SLOVENSKI STANDARD
SIST EN 39:2002

01-september-2002

Nadomeġ ena:
SIST HD 1039:2000

Jeklene cevi za gradbene odre - Tehniġ ni dobavni pogoji

Loose steel tubes for tube and coupler scaffolds - Technical delivery conditions

Stahlrohre für die Verwendung in Trag und Arbeitsgerüsten - Technische Lieferbedingungen

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Tubes en acier pour structures en échafaudages à tubes et raccords - Conditions techniques de livraison

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Ta slovenski standard je istoveten z: EN 39:2001

ICS:

77.140.75	Jeklene cevi in cevni profili za posebne namene	Steel pipes and tubes for specific use
91.220	Gradbena oprema	Construction equipment

SIST EN 39:2002 **en**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 39

April 2001

ICS 77.140.75; 91.220

Supersedes HD 1039:1990

English version

Loose steel tubes for tube and coupler scaffolds - Technical delivery conditions

Tubes libres en acier pour échafaudages à tubes et raccords - Conditions techniques de livraison

Systemunabhängige Stahlrohre für die Verwendung in Trag- und Arbeitsgerüsten - Technische Lieferbedingungen

This European Standard was approved by CEN on 18 January 2001.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard 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 Management Centre has the same status as the official versions.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard has been prepared by Technical Committee ECISS/TC 29 “Steel tubes and fittings for steel tubes ”, the secretariat of which is held by UNI, in conjunction with CEN/TC 53 “ Temporary works equipment ”

This European Standard replaces HD 1039:1990.

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 October 2001, and conflicting national standards shall be withdrawn at the latest by October 2001.

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

This European Standard is derived with modifications from Harmonisation Document HD 1039 “Steel tubes for falsework and working scaffolds -Requirements, tests”.

This European Standard cancels and replaces HD 1039:1990 “Steel tubes for falsework and working scaffolds - Requirements, tests”.

The significant technical changes are:-

— tubes will now be supplied galvanized unless an option for them to be supplied without a coating (bare) or painted is specified.

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— all tubes are now required to be suitable for galvanising.

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— requirements for the coating, previously contained in Annexes A and B are now covered (in accordance with CEN rules) by reference to European or International Standards and are not included in the text of this standard.

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— tubes may only be manufactured using killed steel.

— the maximum tensile strength of the tubes has been increased to 520 MPa [1] .

— a maximum manganese content has been introduced and the sulphur and phosphorus contents reduced.

— the mass tolerance for single tubes has been changed from - 8% to - 7,5%. The maximum single tube mass tolerance and the mass tolerance for batches of tubes have been deleted from the standard (outside diameter tolerances have not been changed).

— length types, standard or approximate or exact, and tolerances on those length types are now specified.

— a flattening test requirement has been introduced for welded tubes.

— requirements for the type and content of inspection documents have been introduced for use when inspection documentation is specified.

— specific inspection is now permitted as an option with testing frequencies specified.

— the depth of marking of at least 0,2 mm is now a recommendation with an option to specify it as a requirement. The order of marking has changed slightly in order to preserve the separation of standard number and thickness type.

Annex A is informative.

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1) 1 MPa = 1 N/mm^2

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1 Scope

This European Standard specifies the requirements for non-alloy steel tubes for use with EN 74 couplers in the construction of falsework and working scaffolds. It includes detailed requirements for marking to aid long term identification, for protective coating by reference to European and International Standards, and for inspection and testing.

NOTE 1: Tubes to this European Standard, which have a specified outside diameter of 48,3 mm and specified thickness of 3,2 mm or 4,0 mm, may also be used in conjunction with other sizes and grades of steel tubes for applications such as prefabricated scaffolds.

NOTE 2: The use of these tubes should be in accordance with appropriate International and national requirements, for example prEN12811 and prEN12812.

2 Normative references

This European Standard 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. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 10002-1	Metallic materials - Tensile testing - Part 1: Method of test (at ambient temperature).
EN 10020	Definition and classification of grades of steel.
EN 10021	General technical delivery requirements for steel and iron 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 10204	Metallic products - Types of inspection documents (including amendment A1 :1995).
EN 10233	Metallic materials - Tube - Flattening test.
EN 10240	Internal and/or external protective coatings for steel tubes - Specification for hot dip galvanized coatings applied in automatic plants.
EN ISO 377	Steel and steel products - Location and preparation of samples and test pieces for mechanical testing.
EN ISO 1461	Hot dip galvanized coatings on fabricated iron and steel articles - Specification and test methods.
EN ISO 2409	Paints and varnishes - Cross-cut test.
EN ISO 2566-1	Steel - Conversion of elongation values - Part 1: Carbon and low alloy steels.
prEN 10168 [2)]	Iron and steel products - inspection documents contents – List of information and description.
prEN 10266 [2)]	Steel tubes, fittings and structural hollow sections - Definitionsand symbols for use in product standards.
ISO 4628-3	Paints and varnishes - Evaluation of degradation of paint coatings - Designation of intensity, quantity and size of common types of defect – Part 3: Designation of degrees of rusting.
ISO 7253:1996	Paints and varnishes - Determination of resistance to neutral salt spray.
CR 10260	Designation system for steel - Additional symbols.

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[2)] In preparation, until this document is published as a European standard, the corresponding national standard(s) should be agreed at the time of enquiry and order

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3 Terms and definitions

For the purpose of this European standard the terms and definitions given in, EN 10020 (definition and classification of steel) EN 10021 (Inspection and testing), EN 10204 (Inspection documents), prEN 10266 (Seamless and welded tube) and the following, in addition to or instead of the definitions and symbols given in the above text, apply.

3.1
type 3 tube
tube of 3,2 mm specified wall thickness.

3.2
type 4 tube
tube of 4,0 mm specified wall thickness.

3.3
bare tube
tube whose surface is as manufactured without subsequent coating.

4 Classification and designation

4.1 Classification

In accordance with the classification system in EN10020, the steel in Table 1 is classified as non-alloy quality steel.

4.2 Designation

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For the tubes covered by this European Standard the steel designation consists of :

— the number of this European Standard (EN 39)

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plus either :

— the steel name in accordance with EN 10027-1 and CR 10260;

or:

— the steel number allocated in accordance with EN 10027-2 .

5 Information to be supplied by the purchaser

5.1 Mandatory Information

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

a) the quantity (mass or total length or number);

b) the number of this European Standard (EN 39);

c) the type (3 or 4) or specified wall thickness (mm);

d) the standard length required (see 7.6.5);

e) the options required (see 5.2).

5.2 Options

A number of options are specified in this European standard and are listed below. In the event that the purchaser does not indicate a wish to implement any of these options, at the time of enquiry and order, the tube shall be supplied in accordance with the basic specification (see 5.1).

1) The type of tube, seamless or welded, shall be as specified (see 6.2).

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2) The silicon content of range 1 shall be limited (see 7.2).

3) Approximate or exact length is specified (see 7.6.5).

4) A tighter tolerance on length is specified (see Table 2).

5) Specific inspection and testing is specified (see 8. 1).

6) An inspection document shall be supplied (see 8.2.1).

7) Depth of impression of marking to be at least 0,2 mm (see clause 12).

8) Tubes shall be supplied bare (see clause 13).

9) Temporary corrosion protection is specified (see clause 13).

10) Tubes shall be supplied painted, colour to be agreed (see clause 13).

5.3 Examples of ordering

EXAMPLE 1 One thousand tubes in accordance with EN 39 with a specified wall thickness of 3,2 mm (type 3) in 6,0 metre standard lengths, supplied bare (option 8) and with temporary corrosion protection (option 9)

1000 tubes –EN 39 - 3,2 - 6,0 - Options 8 and 9

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EXAMPLE 2 48 tonnes of tube in accordance with EN 39 type 4 (4,0 mm specified wall thickness), supplied in 6,4 metre standard lengths and with an inspection document 2.2 according to EN 10204 provided (option 6)

48 tonnes tube – EN 39 - 4 - 6,4 - Option 6 - 2.2.

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6 Manufacturing process

6.1 Steelmaking process

The steelmaking process is at the discretion of the manufacturer.

The steel shall be killed.

6.2 Tube manufacture

The tubes shall be made seamless or welded, at the discretion of the manufacturer unless option 1 is specified.

Option 1 Tubes shall be supplied seamless or welded the type to be specified by the purchaser.

Finished welded tubes shall not include welds used for joining together lengths of the hot or cold rolled strip prior to forming.

7 Requirements

7.1 General

When manufactured in accordance with clause 6 and inspected in accordance with clause 8, the tube shall conform to the requirements of this European Standard .

In addition to the requirements of this European Standard, the general technical delivery requirements specified in EN 10021 shall apply.

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7.2 Chemical composition and mechanical properties

The tube shall meet the requirements for chemical composition and mechanical properties given in Table 1. The cast analysis reported by the steel producer shall apply.

The silicon content shall be within either range 1 or range 2 (see Table 1) unless option 2 is specified.

Option 2 the silicon content in range 1 shall be limited to 0,04 % maximum.

Table 1 — Chemical composition and Mechanical Properties

Steel grade		Chemical composition (cast analysis), in % by mass						Mechanical properties		
		C	Si	Mn	P	S	Al	Yield strength R_{eH} min	Tensile strength R_m	Elongation A min
Steel name	Steel number	max		max.	max.	max.	min.	*MPa*[1]	*MPa* [1]	%
S235GT	1.0106	0,20	[a], [b]	1,40	0,040	0,045	0,020	235	340/520	24

[a] ≤ 0,05 % (range 1) (≤ 0,04 % if option 2 is specified) or ≥ 0,15 % ≤ 0,2 5% (range 2).

[b] When bare tubes are specified (see option 8) the range shall be reported at the time of enquiry and order.

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A flattening test shall be carried out on welded tube in accordance with 10.2.

7.3 Appearance

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The tubes shall have a smooth external surface corresponding to the manufacturing process. Surface imperfections are permitted providing the dimensions remain within the tolerance limits given in 7.6.

7.4 Straightness

The deviation from straightness of any tube length (L), shall not exceed 0,002 L . Deviations from straightness over any one metre length shall not exceed 3 mm (see Figure 1).

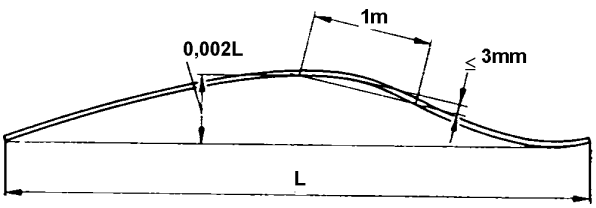

Figure 1 — Maximum deviation of a tube from straight

7.5 External weld bead and preparation of ends

The external weld bead of welded tubes shall be trimmed flush. Tube ends shall be cut nominally square with the axis of the tube and shall be free from harmful burrs.