



# NU-GUARD G™ NU-GUARD FR™

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## EXPANDABLE MONOFILAMENT BRAIDED SLEEVING

- NU-GUARD G rated to 150 °C.
- NU-GUARD G is RoHS and WEEE compliant.
- Available Sizes: 1/8" – 2 1/2"
- Packaging: Standard Spools, Bulk Spools, Cut to length.
- Colors: NU-GUARD G standard color is black. Consult factory for other colors. NU-GUARD FR is available in black with a contrasting black tracer or white with a contrasting black tracer. For other tracer colors, consult factory.



## DESCRIPTION

Sofanou NU-GUARD G and NU-GUARD FR flame retardant expandable monofilament braided sleeveings are produced by braiding specially formulated PET (polyethylene terephthalate) monofilaments into a cylindrical sleeve. NU-GUARD G is a tough and lightweight sleeveing that demonstrates excellent chemical and fungus resistance while providing good mechanical properties. The open weave construction allows each size to expand to three times its original diameter. This expansion combined with the extreme flexibility makes NU-GUARD G and FR easy to apply over irregular shapes. They are also available in tight weave and heavy duty constructions for special applications.

## USES

NU-GUARD G and NU-GUARD FR expandable monofilament braided sleeveings provide a tough, durable protection over tubing, hoses, wire, wire bundles, wire harnesses, cable assemblies and flat ribbon cable. The open weave provides for the dissipation of heat and moisture, prevention condensation and allowing for complete drainage. The resistance of the polyester monofilament to most oils, sea water, fuels, cleaners, solvents and chemicals makes it ideal for applications in harsh environments. NU-GUARD G and NU-GUARD FR exhibit flexibility even at low temperatures making it ideal for applications in machine tools, robotics, automatic equipment and wherever exposure to extreme weather conditions is a concern.

## SPECIFICATIONS

UL – NU-GUARD G and FR sleeveings are Underwriters Laboratory Recognized for continuous operation at 125 °C and will withstand intermittent operation up to 150 °C (UL file #E131769)

UL – NU-GUARD FR sleeveings are VW-1 rated by Underwriters Laboratory

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## SPECIFICATIONS – CONT'D

Ford – E8ZB-18K459-AA (Chart); E77H-18K459-AA (Chart); E9TB18K459-CA (Chart)  
and others.

Chrysler – 4414566 (Chart)

NU-GUARD G & NU-GUARD FR SLEEVINGS			
CHARACTERISTICS OF EXPANDABLE MONOFILAMENT BRAIDED SLEEVINGS			
PROPERTY	TEST METHOD	NU-GUARD G PERFORMANCE	NU-GUARD FR PERFORMANCE
Tensile strength	ASTM D 876	100,000 psi	110,000 psi
Elongation	ASTM D 876	25%	25%
Specific Gravity	ASTM D 792	1.31	1.31
Moisture Absorption 24 hours	ASTM D 570	0.08%	0.08%
Shrinkage @ 180°C		4%	4.2%
Max. operating temp.	UL 224	150° C	150° C
Melt Temperature	ASTM D 2117	250° C	240° C
Low Temp. Flexibility	MIL I 23053	-70° C	-70° C
Flammability	UL 224	Does not burn	VW-1 / FR-1
Thermal Aging	ASTM D 3045	175° for 3 hrs.	175° for 3 hrs.
Flexural Modulus 10 <sup>3</sup> psi @ 73°	ASTM D 790	400	410
Fungus Resistance	MIL STD 810 (508)	No Growth	No Growth
Copper Corrosiveness	MIL I 23053	No Effect	No Effect

## FLUID RESISTANCE

Virtually no effect on the tensile strength or elongation of NU-GUARD FR when exposed to the following fluids: cleaning fluid, de-icing fluid, fuel oil, gasoline, hydraulic fluid, lubricating oil, salt water and solvents. NU-GUARD G may exhibit a slight reduction in elongation (approximately 5%).

GENERAL PURPOSE EXPANDABLE SLEEVING DIMENSIONS				
Nominal I.D. (inches)	Nominal I.D. (mm)	Sofanou Part No.	Size Range (inches)	Approximate weight (lbs / 1000 ft)
1/8	3.18	GP-321	3/32 – 9/32	1.8
1/4	6.35	GP-481	1/8 – 1/2	2.7
1/4	6.35	GP-243	1/8 – 9/32	3.9
3/8	9.53	GP-363	3/16 – 5/8	5.7
1/2	12.7	GP-483	1/4 – 3/4	7.4
3/4	19.1	GP-643	1/2 – 1 1/4	10.4
1 1/4	31.8	GP-963	3/4 – 1 1/2	15.9
1 3/4	44.5	GP-964	1 1/4 – 2 1/2	19.6
2	50.8	GP-1203	1 1/2 – 3 1/2	26.3
2 1/2	63.5	GP-1206	1 3/4 – 4 1/4	34.0

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<b>FLAME RETARDANT EXPANDABLE SLEEVING DIMENSIONS</b>				
<b>Nominal I.D. (inches)</b>	<b>Nominal I.D. (mm)</b>	<b>Sofanou Part No.</b>	<b>Size Range (inches)</b>	<b>Approximate weight (lbs / 1000 ft)</b>
1/8	3.18	FR-321	3/32 – 9/32	1.82
1/4	6.35	FR-481	1/8 – 1/2	2.7
1/4	6.35	FR-243	1/8 – 9/32	3.9
1/2	12.7	FR-483	1/4 – 3/4	7.4
3/4	19.1	FR-643	1/2 – 1 1/4	10.4
1	25.4	FR-963	3/4 – 1 3/4	15.9
1 3/4	44.5	FR-964	1 – 2 1/2	19.6
2	50.8	FR-1204	1 1/4 – 3	26.3
2 1/2	63.5	FR-1205	1 1/2 – 3 1/4	30.0

<b>HIGH TEMPERATURE (HALAR) EXPANDABLE SLEEVING DIMENSIONS</b>				
<b>Nominal I.D. (inches)</b>	<b>Nominal I.D. (mm)</b>	<b>Sofanou Part No.</b>	<b>Size Range (inches)</b>	<b>Approximate weight (lbs / 1000 ft)</b>
7/64	2.78	HT-321	3/32 – 1/8	2.5
1/4	6.35	HT-481	1/8 – 3/8	3.8
7/16	11.11	HT-363	1/4 – 5/8	7.7
1/2	12.7	HT-483	3/8 – 7/8	11.4
3/4	19.1	HT-723	1/2 – 1 3/8	17.2
1 1/4	31.8	HT-963	3/4 – 1 3/4	26.0
1 3/4	44.5	HT-1204	1 1/4 – 2 1/2	40.0
2	50.8	HT-1205	1 3/4 – 3	48.0
2 1/2	63.5	HT-1206	1 1/2 – 3 1/2	59.8

High temperature HALAR expandable sleeving will not support combustion and provides maximum resistance to chemical attack.

NU-GUARD FR (Flame Retardant) does not meet the requirements of RoHS, WEEE and California Prop 65 due to its polybrominated biphenol and diphenol content. Consult the factory for non-brominated, RoHS compliant FR availability.

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Fraction	Decimal
1/32	0.0313
1/16	0.0625
3/32	0.0938
1/8	0.1250
5/32	0.1563
3/16	0.1875
7/32	0.2188
1/4	0.2500
9/32	0.2813
5/16	0.3125
11/32	0.3438
3/8	0.3750
13/32	0.4063
7/16	0.4375
15/32	0.4688
1/2	0.5000
17/32	0.5313
9/16	0.5625
19/32	0.5938
5/8	0.6250
21/32	0.6563
11/16	0.6875
23/32	0.7188
3/4	0.7500
25/32	0.7813
13/16	0.8125
27/32	0.8438
7/8	0.8750
29/32	0.9063
15/16	0.9375
31/32	0.9688
1	1.0000

mm	in.
0.50	0.02
1.00	0.04
1.50	0.06
2.00	0.08
2.50	0.10
3.00	0.12
3.50	0.14
4.00	0.16
4.50	0.18
5.00	0.20
5.50	0.22
6.00	0.24
6.50	0.26
7.00	0.28
7.50	0.30
8.00	0.31
8.50	0.33
9.00	0.35
9.50	0.37
10.00	0.39
10.50	0.41
11.00	0.43
11.50	0.45
12.00	0.47
12.50	0.49
13.00	0.51
13.50	0.53
14.00	0.55
14.50	0.57
15.00	0.59
15.50	0.61
16.00	0.63
16.50	0.65
17.00	0.67
17.50	0.69
18.00	0.71
18.50	0.73
19.00	0.75
19.50	0.77
20.00	0.79
20.50	0.81
21.00	0.83
21.50	0.85
22.00	0.87
22.50	0.89
23.00	0.91
23.50	0.93
24.00	0.94
24.50	0.96
25.00	0.98
25.50	1.00

°C	°F
400	752
390	734
380	716
370	698
360	680
350	662
340	644
330	626
320	608
310	590
300	572
290	554
280	536
270	518
260	500
250	482
240	464
230	446
220	428
210	410
200	392
190	374
180	356
170	338
160	320
150	302
140	284
130	266
120	248
110	230
100	212
90	194
80	176
70	158
60	140
50	122
40	104
30	86
20	68
10	50
0	32
-10	14
-20	-4
-30	-22
-40	-40
-50	-58
-60	-76
-70	-94
-80	-112

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