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Samsø Energy Academy, Denmark

Physical Elements

Zinc is present throughout the natural environment; in the earth, air and water. Zinc is essential to all life, a fundamental part of the metabolic processes of plants, animals and humans.

Green Manufacturing Process

- Deep Mined vs. Strip Mined
- Emissions during smelting and processing are kept to a minimum through state-of-the-art production equipment.

Sustainable Resource

Zinc ore is readily available and as far as present day usage, zinc ore reserves are estimated at 34 million tons throughout the world – based on the current production quantities this would be a reserve for the next 700 years. This timeframe does not take recycling into account, thus extending the timeframe of zinc even further.

Longevity

Due to its corrosion resistance, RHEINZINK applications have an extremely long life span. The patina is responsible for the cor-

rosion protection and the durability of the material. The water-insoluble layer is permanently removed by environmental influences / erosion (both natural and harming environmental influences) and simultaneously the material forms a new patina. For the central European climate a value of 3.0 g/(m²·a) respectively 0.4 µm per year can be assumed as the average wear rate. According to latest studies this value has to be considered rather to be too high than too low. If the wear rate is considered in context with the so-called half-value thickness (e.g. 0.35 mm for 0.7 mm sheet thickness) the result would be a statistical life expectancy of several hundred years. However, this statement only represents a theoretical life expectancy. With proper design, fabrication and installation, a realistic roof life expectancy of 100 to 120 years can be expected and 150+ years for wall cladding.

Recyclability

RHEINZINK is infinitely recyclable and recycles 100% of its scrap. The recycling rate of building construction zinc (European data)

is estimated at 96%. Recycling RHEINZINK requires an energy expenditure of approximately 5% of the primary energy content.

Certifications and Quality Standards

Following a comprehensive evaluation of its entire life cycle – raw material extraction, processing, service and recycling – the independent German Institute Building and Environment e.V. [Institut Bauen und Umwelt e.V.] declared RHEINZINK to be an environmentally compatible building product. In accordance with ISO 14025, (EPD-RHE-2009112-D) with EN ISO 9001:2008 certification, and the QUALITY ZINC designation by TÜV Rheinland (test no. 424-030012), all RHEINZINK products meet the highest quality criteria and are subjected to voluntary inspection according to the QUALITY ZINC criteria catalog. RHEINZINK has received an ASTM standard approval for Architectural Rolled Zinc for two alloys. The designations are ASTM B69-13 - Types 1 and 2. Type 1 is for blue-grey and bright rolled zinc. Type 2 is for graphite-grey.

Currently, RHEINZINK is the **only** zinc manufacturer with a Type 2 designation.

