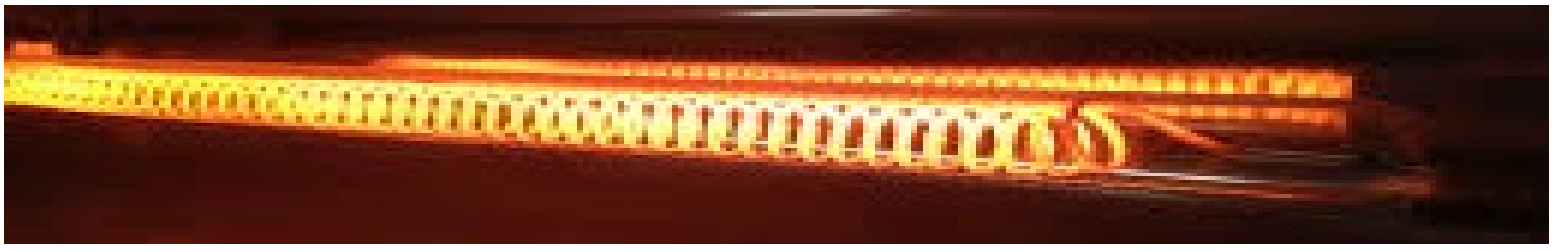
WelTec
Te Whare Wānanga o te Awakairangi

EE3103 3
Resistance, resistivity and resistors workbook

Student name

WORKSHEET 18B



Insulation Resistance (IR).
Work Sheet 18B.
Harder theory and calculations.

1. When testing an installation or an appliance, the IR tester is connected between phase / neutral (clamped together) and _____. An important testing consideration is that all switches must be in the _____ position and all circuitry must be tested as being _____.

2. The minimum IR test result for an installation or an appliance is _____.
   When this minimum IR test result is recorded, what is the current that will flow in the earthing conductor of an appliance or the protective earthng conductors for an installation, when 230V ac is connected? _____.

3. A normal test result for a new appliance/installation could be expected to be _____.
   A test result less than the minimum would indicate:_____
   _____

4. Why should the main earthing conductor for an installation be connected to the protective earthing conductor being tested when an IR test is being performed ? _____
   _____
   _____.

5. A cable has an IR test of 77MΩ and is 85m long. What is the IR of 22m of this cable ?.

6. A cable is 45m long. You test a 1m off-cut and and get an IR test result of 12 MΩ. At that point in time your IR tester goes faulty. What could you reasonably expect the IR of the 45m length to be ?

7. An old cable has an IR of 0.35MΩ and is measured at 45m long. What length of this cable would give a test result of 2MΩ.

8. A cable on a drum is of unknown length. You cut 1m off it and the IR test result for this off cut is 180 MΩ. You then test the remaining cable on the drum and record 2 MΩ. What is the length of cable on the drum ?.