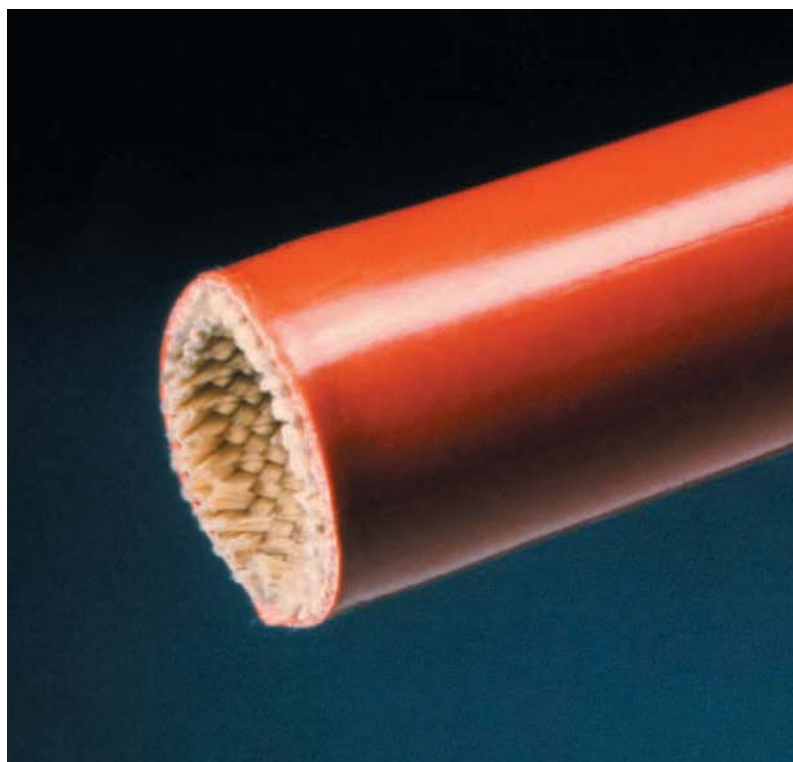


## Product Highlights

- Working temperature  
-70°C to +200°C  
(Class H & N)
- Grade A (7 kV)
- Available in AWG  
sizes #24 through 3" I.D.
- VW-1 sizes up to 2"
- UL, CSA & QPL  
Recognized
- Applicable specifications:  
  
ASTM D-350/372  
MIL-I-3190/6-QPL  
UL 1441  
NEMA TF-1
- Excellent low temperature  
flexibility
- Available in red iron oxide,  
white and black



# Ben-Har™ 1151- FR Grade A

Ben-Har 1151-FR sleeving is an extremely flexible silicone rubber coated fiberglass sleeving with outstanding flame retardant properties. It is a UL recognized component, meeting VW-1 flammability requirements, recommended for Class H (+200°C) systems.

The special combination of a smooth fiberglass bore and flexible, elastomeric silicone coating allows this sleeving to expand and conform over larger dimensions, assuring a snug fit, permanent placement, and elastic self-fitting on components or terminals.

The excellent bond of rubber coating to the braid insures against damage from rough assembly handling.

Ben-Har 1151-FR is resistant to acids, alkalis, organic solvents, and aliphatic hydrocarbons. Slight swelling is produced by aromatic solvents and chlorinated hydrocarbons. Ketones and esters may cause deterioration. Ben-Har 1151-FR is compatible with common Class H insulating varnishes.

Ben-Har 1151-FR is commonly used in appliance assemblies, wire harnesses, transformer leads, power supplies, and motor coil and heater leads. This product can be obtained in colors for identification and appearance.

**BentleyHarris®**  
Protection Products

## Performance Data

Outstanding flexibility, self-fitting and good push-back  
1151-FR Grade A meets flammability requirements UL VW-1.

Property	Results
Hardness, durometer A	35 +/- 5
Tensile strength	60 bar
Elongation rubber	500%
Tear resistance, die B	70 psi
Tensile modulus at 100% elongation	10.3 bar
Dielectric constant (100 Hz - 100 kHz)	3.10
Dissipation factor (100 Hz)	0.00320
(10.000 Hz)	0.00016
Volume resistivity	2.48 x 10 <sup>14</sup> ohm/cm
Dielectric strength	485 volts / 0.025 mm

## Product Specifications

NEMA Size AWG	Nominal diameter (inches)	Nominal diameter (mm)	Part Number	Diameter tolerance (mm)	Standard Packaging (m)
24	0.022	0.56	32001924xxS	± 0.15	150
22	0.027	0.69	32001922xxS	± 0.15	150
20	0.034	0.86	32001920xxS	± 0.15	150
18	0.042	1.07	32001918xxS	± 0.20	150
16	0.053	1.35	32001916xxS	± 0.20	150
14	0.066	1.68	32001914xxS	± 0.20	150
12	0.085	2.16	32001912xxS	± 0.20	75
10	0.106	2.69	32001910xxS	± 0.20	75
9	0.118	3.00	32001909xxS	± 0.20	75
8	0.133	3.38	32001908xxS	± 0.20	75
7	0.148	3.76	32001907xxS	± 0.30	75
6	0.166	4.22	32001906xxS	± 0.30	38
5	0.186	4.72	32001905xxS	± 0.30	38
4	0.208	5.28	32001904xxS	± 0.40	38
3	0.234	5.94	32001903xxS	± 0.40	38
2	0.263	6.68	32001902xxS	± 0.40	15
1	0.294	7.47	32001901xxS	± 0.40	15
0	0.330	8.38	32001900xxS	± 0.40	15
3/8"	0.375	9.52	32001010xxS	± 0.60	15
7/16"	0.438	11.12	32001011xxS	± 0.60	15
1/2"	0.500	12.70	32001013xxS	± 0.60	15
5/8"	0.625	15.87	32001016xxS	± 0.90	15
3/4"	0.750	19.05	32001019xxS	± 0.90	15
7/8"	0.875	22.22	32001022xxS	± 0.90	15
1"	1.000	25.40	32001025xxS	± 0.90	15
1 1/4"	1.250	31.75	32001032xxS		15
1 1/2"	1.500	38.10	32001038xxS		15
2"	2.000	50.80	32001051xxS		15
2 1/2"	2.500	63.50	32001064xxS		15
3"	3.000	76.20	32001076xxS		15

xx = Colour Code    02 = White    03 = Black    14 = Red iron oxide

### Part Numbering System

Example:	Description	Size AWG	Colour	Quantity	Part Number
	1151-FR Grade A	2	14(red iron oxide)	150 m	3200190214S

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## Availability

Bentley-Harris® Ben-Har 1151-FR Grade A is available in sizes from 0.56 mm to 76.2 mm.

Standard colours are white (02) and red iron oxide (14). The colour black (03) is subject to a minimum quantity of 4 standard packaging units per size.

Standard packaging for 1151-FR Grade A is on cardboard spools except for sizes AWG 1/2" to 3" which are supplied in coils. Special packaging for larger quantities are available on request for sizes from AWG 24 to 7/16".

All numeric data show average or typical values.



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