



**SLOVENSKI STANDARD**  
**SIST EN 12972:2018/oprA1:2023**  
**01-januar-2023**

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**Cisterne za prevoz nevarnega blaga - Preskušanje, pregled in označevanje kovinskih cistern - Dopolnilo A1**

Tanks for transport of dangerous goods - Testing, inspection and marking of metallic tanks

Tanks für die Beförderung gefährlicher Güter - Prüfung, Inspektion und Kennzeichnung von Metalltanks

Citernes destinées au transport de matières dangereuses - Épreuve, contrôle et marquage des citernes métalliques

**Ta slovenski standard je istoveten z: EN 12972:2018/prA1**

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**ICS:**

13.300	Varstvo pred nevarnimi izdelki	Protection against dangerous goods
23.020.20	Posode in vsebniki, montirani na vozila	Vessels and containers mounted on vehicles

**SIST EN 12972:2018/oprA1:2023**      **en,fr,de**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**EN 12972:2018**  
**prA1**

January 2023

ICS 13.300; 23.020.20

English Version

## Tanks for transport of dangerous goods - Testing, inspection and marking of metallic tanks

Citernes destinées au transport de matières  
dangereuses - Épreuve, contrôle et marquage des  
citernes métalliques

Tanks für die Beförderung gefährlicher Güter -  
Prüfung, Inspektion und Kennzeichnung von  
Metalltanks

This draft amendment is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 296.

This draft amendment A1, if approved, will modify the European Standard EN 12972:2018. If this draft becomes an amendment, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (EN 12972:2018/prA1:2023) has been prepared by Technical Committee CEN/TC 296 “Tanks for the transport of dangerous goods”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

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**EN 12972:2018/prA1:2023 (E)****1 Modification to Clause 2 “Normative references”**

Add the following references:

“EN ISO 5817, *Welding — Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) — Quality levels for imperfections (ISO 5817)*

EN ISO 10042, *Welding — Arc-welded joints in aluminium and its alloys — Quality levels for imperfections (ISO 10042)*

EN ISO 10863, *Non-destructive testing of welds — Ultrasonic testing — Use of time-of-flight diffraction technique (TOFD) (ISO 10863)*

EN ISO 13588, *Non-destructive testing of welds — Ultrasonic testing — Use of automated phased array technology (ISO 13588)*

EN ISO 15626, *Non-destructive testing of welds — Time-of-flight diffraction technique (TOFD) — Acceptance levels (ISO 15626)*

EN ISO 19285, *Non-destructive testing of welds — Phased array ultrasonic testing (PAUT) — Acceptance levels (ISO 19285)*”.

**2 Modification to 3.2.4**

Replace the title of 3.2.4 with “Welding imperfection symbols (used in Table 3, Table 6 and Table 7)”.

**3 Modification to 4.3 “Inspection for modification of a tank”**

Add the following note at the end of 4.3:

“NOTE The certificate for modification meets the requirements of the certificate referred to in 6.8.2.3.4 of RID [1] and ADR [2].”

**4 Modifications to 5.3.6.1 “General”**

Replace paragraph 7 of 5.3.6.1 with the following amended text:

“When the joint coefficient  $\lambda$  is less than 1 and when the presence of an unacceptable defect is noted in the tested portion of a weld, NDT shall be extended to a portion of the weld with a length at least equal to that which has just been tested on each side of the defect. If this additional NDT gives rise to the observation of a new unacceptable defect, NDT shall be extended to all remaining welds made according to the same procedure. Repaired welds shall be inspected according to the same method as the original welds. Rectified welds shall be verified against the minimum thickness.”

Replace Table 1 with the following amended table:

“

**Table 1 — NDT to be performed on dangerous goods transport tank welds**

Joint type		For tank calculated with joint coefficient		
		$\lambda = 0,8$	$\lambda = 0,9$	$\lambda = 1,0$
1) Full penetration butt welds	a) Circular welds of the shell	100 % of the length of N: RT or UT 10 % of the length of C: RT or UT	100 % of the length of N: RT or UT 25 % of the length of C: RT or UT	100 % of the length of C: RT or UT
	b) Non-circular welds of the shell	100 % of the length of N: RT or UT 10 % of the length of NC: RT or UT	100 % of the length of N: RT or UT 100 % of the length of NC: RT or UT	100 % of the length of NC: RT or UT
	c) internal tubes $D_i > 80$ mm	10 % of the length of C: RT	25 % of the length of C: RT	100 % of the length of C: RT
2) Full penetration fillet welds (tube, flange $D_i > 80$ mm)	a) $e \leq 12$ mm	10 % of the length of joints: PT <sup>a</sup> or MT <sup>a</sup>	50 % of the length of joints: PT <sup>a</sup> or MT <sup>a</sup>	100 % of the length of joints: PT <sup>a</sup> or MT <sup>a</sup>
	b) $e > 12$ mm	10 % of the length of joints: PT <sup>a</sup> or MT <sup>a</sup>	50 % of the length of joints: UT or RT	100 % of the length of joints: UT or RT
3) Partially penetrated fillet welds — Partition welds — End welds including lap joints used for joining an end to the shell wall — Tube with $D_i > 80$ mm		10 % of the length of joints: PT <sup>a</sup> , ET <sup>a</sup> or MT <sup>a</sup>	50 % of the length of joints: PT <sup>a</sup> , ET <sup>a</sup> or MT <sup>a</sup>	100 % of the length of joints: PT <sup>a</sup> , ET <sup>a</sup> or MT <sup>a</sup>
4) Other elements welded directly on to the shell		—	25 % of the length of PT <sup>a</sup> , ET <sup>a</sup> , or MT <sup>a</sup>	50 % of the length of PT <sup>a</sup> , ET <sup>a</sup> or MT <sup>a</sup>
5) Internal tubes with $D_i < 80$ mm		—	—	100 % of the length of PT, ET, MT
6) Tubes outside the shell with $D_i > 80$ mm		—	—	100 % of the length of RT
7) Tubes outside the shell with $D_i \leq 80$ mm		—	—	100 % of the length of PT, ET, MT
<sup>a</sup> Non-mandatory control for 1.1, 1.2, 8.1, 22.1, 22.4 and 23 groups of material as defined in CEN ISO/TR 15608. Nevertheless, NDT shall be performed where there is doubt of quality of welds.				

”

## EN 12972:2018/prA1:2023 (E)

**5 Modification to 5.3.6.2 “Limitations of NDT methods”**

After “— for UT the material thickness shall be > 8 mm” add the following text “, for UT-PA and UT-TOFD the material thickness shall be > 6 mm”.

**6 Modifications to 5.3.6.3.2 “Welding imperfections”**

Replace the first paragraph with the following:

“The acceptance criteria for visual testing shall comply with the relevant regulation and the relevant technical code as applicable, or, if there are no requirements in the technical code, the requirements given in Table 3. If according to the relevant technical code fatigue has to be addressed, EN ISO 5817 evaluation group B for steel and EN ISO 10042 for aluminium alloys shall be mentioned.”

In line 8 and 9 of Table 3, replace “smooth transition” with “smooth weld transitions”.

In line 12, 13, 14 and 16 of Table 3, replace “smooth transition required” with “with smooth weld transitions”.

Replace line 12 of Table 3 with the following:

“

Excessive penetration	504	$h \leq 1 \text{ mm} + 0,6 b$ , maximum 4 mm, with smooth weld transition.
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”.

Replace line 19 of Table 3 with the following:

“

Spatter	602	Shall be removed from all components in direct contact with the substance carried.
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”.

**7 Modifications to 5.3.6.5 “Radiographic inspection”**

Replace the second paragraph with the following:

“The acceptance criteria for radiographic inspection shall comply with the relevant regulation and the relevant technical code as applicable, or, if there are no requirements in the technical code, the requirements given in Table 6 and Table 7”.

Replace line 12 of Table 6 with the following:

“

Metallic inclusions other than copper	304	$h \leq 0,2 t$ , maximum 2 mm.
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”.

**8 Modification to 5.3.6.6.1 “General”**

At the end of the sentence, add “or EN ISO 10863 level C (for UT-TOFD) or EN ISO 13588 level B (for UT-PA).”



## 9 Modification to 5.3.6.6.2 “General”

*At the end of the second sentence, add “, for UT-TOFD – EN ISO 15626 level 1, for UT PA – EN ISO 19285 level 2.”*

## 10 Modification to 5.3.7.1 “General”

*Replace paragraph 10 of 5.3.7.1 with the following:*

“— Hardness test (HT) shall be done according to EN ISO 9015-1:2011, where the shell is to be heat treated according to the regulation.”

## 11 Modification to Annex D

*Replace line 8 of Table D.2 with the following:*

“

8	Materials of the shell and of the ends, if different, as well as material grades and references to materials standards, if available.
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”

## 12 Modification to Annex E

*Replace Annex E with the following:*

“

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## Annex A (normative)

### Tank plates for tank containers intended for the transport of hazardous materials

The general arrangement of the tank plate for tank-containers intended for the carriage of dangerous liquids and solids shall comply with Tables E.1, E.2 and E.3. Include lines 6.1, 7, 9, 10, 11, 13, 14, 15 and 16 only if required; otherwise, these lines can be omitted.

**Table E.1 — General Information**

1 – Manufacturer			
2 – Approval number			
2.1 – Applicable regulation	ADR <sup>a</sup>	RID <sup>a</sup>	<sup>b</sup>
2.2 – Construction standard – technical code			
2.3 – Manufacturers type identification			
3 – Manufacturers serial number			
4 – Year of manufacture			
5 – Test pressure			kPa or bar <sup>e</sup>
6 – Total water capacity of the tank <sup>c</sup>			Litres
6.1 – Water capacity of partitions <sup>c</sup>			Litres
7 – Design temperature(s)			°C
8 – Tank material			
8.1 – Material standards			
9 – Material protective lining/coating			
10 – Insulation <sup>d</sup>			
11 – Maximum working pressure			kPa or bar <sup>e</sup>
12 – External design pressure			kPa or bar <sup>e</sup>
18 – Tare			kg
19 – Maximum permissible gross weight			kg
20 – Tank code / Instruction code			
21 – Special provisions			
22 – Owners name			
22.1 – Operator name			