DOE/CE/23810-63

COMPATIBILITY OF REFRIGERANTS AND LUBRICANTS WITH MOTOR MATERIALS UNDER RETROFIT CONDITIONS

Final Report

Volume III

DATA TABLES, LOW PRESSURE REFRIGERANTS

Robert G. Doerr and Todd D. Waite

The Trane Company
3600 Pammel Creek Road
La Crosse, Wisconsin 54601-7599

October 1996

Prepared for
The Air-Conditioning and Refrigeration Technology Institute
Under
ARTI MCLR Project Number 655-50400

This research project is supported, in whole or in part, by U.S. Department of Energy grant DE-FG02-91CE23810: Materials Compatibility and Lubricants Research (MCLR) on CFC-Refrigerant Substitutes. Federal funding supporting this project constitutes 93.57% of allowable costs. Funding from non-government sources supporting this project consists of direct cost sharing of 6.43% of allowable costs; and in-kind contributions from the air-conditioning and refrigeration industry.

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FORMAT FOR THE FINAL REPORT

Because of the large scope of this project and the large amount of data recorded, the final report is divided into four volumes.

Volume I (148 pages) contains the abstract, introduction, significant results, conclusions, material identification, experimental procedures and summary data tables. This volume provides the results of the study and other information of interest to most readers. The other volumes are necessary only if the reader is interested in the individual data measurements rather than summaries or averages of the data sets.

Volume II (250 pages) contains the measurements from tests on the three high pressure refrigerant-lubricant combinations and their alternatives.

Original Refrigerant	Alternative Refrigerant	Exposure Temperature
R-12/Mineral Oil	R-134a/Polyol Ester	127°C (260°F)
R-22/Mineral Oil	R-407C/Polyol Ester	127°C (260°F)
R-502/Mineral Oil	R-404A/Polyol Ester	127°C (260°F)

Volume III (155 pages) contains the measurements from tests on the three low pressure refrigerant-lubricant combinations and their alternatives.

Original Refrigerant	Alternative Refrigerant	Exposure Temperature
R-11/Mineral Oil	R-123/Mineral Oil	100°C (212°F)
R-11/Mineral Oil	R-245ca/Polyol Ester	100°C (212°F)
R-123/Mineral Oil	R-245ca/Polyol Ester	100°C (212°F)

Volume IV (44 pages) contains the photographs of the motor materials after exposure to the six refrigerant-lubricant combinations and their alternatives.

TABLE OF CONTENTS

VOLUME III

DATA TABLES LOW PRESSURE REFRIGERANTS

COMPATIBILITY OF REFRIGERANTS AND LUBRICANTS WITH MOTOR MATERIALS UNDER RETROFIT CONDITIONS

Robert G. Doerr and Todd D. Waite
The Trane Company

ABSTRACT

Compatibility tests were conducted on motor materials to determine if exposure to the original refrigerant/mineral oil would affect compatibility of the motor materials after retrofit to the alternative refrigerant/lubricant. The motor materials were exposed at elevated temperature to the original refrigerant and mineral oil for 500 hours, followed by exposure to the alternative refrigerant and lubricant for 500 hours. Measurements were also taken after 168 and 336 hours. As a control, some samples were exposed to the original refrigerant/mineral oil for a total of 1000 hours. The original refrigerants and the alternatives tested for retrofit were as follows:

Original Refrigerant	**Alternative Refrigerant**	**Exposure Temperature**
R-12/Mineral Oil	R-134a/Polyol Ester	127°C (260°F)
R-22/Mineral Oil	R-407C/Polyol Ester	127°C (260°F)
R-502/Mineral Oil	R-404A/Polyol Ester	127°C (260°F)
R-11/Mineral Oil	R-123/Mineral Oil	100°C (212°F)
R-11/Mineral Oil	R-245ca/Polyol Ester	100°C (212°F)
R-123/Mineral Oil	R-245ca/Polyol Ester	100°C (212°F)

Most motor materials exposed to the alternative refrigerant and lubricant (after an initial exposure to the original refrigerant and mineral oil) were compatible with the alternative refrigerant and lubricant. The only concern was delamination and blistering of the sheet insulation containing Nomex, especially after removal of absorbed refrigerant. This was attributed to solution of the adhesive and not to the Nomex itself. Embrittlement of the polyethylene terephthalate (PET) found in Mylar and Melinex sheet and sleeving insulations was initially observed, but subsequent tests under dry conditions showed that embrittlement of the PET materials was caused by moisture present during the exposure.

Compatibility tests of elastomers with R-245ca, retrofitted from R-11 and R-123, showed that the nitrile was compatible with both R-11 and R-245ca, but not with R-123. The neoprene was unsatisfactory because of shrinkage in the R-245ca.

Data Tables:
Part 1

R-11/Mineral Oil to
R-123/Mineral Oil

500 HRS IN R-11/MINERAL OIL @ 212 F

Varnish U-475EH

Varnish Disk#	Weight Disk Before in Air (grams)	Weight Disk before in Methanol (grams)	Weight Disk after in Air (grams)	Weight Disk after in MeOH (grams)
1	1.7348	0.5770	1.8188	0.6452
2	1.8278	0.6086	1.9153	0.6792
3	2.1721	0.7213	2.2711	0.8053

Varnish Disk#	Volume Before (milliters)	Volume After (milliliters)	Change in Weight	Change in Volume
1	1.4811	1.5013	4.84%	1.36%
2	1.5597	1.5813	4.79%	1.39%
3	1.8560	1.8751	4.56%	1.03%
		AVERAGE	4.73%	1.26%

1000 HRS IN R-11/MINERAL OIL @ 212 F

Varnish U-475EH

Varnish Disk#	Weight Disk Before in Air (grams)	Weight Disk before in Methanol (grams)	Weight Disk after in Air (grams)	Weight Disk after in MeOH (grams)
1	1.7348	0.5770	1.8516	0.6690
2	1.8278	0.6086	1.9510	0.7048
3	2.1721	0.7213	2.3104	0.8351

Varnish Disk#	Volume Before (milliters)	Volume After (milliliters)	Change in Weight	Change in Volume
1	1.4811	1.5129	6.73%	2.14%
2	1.5597	1.5942	6.74%	2.21%
3	1.8560	1.8873	6.37%	1.69%
		AVERAGE	6.61%	2.02%

500 HRS IN R-11/MINERAL OIL @ 212 F
168 HRS IN R-123/MINERAL OIL @ 212 F

Varnish U-475EH

Varnish Disk#	Weight Disk Before in Air (grams)	Weight Disk before in Methanol (grams)	Weight Disk after in Air (grams)	Weight Disk after in MeOH (grams)
1	1.4392	0.4810	1.6455	0.6071
2	1.8452	0.6150	2.0902	0.7708
3	1.5714	0.5240	1.7948	0.6637

Varnish Disk#	Volume Before (milliters)	Volume After (milliliters)	Change in Weight	Change in Volume
1	1.2258	1.3284	14.33%	8.37%
2	1.5737	1.6879	13.28%	7.25%
3	1.3399	1.4470	14.22%	7.99%
		AVERAGE	13.94%	7.87%

500 HRS IN R-11/MINERAL OIL @ 212 F
336 HRS IN R-123/MINERAL OIL @212 F

Varnish U-475EH

Varnish Disk#	Weight Disk Before in Air (grams)	Weight Disk before in Methanol (grams)	Weight Disk after in Air (grams)	Weight Disk after in MeOH (grams)
1	1.4392	0.4810	1.6512	0.6100
2	1.8452	0.6150	2.1042	0.7786
3	1.5714	0.5240	1.7996	0.6660

Varnish Disk#	Volume Before (milliters)	Volume After (milliliters)	Change in Weight	Change in Volume
1	1.2258	1.3320	14.73%	8.66%
2	1.5737	1.6958	14.04%	7.75%
3	1.3399	1.4502	14.52%	8.23%
		AVERAGE	14.43%	8.22%

500 HRS IN R-11/MINERAL OIL @ 212 F
500 HRS IN R-123/MINERAL OIL @212 F

Varnish U-475EH

Varnish Disk#	Weight Disk Before in Air (grams)	Weight Disk before in Methanol (grams)	Weight Disk after in Air (grams)	Weight Disk after in MeOH (grams)
1	1.4392	0.4810	1.6480	0.6074
2	1.8452	0.6150	2.1009	0.7759
3	1.5714	0.5240	1.7978	0.6644

Varnish Disk#	Volume Before (milliters)	Volume After (milliliters)	Change in Weight	Change in Volume
1	1.2258	1.3312	14.51%	8.60%
2	1.5737	1.6950	13.86%	7.71%
3	1.3399	1.4499	14.41%	8.21%
		AVERAGE	14.26%	8.17%

500 HRS IN R-11/MINERAL OIL @ 212 F

Wire Type/Varnish		Unexposed Bond Strengths (Pounds)	Experimental Bond Strengths (Pounds)	Change in Bond Strength From Unexposed
		26.55	25.65	
Wire Type C		28.90	23.55	
coated with		26.20	29.65	-6.28%
U-475EH		27.75	27.90	
		27.55	21.60	
	Average	27.39	25.67	

500 HRS IN R-11/MINERAL OIL @ 212 F 24 HR BAKE @ 302 F

		26.55	24.35	
Wire Type C		28.90	31.30	
coated with		26.20	33.90	-2.15%
U-475EH		27.75	19.30	
		27.55	25.15	
	Average	27.39	26.80	

1000 HRS IN R-11/MINERAL OIL @ 212 F

		26.55	17.70	
Wire Type C		28.90	26.00	
coated with		26.20	20.70	-22.56%
U-475EH		27.75	27.30	
		27.55	14.35	
	Average	27.39	21.21	

1000 HRS IN R-11/MINERAL OIL @ 212 F 24 HR BAKE @ 302 F

		26.55	28.20	
Wire Type C		28.90	28.55	
coated with		26.20	31.05	-3.91%
U-475EH		27.75	11.30	
		27.55	32.50	
	Average	27.39	26.32	

Wire Type C is Polyester base with amide imide overcoat and epoxy saturated glass serving.

500 HRS IN R-11/MINERAL OIL @ 212 F
168 HRS IN R-123/MINERAL OIL @ 212 F

Wire Type/Varnish		Unexposed Bond Strengths (Pounds)	Experimental Bond Strengths (Pounds)	Change in Bond Strength From Unexposed
		26.55	15.05	
Wire Type C		28.90	28.50	
coated with		26.20	28.70	-11.90%
U-475EH		27.75	26.20	
		27.55	22.20	
	Average	27.39	24.13	

500 HRS IN R-11/MINERAL OIL @ 212 F
168 HRS IN R-123/MINERAL OIL @ 212 F
24 HR BAKE @ 302 F

		26.55	25.90	
Wire Type C		28.90	24.65	
coated with		26.20	19.60	-16.65%
U-475EH		27.75	27.25	
		27.55	16.75	
	Average	27.39	22.83	

500 HRS IN R-11/MINERAL OIL @ 212 F
336 HRS IN R-123/MINERAL OIL @212 F

		26.55	28.17	
Wire Type C		28.90	30.37	
coated with		26.20	29.85	14.96%
U-475EH		27.75	38.55	
		27.55	30.50	
	Average	27.39	31.49	

Wire Type C is Polyester base with amide imide overcoat and epoxy saturated glass serving.

500 HRS IN R-11/MINERAL OIL @ 212 F
336 HRS IN R-123/MINERAL OIL @212 F
24 HR BAKE @ 302 F

Wire Type/Varnish		Unexposed Bond Strengths (Pounds)	Experimental Bond Strengths (Pounds)	Change in Bond Strength From Unexposed
		26.55	25.15	
Wire Type C		28.90	28.42	
coated with		26.20	25.15	-5.46%
U-475EH		27.75	24.75	
		27.55	26.00	
	Average	27.39	25.89	

500 HRS IN R-11/MINERAL OIL @ 212 F
500 HRS IN R-123/MINERAL OIL @212 F

		26.55	31.60	
Wire Type C		28.90	31.35	
coated with		26.20	29.55	-3.18%
U-475EH		27.75	25.95	
		27.55	14.15	
	Average	27.39	26.52	

500 HRS IN R-11/MINERAL OIL @ 212 F
500 HRS IN R-123/MINERAL OIL @212 F
24 HR BAKE @ 302 F

		26.55	33.35	
Wire Type C		28.90	28.55	
coated with		26.20	27.65	9.75%
U-475EH		27.75	29.90	
		27.55	30.85	
	Average	27.39	30.06	

Wire Type C is Polyester base with amide imide overcoat and epoxy saturated glass serving.

500 HRS IN R-11/MINERAL OIL @ 212 F

Wire Type	Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change	Unexposed Burnout Strengths (seconds)	Experimental Burnout Strengths (seconds)	Burnout Change
	11.83	15.37		738	732	
	12.10	13.07		734	729	
Wire Type C	12.29	12.99	12.43%	728	734	-1.77%
	12.90	14.14		741	730	
	12.61	13.83		727	678	
Average	12.35	13.88		734	721	

1000 HRS IN R-11/MINERAL OIL @ 212 F

	11.83	15.24		738	730	
	12.10	13.02		734	700	
Wire Type C	12.29	13.54	13.40%	728	657	-3.46%
	12.90	15.22		741	718	
	12.61	12.98		727	736	
Average	12.35	14.00		734	708	

500 HRS IN R-11/MINERAL OIL @ 212 F
168 HRS IN R-123/MINERAL OIL @ 212 F

	11.83	11.03		738	728	
	12.10	14.46		734	729	
Wire Type C	12.29	10.28	4.97%	728	738	-0.30%
	12.90	12.43		741	734	
	12.61	16.60		727	728	
Average	12.35	12.96		734	731	

500 HRS IN R-11/MINERAL OIL @ 212 F
336 HRS IN R-123/MINERAL OIL @212 F

	11.83	16.00		738	729	
	12.10	11.05		734	733	
Wire Type C	12.29	14.87	17.82%	728	730	-0.35%
	12.90	16.46		741	734	
	12.61	14.35		727	729	
Average	12.35	14.55		734	731	

500 HRS IN R-11/MINERAL OIL @ 212 F
500 HRS IN R-123/MINERAL OIL @212 F

	11.83	13.65		738	734	
	12.10	11.45		734	731	
Wire Type C	12.29	13.10	3.40%	728	730	-1.80%
	12.90	12.69		741	732	
	12.61	12.94		727	675	
Average	12.35	12.77		734	720	

Wire Type C is Polyester base with amide imide overcoat and epoxy saturated glass serving.

500 HRS IN R-11 / MINERAL OIL @ 212 F

Wire Type Varnish	Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change	Unexposed Burnout Strengths (seconds)	Experimental Burnout Strengths (seconds)	Burnout Change
	13.69	15.78		744	749	
Wire Type C	11.93	15.68		749	743	
coated with	14.85	16.13	20.86%	753	746	-0.59%
U-475EH	11.76	16.63		755	753	
	14.01	15.84		753	741	
Average	13.25	16.01		751	746	

1000 HRS IN R-11 / MINERAL OIL @ 212 F

	13.69	13.19		744	729	
Wire Type C	11.93	13.11		749	729	
coated with	14.85	15.25	10.13%	753	728	-2.77%
U-475EH	11.76	15.68		755	734	
	14.01	15.72		753	730	
Average	13.25	14.59		751	730	

500 HRS IN R-11 / MINERAL OIL @ 212 F
168 HRS IN R-123 / MINERAL OIL @ 212 F

	13.69	14.58		744	739	
Wire Type C	11.93	16.55		749	743	
coated with	14.85	16.84	23.43%	753	746	-1.20%
U-475EH	11.76	16.78		755	745	
	14.01	17.01		753	736	
Average	13.25	16.35		751	742	

500 HRS IN R-11 / MINERAL OIL @ 212 F
336 HRS IN R-123 / MINERAL OIL @212 F

	13.69	16.37		744	736	
Wire Type C	11.93	17.33		749	749	
coated with	14.85	16.75	23.82%	753	741	-1.39%
U-475EH	11.76	15.90		755	743	
	14.01	15.67		753	733	
Average	13.25	16.40		751	740	

500 HRS IN R-11 / MINERAL OIL @ 212 F
500 HRS IN R-123 / MINERAL OIL @212 F

	13.69	16.28		744	735	
Wire Type C	11.93	14.67		749	732	
coated with	14.85	15.70	14.93%	753	746	-1.41%
U-475EH	11.76	15.00		755	748	
	14.01	14.48		753	740	
Average	13.25	15.23		751	740	

Wire Type C is Polyester base with amide imide overcoat and epoxy saturated glass serving.

500 HRS IN R-11 / MINERAL OIL @ 212 F

Lead Wire Insulation Type	Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
Polyester Composite	10.87	10.60	
Dacron-Mylar-Dacron	10.82	12.49	14.50%
	7.62	10.47	
Average	9.77	11.19	
Polyester, Fluorpolymer	10.78	15.05	
Composite	9.24	14.96	49.31%
Dacron-Teflon-Dacron	10.46	15.50	
Average	10.16	15.17	

1000 HRS IN R-11 / MINERAL OIL @ 212 F

Polyester Composite	10.87	9.80	
Dacron-Mylar-Dacron	10.82	10.10	2.56%
	7.62	10.16	
Average	9.77	10.02	
Polyester, Fluorpolymer	10.78	15.10	
Composite	9.24	15.20	47.41%
Dacron-Teflon-Dacron	10.46	14.63	
Average	10.16	14.98	

500 HRS IN R-11 / MINERAL OIL @ 212 F
168 HRS IN R-123 / MINERAL OIL @ 212 F

Lead Wire Insulation Type	Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
Polyester Composite	10.87	9.56	
Dacron-Mylar-Dacron	10.82	9.60	0.48%
	7.62	10.29	
Average	9.77	9.82	
Polyester, Fluorpolymer	10.78	15.96	
Composite	9.24	14.83	46.29%
Dacron-Teflon-Dacron	10.46	13.80	
Average	10.16	14.86	

500 HRS IN R-11 / MINERAL OIL @ 212 F
336 HRS IN R-123 / MINERAL OIL @212 F

Polyester Composite	10.87	8.98	
Dacron-Mylar-Dacron	10.82	7.11	-8.73%
	7.62	10.66	
Average	9.77	8.92	
Polyester, Fluorpolymer	10.78	15.30	
Composite	9.24	15.96	52.20%
Dacron-Teflon-Dacron	10.46	15.13	
Average	10.16	15.46	

500 HRS IN R-11 / MINERAL OIL @ 212 F
500 HRS IN R-123 / MINERAL OIL @212 F

Polyester Composite	10.87	7.43	
Dacron-Mylar-Dacron	10.82	8.83	-17.67%
	7.62	7.87	
Average	9.77	8.04	
Polyester, Fluorpolymer	10.78	15.43	
Composite	9.24	11.66	30.25%
Dacron-Teflon-Dacron	10.46	12.61	
	10.16	13.23	

500 HRS IN R-11 / MINERAL OIL @ 212 F

Sleeving Type		Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
Polyester Film		>19.14	>19.84	
		>17.05	>19.20	1.10%
		>16.60	>14.33	
	Average	>17.60	>17.79	
Aramid Fiber Mat		>11.83	>11.43	
Polyester Film		>12.33	>12.47	-2.82%
		>12.40	>11.63	
	Average	>12.19	>11.84	

1000 HRS IN R-11 / MINERAL OIL @ 212 F

Polyester Film		>19.14	>16.24	
		>17.05	>18.83	-1.06%
		>16.60	>17.16	
	Average	>17.60	>17.41	
Aramid Fiber Mat		>11.83	>13.73	
Polyester Film		>12.33	>15.61	14.80%
		>12.40	>12.63	
	Average	>12.19	>13.99	

500 HRS IN R-11/MINERAL OIL @ 212 F
168 HRS IN R-123/MINERAL OIL @ 212 F

Sleeving Type		Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
Polyester Film		>19.14	>13.86	
		>17.05	>17.82	-5.61%
		>16.60	>18.15	
	Average	>17.60	>16.61	
Aramid Fiber Mat		>11.83	>13.33	
Polyester Film		>12.33	>10.81	1.59%
		>12.40	>13.00	
	Average	>12.19	>12.38	

500 HRS IN R-11/MINERAL OIL @ 212 F
336 HRS IN R-123/MINERAL OIL @212 F

Polyester Film		>19.14	>16.10	
		>17.05	>15.54	-9.36%
		>16.60	>16.21	
	Average	>17.60	>15.95	
Aramid Fiber Mat		>11.83	>10.69	
Polyester Film		>12.33	>9.83	-18.27%
		>12.40	>9.36	
	Average	>12.19	>9.96	

500 HRS IN R-11/MINERAL OIL @ 212 F
500 HRS IN R-123/MINERAL OIL @212 F

Sleeving Type		Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
Polyester Film		>19.14	>10.90	
		>17.05	>13.10	-32.11%
		>16.60	>11.84	
	Average	>17.60	>11.95	
Aramid Fiber Mat		>11.83	>11.84	
Polyester Film		>12.33	>11.09	-3.58%
		>12.40	>12.32	
	Average	>12.19	>11.75	

500 HRS IN R-11/MINERAL OIL @ 212 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.490	85.5	19.39	22.48	-7.87%
2	0.009	0.505	94.6	20.80		
3	0.009	0.512	101.1	21.94		
Average				20.71		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	1.92	96.00%	134.83%	-10.75%	>14.10	>14.47	3.64%
2	2.57	128.50%				>14.70	
3	2.73	136.50%				>14.67	
Average		120.33%				>14.61	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.514	98.4	19.13	19.06	-6.90%
2	0.010	0.450	76.9	17.08		
3	0.010	0.445	75.8	17.02		
Average				17.74		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	3.22	161.00%	142.83%	-18.20%	>14.60	>14.60	-2.58%
2	1.99	99.50%				>13.40	
3	1.80	90.00%				>14.67	
Average		116.83%				>14.22	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.550	145.7	12.61	13.40	-5.30%
2	0.021	0.512	138.7	12.90		
3	0.021	0.517	136.3	12.55		
Average				12.69		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.53	26.50%	29.33%	-6.24%	>18.56	>16.85	-4.94%
2	0.57	28.50%				>18.95	
3	0.55	27.50%				>17.13	
Average		27.50%				>17.64	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.507	89.7	17.68	18.09	-3.38%
2	0.010	0.456	74.9	16.43		
3	0.010	0.532	97.5	18.33		
Average				17.48		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.59	14.75%	16.25%	-7.18%	10.24	13.50	29.82%
2	0.55	13.75%				13.20	
3	0.67	16.75%				13.18	
Average		15.08%				13.29	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.508	26.2	5.73	7.07	-19.65%
2	0.009	0.500	26.0	5.77		
3	0.009	0.480	24.0	5.54		
Average				5.68		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.09	2.25%	1.92%	21.53%	11.39	11.81	2.52%
2	0.09	2.25%				11.10	
3	0.10	2.50%				12.12	
Average		2.33%				11.68	

Insulation Type: Aramid Mat, Polyester FiIm Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.495	135.3	13.02	17.05	-9.17%
2	0.021	0.500	179.6	17.10		
3	0.021	0.512	175.7	16.34		
Average				15.49		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.24	6.00%	25.50%	-31.37%	>17.76	>16.50	-5.50%
2	0.98	24.50%				>17.36	
3	0.88	22.00%				>16.49	
Average		17.50%				>16.78	

500 HRS IN R-11/MINERAL OIL @ 212 F
24 HR BAKE @ 302 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.509	92.0	18.06	22.48	-19.33%
2	0.010	0.473	88.2	18.65		
3	0.010	0.509	90.1	17.69		
Average				18.13		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	1.90	95.00%	134.83%	-23.98%	14.10	>13.59	-2.27%
2	2.25	112.50%				>13.91	
3	2.00	100.00%				>13.84	
Average		102.50%				>13.78	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.494	95.0	19.23	19.06	-2.15%
2	0.010	0.459	78.6	17.12		
3	0.010	0.521	102.1	19.60		
Average				18.65		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	3.14	157.00%	142.83%	-0.58%	14.60	>14.60	1.32%
2	1.98	99.00%				>14.93	
3	3.40	170.00%				>14.85	
Average		142.00%				>14.79	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.495	136.2	13.10	13.40	-3.19%
2	0.021	0.501	137.3	13.05		
3	0.021	0.385	103.7	12.77		
Average				12.97		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.60	30.00%	29.33%	-0.56%	>18.56	>17.04	-10.38%
2	0.58	29.00%				>15.77	
3	0.57	28.50%				>17.09	
Average		29.17%				>16.63	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.507	87.5	17.26	18.09	-0.92%
2	0.010	0.503	91.8	18.25		
3	0.010	0.575	105.0	18.26		
Average				17.92		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.47	11.75%	16.25%	-20.00%	10.24	11.23	8.30%
2	0.56	14.00%				10.89	
3	0.53	13.25%				11.15	
Average		13.00%				11.09	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.578	29.4	5.64	7.07	-19.95%
2	0.009	0.480	25.1	5.81		
3	0.009	0.570	28.4	5.53		
Average				5.66		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.09	2.25%	1.92%	4.17%	11.39	11.21	0.29%
2	0.07	1.75%				11.79	
3	0.08	2.00%				11.27	
Average		2.00%				11.42	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.435	150.6	16.49	17.05	-5.06%
2	0.021	0.471	157.1	15.88		
3	0.021	0.445	151.3	16.19		
Average				16.19		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.81	20.25%	25.50%	-26.14%	>17.76	>17.80	1.30%
2	0.71	17.75%				>18.40	
3	0.74	18.50%				>17.77	
Average		18.83%				>17.99	

1000 HRS IN R-11/MINERAL OIL @ 212 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.469	81.0	17.27	22.48	-25.61%
2	0.010	0.576	94.8	16.46		
3	0.010	0.499	82.0	16.43		
Average				16.72		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.29	114.50%	134.83%	-38.69%	>14.10	>14.30	1.30%
2	1.42	71.00%				>14.25	
3	1.25	62.50%				>14.30	
Average		82.67%				>14.28	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.500	80.4	16.07	19.06	-15.23%
2	0.010	0.508	80.0	15.75		
3	0.010	0.477	79.4	16.65		
Average				16.16		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.44	22.00%	142.83%	-66.04%	>14.60	>14.69	-2.85%
2	0.45	22.50%				>13.76	
3	2.02	101.00%				>14.10	
Average		48.50%				>14.18	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.512	102.3	9.51	13.40	-27.04%
2	0.021	0.460	110.5	11.44		
3	0.021	0.511	89.9	8.38		
Average				9.78		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.40	20.00%	29.33%	-53.97%	>18.56	>19.37	0.68%
2	0.35	17.50%				>18.14	
3	0.06	3.00%				>18.55	
Average		13.50%				>18.69	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.507	73.0	14.40	18.09	-25.74%
2	0.010	0.523	71.8	13.73		
3	0.010	0.462	56.3	12.18		
Average				13.43		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.17	4.25%	16.25%	-77.44%	10.24	>14.06	36.17%
2	0.15	3.75%				>13.64	
3	0.12	3.00%				>14.13	
Average		3.67%				>13.94	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.489	24.1	5.46	7.07	-46.33%
2	0.009	0.530	11.3	2.37		
3	0.009	0.470	15.0	3.55		
Average				3.79		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.03	0.75%	1.92%	-56.60%	11.39	13.23	17.68%
2	0.03	0.75%				13.57	
3	0.04	1.00%				13.41	
Average		0.83%				13.40	

Insulation Type: Aramid Mat, Polyester FiIm Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.505	143.7	13.55	17.05	-16.85%
2	0.021	0.499	148.8	14.20		
3	0.021	0.453	140.6	14.78		
Average				14.18		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.19	4.75%	25.50%	-73.20%	>17.76	>17.75	-2.27%
2	0.25	6.25%				>17.56	
3	0.38	9.50%				>16.76	
Average		6.83%				>17.36	

1000 HRS IN R-11/MINERAL OIL @ 212 F
24 HR BAKE @ 302 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.498	79.4	15.94	22.48	-28.22%
2	0.010	0.432	69.6	16.10		
3	0.010	0.545	89.2	16.37		
Average				16.14		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.14	7.00%	134.83%	-94.93%	>14.10	>14.19	0.61%
2	0.13	6.50%				>14.14	
3	0.14	7.00%				>14.23	
Average		6.83%				>14.19	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.485	84.8	17.47	19.06	-27.75%
2	0.010	0.501	86.4	17.25		
3	0.010	0.505	33.3	6.59		
Average				13.77		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.15	7.50%	142.83%	-96.50%	>14.60	>14.33	-3.54%
2	0.11	5.50%				>14.47	
3	0.04	2.00%				>13.45	
Average		5.00%				>14.08	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.492	86.2	8.34	13.40	-24.92%
2	0.021	0.372	75.7	9.68		
3	0.021	0.505	128.9	12.15		
Average				10.06		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.07	3.50%	29.33%	-80.68%	>18.56	>19.77	6.30%
2	0.08	4.00%				>19.99	
3	0.19	9.50%				>19.43	
Average		5.67%				>19.73	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.465	60.1	12.91	18.09	-25.49%
2	0.010	0.510	73.6	14.42		
3	0.010	0.597	78.2	13.10		
Average				13.48		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.14	3.50%	16.25%	-77.44%	10.24	11.23	4.04%
2	0.15	3.75%				9.35	
3	0.15	3.75%				11.38	
Average		3.67%				10.65	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.570	28.1	5.48	7.07	-15.65%
2	0.009	0.463	25.3	6.07		
3	0.009	0.480	27.4	6.34		
Average				5.96		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.06	1.50%	1.92%	-39.24%	11.39	11.60	0.56%
2	0.04	1.00%				11.40	
3	0.04	1.00%				11.36	
Average		1.17%				11.45	

Insulation Type: Aramid Mat, Polyester FiIm Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.525	171.7	15.57	17.05	-8.30%
2	0.021	0.515	163.4	15.11		
3	0.021	0.501	170.7	16.22		
Average				15.64		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.42	10.50%	25.50%	-67.97%	>17.76	>19.99	7.43%
2	0.23	5.75%				>18.48	
3	0.33	8.25%				>18.77	
Average		8.17%				>19.08	

500 HRS IN R-11/MINERAL OIL @ 212 F
168 HRS IN R-123/MINERAL OIL @ 212 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.466	80.4	17.25	22.48	-22.34%
2	0.010	0.522	94.7	18.14		
3	0.010	0.453	76.9	16.98		
Average				17.46		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	1.95	97.50%	134.83%	-30.90%	>14.10	>14.56	1.70%
2	2.27	113.50%				>14.06	
3	1.37	68.50%				>14.40	
Average		93.17%				>14.34	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.498	93.1	18.69	19.06	-2.70%
2	0.010	0.559	101.8	18.21		
3	0.010	0.509	95.4	18.73		
Average				18.55		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.98	149.00%	142.83%	6.89%	>14.60	>14.37	-0.89%
2	3.07	153.50%				>14.35	
3	3.11	155.50%				>14.69	
Average		152.67%				>14.47	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.528	120.2	10.84	13.40	-14.68%
2	0.021	0.567	143.2	12.03		
3	-	-	-	-		
Average				11.43		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.40	20.00%	29.33%	-23.29%	>18.56	>16.70	-6.57%
2	0.50	25.00%				>16.87	
3	-	-				>18.45	
Average		22.50%				>17.34	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.525	90.6	17.26	18.09	-6.77%
2	0.010	0.575	91.3	15.87		
3	0.010	0.512	89.5	17.47		
Average				16.87		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.38	9.50%	16.25%	-34.36%	10.24	>14.02	32.71%
2	0.36	9.00%				>13.74	
3	0.54	13.50%				>13.01	
Average		10.67%				>13.59	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.547	28.2	5.73	7.07	-17.94%
2	0.009	0.488	26.4	6.00		
3	0.009	0.502	25.7	5.68		
Average				5.80		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.08	2.00%	1.92%	-0.17%	11.39	10.86	-1.87%
2	0.08	2.00%				11.52	
3	0.07	1.75%				11.15	
Average		1.92%				11.18	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.509	164.7	15.41	17.05	-14.10%
2	0.021	0.504	158.5	14.98		
3	0.021	0.500	142.3	13.55		
Average				14.65		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.48	12.00%	25.50%	-56.54%	>17.76	>17.20	-6.55%
2	0.56	14.00%				>17.48	
3	0.29	7.25%				>15.11	
Average		11.08%				>16.60	

500 HRS IN R-11/MINERAL OIL @ 212 F
168 HRS IN R-123/MINERAL OIL @ 212 F
24 HR BAKE @ 302 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.460	79.0	17.16	22.48	-21.45%
2	0.010	0.491	91.6	18.65		
3	0.010	0.471	80.9	17.17		
Average				17.66		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	1.30	65.00%	134.83%	-25.34%	>14.10	>13.78	-2.96%
2	2.74	137.00%				>13.37	
3	2.00	100.00%				>13.90	
Average		100.67%				>13.68	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.498	88.7	17.81	19.06	-8.88%
2	0.010	0.499	90.6	18.16		
3	0.010	0.463	74.7	16.13		
Average				17.37		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.91	145.50%	142.83%	-6.88%	>14.60	>13.71	-2.44%
2	3.00	150.00%				>14.21	
3	2.07	103.50%				>14.81	
Average		133.00%				>14.24	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.424	121.6	13.66	13.40	2.05%
2	0.021	0.535	158.3	14.09		
3	0.021	0.462	128.8	13.28		
Average				13.67		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.52	26.00%	29.33%	-10.79%	>18.56	>17.05	-11.71%
2	0.55	27.50%				>16.42	
3	0.50	25.00%				>15.69	
Average		26.17%				>16.39	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.442	79.9	18.07	18.09	1.58%
2	0.010	0.419	73.1	17.45		
3	0.010	0.493	96.7	19.61		
Average				18.38		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.38	9.50%	16.25%	-36.92%	10.24	11.99	16.89%
2	0.34	8.50%				12.53	
3	0.51	12.75%				11.39	
Average		10.25%				11.97	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.490	28.1	6.37	7.07	-10.07%
2	0.009	0.519	30.3	6.48		
3	0.009	0.480	26.9	6.23		
Average				6.36		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.06	1.50%	1.92%	-26.22%	11.39	11.83	-4.36%
2	0.06	1.50%				10.09	
3	0.05	1.25%				10.76	
Average		1.42%				10.89	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.507	167.1	15.69	17.05	-6.38%
2	0.021	0.535	179.1	15.94		
3	0.021	0.485	165.5	16.25		
Average				15.96		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.39	9.75%	25.50%	-56.54%	>17.76	>17.07	-0.28%
2	0.42	10.50%				>18.13	
3	0.52	13.00%				>17.93	
Average		11.08%				>17.71	

500 HRS IN R-11/MINERAL OIL @ 212 F
336 HRS IN R-123/MINERAL OIL @212 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.504	83.0	16.47	22.48	-25.97%
2	0.010	0.560	96.1	17.16		
3	0.010	0.385	62.8	16.30		
Average				16.64		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	1.73	86.50%	134.83%	-35.60%	>14.10	>14.00	0.17%
2	1.89	94.50%				>14.09	
3	1.59	79.50%				>14.28	
Average		86.83%				>14.12	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.494	91.6	18.53	19.06	-5.67%
2	0.010	0.589	100.6	17.08		
3	0.010	0.504	92.4	18.32		
Average				17.98		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	3.32	166.00%	142.83%	3.97%	>14.60	>14.47	-3.06%
2	2.59	129.50%				>14.69	
3	3.00	150.00%				>13.30	
Average		148.50%				>14.15	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.511	127.4	11.87	13.40	-12.01%
2	0.021	0.484	120.1	11.82		
3	0.021	0.498	122.2	11.68		
Average				11.79		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.50	25.00%	29.33%	-14.76%	>18.56	>17.06	-8.15%
2	0.48	24.00%				>16.65	
3	0.52	26.00%				>17.43	
Average		25.00%				>17.05	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.432	63.3	14.65	18.09	-15.46%
2	0.010	0.438	67.1	15.32		
3	0.010	0.435	69.2	15.91		
Average				15.29		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.20	5.00%	16.25%	-60.51%	10.24	13.30	31.97%
2	0.24	6.00%				13.49	
3	0.33	8.25%				13.75	
Average		6.42%				13.51	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.475	22.9	5.35	7.07	-24.28%
2	0.009	0.510	21.7	4.73		
3	0.009	0.474	25.5	5.98		
Average				5.35		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.06	1.50%	1.92%	-26.22%	11.39	11.59	6.64%
2	0.06	1.50%				12.15	
3	0.05	1.25%				12.70	
Average		1.42%				12.15	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.495	151.3	14.56	17.05	-17.73%
2	0.021	0.476	141.6	14.17		
3	0.021	0.464	130.2	13.36		
Average				14.03		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.49	12.25%	25.50%	-60.78%	>17.76	>17.07	-3.40%
2	0.39	9.75%				>16.90	
3	0.32	8.00%				>17.50	
Average		10.00%				>17.16	

500 HRS IN R-11/MINERAL OIL @ 212 F
336 HRS IN R-123/MINERAL OIL @212 F
24 HR BAKE @ 302 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.491	86.5	17.62	22.48	-22.00%
2	0.010	0.430	70.3	16.34		
3	0.010	0.492	91.8	18.65		
Average				17.53		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.19	109.50%	134.83%	-28.80%	>14.10	>13.98	0.78%
2	0.97	48.50%				>14.67	
3	2.60	130.00%				>13.98	
Average		96.00%				>14.21	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.502	90.4	18.01	19.06	-6.29%
2	0.010	0.515	93.1	18.07		
3	0.010	0.514	90.0	17.51		
Average				17.86		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	3.08	154.00%	142.83%	4.09%	>14.60	>14.19	-2.92%
2	3.04	152.00%				>13.70	
3	2.80	140.00%				>14.63	
Average		148.67%				>14.17	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.509	144.1	13.48	13.40	-1.54%
2	0.021	0.513	143.9	13.36		
3	0.021	0.395	105.7	12.74		
Average				13.19		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.55	27.50%	29.33%	-11.92%	>18.56	>18.41	-3.11%
2	0.55	27.50%				>19.40	
3	0.45	22.50%				>16.14	
Average		25.83%				>17.98	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.442	71.9	16.27	18.09	-15.77%
2	0.010	0.442	61.7	13.95		
3	0.010	0.475	73.6	15.49		
Average				15.24		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.30	7.50%	16.25%	-65.64%	10.24	12.09	13.67%
2	0.15	3.75%				11.91	
3	0.22	5.50%				10.92	
Average		5.58%				11.64	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.498	28.6	6.38	7.07	-10.27%
2	0.009	0.494	29.3	6.59		
3	0.009	0.604	33.0	6.06		
Average				6.34		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.05	1.25%	1.92%	-34.90%	11.39	11.55	-0.53%
2	0.05	1.25%				10.84	
3	0.05	1.25%				11.60	
Average		1.25%				11.33	

Insulation Type: Aramid Mat, Polyester FiIm Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.565	176.2	14.85	17.05	-22.31%
2	0.021	0.491	135.6	13.15		
3	0.021	0.488	120.3	11.74		
Average				13.25		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.34	8.50%	25.50%	-77.78%	>17.76	>16.67	-3.13%
2	0.19	4.75%				>17.60	
3	0.15	3.75%				>17.34	
Average		5.67%				>17.20	

500 HRS IN R-11/MINERAL OIL @ 212 F
500 HRS IN R-123/MINERAL OIL @212 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.489	84.3	17.23	22.48	-26.10%
2	0.010	0.512	83.7	16.35		
3	0.010	0.520	84.6	16.26		
Average				16.61		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.27	113.50%	134.83%	-25.96%	>14.10	>14.05	1.54%
2	1.90	95.00%				>14.56	
3	1.82	91.00%				>14.34	
Average		99.83%				>14.32	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.450	73.6	16.36	19.06	-12.72%
2	0.010	0.455	75.1	16.51		
3	0.010	0.489	83.4	17.04		
Average				16.64		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.00	100.00%	142.83%	-9.33%	>14.60	>14.39	-1.60%
2	2.75	137.50%				>14.25	
3	3.02	151.00%				>14.46	
Average		129.50%				>14.37	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.450	123.4	13.06	13.40	-6.89%
2	0.021	0.561	150.2	12.75		
3	0.021	0.492	120.1	11.62		
Average				12.48		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.57	28.50%	29.33%	-9.08%	>18.56	>16.69	-11.66%
2	0.52	26.00%				>17.10	
3	0.51	25.50%				>15.40	
Average		26.67%				>16.40	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.443	75.0	16.93	18.09	-15.42%
2	0.010	0.588	83.7	14.23		
3	0.010	0.512	75.5	14.74		
Average				15.30		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.24	6.00%	16.25%	-68.21%	10.24	>12.98	29.00%
2	0.18	4.50%				>13.59	
3	0.20	5.00%				>13.06	
Average		5.17%				>13.21	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.431	17.3	4.46	7.07	-33.65%
2	0.009	0.508	22.3	4.87		
3	0.009	0.626	26.7	4.74		
Average				4.69		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.04	1.00%	1.92%	-56.60%	11.39	>13.30	10.92%
2	0.03	0.75%				>12.20	
3	0.03	0.75%				>12.40	
Average		0.83%				>12.63	

Insulation Type: Aramid Mat, Polyester FiIm Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.492	151.6	14.67	17.05	-13.11%
2	0.021	0.481	144.9	14.35		
3	0.021	0.506	163.9	15.42		
Average				14.81		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.44	11.00%	25.50%	-52.29%	>17.76	>17.90	-1.03%
2	0.45	11.25%				>17.24	
3	0.57	14.25%				>17.59	
Average		12.17%				>17.58	

500 HRS IN R-11/MINERAL OIL @ 212 F
500 HRS IN R-123/MINERAL OIL @212 F
24 HR BAKE @ 302 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.465	77.9	16.75	22.48	-26.91%
2	0.010	0.509	82.5	16.21		
3	0.010	0.508	83.0	16.33		
Average				16.43		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.14	7.00%	134.83%	-94.07%	>14.10	>14.02	0.92%
2	0.17	8.50%				>14.07	
3	0.17	8.50%				>14.60	
Average		8.00%				>14.23	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.540	93.3	17.27	19.06	-10.21%
2	0.010	0.504	85.0	16.87		
3	0.010	0.553	95.2	17.21		
Average				17.11		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.14	7.00%	142.83%	-93.82%	>14.60	>14.01	-1.87%
2	0.22	11.00%				>14.68	
3	0.17	8.50%				>14.29	
Average		8.83%				>14.33	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.516	144.6	13.34	13.40	-0.10%
2	0.021	0.497	140.4	13.45		
3	0.021	0.465	130.5	13.36		
Average				13.39		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.50	25.00%	29.33%	-18.17%	>18.56	>18.69	-3.43%
2	0.49	24.50%				>18.09	
3	0.45	22.50%				>16.99	
Average		24.00%				>17.92	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.493	70.9	14.37	18.09	-20.31%
2	0.010	0.444	63.1	14.21		
3	0.010	0.494	72.5	14.67		
Average				14.42		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.05	1.25%	16.25%	-78.97%	10.24	11.28	5.01%
2	0.18	4.50%				10.33	
3	0.18	4.50%				10.65	
Average		3.42%				10.75	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.420	21.3	5.63	7.07	-28.81%
2	0.009	0.487	22.1	5.05		
3	0.009	0.504	20.1	4.42		
Average				5.03		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.04	1.00%	1.92%	-30.56%	11.39	11.07	-1.90%
2	0.06	1.50%				11.47	
3	0.06	1.50%				10.98	
Average		1.33%				11.17	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.494	170.0	16.39	17.05	-8.68%
2	0.021	0.498	160.3	15.33		
3	0.021	0.450	141.7	14.99		
Average				15.57		

	Stretch (Inches)	Experimental Elongation	Average Elongation (Unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (Unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.41	10.25%	25.50%	-68.63%	>17.76	>18.46	0.11%
2	0.32	8.00%				>17.68	
3	0.23	5.75%				>17.20	
Average		8.00%				>17.78	

500 HRS IN R-11/MINERAL OIL @ 212 F

Tape Tie Cords	Sample #	Unexposed Break Load (lbs.)	Experimental Breakload (lbs.)	Change in Breakload Strength
Tape	1	441.60	422.70	
B	2	424.20	372.70	-12.49%
	3	490.70	391.70	
	Average	452.17	395.70	
Cord	1	28.05	22.50	
C	2	34.85	30.75	-15.96%
	3	40.50	33.65	
	Average	34.47	28.97	

		Unexposed Stretch (Inches)	Unexposed Elongation	Experimental Stretch (Inches)	Experimental Elongation	Change from Unexposed Elongation
Tape	1	0.11	5.50%	0.10	5.00%	
B	2	0.11	5.50%	0.07	3.50%	-20.59%
	3	0.12	6.00%	0.10	5.00%	
	Average	0.11	5.67%	0.09	4.50%	
Cord	1	0.62	31.00%	0.35	17.50%	
C	2	0.18	9.00%	0.35	17.50%	5.00%
	3	0.20	10.00%	0.35	17.50%	
	Average	0.33	16.67%	0.35	17.50%	

Tape B is braided polyester, acrylic binder

Cord C is polyester tie cord

1000 HRS IN R-11/MINERAL OIL @ 212 F

Tape Tie Cords	Sample #	Unexposed Break Load (lbs.)	Experimental Breakload (lbs.)	Change in Breakload Strength
Tape	1	441.60	401.20	
B	2	424.20	417.00	-9.83%
	3	490.70	405.00	
	Average	452.17	407.73	
Cord	1	28.05	36.82	
C	2	34.85	40.30	11.82%
	3	40.50	38.50	
	Average	34.47	38.54	

		Unexposed Stretch (Inches)	Unexposed Elongation	Experimental Stretch (Inches)	Experimental Elongation	Change from Unexposed Elongation
Tape	1	0.11	5.50%	0.11	5.50%	
B	2	0.11	5.50%	0.11	5.50%	-2.94%
	3	0.12	6.00%	0.11	5.50%	
	Average	0.11	5.67%	0.11	5.50%	
Cord	1	0.62	31.00%	0.45	22.50%	
C	2	0.18	9.00%	0.43	21.50%	33.00%
	3	0.20	10.00%	0.45	22.50%	
	Average	0.33	16.67%	0.44	22.17%	

Tape B is braided polyester, acrylic binder

Cord C is polyester tie cord

500 HRS IN R-11/MINERAL OIL @ 212 F
168 HRS IN R-123/POLYOLESTER @ 212 F

Tape Tie Cords	Sample #	Unexposed Break Load (lbs.)	Experimental Breakload (lbs.)	Change in Breakload Strength
Tape	1	441.60	340.00	
B	2	424.20	492.00	-1.95%
	3	490.70	498.00	
	Average	452.17	443.33	
Cord	1	28.05	34.52	
C	2	34.85	21.25	-12.15%
	3	40.50	35.07	
	Average	34.47	30.28	

		Unexposed Stretch (Inches)	Unexposed Elongation	Experimental Stretch (Inches)	Experimental Elongation	Change from Unexposed Elongation
Tape	1	0.11	5.50%	0.07	3.50%	
B	2	0.11	5.50%	0.11	5.50%	-14.71%
	3	0.12	6.00%	0.11	5.50%	
	Average	0.11	5.67%	0.10	4.83%	
Cord	1	0.62	31.00%	0.39	19.50%	
C	2	0.18	9.00%	0.38	19.00%	14.00%
	3	0.20	10.00%	0.37	18.50%	
	Average	0.33	16.67%	0.38	19.00%	

Tape B is braided polyester, acrylic binder

Cord C is polyester tie cord

500 HRS IN R-11/MINERAL OIL @ 212 F
336 HRS IN R-123/POLYOLESTER @212 F

Tape Tie Cords	Sample #	Unexposed Break Load (lbs.)	Experimental Breakload (lbs.)	Change in Breakload Strength
Tape	1	441.60	347.20	
B	2	424.20	358.00	-18.82%
	3	490.70	396.00	
	Average	452.17	367.07	
Cord	1	28.05	29.12	
C	2	34.85	25.17	-12.73%
	3	40.50	35.95	
	Average	34.47	30.08	

		Unexposed Stretch (Inches)	Unexposed Elongation	Experimental Stretch (Inches)	Experimental Elongation	Change from Unexposed Elongation
Tape	1	0.11	5.50%	0.08	4.00%	
B	2	0.11	5.50%	0.11	5.50%	-11.76%
	3	0.12	6.00%	0.11	5.50%	
	Average	0.11	5.67%	0.10	5.00%	
Cord	1	0.62	31.00%	0.40	20.00%	
C	2	0.18	9.00%	0.38	19.00%	13.00%
	3	0.20	10.00%	0.35	17.50%	
	Average	0.33	16.67%	0.38	18.83%	

Tape B is braided polyester, acrylic binder

Cord C is polyester tie cord

500 HRS IN R-11/MINERAL OIL @ 212 F
500 HRS IN R-123/POLYOLESTER @212 F

Tape Tie Cords	Sample #	Unexposed Break Load (lbs.)	Experimental Breakload (lbs.)	Change in Breakload Strength
Tape	1	441.60	449.00	
B	2	424.20	417.00	-3.58%
	3	490.70	442.00	
	Average	452.17	436.00	
Cord	1	28.05	37.25	
C	2	34.85	25.85	-15.33%
	3	40.50	24.45	
	Average	34.47	29.18	

		Unexposed Stretch (Inches)	Unexposed Elongation	Experimental Stretch (Inches)	Experimental Elongation	Change from Unexposed Elongation
Tape	1	0.11	5.50%	0.10	5.00%	
B	2	0.11	5.50%	0.10	5.00%	-11.76%
	3	0.12	6.00%	0.10	5.00%	
	Average	0.11	5.67%	0.10	5.00%	
Cord	1	0.62	31.00%	0.47	23.50%	
C	2	0.18	9.00%	0.38	19.00%	19.00%
	3	0.20	10.00%	0.34	17.00%	
	Average	0.33	16.67%	0.40	19.83%	

Tape B is braided polyester, acrylic binder

Cord C is polyester tie cord

Data Tables:
Part 2

R-11/Mineral Oil to
R-245ca/Polyolester

500 HRS IN R-11/MINERAL OIL @ 212 F

Varnish Sterling U-475

Varnish Disk#	Weight Disk Before in Air (grams)	Weight Disk before in Methanol (grams)	Weight Disk after in Air (grams)	Weight Disk after in MeOH (grams)
1	1.3270	0.4373	1.4114	0.5175
2	1.7475	0.5551	1.8791	0.6763
3	1.8220	0.5862	1.9601	0.7059

Varnish Disk#	Volume Before (milliters)	Volume After (milliliters)	% Change in Weight	% Change in Volume
1	1.1382	1.1435	6.36%	0.47%
2	1.5254	1.5387	7.53%	0.87%
3	1.5809	1.6045	7.58%	1.49%
		AVERAGE	7.16%	0.94%

1000 HRS IN R-11/MINERAL OIL @ 212 F

Varnish Sterling U-475

Varnish Disk#	Weight Disk Before in Air (grams)	Weight Disk before in Methanol (grams)	Weight Disk after in Air (grams)	Weight Disk after in MeOH (grams)
1	1.3199	0.4245	1.3668	0.4867
2	1.7899	0.5882	1.8413	0.6629
3	1.3763	0.4529	1.4284	0.5148

Varnish Disk#	Volume Before (milliters)	Volume After (milliliters)	% Change in Weight	% Change in Volume
1	1.1455	1.1259	3.55%	-1.71%
2	1.5373	1.5075	2.87%	-1.94%
3	1.1813	1.1687	3.79%	-1.06%
		AVERAGE	3.40%	-1.57%

500 HRS IN R-11/MINERAL OIL @ 212 F
168 HRS IN R-245ca/POLYOLESTER @ 212 F

Varnish Sterling U-475

Varnish Disk#	Weight Disk Before in Air (grams)	Weight Disk before in Methanol (grams)	Weight Disk after in Air (grams)	Weight Disk after in MeOH (grams)
1	1.3270	0.4373	1.3671	0.4908
2	1.7475	0.5551	1.8193	0.6424
3	1.8220	0.5862	1.8881	0.6630

Varnish Disk#	Volume Before (milliters)	Volume After (milliliters)	% Change in Weight	% Change in Volume
1	1.1382	1.1210	3.02%	-1.51%
2	1.5254	1.5056	4.11%	-1.30%
3	1.5809	1.5672	3.63%	-0.87%
		AVERAGE	3.59%	-1.22%

500 HRS IN R-11/MINERAL OIL @ 212 F
336 HRS IN R-245ca/POLYOLESTER @212 F

Varnish Sterling U-475

Varnish Disk#	Weight Disk Before in Air (grams)	Weight Disk before in Methanol (grams)	Weight Disk after in Air (grams)	Weight Disk after in MeOH (grams)
1	1.3270	0.4373	1.3575	0.4864
2	1.7475	0.5551	1.8030	0.6336
3	1.8220	0.5862	1.8742	0.6549

Varnish Disk#	Volume Before (milliters)	Volume After (milliliters)	% Change in Weight	% Change in Volume
1	1.1382	1.1144	2.30%	-2.09%
2	1.5254	1.4960	3.18%	-1.93%
3	1.5809	1.5598	2.86%	-1.34%
		AVERAGE	2.78%	-1.78%

500 HRS IN R-11/MINERAL OIL @ 212 F
500 HRS IN R-245ca/POLYOLESTER @212 F

Varnish Sterling U-475

Varnish Disk#	Weight Disk Before in Air (grams)	Weight Disk before in Methanol (grams)	Weight Disk after in Air (grams)	Weight Disk after in MeOH (grams)
1	1.3270	0.4373	1.3561	0.4844
2	1.7475	0.5551	1.8005	0.6298
3	1.8220	0.5862	1.8721	0.6536

Varnish Disk#	Volume Before (milliters)	Volume After (milliliters)	% Change in Weight	% Change in Volume
1	1.1382	1.1151	2.19%	-2.02%
2	1.5254	1.4976	3.03%	-1.82%
3	1.5809	1.5588	2.75%	-1.40%
		AVERAGE	2.66%	-1.75%

500 HRS IN R-11/MINERAL OIL @ 212 F

Wire Type/Varnish	Unexposed Bond Strengths (Pounds[lbs.])	Experimental Bond Strengths (Pounds[lbs.])	% Change in Bond Strength From Unexposed	Appearance Change
	26.55	32.12		
Wire Type C	28.90	32.25		
coated with	26.20	28.45	13.25%	
U-475EH	27.75	33.15		
	27.55	29.12		
Average	27.39	31.02		

500 HRS IN R-11/MINERAL OIL @ 212 F
24 HR BAKE @ 302 F

	26.55	34.67		
Wire Type C	28.90	33.67		
coated with	26.20	32.12	23.32%	
U-475EH	27.75	33.32		
	27.55	35.10		
Average	27.39	33.78		

1000 HRS IN R-11/MINERAL OIL @ 212 F

	26.55	28.70		
Wire Type C	28.90	31.05		
coated with	26.20	26.95	9.38%	
U-475EH	27.75	33.10		
	27.55	30.00		
Average	27.39	29.96		

1000 HRS IN R-11/MINERAL OIL @ 212 F
24 HR BAKE @ 302 F

	26.55	31.90		
Wire Type C	28.90	30.30		
coated with	26.20	28.85	10.33%	
U-475EH	27.75	30.80		
	27.55	29.25		
Average	27.39	30.22		

Wire Type C is Polyester base with amide imide overcoat and epoxy saturated glass serving.

500 HRS IN R-11/MINERAL OIL @ 212 F
168 HRS IN R-245ca/ESTER OIL @ 212 F

Wire Type/Varnish	Unexposed Bond Strengths (Pounds[lbs.])	Experimental Bond Strengths (Pounds[lbs.])	% Change in Bond Strength From Unexposed	Appearance Change
	26.55	33.87		
Wire Type C	28.90	34.90		
coated with	26.20	36.17	25.40%	
U-475EH	27.75	35.00		
	27.55	31.80		
Average	27.39	34.35		

500 HRS IN R-11/MINERAL OIL @ 212 F
168 HRS IN R-245ca/ESTER OIL @ 212 F
24 HR BAKE @ 302 F

	26.55	35.82		
Wire Type C	28.90	34.82		
coated with	26.20	31.77	19.63%	
U-475EH	27.75	30.75		
	27.55	30.67		
Average	27.39	32.77		

500 HRS IN R-11/MINERAL OIL @ 212 F
336 HRS IN R-245ca/ESTER OIL @212 F

	26.55	31.75		
Wire Type C	28.90	38.97		
coated with	26.20	30.77	26.00%	
U-475EH	27.75	37.80		
	27.55	33.27		
Average	27.39	34.51		

Wire Type C is Polyester base with amide imide overcoat and epoxy saturated glass serving.

500 HRS IN R-11/MINERAL OIL @ 212 F
336 HRS IN R-245ca/ESTER OIL @212 F
24 HR BAKE @ 302 F

Wire Type/Varnish	Unexposed Bond Strengths (Pounds[lbs.])	Experimental Bond Strengths (Pounds[lbs.])	% Change in Bond Strength From Unexposed	Appearance Change
	26.55	33.67		
Wire Type C	28.90	34.87		
coated with	26.20	29.70	23.59%	
U-475EH	27.75	34.50		
	27.55	36.52		
Average	27.39	33.85		

500 HRS IN R-11/MINERAL OIL @ 212 F
500 HRS IN R-245ca/ESTER OIL @212 F

	26.55	33.20		
Wire Type C	28.90	26.35		
coated with	26.20	28.75	9.78%	
U-475EH	27.75	30.25		
	27.55	31.80		
Average	27.39	30.07		

500 HRS IN R-11/MINERAL OIL @ 212 F
500 HRS IN R-245ca/ESTER OIL @212 F
24 HR BAKE @ 302 F

	26.55	37.00		
Wire Type C	28.90	31.15		
coated with	26.20	31.30	21.25%	
U-475EH	27.75	30.85		
	27.55	35.75		
Average	27.39	33.21		

Wire Type C is Polyester base with amide imide overcoat and epoxy saturated glass serving.

500 HRS IN R-11/MINERAL OIL @ 212 F

Wire Type	Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric % Change	Unexposed Burnout Strengths (seconds)	Experimental Burnout Strengths (seconds)	Burnout % Change
	11.83	13.49		738	609	
	12.10	13.76		734	674	
Wire Type C	12.29	13.71	7.76%	728	604	-9.68%
	12.90	13.66		741	727	
	12.61	11.90		727	699	
Average	12.35	13.30		734	663	

1000 HRS IN R-11/MINERAL OIL @ 212 F

	11.83	13.91		738	658	
	12.10	13.85		734	668	
Wire Type C	12.29	13.78	11.03%	728	730	-10.25%
	12.90	13.41		741	609	
	12.61	13.59		727	627	
Average	12.35	13.71		734	658	

500 HRS IN R-11/MINERAL OIL @ 212 F
168 HRS IN R-245ac/ESTER OIL @ 212 F

	11.83	12.49		738	741	
	12.10	13.70		734	668	
Wire Type C	12.29	14.16	9.36%	728	600	-11.50%
	12.90	13.76		741	613	
	12.61	13.40		727	624	
Average	12.35	13.50		734	649	

500 HRS IN R-11/MINERAL OIL @ 212 F
336 HRS IN R-245ca/ESTER OIL @212 F

	11.83	13.55		738	593	
	12.10	13.21		734	728	
Wire Type C	12.29	13.53	6.45%	728	643	-6.79%
	12.90	13.24		741	727	
	12.61	12.18		727	728	
Average	12.35	13.14		734	684	

500 HRS IN R-11/MINERAL OIL @ 212 F
500 HRS IN R-245ca/ESTER OIL @212 F

	11.83	14.39		738	626	
	12.10	14.35		734	635	
Wire Type C	12.29	15.00	14.58%	728	632	-13.55%
	12.90	12.93		741	621	
	12.61	14.06		727	657	
Average	12.35	14.15		734	634	

Wire Type C is Polyester base with amide imide overcoat and epoxy saturated glass serving.

500 HRS IN R-11/MINERAL OIL @ 212 F

Wire Type	Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric % Change	Unexposed Burnout Strengths (seconds)	Experimental Burnout Strengths (seconds)	Burnout % Change
	13.69	15.29		744	743	
	11.93	13.84		749	742	
Wire Type C	14.85	13.56	12.88%	753	732	-1.76%
	11.76	16.84		755	736	
	14.01	15.24		753	735	
Average	13.25	14.95		751	738	

1000 HRS IN R-11/MINERAL OIL @ 212 F

	13.69	13.63		744	751	
	11.93	15.32		749	704	
Wire Type C	14.85	15.55	7.35%	753	727	-2.18%
	11.76	15.25		755	744	
	14.01	11.36		753	746	
Average	13.25	14.22		751	734	

500 HRS IN R-11/MINERAL OIL @ 212 F

168 HRS IN R-245ac/ESTER OIL @ 212 F

	13.69	15.73		744	747	
	11.93	16.89		749	748	
Wire Type C	14.85	15.10	14.04%	753	743	-0.91%
	11.76	13.09		755	744	
	14.01	14.73		753	738	
Average	13.25	15.11		751	744	

500 HRS IN R-11/MINERAL OIL @ 212 F

336 HRS IN R-245ca/ESTER OIL @212 F

	13.69	14.33		744	752	
	11.93	15.28		749	758	
Wire Type C	14.85	13.16	10.46%	753	750	0.21%
	11.76	16.69		755	750	
	14.01	13.71		753	752	
Average	13.25	14.63		751	752	

500 HRS IN R-11/MINERAL OIL @ 212 F

500 HRS IN R-245ca/ESTER OIL @212 F

	13.69	13.70		744	737	
	11.93	16.14		749	746	
Wire Type C	14.85	16.50	12.58%	753	748	-1.04%
	11.76	14.03		755	752	
	14.01	14.20		753	732	
Average	13.25	14.91		751	743	

Wire Type C is Polyester base with amide imide overcoat and epoxy saturated glass serving.

500 HRS IN R-11/MINERAL OIL @ 212 F

Lead Wire Insulation Type	Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric % Change	Appearance Change
Polyester Composite	10.87	8.59		
Dacron-Mylar-Dacron	10.82	8.54	-8.39%	
	7.62	9.72		
Average	9.77	8.95		
Polyester, Fluorpolymer	10.78	13.92		
Composite	9.24	14.35	39.12%	
Dacron-Teflon-Dacron	10.46			
Average	10.16	14.14		

1000 HRS IN R-11/MINERAL OIL @ 212 F

Polyester Composite	10.87	7.61		
Dacron-Mylar-Dacron	10.82	5.95	-23.47%	
	7.62	8.87		
Average	9.77	7.48		
Polyester, Fluorpolymer	10.78	16.11		
Composite	9.24	16.00	56.46%	
Dacron-Teflon-Dacron	10.46	15.58		
Average	10.16	15.90		

500 HRS IN R-11/MINERAL OIL @ 212 F
168 HRS IN R-245ca/MINERAL OIL @ 212 F

Lead Wire Insulation Type	Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric % Change	Appearance Change
Polyester Composite	10.87	6.53		
Dacron-Mylar-Dacron	10.82	5.34	-39.20%	
	7.62	5.95		
Average	9.77	5.94		
Polyester, Fluorpolymer	10.78	15.45		
Composite	9.24	18.62	74.38%	
Dacron-Teflon-Dacron	10.46	19.08		
Average	10.16	17.72		

500 HRS IN R-11/MINERAL OIL @ 212 F
336 HRS IN R-245ca/MINERAL OIL @ 212 F

Polyester Composite	10.87	6.92		
Dacron-Mylar-Dacron	10.82	6.55	-31.06%	
	7.62			
Average	9.77	6.74		
Polyester, Fluorpolymer	10.78	19.60		
Composite	9.24	19.60	87.47%	
Dacron-Teflon-Dacron	10.46	17.94		
Average	10.16	19.05		

500 HRS IN R-11/MINERAL OIL @ 212 F
500 HRS IN R-245ca/MINERAL OIL @212 F

Polyester Composite	10.87	5.56		
Dacron-Mylar-Dacron	10.82	6.67	-31.32%	
	7.62	7.90		
Average	9.77	6.71		
Polyester, Fluorpolymer	10.78	16.04		
Composite	9.24	14.80	51.77%	
Dacron-Teflon-Dacron	10.46	15.42		
	10.16	15.42		

500 HRS IN R-11 / MINERAL OIL @ 212 F

Sleeving Type	Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric % Change
Polyester Film	>19.14	>10.06	
	>17.05	>9.72	-44.71%
	>16.60	>9.41	
Average	>17.60	>9.73	
Aramid Fiber Mat	>11.83	>10.30	
Polyester Film	>12.33	>9.60	-20.92%
	>12.40	>9.01	
Average	>12.19	>9.64	

1000 HRS IN R-11 / MINERAL OIL @ 212 F

Polyester Film	>19.14	>12.17	
	>17.05	>11.33	-36.73%
	>16.60	>9.90	
Average	>17.60	>11.13	
Aramid Fiber Mat	>11.83	>11.97	
Polyester Film	>12.33	>13.07	0.71%
	>12.40	>11.78	
Average	>12.19	>12.27	

500 HRS IN R-11/MINERAL OIL @ 212 F
168 HRS IN R-245ca/ESTER OIL @ 212 F

Sleeving Type	Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric % Change
Polyester Film	>19.14	>11.38	
	>17.05	>10.98	-34.97%
	>16.60	>11.97	
Average	>17.60	>11.44	
Aramid Fiber Mat	>11.83	>11.73	
Polyester Film	>12.33	>11.03	-12.50%
	>12.40	>9.23	
Average	>12.19	>10.66	

500 HRS IN R-11/MINERAL OIL @ 212 F
336 HRS IN R-245ca/ESTER OIL @212 F

Polyester Film	>19.14	>12.88	
	>17.05	>11.00	-31.92%
	>16.60	>12.06	
Average	>17.60	>11.98	
Aramid Fiber Mat	>11.83	>11.33	
Polyester Film	>12.33	>11.54	-6.26%
	>12.40	>11.40	
Average	>12.19	>11.42	

500 HRS IN R-11/MINERAL OIL @ 212 F
500 HRS IN R-245ca/ESTER OIL @212 F

Sleeving Type	Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric % Change
Polyester Film	>19.14	>11.95	
	>17.05	>12.06	-31.77%
	>16.60	>12.01	
Average	>17.60	>12.01	
Aramid Fiber Mat	>11.83	>11.82	
Polyester Film	>12.33	>11.01	-4.68%
	>12.40	>12.02	
Average	>12.19	>11.62	

500 HRS IN R-11/MINERAL OIL @ 212 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.460	94.2	20.48	22.48	-11.89%
2	0.010	0.526	102.9	19.56		
3	0.010	0.483	93.6	19.38		
Average				19.81		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.96	148.00%	134.83%	0.74%	>14.10	> 13.50	-1.16%
2	2.63	131.50%				> 14.31	
3	2.56	128.00%				> 14.00	
Average		135.83%				>13.94	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.488	84.3	17.27	19.06	-9.61%
2	0.010	0.470	74.2	15.79		
3	0.010	0.473	88.1	18.63		
Average				17.23		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	1.48	74.00%	142.83%	-36.17%	>14.60	>14.49	-0.82%
2	1.11	55.50%				>14.36	
3	2.88	144.00%				>14.59	
Average		91.17%				>14.48	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.499	135.1	12.89	13.40	-5.82%
2	0.021	0.510	136.0	12.70		
3	0.021	0.470	121.1	12.27		
Average				12.62		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.52	26.00%	29.33%	-13.63%	>18.56	>18.56	3.79%
2	0.46	23.00%				>19.27	
3	0.54	27.00%				>19.96	
Average		25.33%				>19.26	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.497	90.1	18.13	18.09	-1.64%
2	0.010	0.505	91.1	18.03		
3	0.010	0.482	83.0	17.22		
Average				17.79		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.37	9.25%	16.25%	-39.49%	10.24	13.02	27.08%
2	0.45	11.25%				13.27	
3	0.36	9.00%				12.75	
Average		9.83%				13.01	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.522	19.9	4.24	7.07	-42.65%
2	0.009	0.505	17.4	3.83		
3	0.009	0.504	18.6	4.10		
Average				4.05		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.06	1.50%	1.92%	-30.56%	11.39	10.51	-5.21%
2	0.04	1.00%				10.82	
3	0.06	1.50%				11.06	
Average		1.33%				10.80	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.519	174.8	16.04	17.05	-4.63%
2	0.021	0.494	171.4	16.52		
3	0.021	0.509	173.4	16.22		
Average				16.26		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.60	15.00%	25.50%	-39.54%	>17.76	> 17.95	-1.18%
2	0.69	17.25%				> 17.04	
3	0.56	14.00%				> 17.66	
Average		15.42%				>17.55	

500 HRS IN R-11/MINERAL OIL @ 212 F
24 HR BAKE @ 302 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.402	65.8	16.37	22.48	-18.70%
2	0.010	0.472	89.5	18.96		
3	0.010	0.517	100.8	19.50		
Average				18.28		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.48	24.00%	134.83%	-30.04%	>14.10	> 14.12	9.93%
2	2.47	123.50%				> 13.64	
3	2.71	135.50%				> 18.74	
Average		94.33%				>15.50	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.482	82.0	17.01	19.06	-4.70%
2	0.010	0.502	95.3	18.98		
3	0.010	0.492	91.0	18.50		
Average				18.16		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.14	7.00%	142.83%	-58.11%	>14.60	> 14.27	6.51%
2	1.17	58.50%				> 13.64	
3	2.28	114.00%				> 18.74	
Average		59.83%				>15.55	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.498	146.9	14.05	13.40	2.95%
2	0.021	0.529	147.0	13.23		
3	0.021	0.533	157.9	14.11		
Average				13.80		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.54	27.00%	29.33%	-13.06%	>18.56	>18.61	0.81%
2	0.46	23.00%				>18.65	
3	0.53	26.50%				>18.87	
Average		25.50%				>18.71	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.500	92.5	18.50	18.09	0.11%
2	0.010	0.510	85.8	16.81		
3	0.010	0.488	92.8	19.02		
Average				18.11		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.31	7.75%	16.25%	-48.21%	10.24	11.66	6.18%
2	0.26	6.50%				11.33	
3	0.44	11.00%				9.63	
Average		8.42%				10.87	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.471	25.6	6.04	7.07	-29.52%
2	0.009	0.474	18.6	4.36		
3	0.009	0.442	18.1	4.55		
Average				4.98		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.04	1.00%	1.92%	-26.22%	11.39	11.21	0.29%
2	0.07	1.75%				11.79	
3	0.06	1.50%				11.27	
Average		1.42%				11.42	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.515	187.9	17.37	17.05	3.65%
2	0.021	0.503	194.4	18.40		
3	0.021	0.495	179.2	17.24		
Average				17.67		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.48	12.00%	25.50%	-54.58%	>17.76	>19.82	9.14%
2	0.44	11.00%				>19.82	
3	0.47	11.75%				>18.51	
Average		11.58%				>19.38	

1000 HRS IN R-11/MINERAL OIL @ 212 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.480	97.2	20.25	22.48	-12.31%
2	0.010	0.489	94.8	19.39		
3	0.010	0.500	97.5	19.50		
Average				19.71		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.83	141.50%	134.83%	6.92%	> 14.10	> 14.36	0.57%
2	2.91	145.50%				> 13.96	
3	2.91	145.50%				> 14.22	
Average		144.17%				> 14.18	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.494	83.6	16.92	19.06	-10.64%
2	0.010	0.496	83.8	16.90		
3	0.010	0.540	93.3	17.28		
Average				17.03		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.26	113.00%	142.83%	-11.55%	> 14.60	> 14.37	-2.03%
2	2.14	107.00%				> 14.44	
3	3.18	159.00%				> 14.10	
Average		126.33%				> 14.30	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.453	122.3	12.86	13.40	-1.28%
2	0.021	0.512	142.1	13.22		
3	0.021	0.518	148.1	13.61		
Average				13.23		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.49	24.50%	29.33%	-10.79%	> 18.56	> 17.48	-1.19%
2	0.54	27.00%				> 19.60	
3	0.54	27.00%				> 17.94	
Average		26.17%				> 18.34	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.503	81.5	16.20	18.09	-8.19%
2	0.010	0.496	84.8	17.10		
3	0.010	0.504	83.3	16.53		
Average				16.61		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.25	6.25%	16.25%	-56.92%	> 10.24	> 13.00	22.98%
2	0.29	7.25%				> 12.26	
3	0.30	7.50%				> 12.52	
Average		7.00%				> 12.59	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.475	18.8	4.40	7.07	-24.85%
2	0.009	0.518	26.7	5.73		
3	0.009	0.516	27.0	5.81		
Average				5.31		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.06	1.50%	1.92%	-39.24%	11.39	12.00	-0.61%
2	0.04	1.00%				10.38	
3	0.04	1.00%				11.58	
Average		1.17%				11.32	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.506	169.0	15.90	17.05	-9.03%
2	0.021	0.507	160.6	15.08		
3	0.021	0.503	164.2	15.54		
Average				15.51		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.43	10.75%	25.50%	-64.05%	>17.76	> 18.44	1.61%
2	0.30	7.50%				> 17.47	
3	0.37	9.25%				> 18.23	
Average		9.17%				>18.05	

1000 HRS IN R-11/MINERAL OIL @ 212 F
24 HR BAKE @ 302 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.468	92.9	19.85	22.48	-14.44%
2	0.010	0.506	102.3	20.22		
3	0.010	0.435	76.7	17.63		
Average				19.23		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.23	111.50%	134.83%	-26.95%	> 14.10	> 14.10	-1.39%
2	2.66	133.00%				> 13.75	
3	1.02	51.00%				> 13.86	
Average		98.50%				> 13.90	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.512	96.1	18.77	19.06	-6.73%
2	0.010	0.495	85.5	17.27		
3	0.010	0.517	89.4	17.29		
Average				17.78		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	1.01	50.50%	142.83%	-46.44%	> 14.60	> 14.23	-3.11%
2	1.16	58.00%				> 14.16	
3	2.42	121.00%				> 14.05	
Average		76.50%				> 14.15	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.491	145.0	14.06	13.40	2.76%
2	0.021	0.525	150.8	13.68		
3	0.021	0.497	141.6	13.57		
Average				13.77		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.56	28.00%	29.33%	-7.94%	> 18.56	> 18.48	-1.28%
2	0.52	26.00%				> 17.90	
3	0.54	27.00%				> 18.59	
Average		27.00%				> 18.32	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.467	86.8	18.59	18.09	-1.61%
2	0.010	0.507	88.8	17.51		
3	0.010	0.506	87.5	17.29		
Average				17.80		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.28	7.00%	16.25%	-62.56%	10.24	10.34	3.48%
2	0.24	6.00%				10.20	
3	0.21	5.25%				11.25	
Average		6.08%				10.60	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.427	17.8	4.63	7.07	-32.47%
2	0.009	0.422	17.4	4.58		
3	0.009	0.511	23.5	5.11		
Average				4.77		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.05	1.25%	1.92%	-34.90%	11.39	11.13	-9.63%
2	0.05	1.25%				9.73	
3	0.05	1.25%				10.02	
Average		1.25%				10.29	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.538	192.3	17.02	17.05	1.30%
2	0.021	0.517	188.4	17.35		
3	0.021	0.481	176.2	17.44		
Average				17.27		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.31	7.75%	25.50%	-64.38%	> 17.76	> 17.69	2.31%
2	0.38	9.50%				> 17.41	
3	0.40	10.00%				> 19.41	
Average		9.08%				> 18.17	

500 HRS IN R-11/MINERAL OIL @ 212 F
168 HRS IN R-245ca/POLYOLESTER @ 212 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.520	101.6	19.54	22.48	-12.64%
2	0.010	0.512	102.5	20.02		
3	0.010	0.499	96.6	19.36		
Average				19.64		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.73	136.50%	134.83%	2.85%	>14.10	> 14.33	-0.50%
2	2.98	149.00%				> 13.66	
3	2.61	130.50%				> 14.10	
Average		138.67%				>14.03	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.478	92.1	19.27	19.06	1.14%
2	0.010	0.545	107.2	19.67		
3	0.010	0.506	95.6	18.89		
Average				19.28		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.12	106.00%	142.83%	-13.77%	>14.60	>14.58	-1.69%
2	2.03	101.50%				>14.21	
3	3.24	162.00%				>14.27	
Average		123.17%				>14.35	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.495	120.2	11.56	13.40	-1.14%
2	0.021	0.470	143.2	14.51		
3	0.021	0.480	137.8	13.67		
Average				13.25		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.54	27.00%	29.33%	-5.67%	>18.56	> 18.26	1.56%
2	0.56	28.00%				> 18.57	
3	0.56	28.00%				> 19.72	
Average		27.67%				>18.85	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.509	90.0	17.68	18.09	-4.72%
2	0.010	0.509	89.5	17.58		
3	0.010	0.492	80.9	16.44		
Average				17.24		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.29	7.25%	16.25%	-57.95%	10.24	> 13.05	25.94%
2	0.29	7.25%				12.38	
3	0.24	6.00%				13.26	
Average		6.83%				> 12.90	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.453	20.2	4.95	7.07	-28.55%
2	0.009	0.512	24.7	5.36		
3	0.009	0.505	22.0	4.84		
Average				5.05		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.05	1.25%	1.92%	-43.58%	11.39	> 12.90	18.41%
2	0.03	0.75%				> 13.86	
3	0.05	1.25%				13.70	
Average		1.08%				> 13.49	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.500	170.4	16.23	17.05	-5.16%
2	0.021	0.498	170.1	16.27		
3	0.021	0.504	169.5	16.01		
Average				16.17		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.50	12.50%	25.50%	-49.35%	>17.76	> 18.18	-0.19%
2	0.54	13.50%				> 17.07	
3	0.51	12.75%				> 17.93	
Average		12.92%				>17.73	

500 HRS IN R-11/MINERAL OIL @ 212 F
168 HRS IN R-245ca/POLYOLESTER @ 212 F
24 HR BAKE @ 302 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.462	90.1	19.50	22.48	-12.51%
2	0.010	0.467	96.7	20.71		
3	0.010	0.498	93.6	18.80		
Average				19.67		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.59	64.75%	134.83%	-49.07%	> 14.10	> 13.79	-0.76%
2	2.78	69.50%				> 14.10	
3	2.87	71.75%				> 14.09	
Average		68.67%				> 13.99	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.516	99.0	19.19	19.06	-6.74%
2	0.010	0.505	85.4	16.91		
3	0.010	0.505	87.0	17.23		
Average				17.77		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	3.27	81.75%	142.83%	-55.25%	> 14.60	> 14.11	-3.63%
2	2.19	54.75%				> 14.21	
3	2.21	55.25%				> 13.89	
Average		63.92%				> 14.07	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.489	143.1	13.94	13.40	1.56%
2	0.021	0.487	138.7	13.56		
3	0.021	0.483	135.2	13.33		
Average				13.61		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.58	29.00%	29.33%	-10.79%	> 18.56	> 18.85	-4.87%
2	0.48	24.00%				> 17.17	
3	0.51	25.50%				> 16.95	
Average		26.17%				> 17.66	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.519	93.7	18.05	18.09	0.57%
2	0.010	0.484	87.6	18.10		
3	0.010	0.476	87.7	18.42		
Average				18.19		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.26	6.50%	16.25%	-57.95%	10.24	13.10	23.34%
2	0.24	6.00%				12.90	
3	0.32	8.00%				11.89	
Average		6.83%				12.63	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.504	22.5	4.96	7.07	-28.75%
2	0.009	0.502	21.6	4.78		
3	0.009	0.484	23.4	5.37		
Average				5.04		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.04	1.00%	1.92%	-52.26%	11.39	11.10	2.69%
2	0.03	0.75%				12.10	
3	0.04	1.00%				11.89	
Average		0.92%				11.70	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.490	175.9	17.09	17.05	0.57%
2	0.021	0.501	179.5	17.06		
3	0.021	0.505	183.3	17.28		
Average				17.15		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.41	10.25%	25.50%	-61.44%	>17.76	>16.96	0.98%
2	0.38	9.50%				>18.65	
3	0.39	9.75%				>18.19	
Average		9.83%				>17.93	

500 HRS IN R-11/MINERAL OIL @ 212 F
336 HRS IN R-245ca/POLYOLESTER @212 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.524	106.6	20.34	22.48	-9.42%
2	0.010	0.521	104.7	20.10		
3	0.010	0.511	105.5	20.65		
Average				20.36		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	3.16	158.00%	134.83%	18.54%	>14.10	>13.78	-2.29%
2	3.26	163.00%				>13.66	
3	3.17	158.50%				>13.89	
Average		159.83%				>13.78	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.505	92.6	18.34	19.06	-6.94%
2	0.010	0.492	82.2	16.71		
3	0.010	0.507	92.1	18.17		
Average				17.74		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	3.41	170.50%	142.83%	-1.51%	>14.60	>14.03	-1.69%
2	1.79	89.50%				>14.41	
3	3.24	162.00%				>14.62	
Average		140.67%				>14.35	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.470	127.9	12.96	13.40	-0.75%
2	0.021	0.502	143.8	13.64		
3	0.021	0.503	140.5	13.30		
Average				13.30		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.54	27.00%	29.33%	-6.24%	>18.56	> 18.37	1.04%
2	0.57	28.50%				> 18.86	
3	0.54	27.00%				> 19.03	
Average		27.50%				>18.75	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.503	90.0	17.89	18.09	-1.34%
2	0.010	0.528	96.7	18.31		
3	0.010	0.507	87.9	17.34		
Average				17.85		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.37	9.25%	16.25%	-43.08%	10.24	12.10	22.75%
2	0.37	9.25%				13.14	
3	0.37	9.25%				12.47	
Average		9.25%				12.57	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.498	18.9	4.22	7.07	-34.64%
2	0.009	0.520	22.2	4.74		
3	0.009	0.485	21.4	4.90		
Average				4.62		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.06	1.50%	1.92%	-21.88%	11.39	11.06	-7.46%
2	0.06	1.50%				11.59	
3	0.06	1.50%				8.97	
Average		1.50%				10.54	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.475	168.9	16.93	17.05	1.97%
2	0.021	0.517	191.1	17.60		
3	0.021	0.515	190.6	17.62		
Average				17.39		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.27	6.75%	25.50%	-65.69%	>17.76	>17.38	-3.81%
2	0.36	9.00%				>16.98	
3	0.42	10.50%				>16.89	
Average		8.75%				>17.08	

500 HRS IN R-11/MINERAL OIL @ 212 F
336 HRS IN R-245ca/POLYOLESTER @212 F
24 HR BAKE @ 302 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.503	102.3	20.34	22.48	-12.71%
2	0.010	0.500	99.2	19.84		
3	0.010	0.480	89.7	18.69		
Average				19.62		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.73	136.50%	134.83%	-8.90%	> 14.10	> 13.88	-2.39%
2	2.55	127.50%				> 13.68	
3	2.09	104.50%				> 13.73	
Average		122.83%				> 13.76	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.462	81.0	17.53	19.06	-0.81%
2	0.010	0.535	100.5	18.79		
3	0.010	0.475	96.9	20.40		
Average				18.91		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.09	104.50%	142.83%	-10.27%	> 14.60	> 14.38	-2.35%
2	3.10	155.00%				> 14.03	
3	2.50	125.00%				> 14.36	
Average		128.17%				> 14.26	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.476	135.9	13.60	13.40	1.80%
2	0.021	0.460	130.6	13.52		
3	0.021	0.509	147.6	13.81		
Average				13.64		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.56	14.00%	29.33%	-51.98%	> 18.56	> 18.90	-3.02%
2	0.54	13.50%				> 18.40	
3	0.59	14.75%				> 16.70	
Average		14.08%				> 18.00	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.509	89.5	17.58	18.09	0.30%
2	0.010	0.478	87.4	18.28		
3	0.010	0.502	93.2	18.57		
Average				18.14		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.28	7.00%	16.25%	-49.74%	10.24	11.37	12.24%
2	0.33	8.25%				11.76	
3	0.37	9.25%				11.35	
Average		8.17%				11.49	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.538	25.3	5.23	7.07	-14.29%
2	0.009	0.533	30.3	6.32		
3	0.009	0.472	28.2	6.64		
Average				6.06		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.07	1.75%	1.92%	-30.56%	11.39	11.60	3.42%
2	0.04	1.00%				11.87	
3	0.05	1.25%				11.87	
Average		1.33%				11.78	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.502	180.9	17.16	17.05	-1.04%
2	0.021	0.489	171.9	16.74		
3	0.021	0.515	180.8	16.72		
Average				16.87		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.58	14.50%	25.50%	-45.75%	> 17.76	> 17.70	-0.41%
2	0.57	14.25%				> 17.66	
3	0.51	12.75%				> 17.70	
Average		13.83%				> 17.69	

500 HRS IN R-11/MINERAL OIL @ 212 F
500 HRS IN R-245ca/POLYOLESTER @212 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.473	94.5	19.98	22.48	-10.26%
2	0.010	0.498	102.3	20.54		
3	0.010	0.501	100.2	20.00		
Average				20.17		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.83	141.50%	134.83%	5.81%	>14.10	>14.48	0.02%
2	2.99	149.50%				>13.73	
3	2.74	137.00%				>14.10	
Average		142.67%				>14.10	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.510	83.4	16.35	19.06	-13.45%
2	0.010	0.454	75.2	16.56		
3	0.010	0.461	76.4	16.57		
Average				16.50		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	1.71	85.50%	142.83%	-40.84%	>14.60	>14.94	2.05%
2	1.67	83.50%				>14.76	
3	1.69	84.50%				>15.00	
Average		84.50%				>14.90	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.471	128.4	12.98	13.40	-1.39%
2	0.021	0.511	144.2	13.44		
3	0.021	0.528	146.6	13.22		
Average				13.21		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.52	26.00%	29.33%	-2.26%	>18.56	>18.67	-1.63%
2	0.61	30.50%				>18.01	
3	0.59	29.50%				>18.09	
Average		28.67%				>18.26	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.518	85.6	16.53	18.09	-8.51%
2	0.010	0.508	84.9	16.71		
3	0.010	0.502	82.4	16.41		
Average				16.55		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.29	7.25%	16.25%	-55.90%	10.24	> 13.30	28.13%
2	0.28	7.00%				> 13.05	
3	0.29	7.25%				> 13.01	
Average		7.17%				> 13.12	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.490	18.9	4.29	7.07	-36.09%
2	0.009	0.515	21.0	4.53		
3	0.009	0.504	21.5	4.74		
Average				4.52		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.06	1.50%	1.92%	-21.88%	11.39	> 13.08	24.35%
2	0.06	1.50%				> 13.90	
3	0.06	1.50%				> 15.51	
Average		1.50%				> 14.16	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.493	172.6	16.67	17.05	-5.99%
2	0.021	0.507	165.1	15.51		
3	0.021	0.490	163.7	15.91		
Average				16.03		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.55	13.75%	25.50%	-51.96%	>17.76	>19.50	6.83%
2	0.49	12.25%				>18.96	
3	0.43	10.75%				>18.46	
Average		12.25%				>18.97	

500 HRS IN R-11/MINERAL OIL @ 212 F
500 HRS IN R-245ca/POLYOLESTER @212 F
24 HR BAKE @ 302 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.512	103.8	20.27	22.48	-8.77%
2	0.010	0.507	106.5	21.01		
3	0.010	0.481	97.4	20.25		
Average				20.51		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.89	144.50%	134.83%	9.89%	> 14.10	> 14.68	3.66%
2	3.16	158.00%				> 14.66	
3	2.84	142.00%				> 14.51	
Average		148.17%				> 14.62	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.471	81.8	17.36	19.06	-6.06%
2	0.010	0.519	87.3	16.82		
3	0.010	0.496	96.9	19.54		
Average				17.91		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	1.71	85.50%	142.83%	-26.72%	> 14.60	> 14.58	-2.90%
2	1.08	54.00%				> 14.09	
3	3.49	174.50%				> 13.86	
Average		104.67%				> 14.18	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.495	143.4	13.80	13.40	4.67%
2	0.021	0.513	153.3	14.23		
3	0.021	0.489	144.3	14.05		
Average				14.03		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.57	28.50%	29.33%	1.15%	> 18.56	> 15.57	-13.40%
2	0.62	31.00%				> 16.56	
3	0.59	29.50%				> 16.09	
Average		29.67%				> 16.07	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.488	91.2	18.69	18.09	1.57%
2	0.010	0.493	88.7	17.99		
3	0.010	0.500	92.2	18.44		
Average				18.37		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.35	8.75%	16.25%	-51.28%	10.24	11.89	21.16%
2	0.26	6.50%				12.43	
3	0.34	8.50%				12.90	
Average		7.92%				12.41	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.490	26.5	6.01	7.07	-22.17%
2	0.009	0.500	22.4	4.98		
3	0.009	0.489	24.3	5.52		
Average				5.50		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.04	1.00%	1.92%	-34.90%	11.39	13.63	13.08%
2	0.05	1.25%				12.32	
3	0.06	1.50%				12.69	
Average		1.25%				12.88	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.521	198.1	18.11	17.05	2.97%
2	0.021	0.491	180.0	17.46		
3	0.021	0.500	179.6	17.10		
Average				17.56		

	Stretch (Inches)	Experimental Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.47	11.75%	25.50%	-53.27%	> 17.76	> 18.22	3.40%
2	0.52	13.00%				> 18.83	
3	0.44	11.00%				> 18.04	
Average		11.92%				> 18.36	

500 HRS IN R-11/MINERAL OIL @ 212 F

Tape Tie Cords	Sample #	Unexposed Break Load (lbs.)	Experimental Breakload (lbs.)	Change in Breakload Strength
Tape	1	441.60	471.00	
B	2	424.20	450.70	0.68%
	3	490.70	444.00	
	Average	452.17	455.23	
Cord	1	28.05	30.00	
C	2	34.85	33.35	-8.15%
	3	40.50	31.62	
	Average	34.47	31.66	

		Unexposed Stretch (Inches)	Unexposed Elongation	Experimental Stretch (Inches)	Experimental Elongation	Change from Unexposed Elongation
Tape	1	0.10	5.00%	0.10	5.00%	
B	2	0.10	5.00%	0.07	3.50%	-12.90%
	3	0.11	5.50%	0.10	5.00%	
	Average	0.10	5.17%	0.09	4.50%	
Cord	1	0.39	19.50%	0.35	17.50%	
C	2	0.44	22.00%	0.35	17.50%	-14.63%
	3	0.40	20.00%	0.35	17.50%	
	Average	0.41	20.50%	0.35	17.50%	

Tape B is braided polyester, acrylic binder

Cord C is polyester tie cord

1000 HRS IN R-11/MINERAL OIL @ 212 F

Tape Tie Cords	Sample #	Unexposed Break Load (lbs.)	Experimental Breakload (lbs.)	Change in Breakload Strength
Tape	1	441.60	487.00	
B	2	424.20	465.00	4.59%
	3	490.70	466.70	
	Average	452.17	472.90	
Cord	1	28.05	31.12	
C	2	34.85	33.42	-7.31%
	3	40.50	31.30	
	Average	34.47	31.95	

		Unexposed Stretch (Inches)	Unexposed Elongation	Experimental Stretch (Inches)	Experimental Elongation	Change from Unexposed Elongation
Tape	1	0.11	5.50%	0.11	5.50%	
B	2	0.11	5.50%	0.11	5.50%	3.12%
	3	0.10	5.00%	0.11	5.50%	
	Average	0.11	5.33%	0.11	5.50%	
Cord	1	0.46	23.00%	0.50	25.00%	
C	2	0.41	20.50%	0.43	21.50%	6.15%
	3	0.43	21.50%	0.45	22.50%	
	Average	0.43	21.67%	0.46	23.00%	

Tape B is braided polyester, acrylic binder

Cord C is polyester tie cord

500 HRS IN R-11/MINERAL OIL @ 212 F
168 HRS IN R-245ca/POLYOLESTER @ 212 F

Tape Tie Cords	Sample #	Unexposed Break Load (lbs.)	Experimental Breakload (lbs.)	Change in Breakload Strength
Tape	1	441.60	483.10	
B	2	424.20	453.10	0.57%
	3	490.70	428.00	
	Average	452.17	454.73	
Cord	1	28.05	30.67	
C	2	34.85	33.77	0.25%
	3	40.50	39.22	
	Average	34.47	34.55	

		Unexposed Stretch (Inches)	Unexposed Elongation	Experimental Stretch (Inches)	Experimental Elongation	Change from Unexposed Elongation
Tape	1	0.11	5.50%	0.07	3.50%	
B	2	0.10	5.00%	0.11	5.50%	-3.33%
	3	0.09	4.50%	0.11	5.50%	
	Average	0.10	5.00%	0.10	4.83%	
Cord	1	0.46	23.00%	0.39	19.50%	
C	2	0.44	22.00%	0.38	19.00%	-24.50%
	3	0.61	30.50%	0.37	18.50%	
	Average	0.50	25.17%	0.38	19.00%	

Tape B is braided polyester, acrylic binder

Cord C is polyester tie cord

500 HRS IN R-11/MINERAL OIL @ 212 F
336 HRS IN R-245ca/POLYOLESTER @212 F

Tape Tie Cords	Sample #	Unexposed Break Load (lbs.)	Experimental Breakload (lbs.)	Change in Breakload Strength
Tape	1	441.60	487.70	
B	2	424.20	444.80	-1.15%
	3	490.70	408.40	
	Average	452.17	446.97	
Cord	1	28.05	29.67	
C	2	34.85	33.35	-4.99%
	3	40.50	35.22	
	Average	34.47	32.75	

		Unexposed Stretch (Inches)	Unexposed Elongation	Experimental Stretch (Inches)	Experimental Elongation	Change from Unexposed Elongation
Tape	1	0.10	5.00%	0.08	4.00%	
B	2	0.11	5.50%	0.11	5.50%	-9.09%
	3	0.12	6.00%	0.11	5.50%	
	Average	0.11	5.50%	0.10	5.00%	
Cord	1	0.42	21.00%	0.40	20.00%	
C	2	0.41	20.50%	0.38	19.00%	-10.32%
	3	0.43	21.50%	0.35	17.50%	
	Average	0.42	21.00%	0.38	18.83%	

Tape B is braided polyester, acrylic binder

Cord C is polyester tie cord

500 HRS IN R-11/MINERAL OIL @ 212 F
500 HRS IN R-245ca/POLYOLESTER @212 F

Tape Tie Cords	Sample #	Unexposed Break Load (lbs.)	Experimental Breakload (lbs.)	Change in Breakload Strength
Tape	1	441.60	476.70	
B	2	424.20	477.70	3.90%
	3	490.70	455.00	
	Average	452.17	469.80	
Cord	1	28.05	32.57	
C	2	34.85	29.85	-4.41%
	3	40.50	36.42	
	Average	34.47	32.95	

		Unexposed Stretch (Inches)	Unexposed Elongation	Experimental Stretch (Inches)	Experimental Elongation	Change from Unexposed Elongation
Tape	1	0.10	5.00%	0.10	5.00%	
B	2	0.11	5.50%	0.10	5.00%	-6.25%
	3	0.11	5.50%	0.10	5.00%	
	Average	0.11	5.33%	0.10	5.00%	
Cord	1	0.41	20.50%	0.47	23.50%	
C	2	0.42	21.00%	0.38	19.00%	-12.50%
	3	0.53	26.50%	0.34	17.00%	
	Average	0.45	22.67%	0.36	19.83%	

Tape B is braided polyester, acrylic binder

Cord C is polyester tie cord

500 hrs. R-11 followed by 168, 336, 500 hrs in R-245ca, and additional 500hrs in R-11

O-Rings; Weight Volume Swell For Nitrile

	Air Before	CH_3OH before	Air After	CH_3OH After	% Chg Weight	% Chg Volume
R-11	1.0515	0.3610	1.2480	0.4593	18.69%	14.22%
500 hrs	1.0676	0.3663	1.2645	0.4657	18.44%	13.90%
	1.0568	0.3629	1.2544	0.4608	18.70%	14.37%
			Average		18.61%	14.16%
R-245ca	1.0637	0.3648	1.2754	0.4547	19.90%	17.43%
168 hrs	1.0550	0.3614	1.2656	0.4510	19.96%	17.45%
	1.0556	0.3618	1.2642	0.4511	19.76%	17.20%
			Average		19.88%	17.36%
R-245ca	1.0689	0.3661	1.2755	0.4553	19.33%	16.70%
336 hrs	1.0631	0.3645	1.2710	0.4490	19.56%	17.66%
	1.0529	0.3618	1.2587	0.4521	19.55%	16.71%
			Average		19.48%	17.03%
R-245ca	1.0572	0.3623	1.2617	0.4522	19.34%	16.49%
500 hrs	1.0591	0.3628	1.2651	0.4537	19.45%	16.53%
	1.0583	0.3631	1.2602	0.4509	19.08%	16.41%
			Average		19.29%	16.48%
R-11	1.0626	0.3647	1.2598	0.4673	18.56%	13.55%
1000 hrs	1.0650	0.3653	1.2619	0.4668	18.49%	13.63%
	1.0570	0.3627	1.2497	0.4659	18.23%	12.89%
			Average		18.43%	13.36%

500 hrs. R-11 followed by 168, 336, 500 hrs in R-245ca, and additional 500hrs in R-11

O-Rings; Tensile and Elongation for Nitrile

	Break Force (lbs.)	Stretch (in.)	Tensile (lbs./in.*in.)	Elongation %	% Chg. Tensile	% Chg. Elongation
R-11	52.85	4.03	174.42	171%	-28.90%	-45.70%
500 hrs	52.00	4.31	171.62	183%	-30.04%	-41.89%
	48.75	3.84	160.89	163%	-34.42%	-48.29%
	52.45	4.35	173.10	185%	-29.44%	-41.34%
			Average		-30.70%	-44.30%
R-245ca	35.07	4.01	115.74	170%	-52.82%	-45.97%
168 hrs	53.62	4.32	176.96	183%	-27.86%	-41.75%
	51.47	4.09	169.87	174%	-30.76%	-44.88%
	48.67	4.56	160.63	194%	-34.52%	-38.48%
			Average		-36.49%	-42.77%
R-245ca	41.47	3.25	136.86	138%	-44.21%	-56.33%
336 hrs	49.10	3.74	162.05	159%	-33.94%	-49.65%
	40.57	3.32	133.89	141%	-45.42%	-55.37%
	41.40	3.59	136.63	152%	-44.30%	-51.70%
			Average		-41.97%	-53.26%
R-245ca	46.90	3.67	154.79	156%	-36.90%	-50.61 %
500 hrs	46.55	3.39	153.63	144%	-37.38%	-54.42%
	46.00	3.31	151.82	140%	-38.12%	-55.51%
	31.07	3.06	102.54	129%	-58.20%	-58.92%
			Average		-42.65%	-54.86%
R-11	21.35	3.37	70.46	143%	-71.28%	-54.69%
1000 hrs	25.75	3.63	84.98	154%	-65.36%	-51.15%
	29.05	3.80	95.87	161%	-60.92%	-48.83%
	24.02	3.46	79.27	147%	-67.69%	-53.47%
			Average		-66.31%	-52.04%

500 hrs. R-11 followed by 168, 336, 500 hrs in R-245ca, and additional 500hrs in R-11

O-Rings; Durometer For Nitrile

	Durometer After	% Chg. Durometer
R-11 500 hrs	69	0.00%
	70	1.45%
	71	2.90%
	Average	1.45%
R-245ca 168 hrs	72	4.35%
	71	2.90%
	75	8.70%
	Average	5.31%
R-245ca 336 hrs	70	1.45%
	70	1.45%
	72	4.35%
	Average	2.42%
R-245ca 500 hrs	70	1.45%
	72	4.35%
	72	4.35%
	Average	3.38%
R-11 1000 hrs	58	-15.94%
	60	-13.04%
	62	-10.14%
	Average	-13.04%

500 hrs. R-11 followed by 168, 336, 500 hrs in R-245ca, and additional 500hrs in R-11

O-Rings; Weight Volume Swell For Neoprene

	Air Before	CH_3OH before	Air After	CH_3OH After	% Chg Weight	% Chg Volume
R-11	1.2568	0.5552	1.6232	0.7000	29.15%	31.58%
500 hrs	1.2550	0.5550	1.6153	0.6975	28.71%	31.11%
	1.2641	0.5585	1.6196	0.7012	28.12%	30.16%
			Average		28.66%	30.95%
R-245ca	1.2528	0.5543	1.2354	0.5579	-1.39%	-3.01%
168 hrs	1.2585	0.5561	1.2385	0.5592	-1.59%	-3.29%
	1.2552	0.5548	1.2356	0.5580	-1.56%	-3.26%
			Average		-1.51%	-3.18%
R-245ca	1.2588	0.5560	1.2258	0.5586	-2.62%	-5.07%
336 hrs	1.2585	0.5561	1.2279	0.5601	-2.43%	-4.93%
	1.2580	0.5561	1.2242	0.5585	-2.69%	-5.16%
			Average		-2.58%	-5.05%
R-245ca	1.2587	0.5559	1.2344	0.5580	-1.93%	-3.76%
500 hrs	1.2571	0.5563	1.2373	0.5586	-1.58%	-3.15%
	1.2637	0.5581	1.2391	0.5597	-1.95%	-3.71%
			Average		-1.82%	-3.54%
R-11	1.2665	0.5583	1.6343	0.6897	29.04%	33.38%
1000 hrs	1.2589	0.5557	1.6269	0.6840	29.23%	34.09%
	1.2592	0.5567	1.6219	0.6834	28.80%	33.59%
			Average		29.03%	33.69%

500 hrs. R-11 followed by 168, 336, 500 hrs in R-245ca, and additional 500hrs in R-11

O-Rings; Tensile and Elongation for Neoprene

	Break Force (lbs.)	Stretch (in.)	Tensile (lbs./in.*in.)	Elongation %	% Chg. Tensile	% Chg. Elongation
R-11	37.00	3.75	122.11	159%	-50.22%	-48.85%
500 hrs	36.25	4.99	119.64	212%	-51.23%	-31.73%
	36.60	5.01	120.79	213%	-50.76%	-31.46%
	38.87	5.23	128.28	223%	-47.71%	-28.42%
			Average		-49.98%	-35.11%
R-245ca	-	-	-	-	-	-
168 hrs	55.52	3.78	183.23	160%	-25.31%	-48.44%
	39.42	3.08	130.10	130%	-46.97%	-58.10%
	46.97	3.16	155.02	134%	-36.81%	-56.99%
			Average		-36.36%	-54.51%
R-245ca	50.57	4.42	166.90	188%	-31.97%	-39.60%
336 hrs	44.80	4.28	147.85	182%	-39.73%	-41.53%
	54.67	4.78	180.43	203%	-26.45%	-34.63%
	50.22	4.46	165.74	189%	-32.44%	-39.05%
			Average		-32.65%	-38.70%
R-245ca	46.47	3.94	153.37	167%	-37.48%	-46.23%
500 hrs	49.02	3.99	161.78	169%	-34.05%	-45.54%
	46.35	3.86	152.97	164%	-37.64%	-47.33%
	43.47	3.74	143.47	159%	-41.52%	-48.99%
			Average		-37.67%	-47.02%
R-11	29.77	5.05	98.25	215%	-59.95%	-30.90%
1000 hrs	32.82	5.36	108.32	228%	-55.85%	-26.62%
	24.77	4.55	81.75	193%	-66.68%	-37.81%
	28.60	4.88	94.39	208%	-61.52%	-33.25%
			Average		-61.00%	-32.15%

500 hrs. R-11 followed by 168, 336, 500 hrs in R-245ca, and additional 500hrs in R-11

O-Rings; Durometer For Neoprene

	Durometer After	% Chg. Durometer
R-11 500 hrs	50	-31.51%
	52	-28.77%
	52	-28.77%
	Average	-29.68%
R-245ca 168 hrs	66	-9.59%
	67	-8.22%
	67	-8.22%
	Average	-8.68%
R-245ca 336 hrs	65	-10.96%
	66	-9.59%
	69	-5.48%
	Average	-8.68%
R-245ca 500 hrs	69	-5.48%
	70	-4.11%
	69	-5.48%
	Average	-5.02%
R-11 1000 hrs	49	-32.88%
	50	-31.51%
	52	-28.77%
	Average	-31.05%

Data Tables:
Part 3

R-123/Mineral Oil to R-245ca/Polyolester

Varnish Disks

500 HRS IN R-123 / MINERAL OIL @ 212 F

Varnish Sterling U-475

Varnish Disk#	Weight Disk Before in Air (grams)	Weight Disk before in Methanol (grams)	Weight Disk after in Air (grams)	Weight Disk after in MeOH (grams)
1	1.2251	0.4019	1.4453	0.5374
2	1.5743	0.5132	1.8395	0.6858
3	1.6842	0.5389	1.9634	0.7300

Varnish Disk#	Volume Before (milliters)	Volume After (milliliters)	% Change in Weight	% Change in Volume
1	1.0531	1.1614	17.97%	10.29%
2	1.3574	1.4759	16.85%	8.73%
3	1.4651	1.5778	16.58%	7.69%
		AVERAGE	17.13%	8.90%

1000 HRS IN R-123 / MINERAL OIL @ 212 F

Varnish Sterling U-475

Varnish Disk#	Weight Disk Before in Air (grams)	Weight Disk before in Methanol (grams)	Weight Disk after in Air (grams)	Weight Disk after in MeOH (grams)
1	1.2251	0.4019	1.4286	0.5275
2	1.5743	0.5132	1.8211	0.6746
3	1.6842	0.5389	1.9421	0.7082

Varnish Disk#	Volume Before (milliters)	Volume After (milliliters)	% Change in Weight	% Change in Volume
1	1.0531	1.1527	16.61%	9.46%
2	1.3574	1.4667	15.68%	8.05%
3	1.4651	1.5785	15.31%	7.74%
		AVERAGE	15.87%	8.42%

Varnish Disks

500 HRS IN R-123/MINERAL OIL @ 212 F

168 HRS IN R-245ca/MINERAL OIL @ 212 F

Varnish Sterling U-475

Varnish Disk#	Weight Disk Before in Air (grams)	Weight Disk before in Methanol (grams)	Weight Disk after in Air (grams)	Weight Disk after in MeOH (grams)
1	1.7634	0.5793	1.8573	0.6556
2	1.4166	0.4591	1.4858	0.5264
3	0.7891	0.2586	0.8319	0.2915

Varnish Disk#	Volume Before (milliters)	Volume After (milliliters)	% Change in Weight	% Change in Volume
1	1.5148	1.5373	5.32%	1.49%
2	1.2249	1.2273	4.88%	0.20%
3	0.6786	0.6913	5.42%	1.87%
		AVERAGE	5.21%	1.18%

500 HRS IN R-123/MINERAL OIL @ 212 F

336 HRS IN R-245ca/MINERAL OIL @212 F

Varnish Sterling U-475

Varnish Disk#	Weight Disk Before in Air (grams)	Weight Disk before in Methanol (grams)	Weight Disk after in Air (grams)	Weight Disk after in MeOH (grams)
1	1.7634	0.5793	1.8281	0.6433
2	1.4166	0.4591	1.4612	0.5152
3	0.7891	0.2586	0.8203	0.2874

Varnish Disk#	Volume Before (milliters)	Volume After (milliliters)	% Change in Weight	% Change in Volume
1	1.5148	1.5157	3.67%	0.06%
2	1.2249	1.2102	3.15%	-1.20%
3	0.6786	0.6817	3.95%	0.45%
		AVERAGE	3.59%	-0.23%

Varnish Disks

500 HRS IN R-123 / MINERAL OIL @ 212 F

500 HRS IN R-245ca / MINERAL OIL @212 F

Varnish Sterling U-475

Varnish Disk#	Weight Disk Before in Air (grams)	Weight Disk before in Methanol (grams)	Weight Disk after in Air (grams)	Weight Disk after in MeOH (grams)
1	1.7634	0.5793	1.8101	0.6274
2	1.4166	0.4591	1.4458	0.5084
3	0.7891	0.2586	0.8116	0.2832

Varnish Disk#	Volume Before (milliters)	Volume After (milliliters)	% Change in Weight	% Change in Volume
1	1.5148	1.5130	2.65%	-0.12%
2	1.2249	1.1992	2.06%	-2.10%
3	0.6786	0.6760	2.85%	-0.40%
		AVERAGE	2.52%	-0.87%

Varnished Helical Coils

500 HRS IN R-123/MINERAL OIL @ 212 F

Wire Type/Varnish	Unexposed Bond Strengths (Pounds[lbs.])	Experimental Bond Strengths (Pounds[lbs.])	% Change in Bond Strength From Unexposed
	26.55	29.65	
Wire Type C	28.90	34.60	
coated with	26.20	32.22	13.85%
U-475EH	27.75	27.10	
	27.55	32.35	
Average	27.39	31.18	

500 HRS IN R-123/MINERAL OIL @ 212 F
24 HR BAKE @ 302 F

	26.55	31.62	
Wire Type C	28.90	29.60	
coated with	26.20	30.10	12.46%
U-475EH	27.75	31.52	
	27.55	31.17	
Average	27.39	30.80	

1000 HRS IN R-123/MINERAL OIL @ 212 F

	26.55	27.30	
Wire Type C	28.90	27.85	
coated with	26.20	25.17	-4.86%
U-475EH	27.75	25.47	
	27.55	24.50	
Average	27.39	26.06	

1000 HRS IN R-123/MINERAL OIL @ 212 F
24 HR BAKE @ 302 F

	26.55	25.95	
Wire Type C	28.90	30.80	
coated with	26.20	32.20	14.12%
U-475EH	27.75	38.92	
	27.55	28.42	
Average	27.39	31.26	

Wire Type C is Polyester base with amide imide overcoat and epoxy saturated glass serving.

Varnished Helical Coils

500 HRS IN R-123/MINERAL OIL @ 212 F
168 HRS IN R-245ca/ESTER OIL @ 212 F

Wire Type/Varnish	Unexposed Bond Strengths (Pounds[lbs.])	Experimental Bond Strengths (Pounds[lbs.])	% Change in Bond Strength From Unexposed
	26.55	29.62	
Wire Type C	28.90	29.35	
coated with	26.20	31.70	8.50%
U-475EH	27.75	29.37	
	27.55	28.55	
Average	27.39	29.72	

500 HRS IN R-123/MINERAL OIL @ 212 F
168 HRS IN R-245ca/ESTER OIL @ 212 F
24 HR BAKE @ 302 F

	26.55	30.62	
Wire Type C	28.90	32.30	
coated with	26.20	32.60	18.60%
U-475EH	27.75	30.20	
	27.55	36.70	
Average	27.39	32.48	

500 HRS IN R-123/MINERAL OIL @ 212 F
336 HRS IN R-245ca/ESTER OIL @212 F

	26.55	31.15	
Wire Type C	28.90	34.70	
coated with	26.20	31.65	18.57%
U-475EH	27.75	32.40	
	27.55	***	
Average	27.39	32.48	

Wire Type C is Polyester base with amide imide overcoat and epoxy saturated glass serving.

500 HRS IN R-123/MINERAL OIL @ 212 F
336 HRS IN R-245ca/ESTER OIL @212 F
24 HR BAKE @ 302 F

Wire Type/Varnish	Unexposed Bond Strengths (Pounds[lbs.])	Experimental Bond Strengths (Pounds[lbs.])	% Change in Bond Strength From Unexposed
	26.55	32.80	
Wire Type C	28.90	33.50	
coated with	26.20	27.55	13.91%
U-475EH	27.75	29.20	
	27.55	32.95	
Average	27.39	31.20	

500 HRS IN R-123/MINERAL OIL @ 212 F
500 HRS IN R-245ca/ESTER OIL @212 F

	26.55	27.95	
Wire Type C	28.90	32.95	
coated with	26.20	26.45	10.46%
U-475EH	27.75	34.40	
	27.55	29.52	
Average	27.39	30.25	

500 HRS IN R-123/MINERAL OIL @ 212 F
500 HRS IN R-245ca/ESTER OIL @212 F
24 HR BAKE @ 302 F

	26.55	29.55	
Wire Type C	28.90	30.05	
coated with	26.20	26.35	6.29%
U-475EH	27.75	29.45	
	27.55	30.17	
Average	27.39	29.11	

Wire Type C is Polyester base with amide imide overcoat and epoxy saturated glass serving.

500 HRS IN R-123/MINERAL OIL @ 212 F

Wire Type	Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric % Change	Unexposed Burnout Strengths (seconds)	Experimental Burnout Strengths (seconds)	Burnout % Change
	13.69	15.61		744	731	
	11.93	15.60		749	733	
Wire Type C	14.85	15.21	15.14%	753	728	-2.74%
	11.76	14.55		755	731	
	14.01	15.30		753	728	
Average	13.25	15.25		751	730	

1000 HRS IN R-123/MINERAL OIL @ 212 F

	13.69	13.84		744	751	
	11.93	14.17		749	744	
Wire Type C	14.85	16.03	13.51%	753	755	0.05%
	11.76	15.40		755	751	
	14.01	15.75		753	755	
Average	13.25	15.04		751	751	

500 HRS IN R-123/MINERAL OIL @ 212 F
168 HRS IN R-245ca/ESTER OIL @ 212 F

	13.69	14.54		744	742	
	11.93	16.24		749	755	
Wire Type C	14.85	12.65	13.83%	753	757	0.08%
	11.76	14.96		755	752	
	14.01	17.01		753	751	
Average	13.25	15.08		751	751	

500 HRS IN R-123/MINERAL OIL @ 212 F
336 HRS IN R-245ca/ESTER OIL @212 F

	13.69	16.51		744	745	
	11.93	14.51		749	761	
Wire Type C	14.85	16.33	15.61%	753	729	-1.12%
	11.76	14.73		755	737	
	14.01	14.50		753	740	
Average	13.25	15.32		751	742	

500 HRS IN R-123/MINERAL OIL @ 212 F
500 HRS IN R-245ca/ESTER OIL @212 F

	13.69	13.42		744	759	
	11.93	14.56		749	741	
Wire Type C	14.85	14.45	5.77%	753	748	0.03%
	11.76	14.72		755	751	
	14.01	12.91		753	756	
Average	13.25	14.01		751	751	

Wire Type C is Polyester base with amide imide overcoat and epoxy saturated glass serving.

500 HRS IN R-123/MINERAL OIL @ 212 F

Wire Type	Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric % Change	Unexposed Burnout Strengths (seconds)	Experimental Burnout Strengths (seconds)	Burnout % Change
	11.83	12.37		738	679	
	12.10	11.97		734	647	
Wire Type C	12.29	12.51	3.47%	728	722	-6.05%
	12.90	13.62		741	731	
	12.61	13.40		727	667	
Average	12.35	12.77		734	689	

1000 HRS IN R-123/MINERAL OIL @ 212 F

	11.83	14.76		738	618	
	12.10	11.90		734	636	
Wire Type C	12.29	11.70	6.30%	728	632	-12.54%
	12.90	13.46		741	592	
	12.61	13.80		727	730	
Average	12.35	13.12		734	642	

500 HRS IN R-123/MINERAL OIL @ 212 F
168 HRS IN R-245ca/ESTER OIL @ 212 F

	11.83	13.19		738	728	
	12.10	13.92		734	730	
Wire Type C	12.29	14.44	13.04%	728	623	-3.46%
	12.90	14.33		741	729	
	12.61	13.90		727	731	
Average	12.35	13.96		734	708	

500 HRS IN R-123/MINERAL OIL @ 212 F
336 HRS IN R-245ca/ESTER OIL @212 F

	11.83	14.30		738	649	
	12.10	14.20		734	730	
Wire Type C	12.29	14.60	14.08%	728	723	-3.00%
	12.90	14.34		741	730	
	12.61	12.98		727	726	
Average	12.35	14.08		734	712	

500 HRS IN R-123/MINERAL OIL @ 212 F
500 HRS IN R-245ca/ESTER OIL @212 F

	11.83	13.42		738	730	
	12.10	14.56		734	640	
Wire Type C	12.29	14.45	13.49%	728	631	-8.29%
	12.90	14.72		741	730	
	12.61	12.91		727	633	
Average	12.35	14.01		734	673	

Wire Type C is Polyester base with amide imide overcoat and epoxy saturated glass serving.

500 HRS IN R-123/MINERAL OIL @ 212 F

Lead Wire Insulation Type	Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric % Change
Polyester Composite	10.87	7.70	
Dacron-Mylar-Dacron	10.82	5.70	-32.07%
	7.62	6.51	
Average	9.77	6.64	
Polyester, Fluorpolymer	10.78	13.03	
Composite	9.24	14.11	38.35%
Dacron-Teflon-Dacron	10.46	15.03	
Average	10.16	14.06	

1000 HRS IN R-123/MINERAL OIL @ 212 F

Polyester Composite	10.87	7.61	
Dacron-Mylar-Dacron	10.82	5.95	-23.47%
	7.62	8.87	
Average	9.77	7.48	
Polyester, Fluorpolymer	10.78	16.01	
Composite	9.24	15.59	50.75%
Dacron-Teflon-Dacron	10.46	14.35	
Average	10.16	15.32	

500 HRS IN R-123/MINERAL OIL @ 212 F
168 HRS IN R-245ca/Polyolester @ 212 F

Lead Wire Insulation Type	Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric % Change
Polyester Composite	10.87	7.14	
Dacron-Mylar-Dacron	10.82	5.79	-39.34%
	7.62	4.85	
Average	9.77	5.93	
Polyester, Fluorpolymer	10.78	12.76	
Composite	9.24	12.69	29.17%
Dacron-Teflon-Dacron	10.46	13.92	
Average	10.16	13.12	

500 HRS IN R-123/MINERAL OIL @ 212 F
336 HRS IN R-245ca/Polyolester @ 212 F

Polyester Composite	10.87	8.17	
Dacron-Mylar-Dacron	10.82	7.96	-17.45%
	7.62	8.01	
Average	9.77	8.07	
Polyester, Fluorpolymer	10.78	16.96	
Composite	9.24	11.63	34.94%
Dacron-Teflon-Dacron	10.46	12.54	
Average	10.16	13.71	

500 HRS IN R-123/MINERAL OIL @ 212 F
500 HRS IN R-245ca/Polyolester @212 F

Polyester Composite	10.87	8.17	
Dacron-Mylar-Dacron	10.82	7.54	-19.60%
	7.62		
Average	9.77	7.86	
Polyester, Fluorpolymer	10.78	19.19	
Composite	9.24	18.30	77.30%
Dacron-Teflon-Dacron	10.46	16.55	
	10.16	18.01	

500 HRS IN R-123/MINERAL OIL @ 212 F

Sleeving Type	Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric % Change
Polyester Film	>19.14	>10.69	
	>17.05	>10.22	-41.98%
	>16.60	>9.72	
Average	>17.60	>10.21	
Aramid Fiber Mat	>11.83	>13.44	
Polyester Film	>12.33	>10.54	-3.99%
	>12.40	>11.12	
Average	>12.19	>11.70	

1000 HRS IN R-123/MINERAL OIL @ 212 F

Polyester Film	>19.14	>10.96	
	>17.05	>10.91	-37.73%
	>16.60	>11.00	
Average	>17.60	>10.96	
Aramid Fiber Mat	>11.83	>12.42	
Polyester Film	>12.33	>10.30	-7.14%
	>12.40	>11.23	
Average	>12.19	>11.32	

500 HRS IN R-123/MINERAL OIL @ 212 F
168 HRS IN R-245ca/ESTER OIL @ 212 F

Sleeving Type	Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric % Change
Polyester Film	>19.14	>10.04	
	>17.05	>11.57	-37.49%
	>16.60	>11.39	
Average	>17.60	>11.00	
Aramid Fiber Mat	>11.83	>11.27	
Polyester Film	>12.33	>11.35	-8.92%
	>12.40	>10.68	
Average	>12.19	>11.10	

500 HRS IN R-123/MINERAL OIL @ 212 F
336 HRS IN R-245ca/ESTER OIL @212 F

Polyester Film	>19.14	>12.08	
	>17.05	>11.01	-31.67%
	>16.60	>12.98	
Average	>17.60	>12.02	

Aramid Fiber Mat	>11.83	>11.34	
Polyester Film	>12.33	>11.02	-7.93%
	>12.40	>11.30	
Average	>12.19	>11.22	

500 HRS IN R-123/MINERAL OIL @ 212 F
500 HRS IN R-245ca/ESTER OIL @212 F

Sleeving Type	Unexposed Dielectric Strengths (Kilovolts)	Experimental Dielectric Strengths (Kilovolts)	Dielectric % Change
Polyester Film	>19.14	>9.96	
	>17.05	>10.31	-44.50%
	>16.60	>9.03	
Average	>17.60	>9.77	

Aramid Fiber Mat	>11.83	>12.42	
Polyester Film	>12.33	>10.11	-5.66%
	>12.40	>11.96	
Average	>12.19	>11.50	

500 HRS IN R-123/MINERAL OIL @ 212 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.475	86.8	18.27	22.48	-16.51%
2	0.010	0.487	89.9	18.46		
3	0.010	0.513	100.4	19.57		
Average				18.77		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.69	134.50%	134.83%	3.59%	>14.10	> 13.90	-0.45%
2	2.56	128.00%				> 14.25	
3	3.13	156.50%				> 13.96	
Average		139.67%				>14.04	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.495	93.8	18.95	19.06	1.76%
2	0.010	0.517	102.0	19.73		
3	0.010	0.510	99.5	19.51		
Average				19.40		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	3.32	166.00%	142.83%	14.12%	>14.60	>14.50	0.34%
2	3.38	169.00%				>14.53	
3	3.08	154.00%				>14.92	
Average		163.00%				>14.65	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.457	129.2	13.46	13.40	-0.83%
2	0.021	0.516	140.5	12.97		
3	0.021	0.483	136.3	13.44		
Average				13.29		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.59	29.50%	29.33%	0.01%	>18.56	>17.83	-0.79%
2	0.56	28.00%				>18.90	
3	0.61	30.50%				>18.51	
Average		29.33%				>18.41	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.489	92.3	18.88	18.09	0.29%
2	0.010	0.490	88.9	18.14		
3	0.010	0.498	86.7	17.41		
Average				18.14		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.40	10.00%	16.25%	-35.38%	10.24	12.91	26.50%
2	0.48	12.00%				12.74	
3	0.38	9.50%				13.21	
Average		10.50%				12.95	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.485	20.7	4.74	7.07	-35.34%
2	0.009	0.517	21.0	4.51		
3	0.009	0.471	18.9	4.46		
Average				4.57		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.06	1.50%	1.92%	-26.22%	11.39	13.25	7.87%
2	0.06	1.50%				11.07	
3	0.05	1.25%				12.54	
Average		1.42%				12.29	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.501	171.6	16.31	17.05	-4.23%
2	0.021	0.500	173.1	16.49		
3	0.021	0.480	163.2	16.19		
Average				16.33		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.76	19.00%	25.50%	-24.51%	>17.76	> 17.46	-0.66%
2	0.75	18.75%				> 17.32	
3	0.80	20.00%				> 18.15	
Average		19.25%				>17.64	

500 HRS IN R-123/MINERAL OIL @ 212 F
24 HR BAKE @ 302 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.489	95.8	19.59	22.48	-16.18%
2	0.010	0.503	93.6	18.61		
3	0.010	0.478	87.6	18.33		
Average				18.84		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.99	149.50%	134.83%	-12.61%	>14.10	> 14.03	-2.65%
2	2.39	119.50%				> 13.40	
3	1.69	84.50%				> 13.75	
Average		117.83%				>13.73	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.490	92.6	18.90	19.06	-3.24%
2	0.010	0.500	87.8	17.56		
3	0.010	0.512	96.6	18.87		
Average				18.44		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	3.14	157.00%	142.83%	2.45%	>14.60	> 14.00	-2.03%
2	2.78	139.00%				> 14.48	
3	2.86	143.00%				> 14.43	
Average		146.33%				>14.30	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.535	158.2	14.08	13.40	2.43%
2	0.021	0.497	143.5	13.75		
3	0.021	0.456	127.8	13.35		
Average				13.73		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.61	30.50%	29.33%	-7.38%	>18.56	>16.30	-8.75%
2	0.56	28.00%				>16.90	
3	0.46	23.00%				>17.61	
Average		27.17%				>16.94	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.478	92.8	19.41	18.09	1.05%
2	0.010	0.518	92.3	17.82		
3	0.010	0.497	87.5	17.61		
Average				18.28		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.35	8.75%	16.25%	-47.69%	10.24	11.57	10.87%
2	0.35	8.75%				11.09	
3	0.32	8.00%				11.40	
Average		8.50%				11.35	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.500	19.6	4.36	7.07	-23.30%
2	0.009	0.524	31.9	6.76		
3	0.009	0.490	22.7	5.15		
Average				5.42		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.05	1.25%	1.92%	-34.90%	11.39	11.12	-7.32%
2	0.04	1.00%				10.92	
3	0.06	1.50%				9.63	
Average		1.25%				10.56	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.500	188.5	17.95	17.05	2.91%
2	0.021	0.626	230.1	17.50		
3	0.021	0.508	183.3	17.18		
Average				17.55		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.60	15.00%	25.50%	-46.08%	>17.76	>18.76	2.93%
2	0.51	12.75%				>18.18	
3	0.54	13.50%				>17.90	
Average		13.75%				>18.28	

1000 HRS IN R-123/MINERAL OIL @ 212 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.525	100.6	19.16	22.48	-17.41%
2	0.010	0.521	98.0	18.81		
3	0.010	0.480	85.1	17.73		
Average				18.57		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.64	132.00%	134.83%	-4.82%	> 14.10	> 14.69	2.91%
2	2.89	144.50%				> 14.07	
3	2.17	108.50%				> 14.77	
Average		128.33%				> 14.51	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.500	93.3	18.66	19.06	-0.52%
2	0.010	0.510	95.0	18.63		
3	0.010	0.497	97.4	19.60		
Average				18.96		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	3.01	150.50%	142.83%	12.49%	> 14.60	> 14.99	2.74%
2	3.09	154.50%				> 15.22	
3	3.54	177.00%				> 14.79	
Average		160.67%				> 15.00	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.483	132.4	13.05	13.40	-2.10%
2	0.021	0.470	130.6	13.23		
3	0.021	0.490	134.5	13.07		
Average				13.12		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.56	28.00%	29.33%	-3.40%	> 18.56	> 18.27	-1.31%
2	0.57	28.50%				> 18.39	
3	0.57	28.50%				> 18.29	
Average		28.33%				> 18.32	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.505	88.5	17.52	18.09	-7.73%
2	0.010	0.473	75.8	16.03		
3	0.010	0.495	81.8	16.53		
Average				16.69		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.38	9.50%	16.25%	-47.18%	> 10.24	> 13.40	28.26%
2	0.33	8.25%				13.10	
3	0.32	8.00%				> 12.90	
Average		8.58%				> 13.13	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.464	20.0	4.79	7.07	-30.31%
2	0.009	0.503	22.4	4.95		
3	0.009	0.478	21.7	5.04		
Average				4.93		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.05	1.25%	1.92%	-34.90%	11.39	14.30	26.25%
2	0.05	1.25%				14.40	
3	0.05	1.25%				14.44	
Average		1.25%				14.38	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.501	168.0	15.97	17.05	-7.87%
2	0.021	0.521	162.4	14.84		
3	0.021	0.486	166.5	16.31		
Average				15.71		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.55	13.75%	25.50%	-53.27%	>17.76	> 17.60	-1.61%
2	0.36	9.00%				> 17.09	
3	0.52	13.00%				> 17.73	
Average		11.92%				>17.47	

1000 HRS IN R-123/MINERAL OIL @ 212 F
24 HR BAKE @ 302 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.472	83.9	17.78	22.48	-19.11%
2	0.010	0.500	92.1	18.41		
3	0.010	0.495	91.0	18.37		
Average				18.19		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.31	115.50%	134.83%	-12.36%	> 14.10	> 14.45	3.10%
2	2.54	127.00%				> 14.73	
3	2.24	112.00%				> 14.43	
Average		118.17%				> 14.54	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.512	95.4	18.63	19.06	-3.70%
2	0.010	0.521	90.8	17.43		
3	0.010	0.482	91.6	19.00		
Average				18.35		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.96	148.00%	142.83%	-4.90%	> 14.60	> 14.74	0.39%
2	2.35	117.50%				> 14.73	
3	2.84	142.00%				> 14.50	
Average		135.83%				> 14.66	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.509	145.6	13.62	13.40	3.43%
2	0.021	0.457	135.1	14.08		
3	0.021	0.491	143.1	13.88		
Average				13.86		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.54	27.00%	29.33%	-5.67%	> 18.56	> 16.70	-13.54%
2	0.56	28.00%				> 15.87	
3	0.56	28.00%				> 15.57	
Average		27.67%				> 16.05	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.496	89.8	18.10	18.09	-3.21%
2	0.010	0.494	82.4	16.68		
3	0.010	0.514	91.2	17.74		
Average				17.51		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.47	11.75%	16.25%	-33.33%	10.24	11.45	9.60%
2	0.41	10.25%				12.05	
3	0.42	10.50%				10.17	
Average		10.83%				11.22	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.502	22.3	4.94	7.07	-29.69%
2	0.009	0.498	18.1	4.04		
3	0.009	0.494	26.4	5.94		
Average				4.97		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.04	1.00%	1.92%	-39.24%	11.39	12.72	1.00%
2	0.05	1.25%				10.70	
3	0.05	1.25%				11.09	
Average		1.17%				11.50	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.520	179.6	16.45	17.05	-4.27%
2	0.021	0.499	167.4	15.97		
3	0.021	0.510	177.2	16.55		
Average				16.32		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.54	13.50%	25.50%	-52.94%	> 17.76	> 19.01	3.90%
2	0.50	12.50%				> 17.81	
3	0.40	10.00%				> 18.54	
Average		12.00%				> 18.45	

500 HRS IN R-123/MINERAL OIL @ 212 F
168 HRS IN R-245ca/POLYOLESTER @ 212 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.470	87.9	18.70	22.48	-13.33%
2	0.010	0.512	101.7	19.86		
3	0.010	0.516	102.6	19.88		
Average				19.48		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.55	127.50%	134.83%	2.97%	>14.10	> 14.03	1.49%
2	2.89	144.50%				> 14.43	
3	2.89	144.50%				> 14.47	
Average		138.83%				>14.31	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.479	77.0	16.06	19.06	-7.40%
2	0.010	0.505	93.4	18.49		
3	0.010	0.509	93.7	18.40		
Average				17.65		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	1.13	56.50%	142.83%	-17.03%	>14.60	>14.69	-0.34%
2	3.04	152.00%				>14.50	
3	2.94	147.00%				>14.46	
Average		118.50%				>14.55	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.435	121.6	13.31	13.40	-0.06%
2	0.021	0.490	136.6	13.28		
3	0.021	0.513	146.4	13.59		
Average				13.39		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.54	27.00%	29.33%	-1.69%	>18.56	> 19.37	-0.34%
2	0.61	30.50%				> 17.51	
3	0.58	29.00%				> 18.61	
Average		28.83%				>18.50	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.515	92.7	18.00	18.09	-0.56%
2	0.010	0.484	85.5	17.67		
3	0.010	0.495	90.6	18.30		
Average				17.99		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.31	7.75%	16.25%	-41.03%	10.24	> 13.51	29.75%
2	0.38	9.50%				> 13.36	
3	0.46	11.50%				> 12.99	
Average		9.58%				> 13.29	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.511	22.5	4.89	7.07	-23.33%
2	0.009	0.498	21.6	4.82		
3	0.009	0.492	29.0	6.55		
Average				5.42		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.06	1.50%	1.92%	-21.88%	11.39	> 13.24	24.11%
2	0.06	1.50%				14.48	
3	0.06	1.50%				14.69	
Average		1.50%				> 14.14	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.476	154.5	15.46	17.05	-5.90%
2	0.021	0.495	167.1	16.08		
3	0.021	0.492	171.5	16.60		
Average				16.04		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.58	14.50%	25.50%	-44.12%	>17.76	> 18.86	0.68%
2	0.59	14.75%				> 17.75	
3	0.54	13.50%				> 17.03	
Average		14.25%				>17.88	

500 HRS IN R-123/MINERAL OIL @ 212 F
168 HRS IN R-245ca/POLYOLESTER @ 212 F
24 HR BAKE @ 302 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.472	89.5	18.96	22.48	-14.64%
2	0.010	0.524	101.1	19.29		
3	0.010	0.520	100.4	19.31		
Average				19.19		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.55	63.75%	134.83%	-54.88%	> 14.10	> 13.99	-0.47%
2	2.36	59.00%				> 14.11	
3	2.39	59.75%				> 14.00	
Average		60.83%				> 14.03	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.507	90.9	17.93	19.06	-5.40%
2	0.010	0.492	93.0	18.90		
3	0.010	0.486	83.9	17.26		
Average				18.03		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.71	135.50%	142.83%	-7.70%	> 14.60	> 14.53	1.42%
2	3.09	154.50%				> 15.15	
3	2.11	105.50%				> 14.74	
Average		131.83%				> 14.81	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.500	144.9	13.80	13.40	4.51%
2	0.021	0.492	144.6	14.00		
3	0.021	0.498	148.7	14.22		
Average				14.00		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.54	27.00%	29.33%	-3.40%	> 18.56	> 17.81	-8.17%
2	0.59	29.50%				> 17.23	
3	0.57	28.50%				> 16.09	
Average		28.33%				> 17.04	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.500	86.8	17.36	18.09	-3.88%
2	0.010	0.490	88.9	18.14		
3	0.010	0.497	82.8	16.66		
Average				17.39		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.30	7.50%	16.25%	-56.92%	10.24	13.39	16.86%
2	0.29	7.25%				11.09	
3	0.25	6.25%				11.42	
Average		7.00%				11.97	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.502	24.3	5.38	7.07	-25.85%
2	0.009	0.521	24.2	5.16		
3	0.009	0.497	23.2	5.19		
Average				5.24		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.06	1.50%	1.92%	-17.53%	11.39	11.33	1.81%
2	0.07	1.75%				11.72	
3	0.06	1.50%				11.74	
Average		1.58%				11.60	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.494	185.7	17.90	17.05	3.67%
2	0.021	0.453	176.7	18.57		
3	0.021	0.500	173.8	16.55		
Average				17.68		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.61	15.25%	25.50%	-47.06%	>17.76	>19.56	9.27%
2	0.42	10.50%				>19.00	
3	0.59	14.75%				>19.66	
Average		13.50%				>19.41	

500 HRS IN R-123/MINERAL OIL @ 212 F
336 HRS IN R-245ca/POLYOLESTER @212 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.498	89.8	18.03	22.48	-18.32%
2	0.010	0.495	92.2	18.63		
3	0.010	0.451	83.1	18.43		
Average				18.36		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.56	128.00%	134.83%	-5.44%	>14.10	>13.96	1.37%
2	2.79	139.50%				>14.92	
3	2.30	115.00%				>14.00	
Average		127.50%				>14.29	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.502	96.8	19.28	19.06	0.22%
2	0.010	0.528	101.5	19.22		
3	0.010	0.475	89.3	18.80		
Average				19.10		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.36	118.00%	142.83%	-19.13%	>14.60	>14.21	-1.28%
2	2.28	114.00%				>14.01	
3	2.29	114.50%				>15.02	
Average		115.50%				>14.41	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.500	142.8	13.60	13.40	1.12%
2	0.021	0.450	127.8	13.52		
3	0.021	0.508	144.3	13.53		
Average				13.55		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.56	28.00%	29.33%	-3.40%	>18.56	> 18.37	1.04%
2	0.57	28.50%				> 18.86	
3	0.57	28.50%				> 19.03	
Average		28.33%				>18.75	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.515	86.8	16.85	18.09	-3.64%
2	0.010	0.501	89.1	17.78		
3	0.010	0.512	90.4	17.66		
Average				17.43		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.41	10.25%	16.25%	-32.82%	10.24	12.21	17.87%
2	0.45	11.25%				12.02	
3	0.45	11.25%				11.98	
Average		10.92%				12.07	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.496	25.8	5.78	7.07	-14.74%
2	0.009	0.489	26.7	6.07		
3	0.009	0.497	27.9	6.24		
Average				6.03		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.05	1.25%	1.92%	-30.56%	11.39	10.89	-7.02%
2	0.06	1.50%				9.87	
3	0.05	1.25%				11.01	
Average		1.33%				10.59	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.505	175.6	16.56	17.05	-1.88%
2	0.021	0.515	180.0	16.64		
3	0.021	0.508	181.2	16.99		
Average				16.73		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.64	16.00%	25.50%	-29.74%	>17.76	>17.02	2.55%
2	0.73	18.25%				>18.99	
3	0.78	19.50%				>18.63	
Average		17.92%				>18.21	

500 HRS IN R-123/MINERAL OIL @ 212 F
336 HRS IN R-245ca/POLYOLESTER @212 F
24 HR BAKE @ 302 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.452	83.4	18.45	22.48	-17.31%
2	0.010	0.444	84.3	18.99		
3	0.010	0.490	89.8	18.33		
Average				18.59		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.43	121.50%	134.83%	-0.49%	> 14.10	> 14.04	-0.83%
2	2.89	144.50%				> 13.93	
3	2.73	136.50%				> 13.98	
Average		134.17%				> 13.98	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.490	84.4	17.22	19.06	-8.11%
2	0.010	0.505	89.4	17.70		
3	0.010	0.470	82.8	17.62		
Average				17.51		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.28	114.00%	142.83%	-2.68%	> 14.60	> 14.38	0.18%
2	2.88	144.00%				> 14.90	
3	3.18	159.00%				> 14.60	
Average		139.00%				> 14.63	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.486	140.3	13.75	13.40	2.16%
2	0.021	0.488	138.2	13.49		
3	0.021	0.487	141.5	13.84		
Average				13.69		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.54	13.50%	29.33%	-52.55%	> 18.56	> 16.89	-8.44%
2	0.59	14.75%				> 16.07	
3	0.54	13.50%				> 18.02	
Average		13.92%				> 16.99	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.532	90.8	17.07	18.09	-2.93%
2	0.010	0.515	91.8	17.83		
3	0.010	0.510	90.7	17.78		
Average				17.56		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.36	9.00%	16.25%	-49.23%	10.24	11.27	8.40%
2	0.30	7.50%				10.56	
3	0.33	8.25%				11.47	
Average		8.25%				11.10	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.493	22.9	5.16	7.07	-29.10%
2	0.009	0.509	21.7	4.74		
3	0.009	0.482	22.3	5.14		
Average				5.01		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.06	1.50%	1.92%	-21.88%	11.39	11.20	3.60%
2	0.06	1.50%				12.20	
3	0.06	1.50%				12.00	
Average		1.50%				11.80	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.520	194.9	17.85	17.05	2.22%
2	0.021	0.478	172.4	17.17		
3	0.021	0.488	176.9	17.26		
Average				17.43		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.62	15.50%	25.50%	-41.18%	> 17.76	> 17.72	3.72%
2	0.60	15.00%				> 18.82	
3	0.58	14.50%				> 18.72	
Average		15.00%				> 18.42	

500 HRS IN R-123/MINERAL OIL @ 212 F
500 HRS IN R-245ca/POLYOLESTER @212 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.510	95.4	18.71	22.48	-21.33%
2	0.010	0.485	79.4	16.37		
3	0.010	0.505	90.8	17.98		
Average				17.69		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.64	132.00%	134.83%	-33.99%	>14.10	>14.25	0.61%
2	0.86	43.00%				>14.09	
3	1.84	92.00%				>14.22	
Average		89.00%				>14.19	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.475	80.8	17.01	19.06	-8.74%
2	0.010	0.498	91.0	18.27		
3	0.010	0.474	80.1	16.90		
Average				17.39		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.13	106.50%	142.83%	-17.15%	>14.60	>14.57	1.05%
2	2.88	144.00%				>14.65	
3	2.09	104.50%				>15.04	
Average		118.33%				>14.75	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.505	141.1	13.31	13.40	-0.31%
2	0.021	0.512	147.0	13.67		
3	0.021	0.521	143.3	13.10		
Average				13.36		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.54	27.00%	29.33%	-7.94%	>18.56	>17.75	-0.52%
2	0.57	28.50%				>19.07	
3	0.51	25.50%				>18.57	
Average		27.00%				>18.46	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.480	84.5	17.60	18.09	-5.98%
2	0.010	0.510	85.5	16.76		
3	0.010	0.505	84.1	16.65		
Average				17.01		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.50	12.50%	16.25%	-36.41%	10.24	> 12.90	23.54%
2	0.34	8.50%				12.42	
3	0.40	10.00%				12.63	
Average		10.33%				> 12.65	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.497	27.6	6.17	7.07	-15.03%
2	0.009	0.510	27.2	5.93		
3	0.009	0.510	27.2	5.93		
Average				6.01		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.06	1.50%	1.92%	-21.88%	11.39	10.59	-7.58%
2	0.06	1.50%				9.66	
3	0.06	1.50%				11.33	
Average		1.50%				> 10.53	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.469	163.9	16.64	17.05	-3.93%
2	0.021	0.461	163.6	16.90		
3	0.021	0.500	163.8	15.60		
Average				16.38		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.82	20.50%	25.50%	-24.84%	>17.76	>18.40	5.84%
2	0.88	22.00%				>19.12	
3	0.60	15.00%				>18.87	
Average		19.17%				>18.80	

500 HRS IN R-123/MINERAL OIL @ 212 F
500 HRS IN R-245ca/POLYOLESTER @212 F
24 HR BAKE @ 302 F

Insulation Type: Polyester Film

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.517	98.8	19.11	22.48	-16.33%
2	0.010	0.476	88.7	18.63		
3	0.010	0.500	93.4	18.68		
Average				18.81		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.74	137.00%	134.83%	-0.62%	> 14.10	> 14.86	2.48%
2	2.54	127.00%				> 14.63	
3	2.76	138.00%				> 13.86	
Average		134.00%				> 14.45	

Insulation Type: Polyester Film,Low Oligomer

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.502	89.9	17.36	19.06	-6.18%
2	0.010	0.498	88.0	17.67		
3	0.010	0.535	99.6	18.62		
Average				17.88		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	2.99	149.50%	142.83%	2.57%	> 14.60	> 14.35	0.05%
2	2.64	132.00%				> 14.76	
3	3.16	158.00%				> 14.71	
Average		146.50%				> 14.61	

Insulation Type: Polyester Composite- Dacron-Mylar-Dacron

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.469	136.6	13.87	13.40	1.70%
2	0.021	0.426	117.1	13.09		
3	0.021	0.527	154.1	13.92		
Average				13.63		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.57	28.50%	29.33%	-10.22%	> 18.56	> 17.60	-9.25%
2	0.47	23.50%				> 15.73	
3	0.54	27.00%				> 17.20	
Average		26.33%				> 16.84	

Insulation Type: Aramid Fiber Mat- Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.010	0.531	98.0	18.46	18.09	-2.09%
2	0.010	0.508	89.2	17.56		
3	0.010	0.500	85.6	17.12		
Average				17.71		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.59	14.75%	16.25%	-16.92%	10.24	11.60	17.38%
2	0.54	13.50%				12.24	
3	0.49	12.25%				12.22	
Average		13.50%				12.02	

Insulation Type: Aramid Fiber, Mica Mat- Nomex Mica

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.009	0.495	20.1	4.51	7.07	-31.50%
2	0.009	0.512	25.7	5.58		
3	0.009	0.528	21.1	4.44		
Average				4.84		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.07	1.75%	1.92%	-17.53%	11.39	12.90	7.11%
2	0.05	1.25%				11.60	
3	0.07	1.75%				12.10	
Average		1.58%				12.20	

Insulation Type: Aramid Mat, Polyester Film Composite- Nomex-Mylar-Nomex

Sample #	Sample Width (Inches)	Sample Thickness (Inches)	Break Load (Pounds)	Tensile Strength (ksi)	Average Tensile Strength (Unexposed)	Change in Tensile Strenth From Unexposed
1	0.021	0.488	174.5	17.03	17.05	0.68%
2	0.021	0.490	178.6	17.36		
3	0.021	0.490	176.1	17.11		
Average				17.17		

	Stretch (Inches)	Experimenta Elongation	Average Elongations (unexposed)	Change in Elongation from Unexposed	Average Dielectric Strengths (unexposed)	Experimental Dielectric Strengths (Kilovolts)	Dielectric Change
1	0.77	19.25%	25.50%	-21.90%	> 17.76	> 18.70	4.30%
2	0.87	21.75%				> 18.30	
3	0.75	18.75%				> 18.57	
Average		19.92%				> 18.52	

500 HRS IN R-123/MINERAL OIL @ 212 F

Tape Tie Cords	Sample #	Unexposed Break Load (lbs.)	Experimental Breakload (lbs.)	Change in Breakload Strength
Tape	1	441.60	433.20	
B	2	424.20	472.20	-20.89%
	3	490.70	167.70	
	Average	452.17	357.70	
Cord	1	28.05	36.80	
C	2	34.85	19.45	-17.36%
	3	40.50	29.20	
	Average	34.47	28.48	

		Unexposed Stretch (Inches)	Unexposed Elongation	Experimental Stretch (Inches)	Experimental Elongation	Change from Unexposed Elongation
Tape	1	0.12	6.00%	0.10	5.00%	
B	2	0.13	6.50%	0.07	3.50%	-22.86%
	3	0.10	5.00%	0.10	5.00%	
	Average	0.12	5.83%	0.09	4.50%	
Cord	1	0.54	27.00%	0.35	17.50%	
C	2	0.37	18.50%	0.35	17.50%	-13.93%
	3	0.31	15.50%	0.35	17.50%	
	Average	0.41	20.33%	0.35	17.50%	

Tape B is braided polyester, acryl
Cord C is polyester tie cord

1000 HRS IN R-123 / MINERAL OIL @ 212 F

Tape Tie Cords	Sample #	Unexposed Break Load (lbs.)	Experimental Breakload (lbs.)	Change in Breakload Strength
Tape	1	441.60	466.50	
B	2	424.20	423.50	-2.23%
	3	490.70	436.20	
	Average	452.17	442.07	
Cord	1	28.05	32.87	
C	2	34.85	29.37	-11.42%
	3	40.50	29.35	
	Average	34.47	30.53	

		Unexposed Stretch (Inches)	Unexposed Elongation	Experimental Stretch (Inches)	Experimental Elongation	Change from Unexposed Elongation
Tape	1	0.11	5.50%	0.11	5.50%	
B	2	0.10	5.00%	0.11	5.50%	0.00%
	3	0.12	6.00%	0.11	5.50%	
	Average	0.11	5.50%	0.11	5.50%	
Cord	1	0.41	20.50%	0.45	22.50%	
C	2	0.38	19.00%	0.43	21.50%	10.83%
	3	0.41	20.50%	0.45	22.50%	
	Average	0.40	20.00%	0.44	22.17%	

Tape B is braided polyester, acryl
Cord C is polyester tie cord

500 HRS IN R-123/MINERAL OIL @ 212 F
168 HRS IN R-245ca/POLYOLESTER @ 212 F

Tape Tie Cords	Sample #	Unexposed Break Load (lbs.)	Experimental Breakload (lbs.)	Change in Breakload Strength
Tape	1	441.60	477.60	
B	2	424.20	498.00	6.99%
	3	490.70	475.70	
	Average	452.17	483.77	
Cord	1	28.05	32.15	
C	2	34.85	20.15	-22.63%
	3	40.50	27.70	
	Average	34.47	26.67	

		Unexposed Stretch (Inches)	Unexposed Elongation	Experimental Stretch (Inches)	Experimental Elongation	Change from Unexposed Elongation
Tape	1	0.11	5.50%	0.07	3.50%	
B	2	0.12	6.00%	0.11	5.50%	-17.14%
	3	0.12	6.00%	0.11	5.50%	
	Average	0.12	5.83%	0.10	4.83%	
Cord	1	0.43	21.50%	0.39	19.50%	
C	2	0.34	17.00%	0.38	19.00%	-2.56%
	3	0.40	20.00%	0.37	18.50%	
	Average	0.39	19.50%	0.38	19.00%	

Tape B is braided polyester, acryl
Cord C is polyester tie cord

500 HRS IN R-123/MINERAL OIL @ 212 F
336 HRS IN R-245ca/POLYOLESTER @212 F

Tape Tie Cords	Sample #	Unexposed Break Load (lbs.)	Experimental Breakload (lbs.)	Change in Breakload Strength
Tape	1	441.60	448.00	
B	2	424.20	393.00	-7.11%
	3	490.70	419.00	
	Average	452.17	420.00	
Cord	1	28.05	32.17	
C	2	34.85	29.55	-13.84%
	3	40.50	27.37	
	Average	34.47	29.70	

		Unexposed Stretch (Inches)	Unexposed Elongation	Experimental Stretch (Inches)	Experimental Elongation	Change from Unexposed Elongation
Tape	1	0.10	5.00%	0.08	4.00%	
B	2	0.09	4.50%	0.11	5.50%	7.14%
	3	0.09	4.50%	0.11	5.50%	
	Average	0.09	4.67%	0.10	5.00%	
Cord	1	0.36	18.00%	0.40	20.00%	
C	2	0.30	15.00%	0.38	19.00%	1.80%
	3	0.45	22.50%	0.35	17.50%	
	Average	0.37	18.50%	0.38	18.83%	

Tape B is braided polyester, acryl
Cord C is polyester tie cord

500 HRS IN R-123/MINERAL OIL @ 212 F
500 HRS IN R-245ca/POLYOLESTER @212 F

Tape Tie Cords	Sample #	Unexposed Break Load (lbs.)	Experimental Breakload (lbs.)	Change in Breakload Strength
Tape	1	441.60	426.10	
B	2	424.20	454.30	-3.77%
	3	490.70	425.00	
	Average	452.17	435.13	
Cord	1	28.05	35.25	
C	2	34.85	24.00	-11.51%
	3	40.50	32.25	
	Average	34.47	30.50	

		Unexposed Stretch (Inches)	Unexposed Elongation	Experimental Stretch (Inches)	Experimental Elongation	Change from Unexposed Elongation
Tape	1	0.11	5.50%	0.10	5.00%	
B	2	0.11	5.50%	0.10	5.00%	-9.09%
	3	0.11	5.50%	0.10	5.00%	
	Average	0.11	5.50%	0.10	5.00%	
Cord	1	0.54	27.00%	0.47	23.50%	
C	2	0.64	32.00%	0.38	19.00%	-26.54%
	3	0.44	22.00%	0.34	17.00%	
	Average	0.54	27.00%	0.36	19.83%	

Tape B is braided polyester, acryl
Cord C is polyester tie cord

O-Rings

Exposure to R-123 followed by 168, 336, and 500 hour exposures in R-245ca and 500 additional hours in R-123

Weight Volume Change For Nitrile

	Air Before (gms.)	Methanol Before (gms.)	Air After (gms.)	Methanol After (gms.)	Chg Weight (%)	Chg Volume (%)
R-123	1.0578	0.3618	1.9766	0.7522	86.86%	75.92%
500 hrs	1.0608	0.3626	1.9927	0.7564	87.85%	77.07%
	1.0565	0.3613	1.9860	0.7538	87.98%	77.24%
			Average		87.56%	76.74%
R-245ca	1.0471	0.3577	1.3187	0.4710	25.94%	22.96%
168 hrs	1.0607	0.3628	1.3264	0.4740	25.05%	22.14%
	1.0554	0.3609	1.3194	0.4713	25.01%	22.12%
			Average		25.33%	22.41%
R-245ca	1.0548	0.3601	1.3044	0.4671	23.66%	20.53%
336 hrs	1.0558	0.3605	1.3074	0.4693	23.83%	20.54%
	1.0738	0.3668	1.3237	0.4738	23.27%	20.21%
			Average		23.59%	20.43%
R-245ca	1.0382	0.3543	1.2851	0.4579	23.78%	20.95%
500 hrs	1.0597	0.3616	1.3107	0.4668	23.69%	20.89%
	1.0473	0.3582	1.2913	0.4596	23.30%	20.69%
			Average		23.59%	20.84%
R-123	1.0654	0.3642	2.0383	0.7777	91.32%	79.78%
1000 hrs	1.0525	0.3596	1.9929	0.7611	89.35%	77.77%
	1.0626	0.3631	2.0161	0.7689	89.73%	78.30%
			Average		90.13%	78.62%

O-Rings

Exposure to R-123 followed by 168, 336, and 500 hour interval in R-245ca and 500 additional hours in R-123

Tensile and Elongation for Nitrile

	Break Force (lbs.)	Stretch (in.)	Tensile (lbs./sq. in.)	Elongation (%)	Chg. Tensile (%)	Chg. Elongation (%)
R-123	50.40	3.93	166.34	167%	-33.34%	-47.06%
500 hrs	36.25	3.26	119.64	138%	-52.06%	-56.19%
	31.80	4.06	104.95	172%	-57.94%	-45.29%
	59.55	3.91	196.53	166%	-21.24%	-47.34%
			Average		-41.15%	-48.97%
R-245ca	43.72	3.71	144.29	157%	-42.18%	-50.06%
168 hrs	43.72	3.84	144.29	163%	-42.18%	-48.29%
	46.25	3.88	152.64	165%	-38.83%	-47.74%
	42.20	3.86	139.27	164%	-44.19%	-48.02%
			Average		-41.84%	-48.53%
R-245ca	45.92	4.80	151.55	204%	-39.27%	-35.21%
336 hrs	49.92	5.00	164.75	213%	-33.98%	-32.48%
	45.67	4.93	150.73	210%	-39.60%	-33.44%
	46.75	4.96	154.29	211%	-38.17%	-33.03%
			Average		-37.75%	-33.54%
R-245ca	48.12	4.91	158.81	209%	-36.36%	-33.71%
500 hrs	45.47	4.69	150.07	199%	-39.86%	-36.71%
	48.77	4.95	160.96	211%	-35.50%	-33.17%
	46.05	4.88	151.98	208%	-39.10%	-34.12%
			Average		-37.70%	-34.43%
R-123	52.92	3.11	174.65	132%	-30.01%	-58.24%
1000 hrs	52.67	3.16	173.83	134%	-30.34%	-57.56%
	48.55	2.98	160.23	126%	-35.79%	-60.01%
	43.55	2.75	143.73	116%	-42.40%	-63.14%
			Average		-34.64%	-59.74%

Exposure to R-123 followed by 168, 336, and 500 hour interval in R-245ca and 500 additional hours in R-123

Durometer For Nitrile

	Durometer After	% Chg. Durometer
R-123 500 hrs	59	-14.49%
	60	-13.04%
	60	-13.04%
	Average	-13.53%
R-245ca 168 hrs	58	-15.94%
	59	-14.49%
	59	-14.49%
	Average	-14.98%
R-245ca 336 hrs	63	-8.70%
	63	-8.70%
	63	-8.70%
	Average	-8.70%
R-245ca 500 hrs	60	-13.04%
	60	-13.04%
	62	-10.14%
	Average	-12.08%
R-123 1000 hrs	58	-15.94%
	60	-13.04%
	62	-10.14%
	Average	-13.04%

Exposure to R-123 followed by 168, 336, and 500 hour exposures in R-245ca and 500 additional hours in R-123

Weight Volume Change For Neoprene

	Air Before (gms.)	Methanol Before (gms.)	Air After (gms.)	Methanol After (gms.)	Chg Weight (%)	Chg Volume (%)
R-123	1.2610	0.5544	1.6290	0.6813	29.18%	34.12%
500 hrs	1.2608	0.5549	1.6251	0.6802	28.89%	33.86%
	1.2550	0.5516	1.6225	0.6780	29.28%	34.28%
			Average		29.12%	34.09%
R-245ca	1.2571	0.5548	1.2207	0.5554	-2.90%	-5.27%
168 hrs	1.2571	0.5555	1.2235	0.5573	-2.67%	-5.05%
	1.2719	0.5612	1.2343	0.5620	-2.96%	-5.40%
			Average		-2.84%	-5.24%
R-245ca	1.2548	0.5511	1.2258	0.5586	-2.31%	-5.19%
336 hrs	1.2580	0.5528	1.2279	0.5601	-2.39%	-5.30%
	1.2549	0.5517	1.2242	0.5585	-2.45%	-5.33%
			Average		-2.38%	-5.27%
R-245ca	1.2561	0.5529	1.2304	0.5514	-2.05%	-3.44%
500 hrs	1.2542	0.5515	1.2285	0.5610	-2.05%	-5.01%
	1.2503	0.5503	1.2248	0.5595	-2.04%	-4.96%
			Average		-2.04%	-4.47%
R-123	1.2621	0.5552	1.6263	0.6780	28.86%	34.15%
1000 hrs	1.2536	0.5513	1.6166	0.6840	28.96%	32.79%
	1.2583	0.5536	1.6169	0.6885	28.50%	31.74%
			Average		28.77%	32.90%

O-Rings

Exposure to R-123 followed by 168, 336, and 500 hour interval in R-245ca and 500 additional hours in R-123

Tensile and Elongation for Neoprene

	Break Force (lbs.)	Stretch (in.)	Tensile (lbs./sq. in.)	Elongation (%)	Chg. Tensile (%)	Chg. Elongation (%)
R-123	28.67	4.78	94.62	203%	-56.29%	-34.65%
500 hrs	36.48	5.43	120.40	231%	6.98%	-25.68%
	41.15	5.78	135.81	246%	20.68%	-20.85%
	39.07	5.66	128.94	241%	14.58%	-22.51%
			Average		-3.51%	-25.92%
R-245ca	39.35	4.16	129.87	177%	15.40%	-43.21%
168 hrs	33.77	3.81	111.45	162%	-0.97%	-48.04%
	43.02	4.43	141.98	188%	26.16%	-39.48%
	44.95	4.61	148.35	196%	31.82%	-37.00%
			Average		18.10%	-41.93%
R-245ca	54.60	5.46	180.20	232%	60.12%	-25.27%
336 hrs	47.05	4.98	155.28	212%	37.98%	-31.89%
	58.45	5.81	192.90	247%	71.41%	-20.44%
	52.30	5.34	172.61	227%	53.37%	-26.92%
			Average		55.72%	-26.13%
R-245ca	48.12	4.40	158.81	187%	41.12%	-39.90%
500 hrs	45.47	3.97	150.07	168%	33.34%	-45.83%
	48.72	4.60	160.79	196%	42.88%	-37.14%
	46.05	4.50	151.98	191%	35.05%	-38.52%
			Average		38.10%	-40.34%
R-123	28.95	4.36	95.54	185%	-15.10%	-40.45%
1000 hrs	27.27	4.24	90.00	180%	-20.03%	-42.10%
	27.45	4.38	90.59	186%	-19.50%	-40.17%
	29.02	4.43	95.78	188%	-14.90%	-39.48%
			Average		-17.38%	-40.55%

O-Rings

Exposure to R-123 followed by 168, 336, and 500 hour interval in R-245ca and 500 additional hours in R-123

Durometer For Neoprene

	Durometer After	% Chg. Durometer
R-123 500 hrs	54	-14.29%
	57	-9.52%
	57	-9.52%
	Average	-11.11%
R-245ca 168 hrs	68	7.94%
	67	6.35%
	62	-1.59%
	Average	4.23%
R-245ca 336 hrs	68	7.94%
	69	9.52%
	70	11.11%
	Average	9.52%
R-245ca 500 hrs	69	9.52%
	69	9.52%
	69	9.52%
	Average	9.52%
R-123 1000 hrs	58	-7.94%
	58	-7.94%
	58	-7.94%
	Average	-7.94%