

Atmospheric corrosion of weathering steels. Overview for engineers. Part I: Basic concepts

M. Morcillo, I. Díaz, H. Cano, B. Chico, D. de la Fuente

Abstract

The atmospheric corrosion of weathering steel (WS) has been extensively discussed in the scientific literature, but a comprehensive overview of this topic from an engineering viewpoint is currently lacking. The present publication seeks to fill this gap, providing engineers, designers and steel manufacturers with an insight into the current state of knowledge on this important structural material and presenting key research findings in a way that promotes their practical application. The Part I of this review is addressed to various aspects of WS atmospheric corrosion, such as corrosion mechanisms, corrosion products and layers, effect of exposure environment conditions and long term performance. A number of design and metallurgical considerations is also focused.

Keywords: Weathering steel, Atmospheric corrosion, Engineering