

# Joint Action 2015 GPSD

Joint Market Surveillance Action co-funded by the European Union  
Grant Agreement Number: 705038 - JA2015 - GPSD

## Final Technical Report PLAYGROUNDS

Covering the period: 8 April 2016 - 7 June 2018



Co-funded by  
the European Union



August 2018  
Updated May 2019

**Author:** PROSAFE  
[www.prosafe.org](http://www.prosafe.org)

Avenue des Arts/Kunstlaan 41  
1040 Brussels, Belgium

**Contacts:** Ioana Sandu, PROSAFE Executive Director  
[info@prosafe.org](mailto:info@prosafe.org) / +32 (2) 808 09 06

*Cover photograph: A picture of a recently installed playground in Latvia, which includes a number of novel items of playground equipment.*

#### Disclaimer

This report arises from the Joint Market Surveillance Action on GPSD Products - JA2015, which received funding from the European Union in the framework of the 'Programme of Community Action in the field of Consumer Policy (2014-2020)'.

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## Table of Contents

Table of Contents.....	3
Table of Photographs .....	4
List of Tables .....	4
List of abbreviations .....	5
<b>Executive Summary .....</b>	<b>6</b>
<b>Introduction .....</b>	<b>8</b>
1.1 Report Structure .....	9
1.2 Overview of the Activity's key staff .....	10
1.3 Main Objectives .....	10
1.4 Number of samples inspected and main activities .....	11
1.5 The Timeline of the Activity .....	12
<b>2 Setting up the Product Activity .....</b>	<b>15</b>
2.1 The preparatory phase .....	15
2.2 Timing of activities .....	15
2.3 The applicable legislation and safety standards .....	15
2.3.1 The applicable legislation and safety standards .....	15
2.3.2 Previous versions of legislation and standards .....	16
2.3.3 Recent editions of standards.....	17
2.4 The 'Inspection Manual' and the 'Checklist'.....	17
2.5 Risk assessment methods for playground equipment.....	18
2.5.1 Identifying product hazards in special cases .....	18
2.5.2 Risk assessment methods .....	18
<b>3 Activities and results .....</b>	<b>21</b>
3.1 Inspections .....	21
3.2 The results obtained from the inspections .....	21
3.2.1 The inspections conducted during the Spring 2017 .....	21
3.2.2 Inspections on outdoor playgrounds and playground equipment .....	25
3.3 Statistics relating to the results.....	32
3.4 The inspection of playgrounds in Iceland.....	34
3.4.1 Legal framework and remit .....	34
3.4.2 Findings from the review .....	35
<b>4 Follow-up work.....</b>	<b>36</b>
4.1 Approach adopted by the Member States .....	36
4.2 Case studies.....	36
4.2.1 Case study 1 - follow-up action taken by the operators - Slovenia .....	37
4.2.2 Case study 2 - who owns the playground being inspected? - Latvia .....	37
4.2.3 Case study 3 - which part of the standard applies? - Latvia.....	38
4.2.4 Case study 4 - home made equipment can be safe - Germany, Baden Württemberg .....	39
<b>5 Risk Assessment .....</b>	<b>41</b>
5.1 The principal hazards relating to playground equipment .....	41
5.2 Risk Assessment, indoor playground equipment.....	41
5.3 Risk Assessment, outdoor playground equipment.....	43
<b>6 Liaisons .....</b>	<b>45</b>
6.1 International stakeholders .....	45
6.2 The training of inspectors .....	46
<b>7 Conclusions and lessons learned.....</b>	<b>48</b>
7.1 Background information .....	48
7.2 Manufacturers, importers, authorised representatives and installers of playgrounds.....	48
7.3 Standardisation organisations and test laboratories.....	49
7.4 Training of inspectors .....	50
7.5 Maintenance of playgrounds and playground equipment .....	51

7.6 Market surveillance authorities .....	52
7.7 Regular users .....	53
7.8 European Commission .....	53
Annex I Checklists for the inspection of playgrounds .....	55
Annex II - Request for interpretation by CEN of EN 1176-5 .....	55
ANNEX III - Market surveillance of playground Equipment in Iceland .....	57
Legal situation (and differences) .....	57
Legal responsibility .....	57
Inspections .....	58
Number of playgrounds in Iceland .....	58

## Table of Photographs

Photograph 1 Complex playground equipment installed in Baden-Württemberg, Germany .....	23
Photograph 2 Activity toy for domestic used in an indoor playground in Latvia .....	23
Photograph 3 Application of probes to an item of playground equipment in Slovenia .....	24
Photograph 4 The rolling bars on a slide in Baden-Württemberg, Germany .....	24
Photograph 5 A pair of slides in a playground in Slovenia .....	25
Photograph 6: Lack of structural integrity non-compliance. ....	27
Photograph 7 Example of damage that may lead to collapsing/breaking down of the equipment .....	27
Photograph 8: Projections on items of equipment in Latvia. ....	28
Photograph 9: A slide in a Latvian playground where there is a failure to protect from a fall.....	28
Photograph 10 An item of rocking equipment in use in Latvia .....	28
Photograph 11 Example of an non-compliant item of equipment in Latvia .....	29
Photograph 12 A non-compliant item of playground equipment in the Slovak Republic.....	29
Photograph 13 Non-compliant item of playground equipment .....	30
Photograph 14: An example of unsafe surfacing in a playground in the Czech Republic .....	30
Photograph 15: Shows the inappropriate placing of products in a playground in Slovenia .....	31
Photograph 16: An activity toy for domestic use being used in an outdoor playground in Latvia.....	31
Photograph 17 Non-compliant and poorly maintained playground equipment in Latvia .....	32
Photograph 18 Examples of "DO NOT USE" instruction in a Slovenia playground .....	36
Photograph 19 Examples of post-inspection remedial action taken in Slovenian playgrounds .....	37
Photograph 20 A novel "cableway" in a Latvian playground.....	39
Photograph 21 Examples of 'home made' items of playground equipment in Germany .....	40

## List of Tables

Table 1 Percentage of fall accidents associated with the different types of playground equipment .....	9
Table 2 Level of risk of common hazards presented by playground equipment .....	20
Table 3: Results from the spring 2017 inspection of items of indoor equipment .....	22
Table 4 No. of non-compliant items of indoor equipment (Spring 2017) .....	24
Table 5 The results of the Summer/Autumn 2017 inspections on outdoor playgrounds .....	26
Table 6 No. of non-compliant outdoor equipment (Summer/Spring 2017) .....	26
Table 7 Overview of playground inspections in JA2015 .....	33
Table 8: Level of risk associated with common hazards presented by playground equipment .....	41
Table 9: Statistics of non-compliances in indoor playground equipment.....	41
Table 10 Inspection results of non-compliant indoor playground equipment.....	42
Table 11: Risk assessments conducted on non-compliant items of equipment - spring 2017. ....	43
Table 12: Statistics of technical non-compliances, outdoor equipment.....	43
Table 13 Inspection results of noncompliant outdoor playground equipment .....	44
Table 14 Risk assessments on non-compliant items of equipment (Summer/Autumn 2017) .....	44
Table 15: List of stakeholders identified by the Work Package .....	45
Table 16: Number of outdoor playgrounds registered at 10 health authorities in Iceland .....	58

## List of abbreviations

AFNOR	Association Française de Normalisation, the national standards body of France
ANEC	European Association for the Co-ordination of Consumer Representation in Standardisation
BEUC	Bureau Européen des Unions de Consommateurs
BSI	British Standards Institution, the national standards body of the UK
CA	Icelandic Consumer Agency
CE	Abbreviation of French phrase ‘Conformité Européene’, which literally means ‘European Conformity’
CEN TC 136/SC1	CEN Technical Committee 136 - Sports, playground and other recreational facilities and equipment/Sub Committee 1 - Playground Equipment for Children
CHAFEA	The Consumers, Health, Agriculture and Food Executive Agency
CRPC	Latvian Consumer Rights Protection Centre
CTIA	The Czech Trade Inspection Authority
DIN	Deutsches Institut für Normung, the national standards body of Germany
DSB	The Norwegian Directorate for Civil Protection
EN	European Standard developed by CEN - The European Standardisation Organisation and published by National Standardisation Bodies (NSBs). CEN also use TR for Technical Report and Fpr for Provisional Technical Report
EuroSafe	European Association for Injury Protection and Safety Promotion
FPSE	Federal Public Service Economy SME's, Self-employed and Energy, Belgium
GOST	GOST and GOST R are the national standards of the Russian Federation
GPSD	Directive 2001/95/EU - On general product safety
IDB	European Union's Injury Database
IST	Icelandic Standards, the national standards body of Iceland.
LVS	Latvian Standard, the national standardisation body of Latvia
MEBW	Ministry of Environment, Climate Protection and the Energy Sector of Baden-Württemberg, Germany
MIRS	The Market Inspectorate of Republic of Slovenia
MSA	Market Surveillance Authority
PD/CEN/TR	A Published Document by CEN as a Technical Report
RAG	Risk Assessment Guidelines
RoSPA	Royal Society for the Prevention of Accidents, UK
STI	The Slovak Trade Inspection

## Executive Summary

*This report details the activities undertaken and the results achieved in the product activity entitled "Playgrounds", which formed part of Joint Action 2015, an Action co-funded by the European Union.*

Eight countries took part in this market surveillance action: Belgium, The Czech Republic, Germany (Baden Württemberg), Iceland, Latvia, Norway, Slovakia and Slovenia. Norway joined the project initially but withdrew during the Spring 2017 due to differences in the legal competences necessary to undertake the project. The JA2015 Coordinator was PROSAFE.

The terms of reference of the project were to focus on playground equipment that is already installed in playgrounds in the participating MS, rather than new equipment being placed on the market. As a consequence, some of the equipment in use in the playgrounds being inspected were made to the safety requirements of previous editions of the applicable standards (the EN 1176 series). Ancillary items of equipment found in playgrounds, such as fences, gates, pathways, etc., were not included in the inspection regime.

Two major market surveillance inspections were organised during the course of the project:

1. Spring 2017, reviewed the safety of indoor playground equipment.
2. Summer and Autumn of 2017, focussed almost exclusively on equipment in outdoor playgrounds.

A wide variety of different types of playground equipment were inspected in the indoor playgrounds. Some were complex items, which contained playground equipment designed to give children a wide variety of play experiences, whereas others consisted of a single item of equipment, such as a ball pool or a slide. The range of equipment in the outdoor playgrounds inspected was more limited and, for the most part, consisted of cableways, carousels, climbing equipment/units, combined play equipment (i.e. equipment that included a number of different items of equipment), rocking equipment/seesaws, slides, and swings.

A total of 357 playgrounds were inspected during the market surveillance exercises conducted during the Spring 2017 and the Summer/Autumn 2017. The Spring 2017 market surveillance exercise was confined to the inspection of indoor playgrounds, 91 in total, whereas the Summer/Autumn 2017 exercise was almost exclusively devoted to the inspection of outdoor playgrounds, 266 in total.

The total number of items of equipment inspected was 1.016, 188 during the Spring 2017 inspection and 828 during the Summer/Autumn 2017 inspection.

The Project Group are concerned at the large proportion of the non-compliant items of equipment, i.e. 790 (78%). A total of 677 (67%) of the items of equipment were non-compliant with regard to the information with which equipment should be marked in order to conform to the requirements of EN 1176. The bulk of the items of equipment missed three or more of the mandatory five pieces of information.

Of much greater concern to the Project Group was the very high number of items of equipment, 549 (54%) that were non-compliant with regard to the technical requirements. These included non-compliances related to structural integrity, fall protection, the entrapment of the head and neck, body, a foot or leg, fingers or clothing, and non-compliances with regard to 'falling space' and surfacing issues.

Where instances of these non-compliances were found to present a serious risk, the inspector required the operator of the playground to stop using the equipment immediately. In this situation the equipment was taken out of use or modified so that it did not present a risk to children.

In other cases, where non-compliant equipment presented a high, medium or low risk, the inspector gave the operator of the playground details of the non-compliances identified during their visit. The operator of the playground was required to send to the MSA within the next few days details of the corrective action they would be undertaking so as to bring the equipment into compliance. A follow-up visit was usually arranged by the inspector to check that the corrective action had been undertaken and that the equipment was now in compliance. When this did not occur, the inspector checked that compliance had been achieved by correspondence between the operator of the playground and the MSA.



Prior to undertaking the inspections, the Project Group reviewed the benefits/drawbacks of using a number of different approaches to the assessment of risk to the user when one or more non-compliances were found on an item of equipment. After an extensive discussion on this issue a common approach to 'risk assessment' was adopted. This is documented in some detail in the report.

To conclude, six of the participating MS achieved the principal objective of inspecting a range of indoor and outdoor playgrounds within their area of jurisdiction.

The results of the inspection give cause for real concern as such a high proportion of the items of equipment inspected were found to be non-compliant with regard to their markings and/or the other requirements specified at EN 1176 and EN 1177. The project has shown that market surveillance authorities can play a key role in monitoring the safety of these items of equipment and make a strong contribution to raising the level of safety in this type of equipment. The results from this project, and the 2007 Joint Action on playgrounds, show that there is a continuing need for market surveillance authorities to inspect this type of equipment on a regular basis and, in some cases, possibly to give this issue a higher priority than in the past.

Recommendations are given in the report with regard to how the key stakeholders involved in the playground scenario can play an increased role in contributing towards the safety of playground equipment.

**357** indoor (91) and outdoor (266) playgrounds were inspected



**1,016** items inspected



**78% (790 items)** of the inspected equipment found to be non-compliant

**Caution!**

The results of the inspections included in this report are based on the items of playground equipment that were inspected in playgrounds situated in the participating countries by experienced market surveillance staff. They were looking for potentially non-compliant and unsafe products.

As in any routine market surveillance activity, the results represent the targeted efforts that authorities undertake to identify unsafe products. They do not give a statistically valid picture of the situation in playgrounds across the EU. In this Action the term 'targeted' refers to the fact that certain specific settings for the inspection of playgrounds and playground equipment were selected for inclusion in the market surveillance exercises. For example, indoor playgrounds, outdoor playgrounds, those located in premises under the control of municipalities and those in commercial premises etc.

The items of playground equipment were assessed against the provisions of the General Product Safety Directive<sup>1</sup> and CEN standards EN 1176 (various parts) and EN 1177.

<sup>1</sup> Directive 2001/95/EC - on General Product Safety.

## Introduction

Joint Actions 2015 on playground equipment was the second occasion on which market surveillance authorities had conducted a multi-national market surveillance exercise on playground equipment. It followed on from the work undertaken during a previous Joint Action on Playgrounds, which formed part of JA2007.

Members were aware that in the intervening period the playground market had changed and developed in response to new, and potentially more dangerous items of equipment, being placed on the market. Members also noted that during this period the on-line sale of playground equipment was starting to make an impact on the market for new products. Many of the items for sale on-line are made outside the EU and are being placed on the market without recourse to their being sold by an importer based in the Community.

When assessing the safety of playground equipment, they noted it is important to recognise that the use incurs a degree of risk for children. The Royal Society for the Prevention of Accidents succinctly summarises this as follows<sup>2</sup>:

*'Play is an essential element in the child's physical and mental growth. Through high quality play opportunities children are stimulated to learn and practice a range of skills. Through play children learn by doing. They will invariably make mistakes and injuries will occur.'*

*Play areas to be attractive to children, and of benefit to them, must carry a variety of levels of challenge and difficulty. Children should be able to explore solutions to these challenges and to practice their newly acquired abilities in carefully designed settings where the level of risk can be assessed and managed....*

*... Good management will not remove every possibility of accident and injury to children - indeed it should not do so - but it will reduce greatly the number of serious injuries and help to provide places which are enjoyable and in which children have fun.'*

Estimates using the EU Injury Database (IDB) indicate that in the EU 28 MS approximately 137,000 accidents involving playground equipment occur annually to children 0-14 years of age and are serious enough to require a visit to an emergency department. For children under 5 years of age four types of playground figure amongst the 'top ten' infant or child products involved in child injuries. Number 1 is 'swings'; slides and sliding boards are number 2. Playground climbing apparatus is number 6 and other specified playground equipment number 8.

Deaths have occurred when a child's head is caught in an opening or net mesh in playground equipment either because of bad design, incorrect installation, lack of maintenance, or because the child was wearing a helmet or had drawstrings on their clothing (e.g. jacket hoods). Approximately 50% of playground equipment related injuries are caused directly by the equipment. Lack of regular inspections and maintenance has resulted in equipment collapsing and killing or severely injuring children; equipment supported by one post has a higher risk of collapsing. Approximately 50% of playground injuries occur when a child falls from the equipment onto a surface. Surfacing in the falling area of equipment can lose its impact absorption properties over time, in particular if poorly installed or maintained<sup>3</sup>.

A prime contributor to playground injuries is the sudden (or near sudden) stop that occurs when there is an impact with the surface under and around the playground and the way it absorbs energy<sup>4</sup>. As it is important for children to experience risk and challenge, it is the performance of this surface that must be reconsidered in these Standards if there is any chance of reducing the severity and/or frequency of injuries in the playground.

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<sup>2</sup> Maintaining play facilities in commercial premises. Inspecting indoor and outdoor playgrounds, inflatables and rides. RoSPA, Birmingham, UK. 2000. ISBN 0-9524370-9-0.

<sup>3</sup> Source: RoSPA

<sup>4</sup> According to the proceedings of the conference ANEC co-hosted with TUV Austria on 25 October 2013 on playground safety: Playground Safety Day 2013 - TUV Austria Academy 10/25/13



In the UK alone, RoSPA<sup>5</sup> estimates that some 40,000 accidents occur each year to children when using playground equipment<sup>6</sup>. These figures show that pro-rata the EU's IDB figures for the number of accidents occurring each year when using playground equipment may be an under-estimate. RoSPA notes that not all accidents are related to the equipment, with between 40% - 80% of them occurring as a consequence of a fall to the surface. Of the remaining accidents, at least 4% involve children being struck by a swing seat (although the resultant injury is usually not serious<sup>7</sup>). Of the equipment involved in fall injuries the figures suggest the percentages that are shown in the table below.

Playground equipment	Percentage of fall accidents associated with the equipment
Swings	40%
Climbers	23%
Slides	21%
Roundabouts	5%
Seesaws	4%
Fireman's Poles	1%
Other types of equipment	6%

*Table 1 Percentage of fall accidents associated with the different types of playground equipment*

Considering the high number of injuries as presented above and the high level of risk for children using poor playground equipment, the conduct of this project was a unique undertaking for the market surveillance collaboration in Europe and for the safety of children. The project contributed to the improvement of the safety of the playground equipment that is already in use, rather than newly installed equipment. The reason is that this type of equipment degrades through use and exposure to the elements. Although each swing, roundabout or see-saw may have started life by conforming to the relevant safety standard, EN 1176 - playground equipment, it may have been poorly maintained or become unsafe since it was installed.

## 1.1 Report Structure

The Final Technical Report of the Joint Actions 2015 (JA2015)<sup>8</sup> Playgrounds contains the following sections:

**Section 1** introduces the project and provides some background information relating to the activity.

**Section 2** discusses the work that was undertaken during the first, preparatory, stage of the project.

**Section 3** provides a summary of the number and types of playground and playground equipment that were inspected during the market surveillance activities.

**Section 4** outlines the follow-up activities that were undertaken by the participating Member States (MS) in relation to non-compliant products.

**Section 5** discusses the key area of 'risk assessment' and provides details of the risk assessments undertaken by MS on certain non-compliant products.

**Section 6** discusses the links that the Project Group established with a range of external stakeholders.

**Section 7** summarises the lessons learnt and the conclusions that can be drawn from the project activity.

Statistics shown in this report need to be used and interpreted with caution. The scope of project is not to determine the percentage of safe products within the Single Market, but rather to ensure that dangerous products are not in use, or that they are rendered safe within a very short period of time before being

<sup>5</sup> <http://www.rospa.com/play-safety/>

<sup>6</sup> <https://www.rospa.com/play-safety/advice/playground-accidents/>

<sup>7</sup> According to RoSPA, the high percentage of injuries from using swings does not imply that they are more dangerous than other types of equipment but simply that they are a more popular item of play – overhead bars which rotate are one of the most dangerous items in the playground.

<sup>8</sup> Grant Agreement No: CHAFEA 705038 – JA2015 - GPSD.

allowed to be re-used by children. This was achieved through effective collaboration between the market surveillance authorities and the economic operators or authorities that manage these playgrounds.

The results represent the targeted efforts that the participating authorities undertook to identify unsafe products. The products sampled were from a range of different ‘types’<sup>9</sup> of playground equipment that the Project Group considered to present a risk to consumers.

## 1.2 Overview of the Activity’s key staff

The Activity Leader was Toon Goossens from the Federal Public Service Economy SME’s, Self-employed and Energy (FPSE), Belgium. A PROSAFE consultant, Robert Chantry-Price, supported the Activity Leader. The membership of the Group included the following representatives from the participating MS:

Belgium:	Federal Public Service Economy SME’s, Self-employed and Energy - FPSE
Czech Republic	The Czech Trade Inspection Authority - CTIA
Germany:	Ministry of Environment, Climate Protection & Energy Sector of Baden-Württemberg - MEBW
Iceland:	Icelandic Consumer Agency - CA
Latvia:	Latvian Consumer Rights Protection Centre - CRPC
Norway:	The Norwegian Directorate for Civil Protection - DSB
Slovakia:	The Slovak Trade Inspection - STI
Slovenia:	The Market Inspectorate of Republic of Slovenia - MIRS

## 1.3 Main Objectives

The primary objective of the project was to detect unsafe playgrounds and playground equipment currently in use and to take action against them, whilst developing and exchanging best practices.

During the preparatory phase the Project Group focused on:

- Determining which types of playground and playground equipment should be inspected during the course of the project;
- Establishing the project plan;
- Establishing which ‘types’ of playground equipment presented the highest risk to consumers;
- Establishing which safety requirements, as described at EN 1176 - Playground Equipment and Surfacing - (various parts) & EN 1177 - Impact attenuating playground surfacing - Safety requirements and test methods, are likely to present a significant hazard to consumers;
- Requesting the participating MS to arrange inspections of a significant number of playgrounds during the course of the project.

In the intermediate phase the Project Group:

- Inspected playgrounds and playground equipment in a wide variety of settings;
- Conducted an initial assessment of the risks likely to be encountered by children when using the equipment so as to establish whether any non-compliant items of equipment presented a low, medium, high or serious risk to consumers;
- Determined the corrective measures that the operator of the playground needed to undertake in relation to any non-compliant items of equipment so that the equipment was brought into conformity with the legislation.

During the final phase the Project Group:

<sup>9</sup> The principal types of playground equipment in use are listed at EN 1176-1.

- Reviewed the results of the various inspections that were undertaken on the items of equipment that had been inspected;
- Formulated a number of best practices in relation to the risk assessment of non-compliant products;
- Collected information on the measures taken by market surveillance authorities in relation to non-compliant products.

In terms of the scope, the JA2015 Grant Agreement refers to both ‘playgrounds’ and ‘playground equipment’<sup>10</sup>. During the early stages of the activity, the Project Group recognised that it would be necessary to identify non-conformities in relation to specific items of equipment and to discuss the corrective action required with those responsible for the operation of the ‘playground’ concerned.

It was agreed that during inspections they would focus primarily on the safety of items of ‘playground equipment’ and not on the safety of the playground as a whole. Members recognised that many ‘playgrounds’ contained features such as: fences and barriers, gates, litter bins, paths, seats, signage, shrubs and flowers etc., all of which could present a hazard to children if they were not appropriately sited or maintained. The Project Group agreed to exclude these items from their inspections, as no test specifications are available to determine whether or not these items are safe.

## 1.4 Number of samples inspected and main activities

A total of 357 playgrounds containing 1016 separate items of equipment were inspected during the course of the project.

During the Spring 2017, a total of 91 playgrounds containing a total of 188 items of equipment were inspected. They were located at a number of locations designated as indoor playgrounds in the MS participating in the project.

During the Summer/Autumn 2017, a total of 266 playgrounds were inspected with a total of 828 items of playground equipment. Nearly all these items of equipment were located in outdoor playgrounds.

The project included the following tasks:

- Deciding on which ‘settings’ should be inspected during the course of the market surveillance exercises.
- Reviewing the provisions of European standards EN 1176 (various parts) and EN 1177 concerning playground equipment to ascertain their applicability to the work being undertaken during the project.
- Deciding on the sampling criteria.
- Deciding on which items of equipment within a playground should be inspected and on which items should be excluded from the inspection scheme.
- Detailing how the inspection procedure should be implemented at the playgrounds being inspected.
- Deciding on which risk assessment procedure should be adopted in relation to non-compliant products.
- Deciding on how best to proceed with regard to any ‘follow-up’ action that should be adopted concerning non-compliant products and the exchange of information on these activities.
- Preparing documentation for use by inspectors so as to be able to undertake the inspection programme.
- Setting arrangements in hand for the review of the results of the inspections after they had been concluded and for the review of the project’s conclusions.

<sup>10</sup> Section 2 of the Grant Agreement - Potential Impact, at pages 11 & 12 entitles the project ‘Playgrounds’, whereas the text discusses the dangers posed by ‘playground equipment’. Section 4.1 Working methodology, at page 22, again refers to ‘playgrounds’, but then discusses the need to sample products, i.e. specific items of playground equipment. In Section 4.2 - Overview of work package, at page 51 the text refers to the market surveillance of playgrounds.

## 1.5 The Timeline of the Activity

### *Phase 1 - Month 3- Month 8 (April 2016 - November 2016) - The preparatory phase*

The Activity held its Kick-Off meetings on 16<sup>th</sup> June 2016 in Brussels. They comprised of an ‘open’ meeting, where representatives from the participating MS and a number of stakeholders were invited and a ‘closed’ meeting for the representatives of the participating MS.

At the ‘open’ meeting, the purpose and the scope of the Activity were outlined and the requirements of the MS were discussed. The group considered the requirements of the directive and the standards listed at Section 2.3.1, as they apply to the activity.

Members noted that no test laboratory would be involved in assessing the safety of the items of playground equipment being inspected. JA2015 would focus on items of equipment that are already in situ in playgrounds in the participating MS. The inspections would be conducted by members of staff from the MSAs in the country concerned, or by other government agencies responsible for the safety of playgrounds and their equipment.

Other issues considered at the meeting included oral and written presentations from stakeholders, i.e. the participating MS; and the external stakeholders, e.g. ANEC, CEN TC 136/SC1 - Playground Equipment etc.

Following these discussions, it was agreed that:

The market surveillance exercises would include outdoor playgrounds and Indoor playgrounds and not playgrounds involving water play facilities and inflatable play equipment.

Playgrounds managed or owned by the following types of organisations should be inspected:

- Municipalities etc.;
- Schools, except in the case of Germany and Slovenia, where school playgrounds are managed by other authorities;
- Commercial organisation for which the public pays an entrance fee;
- Commercial premises for which the public does not pay an entrance fee, e.g. playgrounds in shopping malls, shops, cafes and restaurants etc.

The following hazards should be included within the inspection regime:

- Those relating to head/neck and body entrapment;
- The entrapment of clothing;
- Finger entrapment;
- Limb entrapment;
- Obstacles within the ‘falling space’;
- Inadequate surfacing;
- Inadequate structural integrity of the playground equipment.

The owners/managers of indoor playground were usually not given prior notice of the inspection, and, wherever possible, they were present during the inspection. In other words, inspections were usually not initiated without the presence of the person responsible for the operation of the playground.

In the case of outdoor playgrounds that belonged to a municipality, or where the ownership of the playground was unknown, inspections were, on occasion, carried out without the presence of a representative from the operators of the playground.

A ‘Manual’ and a ‘Checklist’ should be prepared by the Project Group for use by the inspectors when assessing the safety of an item of playground equipment/a playground.

Members were asked to send the Project Coordinator any schemes for the risk assessment of children’s playground/playground equipment that they thought would be of value to the project.

The participants met for the second Project Group meeting on 21 and 22 September 2016 in Brussels. The meeting focussed on the following issues:

- A review of certain documents that had been prepared during the course of JA 2007 - Playground Equipment and which were relevant to the current Joint Action.
- A review of a paper by CEN TC 136/SC1 entitled 'Final Draft - Playground and recreational areas-requirement for quality of inspections and the competence of inspectors. The draft provides details of the scheme of training that should be introduced for the training of playground inspectors. This is an issue about which the Project Group was particularly concerned as a comprehensive, pan-European scheme, for the education and training of playground inspectors has yet to be published.
- A review of the Manuals for the inspection of playground equipment currently in use by some of the participating MS.
- A review of the national overview prepared by each participating Member State concerning the safety of playground equipment/playgrounds in their country.
- A review of the range of risk assessment methods currently in use so as to quantify the risk to consumers when using unsafe playground equipment. In this connection the appropriateness of the RAG detailed at Decision 2010/15/EU and those published by the Royal Society for the Prevention of Accidents (RoSPA) relating to Playground Equipment were considered.
- A discussion concerning the development of a 'Manual' and a 'Checklist' for use by inspectors when reviewing the safety of an item of playground equipment. It was agreed that the 'Manual' and the 'Checklist' would be prepared by an MSA during the autumn 2016 in time for the first market surveillance exercise, which would be conducted during the period December 2016 - March 2017.
- A discussion concerning the organisation of the 1st Market Surveillance exercise, which would concern only INDOOR playground equipment.
- The conduct of a training exercise for members of the Project Group on a range of items of playground equipment currently installed at the Parc de Bruxelles, Brussels.
- A discussion concerning the purchase of one or more sets of probes and guides for use when inspecting items of equipment in accordance with the provisions of EN 1176.

### *Phase 2 - Month 9 - Month 16 (December 2016 - July 2107) - The second phase*

The participants met for the third Project Group meeting on the 21 March 2017 in Brussels. The items discussed were:

- The formal receipt of the 'Manual' and the 'Checklist' for the inspection of playground equipment/playgrounds, which had been circulated to MS during December 2016.
- The fact that one or more sets of probes and guides had been purchased during November 2016 for use by each of the participating MS – these consisted of Probes A-E; the test template for the head and neck entrapment in a partially 'V' shaped opening; the test device for the entrapment of clothing and rods to test for finger entrapment.
- The follow-up action that would need to be undertaken by each MS regarding any item of playground equipment that was non-compliant. It was recognised that in some cases these items of equipment would not have been compliant to EN 1176 at the time they were sold to the playground concerned. It was agreed that, in these circumstances, it would be necessary for the MSA to draw the attention of the manufacturer or importer to the deficiencies in the safety of the product. It would also be necessary for the MSA to ask the manufacturer/importer to take remedial action to ensure that the item of equipment can be rendered safe for use in ALL the playgrounds in which they are currently installed.
- A review was undertaken of the results from the 1st Market Surveillance Exercise on INDOOR playgrounds that was being conducted during the period December 2016 - April 2017 – this is referred to as the Spring 2017 market surveillance exercise in this report.

- The arrangements for the 2nd and 3rd Market Surveillance Exercises to be conducted during the period May - October 2017 were also reviewed – this is referred to as the Summer/Autumn 2017 market surveillance exercise in this report.
- The method to be used for the risk assessment of non-conforming items of playground equipment was considered.
- Members reviewed how to optimise the use of the travel budget allocated to the MS.
- It was agreed that in each of the Market Surveillance exercises it would be left to the discretion of the MSA to decide which playgrounds to inspect and, within each playground, which items of equipment to inspect.
- Tendering for Test Laboratories: As no new items of equipment were being tested, tendering for test labs was not relevant.

### *Phase 3 - Month 17 - Month 26 (August 2017 - May 2018) - The final phase*

The fourth Project Group meeting was held in Brussels on 24<sup>th</sup> October 2017 and was principally devoted to:

- Reviewing the results from the inspection of items of playground equipment during the Summer/Autumn 2017 market surveillance exercises;
- A review of the action being taken by the regulatory authorities concerning the non-compliant items inspected during the Summer/Autumn 2017 market surveillance exercise;
- A review of the risk assessments undertaken on non-compliant items of playground equipment by the MSA concerned and the follow up actions taken by the relevant authorities;
- A discussion of the reasons that the Icelandic Consumer Authority had been unable to conduct any inspections of playground equipment and the current arrangements that are in operation in Iceland for the inspection of playgrounds.

Members took the opportunity to present and highlight specific examples of non-compliances they had observed during the course of their inspections and showed examples of the corrective action taken by some of the operators of the playgrounds concerned.

The Activity Leader and the Activity Coordinator attended the Final Workshop of JA2015 in Brussels on 17 and 18 April 2018 and presented an oral report on the conduct of the Joint Action - Playgrounds.



## 2 Setting up the Product Activity

### 2.1 The preparatory phase

At an early stage in the discussions regarding the Project it became apparent that responsibility for inspecting playgrounds and playground equipment in some of the MS is shared by a number of regulatory authorities. These authorities may be based in a number of different government departments. In these circumstances no one ministry has overall responsibility for checking on the safety of all the playgrounds in the country concerned. Responsibility for this matter may be shared by the inspectorates for market surveillance, schools, hospitals, social services, shops etc. Even estimating the number of playgrounds in operation in a country is problematic, as no single organization has this figure.

During the course of JA2007 - Playgrounds the European Standard on Playground Equipment and Surfacing- EN 1176 was revised. This resulted in EN 1176 parts 1 - 7 and part 11 being published during the summer 2008; EN 1176- 10 being published in the autumn 2008 and EN 1177 - Impact attenuating playground surfaces being published in the autumn 2008. EN 1176-11 was subsequently revised and a new version of the standard was published in the autumn 2014.

Members were conscious that the terms of reference of the Grant Agreement specified that only items of equipment that are already in situ were to be assessed for their safety and that no items of equipment would be subject to laboratory assessment. The representatives of the Project Group from the participating MS therefore made arrangements for their colleagues in the various market surveillance authorities to be on standby to undertake the inspection of items of playground equipment during the course of 2017.

During this phase arrangements were made to prepare a 'Manual' for use by inspectors when reviewing the safety of individual items of playground equipment and a 'Checklist' for use by inspectors when recording the results of each inspection. Arrangements were also made to supply each participating Member State with 1 or 2 sets of probes and guides for use during the inspections. The shape and size of the probes and guides are referenced at EN 1176-1.

### 2.2 Timing of activities

Members of the Project Group were aware that, because of the adverse climatic conditions in certain participating MS, the inspection of items of equipment already in use in outdoor playgrounds is only feasible during the period from March to October each year. Outside this period, inspections on indoor playgrounds are a suitable alternative. The timing of the market surveillance exercises was arranged with these restraints in mind.

It was agreed therefore that items of indoor playgrounds would be inspected during the Spring 2017 and that the principal inspection of outdoor playgrounds would take place during the Summer/Autumn 2017.

### 2.3 The applicable legislation and safety standards

#### *2.3.1 The applicable legislation and safety standards*

The applicable safety legislation with regard to playground equipment is the General Product Safety Directive (2001/95/EC). This legislation has been transposed into domestic legislation in each of the participating MS.

The safety standards applicable during the period during which inspections were undertaken were:

- EN 1176-1:2008 - Playground equipment and surfacing. General safety requirements and test methods.
- EN 1176-2:2008 - Playground equipment and surfacing. Additional specific safety requirements and test methods for swings.

- EN 1176-3:2008 - Playground equipment and surfacing. Additional specific safety requirements and test methods for slides.
- EN 1176-4:2008 - Playground equipment and surfacing. Additional specific safety requirements and test methods for cableways.
- EN 1176-5:2008 - Playground equipment and surfacing. Additional specific safety requirements and test methods for carousels.
- EN 1176-6:2008 - Playground equipment and surfacing. Additional specific safety requirements and test methods for rocking equipment.
- EN 1176-7:2008 - Playground equipment and surfacing. Guidance on installation, inspection, maintenance and operation.
- EN 1176-10:2008 - Playground equipment and surfacing. Additional specific safety requirements and test methods for fully enclosed play equipment (Note this is the first edition of a European standard covering this type of equipment).
- EN 1176-11:2014 - Playground equipment and surfacing. Additional specific safety requirements and test methods for spatial network.
- EN 1177: 2008 - Impact attenuating playground surfacing. Determination of critical fall height, are likely to present a significant hazard to consumers, and

In addition, the following ‘Published Documents’ are also relevant:

- PD CEN/TR 16396:2012 - Playground equipment for children. Replies to requests for interpretation of EN 1176:2008 and its parts.
- PD CEN/TR 16467: 2013 - Playground equipment accessible for all children.
- PD CEN/TR 16598:2014 - Collection of rationales for EN 1176. Requirements.
- PD CEN/TR 16879: 2016 - Siting of Playground and other recreational facilities. Advice on methods for positioning and separation.

It was noted that none of the standards listed above are regarded as a harmonised standard, as they are not included in the latest version of the Commission’s ‘Communication in the framework of the implementation of the Directive 2001/95/EC of the European Parliament and of the Council on general product safety’<sup>11</sup>.

It was noted that a substantial number of the items of playground equipment inspected during the course of the Project may have been manufactured and placed on the market prior to the publication of the standards listed above. In such cases they may have been made to the requirements of the previous versions of the standard.

In the case of equipment that was placed on the market prior to 1998, the item of equipment may have been made to a national standard that preceded the publication of the EN 1176 series of standards and/or the publication of EN 1177. For example, the items of equipment that were installed in Latvia during the Soviet era were not made to the requirements of the European standards on playground equipment.

### ***2.3.2 Previous versions of legislation and standards***

It is important to consider the legislation and standards that were applicable prior to those that are currently in force as playground equipment, particularly that installed in outdoor playgrounds may have been in use for as long as 30-40 years. At the time of its installation the legislative requirements and safety standards that applied to these products would have been different and, in some cases, less onerous than those that are being applied in today’s market.

The current version of the General Product Safety Directive has been effective in MS since 15 January 2004. Prior to this date Directive 92/59/EEC on General Product Safety was applicable from 29 June 1994. Before 1994, Decision 89/45/EEC on a Community system for the rapid exchange of information on dangers arising from the use of consumer products applied from 21 December 1988.

The previous versions of the various parts of EN 1176 that were applicable in the recent past were:

- EN 1176-1:1998 - Playground equipment. General safety requirements and test methods
- EN 1176-2:1998 - Playground equipment. Additional specific safety requirements and test methods for swings

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<sup>11</sup> This Communication lists the titles and references of European standards under the Directive. The Communication is referenced as 2017/C 267/03 and was published on 11 August 2017.

- EN 1176-3:1998 - Playground equipment. Additional specific safety requirements and test methods for slides
- EN 1176-4:1998 - Playground equipment. Additional specific safety requirements and test methods for runways
- EN 1176-5:1999 - Playground equipment. Additional specific safety requirements and test methods for carousels
- EN 1176-6:1998 - Playground equipment. Additional specific safety requirements and test methods for rocking equipment
- EN 1176-7:1997 - Playground equipment. Guidance on installation, inspection, maintenance and operation
- BS EN 1176-11:2008 - Playground equipment and surfacing. Additional specific safety requirements and test methods for spatial network
- EN 1177:1998 - Impact absorbing playground surfacing. Safety requirements and test methods

It should be noted that all the standards listed above were published as a European standard for the first time from 1998 onwards and that, where applicable, they replaced national standards published by the National Standards organisations in individual MS.

### 2.3.3 Recent editions of standards

During the summer 2017 a number of the parts of EN 1176 were updated by CEN and approved for publication. They were published by BSI, AFNOR and DIN during the final months of 2017/early 2018. The parts that were revised are: EN 1176-1; EN 1176-2; EN 1176-3; EN 1176-4; EN 1176-6. In early 2018 a revised version of EN 1177 was published as EN 1177: 2018. Certain other national standards organisations took the opportunity to publish the 2017 and 2018 editions of these standards during this period.

As these editions of the standard were published after the market surveillance inspections had been concluded by the MS participating in the project, any new or revised provisions included in these editions of the standard would not have been applicable to those items of equipment that were inspected during the course of 2017.

## 2.4 The 'Inspection Manual' and the 'Checklist'

During the course of the Autumn 2016 the representative from the Federal Public Service Economy (FPSE), Belgium drafted the text of the 'Manual' and the 'Checklist' for use by inspectors in the participating MS. The draft Manual, which is in English, is based on a more extensive Manual that is available in both Dutch and French and is currently in use by the FPSE, Belgium. The 'Checklist' enabled inspectors to provide information about the playground being inspected and whether the particular items of equipment under review were compliant/non-compliant with the requirements a wide range of clauses detailed in EN 1176 and/or EN 1177.

The drafts of the 'Manual' and the 'Checklist' were circulated for review by members of the Project Group during the Autumn 2016. The final version of the 'Manual' and the 'Checklist' were available for use by the end of November 2016. The November 2016 version of the 'Checklist' did not include Section 7 - Details of any follow-up activity taken by the MSA with regard to non-compliant items of equipment. This additional Section was included in the second edition of the 'Checklist', which was used for the market surveillance exercise conducted during the Summer/Autumn 2017.

Section 7 of the 'Checklist' was added after the Spring 2017 market surveillance and was included for use in the market surveillance exercise conducted during the Summer/Autumn 2017.

The 'Manual' includes extracts from EN 1176 and/or EN 1177 at the following sections:

- 1 Materials used, including timber, metal, synthetics, concrete and the absence of toxic substances (as per EN 1176-1 §4.1)
- 2 Structural integrity (as per EN 1176-1 §4.2.2)
- 3 Fall protection (as per EN 1176-1 §4.2.4)
- 4 Entrapment of head and neck, clothing, the body, of a foot or leg, of fingers and the requirements for specific equipment (as per EN 1176-1 §4.2.7)

- 5 Falling space in various zones- falling space including the requirements for specific equipment (as per EN 1176-1 §4.2.8)
- 6 Surfacing, including the requirements for specific equipment (as per EN 1176-1 §4.2.8.5 and EN 1177)
- 7 Markings on playground equipment (as per EN 1176-1 §7)

The 'Checklist' addresses the following topics:

- 1 Form A - To provide details of the playground being inspected
- 2 Form B - To provide the following information concerning each item of equipment that was being inspected in the playground being inspected, viz.:
  - Data concerning whether the markings/labels on the item are in compliance with the GPSD and EN 1176;
  - Data concerning the structural integrity of the item of equipment;
  - Data concerning whether the equipment has adequate fall protection;
  - Data concerning whether the items of equipment is likely to present an entrapment hazard to the user;
  - Data concerning the adequacy of the falling space around the item of equipment;
  - Data concerning the adequacy of the surfacing on which the equipment stands and its surrounding area;
  - In relation to non-compliant equipment, details of any follow up activity that needs to be taken by the operator of the playground so as to render it safe to use, or whether it is necessary to stop using the equipment forthwith because it presents a serious risk to children.

A copy of the 'Manual' entitled JA2015 - Playgrounds is available on PROSAFE's website<sup>12</sup>. A copy of the 'Checklist' is annexed to this report and is also available on PROSAFE's website.

## 2.5 Risk assessment methods for playground equipment

### 2.5.1 Identifying product hazards in special cases

The members noted that in some participating MS it was common practice for community groups, parent-teacher groups in schools etc. to make items of playground equipment from reused materials such as logs, metal hardware etc. These items, when new, would almost certainly, not have been tested in accordance with the provisions of EN 1176 and/or EN 1177 and may have been constructed with inherent non-compliances. It was noted that this practice is prevalent in Iceland and Norway and elsewhere and, that when visiting playgrounds, it would be necessary for inspectors to pay particular attention to the hazards posed by this type of equipment.

The representative from Latvia asked members to note that there were a significant number of items of equipment in use in playgrounds within the country that were installed during the Soviet era and which had not been made to the requirements of EN1176/EN 1177. She thought it unlikely that, at the time of their installation, they would have been made to the requirements of a GOST standard relating to playground equipment, assuming that a Soviet standard for playground equipment was available during this period<sup>13</sup>.

### 2.5.2 Risk assessment methods

At the first and second Project Group meetings members discussed the various risk assessment methods that are available to inspectors of playgrounds and playground equipment and analysed this issue in detail to understand the differences between the methods and their specific advantages and disadvantages.

<sup>12</sup> JA2015 Playground Equipment webpage: <http://prosafe.org/index.php/joint-actions-2015/playground-equipment-2>  
The Joint Action on Playground Equipment 2008: <http://prosafe.org/index.php/joint-actions-2008/playground-equipment>

<sup>13</sup> The website of the Russian Federal Agency on Technical Regulation and Metrology list a range of standards relating to the safety of playground equipment, e.g. GOST-P 56129: 2012. It is understood that these standards are largely based on the main nominative provisions of EN 1176. These standards were published during the period 2012-2016. The Federation's website does not give details as to whether there were any the previous editions of these standards, so it is not possible to determine whether or not it is likely that the items of equipment installed in Latvia during the Soviet era were made to any of the earlier versions of these standards.

Members recognized that the method based on the RAG detailed in the Commission Implementing Decision of 9.11.2018 has been used extensively for assessing the risks posed by new consumer products. Furthermore, the Project Group recognised that the RAG catered for a wide range of hazards, e.g. physical, electrical, biological and thermal and for a range of probabilities of an accident occurring ranging from  $\frac{1}{2}$  to  $< 1/1,000,000$ .

At the 2nd Project Group meeting members reviewed a copy of a paper from CEN TC 136/SC1, dated May 2013, concerning 'Playground and recreational areas - requirements for quality of inspections and competence of inspectors. Annex C to the paper concerns Risk Analysis and outlines three methods of risk analysis that relate to playground equipment:

1. Method 1, an empirical method, in which the risk level (R) is based on the severity of a likely accident (S) x probability of the accident occurring (P) x the exposure to the accident (E).
2. Method 2, is a transposition of the RAG method and determines the level of risk by multiplying the 'probability of damage during the foreseeable lifetime of the product' (P) with the 'severity of injury' (S) using a matrix similar to that used in the RAG.
3. Method 3 is a simpler version of method 2, where the inspector identifies the hazards on site and makes a judgement of the level of risk based on their experience and knowledge about the level of risk to which the user will be exposed.

The Royal Society for the Prevention of Accidents (RoSPA) from United Kingdom has devised a method for risk assessment built around a scoring scheme that is based on an analysis of accident statistics from the UK and elsewhere. The method requires that the likelihood of injury occurring and the severity of injury are both scored between 1 and 5, with 1 being the lowest and 5 being the highest. Afterwards, the risk score is calculated by multiplying the two so the minimum risk score is 1 and the maximum score is 25. This figure can be modified by taking into account other factors such as the condition of the equipment and the surface around the equipment. Finally, a risk level is derived based on the risk score. RoSPA has issued a booklet that describes the method and presents examples of how to assess different types of playground equipment.

### *The methodology used by Member States participating in the Project*

Members discussed the approach they are currently using in order to risk assess any non-compliant item of playground equipment. They were based on the principles in the RAG method as described in the Commission Implementing Decision of 9.11.2018. This method requires the identification of the product hazard and the likely injury and injury level. An injury scenario is established and the probability that the scenario will happen is estimated. Finally, the injury level and the probability are combined to give the risk level:

- **Hazard identification:** The members recognized that EN 1176 identifies a range of hazards that can present when using playground equipment, e.g. lack of structural integrity, lack of protection from falling, contusion due to moving parts etc.
- **Injury and injury level:** In practice, each type of hazard presented a fairly easily defined injury and injury level to the consumer.
- **Scenario and probability:** The members found it tricky to estimate the probability that an injury would occur and virtually impossible to quantify. However, the practical situation was that the span of realistic probabilities would mostly be limited to one or two decades.
- **Risk level:** This in turn implied that the calculation in reality would normally result in the same risk level for different cases based on the same hazard.

This line of thinking made it practically possible to link the product hazard directly to a risk level.

In some cases, the probabilities that could occur in practice would lead to two different risk levels. Even in these cases, the members found that the probabilities would be determined by easily recognisable features with the playground equipment like the type of equipment, the state of maintenance and the surroundings of the equipment.

**Fout! Verwijzingsbron niet gevonden.** summarises the 'Level of risk generally associated with some of the common hazards presented by playground equipment'.

Hazard	Level of risk
Head and neck entrapment	Serious risk
Entrapment of clothing	High or Serious risk
Entrapment of a finger	Medium risk
Entrapment of a foot or a leg	Medium risk
Falling space and falling protection	High or serious risk (reviewed on a case by case basis)
Inadequate surfacing	High or serious risk
Structural integrity	Low to serious risk (depending on the situation)

*Table 2 Level of risk of common hazards presented by playground equipment*

Members agreed that this table should be used as a guide to the level of risk presented by each type of hazard and not as a definitive statement of the level of risk associated with each type of hazard.

Having assessed the level of risk for a particular item of equipment, the inspector would need to provide the operator of the playground with a written report of their findings. For non-compliant equipment this may require the operator to immediately stop using the item of equipment concerned in the case of equipment presenting a serious risk, or a time period during which the equipment must be repaired or rendered safe for items that presented a high, medium or low risk.

It was recognised that, on occasion, an item of equipment and/or its surfacing may present a number of hazards, in which case the inspector would select the hazard presenting the highest degree of risk as the determinant for whether the equipment should be withdrawn from use or the timescale allowed for its repair so as to conform to the relevant clause(s) in EN 1176 and/or EN 1177.



## 3 Activities and results

### 3.1 Inspections

Only six of the eight participating MS undertook inspections as part of the market surveillance activity.

Details of the number of inspections of playgrounds and items of playground equipment are given at **Fout! Verwijzingsbron niet gevonden.** at Section 3.3

Inspections were conducted during the Spring 2017 and during the Summer/Autumn 2017. The inspections that took place during the Spring 2017 were almost exclusively confined to items being used in indoor playgrounds; nearly all the items of equipment inspected during the Summer/Autumn 2017 were confined to items located in outdoor playgrounds, except in the case of the inspections conducted in the Czech Republic, where they included a few items of equipment placed in indoor playgrounds.

### 3.2 The results obtained from the inspections

#### 3.2.1 The inspections conducted during the Spring 2017

Six of the participating MS (Belgium, Czech Republic, Germany (Baden Württemberg), Latvia, Slovak Republic and Slovenia) undertook inspections of indoor playgrounds during the Spring 2017. A total of 91 playgrounds were inspected. The playgrounds inspected included a total of 188 items of equipment of which 174 (93%) were non-compliant. 165 (88%) of these items were non-compliant in relation to one or more of the marking requirements specified in EN 1176. A total of 81 (43%) were 'technically' non-compliant, i.e. having failed to meet the requirements of EN 1176 and/or EN 1177 for a non-compliance other than 'marking'.

Table 3 gives the 'headline' statistics in relation to the inspections conducted on indoor playgrounds by each of the participating MS during the Spring 2017. 165 (88%) of the items inspected were missing one or more of the following items of information:

- The provision of the name and address of the item's manufacturer, or authorised representative<sup>14</sup>;
- The year of manufacture;
- The basic level mark (where applicable);
- The reference and date of the standard to which the product conforms;
- The type or serial number of the product provided by the manufacturer, importer or distributor.

The most common technical non-conformities were:

- a failure to protect from falls;
- the entrapment of various parts of the body - head and neck, the body itself, leg or foot, fingers or an item of clothing, and
- insufficient falling space between adjacent items of equipment.

A detailed analysis of the non-compliances presented by INDOOR equipment is at Table 9.

The fact that 81 (43%) of the items were technically non-compliant with regard to the safety requirements specified in EN 1176 and/or EN 1177 was a matter of serious concern to the Project Group.

Members recognized that little could be done at this stage in the product's life cycle to correct any non-compliances in relation to the marking of equipment in accordance with EN 1176-1, other than to prohibit the use of the equipment. This would seem to be an over-reaction to an issue that does not affect the safety of the children using the equipment even, though many of the items of equipment inspected failed to comply with 3 or more of the features listed above. The lack of markings indicates that for many of these items of equipment that they were not designed/manufactured with the requirements of EN 1176/EN 1177 in mind.

<sup>14</sup> This is also a requirement of Directive 2001/95/EC - On general product safety - Article 2.

JA 2015- Playground equipment - Results from inspections conducted during Spring 2017							
	Belgium	Czech Republic	Germany	Latvia	Slovak Republic	Slovenia	TOTALS
No. of playgrounds inspected	10	19	8	10	30	14	91
No. of items of equipment inspected	28	39	28	17	53	23	188 (100%)
No of non-compliant items of equipment	23	35	28	17	49	22	174 (93%)
No. of items of equipment with non-compliant markings	23	35	25	17	46	19	165 (88%)
No. of items with 1 or more technical non-compliances	3	0	23	16	24	15	81 (43%)

Note: No inspections were conducted by Iceland or by Norway

Table 3: Results from the spring 2017 inspection of items of indoor equipment

Most of the indoor playgrounds contained only 1 or 2 items of equipment. The representatives from the participating MS reported a wide variety in the type of equipment in use. There were a number of playgrounds in which only a single item of equipment was available. These items often included a number of different features so as to give children a range of experiences such as: climbing, sliding, balancing etc. and are referred to as ‘Combined Equipment’. An example of this type of equipment in use in an indoor playground in Baden-Württemberg is shown at Photograph 1 Complex playground equipment installed in Baden-Württemberg, Germany

Inspectors also reported on playgrounds in which the equipment consisted of a number of relatively simple ‘stand-alone’ items, such as a ball pool, swing, slide etc.

Members reported that, in a number of cases, the equipment was not securely affixed to the floor. This gave rise to concerns that the equipment could move, or overturn, when children were using it. The reason given by the playground operator for not fixing the equipment to the ground was often that the floor of the premises would be permanently damaged if fixing bolts were used. In these instances, the inspectors concluded that this was unsatisfactory and that the equipment needed to be fixed firmly to the floor as soon as possible.

Inspectors noted that there were a few instances in which ‘CE’ marked products were being used in these playgrounds, i.e. they were activity toys for domestic use, and not items of playground equipment for collective use. In some cases, they contained a ‘Warning’ that the equipment was for ‘family domestic use only’. The inspectors took the view that these items are generally unsuitable for public use and insisted that the operator of the playground should stop using them forthwith. An example of an activity toy being used in an indoor playground in Latvia is shown at **Fout! Verwijzingsbron niet gevonden..**



*Photograph 1 Complex playground equipment installed in Baden-Württemberg, Germany*



*Photograph 2 Activity toy for domestic used in an indoor playground in Latvia*

**Fout! Verwijzingsbron niet gevonden.** shows that amongst the 15 different types of equipment that were technically non-compliant, the following types of equipment were particularly prone to presenting a hazard/hazards to consumers: climbing areas; combined play equipment, i.e. products that included a number of different types of activity; fully enclosed play equipment; infant areas; slides.

Most of the indoor playgrounds had a member of staff nearby so that, in the event of an accident or child getting into difficulties when using the equipment, the child could be assisted very quickly. In the case of those playgrounds for which admission was charged this was often the person collecting the admission fee. Concern was expressed by inspectors that, in some cases, the equipment had been poorly designed and that, should an accident occur, or a child panic when using the equipment, it would be difficult for an adult to gain access to the relevant part of the equipment quickly and release the child.

When this occurred the inspector often suggested to the operator of the playground how such a hazard might be mitigated.

No. of items of equipment in INDOOR playgrounds that were technically non-compliant			
Auto Scooter	1	Labyrinth	2
Carousel	4	Net	1
Climbing area	9	Playhouse	3
Combined play equipment	6	Roll conveyor	3
Fully enclosed equipment	11	Slide	29
Infant area	6	Swing	2
Hanging bridge	1	Toboggan	1
		Unspecified item	2
<b>Total No. of items of equipment that were technically non-compliant:</b>			<b>81</b>

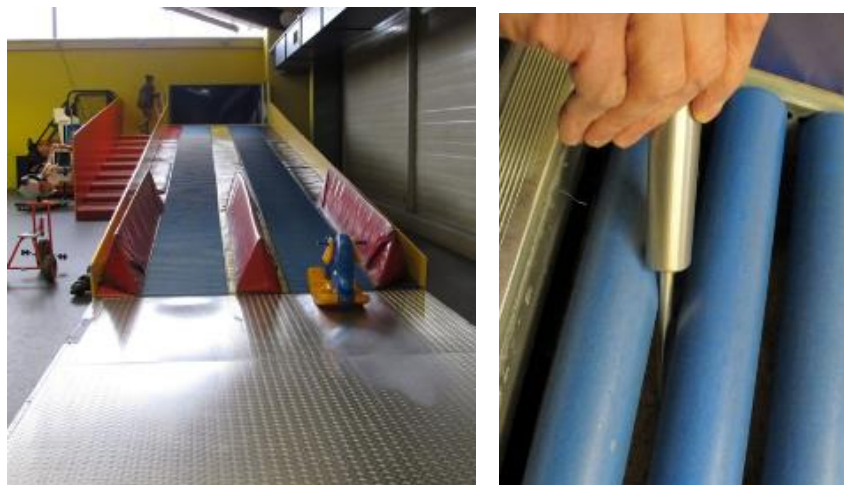
Table 4 No. of non-compliant items of indoor equipment (Spring 2017)

The inspectors were concerned about the large number of items of equipment that were technically non-compliant. Where this occurred, the inspector discussed the remedial action that should be taken with the operator of the playground. This ranged from an immediate ‘stop’ on using the item of equipment for items that presented a serious risk to consumers, to an action plan to remedy the non-compliance(s) within a defined time period for items that presented a high to low risk. In the latter case the inspector concerned then checked that the appropriate remedial action had been taken within the timescale they specified. Once the inspectors had discussed the areas of non-compliance with the playground operator and an action plan agreed corrective action was undertaken on a ‘voluntary’ basis. The inspector checked that compliance had been achieved by revisiting the playground to inspect the items of equipment that was non-compliant, or by correspondence with the operator of the playground.

**Fout! Verwijzingsbron niet gevonden. to Fout! Verwijzingsbron niet gevonden.** show examples of items of equipment being checked for compliance/non-compliance.



Photograph 3 Application of probes to an item of playground equipment in Slovenia



Photograph 4 The rolling bars on a slide in Baden-Württemberg, Germany





*Photograph 5 A pair of slides in a playground in Slovenia*

The test equipment specified in EN 1176-1, i.e. chain, pole, collar and toggle, is being used to check the equipment for the entrapment hazard for clothing.

### ***3.2.2 Inspections on outdoor playgrounds and playground equipment***

Six MS (Belgium, Czech Republic, Germany (Baden-Württemberg), Latvia, Slovak Republic and Slovenia) undertook inspections of playgrounds during the Summer/Autumn 2017. Nearly all the inspections related to outdoor playgrounds. A total of 266 playgrounds with 828 items of equipment were inspected. 616 (75%) of these items were non-compliant in relation to one or more clauses specified in EN 1176 and/or EN 1177. A total of 512 (62%) items did not have markings in compliance with the requirements of EN 1176-1, Clause 7. The Project Group considered it would be virtually impossible, at this stage in the lifetime of the equipment, to ask the operator of the playgrounds concerned to take corrective action. In many cases details concerning the name and address of the manufacturer or importer of the equipment were not present on the equipment. This meant that it was not possible to raise any safety concerns relating to the items of equipment with the manufacturer or importer of the product.

In some cases, the legislation in the participating Member State restricted the settings in which the MSA were permitted to conduct inspections. The bulk of the playground inspections were, however, owned by municipalities. In all cases, other than Germany (Baden-Württemberg), inspections were conducted in public playgrounds. Only Belgium and the Czech and Slovak Republics were able to conduct inspections on school premises, principally at kindergartens and primary schools. The Czech Republic also conducted inspections on commercial premises. Germany (Baden-Württemberg) was unusual in that all its inspections were conducted on commercial premises. The range of locations inspected by Baden-Württemberg was diverse

and included campsites, fast food restaurants, pubs/beer gardens, zoos, an open-air swimming pool, a golf facility and an adventure playground.

**Fout! Verwijzingsbron niet gevonden.** shows the results of the inspections, where a very high number of non-compliances in relation to technical safety issues were detected. A total of 468 (57%) of the items of equipment were non-compliant in this respect. In each case the inspector discussed with the operator of the playground the corrective action that should be undertaken to render the equipment safe. In a number of cases this resulted in the item of equipment being decommissioned, whereas in others it required the operator to make good any deficiencies in the safety of their equipment. The fact that such a high proportion of items were non-compliant in relation to 1 or more safety requirements was a matter of particular concern to the Project Group, as children are often not supervised when using equipment in outdoor playgrounds.

JA 2015 - Playground equipment - Results from inspections conducted during Summer/Autumn 2017							
	Belgium	Czech Republic	Germany	Latvia	Slovak Republic	Slovenia	TOTALS
No. of playgrounds inspected	20	31	17	43	50	105	266
No. of items of equipment inspected	60	114	61	185	190	218	828 (100%)
No of items of non-compliant equipment	56	51	43	185	120	161	616 (75%)
No. of items of equipment with non-compliant markings	56	40	36	182	97	101	512 (62%)
No. of items with 1 or more technical non-compliances	0	24	36	164	83	161	468 (57%)

Note: No inspections were conducted by Iceland or by Norway

Table 5 The results of the Summer/Autumn 2017 inspections on outdoor playgrounds

**Fout! Verwijzingsbron niet gevonden.** shows the quantity of each type of equipment that was inspected during the Summer/Autumn 2017 market surveillance exercise and that were found to be technically non-compliant. Swings and slides were a feature of many playgrounds and, not surprisingly, were frequently found to be non-compliant. The ‘other equipment’ found to be non-compliant included a wide range of products, such as parallel bars, a jungle gym, steps and ropes etc.

JA 2015 - Playground equipment - Results from inspections of OUTDOOR equipment conducted during Summer/Autumn 2017			
No. of items of equipment that were technically non-compliant:			
Cableway	2	Rocking equipment/seesaw	24
Carousel	17	Slide	121
Climbing Equipment/Unit	53	Swing	175
Combined play equipment	42	Other equipment	34
Total No. of items of equipment that were technically non-compliant:			468

Table 6 No. of non-compliant outdoor equipment (Summer/Spring 2017)



During the course of the 4th Project Group meeting MS took the opportunity to show photographs of the different types of non-compliance they had observed during the course of their inspections. These are illustrated at Photograph 6 - Photograph 15.

Photograph 6 and **Fout! Verwijzingsbron niet gevonden.** show examples of non-compliances relating to the materials used and which present a hazard to users, i.e. rusty metal components produce toxic oxide that scales or flakes and timber becomes rotten or splinters. (EN 1176-1 - Clause 4.1 and Clause 4.2.2)



*Photograph 6: Lack of structural integrity non-compliance*

The example shown in photograph 6 presents rusting on an item of equipment in Germany and of wood rot on an item of equipment in Latvia.



*Photograph 7 Example of damage that may lead to collapsing/breaking down of the equipment*

Photograph 8 shows non-compliances relating to projections. They present a hazard to users by causing lacerations to body parts, and/or can snag clothing (EN 1176-1 - Clause 4.1). In the photograph on the left this is caused by a bracket and a screw and on the right by a nut and bolt present a hazard.



Photograph 8: Projections on items of equipment in Latvia

Photograph 9 shows a non-compliance relating to the failure to protect the user from a fall. (EN 1176-1 - Clause 4.2.4 and EN 1176-3 - Clause 4.3.2 and 4.4.3). In this example an easily accessible slide (a ladder with a first rung less than 400 mm from the ground surface is the means of access to the equipment). It is not provided with adequate guarding section (barrier function) at the starting section of the slide and the lateral protection of the sliding section of the slide.



Photograph 9: A slide in a Latvian playground where there is a failure to protect from a fall

**Fout! Verwijzingsbron niet gevonden.** shows a non-compliance relating to the pinching/crushing or entrapment by moving parts, in this example by the bending of coils of the spring when the equipment rocks from side to side (EN 1176-1 - Clauses 4.2.6 and 4.2.7.6 and EN 1176-6 - Clause 4.4).



Photograph 10 An item of rocking equipment in use in Latvia



**Fout! Verwijzingsbron niet gevonden.** illustrates the use of the device to test for the entrapment of clothing. It includes a toggle, chain, collar and pole. There is a non-compliance because a child could entrap their clothing when using the slide (EN 1176- 1 - Clause 4.2.7.3 and EN 1176-3 - Clause 4.7).



*Photograph 11 Example of an non-compliant item of equipment in Latvia*

**Fout! Verwijzingsbron niet gevonden.** shows non-compliances relating to the potential for the entrapment of a finger or fingers between the wooden members of an item of equipment. The photograph shows the application of the ‘finger rod’ to test for compliance.



*Photograph 12 A non-compliant item of playground equipment in the Slovak Republic*

**Fout! Verwijzingsbron niet gevonden.** shows non-compliance relating to the failure to provide sufficient falling space between adjacent items of equipment, in this example between the slide and a climbing frame (EN 1176-1 - Clause 4.2.8). This example is from a Latvian playground, where the impact area/falling space between the slide and the adjacent item of equipment, a climbing frame, is 1.44 m instead of circa 1.93 m (EN 1176-1, Clause 4.2.8 and EN 1176-3 - Clause 4.8).



*Photograph 13 Non-compliant item of playground equipment*

Photograph 14 shows a non-compliance relating to the provision of inadequate surfacing. In this case the grass doesn't provide for an impact absorbing area when a child falls from the slide, i.e. from a height of more than 60 cm at the starting section (EN 1176).



*Photograph 14: An example of unsafe surfacing in a playground in the Czech Republic*

Photograph 15 shows an example of a public playground in Slovenia with a swing and a slide. They are toys and should not be for public use. The inappropriate placing of the equipment could present a hazard to children - the possibility of a child falling into the nearby lake and/or of a child running into the roadway. In the photo on the left the swing is located close to open water and in the right-hand photo the slide and the swing are situated close to a road. Note - There is a large gap in the fencing! The picture top left and top right shows before and after the subsequent removal (central photo).





*Photograph 15: Shows the inappropriate placing of products in a playground in Slovenia*

Photograph 16 shows an example of a toy slide being used in Latvia in a public playground. The product is ‘CE’ marked. The MSA indicated to the operator of the playground that the product is a ‘toy’ and may not be able to withstand the load applied as a consequence of its frequent use by the public.



*Photograph 16: An activity toy for domestic use being used in an outdoor playground in Latvia*

**Fout! Verwijzingsbron niet gevonden.** shows an example of a playground in Latvia in which the equipment has been poorly maintained as no person or organization has taken on responsibility for its ownership. The playground did not have a legal 'owner'. The diameter of the carousel exceeds the permissible limit. This increases the risk of the child entering the moving carousel and increases the speed of the periphery of the carousel.

The seats on the carousel do not meet the impact attenuating standard resulting in the risk of injury to the body and body parts through collision and through the impact of moving parts of the carousel. Furthermore, the seats of the carousel were not fitted with a back rest or a hand grip which, again, increases the risk of children falling from the moving carousel and/or getting hurt through a fall or through impact by the equipment.



*Photograph 17 Non-compliant and poorly maintained playground equipment in Latvia*

### 3.3 Statistics relating to the results

Table 7 Overview of playground inspections in JA2015

has been prepared in order to give an overview of the 357 playgrounds and 1016 items of playground equipment that were inspected during the course of the project.

From amongst the items of equipment inspected 790 (78%) were found to be non-compliant regarding their markings and/or technical issues, e.g. structural integrity, fall protection, surfacing etc.; 677 (67%) were non-compliant with regard to their markings, and 549 (54%) were non-compliant with regard to technical issues.



JA 2015 - Playground equipment - Results from inspections conducted during the Spring 2017 and the Summer/Autumn 2017							
	Belgium	Czech Republic	Germany	Latvia	Slovak Republic	Slovenia	TOTALS
No. of playgrounds inspected during Spring 2017	10	19	8	10	30	14	91
No of playgrouhds inspected during Summer/Autumn 2017	20	31	17	43	50	105	266
<i>Total No of playgrounds inspected during Spring 2017 and Summer/Autumn 2017</i>	30	50	25	53	80	119	357
No. of items of equipment inspected during Spring 2017 inspection	28	39	28	17	53	23	188
No of items of equipment inspected during Summer/Autumn 2017 inspection	60	114	61	185	190	218	828
<i>Total No of items of playground equipment inspected during Spring 2017 and Summer/Autumn 2017 inspections</i>	88	153	89	202	243	241	1016(100%)
No of non-compliant items of equipment found during the Spring 2017 inspection	23	35	28	17	49	22	174
No of non-compliant items of equipment found during the Summer/Autumn 2017 inspection	50	51	43	185	120	161	616
<i>Total No of non-compliant items of equipment found during the Spring 2017 and Summer/Autumn 2017 inspections</i>	73	86	71	202	169	183	790(78%)
No. of items of equipment with non-compliant markings found during Spring 2017 inspection	23	35	25	17	46	19	165
No. of items of equipment with non-compliant markings found during Summer/Autumn 2017 inspection	56	40	36	182	97	101	512
<i>Total No. of items of equipment with non-compliant markings found during Spring 2017 and Summer/Autumn 2017 inspections</i>	79	75	61	199	143	120	677(67%)
No. of items with 1 or more technical non-compliances found during the Spring 2017 inspection	3	0	23	16	24	15	81
No. of items with 1 or more technical non-compliances found during the Summer/Autumn 2017 inspection	0	24	36	164	83	161	468
<i>Total No. of items with 1 or more technical non-compliances found during the Spring 2017 and the Summer/Autumn 2017 inspections</i>	3	24	59	180	107	176	549(54%)
<i>Note: No inspections were conducted by Iceland or by Norway</i>							

Table 7 Overview of playground inspections in JA2015

## 3.4 The inspection of playgrounds in Iceland

### 3.4.1 Legal framework and remit

The Icelandic Consumer Agency initially joined the JA2015 Playgrounds Project in order to inspect only new playground equipment being placed on the market, the equipment in use being outside their jurisdiction<sup>15</sup>. Iceland is a full member of the Internal Market of the EU and therefore all playground equipment being placed on the market must fulfil EU/EEA legislation in relation to product safety and playground equipment, i.e. they must meet the requirements of the EN 1176 standard and EN 1177.

At the kick-off meeting of the Project Group it became clear that the participating authorities from other countries are responsible amongst others for the inspection of playground equipment 'in use' and the general safety of playgrounds. The situation is different in Iceland<sup>16</sup> and a detailed report is presented in Annex 1. Playground operators (public and private) need a license from one of 10 local health inspectorates of the respective municipalities where the intention is to open a playground<sup>17</sup>. The economic operator of playgrounds (whether private or public) is responsible for all inspections. According to the applicable rules the operators must submit checklists for internal inspections when they apply for a license to operate a playground.

After the first meeting, the Consumer Agency (CA) decided they would like to continue participating in the project although they did not have the authority to inspect playgrounds 'in use'. They deemed it useful to assess safety and inspection reports from the one and single accredited inspection body in Iceland against the common checklist of the JA2015 Project Group.

Results and findings were valuable to the project as they would give insight into the extent of compliance of some of the playgrounds in Iceland, as well as inspection procedures of the third party, and possibly other mandatory inspections that are being done by the playground operators. The CA therefore agreed to obtain inspections reports from previous years and compare these with the common checklist of the Joint Action Project Group. This would help better understand if the common benchmarks agreed by the Project Group were met in inspections carried out in Iceland.

#### (a) Onsite inspections

The local authorities that operate playgrounds do regular inspections and are obliged to have at hand the checklists that the operator has delivered. The accredited inspection body has its own manual for inspections and checklists that were not made available to the CA during this Joint Action. Furthermore, submission of the inspection reports to the CA was denied due to confidentiality vis-à-vis the playground operators, and the CA was advised to obtain these reports directly from the operator who had ordered the inspection.

The CA had obtained in total 40 reports made by the accredited inspection body in Iceland upon request from public local authorities, whilst 2 were available online, from the years 2015-2017. When inspecting the reports and comparing them to the checklist of the Project Group, the Agency focused on the 24 most recent reports from the year 2017.

#### (b) The inspection reports

On reviewing the reports, it became clear that they only give an insight into deviations (non-conformities) found during inspections, but they do not contain the general checklist that they follow during their inspections. A clear overview of what was inspected is therefore not contained in the reports. The CA had asked the accredited inspection body in Iceland to deliver a copy of the checklist, with no avail. Thus, the CA could not carry out the comparison exercise intended.

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<sup>15</sup> The market surveillance of new playground equipment being placed on the market is the responsibility of the Consumer Agency.

<sup>16</sup> The Icelandic participants explained that the safety of playground equipment is regulated by Icelandic Ministerial Regulation No. 942/2002 - On the safety of playgrounds and playground equipment.

<sup>17</sup> Conform Act No. 7/1998 - On hygiene and pollution prevention.

Many non-conformities were found in relation to the markings on the equipment, as specified in Clause 7 of ÍST EN 1176-1. No information on the inadequate markings or about nonconformities regarding 'Fall protection', as specified at EN 1176-1: Clause 4.2.4., had however been documented in the reports that Consumer Agency has reviewed. Some reports mentioned the poor maintenance of the equipment, e.g. rotten wood, and broken equipment, that would affect the structural integrity of the equipment.

The reports covered three different settings of playgrounds: (i) schools, (ii) kindergartens and (iii) 'open' playgrounds, i.e. those to which the general public has access.

### Schools

The Agency reviewed inspections report of playgrounds operated by 5 public elementary schools. A total of 72 items of playground equipment were inspected and 23 non-compliances were found, 4 relating to 'falling space' and 19 concerning 'surfacing'.

### Kindergartens

The Agency reviewed reports on 4 kindergartens (publicly operated) that were inspected. A total of 74 items of playground equipment were inspected and 50 non-compliances were found. There were 20 significant non-compliances, other than those relating to markings, 4 concerning 'entrapment', 14 concerning 'surfacing' and 2 relating to 'falling space'.

### Open playgrounds

The CA reviewed 15 reports received on inspections of 'open' playgrounds (also public operated) in year 2017). A total of 64 items of equipment were inspected with 90 non-compliances. There were 26 non-compliances concerning issues covered in the common check list from the JA2015 Project Group, 3 concerning 'falling space', 17 on 'surfacing' and 6 on 'entrapment'. Most non-compliances were marked as presenting a 'considerable risk', which they suggested, should be rectified within three months.

However, as the rectification of any non-compliances is in the hands of the playground operator concerned, the CA has no information on whether the equipment was rendered compliant. The obligation to ensure that the playground equipment is put into compliance is most likely in principle within the scope of the local health inspectorates that issue licences to the operator. If the non-conformities are not properly reported to the health inspectorate that issues the license, there is a danger that the authority does not repeal the licence if compliance and repairs are not ensured by the responsible operator.

## 3.4.2 Findings from the review

More coordinated surveillance and inspections on playground equipment in use has to be undertaken to ensure that common standards and inspection protocols prescribed in Icelandic Regulation No. 942/2002 are implemented by operators of playgrounds.

The inspection that is to be done once a year by an accredited third party seems to be too costly for most of the operators of playgrounds, many of which are public authorities. This obligation to ensure annual inspection is possibly not met due to lack of enforcement in some cases.

Furthermore, no central body oversees that the annual inspections are enforced or receives the inspections reports that are produced under the current system. The Environment Agency only coordinates the local health inspectorates to a limited extent, but does not take any measures against playground operators that do not comply. Therefore, in order to ensure a safer environment for children at play on public playgrounds a review of the legislation is necessary to centralise the enforcement powers and create the obligation to publish the inspection reports.

The CA considered it a great opportunity to be able to follow the Project Group and its benchmarks in the area of safety of playgrounds in use that can serve as examples for possible improvements in Iceland.

## 4 Follow-up work

### 4.1 Approach adopted by the Member States

Whenever an inspector found that an item of equipment was non-compliant this was reported immediately to the operator of the playground. In case of a serious non-compliance, its use was stopped forthwith, for example, by sealing the equipment. In most cases this resulted in the equipment being taken out of use and its removal from the playground. Exceptionally, should the operator of the playground wish to continue using the equipment, the inspector required that the equipment was taken out of use and that the operator take steps to bring the equipment into conformity as soon as possible. In these circumstances the MSA subsequently re-assessed the equipment to check whether it was safe for children to use after any repairs or modifications to the equipment had been undertaken.

When the use of the item was to be 'prohibited', the item of equipment was marked with a notice showing that it is not to be used. Fixing a notice to the equipment so that children could not use it was often difficult to undertake in the case of outdoor playgrounds, where the installation of a notice that is both weatherproof and vandal-proof is required. The shape and size of the item of equipment sometimes presented some difficulties when it came to affix a prohibition notice. Example of where this occurred is shown at **Fout! Verwijzingsbron niet gevonden..**

Even when a notice is attached to an item of equipment that presents a serious risk to children this may be insufficient to prevent its use. Some children may not be able to read that its use is prohibited, and even if they can read the prohibition notice, this will not necessarily prevent children from using the equipment. The remedy in this situation is to remove the item of equipment from the playground as soon as practicable.



Photograph 18 Examples of "DO NOT USE" instruction in a Slovenia playground

### 4.2 Case studies

The following case studies relate to a number of different situations experienced by inspectors during the course of their inspection of playgrounds in the participating MS.



### 4.2.1 Case study 1 - follow-up action taken by the operators - Slovenia

**Fout! Verwijzingsbron niet gevonden.** shows examples of equipment (in the upper left and centre photographs) where the seats of the swing and the rocking item presented an entrapment hazard and, in the upper right-hand photograph, where the surfacing under the swing was inadequate.

The operator of the playground readily agreed with the inspector's assessment that these items of equipment were non-compliant. They recognized that the non-compliant items required a substantial repair to be undertaken if they were to be rendered safe to use, or that they had come to the end of their useful life and needed to be de-commissioned or replaced with new equipment.

The lower left and centre illustrations at **Fout! Verwijzingsbron niet gevonden.** shows that the equipment was subsequently taken out of use so it cannot present a hazard to users. The lower photograph on the right, shows that new, compliant, surfacing has been installed underneath this swing.



Photograph 19 Examples of post-inspection remedial action taken in Slovenian playgrounds

### 4.2.2 Case study 2 - who owns the playground being inspected? - Latvia

The Latvian Consumer Protection Rights Centre (CRPC) requested 118 municipalities to provide information about the playgrounds located in the territory of their municipality. They asked for information concerning who owned the playground and who was responsible for its operation. The CRPC received the information they requested from only 29 municipalities.

In these circumstances the CRPC's first task was to identify those playgrounds within each municipality that they wished to inspect. As the CRPC wanted to inspect playgrounds that posed more serious/high risk(s) to their users, these playgrounds were identified using the website 'Google Street Maps' as the playgrounds could be identified easily from the aerial photographs that are available on this website. Using this information, the inspector from the Centre was able to make a list of the playgrounds in each locality that she wished to inspect.

Correspondence with the authority at this stage did not always enable the inspector to ascertain whether or not the local authority had formally assumed responsibility for the management of the playgrounds that were scheduled for inspection. The inspections revealed that, in a number of cases, little or no maintenance

of the equipment had taken place over the last few years. Many of the items of equipment that were inspected presented a serious risk to children and needed repair or to be taken out of use. In some cases, it was apparent that the playground was installed during the Soviet era and that it provided a facility for the community living in the flats or houses nearby, but that no one had subsequently taken over responsibility for the care and maintenance of the playground.

In a number of instances, it was apparent that the playground was not being managed by the residents in its locality, or owned by a defined group of individuals or by a company, but that it was a public space that could be enjoyed by anyone who wished to use the facility. When this occurred, the inspector contacted the municipality in which it is situated, as it had to be assumed, by default, that the municipality were the owners of the playground.

During the course of the inspections it quickly became apparent that, for some of the playgrounds without owners and/or operators, the legal form for the playground was unclear. For example, land near to the playground may belong to a residential house or an apartment or the municipality, but the playground itself and its equipment may not formally have been recorded as being in existence by the relevant authority, even though it had been in use for some years.

Establishing who owned these playgrounds often proved to be a difficult and complex task. In some instances, there did not appear to be any legal record of the existence of the playground. There were a few cases in which the municipality has handed over operation of a playground to an operator. In accordance with the agreement concluded between the municipality and the owners of the apartments concerned, the operator only provided mandatory administrative activities relating to the playground. The administrative tasks for which the operator assumed responsibility could be limited to cleaning the area occupied by the playground. Other administrative activities, that are not mandatory and are not determined by law, are performed in accordance with the will and solvency of the residential house owner (who signs a contract for the administration of a residential house and ensures the financing required for this task). This excluded the operators of the playground from any responsibility for the maintenance of playground and its equipment.

During the course of the correspondence between the CRPC and some of the municipalities it became apparent that, in many cases, the authority had not included an item of expenditure in its budget for the maintenance of these playgrounds, or for their inspection. Recognition that the playground is “theirs” therefore meant introducing a new item of expenditure into the municipality’s budget at a time when financial resources are very limited. In the short term this will involve a ‘one off’ cost to ensure the equipment is compliant with EN 1176 and/or EN 1177 and, thereafter, an annual cost for the maintenance and inspection of their ‘newly’ acquired playground.

### **4.2.3 Case study 3 - which part of the standard applies? - Latvia**

In this case study the item of equipment in the foreground of **Fout! Verwijzingsbron niet gevonden.** provides children with an experience similar to that of a ‘cableway’, but the suspension assembly for the traveller is a rigid beam, rather than a flexible cableway. This has raised the question concerning the application of the requirements of EN 1176-4 - Additional safety requirements and test methods for cableways to this particular product.

During the inspection it was established that the ground clearance (distance of the lowest point on the grip and the surface beneath) in the running position of the equipment, i.e. the cableway, is 1570 mm. According to clause 4.12 of EN 1176-4: 2008 ‘Playground equipment and surfacing - Part 4: Additional specific safety requirements and test methods for cableways’ the ground clearance in the running position for hanging type cableways shall be 2000 mm minimum. Since the equipment is marked with standard EN 1176-1, the CRPC has enquired of the manufacturer whether he has considered the requirements of EN 1176-4. The manufacturer informed the CRPC that the equipment is certified by TÜV Rheinland Product Safety GmbH according to EN 1176-1 and, referring to Clause 1 of EN 1176-4, indicated that the requirement set out in Clause 4.12 of EN 1176-4 is not applicable because in the structure of the equipment it uses a rigid tube instead of cable. CRPC drew the manufacturer’s attention to the fact that the requirements applicable to this type of equipment determine not only the design of the equipment, but also the operating principle of the equipment, in this particular case traveling from platform to platform along a rigid tube under the force of gravity. Moreover, taking into account the rationale of the requirement set out in Clause 4.12 of EN 1176-



4, which is given in Clause 7.12 of the Technical Report CEN/TR 16598:2014 “Collection of rationales for EN 1176 - Requirements” - states ‘take care that a child being in the cable direction cannot be rolled or crushed by the traveller (with a user on board)’. CRPC’s view is that whether the equipment is fitted with a rigid tube, or a flexible cable, does not seem to have any significance in these circumstances.



Photograph 20 A novel "cableway" in a Latvian playground

#### 4.2.4 Case study 4 - home made equipment can be safe - Germany, Baden Württemberg

Fout! Verwijzingsbron niet gevonden. shows two examples of where redundant timber has been used by a zoo to create imaginative items of play equipment that are both compliant with the relevant safety standards and safe to use. These examples show how difficult it is for the installers of these items of ‘home-made’ items of equipment to assess their compliance to the requirements of EN 1176 and EN 1177.



*Photograph 21 Examples of 'home made' items of playground equipment in Germany*

## 5 Risk Assessment

### 5.1 The principal hazards relating to playground equipment

When preparing the ‘Manual’ and the ‘Checklist’ (see Annex I) for use by inspectors the Project Group recognized that it would be impracticable for the inspectors to check each item of playground equipment for all the various hazards that are identified in the EN 1176 series of standards and in EN 1177. It was decided to concentrate on the principal hazards that are identified in these standards in order to ensure that a reasonable number of items of equipment could be inspected during the course of the project. The Project Group noted that inspectors could be trained either locally, or by using the training video prepared for the Joint Action on Playgrounds that was undertaken in 2007. As a consequence, inspectors did not inspect the safety of items of equipment for some of the more detailed requirements specified in Parts 1 - 7, 10 and 11 of EN 1176 and EN 1177.

### 5.2 Risk Assessment, indoor playground equipment

Table 8 is reproduced from a previous section of the report and summarises the ‘Level of risk generally associated with some of the common hazards presented by playground equipment.’

Hazard	Level of risk
Head and neck entrapment	Serious risk
Entrapment of clothing	High or Serious risk
Entrapment of a finger	Medium risk
Entrapment of a foot or a leg	Medium risk
Falling space and falling protection	High or serious risk (reviewed on a case by case basis)
Inadequate surfacing	High or serious risk
Structural integrity	Low to serious risk (depending on the situation)

Table 8: Level of risk associated with common hazards presented by playground equipment

The results from the Spring 2017 market surveillance exercise concerning the inspection of INDOOR playground equipment are analysed at **Fout! Verwijzingsbron niet gevonden..** They show the various hazards presented by the different types of equipment against the requirements specified in the clauses at EN 1176 or EN 1177. Using the information at Table 8 the level of risk associated with each of the hazards listed above was assessed.

Table 9 shows the statistics of the technical non-compliances.

Non-compliance	Number of non-compliances	
Structural integrity	7	3%
Fall protection	47	21%
Entrapment of various parts of the body	101	44%
Inadequate falling space	47	21%
Surfacing issues	27	12%
<b>Total</b>	<b>229</b>	<b>100%</b>

Table 9: Statistics of non-compliances in indoor playground equipment

The inspectors noted that, in many cases, a particular item of equipment was found to present more than one non-compliance. In a number of cases each non-compliance presented a different level of risk.

ANALYSIS OF RESULTS RELATING TO THE INSPECTION OF ITEMS OF EQUIPMENT THAT WERE NON-COMPLIANT IN RELATION TO THE CLAUSE SPECIFIED

TYPE OF EQUIPMENT	CLAUSE SPECIFIED IN CHECKLIST & WHICH RELATES TO REQUIREMENTS SPECIFIED IN EN 1176 OR EN 1177														TOTALS			
	2 - STRUCTURAL INTEGRITY		3 - FALL PROTECTION		4 - ENTRAPMENT					5 - FALLING SPACE				6 - SURFACING				
	2.1 - Lack of structural integrity	2.2 - Wood rot - timber structures	3.1 - General	3.2 - Slides	4.1 - Head & Neck	4.2 - Clothing	4.3 - Body	4.4 - Foot or leg	4.5 - Fingers	5.1 - General	5.2 - Swings	5.3 - Slides	5.5 - Carousels	5.7 - Fully enclosed play equipment	6.1 - General	6.3 - Slide	6.4 - Carousel	
No of non-compliant items inspected analysed by clause																		
Auto-scooter					1													1
Carousel			1						1	3			1				1	7
Climbing area					1	5	1	2	5	1								15
Combined play equipment			3	2	4		4	1	3	1	1	1			1			21
Fully enclosed play equipment			3	6	7	4	4	1		7		6		10	7			55
Infant area							6	1	3				1					11
Inflatable equipment	1																	1
Hanging bridge			1		1		1											3
Labyrinth			1						1									2
Net	1									1					1			3
Playhouse					2	1	1			3					3			10
Roll conveyor			2	1		2	1	1	1									8
Slide	4		14	11	13	6	2	4	6	5		6			8	4		83
Swing		1	1		1				1									4
Toboggan						1												1
Unspecified item			1		1										1		1	4
<b>TOTALS</b>	<b>6</b>	<b>1</b>	<b>27</b>	<b>20</b>	<b>31</b>	<b>25</b>	<b>14</b>	<b>10</b>	<b>21</b>	<b>21</b>	<b>1</b>	<b>14</b>	<b>1</b>	<b>10</b>	<b>21</b>	<b>4</b>	<b>2</b>	<b>229</b>
<b>Level of Risk</b>	<b>Low to Serious depending on situation</b>		<b>High or Serious depending on situation</b>		<b>Serious</b>	<b>High or serious</b>	<b>High</b>	<b>Medium</b>	<b>Medium</b>	<b>High or Serious depending on situation</b>				<b>High or Serious depending on situation</b>				

Table 10 Inspection results of non-compliant indoor playground equipment

**Fout! Verwijzingsbron niet gevonden.** presents an analysis of the inspection results and details the number of items of equipment and the types of equipment that were non-compliant to various clauses of EN 1176 and/or EN 1177.

Whilst any non-compliance is a matter that ought to have been remedied by the playground operator during the course of their daily and/or regular inspections, the Project Group was particularly concerned that so many non-compliances were recorded during their inspections. Of particular note is that many of the non-compliances relate to high or serious risks presented by the equipment.

Table 12 details the level of risk presented by the items of equipment inspected during the Spring 2017 market surveillance exercise and the level of risk posed by some of the more frequently encountered types of equipment in these playgrounds.

*When an item of equipment presented a number of non-compliances, then the non-compliance that presented the highest level of risk to the consumer was recorded as the ‘level of risk’ for the item of equipment concerned.*

JA 2015 - Playground equipment - Risk assessments relating to the inspection of INDOOR equipment conducted during Spring 2017							
Risk level:	Low	Medium	High	Low - Serious	High - Serious	Serious	TOTALS
Indoor playground equipment	0	15	2	1	19	44	81
The risk assessments relating to the most common items inspected were:							
Climbing areas	0	4	0	0	4	1	9
Fully enclosed play areas	0	1	0	0	0	10	11
Slides	0	2	0	1	5	21	29
Other items of equipment	0	8	2	0	10	12	32

Table 11: Risk assessments conducted on non-compliant items of equipment - spring 2017.

### 5.3 Risk Assessment, outdoor playground equipment

The results from the Summer/Autumn 2017 market surveillance exercise concerning the inspection of outdoor playground equipment are analysed at **Fout! Verwijzingsbron niet gevonden..** They show the various hazards presented by the different types of equipment against the requirements specified in the clauses at EN 1176 and EN 1177. Using the information at Table 8 the level of risk associated with each of the hazards listed above were assessed.

The table below shows the statistics of the technical non-compliances.

Non-compliance	Number of non-compliances	
Structural integrity	113	11%
Fall protection	112	11%
Entrapment of various parts of the body	230	23%
Inadequate falling space	181	18%
Surfacing issues	382	38%
<b>Total</b>	<b>1.018</b>	<b>100%</b>

Table 12: Statistics of technical non-compliances, outdoor equipment

The inspectors noted that, in many cases, a particular item of equipment was found to present more than one technical non-compliance. Whilst the high number of non-compliances is a matter for concern, the inspectors noted a large number of items of equipment failed the requirements relating to structural integrity and that many were cited as having inadequate surfacing. The potential for entrapment by many items was high and, as a consequence, a large number of items of equipment presented a serious risk to children when using these products.

Table 14 gives an analysis of the inspection non-compliant items of outdoor items playground equipment in relation to the various clauses specified in EN 1176 and/or EN 1177. It details the number of items of equipment and the types of equipment that were non-compliant.



JA 2015 - Playground equipment - Results from inspections conducted during Summer/Autumn 2017																								
ANALYSIS OF RESULTS RELATING TO THE INSPECTION OF ITEMS OF EQUIPMENT THAT WERE NON-COMPLIANT IN RELATION TO THE CLAUSE SPECIFIED																								
TYPE OF EQUIPMENT	CLAUSE SPECIFIED IN CHECKLIST & WHICH RELATES TO REQUIREMENTS SPECIFIED IN EN 1176 OR EN 1177													TOTALS										
	2 - STRUCTURAL 2.1 - Lack of structural integrity	2.2 - Wood rot timber structures	3 - FALL 3.1 - General	3.2 - Slides	4 - ENTRAPMENT 4.1 - Head & Neck	4.2 - Clothing	4.3 - Body	4.4 - Foot or leg	4.5 - Fingers	4.6 - by Rocking equipment /Seesaw	5 - FALLING SPACE 5.1 - General	5.2 - Swings	5.3 - Slides		5.4 - Cable Runways	5.5 - Carousels	5.6 - Rocking equipment/ Seesaws	5.7 - Fully enclosed play equipment	6 - SURFACING 6.1 - General	6.2 - Swings	6.3 - Slides	6.4 - Carousels		
No of non-compliant items inspected analysed by clause																								
Cableway																								2
Carousel	2							3	4		7			1	3			11				10		41
Climbing area/equipment	5		3		18	1	2	1	1		19		1					26						77
Combined play equipment	12	5	23	4	20	1	1	6	4		14	1						23			3			117
Rocking equipment/ Seesaw	3							5	1	10	2							10						41
Slide	24	13	30	35	35	15	2	3	12		48		1					66	15		15			314
Swing	30	12	5	1	20	3	2			48	58	4	1			1		105	72		4			366
Other equipment	5	2	9	2	2			3	5		11							21						60
TOTALS	81	32	70	42	95	20	12	17	84	2	167	5	3	2	4	0	0	263	87	22	10			1018
Level of Risk	Low to serious depending on situation		High to serious depending on situation		Serious		High to serious		High		High to serious depending on situation		High to serious depending on situation		High to serious depending on situation		High to serious depending on situation		High to serious depending on situation		High to serious depending on situation			

Table 13 Inspection results of noncompliant outdoor playground equipment

JA 2015 - Playground equipment - Risk assessments from Inspection of OUTDOOR playgrounds conducted during Summer/Autumn 2017					
Risk level:	Low	Medium	High	Serious	TOTALS
Type of equipment					
Cableway	0	0	1	1	2 (0%)
Carousels	0	6	6	5	17 (4%)
Climbing Area/Equipment	2	7	9	35	53 (11%)
Combined equipment	0	5	6	31	42 (9%)
Rocking equipment/Seesaw	1	10	2	11	24 (5%)
Slide	8	29	12	72	121 (26%)
Swing	20	60	16	79	175 (37%)
Other equipment	0	0	20	14	34 (7%)
TOTAL	31 (7%)	117 (25%)	72 (15%)	248 (53%)	468 (100%)

Table 14 Risk assessments on non-compliant items of equipment (Summer/Autumn 2017)

The high number of non-conformities and the corresponding risk presented by the equipment reviewed by the inspectors is reflected in the figures in the Table 15. It should be noted that when an item of equipment presented a number of non-compliances the non-compliance that presented the highest level of risk to the consumer was recorded as the level of risk for the item of equipment concerned.

The table shows that of the 468 non-compliant items of equipment inspected some 320 (68%) items presented either a high or a serious risk to children using the equipment. A review of the figures at **Fout! Verwijzingsbron niet gevonden.** shows that all seven types of equipment referenced in the table present a large number of risks in the ‘High’ or ‘Serious’ categories. Whilst recognising that there was no intention to inspect a statistically valid number of samples of the different types of playground equipment, it would seem from this limited sample that no particular type of equipment is less or more dangerous than the other types of equipment. This again emphasises the need for increased vigilance on the part of market surveillance authorities to ensure that the operators of playgrounds undertake regular inspections on all their items of equipment.



## 6 Liaisons

### 6.1 International stakeholders

At the start of the project the organisations listed in Table 15 were identified as being important stakeholders in relation to the Project and an invitation was extended to them to attend the 1st (Open) Project Group meeting held on 16 June 2016.

ANEC
BEUC
CEN Technical Committee 136 - Sports, playground and other recreational facilities and equipment - Sub-Committee 1 - Playground equipment for children
EuroSafe
Fair Play for Children
Federation of the European Play Industries
Register of Play Inspectors International (RPII)
RoSPA

*Table 15: List of stakeholders identified by the Work Package*

When the organisations could not attend the meeting, they were invited to make a written contribution outlining the issues they thought would be relevant to the conduct of the Project. Unfortunately, none of these organisations felt able to make a written contribution to the meeting.

ANEC suggested that the project should not just assess the safety of individual items of playground equipment, but the playground in which the equipment is situated. He drew attention to the fact that, over time, equipment can lose its structural integrity as a consequence of consumer wear, consumer abuse and the impact of the environment on the equipment etc., i.e. frost, snow, ice, rain, heat, corrosion of metal items, decay of wooden components etc. He also drew attention to the accident statistics relating to playground equipment and the importance of having the appropriate impact absorbing surfaces for each item of equipment.

ANEC was concerned about the lack of the regular inspection of playground equipment in a number of jurisdictions. He also suggested that, in a number of cases, when new equipment is installed some items are not supplied with valid certificates of conformity to the relevant part(s) of EN 1176. ANEC thought that the project should not include ‘water play’ equipment but should focus on indoor and outdoor playgrounds.

During the course of the 4th Project Group meeting the representative from the Latvian Consumer Rights Protection Centre referred to some correspondence she had initiated with CEN Technical Committee 136/SC1 concerning a request for interpretation relating to EN 1176-1 Clause 4.2.7.2 - Entrapment of the head and neck and EN 1176-5 - Clause 4.4 - User stations. A reply to her enquiry was received during the winter 2017/18. A copy of the request to CEN TC 136/SC1 and the response from their Interpretation Panel is given at Annex II.

At the 1<sup>st</sup> Project Group, the representative of the CEN TC 136 - SC1 drew attention to the work currently being undertaken within TC 136 - SC1 on the preparation of a Technical Report concerning the competence of inspectors of playground equipment and the quality of inspections. He said that work on this document was well advanced and hoped that a ‘draft for discussion’ would be available within the next month or so. He kindly agreed to send a copy of the latest version of the document, when it is available, to the Project Coordinator. TC136-SC1’s paper on this topic was received in time for the 2nd Project Group meeting and its contents were reviewed. Members found the section relating to the competence of playground inspectors of particular interest and agreed to review the paper again once a ‘publicly available’ version of the paper was published.

Members considered that this was a very important issue and highly relevant to the work of the project. They noted that only the Register of Playground Inspectors International (RPII) has currently published a scheme for the education and training of inspectors. They have also published an assessment scheme based on their syllabus so as to establish whether or not a candidate is competent to examine playground

equipment to the requirements of EN 1176 and EN 1177. The Working Group noted that the number of people who have qualified using the RPII's scheme is currently very low. They also noted that there are a number of other organisations currently offer training schemes for playground inspectors, but that they do not seem to offer a formally externally validated assessment scheme for their students at the end of their training.

The representative of the CEN TC 136 - SC1 also drew attention to the need to take a 'common sense' approach to the inspection of playgrounds and playground equipment. He thought it is not necessary to apply the provisions of EN 1176 too rigorously, but to review the risks, if any, posed by each item of equipment. He recognised that in some cases EN 1176 did not provide guidance on whether a particular feature on an item of playground equipment presented, or did not present, a hazard.

## 6.2 The training of inspectors

By the close of the Joint Action on Playgrounds CEN/TC 136 had not published its 'Technical Report', referred to at 6.1 above, concerning the requirements for the quality of inspections of public playground environments.

In November 2017, CEN TC 136 - SC1 had published a paper entitled: 'Final Draft - FprCEN/TR 17207 - Playground and recreational areas - requirements for quality of inspections and competence of inspectors. The Project Coordinator circulated copies to the members of the Project Group.

CEN state that 'The Report forms a guideline for the education, examination and evaluation of the inspectors' competence concerning public playground and recreational sports environments. For each specific task an inspector may need to perform, the guidelines describe the knowledge required by the inspector and also sets out the basic level of knowledge necessary to undertake this task.

Standard EN 1176 - 1 defines at Clauses 3.26, 3.27 and 3.28 and at EN 1176 - 1 - Clause 6.2 the different types, or levels, of inspection required to help provide a play environment that is suitable for children to play in. At EN 1176 - 7 - Clause 7 the standard discusses the inspection schedule that operators should adopt. It emphasizes that serious defects should be corrected without delay. If this is not possible, the equipment should be secured so that it cannot be used. The standard suggests that the different types of inspections demand different levels of knowledge. The types of inspection outlined in the standard are:

- routine visual inspection;
- operational inspection;
- annual main inspection;
- post-installation inspection.

The draft Guidelines at FprCEN/TR 17207:

- Describes the knowledge and experience the inspector needs for each specific task he/she may need to perform;
- Sets out the basic level of knowledge required of standards EN 1176-1 and EN 1177;
- Details the different types or levels of inspections required to help provide a play environment that is suitable for children to play in.
- Recognises that the different types of inspections demand different levels of knowledge and experience, i.e. routine visual inspections, operational inspection, annual main inspection and post-installation Inspection.
- Notes that there are also other inspections that are useful in helping to ensure the safe operation of a play environment, e.g. post-accident investigations.
- Includes a broad explanation of what these inspections are and how they should be performed.

CEN have stated that the Technical Report, when published, is not intended for use by certification bodies. They comment that, due to the variety of items that can be encountered in the playground environment, the Guidelines can be used only for the following equipment:

- Playground equipment EN 1176 part 1 - 11;
- Skateboard infrastructures EN 14974;

- Free access Multi Sport equipment EN 15312;
- Adventure Playgrounds;
- Outdoor Exercise Equipment;
- DIN 79000 Parkour equipment.

CEN recognise that equipment mentioned in the Guidelines will need to include other items that are on and around the play environment which may need to be assessed depending on their interaction with the play environment. It points out that users can access other items in the playground that may feature in informal play, e.g. gates, fences, plants, natural play features such as rocks, boulders, art features, etc. Since these features are not encompassed within the standards for playground equipment, they will require risk assessment. The authors of the Technical Report point out that a knowledge of the meaning and intentions of the parts of EN 1176 and EN1177 form a vital part of risk assessment procedure. The authors of the Report state that the Guidelines are not intended for use in assessing the safety of equipment against the following standards: EN 71 - Toys, EN 15567 - High Ropes, or EN14960 - Inflatable Equipment.

CEN also acknowledge that the inspector's task is to assess the general level of safety of the play environment and the equipment provided, based on the safety level, as it was when the equipment was installed. They suggest that the format of the inspection and the report, which forms the outcome of the inspection, will be defined between the provider of the inspection and the client (owner/operator).

The Project Group welcomed the fact that this paper is currently at the 'formal vote' stage and hopes that it will receive a positive vote from the CEN Member States. They recognise that, when published, it will make a significant contribution towards the education and training of inspectors of playground equipment across the EU.

The Project Group noted that RoSPA's booklet entitled: Inspecting 'Children's Play Areas'<sup>18</sup> is a useful addition to the literature on this topic. The booklet outlines the different types of inspection that should be undertaken, i.e. Routine inspections; Operational inspections and Annual Inspections and gives 'tips' on inspecting. The booklet also provides some useful checklists for inspecting the different types of equipment and for inspecting other items relating to the playground that have a bearing on its safety, such as: access to the site and its location; gates and dog grids; fences and hedges; signs; seats; litter bins; paths barriers and doors etc. Sadly, the checklists don't reference the relevant clauses in the standard, so those who undertake routine and operational inspections cannot check whether their equipment and/or their playground conforms to the requirements of EN 1176 (various parts) and EN 1177.

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<sup>18</sup> Inspecting Children's Play Areas. Royal Society for the Prevention of Accidents, Birmingham, UK. 3<sup>rd</sup> edition, 2015, ISBN 978-0-9549164-8-6.

## 7 Conclusions and lessons learned

### 7.1 Background information

The reports from the participating MS and stakeholders with an interest in the project indicate that, in many cases, not enough, or too little, attention has been paid to the maintenance of playground equipment over its lifetime. They point out that often the individual components of the equipment have been subject to rusting or rot, which renders them less sound from a structural point of view, than when they were installed.

Minding that this was the second Joint Action concerning the market surveillance of playground equipment, the Project Group was able to build on the policies and practices that were developed during JA 2007 - Playground equipment.

The conclusions and lessons learned during the project can be applied to a number of different key stakeholder groups, each of which can play an important role in ensuring that playground equipment is safe to use once it has been installed. They include:

- The manufacturers, importers distributors, installers and operators of playground equipment;
- The standardisation organisations, test labs and others who are responsible for specifying and ensuring the safety of this group of products when they are placed on the market;
- Those who are responsible for the maintenance of playgrounds and the various items of equipment that are installed on their premises;
- Those who are responsible for the training of inspectors of playground equipment;
- The market surveillance authorities that are charged with ensuring the playgrounds in their area of jurisdiction are safe for children to use;
- Those who use the equipment on a regular basis, i.e. children and their parents/carers, who are often able to see first-hand any safety issues that relate to a particular item of equipment. After all, they have to cope with any injuries that result from the equipment being unsafe and so have a very personal interest in the playgrounds in their locality providing a safe environment in which their children can play. This group of consumers are able to report very quickly to the operator of the playground at which the accident has occurred on the circumstances of any accident or 'near misses' and any dangerous features that the equipment may present as it ages.
- The European Commission, which promulgates legislation concerning the safety of different types of consumer products.

### 7.2 Manufacturers, importers, authorised representatives and installers of playgrounds

The fact that 165 (88%) of the 188 items of indoor playground equipment lacked one or more marking requirements and that 512 (62%) of the 828 items of outdoor playground equipment also lacked one or more of the markings specified at EN 1176: 1 - Clause 7 is disturbing as the marking requirements have been a feature of this standard since it was first published as EN 1176-1: 1998. The requirements cover:

- The provision of the name and address of the item's manufacturer, or authorized representatives;
- The year of manufacture;
- The basic level mark;
- The reference and date of the standard to which the product conforms;
- The type or serial number of the product provided by the manufacturer.

The reports on the majority of items of equipment showed that 3 or more of these items of information were lacking.

For those items of equipment that had technical non-compliances relating their original design and/or manufacture, it was not often possible for the market surveillance authorities to inform the manufacturer, importer, or the authorized representatives that the equipment concerned had faults, ab initio, which rendered the equipment unsafe. This was often because the equipment lacked details of their name and address, the year of manufacture of the equipment, the type and serial no of the product, or because the company manufacturing the product or importing it into the EU had ceased trading.

In those circumstances where the producer of a non-compliant item that had inherent design faults could be traced the economic operator was requested to remedy any design/production faults both at the playground being inspected and take steps to inform the operators of the playgrounds at any other locations at which they had installed the equipment that the equipment is non-compliant. In these circumstances the economic operator has an obligation to ensure that any equipment that was non-compliant at the time of its production is rendered both compliant and safe to use.

An analysis of Table 9 and **Fout! Verwijzingsbron niet gevonden.** show that the most common types of technical non-compliance in relation to the safety requirements specified in EN 1176 and, over which the manufacturer has control at the early stages of the product's inception, were:

- head/neck entrapment, clothing entrapment and/or finger entrapment;
- providing adequate protection against falls.

The Project Group noted that during the last few years there has been a trend for complex items of playground equipment to be manufactured on 'tailor made' or 'bespoke' basis for the playground in which it is to be located. In these circumstances the conformity of the equipment to the relevant safety requirements is difficult to achieve by testing the equipment in a laboratory and can probably be assessed when the product has been fully assembled. This could be undertaken by an independent inspector, or by a visit from an assessor appointed by a test lab that is experienced in assessing the safety of playground equipment.

This Project has shown that this key group of stakeholders needs to pay more attention to the design and testing of their products so that they are in conformity with the safety standards. The Project has demonstrated that the market surveillance authorities now have evidence that a significant number of suppliers are not ensuring that their equipment, at the time of its manufacture, are conforming to the requirements of the GPSD and the relevant safety standards.

### 7.3 Standardisation organisations and test laboratories

The Project Group were pleased to note that CEN Technical Committee 136/SC1 are keeping the standards relating to playground equipment under review and that during 2017 the following up-dated versions of EN 1176 and EN 1177 were published on their behalf by the national standardisation organisations:

- EN 1176-1; EN 1176-2; EN 1176-3; EN 1176-4; EN 1176-5; EN 1176-6.

The following updated parts of EN 1176 are scheduled to be 'voted on' during 2018:

- prEN 1176-5 - Playground equipment and surfacing - Part 5: Additional specific safety requirements and test methods for carousels
- prEN 1176-7 -Playground equipment and surfacing - Part 7: Guidance on installation, inspection, maintenance and operation

In addition, CEN has published, in the recent past, the following Technical Reports that supplement the information given in the various parts of EN 1176 and in EN 1177, viz.:

- CEN/TR 16396:2012 - Playground equipment for children - Replies to requests for interpretation of EN 1176:2008 and its parts;
- CEN/TR 16467:2013 - Playground equipment accessible for all children;

- CEN/TR 16598:2014 - Collection of rationales for EN 1176 - Requirements;
- CEN/TR 16879:2016 - Siting of Playground and other recreational facilities - Advice on methods for positioning and separation.

The latest Technical Report, CEN/TR 16879: 2016, is clearly of particularly useful for playground managers when installing new equipment.

The Project Group recognise that for test labs this is a difficult market in which to provide a testing service as the quantity of new items purchased, compared with the number purchased in other product lines such as toys, child care articles etc., is relatively low. Furthermore, these products are bulky and that, as a consequence, they are likely a fairly large amount of space within the lab is require when they are being tested. It is not surprising therefore that comparatively few labs offer to provide a service for testing this type of equipment.

Manufacturers and importers will, therefore, probably opt to ‘self-certify’ the product as conforming to the requirements of the relevant parts of EN 1176 and, where appropriate, EN 1177. This will need to be done with care and where they are in doubt as to whether they have interpreted the requirement of the standard will need to take expert advice on any issues on which clarification is required.

The development of the inspection market by Icelandic accreditation body represents the development of a new marketing initiative by a company that offers a certification and testing service for consumer products. It is an initiative that other test laboratories may wish to explore. In this connection playground operators will need to budget for both cost of the inspections and for any corrective action that is required should non-compliances be found. It is clear from the inspection reports that many playground operators have not used the services of a professional playground inspector for their annual inspection and that all playground operators need to address this issue should they not currently undertake an annual inspection of their equipment.

The Project Group note that the current range of standards within the scope of EN 1176 do not provide guidance on the ancillary items of equipment that are found in playgrounds and which may sometimes give rise to accidents. These ancillary items include the paths, plants, fences, gates, seats etc. inside the perimeter of the playground and other hazards such as roads, open water etc. that may be in areas adjacent to the playground. The Project Group believe that this is an area on which CEN could usefully provide a standard as part of the EN 1176 series of standards.

## 7.4 Training of inspectors

The development by CEN of FprCEN/TR 17207 - Playground and recreational areas - requirements for quality of inspections and competence of inspectors is warmly welcomed by the Project Group. The education and training of playground inspectors is a matter of both interest and concern as, until the publication of this provisional Report, no Europe-wide advice on the education and training of inspections has been available.

The task of training inspectors in the inspection of playground equipment is currently undertaken on a commercial basis by a number of organisations and by certain other organisations by ‘on the job’ training. These schemes are usually based on the person concerned completing a course of training, the curriculum for which is determined by the training provider concerned, rather than by their following a widely recognised and validated syllabus. Invariably those who complete these courses do not have their competence formally assessed through a combination of time constrained theoretical and practical examinations.

No figures are available concerning the number of inspectors of playground equipment in the EU who have undertaken training in the inspection of playground equipment and who have had their competence assessed after undertaking a time constrained examination of both their theoretical knowledge and understanding of the subject and an assessment of their practical competence to undertake this work. The number of formal qualifications in this subject would seem to be relatively few.



Examples of this type of training scheme are those offered by the Register of Play Inspectors International (RPII) and by RoSPA. Unfortunately, the number of inspectors who have secured these qualifications is pitifully low, with only about 80 active inspectors being listed on the RPII's website who are qualified to undertake indoor and/or outdoor annual inspections and a further 90 or so inspectors who are qualified to undertake the inspection of equipment at a designated school. The bulk of these inspectors are based in the UK, with a handful of inspectors based in SE Asia, Australia or New Zealand, 1 based in Ireland and 1 based in Poland.

It is to be anticipated that, when published, the CEN Technical Report 17207 will stimulate the development of nationally training schemes for the training of playgrounds inspectors. The Group hopes that these schemes will be accompanied by theoretical and practical examinations to test the competence of aspiring inspectors.

## 7.5 Maintenance of playgrounds and playground equipment

The results at Table 3 and **Fout! Verwijzingsbron niet gevonden.** show that in the case of indoor playgrounds 81 (48%) of the 188 items inspected were found to have technical non-compliances, and that for outdoor playgrounds the figures were 468 (57%) items from the 828 inspected.

The high number of items that were found to be non-compliant with regard to 'markings', 677 of the 1018 (67%) items inspected during the course of the project indicates that in many cases the operators of playgrounds did not ensure, prior to purchasing a new item of equipment, that it conforms to the requirements of EN 1176. This is particularly the case for indoor playground equipment where 88% of the items inspected were non-compliant from a marking point of view.

The proportion of technical non-compliances relating to items of equipment found in indoor playgrounds is very high considering that the bulk of these items of equipment are operated under constant adult supervision and can therefore be inspected easily by staff on a daily basis for safety issues. The number of non-compliant surfaces is also a matter for concern as inspectors reported that, in many cases, a fall from the equipment would result in a child falling onto a concrete surface, or one of another substance that affords little protection, e.g. a thin layer of carpet. The high level of non-compliant equipment being used in indoor settings highlights the need for operators of these playgrounds to ensure that their equipment is safe and complies with the GPSD and the relevant safety standards. It is a reminder that that equipment in indoor playgrounds should be subject to both 'Routine Visual' and 'Operational' inspections on a regular basis. In order to minimise the possibility of accidents occurring it is important that staff who work in these facilities are trained in the conduct of both types of inspection.

The results at **Fout! Verwijzingsbron niet gevonden.** and **Fout! Verwijzingsbron niet gevonden.** show, not surprisingly that, pro rata, outdoor playgrounds are likely to present a higher proportion of non-compliances than indoor playgrounds. The 468 (57%) items that were non-compliant with regard to technical issues were recorded as having a total of 181 non-compliances relating to falling space and a total of 382 non-compliances relating to surfacing issues. These are issues over which the operators of playground usually have a high degree of control when the equipment is installed and non-compliances in these categories should be exceptional rather than common.

These results from the inspection of outdoor playgrounds show that the operators of these playgrounds need to start a programme of undertake regular checks (i.e. routine and operational checks) to ensure their equipment is safe and that if any issues, particularly those relating to inadequate surfacing are found, then action is taken quickly to ensure compliance with the EN 1176. Surfacing can deteriorate quickly, particularly over the winter period, and therefore it needs to be checked on a regular basis to ensure it still retains its ability to afford effective protection against falls.

The Project Group was aware that the Joint Action has reviewed only the key safety requirements relating to the playground and its equipment, rather than the whole spectrum of safety issues concerning playground equipment that are specified in EN 1176 and EN 1177. This was principally in order to review the safety of as

many items of equipment as possible could be assessed during the course of the Project. The Group recognise that the inspectors, who are employed by the MSAs, are not experts in assessing certain of the more detailed requirements specified at EN 1176, such as the application of the various methods for calculating the structural integrity of items of playground equipment etc. and therefore these issues were excluded from the inspection regime.

The Project Group was also very conscious that the ancillary items in the playground can also present a high or serious risk to children and would ask playground operators to ensure that these items are included in their inspection regime. RoSPA's publications cited in this Report provide some guidance on this issue, but are probably not widely known outside the UK.

The issue of 'who owns the playground' was highlighted by the Latvian MSA as they found that, in a number of cases, no body or group of individuals had assumed responsibility for the management of certain playgrounds. The MSA has had some difficulty in persuading the relevant municipalities that they needed to assume responsibility for the management of these playgrounds, for putting them in good working order and for ensuring that they are subject to a regular programme of inspection. The Latvian example may be an extreme case of where no person, body or authority has taken responsibility for the management of a playground, but highlight the need for each playground to have a management group specifically established to ensure that it is well maintained and for individual members of the group to have responsibility for the various aspects of its management. This includes the keeping of records concerning the purchase of equipment, for recording details of the various inspections that are formally conducted internally and externally from time to time and for both taking and recording any corrective action that is taken when non-compliances are found.

## 7.6 Market surveillance authorities

The conduct of the inspections by members of the Project Group has highlighted the fact that, in certain jurisdictions, responsibility for the inspection of playgrounds and playground equipment that are 'in use' is shared by a number of regulatory authorities. As a consequence, no one person, or government department, has an overall picture of whether the playgrounds in their country really are safe and whether they are being inspected on a regular basis.

It is clear from the figures at Table 3 and **Fout! Verwijzingsbron niet gevonden.** that in some countries, e.g. Belgium and the Czech Republic, that playgrounds are inspected regularly and that, as a consequence, the items of equipment inspected presented relatively few 'technical' non-compliances. In other countries the number of technical non-compliances is high. This would seem to indicate that there is no legal requirement to ensure that all playground operators undertake regular inspections of their items of playground equipment, or at the very least, inspect them on an annual basis. One way forward could be for the MSAs responsible for playground safety in each jurisdiction to require the operator of each playground to submit an annual return detailing the regular, operational and annual inspections they have carried out during the period under review. This could be accompanied by details of any non-compliances found and the action they have taken to rectify the situation and ensure that the item of equipment concerned has been rendered safe or taken out of use.

It is not surprising that monitoring the safety of equipment that is already in use, irrespective of whether it is 'off the shelf' or 'tailor made' and apparently working well, has been afforded a relatively low priority in the inspection plans of some MSAs. The Project Group hopes that the number of non-compliances found in the inspected playground equipment will act as a spur to market surveillance authorities to re-evaluate the priority given to the inspection of playgrounds within their work plan. Furthermore, the group expects that should a follow-up market surveillance project be organised on playground equipment in the future, relatively fewer non-compliances will be found in the equipment installed on playgrounds.

## 7.7 Regular users

Children, parents and carers are those who use playgrounds and the equipment they contain on a very regular basis and are therefore probably in the best position to observe when an item of equipment is potentially unsafe, or where a lack of maintenance is likely to lead to an accident occurring. It is important that parent/carers play their part in the management of each playground and do not 'leave it to someone else' to take action when an item of equipment starts to degrade or become unsafe. It is recommended that contact points are established by the relevant authorities so that parents/carers can report any safety concerns about the playgrounds/playground equipment that is in use.

The operator of each playground needs to ensure there is a two-way communication between themselves and the users of playgrounds by ensuring that parent/carer representatives are full and active members of the management group. Parents/carers can also play a vital role in not only ensuring that the playground is safe, but in making recommendations for the playground's improvement. In the UK parents with an interest in children playing safely formed a charity back in 1972 (Safe Play for Children<sup>19</sup>) to promote safe environments in which children can play. The scope of the charity's work extends beyond playgrounds into other locations in which children, young and old, can play. There may be similar initiatives in other EU MS, but if such an organisation does not exist, it may be worthwhile parents/carers working together to establish a similar organisation in their own country and thereby increase the awareness amongst the wider population of the importance of promoting safe play.

## 7.8 European Commission

In earlier sections of this Report reference was made to the fact that 'estimates using the EU Injury Database (IDB) indicate that in the EU 28 MS approximately 137,000 accidents involving playground equipment occur annually to children 0-14 years of age and are serious enough to require a visit to an emergency department'. Reference was also made to the fact that, in many jurisdictions, responsibility for checking on the safety of playground equipment that is currently in use is often shared by a number of regulatory authorities, or in some cases, no authority has responsibility for checking on the safety of playgrounds and playground equipment.

The Project Group recognises that, whilst some accidents when using playground are inevitable, those caused by poorly maintained equipment or by 'life expired' equipment contribute to the high number of accidents across the Community. Similarly, inadequate surfacing also leads to a significant number of accidents. In order to reduce the number of accidents the Project Group recommends that the Commission consider whether legislation should be introduced to require the operator of each playground to conduct operational, regular and annual inspections of their playground and playground equipment; to report on the inspections and any remedial action undertaken to bring the equipment into compliance with EN 1176 and/or EN 1177.

This information should be sent to the competent MSA in each Member State. The annual inspections would need to be conducted by an appropriately trained inspector who is independent of the playground being inspected and not by staff from the MSA. The operational and regular inspections could be undertaken by the operator of the playground after their staff had been trained to the appropriate level. New equipment would also need to be inspected prior to it being brought into use.

It may take some time to introduce this legislation, as its introduction would require the training of an appropriate number of playground inspectors in each Member State. The publication of CEN/TR 17207 - Playground and recreational areas - Requirements for quality of inspections and competence of inspectors will be an important step forward in this respect and will provide an opportunity to 'kick start' the development of a curriculum for the training of inspectors in the conduct of annual inspections of playground equipment.

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<sup>19</sup> <http://fairplayforchildren.org/index.php>

Once plenty of inspectors have been trained to undertake this work, requirements should be introduced in the legislation to report annually on the results of playgrounds inspections in each country. Some MS may have legislation in place that already requires playground operators to report on the state of their playground equipment each year. Where such legislation is already in place, the Commission should be able to enquire the MS concerned how the legislation has been implemented, whether any lessons can be learned from the introduction of regulation on this issue and, if it has resulted in a reduction in the number of accidents occurring each year.

## Annex I Checklists for the inspection of playgrounds

[Not available to the public]

## Annex II - Request for interpretation by CEN of EN 1176-5

CEN/TC 136/SC 1

CEN	REQUEST FOR INTERPRETATION	Interpretation request Number 2017-07
Standard: EN 1176-5, EN 1176-1 Edition: 2008	Clause(s): EN 1176-5 clause 4.4 EN 1176-1 clause 4.2.7.2	Date of request: 14.08.2017 Member Body: Latvian Standard Ltd. (LVS)
Key-word(s) : head and neck entrapment, carousels, user stations		
<p><b>MB QUESTION:</b>            Clause 4.4. states:            „In addition to the requirements in EN 1176-1 regarding entrapment of body parts of users (e.g. arms and legs), care should also be taken regarding entrapment of clothing (e.g. jackets, body warmers), that could restrain users when getting off the carousel. [...]”            In accordance with clause 4.2.7.2 of the EN 1176-1:2008 „<i>Playground equipment and surfacing - Part 1: General safety requirements and test methods</i>” (hereinafter - standard EN 1176-1) requirements regarding head and neck entrapment are applicable for completely bound, partially bound and V-shaped openings with lower edge/an entrance more than 600 mm above the ground.            Given that the type B and mostly also type A carousels have a free height of fall less than 600 mm, theoretically the requirements set out in clause 4.2.7.2 of the standard EN 1176-1 are not applicable, therefore there are no specific requirements for carousels for head and neck entrapment.            However, in practice there are cases where children also use the user stations sitting on the seat conversely, or where children use a carousel sitting on the construction elements. In these cases, given that carousels are equipment causing a forced movement, our experts perceive a problem, namely entrapment hazard in completely bound and V-shaped openings.            Head and neck entrapment hazard is also in the swing seats, but since the free height of fall from the swing seats is generally more than 600 mm, in our view, in this case, the requirements of clause 4.2.7.2 of the standard EN 1176-1 for head and neck entrapment are applicable.            The MSA attached a number of photographs of equipment and their elements to support their assertion that this issue required clarification.</p> <p><b>Question</b>            Are the requirements of clause 4.2.7.2 of standard EN 1176-1 for head and neck entrapment applicable to swing seats? Should the requirements of clause 4.2.7.2 of standard EN 1176-1 regarding head and neck entrapment apply to carousel seats and therefore would be a need for amendments to standard EN 1176-5?            The Interpretation Panel have drafted a reply to Latvia in relation to this enquiry. By the close of the Joint Action on Playgrounds a formal reply to Latvia’s ‘Request for Interpretation’ had not been received from CEN TC/136/SC1. The following informal comment has, however, been received from the Panel:</p> <p><b>Comments/proposal for an answer:</b>  <b>Swing seat:</b>            The general requirement in EN 1176-1:2008, chapter 4.2.7.2 is that all completely bound openings with a lower edge more than 600 mm above ground shall be tested.            In EN 1176-2:2008 chapter 4.5 is a specific exemption for swing seats:  <i>The triangular openings formed by the chain or suspension members branching towards the swing seat are exempt from the requirements of EN 1176-1:2008, 4.2.7.2.</i>            In addition, see Interpretation 2016-09 Comments</p> <p><b>Carousels:</b></p>		



Generally, there are no specific tested requirements in addition to EN 1176-1.

EN 1176-5:2008 chapter 4.4 describes some possible hazards, although no strict requirements are given.

Risk assessment shows for each individual case the level of risks. Design should be carried out according the result of the risk assessment.

Note: WG14 to consider if any further specific requirements are justified as part of the revised version currently in preparation.

## ANNEX III - Market surveillance of playground Equipment in Iceland

### *Legal situation (and differences)*

The surveillance of 'new' playground equipment placed on the market is in the hands of the Consumer Agency, cf. IS Regulation No. 942/2002, as amended. On the other hand, the local health authorities in the respective municipalities, after receiving applications, issue the operating licences if all conditions are met by the applicant, such as the obligation to ensure regular inspections of the playground(s) in question. The operators must immediately inform the relevant health inspectorate if any non-conformities do occur in respect to their operation and conditions for their licences. It is the responsibility of each health authority to decide further on which surveillance procedures they follow, for example, how and when licences are withdrawn if requirements, such as annual inspections are not met, etc.

Playground inspections should be done in the following ways according to the provisions of Icelandic Regulation No. 942/2002 as amended, cf. Annex III of the Regulation. The Regulation stipulates that the operator is obliged to perform daily inspections, the objective of which is to detect obvious dangers linked to damage, weather or daily use of the playground equipment. At elementary schools and kinder gardens, it is common that the inspection is performed daily, but typically is not done as frequently at open public playgrounds. There is also a regular operating inspection required at longer intervals, normally 3 months, which is more detailed than the daily inspections and the objective here is to inspect for example the stability of playground equipment and the general safety of the playground area. Finally, the Icelandic regulation sets, as a condition for the operating license, that every 12 months the operator is responsible to have an annual general inspection to be performed by an accredited inspection body in order to confirm, for instance, the safety of the equipment, surface and the environment in general of the playground, etc. It is stipulated as a condition for the licence to operate playgrounds that all the aforementioned inspections are to be done in accordance with a checklist based on provision of ÍST EN 1176 and ÍST EN 1177.

The Consumer Agency during this Joint Action has been informed that only few of operators of playgrounds have contacted the accredited inspection body to undertake the obligatory annual general inspection of the playgrounds, as is required by the Icelandic Regulation, in order to assess whether the playground equipment in use meet, or continue to meet, the requirements of ÍST EN 1176 and/or ÍST EN 1177. From the investigations and information gathered by the Consumer Agency in this project the main reason given by the operators of playgrounds is that these annual general inspections are too costly for them, at least for many of the public operators at the municipality level. Many of these public authorities have their own inspectors to carry out their annual inspections of the playgrounds that they are operating.

### *Legal responsibility*

According to law No. 7/1998 - On hygiene and pollution prevention, as amended, the Environment Agency has the responsibility to coordinate the general work of the 10 local health inspectorates and authorities that are established in the country. The Environment Agency therefore has a coordinating role when it comes to the inspection of playgrounds according to Law No. 7/1998 and the Regulation on hygiene No. 942/2002, as amended. The local health inspectorates issue licences to playground operators and monitor and verify that inspections are being done. In practice, according to information from different parties, these local health inspectorates have different approaches to this surveillance and no central authority collects data to oversee that the playgrounds are indeed inspected once a year as is required by the IS regulation. Also, there is no central authority that monitors if non-conformities contained in the reports are fixed within the normal 3 months delay that is commonly stated in the reports of the accredited inspection body in Iceland.

## Inspections

Attention was drawn to the following features that are perhaps of special concern in relation to the playground safety within Iceland, viz.:

- (i) that the outdoor playgrounds in use need special attention due to the inclement weather e.g. snow, etc.,
- (ii) the mandatory annual general inspection is to be performed by an accredited inspection body. The accredited inspection body in Iceland is the only company that has been accredited to perform the annual inspections in Iceland.
- (iii) that several examples can be found of playgrounds where parents and/or community groups have undertaken to design and construct outdoor playground equipment and create playgrounds with a more 'natural' design.
- (iv) most playgrounds are however owned and operated by public authorities, namely the local municipalities that operate both kindergartens, municipal schools and other such public facilities that are under the sole responsibility of these local authorities and where they install playgrounds as well. In addition, licenses for operation are issued by the local health authorities.

## Number of playgrounds in Iceland

### Outdoor playgrounds

In Iceland, there is no central authority that has an overview of the total number of all playgrounds in Iceland that at present have operating licences. The information at Table 16 gives the most recent number of playgrounds according to information that the Consumer Agency has received from the relevant 10 local health authorities.

Health inspectorates	Schools	Kindergartens	Open playgrounds	All playgrounds
Austurland	15	9	40	64
Hfj. Kóp	30	52	4	86
Kjós	7	9	45	61
Norðurland Eystra	25	28	54	107
Norðurland Vestra	11	11	30	52
Reykjavík	45	100	50	195
Suðurland	-	-	-	60
Suðurnes	12	14	32	58
Vestfirðir	-	-	-	37
Vesturland	13	15	[No information available]	28
<b>Total all playgrounds</b>				<b>748</b>

Table 16: Number of outdoor playgrounds registered at 10 health authorities in Iceland

### Indoor playgrounds

According to information from the accredited inspection body in Iceland, only one indoor playground area has been inspected in the last five years by them. Currently at least 4 indoor playgrounds are operated in Iceland according to the information that the Consumer Agency has estimated. However, the Consumer Agency was not able to establish the total number of indoor playgrounds currently operating. One indoor playground was closed down by Reykjavík's Health Inspectorate in 2017 because of the lack of hygiene and unsafe playground equipment.



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