

Title: **Testing Of Hollow Glass Fibre
Tubes**

Synopsis: This document provides records of testing that took place within The University of Manchester HV Laboratories to test hollow glass fibre tubes provided by Hardy Composites

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1. Purpose of Experiment

To understand the withstand voltage and leakage current levels on a 100 cm section of hollow GFRP rod. The experiment will be done at 50kV magnitudes

2. Circuit Diagram

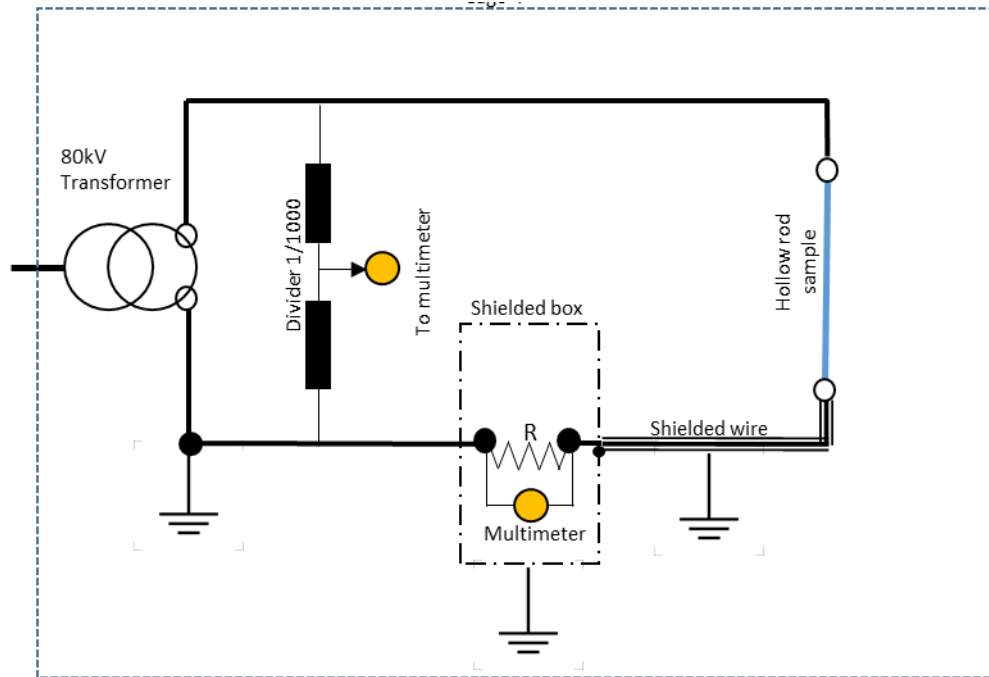


Figure 1 Withstand Voltage Circuit Diagram

3. Test Procedure:

1. The test specimen is isolated from the ground.
2. Two make shift electrodes (using braided copper wire) are made on the fibre tubes, spaced 100cm apart for the test.
3. The output of the AC test set is connected to the top electrode, and the bottom electrode to earth, via a 1kohm resistor, enclosed in a faraday box. A shielded cable is used between the LV electrode and the faraday box to minimise any induced capacitive currents.
4. The multi meter is connected across the resistor and ground in order to record the voltage and thus the leakage current.
5. The voltage was raised to 50kVrms (in short steps of 2-3kVrms) and this voltage is maintained for a period of 1m during which the leakage current is measured.
6. Once testing is finished, earth the HV transformer and divider.

4. Results

Sample Number	Voltage kV	Current Measured (μA)
1	50	32
2	50	30
3	50	30
4	50	30
5	50	30

The samples showed a minimum of 30 μA and a maximum of 32 μA during the 50kV test.