



# SRT

## Stress Relief Tape

Technical Data Sheet

October 2017

### Description and Features

**SRT** is a stress relieving, self-amalgamating rubber compound in roll form. It achieves stress relief in reshaping the electrical field by establishing a controlled voltage gradient across the dielectric interface. It provides an efficient method of achieving stress relief tape for extruded dielectric cables from 5kV through 35 kV. SRT is pliable, self-amalgamating easy to fill gaps and voids, and avoiding dangerous air pocket and humidity penetration.

- High permittivity and low loss tangent gives excellent stress controlling properties.
- Inherent moisture seal.
- A pliable self-amalgamating tape easy to apply.
- Suitable for all cable constructions without the use of special adapters.

### Materials

**Backing**  
Rubber

**Adhesive**  
None

**Color**  
Grey

### Standard Size

Width x Length  
19 mm x 6,1 m (0.75 in. x 20 ft.)  
Other sizes available upon request

### Technical Properties

#### Characteristic

Thickness (mm)  
Breaking Strength (MPa)  
Elongation at break (%)  
Water Absorption (%)  
Dielectric Strength (kV/mm)  
Permittivity  
Factor Dissipation  
Volume Resistivity (Ohm.cm)

#### Typical Value

1,00  
0,95  
140  
0,10  
4,0  
13,5  
0,025  
 $1,8 \times 10^{16}$

#### Test Method

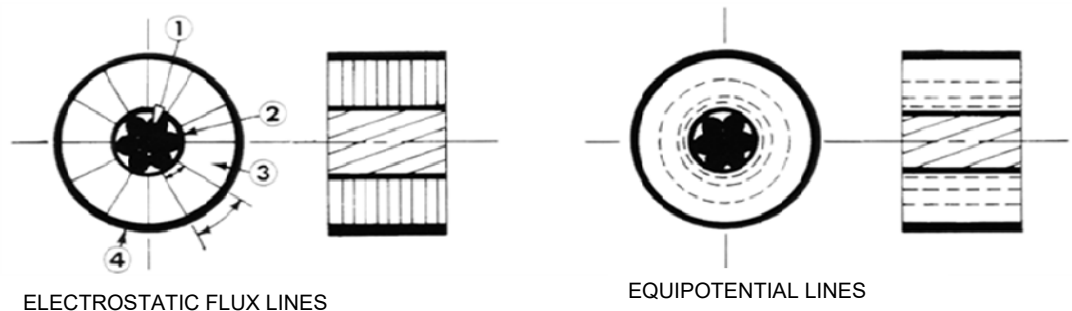
ASTM D 4325  
ASTM D 412  
ASTM D 412  
ASTM D 570  
ASTM D 149  
ASTM D 150  
ASTM D 150  
ASTM D 257

### Recommended Uses

SRT tape is used to regulate and manage the electric fields in terminal and cable joints. By altering the electrical field surrounding the termination or joint the stress concentration is reduced from several thousand volts to values found in a continuous cable.

### Fundamentals

The dielectric field in shielded power cable is balanced and there are no abnormal voltage stresses in the insulation (fig 1). This condition prevails as long as the cable components remain intact.



**Figure 1.-Dielectric Field of High Voltage Shielded Power Cable**  
1.- Conductor; 2.- Conductor shield; 3.- Insulation; 4.- Insulation Shield

When the insulation shield is removed from a cable to do a cable splice or a termination, high potential gradients are concentrated at the cutback point, causing high electrical stress.

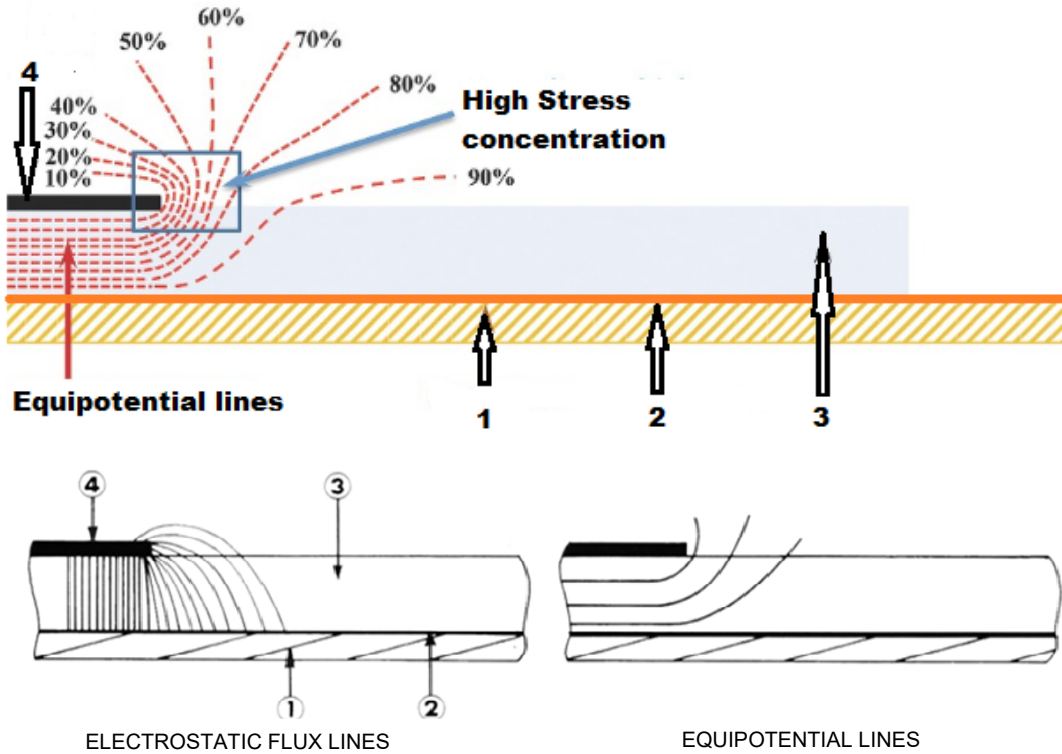
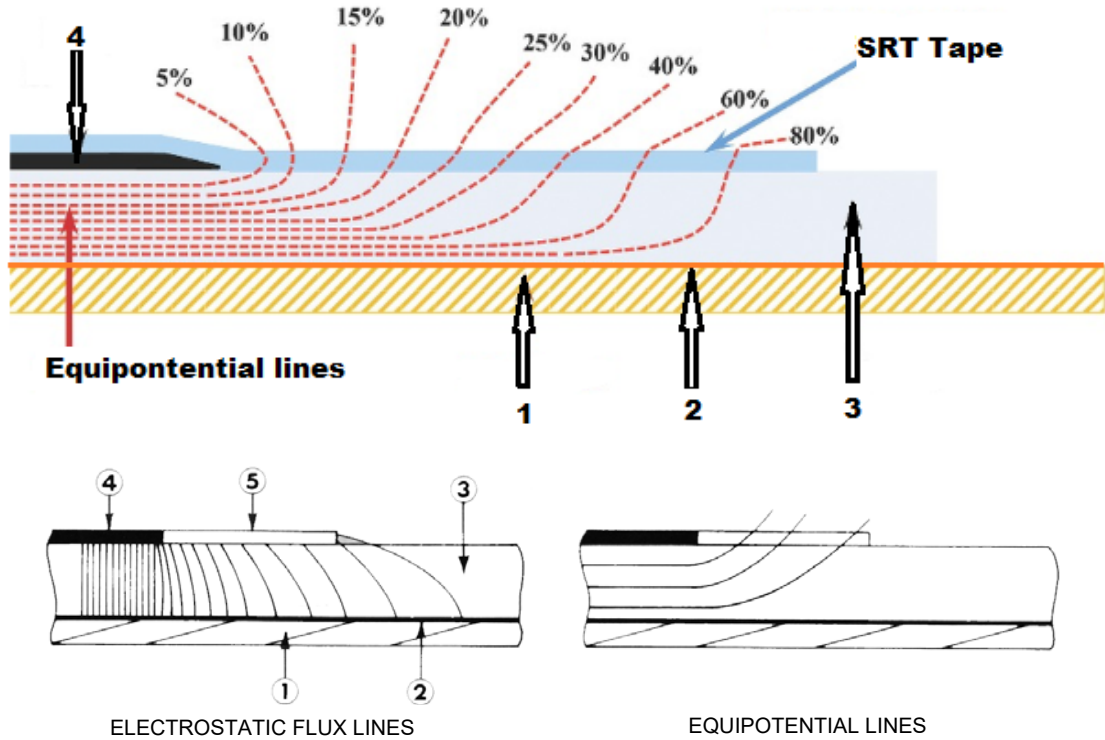


Figure 2.- Dielectric Field of High Voltage Shielded Power Cable with Insulation Shield Removed  
 1.- Conductor; 2.- Conductor shield; 3.- Insulation; 4.- Insulation Shield

These stresses must be controlled (relieved) or the electric field enhancement at these points will produce local discharges that could lead to either flashover along the insulation surface, or dielectric breakdown causing cable failure.

Capacitive Stress Control with SRT tape is based on the principle that when materials of dissimilar permittivities are subject to a potential gradient across their combined thickness, the material having the lowest permittivity, in this case the insulation experiences the highest stress. It can be seen from the schematic diagram that the equipotential lines emerge gradually from the dielectric, thus producing a smooth gradient at the dielectric surface



**Figure 3.-** Dielectric Field of High Voltage Shielded Power Cable Termination Using Voltage Gradient Material Method  
 1.- Conductor; 2.- Conductor shield; 3.- Insulation; 4.- Insulation Shield; 5.- Stress relief tape

## Storage

In original packaging, placed in horizontal position under cover and temperature between 5 and 35 °C

## Shelf Life

60 months from date of manufacture.

Information provided is for reference only. Data in table represent average test results and are not to be used for specification purposes. The product user should make his/her own tests to determine the product's suitability for the intended use

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