DIN 50929-1:2017-03 (E)

C orrosion of metals - Corrosion likelihood of metallic materials when subject to corrosion from the outside - Part 1: General

Contents

Page

Foreword ... 3

1 Scope ... 4

2 Normative references ... 4

3 Terms and definitions ... 5

4 Materials ... 6
4.1 Ferrous materials ... 6
4.1.1 Unalloyed and low-alloy ferrous materials ... 6
4.1.2 High-alloy stainless steels ... 6
4.1.3 Hot-dip galvanized ferrous materials ... 6
4.2 Copper materials ... 6

5 Corrosive environments ... 7
5.1 Installation components inside buildings ... 7
5.2 Pipes, vessels and structural components outside buildings ... 7

6 Types of corrosion and variables ... 7
6.1 Free corrosion ... 7
6.2 Galvanic corrosion ... 7
6.2.1 Aeration and concentration cells ... 7
6.2.2 Cell formation in the presence of impressed current cathodes ... 8
6.3 Impressed current corrosion ... 8
6.4 Effects of differences in temperature ... 8
6.4.1 Ambient temperature is higher than temperature of structural component ... 8
6.4.2 Ambient temperature is lower than temperature of structural component ... 8
6.5 Effects of mechanical stresses ... 8
6.5.1 General ... 8
6.5.2 Unalloyed ferrous materials ... 9
6.5.3 High-alloy stainless steels ... 9
6.5.4 Copper materials ... 9

7 Description of corrosion system ... 9
7.1 Information on the structural component ... 9
7.2 Information on the corrosive environment ... 10
7.3 Information on the system ... 10
7.4 Information on external influences ... 10

8 Estimating the likelihood of corrosion ... 10

9 Corrosion protective measures ... 10

Bibliography ... 11