

Completing the Surface Resistivity Template

- View the concrete surface resistivity measurement video to become familiar with the test procedure: <https://www.youtube.com/watch?v=0GrY2-5AP6o>. You may skip from **1:54 to 5:07** in the video. This portion of the video covers Option B (sealed preparation) and Option C (vacuum saturated preparation) as well as measuring concrete bulk resistivity by the uniaxial method.
- After completion of the test, enter data into the resistivity template.
- The template is developed by R Spragg, R. Ghantous and J Weiss for use in analyzing data from a resistivity test conducted using a 1st generation Proceq Resipod.
- The first tab is for Proceq Resipod data and the second is for RCON data.
- The user will ONLY enter data into the colored cells.
Orange cells are for sample properties measured before resistivity test; cylinder cast date, sample geometry and sponge resistance (for bulk resistivity).
Blue cells are for the measurements from the resistivity test; test date, specimen temperature (°C) and surface configuration (kOhm-cm).
- Sample geometry effects resistivity, thus it is important to enter the accurate diameter (mm) and length (mm).
- It is important to measure temperature for each sample and each test. The template calculates the temperature factor automatically.
- Sponge resistance is required for bulk resistivity from the uniaxial method. Therefore, for surface resistivity, these cells should be left as 0.
- “a (mm)” factor is inner-probe distance.
- “Surface Resistivity factor (SR)” is a cell constant correction used when wenner array probes are used on small concrete bodies. It is a function of the inner-probe distance and the geometry of the concrete body tested. The default value of SR is 1.95 for 4 by 8 inches cylinders.
- “Meter (cm)” is an automatic correction applied by the Resipod and is equal to $2\pi a$. The default value is 24 for 38 mm inner-probe distance.
- “DR (cm)” factor is a cell constant correction dependant on the geometry of the concrete body tested ($\pi \times \text{diamater} \times \text{diameter} \times 0.25 / \text{length}$). DR is for bulk resistivity from uniaxial method. It can be left as 4 for 4 by 8 inches cylinders.

After all the data is entered, the template develops a resistivity curve (Resistivity vs Mixture Age).