LIST OF SYMBOLS AND ABBREVIATIONS

\( a, b, c \) and \( d \) \hspace{1cm} \text{Constants of life equation of Endicott et al.}

\( C_1, C_2, C_3 \) \hspace{1cm} \text{Constants of the proposed life equation.}

\( C_4, C_5, C_6 \) \hspace{1cm} \text{Constants of the proposed life equation.}

\( E \) \hspace{1cm} \text{Activation energy / electrical stress.}

\( h_1, h_2 \) \hspace{1cm} \text{Height of liquid 1 and 2}

\( h, k \) \hspace{1cm} \text{Constants of exponential law for electrical life.}

\( K, R \) \hspace{1cm} \text{Boltzmann's constant / Chemical reaction rate.}

\( L_e \) \hspace{1cm} \text{Electrical life of insulation.}

\( L_T \) \hspace{1cm} \text{Thermal life of insulation.}

\( T \) \hspace{1cm} \text{Temperature in Degree C / Degree K}

\( r \) \hspace{1cm} \text{Regression coefficient.}

\( n \) \hspace{1cm} \text{Number of samples / Power law constant (endurance coefficient) of electrical life.}

\( S_1, S_2 \) \hspace{1cm} \text{Surface area of liquid 1 and 2.}

\( t_1, t_2, t_3 \) \hspace{1cm} \text{Thickness of Dielectrics 1, 2 and 3.}

\( y_1, y_2 \) \hspace{1cm} \text{Volume ratio of liquid 1 and 2.}

\( \varepsilon' \) \hspace{1cm} \text{Permitivity.}

\( \beta \) \hspace{1cm} \text{Shape parameter of Weibull distribution.}

\( \delta \) \hspace{1cm} \text{Scale parameter (characteristic life).}

\( \mu \) \hspace{1cm} \text{Refractive index / Location parameter of a three parameter Weibull distribution.}
\[ \sigma_1, \sigma_2 \] Conductivity of liquid 1 and 2
\[ \lambda \] Coefficient of volume expansion.
\[ \xi \] Coefficient of thermal expansion / Inverse of shape parameter.
\[ \tan \delta \] Dissipation factor.
BOPP Biaxially Oriented Polypropylene Film.
\[ E_{\text{mna}} \] Normalized Mean Absolute Error.
\[ E_{\text{rms}} \] Root Mean Square Error
GMT Gauss-Markov Theorem
PCB Polychlorinated Biphenyl
CO Castor Oil
TO Transformer Oil
MO Mixed Oil (transformer oil and castor oil mixed in equal volume proportions)
P Paper
PP Polypropylene
P + PP + CO Paper-Polypropylene dielectric impregnated with Castor Oil
P + PP + MO Paper-Polypropylene dielectric impregnated with Mixed Oil
PP + CO All-Polypropylene dielectric impregnated with Castor Oil
PP + MO All-Polypropylene dielectric impregnated with Mixed Oil