



A Leader in Electric Motor Testing

# Tip Of The Week

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## Older vs. Newer Insulation System Analysis

When performing insulation testing on form wound motors (at the motor leads and stabilized temperature), it is important to understand the insulation construction. Section 11.2 of the recently revised IEEE 43-2013 mentions that older windings (typically prior to 1970) used varnished cambric, shellac mica-folium, or asphaltic based insulation systems where a higher PI value (over 8) may be indicative of thermally aged insulation. Newer windings (after 1970) typically use epoxy mica based insulation systems. A high PI value (over 5) may be typical for a given machine. To properly analyze these machines, a nominal baseline PI and Insulation Resistance value is necessary along with a baseline Insulation Resistance Profile (IRP). These should be monitored using trend analysis methods for degradation of the insulation system. For newer epoxy mica based insulation systems without nominal baseline test data, it may be difficult to determine if the insulation system has been thermally aged.

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