

# NU-SLEEVE SG-200

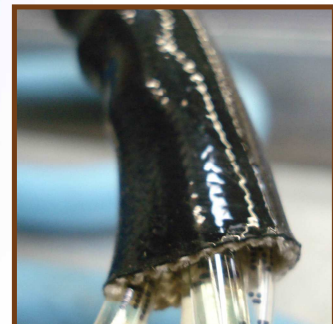
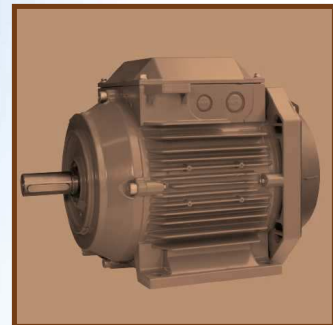
Electrical Equipment

NU-SLEEVE SG-200 is available in 5 electrical grades (A, B, C-1, C-2 and C-3) in a standard wall (NEMA TF-1, Table 3-1) construction. All grades are made using braided E-Glass yarns that have been heat treated to optimize coating adhesion and minimize surface irregularities and then coated with either a liquid silicone rubber (LSR) or a high polymer silicone (HPS) solution, whichever best fits the application. LSR products are available in Grades A, B and C-1.

HPS products are available in Grades C-1, C-2 and C-3 only. All SG-200 products have a high resistance to abrasion, are more homogeneous than extruded rubber sleeving and both types have a high heat/flex capacity. It is highly resistant to end fray and coating fracture, even when stretched over rectangular conductors or wires larger than the normal maximum inside diameter, making it an ideal choice for high stress applications over a wide temperature range from  $-55^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$ .

All NU-SLEEVE SG-200 products are highly resistant to inorganic acids and alkalis. HPS shows no swelling or distortion from Chlorinated organic solvents and aromatic hydrocarbons but these agents will cause some swelling and subsequent reduction in Tensile strength for LSR. Consult the factory for more information concerning specific chemical compatibilities.

NU-SLEEVE SG-200 is used extensively in high temperature applications where one or more of the following features are required: flexibility, expandability, abrasion resistance, cut-through resistance and chemical resistance. It finds application in terminal and lead-wire insulation and protection, wire harness protection in extreme environments as well as high current dry transformers. It may also be stacked or telescoped with the same or other insulation products to obtain higher dielectric voltage ratings.



All our sites are ISO TS16949  
and ISO 14001 certified



## SILICONE RUBBER COATED BRAIDED FIBERGLASS SLEEVING

NU-SLEEVE SG-200

- Class 200 Insulation
- Grade A (7000V) UL & CSA Electrical Component - UL File #E93101, CSA File #LR67735
- Grade A (7000V) & B (4000V) VW-1 Flame Retardant - UL File #E80713 / #E93101
- **Applicable Specifications:**
  - NEMA TF-1 Type 5
  - UL 1441 VW-1
  - FMVSS 302
  - SAE ARP 1536 Abrasion Test
  - MIL-I-3190/6, QPL-3190: Grade A (8000V)
- RoHS and WEEE compliant.
- Low temperature brittle point below -70°C
- Available sizes: AWG #24 – 2 1/2"
- Packaging: standard spools, bulk spools, cut to length (1/2" diameter and under). Above 1 1/2" supplied in 4' lengths.
- Colors: white, black, natural, red iron oxide are standard. Other available colors are subject to factory quotation upon request.

| NEMA Grades Spec. | Jenisco /Markel Hygrade Spec. | Min. Average Breakdown | Min. Individual Breakdown | Silicone Type |
|-------------------|-------------------------------|------------------------|---------------------------|---------------|
| SG-200 A          | ER565/SR-398A                 | 7000V                  | 5000V                     | LSR           |
| SG-200 B          | ER564/SR-398B                 | 4000V                  | 2500V                     | LSR           |
| SG-200 C-1        | ER563/SR-398C                 | 2500V                  | 1500V                     | LSR           |
| SG-200 C-1        | ER562/NA                      | 2500V                  | 1500V                     | HPS           |
| SG-200 C-2        | ER561/NA                      | 1500V                  | 700V                      | HPS           |
| SG-200 C-3        | ER560/NA                      | N/A                    | N/A                       | HPS           |

|                                 |  |
|---------------------------------|--|
| Operating Range (NEMA Class H): | -70° C to 200° C   |
| Dielectric Strength:            | Dry: 8,000 volts, 60 Hz AC @ 500V / sec. Rate of rise                  |
| Dielectric constant:            | Wet: > 80% of the dry values<br>(10,000 Hz) 2.86<br>(100 Hz) 2.87      |
| Volume resistivity:             | (100 Hz) 2.87  |
| Dissipation factor:             | Ohm.cm x 10 <sup>13</sup> 6.1<br>(10,000 Hz) .0011<br>(100 Hz) .0016   |
| Tensile Strength:               | (100 Hz) .0016   |
| Hardness:                       | MPa 8.3  |
| Elongation at break:            | Shore A 37   |
| Fungus resistance:              | % 420  |
| Rate of Burning:                | Inert None at 40x  |
| Radiation Resistance:           | Self-extinguishing with removal of heat source<br>(10 Mrads) No effect |
| Delphi M4613                    |  |
| Heat Age                        | 275°C for 136 hours – no effect.                                       |
| Flammability                    | Self-extinguishing   |
| Fluid exposure                  |  |
| Brake fluids                    | No effect  |
| Transmission fluids             | No effect  |
| Antifreeze                      | No effect  |
| Washer solutions                | No effect  |
| Fuel C                          | No effect  |
| Pwr. Steering fluid             | No effect  |
| Diesel                          | No effect  |
| Battery electrolyte             | No effect  |
| Oil                             | No effect  |
| Abrasion resistance             | 1,500 cycles, minimum  |

## Dimensions

| NEMA Size | Nominal Diameter (inches) | Nominal Diameter (mm) | Delfingen Grade A Part No. | Minimum Diameter (inches) | Maximum Diameter (inches) |
|-----------|---------------------------|-----------------------|----------------------------|---------------------------|---------------------------|
| 24        | 0.024                     | 0.61                  | ER5650024X                 | 0.020                     | 0.027                     |
| 22        | 0.029                     | 0.74                  | ER5650022X                 | 0.025                     | 0.032                     |
| 20        | 0.036                     | 0.91                  | ER5650020X                 | 0.032                     | 0.039                     |
| 18        | 0.044                     | 1.12                  | ER5650018X                 | 0.040                     | 0.049                     |
| 17        | 0.049                     | 1.24                  | ER5650017X                 | 0.045                     | 0.054                     |
| 16        | 0.056                     | 1.42                  | ER5650016X                 | 0.051                     | 0.061                     |
| 15        | 0.062                     | 1.57                  | ER5650015X                 | 0.057                     | 0.067                     |
| 14        | 0.069                     | 1.75                  | ER5650014X                 | 0.064                     | 0.074                     |
| 13        | 0.077                     | 1.96                  | ER5650013X                 | 0.072                     | 0.082                     |
| 12        | 0.086                     | 2.18                  | ER5650012X                 | 0.081                     | 0.091                     |
| 11        | 0.096                     | 2.44                  | ER5650011X                 | 0.091                     | 0.101                     |
| 10        | 0.107                     | 2.72                  | ER5650010X                 | 0.102                     | 0.112                     |
| 9         | 0.119                     | 3.02                  | ER5650009X                 | 0.114                     | 0.124                     |
| 8         | 0.135                     | 3.43                  | ER5650008X                 | 0.129                     | 0.141                     |
| 7         | 0.148                     | 3.76                  | ER5650007X                 | 0.144                     | 0.158                     |
| 6         | 0.166                     | 4.22                  | ER5650006X                 | 0.162                     | 0.178                     |
| 5         | 0.186                     | 4.72                  | ER5650005X                 | 0.182                     | 0.198                     |
| 4         | 0.208                     | 5.28                  | ER5650004X                 | 0.204                     | 0.224                     |
| 3         | 0.234                     | 5.94                  | ER5650003X                 | 0.229                     | 0.249                     |
| 2         | 0.263                     | 6.68                  | ER5650002X                 | 0.258                     | 0.278                     |
| 1         | 0.294                     | 7.47                  | ER5650001X                 | 0.289                     | 0.311                     |
| 5/16"     | 0.313                     | 7.95                  | ER5650312X                 | 0.313                     | 0.334                     |
| 0         | 0.330                     | 8.38                  | ER5650000X                 | 0.325                     | 0.347                     |
| 3/8"      | 0.387                     | 9.83                  | ER5650375X                 | 0.375                     | 0.399                     |
| 7/16"     | 0.450                     | 11.43                 | ER5650437X                 | 0.438                     | 0.462                     |
| 1/2"      | 0.512                     | 13.00                 | ER5650500X                 | 0.500                     | 0.524                     |
| 5/8"      | 0.640                     | 16.26                 | ER5650625X                 | 0.625                     | 0.655                     |
| 3/4"      | 0.768                     | 19.51                 | ER5650750X                 | 0.750                     | 0.786                     |
| 7/8"      | 0.893                     | 22.68                 | ER5650875X                 | 0.875                     | 0.911                     |
| 1"        | 1.018                     | 25.86                 | ER5651000X                 | 1.000                     | 1.036                     |
| 1 1/8"    | 1.144                     | 29.06                 | ER5651125X                 | 1.125                     | 1.161                     |
| 1 1/4"    | 1.260                     | 31.75                 | ER5651250X                 | 1.250                     | 1.286                     |
| 1 1/2"    | 1.518                     | 38.56                 | ER5651500X                 | 1.500                     | 1.536                     |

**Notes:** 1). Grade A (7000V) is shown in the above part numbers. For other grades, substitute as follows in place of ER565:

- o ER564 - Grade B LSR
- o ER563 - Grade C-1 LSR
- o ER562 - Grade C-1 HPS
- o ER561 - Grade C-2 HPS
- o ER560 - Grade C-3 HPS

2) The last 2 characters in the part number are reserved for color identification. For colors, substitute as follows for xx: B=Black, N=Natural, RO=Red Oxide, W=White, G=Green, U=Blue.  
Contact customer service for price and availability of all colors other than black, white, natural and red oxide.

Data for information only, subject to modifications without notice

Delfingen\_NG\_SG-200\_V1\_en

Headquarters:  
Delfingen Industry S.A.  
Zone Industrielle  
25340 Anteuil  
FRANCE  
Phone: +33 (0)3 81 90 73 00  
Fax: +33 (0)3 81 90 73 19

Production:  
DELFINEN US - New York  
2221 NIAGARA FALLS BLVD  
NY 14304 NIAGARA FALLS  
USA  
Phone: +1 716 215 03 00  
Fax: +1 716 215 03 04

E-mail : [delfingen@delfingen.com](mailto:delfingen@delfingen.com)

<http://www.delfingen.com>