

Resistance and Resistivity Worksheet

Material	Resistivity (ρ) Ωm
Aluminum	2.82×10^{-8}
Copper	1.72×10^{-8}
Silver	1.59×10^{-8}
Carbon	3.5×10^{-5}
Teflon	1×10^{16}
Rubber (hard)	$10^{13} - 10^{16}$
Maple wood	30×10^{10}
Silicon	20 - 2300

Assume the problems below are at the same temperature as the table above.

1. What is the resistance of a 30 m silver wire with a 2 mm diameter?
2. A carbon wire with a 3 mm diameter has a resistance of 100 ohms. How long is the wire?
3. A 200 m long aluminum wire has the same resistance and cross-sectional area as a carbon wire. What is the length of the carbon wire?