corrosion rate

**Also contains definition of:** corrosion current

The amount of substance transferred per unit time at a specified surface. Using Faraday's law, the corrosion rate, \( v_{\text{cor}} \), can be formally expressed as an electric current which at the corrosion potential is called the corrosion current, \( I_{\text{cor}} \), e.g. for the anodic dissolution of one component of a material with \( v_{\text{cor}} \) in \( \text{mol s}^{-1} \) and \( I_{\text{cor}} \) in \( \text{A} \) one obtains

\[
I_{\text{cor}} = n F v_{\text{cor}},
\]

\( n \) being the charge number of the electrode reaction and \( F \) the Faraday constant.

**Source:**
PAC, 1989, 61, 19 (*Electrochemical corrosion nomenclature (Recommendations 1988)*) on page 20