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Destructive Versus Non-destructive Testing

A Potentially Destructive Test has the "Potential" to destroy (although not purposefully destroy) the Device Under Test (DUT), which if there is a failure, the specimen may be rendered useless for its intended purpose. Dielectric Insulation Tests that fall into this category include maintenance, acceptance, and proof tests (whether performed in the field or in the shop) such as Surge, Hipot, and Step Voltage. These tests are all performed above the rated voltage of the insulation system, thus, during the test, stress the insulation system and have the potential to render the DUT useless for its intended purpose. Non-destructive testing evaluates the properties of the DUT without causing or having the potential to cause damage. Tests that fall into this category include Insulation Resistance-to-Ground (RTG) commonly called a Megger® test, Polarization Index, Insulation Resistance Profile, and Capacitance-to-Ground (CTG). These tests are intended to be performed within the rated specifications of the DUT, thus, during the test, do not stress the insulation system beyond its rated capability. Should there be a failure during a non-destructive test the insulation system was not in sufficient condition to perform its intended function prior to the test.

You are invited to submit an Electric Motor Testing Tip of your own and receive a free PdMA mug or hat if we publish it! Contact Lou at 813-621-6463 ext. 126 or lou@pdma.com.