

ISO 12944 STANDARD SERIES

Below you can find the list of headlines of ISO 12944 – 1 to 9 standards. In this text below Teknos wants to highlight some of those important issues written in different parts of this standard-series. More detailed information can be read from the particular standards.

1. PAINTS AND VARNISHES. CORROSION PROTECTION OF STEEL STRUCTURES BY PROTECTIVE PAINT SYSTEMS. PART 1: GENERAL INTRODUCTION (ISO 12944-1:2017)

SCOPE

This document defines the overall scope of ISO 12944 (all parts). It gives some basic terms and definitions and a general introduction to the other parts of ISO 12944. Furthermore, it includes a general statement on health, safety and environmental protection, and guidelines for using ISO 12944 (all parts) for a given project.

In this document, durability is expressed in terms of four ranges:

- **Low (L)** up to 7 years;
- **Medium (M)** 7 years to 15 years;
- **High (H)** 15 years to 25 years;
- **Very high (VH)** more than 25 years.

The **durability range** is not a “**guarantee time**”. Durability is a technical consideration/planning parameter that can help the owner set up a maintenance programme. A guarantee time is a consideration that is the legal subject of clauses in the administrative part of the contract. The guarantee time is usually shorter than the durability range. There are no rules that link the two periods of time.

2. PAINTS AND VARNISHES. CORROSION PROTECTION OF STEEL STRUCTURES BY PROTECTIVE PAINT SYSTEMS. PART 2: CLASSIFICATION OF ENVIRONMENTS (ISO 12944-2:2017)

SCOPE

This document deals with the classification of the principal environments to which steel structures are exposed, and the corrosivity of these environments.

5.1 Atmospheric-corrosivity categories

5.1.1 According to ISO 9223, atmospheric environments are classified into six atmospheric corrosivity categories:

- C1 very low corrosivity
- C2 low corrosivity
- C3 medium corrosivity
- C4 high corrosivity
- C5 very high corrosivity
- CX extreme corrosivity

NOTE CX covers different extreme environments. One specific extreme environment is the offshore environment covered by ISO 12944-9. Other extreme environments are not covered in the other parts of ISO 12944.

Immersion categories are described from Im1 to Im4. Im4 environment exists normally in offshore and cathodic protection is used

3. PAINTS AND VARNISHES. CORROSION PROTECTION OF STEEL STRUCTURES BY PROTECTIVE PAINT SYSTEMS. PART 3: DESIGN CONSIDERATIONS (ISO 12944-3:2017)

SCOPE

This document deals with the basic criteria for the design of steel structures to be coated by protective paint systems in order to avoid premature corrosion and degradation of the coating or the structure. It gives examples of appropriate and inappropriate design, indicating how problems of application, inspection and maintenance of paint systems can be avoided. Design measures which facilitate handling and transport of the steel structures are also considered.

5.5 Surface imperfections

Prior to surface preparation, the surface shall be in accordance with the preparation grades of ISO 8501-3 (e.g. weldings, edges, holes). The preparation grade shall be specified (e.g. according to ISO 12944-8).

The preparation grade shall be P3 in case of high and very high durabilities for C4 and higher, as well as Im1 to Im4.

One important issue is also to round the sharp edges.

4. PAINTS AND VARNISHES. CORROSION PROTECTION OF STEEL STRUCTURES BY PROTECTIVE PAINT SYSTEMS. PART 4: TYPES OF SURFACE AND SURFACE PREPARATION (ISO 12944-4:2017)

SCOPE

This document covers the following types of surfaces of steel structures consisting of carbon or low-alloy steel, and their preparation:

- Uncoated surfaces;
- Surfaces thermally sprayed with zinc, aluminum or their alloys;
- Hot-dip-galvanized surfaces;
- Zinc-electroplated surfaces;
- Sherardized surfaces;
- Surfaces painted with prefabrication primer;
- Other painted surfaces

This document defines a number of surface preparation grades but does not specify any requirements for the condition of the substrate prior to surface preparation.

5. PAINTS AND VARNISHES — CORROSION PROTECTION OF STEEL STRUCTURES BY PROTECTIVE PAINT SYSTEMS — PART 5: PROTECTIVE PAINT SYSTEMS (ISO 12944-5:2018)

SCOPE

This document describes the types of paint and paint system commonly used for corrosion protection of steel structures.

Proper surface preparation is one of the preconditions for a long lasting protective coating system. The classification of the coating systems is based on the minimum requirement for surface preparation.

The minimum required surface preparation of hot dip galvanized steel according to ISO 1461 is sweep blasting (see ISO 12944-4), if not otherwise specified.

The required surface preparation of Teknos' paints are described in the technical data sheets.

**6. PAINTS AND VARNISHES. CORROSION PROTECTION OF STEEL STRUCTURES BY PROTECTIVE PAINT SYSTEMS.
PART 6: LABORATORY PERFORMANCE TEST METHODS (ISO 12944-6:2018)**

SCOPE

This document specifies laboratory test methods and test conditions for the assessment of paint systems for the corrosion protection of carbon steel structures. The test results are intended to be considered as an aid in the selection of suitable paint systems and not as exact information for determining durability.

4.1 Relationship between artificial ageing and natural exposure

The selection of a paint system for a specific situation should preferably be based on experience from the use of the system in similar cases. The reason is that the durability of a paint system depends on many external factors such as the environment, the design of the structure, the surface preparation, and the application and drying procedures.

**7. PAINTS AND VARNISHES. CORROSION PROTECTION OF STEEL STRUCTURES BY PROTECTIVE PAINT SYSTEMS.
PART 7: EXECUTION AND SUPERVISION OF PAINT WORK (ISO 12944-7:2017)**

SCOPE

This document deals with the execution and supervision of paint work on steel structures in the workshop or on site.

**8. PAINTS AND VARNISHES. CORROSION PROTECTION OF STEEL STRUCTURES BY PROTECTIVE PAINT SYSTEMS.
PART 8: DEVELOPMENT OF SPECIFICATIONS FOR NEW WORK AND MAINTENANCE (ISO 12944-8:2017)**

SCOPE

This document covers the development of specifications for corrosion protection of steel structures using protective paint systems. It relates to new work and maintenance in the workshop or on site and is also applicable to the corrosion protection of individual components. This document covers the corrosion protection of steel structures exposed to different corrosion stresses by environments such as indoors, open-air and immersion in water or burial in soil, as well as special stresses, due for example, to medium or high temperatures. The need for different durability ranges is considered.

**9. PAINTS AND VARNISHES. CORROSION PROTECTION OF STEEL STRUCTURES BY PROTECTIVE PAINT SYSTEMS.
PART 9: PROTECTIVE PAINT SYSTEMS AND LABORATORY PERFORMANCE TEST METHODS FOR OFFSHORE AND RELATED STRUCTURES (ISO 12944-9:2018)**

SCOPE

This document specifies the performance requirements for protective paint systems for offshore and related structures (i.e. those exposed to the marine atmosphere, as well as those immersed in sea or brackish water). Such structures are exposed to environments of corrosivity category CX (offshore) and immersion category Im4 as defined in ISO 12944-2.

This part of ISO 12944 describes paint systems for high durability according to ISO 12944-1.