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Safety of escalators and moving walks - Part 4: Interpretations related to EN 115 family of standards

Sicherheit von Aufzügen und Fahrtreppen - Teil 4: Auslegungen zur Normenreihe EN 115

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Sécurité des escaliers mécaniques et trottoirs roulants - Partie 4 : Interprétations relatives aux normes de la famille EN 115

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TECHNICAL SPECIFICATION
SPÉCIFICATION TECHNIQUE
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CEN/TS 115-4

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Supersedes CEN/TS 115-4:2015

English Version

Safety of escalators and moving walks - Part 4: Interpretations related to EN 115 family of standards

Sécurité des escaliers mécaniques et trottoirs roulants
- Partie 4 : Interprétations relatives aux normes de la
famille EN 115

Sicherheit von Aufzügen und Fahrtreppen - Teil 4:
Auslegungen zur Normenreihe EN 115

This Technical Specification (CEN/TS) was approved by CEN on 19 July 2020 for provisional application.

The period of validity of this CEN/TS 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 CEN/TS can be converted into a European Standard.

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

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<https://standards.iteh.ai/catalog/standards/sist/d37f6628-2d40-468c-9ee9-c7277e8c921a/sist-ts-cen-ts-115-4-2020>



EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (CEN/TS 115-4:2020) has been prepared by Technical Committee CEN/TC 10 “Lifts, escalators and moving walks”, the secretariat of which is held by AFNOR.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes CEN/TS 115-4:2015.

Interpretations 138 till 150 are added in this edition compared to CEN/TS 115-4:2015.

EN 115 is divided into the following parts:

- EN 115-1, *Safety of escalators and moving walks - Part 1: Construction and installation*;
- EN 115-2, *Safety of escalators and moving walks - Part 2: Rules for the improvement of safety of existing escalators and moving walks*;
- CEN/TR 115-3, *Safety of escalators and moving walks - Part 3: Correlation between EN 115-1:2008+A1:2010 and EN 115-1:2017* [Technical Report];
- CEN/TS 115-4, *Safety of escalators and moving walks - Part 4: Interpretations related to EN 115 family of standards* [Technical specification; the present document].

This document is a collection of interpretations related to the EN 115 series. For the time being, this collection of interpretations relates to EN 115-1. According to the progress in working out interpretations, this document will be amended and/or completed.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

CEN/TS 115-4:2020 (E)**Introduction**

Standards reflect the consensus of the best European expertise and are prepared with highest care. Product standards cannot be formulated in such a way that they describe all possible technical solutions and therefore exclude all uncertainties regarding the understanding of the required provisions. On the other hand, technology is in a permanent evolution, the progress of which cannot be incorporated into standards quickly enough.

Interpretations are a practical way to give:

- a) answers to questions regarding the understanding of clauses in standards;
- b) feedback to the CEN-Committee responsible for a standard about the practical experiences resulting from the use of the standard;
- c) guidance to further development and improvement of standards following:
 - 1) experience, especially accidents and incidents;
 - 2) progress in technology;
 - 3) state of the art.

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1 Scope

This document is a collection of interpretations related to the EN 115 series. This document collects interpretations to EN 115-1:2008+A1:2010 and EN 115-1:2017. Interpretations to other standards of the EN 115 series will be added when they are available.

Interpretations aim to improve the understanding of the clause(s) they are referring to and by that facilitating common understanding between manufacturers, lift installers, notified bodies, inspection bodies and national authorities.

Interpretations do not have the same status as the European standards to which they are related. However, the application of interpretations give to the interested parties confidence that the relevant European standard has not been wrongly applied.

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.

EN 115-1:2008+A1:2010, *Safety of escalators and moving walks - Part 1: Construction and installation*

EN 115-1:2017, *Safety of escalators and moving walks - Part 1: Construction and installation*

EN 349, *Safety of machinery - Minimum gaps to avoid crushing of parts of the human body*

EN 1929-1, *Basket trolleys - Part 1: Requirements and tests for basket trolleys with or without a child carrying facility*

EN 1990:2002, *Eurocode - Basis of structural design*
<https://standards.cen.eu/catalog/standards/sist/d37f6628-2d40-468c-9ee9-c7277e8c921a/sist-ts-cen-ts-115-4-2020>

EN 1990:2002/A1:2005, *Eurocode - Basis of structural design*

EN 1991-1-1, *Eurocode 1: Actions on structures - Part 1-1: General actions - Densities, self-weight, imposed loads for buildings*

EN 1993-1-1:2005, *Eurocode 3: Design of steel structures - Part 1-1: General rules and rules for buildings*

EN 1998-1:2004, *Eurocode 8: Design of structures for earthquake resistance - Part 1: General rules, seismic actions and rules for buildings*

EN 13501-1:2007, *Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests*

EN 13823, *Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item*

EN ISO 13857:2008, *Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2008)*

3 List of interpretations

3.1 General

The following lists show the valid interpretations contained in this document.

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3.2 Lists of interpretations pertaining to EN 115-1

The interpretations related to EN 115-1 are listed in Tables 1 and 2.

Table 1 shows the list of interpretations in their numerical order.

Table 2 shows the list of interpretations in order of the clauses of EN 115-1:2008+A1:2010 and EN 115-1:2017.

These interpretations are detailed in Clause 4.

Table 1 — List of interpretations in numerical order

Interpretation number	Related clause/ subclause	Date of validity	Keywords
101	5.3.1	2012-03-14	Increased height of the web on step treads side
102	5.5.2.4, 5.5.3.3	2012-03-14	Form of 25 cm ² area
103	5.5.3.3	2012-03-14	Load on skirting
104	5.12.2.1.3, 5.12.2.2.2	2012-03-14	Automatic restart in two-direction mode
105	A.2.1	2012-03-14	Unrestricted area, fixed stairs, building height
106	5.12.2.5	2012-03-14	Number of inspection control on site
107	A.2.4	2012-03-14	Rigid deflectors
108	I.1	2012-03-14	Barrier to prevent access of shopping trolleys and baggage carts
109	5.4.3.2	2012-03-14	Testing of steps and pallets drive
110	5.2.1.2	2012-03-14	Stiffness of exterior panel
111	5.12.2.2.4.1 Table 6 h)	2012-03-14	Stopping of succeeding escalators
112	5.3.5	2012-03-14	Measurement of step to step gap
113	5.9	2012-03-14	Fire protection of steps and pallets
114	5.6.2.1	2012-03-14	Handrail clearances
115	A.2.5	2012-03-14	Unrestricted area at the exit
116	5.12.2.2.4.1 Table 6 h), A.2.5	2012-03-14	Area of exit
117	A.2.5, I.2	2012-03-14	Additional stop switch at handrail level - Building interfaces to escalator/moving walk
118	5.8.2.1, A.3.5	2012-03-14	Standing area in machinery spaces
119	A.2	2012-03-14	Fixed devices in unrestricted areas
120	Annex I	2012-03-14	Barriers to prevent shopping trolleys access
121	5.4.2.2.2	2014-11-14	Auxiliary braking system
122	5.3.6	2014-11-14	Location detection missing step device
123	5.4.2.1.1.1, 5.4.2.1.1.3, 5.12.1.2.1.1	2014-11-14	Electrical braking with inverter
124	5.4.1.3.2	2014-11-14	Safety factor of driving elements

Interpretation number	Related clause/ subclause	Date of validity	Keywords
125	4.9, 5.7.2.1	2014-11-14	- 2 horizontal steps \leq 6 m vs. 3 horizontal steps $>$ 6 m; - Lower escalator transition curve, exit/entry
126	5.3.3.2.2	2014-11-14	Step riser, inserts
127	5.7.3.2.6	2014-11-14	Comb switch
128	5.12.2.1.1	2014-11-14	Starting with passengers on the step/pallet band
129	5.12.2.1.3	2014-11-14	Automatic initiation of starting
130	5.7.2.1	2014-11-14	Landing, vertical difference, consecutive steps
131	5.5.3.4 d), Annex K	2014-11-14	Friction coefficient, material
132	A.2.2	2014-11-14	Measure b_{12}
133	5.5.3.4	2014-11-14	Skirt deflector
134	3.1.19, 5.4.1.2	2014-11-14	Definition of nominal speed
135	5.4.2.3	2014-11-14	Excessive speed
136	A.2.5	2014-11-14	Unrestricted area
137	A.2.5	2014-11-14	Unrestricted area
138	5.3.5	2019-09-30	Clearance between two consecutive steps
139	J.2	2019-09-30	Testing and assessing anti-slip properties
140	5.3.3.3.1/5.3.3.3.2	2019-09-30	Step / pallet test frequency
141	5.5.2.1	2019-09-30	Vertical height of the balustrade
142	5.12.3 (EN 115-1:2017)	2019-09-30	Stop device - Disconnection of the power supply
143	5.4.3.2 and 6 (EN 115-1:2017)	2019-09-30	Step/pallet chain - nominal infinite fatigue life
144	5.4.2.2.2 (EN 115-1:2017)	2019-09-30	Auxiliary braking system / verification according Table 11
145	5.1 and Annex M (EN 115-1:2017)	2019-09-30	Seismic - requirements for Escalators / Moving walks vs. Building
146	Annex M (EN 115-1:2017)	2019-09-30	Seismic - requirements for Escalators / Moving walks vs. Building
147	Annex M (EN 115-1:2017)	2019-09-30	Seismic - requirements for Escalators / Moving walks vs. Building
148	Annex M (EN 115-1:2017)	2019-09-30	Seismic - requirements for Escalators / Moving walks vs. Building
149	Annex M (EN 115-1:2017)	2019-09-30	Loading during a seismic event
150	Annex M, M.2.2 - M.2.4 (EN 115-1:2017)	2019-09-30	Structural requirements for seismic conditions

Table 2 — Interpretations in clause/subclause order

Related clause / subclause	Interpretation number	Date of validity	Keywords
3.1.19	134	2014-11-14	Definition of nominal speed
4.9	125	2014-11-14	- 2 horizontal steps \leq 6 m vs. 3 horizontal steps $>$ 6 m; - Lower escalator transition curve, exit/entry
5.1	145	2019-09-30	Seismic – requirements for Escalators / Moving walks vs. Building
5.2.1.2	110	2012-03-14	Stiffness of exterior panel
5.3.1	101	2012-03-14	Increased height of the web on step treads side
5.3.3.2.2	126	2014-11-14	Step riser, inserts
5.3.3.3.1	140	2019-09-30	Step / pallet test frequency
5.3.3.3.2	140	2019-09-30	Step / pallet test frequency
5.3.5	112	2012-03-14	Measurement of step to step gap
5.3.5	138	2019-09-30	Clearance between two consecutive steps
5.3.6	122	2014-11-14	Location detection missing step device
5.4.1.2	134	2014-11-14	Definition of nominal speed
5.4.1.3.2	124	2014-11-14	Safety factor of driving elements
5.4.2.1.1.1	123	2014-11-14	Electrical braking with inverter
5.4.2.1.1.3	123	2014-11-14	Electrical braking with inverter
5.4.2.2.2	121	2014-11-14	Auxiliary braking system
5.4.2.2.2	144	2019-09-30	Auxiliary braking system / verification according Table 11
5.4.2.3	135	2014-11-14	Excessive speed
5.4.3.2	109	2012-03-14	Testing of steps and pallets drive
5.4.3.2	143	2019-09-30	Step/pallet chain – nominal infinite fatigue life
5.5.2.1	141	2019-09-30	Vertical height of the balustrade
5.5.2.4	102	2012-03-14	Form of 25 cm ² area
5.5.3.3	103	2012-03-14	Load on skirting
5.5.3.3	102	2012-03-14	Form of 25 cm ² area
5.5.3.4 d)	131	2014-11-14	Frictional coefficient, material
5.5.3.4	133	2014-11-14	Skirt deflector
5.6.2.1	114	2012-03-14	Handrail clearances
5.7.2.1	125	2014-11-14	- 2 horizontal steps \leq 6 m vs. 3 horizontal steps $>$ 6 m; - Lower escalator transition curve, exit/entry
5.7.2.1	130	2014-11-14	Landing, vertical difference, consecutive steps
5.7.3.2.6	127	2014-11-14	Com switch

Related clause / subclause	Interpretation number	Date of validity	Keywords
5.8.2.1	118	2012-03-14	Standing area in machinery spaces
5.9	113	2012-03-14	Fire protection of steps and pallets
5.12.1.2.1.1	123	2014-11-14	Electrical braking with inverter
5.12.2.1.1	128	2014-11-14	Starting with passengers on the step/pallet band
5.12.2.1.3	104	2012-03-14	Automatic restart in two-direction mode
5.12.2.1.3	129	2014-11-14	Automatic initiation of starting
5.12.2.2.2	104	2012-03-14	Automatic restart in two-direction mode
5.12.2.2.4.1 Table 6 h)	111	2012-03-14	Stopping of succeeding escalators
5.12.2.2.4.1 Table 6 h)	116	2012-03-14	Area of exit
5.12.2.5	106	2012-03-14	Number of inspection control on site
5.12.3	142	2019-09-30	Stop device - Disconnection of the power supply
6	143	2019-09-30	Step/pallet chain - nominal infinite fatigue life
A.2	119	2012-03-14	Fixed devices in unrestricted areas
A.2.1	105	2012-03-14	Unrestricted area, fixed stairs, building height
A.2.2	132	2014-11-14	Measure b_{12}
A.2.4	107	2012-03-14	Rigid deflectors
A.2.5	115	2012-03-14	Unrestricted area at the exit
A.2.5	116	2012-03-14	Area of exit
A.2.5	117	2012-03-14	Additional stop switch at handrail level - Building interfaces to escalator/moving walk
A.2.5	136	2014-11-14	Unrestricted area
A.2.5	137	2014-11-14	Unrestricted area
A.3.5	118	2012-03-14	Standing area in machinery spaces
Annex I	120	2012-03-14	Barriers to prevent shopping trolleys access
I.1	108	2012-03-14	Barrier to prevent access of shopping trolleys and baggage carts
I.2	117	2012-03-14	Additional stop switch at handrail level - Building interfaces to escalator/moving walk
J.2	139	2019-09-30	Testing and assessing anti-slip properties
Annex K	131	2014-11-14	Friction coefficient, material
Annex M	145	2019-09-30	Seismic - requirements for Escalators / Moving walks vs. Building
Annex M	146	2019-09-30	Seismic - requirements for Escalators / Moving walks vs. Building
Annex M	147	2019-09-30	Seismic - requirements for Escalators / Moving walks vs. Building

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Related clause / subclause	Interpretation number	Date of validity	Keywords
Annex M	148	2019-09-30	Seismic – requirements for Escalators / Moving walks vs. Building
Annex M	149	2019-09-30	Loading during a seismic event
M.2.2 – M.2.4	150	2019-09-30	structural requirements for seismic conditions

3.3 Lists of interpretations pertaining to EN 115-2

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4 Interpretations related to EN 115-1

CEN	INTERPRETATION Related to		101 Page 1 of 1
EN 115-1	Edition: 2010	Clause(s): 5.3.1	Valid from:
			Date of modification: 2011-03-30
Key-word(s): Increased height of the web on step treads side		Replacing interpretation Nr.: 01	
<p>QUESTION</p> <p>Is it permitted to have an increased height of the web at both sides of the step tread (demarcation lines opposite to the skirt panels)?</p> <p style="text-align: center;">iTeh STANDARD PREVIEW (standards.iteh.ai)</p>			
<p>INTERPRETATION</p> <p style="text-align: center;">SIST-TS CEN/TS 115-4:2020</p> <p>Increased height of the rib (web) is permitted as long as the same safety level as for a totally flat step/pallet will be ensured. This shall be proofed in detail by risk analysis.</p>			
Date of approval by CEN/TC 10 members: 2012-03-14			

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CEN	INTERPRETATION Related to		102 Page 1 of 1
EN 115-1	Edition: 2010	Clause(s): 5.5.2.4, 5.5.3.3	Valid from:
			Date of modification:
Key-word(s): Form of 25 cm ² area			Replacing interpretation Nr.: 18
<p>QUESTION</p> <p>5.5.2.4 and 5.5.3.3 specify an area of 25 cm² on to which the force shall be applied. Which form (square, circle, rectangle) shall this area have?</p> <p style="text-align: center; color: #e91e63; font-weight: bold; font-size: 1.2em;">iTeh STANDARD PREVIEW</p>			
<p>INTERPRETATION (standards.iteh.ai)</p> <p>With the definition of 25 cm², it was intended to precise the term “lump load” used in former codes.</p> <p style="text-align: center; color: #e91e63; font-size: 0.8em;">SIST-TS CEN/TS 115-4:2020 https://standards.iteh.ai/catalog/standards/sist/d37f6628-2d40-468c-9ee9-c7277e8c921a/sist-ts-cen-ts-115-4-2020</p> <p>Normally, the equipment for such tests has a circular or square surface so that such formed areas will be the practice in general.</p> <p>This will be considered in the next revision of the standard.</p>			
Date of approval by CEN/TC 10 members: 2012-03-14			

CEN	INTERPRETATION Related to		103 Page 1 of 1
EN 115-1	Edition: 2010	Clause(s): 5.5.3.3	Valid from:
			Date of modification:
Key-word(s): Load on skirting		Replacing interpretation Nr.: 20	
<p>QUESTION</p> <ol style="list-style-type: none"> 5.5.3.3 defines the load carrying ability of the skirting and deformation. Does this apply to the whole skirting or only to the area of 25 mm according to 5.5.3.2? If the whole skirting has to be dimensioned for the test load, shall then also the comb plate lighting, if installed in the skirting, withstand this load? <p style="text-align: center;">iTeh STANDARD PREVIEW</p>			
<p>INTERPRETATION (standards.iteh.ai)</p> <ol style="list-style-type: none"> The load and deflection requirements of 5.3.3.3 shall be met up to a height of 25 mm above the line of the step nose or the tread surface of the pallets or belt where the risk of entrapment exists. Above the height of 25 mm, the force requirements of the balustrade of 500 N (see 5.5.2.4) shall be fulfilled. The comb plate lighting has to withstand the test load according to 5.5.3.3 if the lighting or part of it is arranged within the area of skirting of 25 mm above the tread surface. <p>All other requirements of the skirting according to 5.5.3 are still valid. This includes that under the force requirements above the skirting shall remain plain and butt-joined according to 5.5.3.1. At the next revision of EN 115-1:2008+A1:2010, 5.5.3 has to be amended accordingly.</p>			
Date of approval by CEN/TC 10 members: 2012-03-14			