

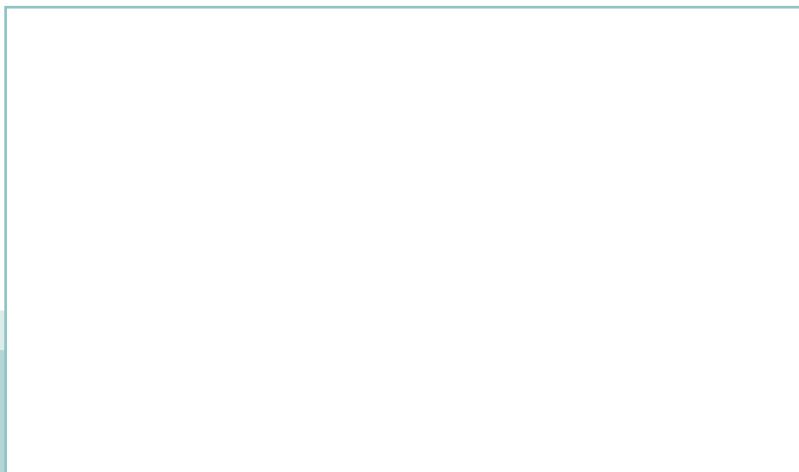
Teknisk rapport

SIS-CEN/TR 16598:2014

Publicerad/Published: 2014-08-20
Utgåva/Edition: 1
Språk/Language: engelska/English
ICS: 97.200.40

Lekredskap – Beskrivning av motiven bakom kraven i EN 1176

Collection of rationales for EN 1176 – Requirements



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TECHNICAL REPORT
RAPPORT TECHNIQUE
TECHNISCHER BERICHT

CEN/TR 16598

February 2014

ICS 97.200.40

English Version

Collection of rationales for EN 1176 - Requirements

Recueil d'exposés des motifs concernant l'EN 1176 -
Exigences

Sammlung von grundsätzlichen Überlegungen zur EN 1176
- Anforderungen

This Technical Report was approved by CEN on 30 September 2013. It has been drawn up by the Technical Committee CEN/TC 136.

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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (CEN/TR 16598:2014) has been prepared by Technical Committee CEN/TC 136 "Sports, playground and other recreational facilities and equipment", the secretariat of which is held by DIN.

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Introduction

The intention of the safety standard for playground equipment was to avoid situations in which a child, due to his age or ability or stage of development, is unable to comprehend a **risk**.

It was the intention to eliminate traps and **risks** from which severe harm could occur for the user.

In consideration of this, the task group choose the form of a report in which the **objective** mentions repeatedly that the aim of the standard is always to protect the child from harm.

It has become apparent that users of the standard have sometimes lost sight of this and were just considering dimensions, functionality or spaces and special equipment parts without regard for the safety aim.

When considering the complexity of an equipment and the efforts to provide safety, these efforts should be proportionate to the incidents that take place in real life.

Dimensions should not be taken as absolute as juristic and safety treatments are different in relation to the risk of a deviation from the standard.

A large number of the **objectives** for the **rationales** are repeated. This is intentional as it reinforces the safety aim of the standard and prevents the misunderstanding of a **rationale** when taken in isolation.

Working on the **rationales** for the single paragraphs, it became obvious for the task group that there where parts in the standard which had been discussed very often and deeply (e.g. the damping qualities of surfaces, HIC) and there were other parts that had no or very little discussions (e.g. hard edges at the end of a falling space).

Noticing this it was nearly self-evident to have an assessment / evaluation proposal for all requirements:

a) fundamental safety issues:

- 1) safety installations / regulations have to prevent situations that may cause the death of a user;
- 2) safety installations / regulations have to prevent situations that may lead to a loss of extremities of a user;
- 3) safety installations / regulations have to prevent situations that may cause a lifetime disability (blindness, paraplegia);
- 4) safety installations / regulations have to prevent situations in which a user is not able to free himself out of a trap;

b) basic safety issues:

- 1) safety installations / regulations should prevent situations which overburden the user according to his age and prevent accidents like bone fractures, bruises, abrasions although these injuries happen in everyday life as well and are accepted by society as things that may happen to a human being;

c) standard issues:

- 1) man-made playground equipment is necessary because the city environments don't offer natural play facilities. Therefore, this kind of equipment is meant to advance the development of the child.

As there are very different development levels during childhood it means that the equipment has to be engineered in such a tricky way that it supports the several stages of development and screens the different age groups.

At least it should be mentioned that the requirements of the standard are just a concern about the effect of an equipment on the user. They do not consider the necessity and the social impact of a playground e.g. in areas where children have no natural resources with which they could play.

The standard cannot account for the behaviour of children. The ideal is that children should use the play environment as a means of personal development. However, it is accepted that the behaviour of children cannot be controlled by a technical standard. The best way to deal with this is to adopt a Risk Assessment process, which will allow the behaviour of children to be considered as part of the inspection of the play environment.

Risk Assessment has to take into account the competence and ability of the potential users of the equipment and the foreseeable risks to those users. It is possible to allow greater challenge and opportunity in play equipment by controlling access to equipment, the control of access has to take in to account the abilities and skills of the user. The standard lists some ways in which access can be controlled.

It is not possible to control the way in which parents or carers may influence the use of play equipment, in particular if they allow, encourage or assist children to overcome controls on access imposed by the designer.

The task group did not review the annexes of the different parts of the standard EN 1176; even though these contain wording that can be considered to be hidden requirements.

Again, it turns out to be true that there is no overlapping with EN 71-8.

1 Scope

This Technical Report is intended to be read in conjunction with EN 1176.

The **rationales** given in this Technical Report describe the main reasons behind the requirements given in EN 1176. The requirements in the standard are the tools (e.g. measures, testing methods etc.) by which the **objectives** are intended to be reached.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1176 (all parts), *Playground equipment and surfacing*

3 Terms and definitions

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

3.1

objective

what is the intention of the clause in the standard

3.2

risk

what might happen to the user if the **objective** is not achieved

3.3

rationale

the reason for making this specific requirement

Note 1 to entry: Often you will find **rationales** in the notes given in the requirements. This is mentioned in the document.

3.4

addendum

additional comments as well as remarks

4 Part 1

4.1 Paragraph in Standard: 4.1.2 Flammability

Objective	To avoid burning – particularly from those materials which produce flaming droplets of molten material which are difficult to extinguish.
Risk	In the event of a flash fire there is insufficient time to intervene and protect the user. The outcome of a fire may be death or disfigurement.
Rationale	The correct selection of materials to ideally prevent this occurring or allow escape from the equipment.

4.2 Paragraph in Standard: 4.1.3 Timber and associated products

Objective protect the user from harm as a result of unforeseen failure of equipment due to decay of wooden parts.

- a) wood is a natural material and will decay with time, sufficient attention shall be paid to its design; protection and maintenance to ensure that structures made of wood are safe especially between maintenance cycles;
- b) wood can splinter;
- c) hazards from species and treatment of wood.

Risk

- a) unforeseen failure of equipment;
- b) puncture injuries, eye injuries;
- c) allergic reaction, it is considered unlikely that poisoning by ingestion will occur.

Rationale

- a) following the requirements of the standard the possibility of failure of the equipment can be controlled within the maintenance intervals;
- b) and c) the selection of the wood type can reduce or eliminate this **risk**.

Addendum wood as a natural material will crack as part of the drying process; this does not necessarily present a dangerous situation.

4.3 Paragraph in Standard: 4.1.4 Metals

Objective protect the user from harm as a result of unforeseen failure of equipment due to corrosion of metal parts.

Risk injury may occur due to unforeseen failure of metal components.

Rationale

- a) metals, either as a structural component or as an auxiliary component, can corrode either due to atmospheric conditions or by electrochemical reaction; sufficient attention shall be paid to its design; protection and maintenance to ensure that structures made of metal are safe, especially between maintenance cycles;
- b) metals that produce toxic oxidation shall be coated.

4.4 Paragraph in Standard: 4.1.5 Synthetics

Objective protect the user from harm as a result of unrecognized failure of equipment due to aging or breaking of synthetic materials.

Risk reinforced materials can produce splinters and cuts; static supporting parts may break.

Rationale use of coloured gelcoats to indicate wear and maintenance according to intervals given by the manufacturer can prevent the **risk**.

4.5 Paragraph in Standard: 4.1.6 Dangerous substances

Objective protect the user from harm as a result of being exposed to dangerous substances.

Risk poisoning by skin contact; poisoning by mouth contact; chemical burns.