PRODUCT
DATA SHEET

NEMA MW 79-C

Class 155 - Copper - Round Conductors - Polyurethane coated magnet wire / winding wire.

APPLICATION

Soderex®/155 magnet wire is used when a coil or component design needs to utilize the unique solder stripping property of the polyurethane resin construction.

Soderex®/155 magnet wire, with its modified polyurethane film, has in the past several years become the standard Class 155 wire for a wide array of fine wire coil applications.

Soderex®/155 magnet wire is recommended but not limited to the following applications:

- Small motors, armatures, and fields
- Appliance controls and relays
- Automotive controls and relays
- Solenoids
- Bobbin wound coils
- Electronic coils
- Small transformers
- Linear motors
- Instruments
- RF coils

ENGINEERING HIGHLIGHTS

1. THERMAL CLASSIFICATION

Soderex®/155 magnet wire is Class 155 when measured in accordance with the ASTM D 2307 test method. Heat shock resistance meets 175°C.

2. THERMOPLASTIC FLOW

Thermoplastic flow (cut-thru) temperature of Soderex®/155 magnet wire is in the 220°C plus range; well above maximum process conditions found in most molded coil work, trickle impregnation processes and standard pre-heat varnish cycles specified for normal Class 155 systems.

3. SOLDERABILITY

Soderex®/155 magnet wire solder strips readily and much more easily than MW 77 type products. It solders consistently at temperatures as low as 390°C.

4. WINDABILITY

Flexibility and adhesion properties of the Soderex®/155 magnet wire film are more than adequate for all but the most severe fine wire winding applications.

5. ELECTRICAL

Soderex®/155 magnet wire insulation exhibits high dielectric strength retention under high humidity conditions. The low dissipation factor of Soderex®/155 magnet wire at high frequencies makes it a prime candidate for RF coil applications.

6. CHEMICAL

The solvent resistance properties of Soderex®/155 are suitable for most Class 105, 130, and 155 varnishes, encapsulation materials, and treating resins.

7. NORMAL AVAILABILITY

- Round Copper Sizes:
  28-47 AWG, Single and Heavy Build

Please consult Magnet Wire Marketing for additional size (including metric) and build information.

Essex® SODEREX® / 155

Magnet Wire / Winding Wire

PRODUCT DATA SHEET

Performance data is representative of 36 AWG heavy build copper. **

THERMAL PROPERTIES

HEAT SHOCK RESISTANCE

TYPICAL PERFORMANCE: No cracks @ 175°C
REQUIRED PERFORMANCE: 20%, 3 XD, no cracks†

SOLDERABILITY

TYPICAL PERFORMANCE: Pass
REQUIRED PERFORMANCE: ≤ 3 seconds @ 390°C†

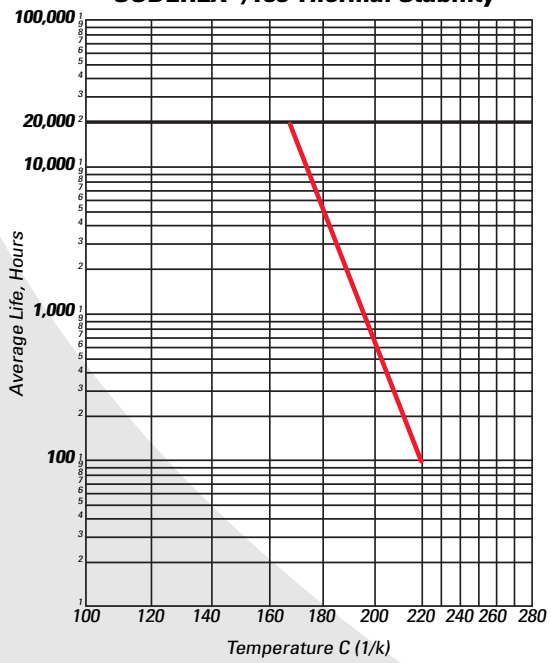
THERMAL STABILITY

TYPICAL PERFORMANCE: 170°C
REQUIRED PERFORMANCE: 155°C minimum†

THERMOPLASTIC FLOW

TYPICAL PERFORMANCE: 240°C
REQUIRED PERFORMANCE: 200°C†

30 AWG Heavy Build Copper SODEREX®/155 Thermal Stability



PHYSICAL PROPERTIES

ADHESION AND FLEXIBILITY

TYPICAL PERFORMANCE: 20%, 1xD, no cracks
REQUIRED PERFORMANCE: 20%, 3xD, no cracks†

CONDUCTOR ELONGATION

TYPICAL PERFORMANCE: 26%
REQUIRED PERFORMANCE: 20% minimum†

ELECTRICAL PROPERTIES

CONTINUITY

TYPICAL PERFORMANCE: ≤ 1 fault/100 feet
REQUIRED PERFORMANCE: ≤ 5 faults/100 feet†

DIELECTRIC BREAKDOWN VOLTAGE

ROOM TEMPERATURE

TYPICAL PERFORMANCE: 6400 volts, avg.
REQUIRED PERFORMANCE: 2600 volts, minimum†

RATED TEMPERATURE

TYPICAL PERFORMANCE: 4900 volts, avg.
REQUIRED PERFORMANCE: 1950 volts, minimum†

** The values shown represent typical average results and are not intended to be used as design data or specification limits.
† Requirements of NEMA MW 1000; Section MW 79-C.

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