Yield (lb/sq.ft.)	Finished Weight (lbs/3000 ft ²)	Apparent Density (gms/cc)	Dielectric Strength in oil (volts/mil)
			Min. (lbs/in)	Nominal (lbs/in)					
22HCF	28	20	25.0	35.0	1.90 min. 2.30 max	0.012	35	1.10	1400
42HCF	39	20	30.0	45.0	2.90 min 3.40 max	0.017	50	1.05	1900
35	35	50	15.0	25.0	12.0	0.019	53	0.28	900
310	35	100	15.0	25.0	18.0	0.024	70	0.24	800
35H	42	50	20.0	30.0	13.0	0.022	63	0.31	700
35HC	39	50	30.0	45.0	6.00 min 8.00 max	0.023	59	0.53	1050
310H	42	100	20.0	30.0	23.0	0.03	84	0.23	600
310HC	39	100	20.0	45.0	10.00 min 15.00 max	0.029	85	0.39	900
55	60	50	25.0	40.0	18.0	0.028	90	0.31	600
510	60	100	20.0	40.0	25.0	0.041	120	0.30	450
510C	60	100	20.0	40.0	12.00 min 14.00 max	0.037	120	0.58	1100
55H	75	50	40.0	50.0	21.0	0.041	113	0.34	700
55HC	75	50	45.0	60.0	10.00 min 12.00 max	0.039	113	0.64	1000
510H	75	100	35.0	45.0	29.0	0.058	150	0.33	550
510HC	75	100	35.0	45.0	12.00min 15.00max	0.037	150	0.76	800
510HC2-ply	159	100	40.0	60.0	22.00min 30.00max	0.101	318	0.77	700
Foil Crepe	53	50	15.0	25.0	11	0.021	83	0.37	N/A
Carbon Black	60	50	15.0	25.0	22	0.03	107	0.26	N/A

Cindus Corporation, Technical Creped Products Division, Cincinnati, Ohio