

IS 2099 BUSHING

S : 2099 -1986

b) for bushings of $U_N > 52$ kV :

$0.5 - 1.05 - 1.5 U_N/\sqrt{3}$ (approximately $0.3 - 0.6 - 0.85 U_N$).

Note :- It is recommended to carry out measurements at a voltage between 2.5 kV and 10 kV as a reference value for measurements carried out later when the bushing is in operation.

11.12.3 Maximum Values of $\tan \delta$ – The maximum values of $\tan \delta$, measured at $1.05 U_N/\sqrt{3}$ shall be as follows :

a) Capacitance graded bushings :

- oil impregnated paper	0.007
- resin bonded paper	0.015
- resin impregnated paper	0.015
- cast resin	0.015
- insulating gas	0.010
- composite and other	See Note

b) Non-capacitance graded bushings :

- cast resin	0.02
- composite and other	See Note

Note :- The manufacturer shall indicate the maximum values of $\tan \delta$ for composite and other bushings.

11.12.4 Permissible Values for Increase of $\tan \delta$ on Capacitance Graded Bushings – The permissible values for increase of $\tan \delta$ of bushings mentioned under 11.12.3 (a) shall be as follows :

From 0.5 to $1.05 U_N/\sqrt{3}$: Max 0.001

From 0.5 to $1.50 U_N/\sqrt{3}$: Max 0.003

11.12.5 Measurement of Capacitance – The Capacitance of the bushing shall be measured at $1.05 U_N/\sqrt{3}$. The Capacitance measured at the end of the series of type and routine dielectric tests should not differ by more than the amount attributable to the puncture of one layer.

Note : In some cases, it may be necessary to wait several hours before repeating the capacitance measurement at the end of the series of dielectric type and routine tests.