



# SLOVENSKI STANDARD

## oSIST prEN 15273-4:2023

01-maj-2023

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### Železniške naprave - Profili - 4. del: Katalog določenih profilov

Railway applications - Gauges - Part 4: Catalogue of defined gauges

Bahnanwendungen - Begrenzungslinien - Teil 4: Katalog der definierten Begrenzungslinien

Applications ferroviaires - Gabarits - Partie 4 : Catalogue des gabarits définis

Ta slovenski standard je istoveten z: prEN 15273-4

#### **ICS:**

45.060.01      Železniška vozila na splošno      Railway rolling stock in  
general

**oSIST prEN 15273-4:2023**

**en,fr,de**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN 15273-4**

March 2023

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ICS

English Version

## Railway applications - Gauges - Part 4: Catalogue of defined gauges

Applications ferroviaires - Gabarits - Partie 4 :  
Catalogue des gabarits définis

Bahnanwendungen - Lichtraum - Teil 4: Katalog der  
Begrenzungslinien

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 256.

If this draft becomes a European Standard, 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.

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## European foreword

This document (prEN 15273-4:2023) has been prepared by Technical Committee CEN/TC 256 “Railway Applications”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This European Standard is one of the series prEN 15273, *Railway applications — Gauges* as listed below:

- prEN 15273-1, *General common rules for Rolling Stock and Infrastructure* gives the general explanations of gauging and defines the sharing of the space between rolling stock and infrastructure;
- prEN 15273-2, *Rolling stock* gives the rules for dimensioning vehicles;
- prEN 15273-3, *Infrastructure* gives the rules for positioning the infrastructure;
- prEN 15273-4, *Catalogue of defined gauges* includes a non-exhaustive list of reference profiles and parameters to be used by infrastructure and rolling stock;
- prCEN/TR 15273-5, *Background, explanation and worked examples*.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

For relationship with EU Directive(s) / Regulation(s), see informative Annex ZA, which is an integral part of this document.

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<https://standards.iteh.ai/catalog/standards/sist/1670a05e-c2e8-42eb-bbb3-bfe980707221/osist-pren-15273-4-2023>

**prEN 15273-4:2023(E)****Introduction**

The aim of this standard is to define the rules for the calculation and verification of the dimensions of rolling stock and infrastructure from a gauging perspective.

This standard describes gauging processes taking into account the relative movements between rolling stock and infrastructure as well as the necessary margins or clearances

This part of the series EN 15273 covers a catalogue of gauges and associated rules and is used in conjunction with the following parts:

- *Part 1: General common rules for Rolling Stock and Infrastructure;*
- *Part 2: Rolling stock;*
- *Part 3: Infrastructure;*
- *Part 5: Background, explanation and worked examples.*

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## 1 Scope

The gauges included in this document have been developed for application on mainline railway networks using various track gauges. Other networks are outside the scope of this document, but the rules may be applied to them.

This document is a catalogue of reference profiles and their associated rules for the defined gauging process. This document is intended to be used with prEN 15273-1:2023, prEN 15273-2:2023 and prEN 15273-3:2023.

This document is not applicable to the gauges “S” and “T” for track gauge 1 520 mm.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

prEN 15273-1:2023, *Railway applications — Gauges — Part 1: General common rules for Rolling stock and Infrastructure*

prEN 15273-2:2023, *Railway applications — Gauges — Part 2: Rolling stock*

prEN 15273-3:2023, *Railway applications — Gauges — Part 3: Infrastructure*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in prEN 15273-1:2023 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp/42eb-bbb3-bfe980707221/osist-pren-15273-4-2023>
- IEC Electropedia: available at <https://www.electropedia.org/>

## 4 Symbols and abbreviations

For the purposes of this document, the symbols and abbreviations given in prEN 15273-1:2023 apply.

## 5 Static gauges

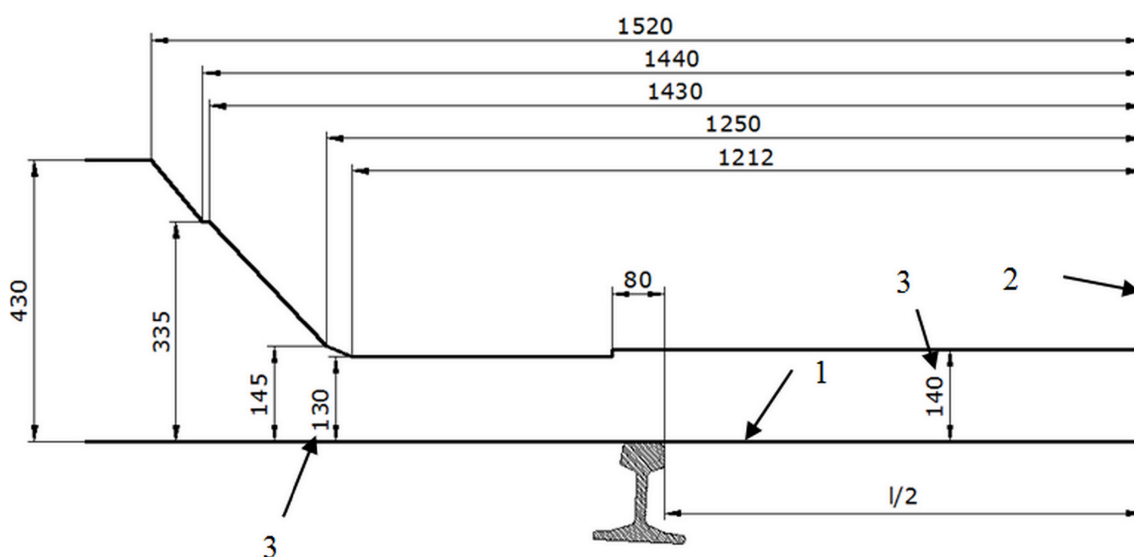
### 5.1 Lower parts

#### 5.1.1 Static gauge GI1

##### 5.1.1.1 Reference profile

Figure 1 shows the reference profile for static gauge GI1.

Dimensions in millimetres

**Key**

- 1 running plane
- 2 centreline of the reference profile
- 3 for rolling stock, values can be reduced by 15 mm for unsprung parts

**Figure 1 — Reference profile for static gauge G11****5.1.1.2 Basic data**

Table 1 gives the basic data to be considered for G11 static gauge calculations.

**Table 1 — Values to be considered for G11 static gauge calculations**

$L$ m	$S_{lim}$	$l_{nom}$ m	$l_{max}$ m	$R_{min}$ m	$R_{v min}$ m
1,5	0,2	1,435	1,465	150	500

**5.1.1.3 Lateral projections**

Table 2 gives the lateral projections for the static gauge G11.

**Table 2 — Formulae for the lateral projections of static gauge G11**

Height	Radius	Formula	
		Inside curve	Outside curve
$h_{CR} \leq 0,43$	$\infty \geq R \geq 250$	$S_{R,a} = S_{R,i} = \frac{2,5}{R}$	
	$250 > R \geq 150$	$S_{R,i} = \frac{50}{R} - 0,190$	$S_{R,a} = \frac{60}{R} - 0,230$
applicable for all heights	applicable for all radii	$S_l = \frac{[l - l_{nom}]_{>0}}{2}$	

### 5.1.1.4 Vertical projections

Table 3 gives the vertical projections for the static gauge GI1.

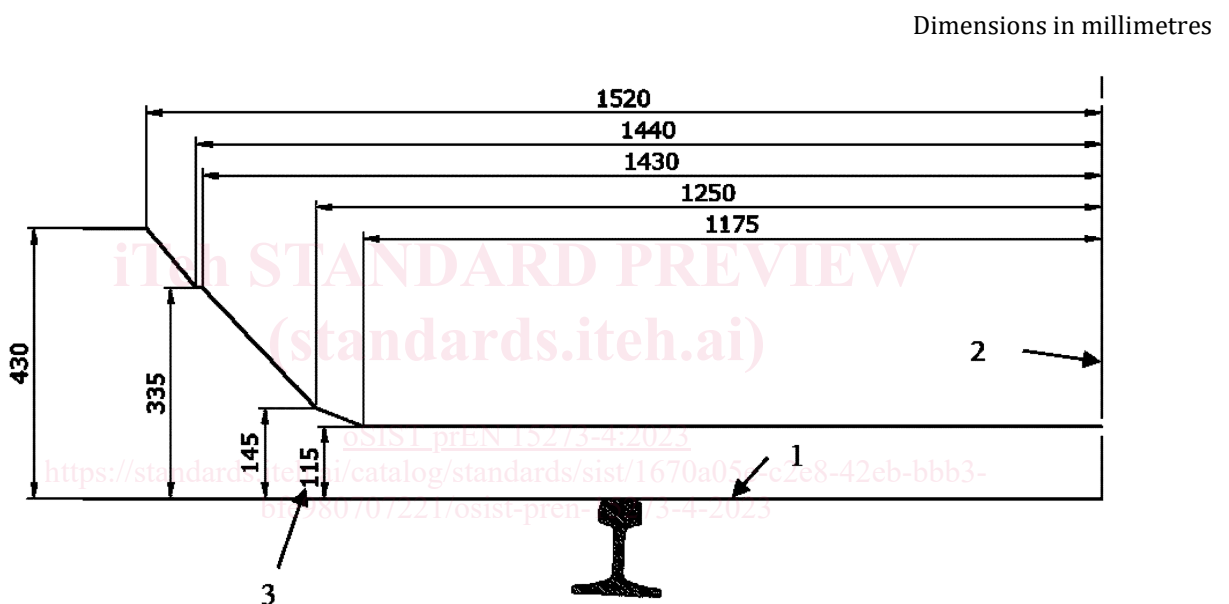
**Table 3 — Vertical projections for lower parts**

Height	$S_{v,u}$
Applicable for all heights	$\frac{50}{R_v}$

### 5.1.2 Static gauge GI2

#### 5.1.2.1 Reference profile

Figure 2 shows the static reference profile GI2.



#### Key

- 1 running plane
- 2 centerline of the reference profile
- 3 for rolling stock, values can be reduced by 15 mm for unsprung parts

**Figure 2 — Reference profile for static gauge GI2**

#### 5.1.2.2 Basic data

The basic data for the static gauge GI2 are the same as for the static gauge GI1, given in Table 1.

#### 5.1.2.3 Lateral projections

The lateral projections for the static gauge GI2 are the same as for the static gauge GI1, given in Table 2.

#### 5.1.2.4 Vertical projections

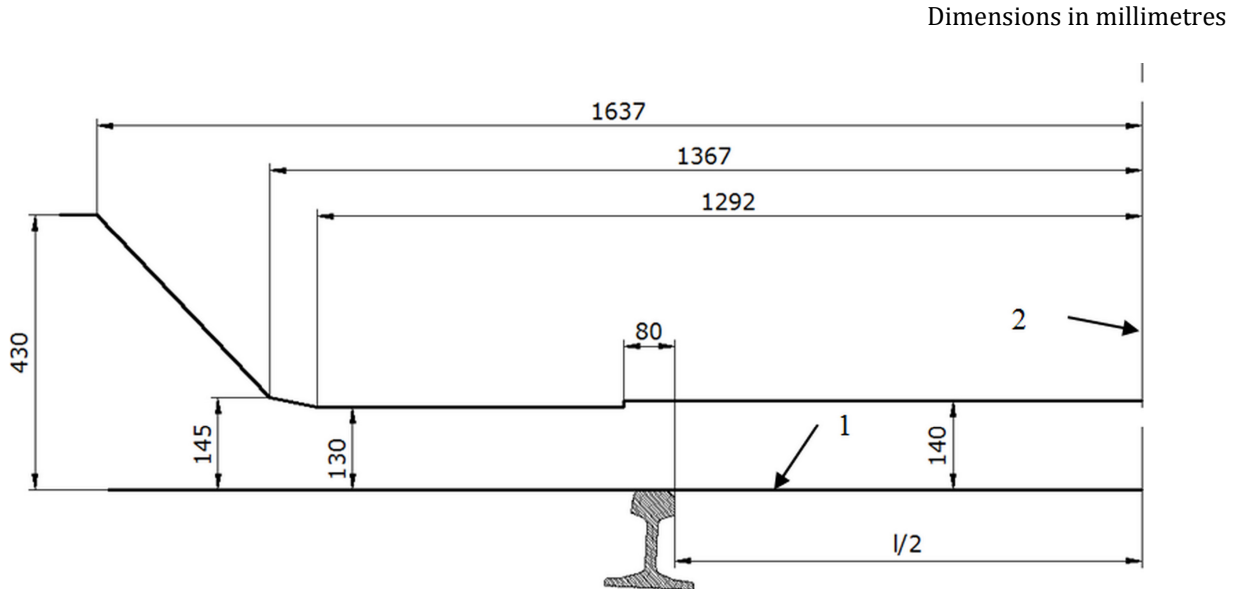
The vertical projections for the static gauge GI2 are the same as for the static gauge GI1, given in Table 3.

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## 5.1.3 Static gauge GEI1

## 5.1.3.1 Reference profile

Figure 3 shows the static reference profile GEI1.



## Key

- 1 running plane
- 2 centerline of the reference profile

**Figure 3 — Reference profile for static gauge GEI1**

## 5.1.3.2 Basic data

Table 4 gives the basic data to be considered for GEI1 static gauge calculations.

**Table 4 — Values to be considered for GEI1 static gauge calculations**

$L$ m	$S_{lim}$	$l_{nom}$ m	$l_{max}$ m	$R_{min}$ m	$R_{vmin}$ m
1,733	0,3	1,668	1,698	150	500

## 5.1.3.3 Lateral projections

The lateral projections for the static gauge GEI1 are the same as for the static gauge GI1, given in Table 2.

## 5.1.3.4 Vertical projections

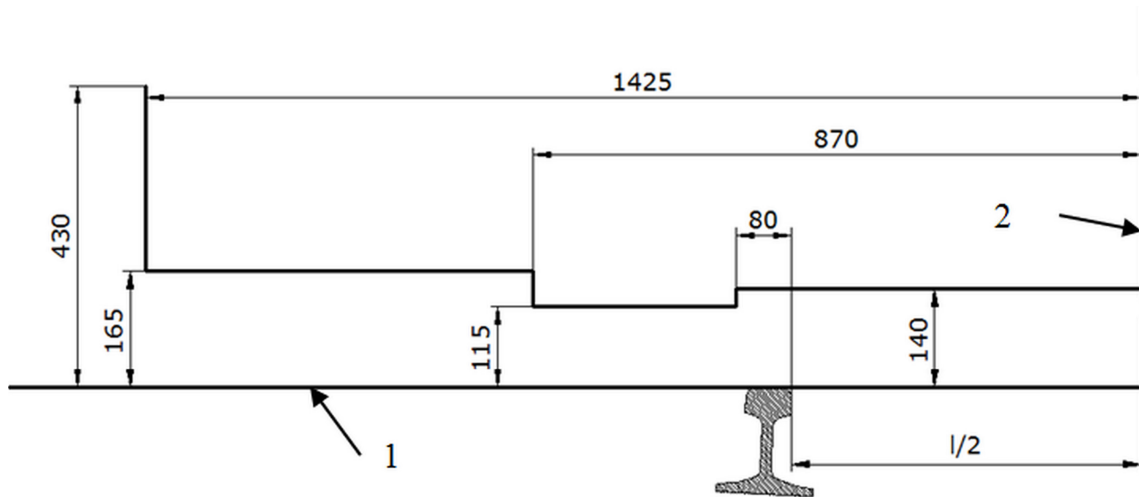
The vertical projections for the static gauge GEI1 are the same as for the static gauge GI1, given in Table 3.

## 5.1.4 Static gauge GEE10

## 5.1.4.1 Reference profile

Figure 4 shows the static reference profile GEE10.

Dimensions in millimetres

**Key**

- 1 running plane
- 2 centerline of the reference profile

**Figure 4 — Reference profile of static gauge GEE10****5.1.4.2 Basic data**

Table 5 gives the basic data to be considered for GEE10 static gauge calculations.

**Table 5 — Values to be considered for GEE10 static gauge calculations**

$L$ m	$S_{lim}$	$l_{nom}$ m	$l_{max}$ m	$R_{min}$ m	$R_{v min}$ m
1,055	0,3	1,000	1,030	80	500

**5.1.4.3 Lateral projections**

Table 6 gives the lateral projections for the lower part of the static gauge GEE10.

**Table 6 — Formulae for the lateral projections of static gauge GEE10**

Height	Radius	Formula	
		Inside curve	Outside curve
$h_{CR} \leq 0,43$	$\infty \geq R \geq 100$	$S_{Ri} = S_{Ra} = \frac{1}{R}$	
	$100 > R \geq 80$	$S_{Ri} = \frac{20}{R} - 0,190$	$S_{Ra} = \frac{24}{R} - 0,230$
applicable for all heights	applicable for all radii	$S_l = \frac{[l - l_{nom}]_{>0}}{2}$	

## prEN 15273-4:2023(E)

## 5.1.4.4 Vertical projections

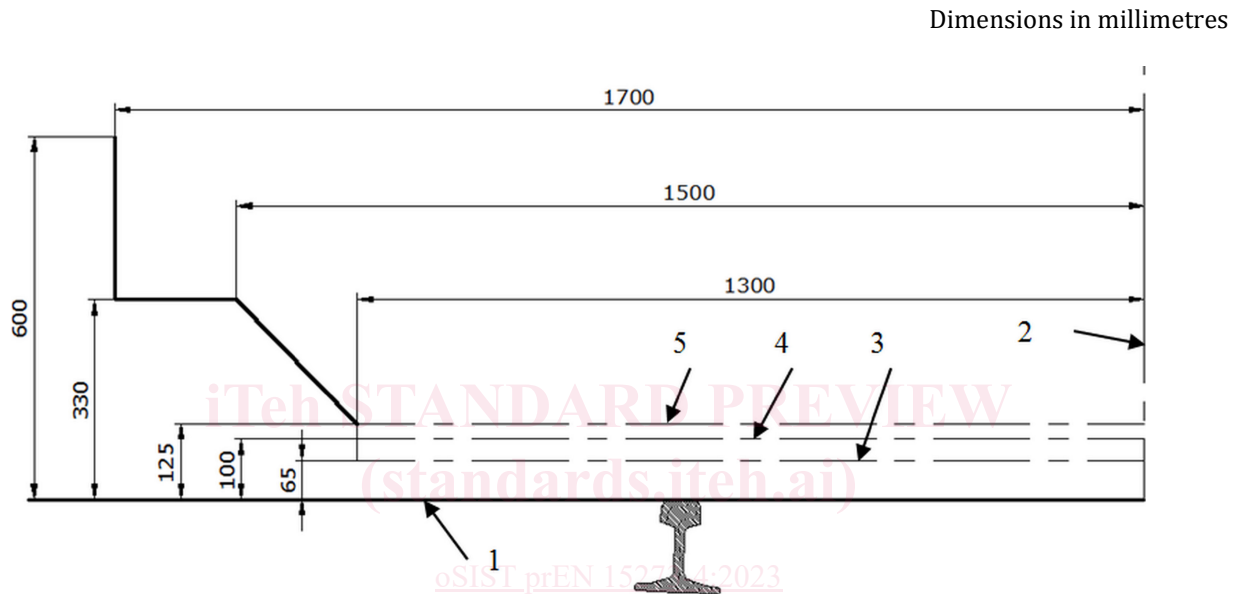
The vertical projections for the static gauge GEE10 are the same as for the static gauge GI1, given in Table 3.

## 5.1.5 Static gauge FIN1

NOTE The static gauge FIN1 is based on broad gauge lines in Finland.

## 5.1.5.1 Reference profile

Figure 5 shows the reference profile for the lower part of static gauge FIN1.



## Key

- 1 running plane
- 2 centreline of the reference profile
- 3 lowering of the gauge for adoption of a separate regulation to be applied to the lower part of the bogies of traction units that are unable to pass over marshalling humps and rail brakes
- 4 lowering of the gauge for adoption of a separate regulation to be applied to the lower part of the vehicles (except for bogies of traction units, see key 3) that are unable to pass over marshalling humps and rail brakes
- 5 lower part for vehicles that are required to pass over marshalling humps and rail brakes

**Figure 5 — Reference profile for lower part of static gauge FIN1**

## 5.1.5.2 Basic data

Table 7 gives the basic data to be considered for FIN1 static gauge calculations.

**Table 7 — Values to be considered for FIN1 static gauge calculations**

$L$ m	$l_{nom}$ m	$l_{max}$ m	$R_{min}$ m	$R_{v min}$ m
1,6	1,524	1,544	150	500

### 5.1.5.3 Lateral projections

Table 8 gives the lateral projections for the static gauge FIN1.

**Table 8 — Formulae for lateral projections of the lower part of static gauge FIN1**

Height	Radius	Formula
$h_{CR} < 0,6$	$\infty \geq R \geq 150$	$S_{Ri} = S_{Ra} = \frac{36}{R} + 0,060$
applicable only for vehicles running over track brakes:		
$h_{CR} < 0,33$	$\infty \geq R \geq 150$	$S_{Ri} = S_{Ra} = \frac{36}{R}$

### 5.1.5.4 Vertical projections

There are no vertical projections the lower part of static gauge FIN1.

## 5.2 Upper parts

### 5.2.1 Static gauge G1

#### 5.2.1.1 Reference profile

Figure 6 shows the reference profile for static gauge G1.

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