



## FORMVAR

Proven performance in oil-filled applications. Excellent hydrolytic stability.

Rea Material Code: **F**  
 Rea Insulation Code: **02**  
 Insulation Material Description: **Polyvinyl Formal**  
 Thermal Class: **105**  
 Shape: **Round**  
 Conductor: **Aluminum**  
 NEMA Specification: **MW 15-A**  
 IEC Specification: **60317-14**

### MARKETS

Transformers:  
**General Utility Distribution Transformers**

### TYPICAL APPLICATIONS

Oil-filled transformers, superconducting coils for cryogenic applications, and motors

### FEATURES AND BENEFITS

- Resistant to mechanical and winding abuse due to superior flexibility and abrasion resistance
- Performs well in in-line flattening processes.
- Compatible with most varnishes and impregnation compounds.
- Retains insulating properties when exposed to cryogenic temperatures.
- Compatible with transformer oils.

### AVAILABILITY

Single	8-20 AWG
Heavy	1-20 AWG

### TYPICAL PROPERTIES

This data is typical of 18 AWG copper, heavy build insulation only. It is not intended to be used to create specification limits.

### THERMAL

Thermal Endurance		
		>110°C
Thermoplastic Flow	minimum	typical
	180°C	230°C
Heat Shock (20% 3X)		
		20% 3x 175°C
Stress Relief Temperature		
		150°C

### MECHANICAL

Mandrel Flexibility	minimum	typical
After Elongation	20% 3x OK	30% 1x OK
After Snap	3x OK	1x OK
Elongation	32%	40%
Unilateral Scrape	minimum	typical
Avg. of 3 sides	1150 gms	1600 gms

### ELECTRICAL

Dielectric Breakdown	
@RT	10 kV
@ 105° C	7 kV
High Voltage Continuity	
NEMA @ 1500 V DC	5 faults/100 ft max
Typical @ 2000 DC	0-1 faults/100 ft

### CHEMICAL

Completeness of Cure	
	5 min boil 70/30
Transfer Oil System	
	Retained Flexibility- 1x OK

Retained Flexibility-  
90% of original  
breakdown voltage

Resistance to Solvents

After 24 hrs @ RT

Xylene  
50/50  
Cellosolve/Xylene  
Perchloroethylene  
1% NaOH  
28% Sulfuric Acid  
Gasohol