



An ISO 9000 Company

TRENTON WAX TAPE ANTI-CORROSION WRAP SYSTEMS® AND DIELECTRIC STRENGTH

Let's take a closer look at Trenton Wax Tape Anti-Corrosion Wrap Systems® and Dielectric Strength.

The ASTM definition of dielectric strength is as follows: *“Dielectric Strength is a measure of the electrical strength of a material (to act) as an insulator.”* What this means in the coatings industry is that the higher the dielectric strength of a material to act as an insulator, the more effective that material should be as an external coating. You actually WANT a coatings material to “insulate” the pipe surface from all external influences whether those influences are bacteria, moisture, salts, UV, galvanic contact, or any mechanism which could generate a corrosion cycle.

Taking a look at some relative measurements for dielectric strength, we note the following:

Material	Dielectric Strength V/mil	Dielectric strength at coating thickness
Fusion Bonded Epoxy	1,180 V/mil	8,260V-17,250V (7-15 mils)
Trenton Tape	236 V/mil	21,240V (90 mils)
PE (cold applied tape)	145 V/mil	5,800 V (40 mils)
Teflon	600 V/mil	N/A

It is no surprise to anyone that FBE is always near the top of anyone's corrosion prevention coatings procedure when you consider performance and durability. However, surface preparation and application are cumbersome and field coatings are difficult to manage. Still, we note that FBE has one of the highest discrete dielectric strength unit numbers in the industry. The applied film thickness is low resulting in the overall moderate applied dielectric strength of FBE when compared to others. So, realizing the fact the FBE is very much a preferred coating because of its inherent dielectric strength, then the total dielectric strength of a coating as calculated by the applied film thickness should be a positive factor in any coatings making decision.

In summary, high dielectric strength is desirable in any anti-corrosion material.

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