SLOVENSKI STANDARD
SIST EN 10292:2001/A2:2005

01-februar-2005

Jekleni trakovi in tanka ploļ evina s poveļ ano napetostjo teļ enja in povrġino, zaġļ iteno po postopkih vroļ ega omakanja ï Tehniļ ni dobavni pogoji ï Dopolnilo A2

Continuously hot-dip coated strip and sheet of steels with higher yield strength for cold forming - Technical delivery conditions

Kontinuierlich schmelztauchveredeltes Band und Blech aus Stählen mit hoher Streckgrenze zum Kaltumformen - Technische Lieferbedingungen

Bandes et tôles en acier a haute limite d'elasticité revetues en continu par immersion a chaud pour formage a froid - Conditions techniques de livraison

Ta slovenski standard je istoveten z: **EN 10292:2000/A2:2004**

ICS:

77.140.50	Ploġļ ati jekleni izdelki in polizdelki	Flat steel products and semi-products

SIST EN 10292:2001/A2:2005 **en**

EUROPEAN STANDARD

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English version

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This amendment A2 modifies the European Standard EN 10292:2000; it was approved by CEN on 18 November 2004.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

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Contents

Foreword

This document (EN 10292:2000/A2:2004) has been prepared by Technical Committee ECISS/TC 27 “Surface coated flat products”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2005, and conflicting national standards shall be withdrawn at the latest by June 2005.

This document supersedes EN 10292:2000/A1:2003.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 10002-1, *Metallic materials – Tensile testing – Part 1: Method of testing at ambient temperature.*

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

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

prEN 10027-1, *Designation systems for steel – Part 1: Steel names.*

EN 10027-2, *Designation systems for steels – Part 2: Numerical system.*

EN 10079, *Definition of steel products.*

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

EN 10204, *Metallic products – Types of inspection documents.*

EN 606, *Bar coding - Transport and handling labels for steel products.*

EURONORM 12[1)], *Bend test for steel sheet and strip less than 3 mm thick.*

ISO 10113, *Metallic materials – Sheet and strip – Determination of plastic strain ratio.*

ISO 10275, *Metallic materials – Sheet and strip – Determination of tensile strain hardening exponent.*

EN ISO 14284, *Steel and iron – Sampling and preparation of samples for the determination of chemical composition (ISO 14284:1996).*

4.2 Designation

4.2.1 Steel names

For the steel grades covered by this document, the steel names as given in Tables 1 and 3 are allocated in accordance with EN 10027-1.

4.2.2 Steel numbers

For the steel grades covered by this document, the steel numbers as given in Tables 1 and 3 are allocated in accordance with EN 10027-2.

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1) Until it is transformed into a European Standard, either EURONORM 12 or the corresponding national standard may be applied.

5.1 Mandatory information

The following information shall be supplied by the purchaser at the time of enquiry and order:

a) the quantity to be delivered,

b) the type of product (strip, sheet, cut length),

c) the number of the dimensional standard (EN 10143),

d) the nominal dimensions and the tolerances on dimensions and shape and, if applicable, letters denoting relevant special tolerances,

e) the term „steel“,

f) number of this standard (EN 10292),

g) steel name or steel number and symbol for the type of hot-dip coating as given in Tables 1 and 3, and if the mechanical properties apply either for the transverse or the longitudinal direction (see Table 3, footnote a),

h) number designating the nominal mass of coating (e.g. 080 = 80 g/m² including both surfaces, see Table 4),

i) in case of hot-dip zinc coated products, letter denoting the coating finish (N, M or R, see Tables 5 and 6 and 7.4),

j) letter denoting the surface quality (A, B or C, see 7.5),

k) letter denoting the surface treatment (C, O, CO, S, P or PO, see 7.6),

l) the method of determining the BH_2-value (see 8.5.3).

EXAMPLE 1 sheet, delivered with dimensional tolerances according to EN 10143 with a nominal thickness of 0,70 mm, ordered with special thickness tolerances (S), nominal width 1 200 mm, ordered with special width tolerances (S), nominal length 2 500 mm, ordered with special flatness tolerances (FS), made of steel HX300LAD+AS080-C-CO (1.0932+AS080-C-CO) according to EN 10292.

1 sheet EN 10143–0,70Sx1 200Sx2 500FS–steel EN 10292–HX300LAD+AS080–C–CO

or

1 sheet EN 10143–0,70Sx1 200Sx2 500FS–steel EN 10292–1.0932-AS080–C–CO

7.6 Surface treatment (surface protection)

7.6.1 General

Hot-dip coated flat products according to this European Standard generally receive surface protection at the producer‘s plant as specified in 7.6.2 to 7.6.7.

The period of protection afforded depends on the atmospheric conditions.

Hot-dip coated flat products are only supplied without surface treatment (untreated (U)) if expressly desired by the purchaser on his own responsibility. In this case, there is increased risk of corrosion on the the surface during storage and transportation.

7.6.7 Phosphated and oiled (PO)

This combination of surface treatment may improve formability.

Table 1 — Chemical composition (cast analysis)

Designation			% by mass							
Steel grade		Symbols for the type of the available hot-dip coatings	C	Si	Mn	P	S	Al	Ti[b]	Nb[b]
Steel name[a]	Steel number		max.	max.	max.	max.	max.	min.	max.	max.
HX180YD	1.0921	+Z, +ZF, +ZA, +AZ, +AS	0,01	0,10	0,70	0,06	0,025	0,02	0,12	-
HX180BD	1.0354	+Z, +ZF, +ZA, +AZ, +AS	0,04	0,50	0,70	0,06	0,025	0,02	-	-
HX220YD	1.0923	+Z, +ZF, +ZA, +AZ, +AS	0,01	0,10	0,90	0,08	0,025	0,02	0,12	-
HX220PD	1.0358	+Z, +ZF, +ZA, +AZ, +AS								
HX220BD	1.0353	+Z, +ZF, +ZA, +AZ, +AS	0,06	0,50	0,70	0,08	0,025	0,02	-	-
HX260YD	1.0926	+Z, +ZF, +ZA, +AZ, +AS	0,01	0,10	1,60	0,10	0,025	0,02	0,12	-
HX260PD	1.0431	+Z, +ZF, +ZA, +AZ, +AS								
HX260BD	1.0433	+Z, +ZF, +ZA, +AZ, +AS	0,11	0,50	0,70	0,10	0,025	0,02	-	-
HX260LAD	1.0929	+Z, +ZF, +ZA, +AZ, +AS	0,11	0,50	0,60	0,025	0,025	0,015	0,15	0,09
HX300PD	1.0443	+Z, +ZF, +ZA, +AZ, +AS								
HX300BD	1.0445	+Z, +ZF, +ZA, +AZ, +AS	0,11	0,50	0,70	0,12	0,025	0,02	-	-
HX300LAD	1.0932	+Z, +ZF, +ZA, +AZ, +AS	0,11	0,50	1,00	0,025	0,025	0,015	0,15	0,09
HX340LAD	1.0933	+Z, +ZF, +ZA, +AZ, +AS	0,11	0,50	1,00	0,025	0,025	0,015	0,15	0,09
HX380LAD	1.0934	+Z, +ZF, +ZA, +AZ, +AS	0,11	0,50	1,40	0,025	0,025	0,015	0,15	0,09
HX420LAD	1.0935	+Z, +ZF, +ZA, +AZ, +AS	0,11	0,50	1,40	0,025	0,025	0,015	0,15	0,09

[a] ***H*** flat products of high strength for cold forming; ***X*** rolling condition (hot rolled or cold rolled) not specified; ***nnn*** minimum proof strength $R_{p0,2}$ in MPa; ***B*** bake-hardened; ***P*** rephosphorized; ***Y*** interstitiell free; ***LA*** low alloy (micro-alloyed); ***D*** intended for hot-dip coating.

[b] These additional elements may be used individually or in combination; where values are specified, the composition limits indicated apply. Vanadium and boron may also be added. The sum of the contents of these dispersoidal elements TI, Nb, and V shall not exceed 0,22 % by mass however.

Table 2 — Permissible product analysis deviations from the values given in Table 1 for the cast analysis

Element	Specified limits according to the cast analysis % by mass	Permissible deviations from the limits of the cast analysis % by mass
C	≤ 0,11	+ 0,02
Si	≤ 0,50	+ 0,03
Mn	≤ 1,00 > 1,00 ≤ 1,60	+ 0,05 + 0,10
P	≤ 0,12	+ 0,01
S	≤ 0,025	+ 0,005
Al_{tot}	≥ 0,02	- 0,005
Ti	≤ 0,15	+ 0,02
Nb	≤ 0,09	+ 0,02