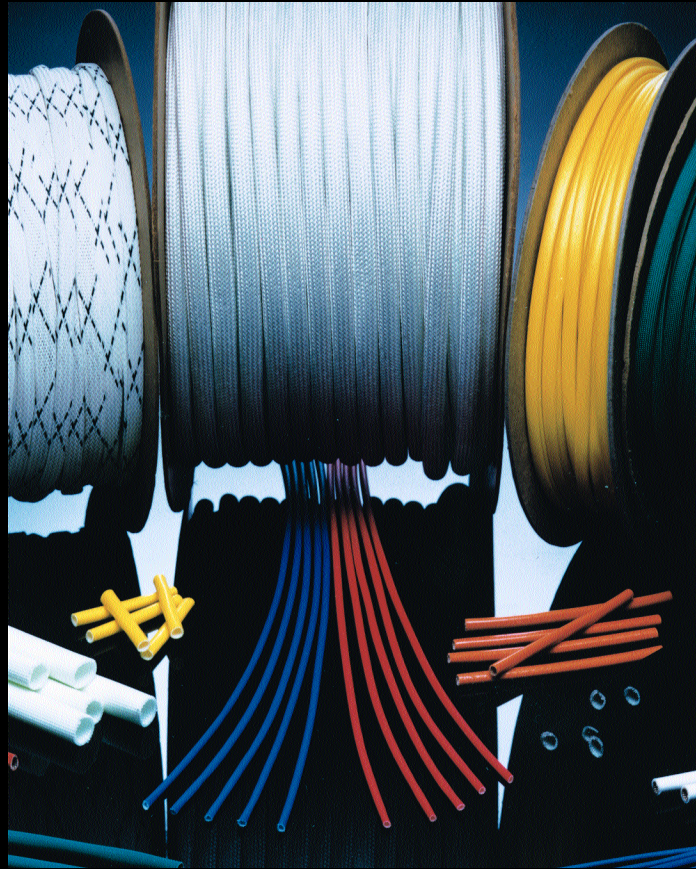




Sleeving Products



INSULATION SOLUTIONS



SLEEVING PRODUCTS

SUFLEX

## TABLE OF CONTENTS

	Page
SUFLEX Capabilities .....	1
VINYLGlas® Sleaving .....	2
ACRYFLEX-F® Sleaving.....	3
ACRYFLEX-F® .....	4
ACRYFLEX-155® .....	5
ACRYFLEX-MR® Motor Shop Repair .....	6
ACRYFLEX® VPI-NF Sleaving .....	7
Silicone Rubber-HD Fiberglass Sleaving .....	8
Silicone Resin-HD Fiberglass Sleaving .....	9
FLEXICONE® 200 Sleaving .....	10
FLEXICONE® 200 VPI Sleaving .....	11
SILVERFLEX® Treated Fiberglass Sleaving .....	12
Flat-Braided Fiberglass Sleaving .....	13
EXTENDO™ Monofilament Expandable Sleavings .....	14
UL/CSA Recognition .....	15
Specification Index .....	16
Sleaving Packaging Weight .....	17
Product Warranty .....	17



Quality System Registered  
 ISO 9002, QS-9000  
 Certificate QSR-516, QSR-QS-030

# SUFLEX CAPABILITIES AND CUSTOMER SERVICES

Suflex Incorporated manufactures flexible sleeving and tubing products for electrical insulation applications. Suflex products meet a variety of UL, CSA, MIL, NEMA and ASTM specifications.

Suflex produces three main products:

**Coated fiberglass sleeving**

**PVC tubing**

**Heat shrink tubing**

## Coated fiberglass sleeving

There are ten coated fiberglass sleeveings manufactured by Suflex. These materials range in size from AWG size #24 to 1" and are available in a variety of colors.

## PVC tubing

Suflex manufactures four PVC products:

703/105, 701, 601, 077

Each product has a different temperature rating for specific applications. These products are available in sizes #24 to 2 1/2" in twelve different colors.

## Heat Shrink Tubing

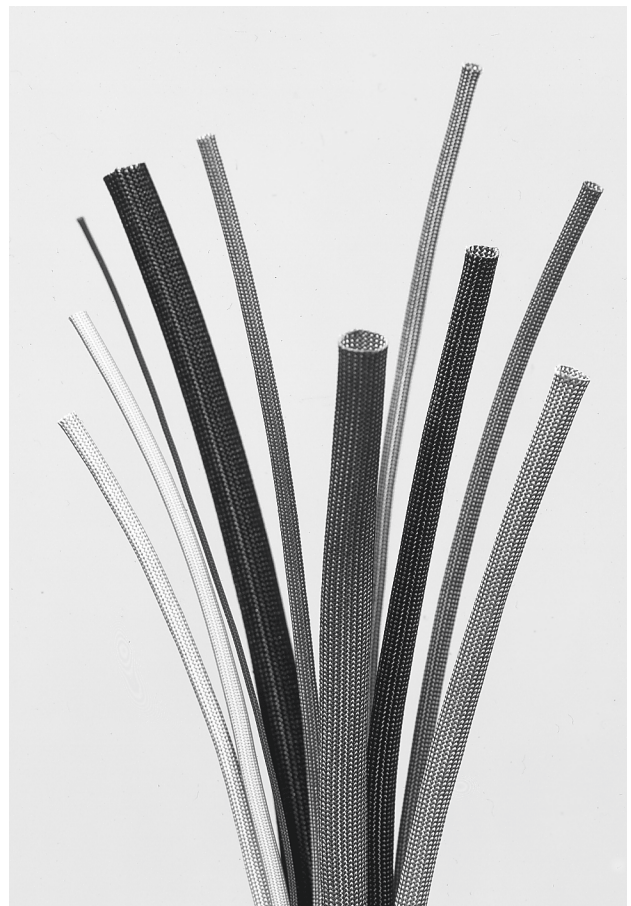
The Heat Shrink product line consists of AF, AVF, ASR, ASR-C, VC, VC-TW, ACP and ADM. The standard sizes range from 3/64" to 2" primarily in the Black and Clear colors. Other colors are available upon request.

## Custom Services

Suflex has the capability to package these materials on spools, 36" lengths (48" lengths for Heat Shrink Tubing) and cut pieces. With many cutting machines, Suflex is capable of cutting any of the above products to a specific length with a minimum of a one-half (1/2") cut piece length. Custom packaging is also available on request.



*The Suflex manufacturing facility on the waterfront in historic Newmarket, NH.*



*SILVERFLEX sleeving is a braided fiberglass sleeving which has been heat treated (natural) or heat treated and impregnated with an acrylic binder. SILVERFLEX sleeving is rated VW-1 by the Underwriters Laboratories, Inc. (File No. E51556).*

## VINYLGAS® SLEEVING

Class 130°C • Vinyl-Coated Fiberglass Sleevings

UL Recognized Component: VW-1 (FR-1), File No. E51556

600 Volt, 105°C, File No. E66526 (Grade A only).

Canadian Standards Association: File No. 37065



### DESCRIPTION

VINYLGAS sleeving consists of a heat-treated fiberglass braid, coated with a firmly bonded plasticized polyvinylchloride film. The vinyl compound is formulated for continuous operation at Class 130°C temperatures.

VINYLGAS sleeving is rated VW-1 by Underwriters Laboratories, Inc. (File No. E51556) and can be furnished with printed legend on the spool head to identify this rating on request. Grade A is UL rated for 600V, 105°C.

### FEATURES

VINYLGAS sleeving is extremely flexible and has excellent abrasion and cut-through resistance. It readily withstands normal varnish baking cycles. Its bright NEMA standard colors provide easy color coding.

### APPLICATIONS

VINYLGAS sleeving is used for supplementary insulation on transformer, motor, generator and resistor leads. Other applications include radio, television and other electronic circuits where it can be pushed back to permit soldering.

### APPLICABLE SPECIFICATIONS

ASTM D372, NEMA TF-1, MIL-I-003190/2, MIL-I-21557

### DIMENSIONS

Size	Inside Diameter				Standard Package Feet
	Maximum		Minimum		
	Inch	(mm)	Inch	(mm)	
24	.027	(.66)	.020	(.51)	500
22	.032	(.81)	.025	(.64)	500
20	.039	(.99)	.032	(.81)	500
18	.049	(1.24)	.040	(1.02)	500
17	.054	(1.37)	.045	(1.19)	500
16	.061	(1.55)	.051	(1.30)	500
15	.067	(1.70)	.057	(1.45)	500
14	.074	(1.88)	.064	(1.63)	500
13	.082	(2.08)	.072	(1.83)	250
12	.091	(2.31)	.081	(2.06)	250
11	.101	(2.57)	.091	(2.31)	250
10	.112	(2.84)	.102	(2.59)	250
9	.124	(3.15)	.114	(2.90)	250
8	.141	(3.58)	.129	(3.28)	250
7	.158	(4.01)	.144	(3.66)	250
6	.178	(4.52)	.162	(4.11)	250
5	.198	(5.03)	.182	(4.62)	250
4	.224	(5.69)	.204	(5.18)	250
3	.249	(6.32)	.229	(5.83)	250
2	.278	(7.06)	.258	(6.55)	250
1	.311	(7.90)	.289	(7.34)	100
0	.347	(8.81)	.325	(8.26)	100
3/8"	.399	(10.13)	.375	(9.53)	100
7/16"	.462	(11.73)	.438	(11.13)	100
1/2"	.524	(13.31)	.500	(12.70)	100
5/8"	.655	(16.64)	.625	(15.88)	100
3/4"	.786	(19.96)	.750	(19.05)	100
7/8"	.911	(23.14)	.875	(22.23)	100
1"	1.036	(26.31)	1.000	(25.40)	100

### PERFORMANCE CHARACTERISTICS

Dielectric Breakdown (ASTM D372) Grade	Typical Test Results — ASTM D372			
	Requirements		Test Results	
	Min. Avg. Volts	Min. Indiv. Volts	Min. Avg. Volts	Min. Indiv. Volts
A – C-48/23/50 C-96/23/96	8,000	6,000	9,500	8,600
	50% of above		5,750	5,100
B – C-48/23/50 C-96/23/96	4,000	2,500	4,800	4,400
	1,200	750	2,900	2,500
C-1 – C-48/23/50 C-96/23/96	2,500	1,500	3,000	2,600
	Not Applicable		Not Applicable	

Property	Requirements	Results
Aging	No cracking after 96 hrs. exposure at 150°C	No cracking
Oil Immersion	No disintegration or swelling after 24 hrs. in ASTM oil #2 @ 105°C	No disintegration or swelling
Flammability (Method B)	Shall require at least 45 seconds to burn 1 inch	Self-extinguishing
Thermal Endurance	Extrapolated temperature 130°C for 15,000 hrs.	130°C

### STANDARD COLORS

Sizes #24-2: Black, yellow and red.

Sizes #1 - 7/16": Black and yellow.

Sizes 1/2" - 1 1/2": Black.

### OTHER COLORS

Available on special order subject to factory quotation and acceptance.

### PACKAGING

Spools of continuous lengths.

Cut to customer specifications.

# ACRYFLEX-F® SLEEVING

Class 155°C • Acrylic-Coated Fiberglass Sleeving (Grades A-B-C and C2)

Class 240°C • Acrylic-Coated Fiberglass Sleeving (Grade C3)

UL Recognized Component: 600 Volt, 155°C (Grade A) File No. E66526

VW-1 (Grade C3 only) File No. E51556

Canadian Standards Association: 600 Volt 155°C (Grade A) File No. 37065

MIL-I-003190/3, ASTM D372, NEMA TF-1



## DESCRIPTION

ACRYFLEX-F fiberglass sleeving is a Class 155°C electrical insulation, manufactured by impregnating and coating a finely braided fiberglass sleeving with a dielectric film of acrylic resin. ACRYFLEX-F sleeving is recommended as a universal coated sleeving for all thermal requirements from Class 105°C through Class 155°C.

## AVAILABLE GRADES

ACRYFLEX-F sleeving is available in the following grades. The dielectric breakdown voltages given are measured according to ASTM D149, using a rate of voltage increase of 500 volts/second.

Grade A	7,000 Volts Min. Avg.	5,000 Volts Min. Indiv.
Grade B	4,000 Volts Min. Avg.	2,500 Volts Min. Indiv.
Grade C-1	2,500 volts Min. Avg.	1,500 Volts Min. Indiv.
Grade C-2	1,500 Volts Min. Avg.	800 Volts Min. Indiv.
Grade C-3	Space factor insulation only approx. 30 VPM.	

1/32" wall constructions available on special order.

## STANDARD COLOR

#24 to 1/2" – Natural (varies from white to tan), black, red and yellow.

5/8" and Larger – Natural.

## APPLICATIONS

ACRYFLEX-F sleeving is widely used in fractional and integral horsepower motors on leads and crossovers. Other uses exist in dry and oil-filled transformers, relays of many types, radio and television circuits, welding apparatus and many others.

## ADVANTAGES

ACRYFLEX-F sleeving is an overall superior sleeving in the 105°C to 155°C thermal rating range. Its compatibility with other components of insulation systems is equal or superior to any other type of sleeving in this temperature range. Use of this one sleeving for Class 105°C, Class 130°C and Class 155°C applications can permit reduction of sleeving inventory with attendant savings.

## FEATURES

ACRYFLEX-F sleeving has superior mechanical and electrical properties, providing its rated dielectric strength during and after the most severe handling in your application. It is fully compatible with most magnet wire coatings such as polyester, acrylic, polyamide, polyimide, epoxy and phenolic, and is proven in applications and laboratory tests in both sealed and unsealed systems.

**DIMENSIONS**

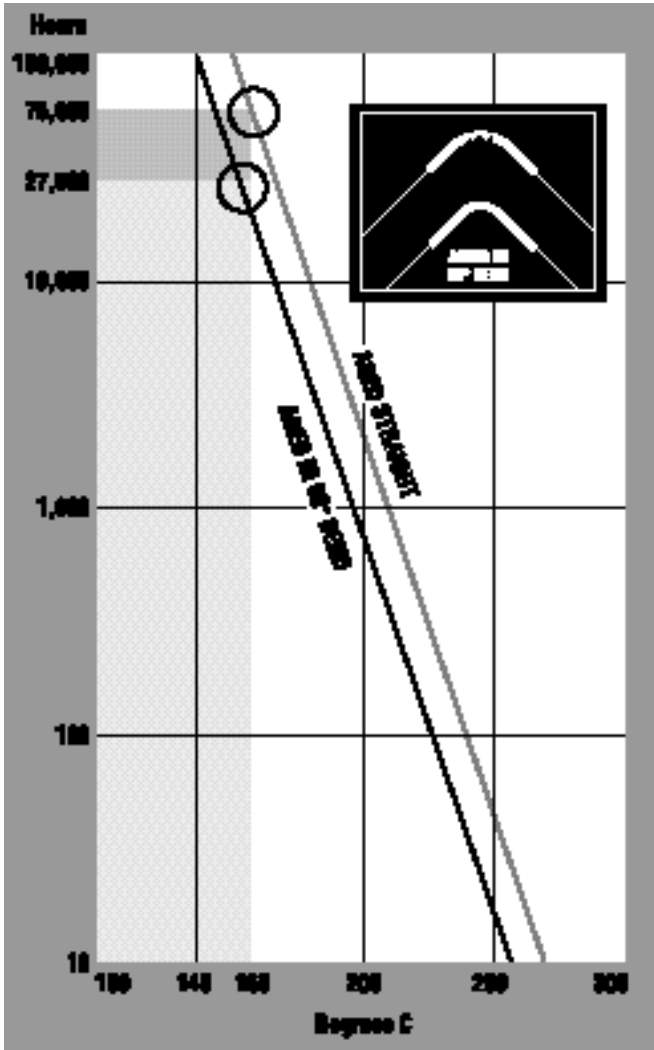
Size NEMA STD.	I.D. Max.		I.D. Min.		Nom. Wall		Feet in Standard Package
	Inch	(mm)	Inch	(mm)	A	C	
24	.027	(.66)	.020	(.51)	.018	.014	500' spools or 36" lengths
22	.032	(.816)	.025	(.64)	.018	.014	
20	.039	(.99)	.032	(.81)	.018	.014	
18	.049	(1.24)	.040	(1.02)	.018	.014	
17	.054	(1.376)	.045	(1.19)	.018	.014	
16	.061	(1.55)	.051	(1.30)	.020	.016	
15	.067	(1.70)	.057	(1.45)	.020	.016	
14	.074	(1.88)	.064	(1.63)	.020	.016	
13	.082	(2.08)	.072	(1.83)	.022	.017	250' spools or 36" lengths
12	.091	(2.31)	.081	(2.06)	.022	.017	
11	.101	(2.57)	.091	(2.31)	.022	.017	
10	.112	(2.84)	.102	(2.59)	.022	.017	
9	.124	(3.15)	.114	(2.90)	.024	.019	
8	.141	(3.58)	.129	(3.28)	.024	.019	
7	.158	(4.01)	.144	(3.66)	.024	.019	
6	.178	(4.52)	.162	(4.11)	.024	.019	
5	.198	(5.03)	.182	(4.62)	.028	.023	100' spools or 36" lengths
4	.224	(5.69)	.204	(5.18)	.028	.023	
3	.249	(6.32)	.229	(5.82)	.028	.023	
2	.278	(7.06)	.258	(6.55)	.028	.023	
1	.311	(7.90)	.289	(7.34)	.028	.023	
0	.347	(8.81)	.325	(8.26)	.028	.023	
3/8"	.399	(10.13)	.375	(9.53)	.034	.030	
7/16"	.462	(11.73)	.438	(11.13)	.034	.030	
1/2"	.524	(13.31)	.500	(12.70)	.034	.030	100' spools, coils or 36" lengths
5/8"	.655	(16.64)	.625	(15.88)	.034	.030	
3/4"	.786	(19.96)	.750	(19.05)	.040	.038	
7/8"	.911	(23.14)	.875	(22.23)	.040	.038	
1"	1.036	(26.31)	1.000	(25.40)	.040	.038	

# ACRYFLEX-F® SLEEVING

Class 155°C • Acrylic-Coated Fiberglass Sleevings  
 UL Recognized Component: 600 Volt, 155°C (Grade A) File No. E66526  
 Canadian Standards Association, 600 Volt 155°C (Grade A) File No. 37065



## PERFORMANCE CHARACTERISTICS



Thermal Aging In 90° Bend  
 Exceeds 25,000 hrs. at 155°C, using 50% of initial dielectric strength.

## FUNCTIONAL THERMAL AGING

The 90° Bend Test is significant in that it simulates the full functional characteristics of ACRYFLEX-F fiberglass sleeving. The sleeving is held on a mandrel in a 90° bend during the entire aging cycle. The performance of the sleeving is measured by a dielectric breakdown test on the 90° bend, where the sleeving is both stretched on the outer radius and compressed on the inner radius of the bend.

## TRANSFORMER OIL IMMERSION

Transformer oil retains more than 90% of its Interfacial Surface Tension after 14 days aging at 105°C with an immersed specimen of ACRYFLEX-F fiberglass sleeving.

## MECHANICAL PROPERTIES

The tough, flexible dielectric coating is thermosetting and can withstand the rigors experienced during the assembly, dipping and baking cycle, without excessive loss of its electrical properties.

## THERMAL AGING TIME†

Aging Temperature	Aged in 90° Bend	Aged Straight
225°C	118 Hrs.	120 Hrs.
200°C	690 Hrs.	990 Hrs.
175°C	3,280 Hrs.	5,045 Hrs.

† to ½ original dielectric strength.

## COMPATIBILITY

Excellent with most wire enamels (polyester, acrylic, polyimide, polyamide, epoxy and phenolic, etc.) — tested in sealed and unsealed systems.

## WEIGHT LOSS

2% - 3% after 24 hours at 180°C.

## LOW TEMPERATURE

Bends without cracking at -25°C.

## RATE OF BURNING

Conforms with requirements of NEMA TF-1, MIL-I-003190/3, and ASTM D372.

## CHEMICAL RESISTANCE

Resistant to oils, acids, alkalies and most organic solvents. After more than 168 hours in the most commonly used aromatics, xylene and toluene, the dried sleeving substantially regains its original properties.

# ACRYFLEX-155<sup>®</sup> SLEEVING

Class 155°C • Acrylic-Coated Fiberglass Sleeving (Grade A)  
 UL Recognized Component: 600 Volt, 155°C (Grade A) File No. E66526  
 MIL-I-003190/3, ASTM D372, NEMA TF-1

**NEW**  
**HUMIDITY-RESISTANT SLEEVING WITH ENHANCED STIFFNESS FOR TOUGH APPLICATIONS.**



## DESCRIPTION

ACRYFLEX-155<sup>®</sup> fiberglass sleeving is a Class 155°C electrical insulation, manufactured by impregnating and coating a finely braided fiberglass sleeving with a dielectric film of acrylic resin. ACRYFLEX-155<sup>®</sup> sleeving is recommended as a universal coated sleeving for all thermal requirements from Class 105°C through Class 155°C.

## AVAILABLE GRADES

ACRYFLEX-155<sup>®</sup> sleeving is available in the following grades. The dielectric breakdown voltages given are measured according to ASTM D149, using a rate of voltage increase of 500 volts/second.

Grade A 7,000 Volts Min. Avg. 5,000 Volts Min. Indiv.

## STANDARD COLOR

#24 to 1/2" – Natural (varies from white to tan), other colors available upon request.

## APPLICATIONS

ACRYFLEX-155<sup>®</sup> sleeving is widely used in fractional and integral horsepower motors on leads and crossovers. Other uses exist in dry and oil-filled transformers, relays of many types, radio and television circuits, welding apparatus and many others.

## ADVANTAGES

ACRYFLEX-155<sup>®</sup> sleeving is an overall superior sleeving in the 105°C to 155°C thermal rating range. Its compatibility with other components of insulation systems is equal or superior to any other type of sleeving in this temperature range. Use of this one sleeving for Class 105°C, Class 130°C and Class 155°C applications can permit reduction of sleeving inventory with attendant savings.

A potential 25% increase in humidity resistance can be achieved with ACRYFLEX-155<sup>®</sup>. ACRYFLEX-155<sup>®</sup> has been found to be compatible in 155°C sealed tube systems

## FEATURES

ACRYFLEX-155<sup>®</sup> sleeving has superior mechanical and electrical properties, providing its rated dielectric strength during and after the most severe handling in your application. It is fully compatible with most magnet wire coatings such as polyester, acrylic, polyamide, polyimide, epoxy and phenolic, and is proven in applications and laboratory tests in both sealed and unsealed systems.

## TRANSFORMER OIL IMMERSION

Transformer oil retains more than 90% of its Interfacial Surface Tension after 14 days aging at 105°C with an immersed specimen of ACRYFLEX-155<sup>®</sup> fiberglass sleeving.

## MECHANICAL PROPERTIES

The tough, flexible dielectric coating is thermosetting and can withstand the rigors experienced during the assembly, dipping and baking cycle, without excessive loss of its electrical properties.

## COMPATIBILITY

Excellent with most wire enamels (polyester, acrylic, polyimide, polyamide, epoxy and phenolic, etc.) — tested in sealed and unsealed systems.

## WEIGHT LOSS

2% - 3% after 24 hours at 180°C.

## LOW TEMPERATURE

Bends without cracking at -25°C.

## RATE OF BURNING

Conforms with requirements of NEMA TF-1, MIL-I-003190/3, and ASTM D372.

## CHEMICAL RESISTANCE

Resistant to oils, acids, alkalis and most organic solvents. After more than 168 hours in the most commonly used aromatics, xylene and toluene, the dried sleeving substantially regains its original properties.

DIMENSIONS

Size NEMA STD.	I.D. Max.		I.D. Min.		Feet in Standard Package
	Inch	(mm)	Inch	(mm)	
24	.027	(.66)	.020	(.51)	1,000' spools or 36" lengths
22	.032	(.816)	.025	(.64)	
20	.039	(.99)	.032	(.81)	
18	.049	(1.24)	.040	(1.02)	
17	.054	(1.376)	.045	(1.19)	
16	.061	(1.55)	.051	(1.30)	
15	.067	(1.70)	.057	(1.45)	
14	.074	(1.88)	.064	(1.63)	
13	.082	(2.08)	.072	(1.83)	
12	.091	(2.31)	.081	(2.06)	
11	.101	(2.57)	.091	(2.31)	500' spools or 36" lengths
10	.112	(2.84)	.102	(2.59)	
9	.124	(3.15)	.114	(2.90)	
8	.141	(3.58)	.129	(3.28)	
7	.158	(4.01)	.144	(3.66)	
6	.178	(4.52)	.162	(4.11)	
5	.198	(5.03)	.182	(4.62)	
4	.224	(5.69)	.204	(5.18)	
3	.249	(6.32)	.229	(5.82)	
2	.278	(7.06)	.258	(6.55)	
1	.311	(7.90)	.289	(7.34)	250' spools or 36" lengths
0	.347	(8.81)	.325	(8.26)	
3/8"	.399	(10.13)	.375	(9.53)	
7/16"	.462	(11.73)	.438	(11.13)	
1/2"	.524	(13.31)	.500	(12.70)	

# ACRYFLEX-MR® SLEEVING

## Motor Shop Grade C Class 155°C

### DESCRIPTION

ACRYFLEX-MR® fiberglass sleeving is a Class 155°C electrical insulation, manufactured by impregnating and coating a finely braided fiberglass sleeving with a dielectric film of acrylic resin. ACRYFLEX-MR® sleeving is recommended as a universal sleeving for motor repair.

### AVAILABLE GRADES

ACRYFLEX-MR® sleeving is available in Grade C.

### STANDARD COLOR

1/2" to #24 – Natural (varies from white to tan) other colors available upon request.

### APPLICATIONS

ACRYFLEX-MR® sleeving is widely used in fractional and integral horsepower motors on leads and crossovers.

### FEATURES

ACRYFLEX-MR® sleeving has superior mechanical and electrical properties, providing its rated dielectric strength during and after the most severe handling in your application. It is fully compatible with most magnet wire coatings such as polyester, acrylic, polyamide, polyimide, epoxy and phenolic, and is proven in applications and laboratory tests in both sealed and unsealed systems.

### DIMENSIONS

Size NEMA STD.	I.D. Max.		I.D. Min.		Feet in Standard Package
	Inch	(mm)	Inch	(mm)	
24	.027	(.66)	.020	(.51)	500' spools or 36" lengths
22	.032	(.816)	.025	(.64)	
20	.039	(.99)	.032	(.81)	
18	.049	(1.24)	.040	(1.02)	
17	.054	(1.376)	.045	(1.19)	
16	.061	(1.55)	.051	(1.30)	
15	.067	(1.70)	.057	(1.45)	
14	.074	(1.88)	.064	(1.63)	250' spools or 36" lengths
13	.082	(2.08)	.072	(1.83)	
12	.091	(2.31)	.081	(2.06)	
11	.101	(2.57)	.091	(2.31)	
10	.112	(2.84)	.102	(2.59)	
9	.124	(3.15)	.114	(2.90)	
8	.141	(3.58)	.129	(3.28)	
7	.158	(4.01)	.144	(3.66)	
6	.178	(4.52)	.162	(4.11)	
5	.198	(5.03)	.182	(4.62)	
4	.224	(5.69)	.204	(5.18)	100' spools or 36" lengths
3	.249	(6.32)	.229	(5.82)	
2	.278	(7.06)	.258	(6.55)	
1	.311	(7.90)	.289	(7.34)	
0	.347	(8.81)	.325	(8.26)	
3/8"	.399	(10.13)	.375	(9.53)	
7/16"	.462	(11.73)	.438	(11.13)	
1/2"	.524	(13.31)	.500	(12.70)	



# ACRYFLEX® VPI-NF SLEEVING\*

Class 155°C • Fiberglass/Acrylic/Fiberglass Sleevings

## DESCRIPTION

ACRYFLEX VPI-NF is a carefully engineered, high dielectric sleeving, specially designed for VPI impregnation. It is composed of a Grade A acrylic sleeve, having an initial average dielectric of 7 kV and a 1/32" wall outer layer of unsaturated glass, braided over and bonded to the acrylic sleeving. The resulting composite affords the flexibility needed for ease of application with a high initial dielectric for testing prior to VPI. The outer layer, which is firmly bonded to the Grade A sleeving, is highly receptive to the VPI resin for uniform impregnation.

Before application of the outer fiberglass braid, the acrylic sleeve meets all the applicable requirements of MIL-I-3190/3, ASTM D372 and NEMA TF-1 Type 6. The average dielectric strength of the unimpregnated VPI sleeving is 8500 volts.

ACRYFLEX VPI-NF is also effective in dip tank operations because the outer braid is completely saturant free and will readily absorb and retain the dipping varnish.

## FEATURES

- Maximum electrical protection
- No possibility of dry spots in absorbent layer
- Minimum bulk in critical areas
- Full range of sizes for exact fit
- One step application
- Available on spools for minimum waste
- Maximum flexibility for rapid installation
- Positive no-slip bond between layers
- Saturant-free outer layer for maximum VPI resin absorption

## COLOR

- Natural (white)

## DIMENSIONS

Size	I.D. Maximum		I.D. Minimum		Nominal Wall Thickness		Unit Weight lbs./cft	Std. Pkg.
	Inch	(mm)	Inch	(mm)	Outer Wall	Total Wall		
8	.141	( 3.58)	.129	( 3.28)	.032	.056	1.8	250' spools
7	.158	( 4.01)	.144	( 3.66)	.032	.056	1.9	
6	.178	( 4.52)	.162	( 4.11)	.032	.056	2.0	
5	.198	( 5.03)	.182	( 4.62)	.032	.060	2.3	
4	.224	( 5.69)	.204	( 5.18)	.032	.060	2.6	
3	.249	( 6.32)	.229	( 5.82)	.032	.060	3.0	
2	.278	( 7.06)	.258	( 6.55)	.032	.060	3.3	100' spools
1	.311	( 7.90)	.289	( 7.34)	.032	.060	3.8	
0	.347	( 8.81)	.325	( 8.26)	.032	.060	3.9	
3/8	.399	(10.13)	.375	( 9.53)	.032	.066	5.1	100' spools
1/2	.524	(13.31)	.500	(12.70)	.032	.066	6.4	

Consult factory for availability of other sizes.

\* Patent No. 4,389,587

# SILICONE RUBBER-HD FIBERGLASS SLEEVING

Class 200°C • Silicone Rubber-HD Fiberglass Sleeving for High Temperature Applications

MIL-I-003190/6 (Grade A) Class 200°C, NEMA TF-1

UL Recognized Component 600V - 200°C Grade A VW-1 File # E66526

Canadian Standards Association 600V - 200°C Grade A File # 37065



## DESCRIPTION

Silicone Rubber-HD fiberglass sleeving consists of a silicone elastomer securely bonded to its supporting fiberglass braid. It is designed to remain flexible over wide operating temperature extremes (-75°C to 220°C).

## FEATURES

Its resistance to ozone, corona, radiation, moisture, compression set, weathering, fungus, and chemical attack provides many advantages to electrical systems. Silicone Rubber-HD sleeving gives top performance in high temperature applications where no other sleeving can be used.

## APPLICATIONS

Silicone Rubber-HD sleeving is suitable for high altitude and

aerospace applications. It is recommended for apparatus leads, appliance and fixture wire insulation, heating cable, ignition systems, relay leads and aircraft wire where a 200°C+ thermal rating is required. It is particularly well suited as heavy duty insulation where subjected to high heat such as in diecasting and plastic molding, and in numerous military electronic applications.

## APPLICABLE SPECIFICATIONS

ASTM D372, MIL-I-003190/6, NEMA TF-1

## STANDARD COLOR

White.

Other colors: consult factory for availability

## DIMENSIONS

Size	I.D. Maximum		I.D. Minimum		Feet in Standard Package
	Inch	(mm)	Inch	(mm)	
24	.027	(.69)	.020	(.51)	500
22	.032	(.81)	.025	(.64)	500
20	.039	(.99)	.032	(.81)	500
18	.049	(1.24)	.040	(1.02)	500
17	.054	(1.37)	.045	(1.19)	500
16	.061	(1.55)	.051	(1.30)	500
15	.067	(1.70)	.057	(1.45)	500
14	.074	(1.88)	.064	(1.63)	500
13	.082	(2.08)	.072	(1.83)	250
12	.091	(2.31)	.081	(2.06)	250
11	.101	(2.57)	.091	(2.31)	250
10	.112	(2.84)	.102	(2.59)	250
9	.124	(3.15)	.114	(2.90)	250
8	.141	(3.58)	.129	(3.28)	250
7	.158	(4.01)	.144	(3.66)	250
6	.178	(4.52)	.162	(4.11)	250
5	.198	(5.03)	.182	(4.62)	250
4	.224	(5.69)	.204	(5.18)	250
3	.249	(6.32)	.229	(5.82)	250
2	.278	(7.06)	.258	(6.55)	250
1	.311	(7.90)	.289	(7.34)	100
0	.347	(8.81)	.325	(8.26)	100
3/8"	.399	(10.13)	.375	(9.53)	100
7/16"	.462	(11.74)	.438	(11.13)	100
1/2"	.524	(13.31)	.500	(12.70)	100
5/8"	.655	(16.64)	.625	(15.88)	100
3/4"	.786	(19.96)	.750	(19.05)	100
7/8"	.911	(23.14)	.875	(22.23)	100
1"	1.036	(26.31)	1.000	(25.40)	100

## PERFORMANCE CHARACTERISTICS

Dielectric Breakdown (ASTM D372) Grade	Typical Test Results			
	Requirements		Test Results	
	Min. Avg. Volts	Min. Individ. Volts	Min. Avg. Volts	Min. Individ. Volts
A - C-48/23/50 C-96/23/96	8,000	6,000	8,700	7,800
	80% of above		8,700	7,800
B - C-48/23/50 C-96/23/96	4,000	2,500	5,000	4,500
	1,200	750	4,750	4,100
C-1 - C-48/23/50 C-96/23/96	2,500	1,500	3,000	2,500
	Not Applicable		Not Applicable	

Property	Requirements	Results
Aging	No cracking after 168 hrs. exposure to 250°C	No cracking
Oil Immersion	No disintegration or swelling after 24 hrs. in ASTM Oil #2 @ 105°C	No disintegration or swelling
MIL-I-003190 Flammability (Method B)	Shall require at least 45 seconds to burn 1 inch	Self Extinguishing
Compatibility with Magnet Wire (Method A)	Magnet wire shall have 50% of original dielectric strength after exposure to sleeving for 672 hrs. @ 200°C	Passes
Thermal Endurance	Extrapolated temperature 200°C for 15,000 hrs.	220°C
Pushback Test (MIL-I-003190)	Shall not crack when length is reduced 20% after aging 168 hrs. @ 250°C	No cracks with 50% reduction in length

# SILICONE RESIN-HD FIBERGLASS SLEEVING

Class 200°C • Silicone Resin-HD Fiberglass Sleeving for High Temperature Applications

MIL-I-003190/5 (Grade A) Class 220°C, NEMA TF-1

UL Recognized Component 600V - 200°C Grade A VW-1 File # E66526

Canadian Standards Association 600V - 200°C Grade A File # 37065



## DESCRIPTION

Silicone Resin-HD sleeving consists of a finely braided fiberglass braid impregnated and coated with a silicone resin. It is designed to perform continuously in the range of temperatures from -75°C to 220°C.

## FEATURES

Silicone Resin-HD fiberglass sleeving has especially good radiation resistance in addition to resistance to ozone, moisture, corona, weathering, fungus and chemical attack.

Where resistance to failure on push-back is required, we recommend silicone rubber-coated fiberglass sleeving.

## APPLICATIONS

Silicone Resin-HD fiberglass sleeving finds application in aerospace installations. It is useful on equipment leads, heating cable and relay leads where temperatures up to 220°C are encountered.

## ADVANTAGES

Silicone Resin-HD fiberglass sleeving combines excellent chemical and radiation resistance with the ability to withstand temperatures up to 220°C.

## APPLICABLE SPECIFICATIONS

ASTM D372, MIL-I-003190/5 (Grade A), NEMA TF-1.

## AVAILABLE GRADES

ASTM D372, Grades A, B, C-1.

## STANDARD COLORS

Natural

## DIMENSIONS

Size	I.D. Maximum		I.D. Minimum		Feet in Standard Package
	Inch	(mm)	Inch	(mm)	
24	.027	(.56)	.020	(.51)	500
22	.032	(.81)	.025	(.64)	500
20	.039	(.99)	.032	(.81)	500
18	.049	(1.24)	.040	(1.02)	500
17	.054	(1.37)	.047	(1.19)	500
16	.061	(1.55)	.051	(1.30)	500
15	.067	(1.70)	.057	(1.45)	500
14	.074	(1.88)	.064	(1.63)	500
13	.082	(2.08)	.072	(1.83)	250
12	.091	(2.31)	.081	(2.06)	250
11	.101	(2.57)	.091	(2.31)	250
10	.112	(2.84)	.102	(2.59)	250
9	.124	(3.15)	.114	(2.90)	250
8	.141	(3.58)	.129	(3.28)	250
7	.158	(4.01)	.144	(3.66)	250
6	.178	(4.52)	.162	(4.11)	250
5	.198	(5.03)	.182	(4.62)	250
4	.224	(5.69)	.204	(5.18)	250
3	.249	(6.32)	.229	(5.82)	250
2	.278	(7.06)	.258	(6.55)	250
1	.311	(7.90)	.289	(7.34)	100
0	.347	(8.81)	.325	(8.26)	100
3/8"	.399	(10.13)	.375	(9.53)	100
7/16"	.462	(11.73)	.438	(11.13)	100
1/2"	.524	(13.31)	.500	(12.70)	100
5/8"	.655	(16.64)	.625	(15.88)	100
3/4"	.786	(19.96)	.750	(19.05)	100
7/8"	.911	(23.14)	.875	(22.23)	100
1"	1.036	(26.31)	1.000	(25.40)	100

## PERFORMANCE CHARACTERISTICS

Dielectric Breakdown (ASTM D372) Grade	Typical Test Results			
	Requirements		Test Results	
	Min. Avg. Volts	Min. Indiv. Volts	Min. Avg. Volts	Min. Indiv. Volts
A - C-48/23/50 C-96/23/96	7,000	5,000	8,700	7,800
	70% of above		8,700	7,800
B - C-48/23/50 C-96/23/96	4,000	2,500	4,800	4,200
	1,200	750	4,500	4,000
C-1 - C-48/23/50 C-96/23/96	2,500	1,500	3,100	2,700
	Not Applicable		Not Applicable	

Property	Requirements	Results
Aging	No cracking after 168 hrs. exposure 250°C	No cracking
Oil Immersion	No disintegration or swelling after 4 hrs. in ASTM Oil #2 @ 105°C	No disintegration or swelling
MIL-I-003190 Flammability (Method B)	Shall require at least 45 seconds to burn 1 inch	Self Extinguishing
Compatibility with Magnet Wire (Method A)	Magnet wire shall have 50% of original dielectric strength after exposure to sleeving for 672 hrs. @ 200°C	Passes
Thermal Endurance	Extrapolated temperature 200°C for 15,000 hrs.	220°C

# FLEXICONE® 200 SLEEVING\*

## Silicone Rubber-Coated Fiberglass Sleeving

UL Recognized Component: 600 Volt, 200°C (Grade A), VW-1, File No. 66526

Canadian Standards Association: 600 Volt, 200°C (Grade A), OFS, File No. 37065

QPL Listed – MIL-003190/6, ASTM D372, NEMA TF-1 - TYPE 6



### OPERATING TEMPERATURE RANGE

-75 to +220°C

### DESCRIPTION

FLEXICONE 200 sleeving is a specially formulated high temperature silicone rubber elastomer, pressure bonded to a heat stabilized fiberglass braid. It is available in ASTM electrical grades A, B and C-1 as standard items, and heavy wall constructions for high voltage use on special order.

### FEATURES

FLEXICONE 200 sleeving exceeds UL 224 VW-1 and CSA-OFS flammability requirements in all grades and colors and will not support combustion. Its outstanding flexibility allows FLEXICONE 200 to withstand the severe push-back test of MIL-I-003190C with ease, even in the lower dielectric grades, thus making it the ideal insulation where sharp bends are encountered or the ability to expand over irregular shaped parts is required. It has a combination of outstanding physical and electrical capabilities that make it ideal for many applications and should be considered where one or more of the following properties is required:

- High temperatures up to 220°C
- VW-1 and OFS flammability rating
- Cut-through resistance
- Abrasion resistance
- Maximum flexibility and/or expandability
- Chemical resistance
- Moisture resistance
- Radiation resistance

### SUGGESTED APPLICATIONS

1. Protective coverings for automotive wiring harnesses and ABS brake wiring.
2. Aerospace and aircraft wiring leads.
3. Heat generating appliances such as coffee pots, hair dryers, toasters, etc.
4. Covering for leads on extrusion plastic molding, die casting machinery, presses, etc.
5. High voltage transformers.

### PACKAGING

Spools – Standard

36" lengths and cut pieces available on special order.

### COLORS

White and Red – Standard.

Special Colors – Consult factory for availability.

### PERFORMANCE CHARACTERISTICS

Dielectric Breakdown (ASTM D372) Grade	Typical Test Results			
	Requirements		Test Results	
	Min. Avg. Volts	Min. Indiv. Volts	Min. Avg. Volts	Min. Indiv. Volts
A – C-48/23/50 C-96/23/96	8,000	6,000	9,500	8,300
	80% of above		89%	
B – C-48/23/50 C-96/23/96	4,000	2,500	6,000	4,700
	1,200	750	3,500	3,100
C-1 – C-48/23/50 C-96/23/96	2,500	1,500	3,000	2,500
	Not Applicable		Not Applicable	

### DIMENSIONS

Size	I.D. Maximum		I.D. Minimum		Feet in Standard Package
	Inch	(mm)	Inch	(mm)	
24	.027	(.66)	.020	(.51)	500
22	.032	(.81)	.025	(.64)	500
20	.039	(.99)	.032	(.81)	500
18	.049	(1.24)	.040	(1.02)	500
17	.054	(1.37)	.045	(1.19)	500
16	.061	(1.55)	.051	(1.30)	500
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7	.158	(4.01)	.144	(3.66)	250
6	.178	(4.52)	.162	(4.11)	250
5	.198	(5.03)	.182	(4.62)	250
4	.224	(5.69)	.204	(5.18)	250
3	.249	(6.32)	.229	(5.82)	250
2	.278	(7.06)	.258	(6.55)	250
1	.311	(7.90)	.289	(7.34)	100
0	.347	(8.81)	.325	(8.26)	100
3/8"	.399	(10.13)	.375	(9.53)	100
7/16"	.462	(11.73)	.438	(11.13)	100
1/2"	.524	(13.31)	.500	(12.70)	100
5/8"	.655	(16.64)	.625	(15.88)	100
3/4"	.786	(19.96)	.750	(19.05)	100
7/8"	.911	(23.14)	.875	(22.23)	100
1"	1.036	(26.31)	1.000	(25.40)	100

\* Patent No. 4,704,335

# FLEXICONE® VPI SLEEVING

Class 220°C • Fiberglass/FLEXICONE/Fiberglass

## DESCRIPTION

FLEXICONE VPI is a double wall silicone rubber sleeve consisting of a tightly braided fiberglass sleeve, coated with a dielectric layer of Flexicone silicone rubber and an outer fiberglass braid firmly bonded to the Flexicone. The outer braid is lightly treated with acrylic resin to prevent fray, improve abrasion resistance and allow coating by the VPI resin.

## FEATURES

- High dielectric
- Good abrasion resistance
- Maximum flexibility for easy installation
- Positive bond between layers
- Expandable to fit over joints and terminals

## PACKAGING

Spool

Cut to length on special order subject to factory quotation.

## COLORS

Natural (light to dark tan)

Other colors available subject to factory quotation.

## DIELECTRIC STRENGTH - ASTM-D149 short term test

Grade	Requirements		Typical Results	
	Avg. Volts	Min. Volts	Avg. Volts	Min. Volts
A	8,000	6,000	10,060	8,800
15KV	15,000	12,000	17,500	13,700

## DIMENSIONS

Size	I.D. Maximum		I.D. Minimum		Total Wall (Nominal)	
	Inch	(mm)	Inch	(mm)	Grade A	Grade 15KV
8	.141	( 3.58)	.129	( 3.28)	.042	.065
7	.158	( 4.01)	.144	( 3.66)	.042	.065
6	.178	( 4.52)	.162	( 4.11)	.042	.065
5	.198	( 5.03)	.182	( 4.62)	.046	.070
4	.224	( 5.69)	.204	( 5.18)	.046	.070
3	.249	( 6.32)	.229	( 5.82)	.046	.070
2	.278	( 7.06)	.258	( 6.55)	.046	.070
1	.311	( 7.90)	.289	( 7.34)	.052	.075
0	.347	( 8.81)	.325	( 8.26)	.052	.075
3/8"	.399	(10.13)	.375	( 9.53)	.058	.080
7/16"	.462	(11.73)	.438	(11.13)	.058	.080
1/2"	.524	(13.31)	.500	(12.70)	.058	.080

# SILVERFLEX® TREATED FIBERGLASS SLEEVING

Class 240°C • For High Temperature — Low Voltage Applications  
UL Recognized Component: VW-1 (FR-1), File No. E51556



## DESCRIPTION

SILVERFLEX sleeving is a braided fiberglass sleeving which has been heat treated (natural) or heat treated and impregnated (T&D) with an acrylic binder. The natural type comes only in a silver-grey color, while the impregnated type ("T & D" for treated and dyed) can be furnished in brown, orange, black, red, yellow, blue or green for color coding. SILVERFLEX sleeving is rated VW-1 by the Underwriters Laboratories, Inc. (File No. E51556) and can be furnished with printed legend on the spool head on request.

## FEATURES

SILVERFLEX fiberglass sleeving is a custom-braided fiberglass sleeving designed specifically for applications where temperatures as high as 1200°F may be encountered. It will maintain its basic properties and do the job in appropriate

applications.

The heat treatment applied during production gives SILVERFLEX fiberglass sleeving non-fraying properties that make it ideal for applications where short lengths are used. The heat treatment also sets the size and removes the starch-oil binder. This same sleeving can also be supplied with a light impregnant which further minimizes fraying and helps maintain a round cross-section where this is desirable. Both types are easily expanded for ease of installation.

In addition to the standard wall thicknesses, heavy walls are available. SILVERFLEX fiberglass sleeving designs can be produced to meet specific requirements.

For flexibility, expandability, high temperature applications, and resistance to fraying, SILVERFLEX sleeving is the material to use.

## APPLICATIONS

SILVERFLEX fiberglass sleeving is used where space factor electrical insulation is sufficient, particularly where high temperatures are encountered. It is used as primary insulation on low voltage applications such as leads in toasters, hot plates, hand irons, coffee makers, range units, percolators, french-fry vessels and other appliances.

In some cases, SILVERFLEX fiberglass sleeving is used as supplementary insulation and protection for other types of primary insulation such as asbestos, extruded silicone rubber, etc. It is popular as a replacement for asbestos gasketing.

SILVERFLEX fiberglass sleeving is used as insulation and protection for small heaters and resistors which operate at high temperatures.

A frequent use of SILVERFLEX fiberglass sleeving is over electrical joints, especially where solder is used and soldering iron temperatures may be reached by the insulation for short periods.

A new use of SILVERFLEX fiberglass sleeving is in vacuum pressure impregnation of stators and rotors, where it is used in heavy wall versions on coil ends and leads.

Non-electrical uses include gaskets for range doors and range door windows, as chemical filters, as reinforcement for baseball bat handles and many others.

## ADVANTAGES

For low-voltage applications, especially those involving heat, SILVERFLEX fiberglass sleeving provides a sturdy, long-lasting and inexpensive insulation. It is flexible and expandable, enabling it to be readily slipped over irregular profiles. It is readily saturated with insulating varnishes or other impregnants. It will withstand use temperatures as high as 1200°F.

## STANDARD COLORS

Unsaturated — Natural silver to tan.

T & D saturated — Black, red, yellow and clear.

Others colors available on special order.

## DIMENSIONS

Size	Inside Diameter				Standard Package Feet
	Maximum		Minimum		
	Inch	(mm)	Inch	(mm)	
24	.027	(.66)	.020	(.51)	500
22	.032	(.81)	.025	(.64)	500
20	.039	(.99)	.032	(.81)	500
18	.049	(1.24)	.040	(1.02)	500
17	.054	(1.37)	.045	(1.19)	500
16	.061	(1.55)	.051	(1.30)	500
15	.067	(1.70)	.057	(1.45)	500
14	.074	(1.88)	.064	(1.63)	500
13	.082	(2.08)	.072	(1.83)	250
12	.091	(2.31)	.081	(2.06)	250
11	.101	(2.57)	.091	(2.31)	250
10	.112	(2.84)	.102	(2.59)	250
9	.124	(3.15)	.114	(2.90)	250
8	.141	(3.58)	.129	(3.28)	250
7	.158	(4.01)	.144	(3.66)	250
6	.178	(4.52)	.162	(4.11)	250
5	.198	(5.03)	.182	(4.62)	250
4	.224	(5.69)	.204	(5.18)	250
3	.249	(6.32)	.229	(5.82)	250
2	.278	(7.06)	.258	(6.55)	250
1	.311	(7.90)	.289	(7.34)	100
0	.347	(8.81)	.325	(8.26)	100
3/8"	.399	(10.13)	.375	(9.53)	100
7/16"	.462	(11.73)	.438	(11.13)	100
1/2"	.524	(13.31)	.500	(12.70)	100
5/8"	.655	(16.64)	.625	(15.88)	100
3/4"	.786	(19.96)	.750	(19.05)	100
7/8"	.911	(23.14)	.875	(22.23)	100
1"	1.036	(26.31)	1.000	(25.40)	100

Also available in 1/32" wall type, sizes #18 to 1".

# FLAT-BRAIDED FIBERGLASS SLEEVING

Class 220°C • Treated & Untreated for Tying Tape or Thin Wall Insulation Between Conductors

## DESCRIPTION

These sleeveings are braided fiberglass with nominal walls of 8 mils and 6 mils. The 8A and 6B types can be provided untreated (U), light varnish treated (RF\*), heavy varnish treated (HVT), and heat treated (HT). Both types conform to the requirements of MIL-Y-1140 and ASTM D581.

## FEATURES

The 8A and 6B series are braided flat and are packaged on spools. Colors are available in the HVT type only.

## APPLICATIONS

Thin walled glass sleeveings are used to provide space insulation between conductors. The flat construction makes them espe-

cially useful on thin rectangular conductors and as tying tape in some applications.

## STANDARD COLORS

Type RF: Natural white only.

Type HT: Silver grey only.

Type HVT: Clear.

Other colors available on special order.

## STANDARD PACKAGING

All Types – 500 foot spools.

### .008 THIN WALL GLASS SLEEVING 8A-150

Size		I.D. Tolerance		Wall Thicknesses					
				Untreated, RF & Heat Treated		Heavy Varnish Treated		Tolerance	
Inch	(mm)	Inch	(mm)	Inch	(mm)	Inch	(mm)	Inch	(mm)
1/16"	1.60	-0, + 1/64	-0 + .40	.008	.02	.009	.02	±.001	.0025
1/8"	3.18	-0, + 1/64	-0 + .40	.008	.02	.009	.02	±.001	.0025
3/16"	4.78	-0, + 1/64	-0 + .40	.008	.02	.009	.02	±.001	.0025
1/4"	6.35	-0, + 1/32	-0 + .80	.008	.02	.009	.02	±.001	.0025
5/16"	7.94	-0, + 1/32	-0 + .80	.008	.02	.009	.02	±.001	.0025
3/8"	9.53	-0, + 1/32	-0 + .80	.008	.02	.009	.02	±.001	.0025
1/2"	12.70	-0, + 1/16	-0 + 1.6	.008	.02	.009	.02	±.001	.0025
5/8"	5.88	-0, + 1/16	-0 + 1.6	.008	.02	—	—	±.001	.0025
3/4"	19.05	-0, + 1/16	-0 + 1.6	.008	.02	—	—	±.001	.0025
7/8"	22.23	-0, + 1/16	-0 + 1.6	.008	.02	—	—	±.001	.0025
1"	25.40	-0, + 1/16	-0 + 1.6	.008	.02	—	—	±.001	.0025

### .006 THIN WALL GLASS SLEEVING 6B-150

Size		I.D. Tolerance		Wall Thicknesses		Tolerance	
Inch	(mm)	Inch	(mm)	Inch	(mm)	Inch	(mm)
1/16"	1.60	-0, + 1/64	-0 + .40	.006	.015	±.001	.0025
1/8"	3.18	-0, + 1/64	-0 + .40	.006	.015	±.001	.0025
3/16"	4.78	-0, + 1/64	-0 + .40	.006	.015	±.001	.0025
1/4"	6.35	-0, + 1/32	-0 + .80	.006	.015	±.001	.0025
5/16"	7.94	-0, + 1/32	-0 + .80	.006	.015	±.001	.0025
3/8"	9.53	-0, + 1/32	-0 + .80	.006	.015	±.001	.0025
1/2"	12.70	-0, + 1/16	-0 + 1.6	.006	.015	±.001	.0025

\* The 6B-150 is supplied as untreated and RF-treated only.

## EXTENDO™ MONOFILAMENT EXPANDABLE SLEEVINGS

SUFLEX EXTENDO Monofilament Expandable Sleeveings represent a complete line of expandable sleeveings for use as mechanical protection for wires, cables, wire harnesses and flat and ribbon cable assemblies. Monofilaments are used to manufacture these products because they offer low bulk weight, and also provide a cost effective mechanical protection.

### EXTENDO PET™

Polyethyleneterephthalate monofilament expandable sleeveing affords excellent mechanical protection and is resistant to most chemicals. EXTENDO PET has the lowest cost of all the monofilament sleeveings. It offers excellent flexibility, and protects the wire and cable bundles from abrasion, chafing, and heat degradation. Since it is self-extinguishing, it offers a degree of flame retardancy as well. EXTENDO PET is capable of continuous operation from -70°C to +125°C.

### EXTENDO PETFR™ 125°C VW-1 FILE #1186®

Flame-retardant polyethyleneterephthalate monofilament expandable sleeveing is manufactured from a specifically formulated flame-retardant polyethyleneterephthalate. It offers the same mechanical and chemical protection as EXTENDO PET and in addition EXTENDO PETFR offers a higher degree of flame retardancy for special requirements such as in appliances. It is capable of continuous operation from -70°C to +125°C.

### EXTENDO PET™ AND PETFR™

Order Size	Size Range	Approximate Weight Lbs./100 Ft.	Std. Pkg. Ft./Spool
1/4"	1/8" - 3/8"	.27	1000
1/2"	1/4" - 3/4"	.75	500
7/8"	1/2" - 1 1/4"	1.00	250
1 1/8"	3/4" - 1 1/2"	1.60	250
1 3/4"	1" - 2 1/2"	2.00	150
2"	1 1/4" - 2 3/4"	2.60	100

Special sizes and constructions available. Contact factory.

### EXTENDO PETNF™

Extra non-fray polyethyleneterephthalate monofilament expandable sleeveing is manufactured from the same monofilaments as EXTENDO PET except the weave construction has been altered to offer more fray resistance than EXTENDO PET. These special constructions allow for the production of a light-weight expandable sleeveing which offers a greater foot-per-pound yield. It is capable of continuous operation from -70°C to +125°C.

### EXTENDO PETNF™

Order Size	Size Range	Approximate Weight Lbs./100 Ft.	Std. Pkg. Ft./Spool
3/8"	3/16" - 1/2"	.26	500
5/8"	3/8" - 3/4"	.50	500
1 1/4"	3/4" - 1 5/8"	1.00	250
1 3/8"	1" - 1 3/4"	1.30	250

### EXTENDO HAL™

Ethylene chlorotrifluoro ethylene (Halar†) monofilament expandable sleeveing is manufactured from Halar (E-CTFE) monofilaments. It offers a product with excellent chemical and abrasion resistance and can be used at higher operating temperatures than the other monofilament sleeveings. EXTENDO HAL is recommended for use where the sleeveing may be exposed to harsh chemicals or severe environments. Since it will not support combustion, it is also suitable for use where flame retardancy is important. It is rated for continuous operation from -70°C to +150°C.

### EXTENDO HAL™

Order Size	Size Range	Approximate Weight Lbs./100 Ft.	Std. Pkg. Ft./Spool
3/32"	3/32" - 1/8"	.25	500
1/4"	1/8" - 3/8"	.40	500
5/8"	1/4" - 7/8"	1.20	250
1"	1/2" - 1 3/8"	1.70	125
1 1/8"	3/4" - 1 1/2"	2.60	125
1 3/8"	1 1/4" - 2 1/2"	4.00	75
2 5/8"	1 3/4" - 3 1/2"	5.00	50

EXTENDO	PET	PETFR	PETNF	HAL
Black	*	*	*	*
Red	S	N/A	S	N/A
Orange	S	N/A	S	N/A
Yellow	S	N/A	S	N/A
Green	S	N/A	S	N/A
Blue	S	N/A	S	N/A
Gray	S	N/A	S	N/A
White	N/A	*	N/A	*
Clear	*	N/A	*	N/A

\* = Standard Color  
S = Available on special order  
N/A = Not Available

### PHYSICAL CHARACTERISTICS

Material	Temperature Tolerances	Melts	Elongation at Break	Shrinkage
Polyethylene Terephthalate	-100 to 260°F (-70 to 125°C)	500°F (260°C)	21%	4% at 350°F (3 minutes)
Flame Retardant PET	-100 to 225°F (-70 to 125°C)	500°F (250°C)	25-40%	4.5% at 350°F (3 minutes)
Halar	-100 to 300°F (-70 to 150°C)	465°F (240°C)	25%	3-4% at 350°F

† (Halar is a registered trademark of E.I. duPont de Nemours & Co.)



## SLEEVING AND EXTRUDED TUBING RECOGNITIONS

Product	Underwriters Laboratories, Inc.	File No.	Canadian Stds. Assoc.	File No.
Acryflex-155®	600V - 155°C Grade A only VW-1 Grade C-3 only	E66526 E51556	600 Volt 155°C Grade A Sizes 24 to 1"	LR-37065
Acryflex-F®	600V - 155°C Grade A only VW-1 Grade C-3 only	E66526 E51556	600 Volt 155°C Grade A Sizes 24 to 1"	LR-37065
Acryflex® VPI	None		None	
Silicone Rubber-HD	600V - 200°C Grade A only VW-1	E66526	600V - 200°C Grade A Sizes 24 to 1"	LR-37065
Silicone Resin-HD	600V - 200°C Grade A only VW-1	E66526	600V - 200°C Grade A Sizes 24 to 1"	LR-37065
Flexicone® 200	600V - 200°C VW-1 Grade A VW-1 Grades B and C	E66526 E51556	600 Volt 200°C Grade A OFS Flame Retardant Sizes 24 to 1"	LR-37065
Vinylglas®	600V - 105°C VW-1 Grade A only VW-1 Grades B and C	E66526 E51556	600 Volt 105°C Grade A OFS Flame Retardant Sizes 24 to 1"	LR-37065
Silverflex® Natural & T&D	VW-1	E51556	None	
Extendo PETFR125°C	VW-1	E118600	None	
Astra® 703/105	300V and 600V 105°C VW-1 Sizes #24 to 2½"	E31622 E66389	105°C Class 1, 2 and 3 Sizes #24 to 2½"	LR-37065
Astra® 601	None		None	
Astra® 701	None		None	

## HEAT SHRINK TUBING RECOGNITIONS

Product	Underwriters Laboratories, Inc.	File No.	Canadian Stds. Assoc.	File No.
Astratite® VC	600V - 105°C VW-1 ¾" to 4" All colors and clear	E31622 E66389	600V - 105°C ¾" to 1" – colors and clear	LR-37065
Astratite® VC-TW	600V - 105°C VW-1 ⅙" to ½" All colors and clear	E31622 E66389	None	
Astratite® VCB	600V - 105°C VW-1 ¾" to 4"	E31622 E66389	None	
Astratite® AVF	600V - 125°C VW-1 ¾" to 1" – colors only Clear not approved	E31622 E66389	600V - 125°C ¾" to 3" – colors only Clear not approved	LR-37065
Astratite® AF	600V - 125°C ¾" to 3" – colors only Clear not approved	E31622 E66389	600V - 125°C ¾" to 3" – colors only Clear not approved	LR-37065
Astratite® ASR Astratite® ASR-C	600V - 125°C ⅜" to 1" - Black only Clear not approved	E31622 E66389	600V - 125°C ¾" to 3" Clear not approved	LR-37065
Astratite® ACP	None		None	

VW-1 – UL designation for highly flame-retarded material.

OFS – CSA designation for highly flame-retarded sleeving.

## SPECIFICATION INDEX

U.S. MILITARY SPECIFICATIONS		RECOMMENDED SUFLEX PRODUCT	AEROSPACE MATERIAL SPECIFICATIONS	RECOMMENDED SUFLEX PRODUCT
MIL-I-631	Grade A Grade B Grade C	Astra® 701 Astra® 701 Astra® 703/105	AMS 3582 AMS 3587 AMS 3588 AMS 3636 AMS 3637 AMS 3638 AMS 3639	None Astratite® AVF Colors Astratite® AVF Clear Astratite® AF Colors Astratite® AF Clear Astratite® ASR Colors Astratite® ASR Clear
MIL-I-3158		None		
MIL-I-003190	/ 2 / 3 / 5 / 6	Vinylglas® Grade A Acryflex® Grade A Silicone Resin-HD Grade A Flexicone® 200 Grade A Silicone Rubber-HD Grade A		
MIL-I-7444	Type 1 Type 3	Astra® 601 Clear Astra® 601 Colors		
MIL-I-18057		Silicone Rubber-HD Grade A		
MIL-I-21557		Vinylglas® Grade A		
MIL-I-22076		Astra® 601		
MIL-I-23053 / 1		None — Neoprene		
MIL-I-23053 / 2	Class 1 Class 2	None Astratite® VC		
MIL-I-23053 / 3		None — Semi-Rigid PVC		
MIL-I-23053 / 4		None		
MIL-I-23053 / 5	Class 1 Class 2 Class 3	Astratite® AF Colors Astratite® AF Clear Astratite® AVF Colors		
MIL-I-23053 / 6	Class 1 Class 2 Class 3	Astratite® ASR Colors Astratite® ASR Clear None		
MIL-I-23053 / 7		None — Spiral-Wrapped Mylar		
MIL-I-23053 / 8		None — Kynar†		
MIL-I-23053 / 9		None — Viton*		
MIL-I-23053 / 10		None — Silicone Rubber		
MIL-I-23053 / 11		None — Teflon FEP*		
MIL-I-23053 / 12		None — Teflon TFE*		
MIL-I-23053 / 13		None — Fluoroelastomer		
MIL-I-23053 / 14		None — Tefzel - ETFE*		
MIL-I-23053 / 15		None — Polyolefin with Adhesive		
MIL-I-23053 / 16		None — Elastomeric Polyolefin		
MIL-R-46846	Type 5	Astratite® AVF		
MIL-Y-1140	Form 1 Form 2 Form 3	None None Flat Braid 8A-150 and 6B-150		
			COMMERCIAL SPECIFICATIONS	RECOMMENDED SUFLEX PRODUCT
			NEMA TF-1	Type 1 Type 2 Type 3 Type 4 Type 5 Type 6 Acryflex-F® Acryflex-F® Vinylglas® Silicone Resin-HD Silicone Rubber-HD Acryflex-F®
			ASTM D372	Type 2 Type 3 Type 4 Type 5 Type 6 Acryflex-F® Vinylglas® Silicone Resin-HD Silicone Rubber-HD & Flexicone® 200 Acryflex-F®
			ASTM D922	Astra® 701
			ASTM D3149	Type 1 Type 2 Type 3 Type 4 Astratite® AF Colors Astratite® AF Clear Astratite® ASR Colors Astratite® ASR Clear

† (Kynar is the registered trademark of ELF Atochem)

\* (Viton, Teflon FEP, Teflon TFE, Tefzel-ETFE are registered trademarks of E.I. du Pont de Nemours & Company.)

## SLEEVING PACKAGING WEIGHT

Size	Feet/Spool	APPROXIMATE SLEEVING WEIGHT — LBS / 1000 FT.					
		ACRYFLEX-F® GRADE A	ACRYFLEX-F® GRADE C	VINYLGAS® GRADE B	FLEXICONE® GRADE A	SILICONE RUBBER SILICONE RESIN GRADE A	SILVERFLEX® T&D ACRYFLEX-C3
24	500	1.39	1.15	1.46	1.46	1.83	.80
22	500	1.56	1.31	1.69	1.66	1.97	.94
20	500	1.71	1.44	1.92	1.93	2.14	1.07
18	500	2.41	2.01	2.50	2.63	2.67	1.28
17	500	2.62	2.20	2.70	2.83	2.82	1.56
16	500	2.92	2.34	3.04	3.16	3.00	1.67
15	500	3.62	2.78	3.80	3.89	3.71	1.82
14	500	4.23	3.21	4.25	4.29	4.00	2.24
13	250	4.69	3.57	4.53	4.79	4.43	2.82
12	250	4.93	3.78	4.92	5.19	4.67	3.01
11	250	5.54	4.26	5.45	5.82	5.31	3.40
10	250	5.84	4.62	5.98	6.26	6.05	3.62
9	250	6.64	5.38	7.60	7.11	6.89	4.13
8	250	7.55	5.70	8.00	7.72	7.50	4.41
7	250	7.85	5.96	8.34	8.39	8.17	4.64
6	250	8.76	6.44	9.77	9.52	9.28	5.09
5	250	11.07	8.26	11.72	11.66	11.64	6.64
4	250	12.38	9.04	13.72	13.02	12.72	7.37
3	250	13.19	9.42	16.44	13.50	14.33	7.56
2	250	17.60	11.70	21.09	17.90	18.72	9.79
1	100	21.32	15.10	26.89	21.50	22.33	13.26
0	100	21.72	15.70	28.54	22.35	22.60	13.46
3/8"	100	32.14	25.08	32.14	30.60	27.71	22.44
7/16"	100	41.16	32.98	35.09	33.25	31.33	30.29
1/2"	100	42.19	33.49	46.87	44.70	42.25	30.70
5/8"	100	50.80	43.94	58.56	55.05	53.59	31.92
3/4"	100	67.80	65.40	81.54	77.45	74.76	58.34
7/8"	100	79.30	76.50	114.48	109.35	103.47	87.31
1"	100	96.80	93.20	126.47	119.90	112.59	96.29

Above weights are for estimation of shipping weight. Actual weight will vary. Add .25 lbs. for each spool to calculate total weight.

Example: Size 3/8 Acryflex® Grade A: Material Weight = 32.14 lbs./mft; Spools – 10 @ .25 lbs./spool = 2.50 lbs./mft; Total Weight = 34.64 lbs./mft

### PRODUCT WARRANTY

Suflex products are warranted free from defects in workmanship and in material. This warranty is in lieu of all other warranties, expressed or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose. The sole and exclusive remedy against Suflex for breach of its limited product warranty shall be, at the option of Suflex, either refund of the invoice value of defective products, or repair or replacement F.O.B. its plant or other shipping point. In no event shall Suflex be liable to any buyer or any third party for any special, incidental, and/or consequential damages. Suflex assumes no obligation of liability for any advice furnished by it or results obtained with respect to these products. All such advice is given and accepted at the buyer's risk. It is subject to revision as additional knowledge and experience are gained. This information, based on our experience, is offered as a part of our service to customers. It is intended for use by persons having technical skill at their discretion and risk. We do not guarantee results, and we assume no liability in connection with its use. Publication of this information is not intended as a license to operate under or a recommendation to infringe any existing patents. Technical data presented herein are to be considered nominal values and are not for specification purposes.



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