

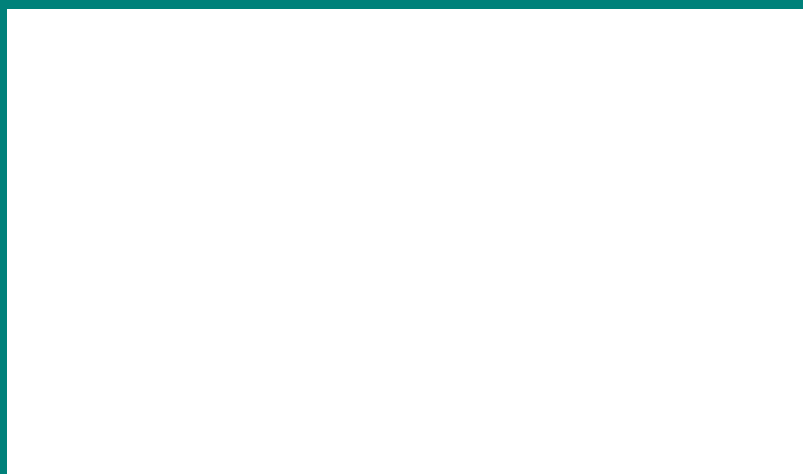
SVENSK STANDARD

SS-EN 15723:2010

Fastställt/Approved: 2010-02-01
Publicerad/Published: 2010-02-23
Utgåva/Edition: 1
Språk/Language: engelska/English
ICS: 45.060.20

Järnvägar – Stängnings- och låsanordningar för skyddsutrustning för nyttolast mot miljöpåverkan – Hållbarhets-, drifts-, indikations-, underhålls- och återvinningskrav

Railway applications – Closing and locking devices for payload protecting devices against environmental influences – Requirements for durability, operation, indication, maintenance, recycling



Hitta rätt produkt och ett leveranssätt som passar dig

Standarder

Genom att följa gällande standard både effektiviserar och säkrar du ditt arbete. Många standarder ingår dessutom ofta i paket.

Tjänster

Abonnemang är tjänsten där vi uppdaterar dig med aktuella standarder när förändringar sker på dem du valt att abonnera på.

På så sätt är du säker på att du alltid arbetar efter rätt utgåva.

e-nav är vår online-tjänst som ger dig och dina kollegor tillgång till standarder ni valt att abonnera på dygnet runt. Med e-nav kan samma standard användas av flera personer samtidigt.

Leveranssätt

Du väljer hur du vill ha dina standarder levererade. Vi kan erbjuda dig dem på papper och som pdf.

Andra produkter

Vi har böcker som underlättar arbetet att följa en standard. Med våra böcker får du ökad förståelse för hur standarder ska följas och vilka fördelar den ger dig i ditt arbete. Vi tar fram många egna publikationer och fungerar även som återförsäljare. Det gör att du hos oss kan hitta över 500 unika titlar. Vi har även tekniska rapporter, specifikationer och "workshop agreement".

Matriser är en översikt på standarder och handböcker som bör läsas tillsammans. De finns på sis.se och ger dig en bra bild över hur olika produkter hör ihop.

Standardiseringsprojekt

Du kan påverka innehållet i framtida standarder genom att delta i någon av SIS ca 400 Tekniska Kommittéer.

Find the right product and the type of delivery that suits you

Standards

By complying with current standards, you can make your work more efficient and ensure reliability. Also, several of the standards are often supplied in packages.

Services

Subscription is the service that keeps you up to date with current standards when changes occur in the ones you have chosen to subscribe to. This ensures that you are always working with the right edition.

e-nav is our online service that gives you and your colleagues access to the standards you subscribe to 24 hours a day. With e-nav, the same standards can be used by several people at once.

Type of delivery

You choose how you want your standards delivered. We can supply them both on paper and as PDF files.

Other products

We have books that facilitate standards compliance. They make it easier to understand how compliance works and how this benefits you in your operation. We produce many publications of our own, and also act as retailers. This means that we have more than 500 unique titles for you to choose from. We also have technical reports, specifications and workshop agreements.

Matrices, listed at sis.se, provide an overview of which publications belong together.

Standardisation project

You can influence the content of future standards by taking part in one or other of SIS's 400 or so Technical Committees.

Europastandarden EN 15723:2010 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 15723:2010.

The European Standard EN 15723:2010 has the status of a Swedish Standard. This document contains the official English version of EN 15723:2010.

© Copyright/Upphovsrätten till denna produkt tillhör SIS, Swedish Standards Institute, Stockholm, Sverige. Användningen av denna produkt regleras av slutanvändarlicensen som återfinns i denna produkt, se standardens sista sidor.

© Copyright SIS, Swedish Standards Institute, Stockholm, Sweden. All rights reserved. The use of this product is governed by the end-user licence for this product. You will find the licence in the end of this document.

Upplysningar om sakinnehållet i standarden lämnas av SIS, Swedish Standards Institute, telefon 08-555 520 00. Standarder kan beställas hos SIS Förlag AB som även lämnar allmänna upplysningar om svensk och utländsk standard.

Information about the content of the standard is available from the Swedish Standards Institute (SIS), tel +46 8 555 520 00. Standards may be ordered from SIS Förlag AB, who can also provide general information about Swedish and foreign standards.

SIS Förlag AB, SE 118 80 Stockholm, Sweden. Tel: +46 8 555 523 10. Fax: +46 8 555 523 11.
E-mail: sis.sales@sis.se Internet: www.sis.se

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 15723

January 2010

ICS 45.060.20

English Version

**Railway applications - Closing and locking devices for payload
protecting devices against environmental influences -
Requirements for durability, operation, indication, maintenance,
recycling**

Applications ferroviaires - Dispositifs de fermeture et de
verrouillage des équipements de protection du chargement
contre les influences environnantes - Exigences de
résistance mécanique, exploitation, marquage,
maintenance et recyclage

Bahnanwendungen - Verschluss- und Sicherungsteile von
Ladegutschutzeinrichtungen gegen Umwelteinflüsse -
Anforderungen an Festigkeit, Bedienbarkeit,
Kennzeichnung, Instandhaltung, Entsorgung

This European Standard was approved by CEN on 7 November 2009.

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 CEN 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 CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents	Page
Foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Requirements	7
4.1 General.....	7
4.2 Strength of side doors and their locking devices, sliding doors and single and multi-leafed doors under transverse loading	8
4.3 Strength of sliding walls and their locking devices	8
4.4 Forces resulting from the passing of trains	8
4.4.1 General.....	8
4.4.2 Movable roofs.....	8
4.4.3 Side doors of high-sided open wagons and their closing and locking devices	8
4.4.4 Unloading doors of gravity discharge wagons and their closing and locking devices	8
4.5 Safeguards of movable protecting devices (i.e. doors, sliding walls, sliding roofs, flaps, hoods)	9
4.6 Verification of durability and functioning	9
4.7 Instructions for use	9
4.8 Environmental conditions.....	9
4.9 Recycling	9
5 Maintenance/repair	10
Annex A (normative) Strength requirements for wagon components and systems for payload protection	11
A.1 General.....	11
A.2 Strength of sliding walls	11
A.3 Forces resulting from the passing of trains	12
A.3.1 Individual strength requirements for sliding walls and their locking devices	12
A.4 Moveable roofs.....	13
A.5 Strength of the side doors of high sided open wagons	13
Annex B (informative) Specification tables	14
B.1 General.....	14
B.2 Application case "Movement of lever parallel to the level of symmetry of the human body, using both hands"	15
B.3 Application case "Pulling and pressing in vertical level, using one hand"	17
B.4 Application case "Pulling and pressing in horizontal level, using one hand"	19
B.5 Application case "Pulling and pressing in horizontal level, using both hands"	21
B.6 Application case "Applied forces for lifting, carrying or holding loads"	23
B.7 Application case "Applied moments at cranks with horizontal rotation axis, parallel to the level of symmetry of the human body, using both hands"	25
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2008/57/EC	28
Bibliography	29

Foreword

This document (EN 15723:2010) has been prepared by Technical Committee CEN/TC 256 "Railway applications", 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 July 2010, and conflicting national standards shall be withdrawn at the latest by July 2010.

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

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

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

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

To achieve an undisturbed, reliable and safe operation of freight trains it is essential to define common requirements for closing and locking devices of protecting devices of interoperable trains with respect to e.g. structural requirements, operating characteristics, way of operation, maintenance as well as their handling.

1 Scope

This European Standard applies to new and upgraded freight wagons where an approval is required. These protecting devices are classified into two types of load and this standard defines the requirements for the durability of the closing and locking devices, their status indication, maintenance and recycling. This standard also defines pass-fail criteria for the dimensioning tests.

NOTE Provisions going beyond the scope of these requirements should be agreed by the contracting parties involved.

This standard is not applicable to closing and locking devices which are used to ensure a pressure difference or to retain liquids /liquid payloads. It is not applicable to vehicles which are emptied by pressure, nor is it applicable to loose tarpaulins.

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

prEN 12663-2, *Railway applications — Structural requirements of railway vehicle bodies — Part 2: Freight wagons*

prEN 15877-1, *Railway applications — Marking on railway vehicles — Part 1: Freight wagons*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

aerodynamic forces

forces affecting the vehicle and component assemblies by an air stream

3.2

forces from selfmass

inertia forces resulting from dynamic forces applied to the protecting (locking) devices

3.3

unloading door

type of door which is subject to the force of the payload (or a proportion of it)

NOTE The door should be able to be secured against un-planned opening (Category 2).

3.4

movable device to protect

device to protect payload against environmental influences and exterior forces

NOTE 1 Loose tarpaulins are not considered as a movable protecting device.

EXAMPLES Sliding walls, flaps, rigid sliding hoods and covers, hinged doors, bottom doors.

3.5**closing and locking device**

device for fixing a movable protecting device in a defined position

3.6**operating module**

freight wagon load securing or locking unit activated by operating elements

NOTE An operating module can also be an operating element.

3.7**operating element**

element which is operated during loading/unloading

EXAMPLES Removable stanchions, hand wheels, sliding walls, levers or movable tie-downs.

3.8**applied force or moment**

body force or moment which acts outwardly from the body

NOTE 1 Applied forces or moments are operating forces.

NOTE 2 In order to activate an operating element, both static and dynamic forces are applied.

3.9**percentile**

statement on how many participants of the test group (in percent) are able to summon up the applied force or applied moment

NOTE 1 The applied forces or moments stated in the standards always refer to certain percentiles of the test group.

NOTE 2 Typical values of percentiles are 1, 5, 15, 50 or 95. Here the difference between 100 and the percentile value describes the percentage of the test group, which is able to summon up more than the respective applied force or moment. When stating the 85th percentile this means for instance that 85 % of the test persons are able to carry out the described activity – and 15 % will be able to carry out more than the described activity. When stating the 15th percentile this means for instance that 15 % of the test persons are not able to carry out the described activity – and 85 % will be able to carry out the described activity.

3.10**types of load**

classification in two types of loads which are considered for the design of closing and locking devices

NOTE 1 These loads are either internal forces from the load itself or external forces during travelling.

NOTE 2 Examples for when these loads are considered for different door types are shown in Table 1.

3.11**automatic safety device**

automatic device that prevents danger from wrong operation to and by the user

3.12**safeguard device**

device that safely locks the movable items in their defined (open, close intermediate) position preventing unintentional movements

Table 1 — Types of load

Type of door	Load types		Examples of types
	Category 1 Planned/accepted forces by payload (even unloading by gravity), dynamic forces from payload (including unloading)	Category 2 No forces from payload, dynamic forces from exterior forces only	
Doors, discharge	X	X	Tanoos, Fals HAA, HHA CDA
Sliding walls	X	X	Hbi... wagons VGA
Sliding covers/hoods		X	Shimms Rils
Hinged side doors/ end doors	X	X	E-wagons
Curtain sides		X	
Hoppers with opening roof		X	Tamns
Siding roof "spread eagles"	X	X	

4 Requirements

4.1 General

Doors and hatches of freight vehicles shall be designed to be closed and locked. This remains valid while the vehicles are in a moving train (unless this is part of the procedure for discharging the payload). Wagons fitted with special equipment (automatic discharging, opening roof, etc.) shall have instructions concerning operation of this equipment and the safety precautions to be taken, placed in a prominent position and if possible in several languages; these instructions may be accompanied by appropriate pictograms.

The closing and locking devices shall be designed to withstand the loads which are caused by the payload under normal, regular conditions and when the payload has been displaced in a foreseeable manner (see Table 1, Category 1).

The closing and locking devices shall be designed to withstand the loads which could effect to vehicles during operation.

The side doors and the shutters of the ventilation apertures of covered wagons shall be designed to prevent wear and in service stresses causing deformation and resulting in these elements being ripped or falling off during the shunting process or while the train is moving (particularly during passing of two trains).

For all types of covered wagon with sliding side doors, they shall be equipped with suitably dimensioned devices to prevent any unintended disengagement. The devices shall limit the vertical play and shall take effect in any operating condition.

The forces, which are needed to actuate the closing and locking devices, shall be of a magnitude that can be applied by an operator without additional tools. Exceptions are allowable when additional tools are specifically made available or when motor driven systems are used.