



SLOVENSKI STANDARD SIST ENV 10169-2:2000

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Continuously organic coated (coil coated) steel flat products - Part 2: Products for building exterior applications

Kontinuierlich organisch beschichtete (bandbeschichtete) Flacherzeugnisse aus Stahl - Teil 2: Erzeugnisse für den Bauaußeneinsatz

Produits plats en acier revetus en continu de matieres organiques (prélaqués) - Partie 2: Produits pour applications extérieures dans le bâtiment

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ICS:

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77.140.50	Ú[z ac]b \ ^} a] a^ \ a]] [ã â^ \ã	Flat steel products and semi-products

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EUROPEAN PRESTANDARD
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ENV 10169-2

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English version

Continuously organic coated (coil coated) steel flat products -
Part 2: Products for building exterior applications

Produits plats en acier revêtus en continu de matières
organiques (prélaqués) - Partie 2: Produits pour
applications extérieures dans le bâtiment

Kontinuierlich organisch beschichtete (bandbeschichtete)
Flacherzeugnisse aus Stahl - Teil 2: Erzeugnisse für den
Bauaußeneinsatz

This European Prestandard (ENV) was approved by CEN on 19 May 1999 as a prospective standard for provisional application.

The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into a European Standard.

CEN members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Contents

	Page
Foreword	4
1 Scope	5
2 Normative references	5
3 Definitions	7
3.1 building exterior applications	7
3.2 factory production control	7
3.3 initial type testing	7
3.4 performance test	7
3.5 corrosivity	7
3.6 corrosion stresses	7
3.7 corrosion system	8
3.8 climate	8
3.9 atmosphere	8
3.10 type of atmosphere	8
3.11 local environment	8
3.12 micro environment	8
3.13 corrosivity category	8
3.14 product flexibility category	9
3.15 corrosion protection category	9
3.16 UV category	9
3.17 UV resistance category	9
3.18 accessibility	9
3.19 period of protection	9
3.20 time of wetness	9
4 Designation	9
5 Substrates, organic coatings, manufacturing process	11
5.1 Steel substrates	11
5.2 Organic coatings	11
5.3 Manufacturing process	12
6 Requirements	12
6.1 Properties which form part of factory production control	12
6.2 Performance properties	14
6.3 Freedom of defects	17
7 Testing	17
7.1 General	17
7.2 Test units	18
7.3 Type and number of tests	18

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[SIST ENV 10169-2:2000](https://standards.iteh.ai/catalog/standards/sist/59bad6fa-ffe4-45fb-ac75-30b6c1175/sist-env-10169-2-2000)

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7.4	Sampling	18
7.5	Retests	18
7.6	Inspection documents	18
8	Marking	18
9	Packing and despatch	19
10	Storage	19
11	Disputes	19
12	Information to be supplied by the purchaser	19
	Annex A (informative) Types of atmosphere	20
	Annex B (informative) Relationship between corrosivity categories and types of atmosphere. Examples of typical environments in a temperate climate	21
	Annex C (informative) Examples of exposures for the different UV categories	22
	Annex D (informative) More common coating materials and coating thickness (es)	23
	Annex E (informative) ECCA outdoor exposure sites	24
	Annex F (informative) Classification of coatings into corrosion protection and UV resistance categories from outdoor exposure test results	25

Foreword

This European Prestandard has been prepared by Technical Committee ECISS/TC 27 "Surface coated flat products - Qualities, dimensions, tolerances and specific tests", the secretariat of which is held by DIN.

This European Prestandard is expected to be re-issued as a full European Standard when Annex F "Classification of coatings into corrosion protection and UV resistance categories from outdoor exposure tests" can be assigned normative status. In this Prestandard Annex F is included as an informative annex until more information becomes available on the classification of different types of exterior environment and on methods of assessing performance in outdoor exposure testing.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

This European Prestandard gives the specific requirements for continuously organic coated (coil coated) steel flat products used for building exterior applications.

It particularly specifies the performance requirements of different product flexibility categories, different corrosion protection categories and different UV resistance categories.

General information concerning continuously organic coated steel flat products is provided by EN 10169-1.

Products for building interior applications will be covered by EN 10169-3 which is in preparation at present.

The products covered are wide strip, sheet cut from wide strip, slit wide strip, strip rolled in widths less than 600 mm and cut lengths (from sheet or strip).

2 Normative references

This European Prestandard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. Subsequent amendments to, or revisions of, any of these publications apply to this European Prestandard only when incorporated in it by amendment or revision. In the case of undated references, the latest edition of the publications referred to applies.

CR 10260, *Designation systems for steel - Additional symbols*

ENV 606, *Bar coded transport and handling labels for steel products*

EN 10020, *Definition and classification of grades of steel*

EN 10021, *General technical delivery requirements for steel and steel products*

EN 10027-1, *Designation systems for steel - Part 1 : Steel names, principal symbols*

EN 10027-2, *Designation systems for steel - Part 2: Steel numbers*

EN 10079, *Definition of steel products*

EN 10142, *Continuously hot-dip zinc coated low carbon steel strip and sheet for cold forming - Technical delivery conditions*

EN 10143, *Continuously hot-dip metal coated steel sheet and strip - Tolerances on dimensions and shape*

EN 10147, *Continuously hot-dip zinc-coated structural steel strip and sheet - Technical delivery conditions*

- EN 10154, *Continuously hot-dip aluminium-silicon (AS) coated steel strip and sheet - Technical delivery conditions*
- EN 10169-1, *Continuously organic coated (coil coated) steel flat products - Part 1 : General information (definitions, materials, tolerances, test methods)*
- EN 10169-3¹⁾, *Continuously organic coated (coil coated) steel flat products - Part 3: Products for building interior applications*
- EN 10204, *Metallic products - Types of inspection documents (includes amendment A1:1995)*
- EN 10214, *Continuously hot-dip zinc-aluminium (ZA) coated steel strip and sheet - Technical delivery conditions*
- EN 10215, *Continuously hot-dip aluminium-zinc (AZ) coated steel strip and sheet - Technical delivery conditions*
- EN ISO 1520, *Paints and varnishes - Cupping test*
- EN ISO 2409, *Paints and varnishes - Cross-cut test*
- EN ISO 12944-2, *Paints and varnishes - Corrosion protection of steel structures by protective paint systems - Part 2: Classification of environments*
- ISO 2810, *Paints and varnishes - Natural weathering*
- ISO 4628-2, *Paints and varnishes - Evaluation of degradation of paint coatings ; designation of intensity, quantity and size of common defect - Part 2 : Designation of degree of blistering*
- ISO 4628-6, *Paints and varnishes - Evaluation of degradation of paint coatings ; designation of intensity, quantity and size of common defect - Part 6: Rating of degree of chalking by tape method*
- ISO 4892-3, *Plastics - Methods of exposure to laboratory light sources - Part 3 : Fluorescent UV lamps*
- ISO 7253, *Paints and varnishes - Determination of resistance to neutral salt spray fog*
- ISO 8044, *Corrosion of metals and alloys - Vocabulary*
- ISO 11507, *Paints and varnishes - Exposure of coatings to artificial weathering - Exposure to fluorescent UV and water*
- ISO 11997-1, *Paints and varnishes - Determination of resistance to cyclic corrosion conditions - Part 1: Wet (salt fog)/dry/humidity*
- ASTM D 4214-89, *Standard test method for evaluating the degree of chalking of exterior paint films*

¹⁾ In preparation.

3 Definitions

For the purpose of this European Prestandard, the following definitions apply in addition to the definitions in EN 10020, EN 10021, EN 10079, EN 10169-1 and EN 10204:

3.1 building exterior applications

All applications in buildings for which the concerned products are submitted to the influence of exterior atmospheres.

NOTE 1 Building products include, for example, ribbed profiles for roofing and walling, curved profiles, brake-pressed profiles, concealed fix roofing and walling, standing seam roofing, corrugated sheeting, factory foamed sandwich panels for roofing and walling, roof tiles, accessories (flashings, trims), rainwater goods (gutters, down pipes), metal doors and garage doors.

NOTE 2 For exterior building elements, it is important that the risk of corrosive attack on internal, i.e. reverse side surfaces, should also be considered. In particular, buildings with wet or chemically polluted internal environments can require a reverse side organic coating selected to provide enhanced corrosion protection.

This can be especially important in double-skin assemblies (e.g. built-up insulated cladding) where the reverse side of the exterior element is not easily accessible for maintenance and/or in situations where the exterior element is expected to provide long term durability.

NOTE 3 Besides the requirements written in this prestandard, other international or national requirements regarding fire resistance, safety etc. can be agreed on at the time of ordering.

3.2 factory production control

The permanent internal control exercised by the manufacturer.

3.3 initial type testing

Group of tests which are originally carried out to demonstrate product conformity to the present prestandard.

3.4 performance test

Test, the result of which should be related to the effective behaviour of the product on site.

3.5 corrosivity

Ability of an environment to cause corrosion in a given corrosion system. [ISO 8044]

3.6 corrosion stresses

The environmental factors which promote corrosion. [EN ISO 12944-2]

3.7 corrosion system

System consisting of one or more metals and all parts of the environment which influence corrosion.[ISO 8044]

3.8 climate

The weather prevailing at a given location or in a given area, as established statistically by meteorological parameters recorded over a prolonged period.[EN ISO 12944-2]

3.9 atmosphere

A mixture of gases, and normally also aerosols and particles, that surrounds a given object.
[EN ISO 12944-2]

3.10 type of atmosphere

Characterization of the atmosphere on the basis of the corrosive agents present and their concentration.[EN ISO 12944-2]

NOTE 1 The main corrosive agents are gases (especially sulfur dioxide) and salts (especially chlorides and/or sulfates).[EN ISO 12944-2]

NOTE 2 The type of atmosphere (see Annex A) will influence the selection of the appropriate product.

3.11 local environment

The atmospheric conditions prevailing around a constituent element of a structure.
[EN ISO 12944-2]

NOTE 1 These conditions determine the corrosivity category and include both meteorological and pollution parameters.[EN ISO 12944-2]

NOTE 2 It should be recognized that in some local areas within a region, environmental conditions can apply which are not typical of the region as a whole, e.g. in a rural atmosphere close to a fossil fuel burning power generation plant, areas immediately down wind of the prevailing wind direction can be subjected to an environment closer to urban or even industrial atmospheres. Such special cases should be considered when organic coatings are chosen.

3.12 micro-environment

The environment at the interface between a constituent element of a structure and its surroundings. The micro-environment is one of the decisive factors in the assessment of corrosion stresses.[EN ISO 12944-2]

3.13 corrosivity category

Category which indicates the corrosivity of the environment taking into account both local and micro-environment and shall be used for the selection of the appropriate product.

NOTE The relationship between corrosivity categories and types of atmospheres is given in Annex B.

3.14 product flexibility category

Category of continuously organic coated steel flat product which presents a certain level of flexibility.

3.15 corrosion protection category

Category of product which presents a certain level of corrosion protection, the choice of which depends on the corrosivity category, the period of protection and the accessibility.

3.16 UV category

Category which indicates the level of UV radiation in the environment.

NOTE Examples of exposures for the different UV categories are given in Annex C.

3.17 UV resistance category

Category of coating which presents a certain level of resistance to degradation by UV, the choice of which depends on the UV category, the period of protection and appearance requirements.

3.18 accessibility

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Ease of access to the steel components for the purpose of inspection and maintenance without any work over and above that concerned with routine inspection.

3.19 period of protection

Time between the first outdoor exposure of the steel component and the moment at which maintenance works need to be carried out to restore corrosion protection.

NOTE The need to restore corrosion protection is deemed to arise when failure of the coating has occurred to the point where a significant amount (for example 5 %) of the component surface exhibits red corrosion of the substrate.

3.20 time of wetness

The period during which a coated surface is covered by a film of electrolyte that is capable of causing atmospheric corrosion. Guidance values for time of wetness can be calculated from temperature and relative humidity by summing the hours where the relative humidity is above 80 % and, at the same time, the temperature is above 0 °C. [EN ISO 12944-2]

4 Designation

4.1 For the steel substrates covered by this European Prestandard the steel names are allocated in accordance with EN 10027-1 and CR 10260; the steel numbers are allocated in accordance with EN 10027-2.