

Materials of Construction Compatibility

The following transformer materials of construction were tested for compatibility with Envirotemp FR3 fluid. Allowing for the usual idiosyncrasies of oil/elastomer interactions, elastomers tended to

- swell slightly in mineral oil and shrink slightly in FR3 fluid,
- increase in tensile strength in FR3 fluid and decrease in mineral oil, and
- soften a little in mineral oil and hardens a little in FR3.

Elastomer interactions with both fluids are satisfactory for static flat-gasket seals. All other materials tested performed well in both fluids.

Core and Coil Materials

- core steel
- bare copper
- bare aluminum
- polyvinyl Formvar
 - copper magnet wire
 - aluminum magnet wire
 - conical mandrel
- Kraft paper
 - pressboard
 - diamond paper
 - plain paper
 - tubing
 - crepe tubing
- vulcanized fiber sheet
- polyamide bias tape w/o epoxy
- polyvinyl acetate adhesive

Group A Materials

- Fiberite thermoset epoxy
- Rynite 530 (PET)
- high temperature Nylon
- Rostone thermoset polyester
- fiberglass/epoxy
- GPO 3 polyester/glass laminate
- Amodel 1133 polyphthalamide
- Mylar film (PET)
- Masonite
- porcelain - radio glaze
- Nylon tie wrap
- Carri-strap

Group B Materials

- Rosite 3250
- PVC wire jacket
- Storm Trapper epoxy coating & wires
- pine block

Tapes

- Tesa 51597 polyester/glass with thermosetting rubber adhesive
- Permaccel P-247 polyester/glass with thermosetting acrylic adhesive
- gum wrap Kraft paper with wheat gum adhesive

Sealants

Loctite PST592 pipe sealant
Loctite Vibra-Seal
Permatex 51D pipe joint compound

polyethylene naphthalate (PEN)
Rynite 350
HTN primary bushing
tap changer
bayonet fuse

Switchgear components

tin-plated bus bar
silver-plated bus bar
Nylon tie wraps
fiberglass string
fiberglass string
bottle bushing
CT protector
cover gasket - wide
cover gasket - narrow
bushing gasket
GPO-3 polyester
semaphore window
auxiliary switches
shaft seal o-ring
semaphore gasket
bottle disc
tank connector
tank connector gasket
CT with wire leads

Elastomers

Buna-N
Nitrile NBR
Nitrile HNBR
epichlorohydrin
Viton
Neoprene (used)
Cork/neoprene (used)

Epoxy Paint (Two Part)

Core Epoxy

Core Banding

Glass / Polyester
Dacron / Epoxy
Green Polyester Bands
Black Nylon Bands

Phenolic (DETC)

Heat Shrink (Polyester)

Laminated Wood

TX Block Material

Nylon (6/6) (Ty-wraps & Banding)

Yoke Band Insulation

CTC (Bonded)

Adhesives

PVA

Casein
Epoxy
Cyanoacrylate
Anaerobic (Thread lockers)
Acrylics (Tapes)