Italia

# TEST REPORT
## *RAPPORTO DI PROVA*

## CONFORMITY TEST ACCORDING TO EN 1176:2008 ON PLAYGROUND EQUIPMENT
## *PROVE DI CONFORMITA' IN ACCORDO ALLA EN 1176:2008 SU ATTREZZATURE PARCHI GIOCO*

**Customer *(Richiedente):***

- Dept./Firm *(Ente/Società):* METALCO SPA
- Mr./Mrs *(Sig./Sig.ra.):* Raffaele Lazzari
- Address *(Indirizzo):* Via Fornace, 44 31033 Castelminio di Resana (TV)

| | |
|---|---|
| Test Request Form no.:<br>*Modulo Richiesta Prova n.:*<br>MEC 14160.00 | Test Report sent to:<br>*Rapporto inviato a:*<br>Raffaele Lazzari |
| Name and Signature of the test engineer:<br>*Nome e Firma esecutore prova:*<br>Matteo Neri | Name and Signature of the Technical Reviewer:<br>*Nome e Firma del Revisore Tecnico:*<br>Paolo Bertotti |
| Date of test samples receipt:<br>*Data ricevimento campioni:*<br>From 2014.11.20 to 20143.11.21 | Date of test execution:<br>*Data esecuzione prove:*<br>From 2014.11.20 to 20143.11.21 |
| Site of test execution (if different from the address in the footer):<br>*Località esecuzione prove (se diversa dal piè pagina):*<br>Metalco Via Fornace, 44 31033 Castelminio di Resana (TV) | Witness to the test:<br>*Presenti alle prove:*<br>Ernesto Collino |

The test results contained in this Test report relate to the tested samples only.
*I risultati del presente rapporto di prova si riferiscono esclusivamente al campione sottoposto a prova.*





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# 1 TEST SETUP
*SETUP DI PROVA*

## 1.1 SAMPLE IDENTIFICATION
*IDENTIFICAZIONE CAMPIONE*

| | |
|---|---|
| **1.1.1 Product/material subjected to test:**<br>*Prodotto/materiale sottoposto a prova:* | Playground Equipments |
| **1.1.2 Description:**<br>*Descrizione:* | Free standing slides |
| **1.1.3 Level (Series product, prototype, etc.):**<br>*Livello (Prodotto di serie, prototipo, ecc.):* | prototipe |
| **1.1.4 Part number:**<br>*Codice prodotto:* | J601 |
| **1.1.5 Serial number:**<br>*N° Matricola:* | Na |
| **1.1.6 Sample identification code:**<br>*Codice identificativo del campione:* | Na |

| | |
|---|---|
| **1.2 AUXILIARY DEVICES**<br>*DISPOSITIVI AUSILIARI* | None |
| **1.3 TEST CONFIGURATION**<br>*CONFIGURAZIONE DI PROVA* | Operanting |
| **1.4 DIAGNOSTIC SYSTEM**<br>*SISTEMA DIAGNOSTICO* | Visual inspection |



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## 2 TEST LIST
*ELENCO DELLE PROVE*

| Test Description | Reference document | Standardized | Differencies |
|---|---|---|---|
| **2.1 Safety Requirements** *Requisiti di sicurezza* | EN 1176-1:2008 §4 and sub clauses | Yes | None |
| **2.2 Test methods and reports** *Metodi di test e rapporto di prova* | EN 1176-1:2008 § 5 and sub clauses | Yes | None |
| **2.3 Information to be provided by the manufacturer/supplier** *Informazioni che devono essere fornite dal produttore/rivenditore* | EN 1176-1:2008 § 6 and sub clauses | Yes | None |
| **2.4 Marking** *Marcatura* | EN 1176-1:2008 § 7 and sub clauses | Yes | None |
| **2.5 Safety Requirements** *Requisiti di sicurezza* | EN 1176-3:2008 §4 and sub clauses | Yes | None |
| **2.6 Additional type requirements** *Requisiti addizionali* | EN 1176-3:2008 §5 and sub clauses | Yes | None |



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## 3 TEST EQUIPMENT USED
*APPARECCHIATURE UTILIZZATE*

| Description | Manufacturer | Model | Serial no./ID | Used in test n.: |
|---|---|---|---|---|
| DYNAMOMETER | AEP Transducers | DNA 500 Kg | 715554 | § 5 |
| Calibro digitale 150 mm | Mitutoyo | Code N°: 500-181U Model N°:CD-15CP | 02080451 (CLB_04) | § 5 |
| Inclinometro digitale | Mitutoyo | Pro 3600 | 950-316 (INC_38) | § 5 |
| Flessometro analogico/digitale | BOSCH | DMB 5 plus | 0 603 096 402 (FLE_144) | § 5 |
| Astina 8 mm | TUV ITALIA | Astina 8 mm - EN 1176 | AST_23 | § 5 |
| Astina 8,6 mm | TUV ITALIA | Astina 8,6 mm - EN 1176 | AST_24 | § 5 |
| Astina 12 mm | TUV ITALIA | Astina 12 mm - EN 1176 | AST_25 | § 5 |
| Astina 25 mm | TUV ITALIA | Astina 25 mm - EN 1176 | AST_26 | § 5 |
| Alamaro | TUV ITALIA | Catena Ø 3,2mm, | ALA_27 | § 5 |
| Sagoma C tras. | TUV ITALIA | Sagoma C - 89 mm | SAG_31 | § 5 |
| Sagoma D tras. | TUV ITALIA | Sagoma D - EN 1176 Ø 230 mm | SAG_32 | § 5 |
| Sagoma E tras. | TUV ITALIA | Sagoma E Ø 130 mm [Teflon] | SAG_33 | § 5 |
| Sagoma V | TUV ITALIA | Sagoma V EN 1176 | SAG_34 | § 5 |
| Anello | TUV ITALIA | Anello di prova Øint. 44 mm Altezza 22 mm | ANE_35 | § 5 |



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## 4 ENVIRONMENTAL CONDITIONS
*CONDIZIONI AMBIENTALI*

**4.1 ROOM TEMPERATURE** 25°C
*TEMPERATURA AMBIENTE*

**4.2 RELATIVE HUMIDITY** Na
*UMIDITA' RELATIVA*

**4.3 PRESSURE** Na
*PRESSIONE*

## 5 MEASUREMENT UNCERTAINTY
*INCERTEZZA DI MISURA*

Measurement uncertainties was estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Declared uncertainties are obtained with factor k=2 except if otherwise specified.

| Measurement | Expanded uncertainty | Found in test n.: |
|---|---|---|
| Forces | 0/+5% | § 2.3 |
| Time | ± 5 s | § 2.3 |

## 6 SAMPLING PLAN
*PIANO DI CAMPIONAMENTO*

Sample selected by the customer.



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## 7 TEST AND/OR MEASUREMENT RESULTS
*RISULTATI DELLE PROVE E/O MISURE*

### 7.1 TEST N.1
*PROVA N.*

| *Clause* | Requirement -Test | Measuring result - Remark | Verdict |
|---|---|---|---|
| 4 | ***Safety requirements*** | | |
| 4.1.1 | ***Materials***<br><br>*Materials shall conform to 4.1.2 to 4.1.5. Materials shall be selected and protected such that the structural integrity of the equipment manufactured from them is not affected before the next relevant maintenance inspection.* | Structure or components made with the following material:<br>Frame made in Stainless steel<br>Other parts made in Polyethylene material<br>For reference, see technical data sheet. | P |
| 4.1.2 | ***Flammability***<br><br>*To avoid the risk of fire and associated hazards, materials known to produce surface flash shall not be used. Particular attention should be given to newly developed products whose properties might not be fully known.* | No parts of these equipments with textile material | N/A |
| 4.1.3 | ***Timber***<br><br>*Wood preversation by construction* | No timber parts | N/A |
| | ***Timber with constantly earth contact***<br><br>*Resistance class 1 and 2 in accordance to EN 350-2:1994, constructive methiods, timber preservation* | | N/A |
| | ***Ply wood***<br><br>*in accorance with EN 636-3:2006* | No ply wood parts | N/A |



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| Clause | Requirement -Test | Measuring result - Remark | Verdict |
|---|---|---|---|
| 4.1.4 | ***Metals***<br><br>*Wether resistant,*<br>*metals that produce toxic oxides that scale or flake shall be protected by a non-toxic coating.* | All metal parts are protecting against corrosion by varnish layer or zinc treatment. | P |
| 4.1.5 | ***Synthetics***<br><br>*If, during maintenance, it is difficult to determine at what point material becomes brittle, manufacturers shall give an indication of the time period after which the part or equipment should be replaced.* | | P |
| | *Consideration should also be given to degradation of structural components through ultraviolet influences.* | | N/A |
| 4.1.6 | ***Dangerous substances***<br>*Dangerous substances shall not be used in playground equipment in such a way that they can cause adverse health effects to the user of the equipment.* | No dangerous substances.<br>See technical data sheet of paint and plastic material. | P |
| 4.2 | ***Design and manufacture***<br><br>*Equipment where the primary play function is augmented by a secondary motion, e.g. rocking and/or rotating, shall conform to the additional parts of EN 1176 relating to both play functions, as appropriate, unless the equipment is specifically covered in just one of the additional parts of EN 1176.* | Structure open for young children and of less able or less competent child.<br><br>No water stagnation in the equipments | P |
| 4.2.1 | ***Gaming risk***<br><br>*The dimensions and degree of difficulty of the equipment should be suitable for the intended user group. The equipment should be designed so that the risk involved in play is apparent and foreseeable by the child.* | The equipment are designed so that the risk involved in play is apparent and foreseeable by the child. | P |
| | *Except when intended for water play, all parts of playground equipment should be designed so that they do not accumulate water.* | No water play | NA |



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| Clause | Requirement -Test | Measuring result - Remark | Verdict |
|---|---|---|---|
| 4.2.2 | ***Structural integrity***<br><br>*Calculation or physical testing* | Test in according to sub clause „C“;<br>Calculation in according to EN 1176 part 6. | P |
| 4.2.3 | ***Accessibility for adults***<br><br>*Playground equipment shall be designed to ensure that adults are able to gain access to assist children within the equipment.* | No closing parts of the equipments, adults can help the child during the play activities. | P |
| 4.2.4 | ***Protection against falling*** | H | |
| | *ee Figure 8* | | |
| | *For equipment other than that which is easily accessible, guardrails shall be provided when the platform is 1 000 mm to 2 000 mm above the playing surface. Height of the guardrail: 600 mm < x > 850 mm.* | | P |
| | *For easily accessible equipment barriers shall be provided when the platform is more than 600 mm above the playing surface. For equipment other than easily accessible, barriers shall be provided when the platform is more than 2 000 mm above the playing surface.*<br>*Height of the barriers: > 700 mm* | | P |
| 4.2.5 | ***Finish of equipment***<br><br>*Wood contains low aamounts of splints, other materials (e.g. glass fibre) shall be non-splintering.*<br>*No protruding nails, wire outstanding free ends or pointed or sharp parts* | All surface are smooth, no free burs or sharp edges. | P |
| | ***protruding scews***<br><br>*permanently covered or less than 8 mm protruding, or minimum 3 mm radius* | All nut or end of screws are protect by plastic taps or special screws with semi spherical head are used. | P |
| | ***Corners and edges***<br><br>*Corners, edges and projections with a radius less than 3mm may be in other accessible parts of the equipment only if they are not sharp.* | All ends are rounded with minimum radius 3 mm | P |



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|---|---|---|---|
| 4.2.6 | ***moving parts***<br><br>*- no crushing points or shearing points*<br>*- Parts from which a high impact force can emanate should have an attenuating construction.*<br><br>*- If moving parts of the equipment can endanger the body, there shall be a ground clearance of at least 400 mm to the ground.* | In all cases is prevent the shearing or squeezing effect with a 25 mm gaps between moving and fixed parts. | P |
| 4.2.7 | ***Protection against entrapment*** | H | |
| 4.2.7.2 | ***Entrapment of the head and neck***<br><br>*no head and neck entrapment*<br>- *completely bound openings through which a user may slide feet first or head first;*<br>- *partially bound or V-shaped openings;*<br>- *other openings (e.g. shearing or moving openings).* | Equipments easily accessible,<br>On the completely bound opening no parts of the equipments where the probe C or E pass, the probe D pass also.<br>On the partially opener, no neck entrapment when tested in according to the probe D 2<br><br>No cases with stage 2 are present. | P |
| 4.2.7.3 | ***Entrapment of clothing/hair***<br>- *gaps or V-shaped openings in which a part of clothing can become trapped while or immediately before the user is undergoing a forced movement;*<br>- *protrusions; and*<br>- *spindles/rotating parts* | No clothing or hair entrapments | P |
| 4.2.7.4 | ***Entrapment of the whole body***<br>*- tunnels into which children can crawl with their whole body; and*<br>*-suspended parts which are heavy or have rigid suspension.* | No tunnel or parts of the equipments with possibility to trap. | N/A |



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| 4.2.7.5 | ***Entrapment of the foot or leg***<br>*- completely bound rigid openings in surfaces on which children can run or climb; and*<br>*- footholds, handholds, etc. extending from these surfaces.* | No walking surface | N/A |
| 4.2.7.6 | ***Entrapment of fingers***<br>- *gaps in which fingers can be trapped whilst the remainder of the body is moving or continues in forced movement, for example sliding, swinging; and*<br>- *variable gaps (excluding chains).* | No open tube.<br>All tube extremities and others holes are covered by plastic taps to prevent finger entrapments.<br>Where the 8 mm finger rod passes through the opening, the 25 mm finger rod (see Figure D.10 b)) also pass through the opening, provided that the opening does not permit access to another finger entrapment site.<br>No entrapment on the chain | P |
| 4.2.8 | ***Protection against injuries during movement and falling*** | H | |
| 4.2.8.1 | ***Determination of free height of fall***<br>*Unless stated otherwise, the free height of fall shall be as given in Table 2.*<br>*In the case of roofs, or other features not intended for play, it is not required for them to be included in the free height of fall where access has not been encouraged.* | The safety instruction are clear and contain the correct information for the complete setting of area (foundation, restrict area for other accessories, etc.).<br>See technical draws | P |
| 4.2.8.2 | ***Determination of spaces and areas*** | | |
| 4.2.8.2.3 | ***Minimum space*** | | |
| | **Dimensions**<br>*See table 3* | | |
| | *Fireman's poles that are accessed via a platform or other starting point shall have a clearance of at least 350 mm from the pole to the edge of the adjacent structure.* | The determination of free space necessary around the equipments is described in the technical draws of singular equipments. | P |



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| Clause | Requirement -Test | Measuring result - Remark | Verdict |
|---|---|---|---|
| 4.2.8.2.4 | ***Extent of the impact area***<br><br>*See picture 17* | See single assembly and installation draws of the manufacturer<br>Safety area and safety space are marked. | P |
| 4.2.8.2.5 | ***Extent of the falling space***<br><br>*In most cases there may be overlapping of falling spaces including impact areas. Unless specified in other parts of this standard, overlapping of the falling space where forced movement exists should not occur.* | The determination of minimum dimension of safety area necessary around the equipments is described in the technical draws of singular equipments. | P |
| 4.2.8.3 | ***Protection against injuries in the free space for users undergoing a movement that is forced by the equipment***<br>*Unless stated otherwise, there shall be no overlapping of adjacent free spaces, or of free space and falling space.*<br>*The free space shall not contain any obstacles that interfere with the passage of a user whilst undergoing a forced movement e.g. tree branches, ropes, cross beams etc.* | No obstacles are allowed on the safety area.<br>See single assembly and installation draws | P |
| 4.2.8.4 | ***Protection against injuries in the falling space***<br><br>*Not any obstacles onto which a user could fall and cause injuries, e.g. posts not flush with adjacent parts or exposed foundations. The following parts of play structures may be in the falling space:*<br>- *adjacent parts of play structures with a difference in free height of fall of less than 600 mm;*<br>- *parts of the equipment bearing or containing the user, or helping the user to keep balance;*<br>- *parts of the equipment with an inclination of 60° or more from the horizontal.* | No exposed foundation.<br><br>See assembly and installation of the equipments.<br><br>No other parts of the equipments or other obstacles are allowed in the safety space.<br><br>See single assembly and installation draws | P |



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|---|---|---|---|
| 4.2.8.5 | ***Protection against injuries from the surface of the impact area***<br><br>*Impact area in accordance with the height of fall*<br>*If loose particulate material is used it shall be installed to a layer thickness of 100 mm more than that determined by testing to EN 1177 to achieve the required critical fall height.*<br><br>*Adjacent platforms*<br>*If the free height of fall between adjacent platforms is more than 1m, the upper surface of the lower platform shall present the necessary impact attenuating properties.* | In the instruction of installation is described to avoid corners or risk of injury in the safety and adjacent area. | P |
| 4.2.8.6 | ***Protection against injuries due to other types of movement***<br>No any obstacles that the user is not likely to expect and which could cause injuries if hit by the user. | No protrusion parts of the equipments. | P |
| **4.2.9** | ***Means of access*** | | |
| 4.2.9.1 | ***Ladders***<br><br>- *The spacing of the rungs or steps shall conform to the head entrapment requirements*<br>- *Rungs and steps shall be non-rotating and equally spaced.*<br>- *Wooden components shall have positive connections that cannot be undone or shifted.*<br>- *There shall be an unobstructed space at the rear of the ladder of at least 90 mm from the centre of the rung or tread*<br>- *Rungs and steps shall be horizontal to within ± 3°.*<br>- *Ladders shall have rungs and/or styles that conform to the requirements for grasp or shall have handrails that conform to the requirements for grip* | | P |



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| 4.2.9.2 | ***Stairs***<br><br>- *protection against falling.*<br>- *Guardrails for platforms up to 1 m in height*<br>- *Guardrails and/or barriers from the first step*<br>- *set of stairs is higher than 1 m and of a greater inclination than 45°, the barrier shall comply with the requirements for grasp or a handrail shall be provided.*<br>- *inclination of stairs shall be constant and the stairs shall have at least three risers. Openings shall conform to the entrapment requirements given in 4.2.7.2. The treads shall be spaced equally, shall be of uniform construction, and shall be horizontal within ± 3°.*<br>- *To provide adequate space for standing, the minimum projection of tread shall be 140 mm and the minimum depth of tread shall be 110 mm, (see Figure 21).*<br>- *Where the overall height of the set of stairs is more than 2 000 mm above ground level, intermediate landings shall be provided at height intervals not exceeding 2 000 mm. The line of the stairs shall not be continuous, but shall be offset by at least the width of the set of stairs, or shall change direction by at least 90°. Intermediate landings shall be at least as wide as the set of stairs and at least 1 000 mm long.* | | N/A |
| 4.2.9.3 | ***Ramps (38°)***<br><br>*-horizontal (+/- 3°)*<br>*- guardrail to platforms up to1 m*<br>*- guardrail or rail from the beginning* | | N/A |



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|---|---|---|---|
| 4.2.9.4 | ***Steep play elements***<br><br>*For steep play elements provided on easily accessible parts of equipment the opening in the barrier shall be 500 mm maximum and the free height of fall of the platform shall be 2 000 mm maximum.* | | N/A |
| 4.2.10 | ***Connections***<br><br>*removable only with a tool* | Connections are secured such that they cannot come loose of their own accord unless specifically designed to do so.<br>Connections are safeguarded by self-locking nuts and are not possible disassembly without tools. | P |
| 4.2.11 | ***Consumable components***<br><br>*removable only with a tool* | Note on the maintenance inspection are indicate to control and in case substitute the bearings when damage.<br>The swing nest the bearings are substitute by nylon bearing. | P |
| 4.2.12 | ***ropes*** | | |
| 4.2.12.1 | ***Ropes fixed at one end***<br><br>*Distance min 600 mm for H <2 m*<br>*Distance min 900 mm for H> 2 m*<br>*Min distance 1 m to parts of equipment H between 2 to 4 m*<br>*Rope ∅ = 25 </ = x </ = 45 mm*<br>*Combination with swings inadmissible* | No ropes | N/A |
| 4.2.12.2 | ***Ropes fixed at both ends (climbing ropes)***<br><br>*- No loop, which fits in the specimen C*<br>*- Rope ∅ = 16 </ = x </ = 45 mm*<br><br>*Additional requirements for ropes on ramps!*<br>*-No overlapping edge over ramps*<br>*Max amplitude. 20% length* | See above | N/A |



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|---|---|---|---|
| 4.2.12.3 | ***Steel ropes***<br>*- No torsion,*<br>*- Corrosion-resistant*<br>*-Ferrules shall conform to EN 13411-3 and the rope end shall coincide with the edge of the grip.*<br>*-Rope grips shall be in accordance with EN 13411-5.* | No steel ropes | N/A |
| ***Clause*** | ***Requirement -Test*** | ***Measuring result - Remark*** | ***Verdict*** |
| 4.2.12.4 | ***Sheathed wire ropes***<br>*-No monofilament or split yarns.* | No monofilament ropes. | N/A |
| 4.2.12.5 | ***Fibre ropes (textile type)***<br>*Fibre ropes shall either:*<br>*-conform to EN ISO 9554 or EN ISO 2307, or*<br>*- manufacturer shall supply a works certificate stating the material used and the safe working load.*<br>*- soft and nonslip covering of strands* | No textile ropes. | N/A |
| 4.2.13 | ***chains***<br>max. 8,6 mm<br>Verbindungsstellen 8,6 < x > 12 mm<br>*max. 8.6 mm*<br>*connections 8.6 <x> 12 mm* | No chain | N/A |
| 4.2.14 | ***foundations***<br>*-Loose-ground: 400 mm below ground or*<br>*-Tops tapered 200 mm below ground or*<br>*-Covered-by components from above* | The minimum deeps of foundations are at 400 mm to the ground level or playing surface.<br>The top of foundation surface are locate at 200 mm minimum below the playing surface | P |
| 4.2.15 | ***Heavy suspended beams***<br>*- Mass of </ = 25 kg*<br>*- Minimum ground clearance of 400 mm*<br>*- Changes in the beam profile with a radius of at least 50 mm*<br>*- The range of movement not exceed 100 mm and shall not go beyond the support posts.*<br>*- Distance between the support post and the heavy suspended beams shall be less than 230 mm throughout its full range of movement.* | No heavy suspended beans | N/A |



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| *Clause* | Requirement -Test | Measuring result - Remark | Verdict |
|---|---|---|---|
| 6 | ***Product information prior information, installation instructions, Maintenance in tasks***<br><br>*-Installation instructions*<br>*-Max weight*<br>*-Installation time*<br>*-Special Tools*<br>*-Foundation plan*<br>*-Hazards indication to cardinal direction*<br>*-Safety free space*<br>*-Required fall protection*<br>*-Maintenance means*<br>*-Maintenance cycles*<br>*-Control information* | The following documents are available:<br>- Installation instructions<br>-Max weight<br>-Installation time<br>-Special Tools<br>-Foundation plan<br>-Hazards indication to cardinal direction<br>-Safety free space<br>-Required fall protection<br>-Maintenance means<br>-Maintenance cycles<br>-Control information | P |
| 7 | ***Marking***<br><br>- *Name / address of the manufacturer*<br>*- equipment reference and year of manufacture*<br>*- Number and date of this European Standard: EN 1176-1:2008.*<br>*- Basic level mark* | All equipments are identify with a permanent marking with the following information:.<br><br>Name and full address of the manufacturer;<br>Code of equipments;<br>Standard reference. | P |
| | ***Documentation***<br><br>*drawings*<br>*material certificates*<br>*calculations* | The following documents are available:<br><br>Drawing,<br>Material certificates<br>calculation | P |



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**EN 1176-3:2008**

| *Clause* | Requirement -Test | Measuring result - Remark | Verdict |
|---|---|---|---|
| **4 Safety requirements** | | | |
| 4.1 | **General**<br>Slides shall conform to EN 1176-1 unless otherwise specified in this part of EN 1176. | See part 1 of EN 1176 on this test report | |
| | **NOTE** This part of EN 1176 contains a number of requirements that will help limit the speed of the user whilst using slides. However, the coefficient of friction of sliding surfaces is highly dependant on the type of textile clothing worn by the user, material of the slide, weight of the user and weather conditions. It is therefore recommended that long slides are designed to ensure speed of the user is sufficiently controlled e.g. changes in direction of the sliding section. | | H |
| 4.2 | **Access** | | |
| | **Free-standing slides**<br>Max. 2,5m height without a change in direction or offset, by a minimum width of the means of access. | 1,4 m | P |
| | **Easily accessible slide**<br>Free height of fall max. 2 m or additional requirements (see 4.3.2 and Table 1). | Max height 1,400 mm. | P |
| | **Crossbar**<br>- shall be provided for attachment slides with a fall height greater than 1 m.<br>-600 mm and 900 mm above the starting section<br>- the area of the starting section between the crossbar and the platform is same as platforms.<br>Such requirements include the height of guard rail or barrier. | Crossbar at 600 mm. | P |
| 4.3 | **Starting section** | | H |
| 4.3.1 | **Length and angle**<br>- length min. 350 mm<br>- decline 0° to 5°<br>-platform may be as starting section | When measured at max 5 ° slope the length of the start area is < 360 mm<br>See copy of technical documentation | P |



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| 4.3.2 | **Guarding section**<br>conforming to DIN EN 1176-1, when<br>- length of the starting section >400 mm<br>- easily accessible free height of fall> 1 m<br>- free height of fall> 2 m<br><br>- offset between lateral protection and guarding section < 89 mm.<br>- opening in the barrier is the same as the width of the starting section or guarding section.<br>-attachment slides height at some point >500 mm<br><br>free-standing slides, height at one point >required for platform. | | P |
| 4.3.3 | **Width**<br>-starting section shall be equal to that of the sliding section(not platform)<br>- with the direction of the initial sliding movement | The wide of the starting area of the slide are the same wide of the opening on the slide | P |
| 4.3.4 | **Lateral protection (sides)**<br>- continuous unbroken<br>- variations in the angle of declination min. radius 50mm | The lateral protection of the starting area are continues unbroken of the sliding section<br>The variation of the angle between the starting area and the sliding area are radius 100 mm | P |
| 4.4 | **Sliding section** | | |
| 4.4.1 | **Angle**<br>angle of declination max. 60°<br>an average max. 40°<br><br>changes in angle of declination> 15°:<br>- R≥ 450mm, for initial 2 000 mm change in height<br>- R≥ 1 m, for remainder | See technical documentation | P |
| 4.4.2 | **Width**<br>sliding sections with length > 1500 mm:<br>Width(W) < 700 mm or > 950 mm | Width <700 mm | P |



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|---|---|---|---|
| 4.4.3 | **Sides and profile of the slide**<br>-dicline < 30°to vertical<br>- radius of edges of sides min. 3 mm<br><br>- of multi track slides height min. 100mm through full length<br>- radius min.3 mm<br><br>See table 1 | The lateral protection are semi circle to the sliding surface.<br><br>No slide with free fall height more than 2 m | P |
| 4.5 | **Run-out section**<br>Decline angel 0 to 10 ° (Type 1)<br>Decline angel 0 to 5 ° (Type 2)<br><br>See table 2 | Type 1 | P |
| 4.6 | **Surface of the slide**<br>- no part of clothes trap position<br>- whether-resistand material<br>- no moving along gap(one piece slide surfaces) | The design of the slides and accessible structure around them are be such that no part of clothes cannot become entrapped | P |
| 4.7 | **Free space**<br>- analog to Table 1 in EN 1176-1<br>- certain slide features, e.g.crossbar, hoods or similar, may be present in the free space as they provide additional safety<br>- multi-track slides, the free spaces may overlap. | For free space see technical drawing | P |
| | **Impact area**<br>- EN 1176-1<br>- width 1m to side<br>- min. 2 m for Type 1 out section<br>-min. 1 m for Type 2 out section<br>- impact attenuating relate to min.1 m height of fall | The safety area on the run out parts required is 2 m.<br>See technical draws | P |
| 4.9 | **Tunnel and mixed tunnel slides** | | |
| 4.9.1 | **Clearance**<br>Height min. 750 mm<br>Width min. 750 mm | No tunnel slide | N/A |



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|---|---|---|---|
| 4.9.2 | **Position**<br>-start at least at the end of the starting section<br>-end in front of run-out section<br>- continuous over whole length | No tunnel | N/A |

-End of this report-



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### 7.1.1 TEST OBJECTIVE
*SCOPO DELLA PROVA*

Determination of load resistance and safety requirements

### 7.1.2 TEST RESULTS
*RISULTATI DI PROVA*

All products has passed the test.

## 8 REMARKS
*NOTE*

None

## 9 APPENDIX
*APPENDICE*

### 9.1 PHOTO DOCUMENTATION
*DOCUMENTAZIONE FOTOGRAFICA*

### 9.2 ATTACHMENTS
*ALLEGATI*

None



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## 10 SUMMARY
*SOMMARIO*






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