

LOG OF MEETING  
DIRECTORATE FOR ENGINEERING SCIENCES

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SUBJECT: F15.36 Soft-Contained Play Equipment Voluntary Standards Meeting

DATE OF MEETING: June 28-29, 1995

PLACE: ASTM Headquarters  
Philadelphia, PA

LOG ENTRY SOURCE: Celestine M. Trainor, ESHF

DATE OF ENTRY: October 27, 1995

COMMISSION ATTENDEE: Celestine M. Trainor, ESHF

NON-COMMISSION ATTENDEES: See attached

SUMMARY OF MEETING: See attached official meeting minutes supplied by the ASTM subcommittee.

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MINUTES #7  
SUBCOMMITTEE F15.36  
SOFT CONTAINED PLAY SYSTEMS  
ASTM HEADQUARTERS  
PHILADELPHIA, PA.  
WEDNESDAY, JUNE 28, 1995  
THURSDAY, JUNE 29, 1995

WEDNESDAY, JUNE 28, 1995:

1. CALL TO ORDER

The meeting was called to order by the Chair, Walt Henderson, at 8:05 A.M.

2. WELCOME

Attendees introduced themselves, and the attendance sheet was passed around for signature.

3. APPROVAL OF MINUTES

A motion was made by Bob Stluka, seconded by David Hamilton, to accept the Minutes of the March 27/28 Meeting. The Minutes were approved.

4. REPORTS FROM OTHER ORGANIZATIONS AND ASTM COMMITTEES

- a) F15.29 - Public Use Playground Equipment - Fran Wallach reported that the revision of Standard F1487-93 is almost complete and the expected publishing date is late 1995.
- b) F8.52 - Playground Surfacing - Walt Henderson reported that F8.52 met in Pittsburgh on February 17 to review data, submitted by Beneficial Design, on its testing of wood fiber surfaces for accessibility. The committee found too many loose ends and a new proposal was submitted by Beneficial for additional testing. The members of F8.52 are currently being solicited for financial support to continue the testing. The testing should be done by the end of the year. The next project for F8.52 will be testing for flammability.
- c) Amusement Rides - Rich Henry reported that they are working with the World Water Park Association and the Go-Cart Association and have produced a 30-page document which will be correlated into the Amusement Park Ride

Standards. By October they will have an updated compilation of all their standards in small book form. The committee is struggling to come up with a definition of "amusement ride device" and will address ingress and egress at their October 21st meeting in San Diego.

- d) CPSC - John Preston reported that CPSC has published Tips for Public Playground Safety, a handout which can be used both by the media and to answer questions from the public. CPSC staff is currently preparing a packet of information for the Commission, in response to the New York City petition for a mandatory standard for Residential Playground Equipment. The Commission hearing is July 13th.

Preston also reported that Commissioner Brown is most interested in soft contained play systems. Another project currently underway is the development of an ASTM standard on the length of children's drawstrings on clothing. The proposed standard allows drawstrings to be 2" in length when stretched out; however, when the fabric is pushed back the result is a string 8" in length. CPSC believes this still constitutes a strangulation hazard, both at neck and waist, and Preston urged ASTM members to vote a negative on this proposed standard, if it remains in current form.

- e) North American Standardization Group - Mike Hayward reported that 6 or 7 meetings have been held, both in the U.S. and Canada, including 2 joint meetings. The results have been very productive and it is hoped to have a draft proposal for a North American Standard to the ASTM and CSA Committees by late Fall, 1995.

There is great interest in Canada in soft contained play systems and they are waiting for the ASTM standard to be completed.

- f) Monty Christensen reported that plans are well underway for the International Conference on Playground Safety, scheduled for October 9-12, 1995, at Penn State University. There are currently over 25 papers being presented, representing about a dozen countries.

## 5. MEETING DATES

ASTM will be moving its headquarters and the meetings for the rest of the year have been established as follows:

Wednesday -	September 20 -	8AM - 5PM
Thursday -	September 21 -	8AM - 5PM
Wednesday -	December 6 -	8AM - 5PM
Thursday -	December 7 -	8AM - 12 Noon

The September meeting will be at the current ASTM headquarters. The December meeting will be at the new headquarters and complete travel and hotel information will be provided to committee members.

6. BALLOT RESULTS

Walt Henderson reported that the ballot had the following return:

37 Affirmative  
 14 Abstentions  
 7 Negatives

The ballot is valid and the negatives were given to the working groups to follow up.

7. OTHER BUSINESS

Walt Henderson advised that several items had been too late to go out with the minutes, or had been incomplete, but were now available to be picked up by committee members.

8. The use of the word "System" was discussed, as used in the Title and Scope of the proposed F15.36 standard. There is potential confusion, as opposed to the intent to address equipment only.

MOTION - by Wayne Mitchell, seconded by Steve Lauzun

Replace the word "Systems" with the word "Equipment" in the title and scope of the proposed standard.

Approved -	20
Opposed -	0
Abstained -	1

Motion passed and goes to ballot.

9. WORKING GROUP REPORTS

EQUIPMENT

Kevin Owens requested that the items in their March Minutes be balloted.

The following motions were made:

MOTION - by Kevin Owens, seconded by Bob Stluka

To accept Sections 1.1, 1.2, and 1.3 of the proposed Equipment Section:

1.1 All accessible portions of soft, contained play equipment shall meet the performance requirements of ASTM F-1487, Section 6, Performance Requirements.

**Rationale:** Section 6 of ASTM F-1487 covers a wide range of issues such as entrapment, entanglement, V conditions, sharp points, protrusions, and tests for nonrigid completely bounded openings that generally are applicable to equipment of soft, contained play equipment.

1.3.1 Differences in height between two consecutive designated play surfaces shall not exceed 20" unless the lower designated play surface is made to conform to ASTM F-1292 for impact attenuation.

1.3.2 Differences in height between two consecutive designated play surfaces shall not exceed 20" in locations where the lower designated play surface may be entered from a passage blind to a user on the upper designated play surface.

**Rationale:** The essential feature that distinguishes soft, contained play systems from traditional playground equipment is that they contain users, not allowing them to climb out or fall out, resulting in fewer falls -- the primary cause of public playground injuries. This section, therefore, is intended to eliminate locations where, even within the container of the play system, a user could injure themselves as a result of a fall to a hard surface or onto another user.

1.2 Discussion was held on how adult entry, use and exit should be handled and this will be reviewed for a possible additional statement on this topic. A large number of the injuries on this equipment are adult injuries.

There was also discussion on reducing the age minimum for the

standard to 18 months. It was pointed out that anthropometric data is not different from 18 months to two years.

The accessibility group will also review 1.2. Height parameters and age groupings were discussed. Section 1.2 was tabled for further working group review. The sections were broken into individual motions.

**MOTION** - Section 1.1 - by Kevin Owens, seconded by Lloyd Reese

1.1	Approved -	21
	Opposed -	0
	Abstained -	1

Motion passed and goes to ballot.

**MOTION** - Section 1.3 - by Bob Stluka, seconded by Rob Pepper

(1.3.1	Approved -	19
(1.3.2	Opposed -	0
	Abstained -	1

Motion passed and goes to ballot.

Discussion was held what the age limitations for the scope should be.

**MOTION** - by David Hamilton, seconded by Bill Boedecker, to have the age range from 2 to 12 years

Approved -	13
Opposed -	3
Abstained -	7

Motion passed and goes to ballot.

**MOTION** - by Bob Stluka, seconded by Bill Boedecker, to use this age range to identify the users in 1.2

Approved -	18
Opposed -	1
Abstained -	5

Motion passed and goes to ballot.

Section 1.4 will be re-written and re-submitted.

Kevin Owens also reported that the group will look at the edges of crawl tubes for laceration problems.

The equipment group reviewed the following areas:

2.1.1 Rungs that are used for hand support shall be between 0.95 and 1.55 inches (24.1 mm and 39.4mm) in diameter.

**Rationale:** ASTM F1487, Section 8.2.1. Rungs that are used for hand support shall have a diameter between 0.95 and 1.55 inches in that the grip strength of both preschool and school age children peaks at the 1.2 inch diameter. This also allows the major portion of the minimum user's hand (in both age groups) to enclose the rung.

2.1.2 Flexible climbing devices shall be securely connected at each end.

**Rationale:** ASTM F1487, Section 7.2.2.2. Flexible climbing devices shall be securely connected at each end to minimize the likelihood of falls or strangulation.

2.2.1 The center to center distance between rungs on upper body equipment with fixed handholds shall be no greater than 15 inches (380 mm).

**Rationale:** ASTM F1487, Section 8.3.1. The 15 inch maximum distance between rungs on upper body equipment with fixed handholds is based on the frontal grip reach (14.9 inches) of the probable minimum user, a 5th percentile 4 year old (according to COMSIS, the typical users of upper body devices are not likely to be young preschoolers). Frontal grip reach gives some indication of the maximum distance that users can reach forward as they attempt to grasp the next rung, and therefore is a reasonable and somewhat conservative measure of reach distance.

2.2.2 The horizontal distance from the leading edge of the take-off and/or landing structure out to the first handhold of upper body equipment shall be no greater than 10 inches (250 mm).

**Rationale:** ASTM F1487, Section 8.3.2. The horizontal distance from the leading edge of the take-off and/or landing structure out to the first handhold of upper body equipment shall be no greater than 10 inches to help ensure that the smallest users can effectively reach the first handhold.

The question arose of foam covering rungs and whether the rung measurements should be calculated "when compressed". Issues are what measurements are used for the uncompressed diameter, and what is the definition of "compression". Further clarifi-

cation and a definition were needed for "flexible climbing devices".

A motion was made by Bob Stluka, seconded by Kevin Owens, to accept Sections 2.1.1 and 2.1.2 if revisions could be made to deal with the issues.

Approved -	14
Opposed -	0
Abstained -	5

The Sections 2.2.1 and 2.2.2 need an additional statement on horizontal ladders, and further work by the working group.

Sliding Poles - It was suggested that a minimum diameter be added to the section, and that the sliding pole height above the surface of the upper access platform.

MOTION by Bob Stluka, seconded by Wayne Mitchell, to accept the following:

Sliding Poles

2.3.1 The sliding pole shall be between 0.95 and 1.9 inches.

2.3.2 The sliding pole shall be continuous with no protruding welds or joints along the sliding surface.

2.3.3 Clearance distance from the upper access platform to the sliding pole shall be between 18 inches and 20 inches (460-500 mm).

2.3.4 The sliding pole shall rise 60 inches (960 mm) or greater above the surface of the upper access platform.

2.3.5 Upper access to the sliding pole shall be from one height only.

Approved -	20
Opposed -	1
Abstained -	2

Motion passed and goes to ballot.

Segments of the slide section were returned to the working group. However, the following motions on Slides were addressed.

MOTION by Bob Stluka, seconded by Mike Hayward, that the following sections on Slides be approved:

2.4.5 The slope of the slide exit region shall be between 0 and 4 degrees as measured from a horizontal plane (see Fig.\_\_\_\_).

**Rationale:** ASTM F-1487, Section 8.5.5.1. The limits on the slope (0 degrees to 4 degrees) of the slide exit region are the same as those recommended in the 1981 CPSC handbook, which were intended to provide a manufacturing tolerance, and yet not compromise the goal of reduced exit velocity. CPSC currently recommends that the exit region should be essentially horizontal and parallel to the ground. If the exit region is sloped upward, water or other debris might accumulate in this area of the slide, which could then present an unnecessary hazard.

2.4.6 Slides shall have an exit region length of 11 inches (280 mm) or greater (see Fig.\_\_\_\_).

**Rationale:** ASTM F-1487, Section 8.5.5.2. The intent of the exit region of the slide is to position the user to exit the slide in an appropriate sitting position. The length of the exit runout is most critical for younger users, who need this transition are more than older children for balance in dismounting. Thus, the 11 inch minimum length of the exit region is based on the thigh length of a 95th percentile 5-year-old.

2.4.7 The radius of curvature of the sliding surface in the exit region shall be 30 inches (760 mm) or greater (see Fig.\_\_\_\_).

**Rationale:** ASTM F-1487, Section 8.5.5.4. The 30 inch radius of curvature of the sliding surface in the exit region is intended to ensure a smooth transition from the inclined slide chute to the horizontal exit surface, thus eliminating abrupt changes in inclination that might cause the user to lose balance while exiting. This dimension is included in the 1981 CPSC handbook. There is currently a lack of injury data or technical research that would provide rationale for a different requirement.

2.4.8 Slide exit edges shall be rounded or curved.

**Rationale:** ASTM F-1487, Section 8.5.5.5. Slide exit edges should be rounded or curved to prevent lacerations or other injuries which could result from impact with a sharp or straight edge.

Approved - 21  
Opposed - 3  
Abstained - 1

Motion passed and goes to ballot.

MOTION by Bob Stluka, seconded by Wayne Mitchell, that the section on Roller Slides be accepted:

2.5.1 Roller slides shall meet the specified requirements for slides in section 1.4

2.5.2 There shall be no pinch, crush, shear, entrapment, entanglement, or catch points between the junctures caused by two or more components of the roller slide.

2.5.2.1 A pinch, crush, shear, entrapment, entanglement, or catch point is any point that will admit a 3/16 inch (5 mm) diameter neoprene test rod at one or more positions, either between rollers or adjacent stationary segments.

2.5.2.2 The neoprene test rod shall have a hardness reading between 50 and 60 as determined by a Type A durometer in accordance with ASTM Test Method D-2240.

Rationale: ASTM F-1487, Section 8.9 thru 8.9.3. For roller slides it was determined that a space of less than 3/16 inch between rollers should minimize the potential for clothing articles, fingers, and toes from becoming entrapped, entangled, and pinched between rollers. This is based on ASTM F-963-86 Toy Safety, Section 4.15.2, Hinge Line Clearance, and Section 4.16.2, Clearances for Movable Segments.

Approved - 16  
Opposed - 4  
Abstained - 3

Motion passed and goes to ballot.

The meeting adjourned for lunch at 11:35 A.M.

The meeting reconvened at 12:50 P.M.

MOTION by Bob Stluka, seconded by Wayne Mitchell, to accept sections 2.6.1 and 2.6.2 on Balance Beams:

2.6.1 The top surface of balance beams shall be no greater than 12 inches (300 mm) above a firm and stable surface.

**Rationale:** ASTM F-1487, Section 8.1.1. The 12 inch height limitation of balance beams corresponds to the approximate gluteal furrow height of a 5th percentile 2-year-old (11.5 inches) and is intended to reduce the likelihood of groin injuries that could occur if a child fell, straddling the beam.

2.6.2 Support structures for balance beams shall not pose a tripping hazard.

**Rationale:** ASTM F-1487, Section 8.1.2. Support posts for balance beams shall not pose a tripping hazard, in order to minimize the likelihood of injuries occurring.

Approved -	20
Opposed -	1
Abstained -	1

Motion passed and goes to ballot.

Section 2.6.3 was returned for further work.

The section on Floor Openings was withdrawn for further review.

**MOTION** by Kevin Owens, seconded by Bob Stluka, to accept the sections on Inflated Devices:

4.1 Pneumatic devices shall meet the structural integrity criteria as specified in Section (specify structural integrity section here), without the designated play surface of the device contacting a hard substrate or floor when loaded.

**Rationale:** This is to avoid the 'bottoming out' effect of an overloaded or underinflated device.

4.2 Pneumatic devices upon which users are intended to walk or crawl shall be secured to minimize lateral movement during use.

**Rationale:** This is a modification of a portion of ASTM, F-24 on Amusement Rides and Devices, Section 8.2. This modification is greatly simplified for use in soft, contained play systems, since the original intent of Section 8.2 is for portable 'moonwalkers' as are typically used in traveling carnivals, where repeated setup and takedown occurs in unpredictable locations.

4.3 Blowers and electrical cords shall be kept out of reach of the public.

4.4 Electrical cords shall not pass under the pneumatic device and shall not interfere with its operation.

4.5 The pneumatic device shall be fully inflated before users are allowed inside.

**Rationale for 4.3, 4.4, and 4.5:** These sections are taken directly from ASTM Amusement Rides and Devices Standard, Sections 8.3.2, 8.3.3, and 8.3.4.

Approved -	18
Opposed -	0
Abstained -	2

Motion passed and goes to ballot.

Phil Tate will provide definition of "Inflated Devices" used in Soft Contained Play Equipment.

**MOTION** by Kevin Owens, seconded by Bob Stluka, to accept the section 5 on Upholstery and Padding:

5.1 Hardware, staples, or fastening devices used in the construction of padding and/or upholstered constructions (assemblies of fabrics, foams, and substrates) shall not pose hidden sharp points or hazards when the surface of the pad or upholstered construction is compressed by a user.

**Rationale:** This is meant to include the consideration of sharp points into assemblies where they may be invisible, but still pose a hazard.

Approved -	20
Opposed -	2
Abstained -	1

Motion passed and goes to ballot.

**ACCESS/EGRESS** - Bill Boedecker reporting:

The Minutes of this working group did not get into the mailing and were distributed at the meeting. A definition is needed for "Path of travel" and there was discussion on what level is the base level for the Designated Evacuation Route. There was question of whether time or distance should be used to measure the outside access points and the rationale for D.E.R. to be

40 ft. from the path of travel.

Other questions dealt with how capacity should be measured and Hank Roux will be contacted to see if there is a fire department formula that is used. This working group will continue to work on this.

The meeting broke into working groups at 2:25 P.M.

THURSDAY, JUNE 29, 1995:

1. CALL TO ORDER

The meeting was called to order by the Chair, Walt Henderson, at 8:05 A.M. The attendance list was passed around.

2. The Fall meeting dates were confirmed as Wednesday, September 20, from 8 A.M. to 5 P.M., and Thursday, September 21, from 8 A.M. to 5 P.M. Please note that the Thursday meeting will end at 5 P.M., since F15.29 will not be meeting. The meeting will be held in Philadelphia.
3. The CPSC fact sheet on playground safety was distributed.
4. Larry Krause and Fran Wallach reported that they have been approached by the media who are doing investigative pieces on soft contained play equipment. Walt Henderson reminded everyone that working materials of ASTM are not to be divulged until a standard is finalized.
5. Peggy Greenwell of the Access Board was introduced, to bring us up-to-date on the proposed Compliance regulations. She explained that the Board is an independent federal agency with the authority to develop minimum guidelines for facilities, under the Architectural Barriers Act for federal agencies. The Board has a staff of 35, and a board of 23, with half appointed by the President, and half by agencies representing the disabled. The Department of Justice is on the Board.

The Recreation Advisory Committee submitted its report to the Board in July, 1994. In September, 1994, the Board published an advanced notice of rule making, which put the report out for comments. About 9,000 copies of the report were distributed and 600 comments (2,300 pages) were received. The

section on Play Settings was one of the segments of the report.

The staff has finished its review of the comments and will meet with the Commissioner at the end of July. There were 184 comments on the Play Setting Section, the majority on public playgrounds. The responses were in 8 categories:

- Individual (in a community)
- Code officials
- Governments (federal, state, local)
- Persons with disabilities
- Manufacturers
- Owner/Operators of playgrounds
- Design professionals
- Professional associations

There was consensus in two areas. It was felt that signs for chemical maintenance for pest control was not an issue for the Access Board to address; and that it was not practical or appropriate to consult with disabled people in planning.

General comments, which had no consensus, covered:

- a) ASTM Standards should be used.
- b) The nature of the playground would be altered.
- c) There was confusion on the application of recommendations to existing facilities.
- d) General support for a trigger number of activities or components, but no consensus on specific number.
- e) Suggestions that percentages (25%, 50%) be used as trigger points, rather than specific number of components or play opportunities.
- f) There was confusion about the height, depth and vertical rise height above the transfer platform. There were comments that 14" was too high for a transfer platform for 2-5 year olds.
- g) There was concern about the accessible route (60" wide) vs. making the entire surface accessible. Some designers felt that the 12 ft. run on a ramp was too restrictive.

- h) Those commenting on surfacing were not comfortable with "firm, stable and slip-resistant"; and there was concern about the edging between 2 surfaces.

Definitions are needed for:

- Play Component
- Close proximity
- Similar or like experiences
- Safe to crawl on

The majority of those addressing Soft Contained Play Equipment felt it should be treated in the same fashion as the Public Playground Equipment, although there may be some differences to address, such as entry into and around the equipment.

The upcoming schedule calls for breaking the report into sections and two sections will be handled through Regulatory Negotiation (Play Settings is one of these). This process brings together all effective parties to get a consensus on rule making. The enforcement agency and the Access Board are represented at the negotiations. Effective parties will include representatives of:

- State and local governments
- Organizations representing the disabled
- Designers
- Owner/Operators
- Manufacturers of equipment

The Board wants 14-15 people in this process and are looking for a group representative for the manufacturers. Meetings will be open but, because of the many people involved, there will be no visitor direct involvement. Any organization wanting representation should wait until the Board publishes its notice of appointment in the Federal Register before submitting requests.

The Access Board will work on all segments of the recommendations at one time and that task is estimated to take about a year which, given a three-month leeway, takes it to October/November, 1996. The Board will also be involved with rule making on children's facilities (day care centers, schools), but this will not include play areas. At that time the Final Report and Notice of Proposed Rulemaking will be published in the Federal Register for comments, with a final rule published at least one year after the publication of the proposed rule (end of 1997).

A request was made to have all members of 15.36 notified when the notice of Proposed Rulemaking is published and a membership list will be given to Greenwell, so that notices can be mailed to them. Any questions and requests for information should be addressed to:

Peggy Greenwell - 202-272-5434  
800-USA-ABLE

Suggestion to use the 202 number, since the 800 number is for technical assistance and is generally very busy.

Walt Henderson volunteered to represent the Soft Contained Play Equipment interests in the regulatory negotiation process. A motion was made by Bob Stluka, seconded by Jay Blanke, to appoint Walt to this position. The vote was 24 Approved, 0 Opposed, 2 Abstentions. The motion passed.

6. WORKING GROUP REPORTS

a) ENTRAPMENT AND ACCESSIBILITY

Beth Roberts reported that they worked on the negatives from the June ballot. Larry Steingraber's negative on Item 2, the transfer platform height, was considered to be persuasive.

MOTION by Elaine Sherman, seconded by Beth Roberts, to find Steingraber's negative on Item 2 persuasive:

Approved -	21
Opposed -	0
Abstained -	2

The motion passed and Item 2 has been withdrawn for further study.

MOTION by Elaine Sherman, seconded by Beth Roberts, to find Lloyd Reese's negative on Item 4 to be persuasive, and to re-write Items 3 and 4 to reflect three levels of activity - ground level, entry level and upper level:

Approved -	24
Opposed -	0
Abstained -	1

The motion passed and Items 3 and 4 will be re-written.

The following negatives were not addressed since the items will have to be re-written:

Item 2

Negative not addressed:

1. Lloyd Reese - Ht of transfer station must be specified as to how measure because a measurement taken of uncompressed material can move out of specified range when material is compressed.
2. Mike Hayward - range of ht of transfer pt ht shall be 14-15" - 1 or 2" allowing for age range and material flexibility.
3. Beth Roberts - item needs further consideration as no standards exist for w/c seat hts and there is a wide variance in seat hts from 14" to almost 24".

Item 4

Negative not addressed:

1. Mike Hayward - item should be re-written to say "can be provided by design where upper level play opportunities do not provide undue challenge or hazard".

b) MAINTENANCE

The proposed practices of their last meeting were reviewed. It was suggested that the section be called Maintenance and Hygiene and that MSDS information be included, or information provided on where it can be obtained. The suggestions were also made that Section 2.1.1 be re-done and 2.1.2 be moved to the last section.

MOTION by Wayne Mitchell, seconded by Bill Boedecker, that Sections I and 2.1 be accepted as modified.

**I. THIS PRACTICE ESTABLISHES GUIDELINES FOR MAINTENANCE AND CLEANING PROCEEDINGS FOR SOFT CONTAINED PLAY EQUIPMENT.**

This consumer safety performance specification establishes nationally recognized safety standards for public use "Soft Contained Play Equipment". These standards are intended to minimize the potential for injuries or illness. Due to the nature of the materials,

it is necessary to perform regular and routine maintenance to insure continued safe and sanitary operations.

## 2. MAINTENANCE/SOFT CONTAINED PLAY EQUIPMENT

2.1 THE DESIGNER OR MANUFACTURER OF EACH PLAY SYSTEM SHALL PROVIDE TO THE OWNER/OPERATOR MAINTENANCE INSTRUCTIONS.

It is the manufacturers/designers responsibility to supply the first owner/operator information regarding routine inspection, maintenance and cleaning to insure the continued safe operation of the "SCPE". The manufacturer/designer has no reasonable way of maintaining responsibility for their equipment other than to the first owner/operator, therefore their responsibility for supplying maintenance information shall extend only to the first owner/operator.

Approved -	19
Opposed -	0
Abstained -	4

Motion passed and goes to ballot.

MOTION by Wayne Mitchell, seconded by Jack Gonzenbach, to accept Section 3, with a re-wording of 3.1.5:

## 3. MANUFACTURER'S MAINTENANCE INSTRUCTIONS

3.1 MANUFACTURER'S MAINTENANCE INSTRUCTIONS SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING.

3.1.1 DESCRIPTION OF RECOMMENDED ASSEMBLY AND DIS-ASSEMBLY TECHNIQUES AND PROCEDURES AS DEEMED NECESSARY BY THE MANUFACTURER TO ACCOMPLISH REPAIRS AND MAINTENANCE.

The owner/operator must rely on the manufacturer to furnish assembly and disassembly instructions as needed in order to maintain and repair the system.

3.1.2 PARTS AND COMPONENTS SHALL BE DESCRIBED AND NUMBERED FOR ORDERING PURPOSES.

It only follows that all parts of the system must be accounted for if the unit is to be assembled correctly and safely. A list of components is the only way to assure this.

3.1.3 RECOMMENDED LUBRICATION PROCEDURES AND FREQUENCIES FOR THE SCPE WHERE APPLICABLE

Many SCPE will have no components requiring lubrication, but those that do must have proper servicing in order to assure the life of the component.

3.1.4 DESCRIPTION OF THE RECOMMENDED INSPECTION, MAINTENANCE PROCEDURES AND FREQUENCY.

Inspections must be performed in order to assure that no damaged parts may pose a safety hazard. Also failure to identify critical areas that may require maintenance can lead to rapid deterioration of the entire system as well as pose a safety hazard for children.

3.1.5 DESCRIPTION OF RECOMMENDED WEAR LIMITS WHERE DEEMED NECESSARY BY THE MANUFACTURER

If knowledge of expected life of components can be shared with the owner/operator, he can develop a preventative maintenance program that will prolong the life of the entire system as well as reduce hazards for the children using the system and can eliminate down time.

3.1.6 RECOMMENDATIONS FOR REPLACEMENT FASTENERS, TORQUE REQUIREMENTS, AND APPROPRIATE PRECAUTIONARY INFORMATION REGARDING THE USE OF FASTENERS THAT HAVE BEEN LOOSENED OR RETORQUED.

Exact specification for the use of replacement fasteners and a description of the reliability of re-torqued fasteners can assist the owner/operator in establishing an adequate parts supply for an adequate preventative maintenance program.

Approved -	18
Opposed -	0
Abstained -	2

Motion passed and goes to ballot.

Section 4 - Manufacturer's Instructions - to be re-written

Section 5 - Owner/Operator Responsibilities - to be re-written

MOTION by Wayne Mitchell, seconded by Fran Wallach, that sections 5.4 to 5.4.2 be accepted as separate sections.

#### 5.4 PROTECTIVE SURFACING AND USE ZONE MAINTENANCE

Loose fill materials surfacing materials at the entrances, exits and under Soft Contained Play Equipment would be impossible to maintain and would be tracked through the system causing additional safety problems. Referring to the requirements under F12.92, surfacing should not be a loose fill but meet the impact attenuation criteria.

5.4.1 THE OWNER/OPERATOR SHALL MAINTAIN THE SURFACING WITHIN AND AROUND THE USE ZONES OF THE PLAY STRUCTURE FREE FROM EXTRANEIOUS MATERIALS THAT COULD CAUSE INJURY, INFECTION OR DISEASE.

Maintaining these surfaces will be by the surface manufacturers recommendations.

5.4.2 THE USE OF LOOSE FILL SURFACING IS NOT RECOMMENDED FOR SOFT CONTAINED PLAY EQUIPMENT

See 5.4

5.4.3 THE OWNER/OPERATOR SHALL MAINTAIN THE PROTECTIVE SURFACING WITHIN THE USE ZONE OF EACH SOFT CONTAINED PLAY EQUIPMENT IN ACCORDANCE WITH SPECIFICATIONS CONTAINED IN F1292, APPROPRIATE FOR THE FALL HEIGHT OF EACH STRUCTURE.

See 5.4

Approved -	15
Opposed -	0
Abstained -	5

Motion passed and goes to ballot.

The working group will also cover the size of use zones and critical height information in the standard.

c) MATERIALS - This committee did not meet.

d) FIRE SAFETY

Lance Saylor reported that the standard will be written, based on standards that are already out there. Most of the current plastics used meet no standards. A working group meeting will be scheduled prior to the next ASTM meeting.

e) DEFINITIONS

Phil Tate reported new definitions will appear in the next minutes.

Working groups were reminded that August 1 is the deadline for submission of their minutes to Fran Wallach.

Next meeting is Wednesday, September 20, 8-5 PM and Thursday, September 21, 8-5 PM\*, in Philadelphia

The meeting was adjourned at 11:45 A.M.

Respectfully Submitted,

Frances Wallach, Secretary

\*Note full day meeting - F15.29 not meeting

### 5.3 Owner/Operator's responsibility

5.3.1 The Owner/Operator of Soft Contained Play Equipment shall promptly notify the manufacturer of an incident, failure, or malfunction which, in their judgement, seriously affects the continued proper operation of the Soft Contained Play Equipment and is information of which the manufacturer should be aware.

*It is the responsibility of the Owner/Operator to notify the manufacturer, vendor and/or contractor who erected the system of any incident, failure or malfunction of the equipment which could or did cause an injury, so that the the manufacturer, vendor and/or contractor can: 1) make any modifications necessary to rectify the problem and 2) notify all operators that may have identical or similar play systems of the potential and recommend modifications. Failure to notify these entities could result in injury or mishap on other structures.*

### 6. Protective Surfacing and Use Zone Maintenance

6.1 The Owner/Operator shall maintain the protective surfacing within the use zone of each Soft Contained Play Equipment in accordance with specifications contained in F 1292, appropriate for the fall height of each component subject to fall zone surfacing requirements.

*Maintenance requirements for these surfaces will be recommended by the surface manufacturer.*

6.1.2 The Owner/Operator shall maintain the surfacing within and around the use zones, entrances and exits of the play structure, free from extraneous materials that could cause injury, infection or disease.

5.2 Prior to use, the Owner/Operator shall conduct or cause to be conducted a daily, Documented and signed pre-opening safety and hygiene inspection, based upon provided instructions, to insure the proper care, safety, hygiene and maintenance of the SCPE. The inspection program shall include, but not be limited to the following:

*This places responsibility on the Owner/Operator of the Soft Contained Play Equipment for making he/she responsible for digesting and imparting to agents, attendants, maintenance and custodial personnel the information the manufacturer has given regarding the assembly, disassembly, maintenance, hygiene, operation and emergency procedures for the Play Equipment. It also transfers to the Owner/Operator the responsibility ( and some liability) for establishing a preventative maintenance and hygiene program.*

5.2.1 Visual inspection of entrances, exits, stairways, and ramps.

*This describes "what" needs to be inspected visually, i.e.,: entrances, exits, stairways, ramps, automatic safety devices, manual safety devices, fencing, guarding, barricades, and all components of the Soft Contained Play Equipment. The Specific points to be inspected and "what to look for" must be a part of the owner/Operator's operations manual as per 5.1, which describes the training, inspection key points and how to inspect.*

5.2.2 Inspection or test of all automatic and manual safety devices and equipment.

*Same rationale as 5.2.1*

5.2.3 Visual inspection of all fencing, guarding and barricades.

*Same rationale as 5.2.1*

5.2.4 Visual inspection of the Soft Contained Play System Structure with an eye to cleanliness. The structure must remain clean before use is permitted.

*Same rationale as 5.2.1*

## 5. OWNER/OPERATOR'S MAINTENANCE RESPONSIBILITIES

5.1 Each Owner/Operator of Soft Contained Play Equipment shall provide a training manual which shall be used to train each employee performing the regularly scheduled inspections and maintenance of the soft contained play equipment as it pertains to their assigned duties. This training shall include, but not be limited to the following:

*The owner/operator should take the manufacturer's maintenance/operations manual and develop a specific training manual to be used as a syllabus for training employees at their specific tasks and responsibilities. If a lawsuit develops, this training manual can become a very valuable defense for the owner/operator. It also helps to develop a consistent inspection and maintenance program aimed at accident prevention.*

5.1.1 Specific Instruction and time table on inspection, maintenance & cleaning procedures.

*This section assigns the responsibility for the owner/operator to develop and implement specific safety, hygiene and maintenance inspection tasks to be performed and the time parameters in which they are to be performed. Housekeeping, safety and maintenance tasks and inspections are many times inseparable. Specific tasks should be outlined and a check list developed.*

5.1.2 Specific emergency and evacuation procedures in the event of abnormal conditions or an interruption in service.

*Utilizing information obtained from the manufacturer's "Owner's" manual and knowledge of the operators specific environmental conditions, specific emergency and evacuation procedures should be developed, written and incorporated into the owner/operators training manual.*

5.1.3 Questions regarding exposure to bacteria or bloodborne pathogens may be directed to local health departments or the center for disease control in Atlanta, Ga. Employees must be trained in decontamination procedures and use of protective equipment as per OSHA's Bloodborne pathogens regulation.

*It is generally recognized that this equipment is subject to contamination from fecal matter, urine, vomitus and blood. In order to maintain a sanitary (free of pathogenic or disease causing bacteria) environment, it is the responsibility of the owner/operator to obtain specific information regarding the correct procedures to adequately sanitize the play equipment. Failure to train employees regarding the procedures and protective equipment necessary to protect themselves is in violation of OSHA's Bloodborn Pathogens Regulation.*

#### 4. MANUFACTURER'S OPERATION INSTRUCTION TO OWNER/OPERATOR

4.1 The manufacturer's Operation instructions shall include but not be limited to the following:

4.1.1 Description of the designated, intended use of the Soft Contained Play Equipment including the function and operation of its major components.

*The manufacturer needs to make recommendations to the owner/operator on the operating instructions for all components of the play structure. The manufacturer best knows the design, function and limitations of the equipment and should not assume that the owner/operator will know & understand the use of any and all components. This information will be invaluable as the owner/operator develops his operations manual.*

4.1.2 Description of the recommended capacity in either weight limitations or person's limitations where applicable.

*The manufacturer/designer of each component of the soft contained play equipment knows the structural limitations of the materials used, in the configuration used and is the only entity that should establish the weight and/or person's limitation or capacity of each component and the entire structure.*

4.1.3 Recommended safety procedures, emergency evacuation information, and instructions regarding required safety backup equipment for the Soft Contained Play System.

*The manufacturer should give the owner/operator the recommendations for the safe operation of the soft contained play system, including location of the emergency evacuation points and suggested equipment needed to assist in emergency situations. ie: ladders, step stools, etc.*

4.1.4 Recommendations for use restriction relating to environmental conditions such as sun, wind, rain, or temperature fluctuation.

*The soft contained Play system is no safer than the environment it is placed in. If the equipment is to be placed indoors, the facility should adhere to and meet local fire, health and safety codes. If the structure is located outside, the manufacturer should give guidelines regarding the environmental effects of cold, (plastics become brittle at temperatures below 32 degrees fahrenheit) (Slides exposed to the hot sun at the wrong angle can cause severe burns)*

### 3. MANUFACTURER'S MAINTENANCE INSTRUCTIONS

3.1 Manufacturer's maintenance Instructions shall include but not be limited to the following:

3.1.1 Description of recommended assembly and disassembly techniques and procedures as deemed necessary by the manufacturer to accomplish repairs and maintenance.

*The owner/operator must rely on the manufacturer to furnish assembly and disassembly instructions as needed in order to maintain and repair the equipment.*

3.1.2 Parts and components shall be described and numbered for ordering purposes.

*It only follows that all parts of the system must be accounted for, if the unit is to be assembled correctly and safely, a list of components is the only way to assure this.*

3.1.3 Recommended lubrication procedures and frequencies for the Soft Contained Play Equipment if applicable.

*Many Soft Contained Play Systems will have no components requiring lubrication, but, those that do, must have proper servicing in order to assure the life of the component.*

3.1.4 Description of the recommended inspection and maintenance procedures including frequency.

*Inspections must be performed in order to assure that no damaged parts may pose a safety hazard for users. Also, failure to identify critical areas that may require maintenance, can lead to rapid deterioration of the entire system as well as pose a safety hazard to children.*

3.1.5 A description of inspection criteria for components known to have limited life or wear limits relative to environmental or use factors such as nets, ropes, & chains.

*The manufacturer must include in the maintenance manual, criteria for establishing wear limits on items like rope, cable, chain & netting. Ie: chain - 1/8th or 1/4 wear, rope, cable & netting- number of frayed or broken fibers. The manufacturer knows the materials best.*

# ASTM F 15.36

## **STANDARD PRACTICE** **FOR MAINTENANCE PROCEDURES** **FOR** **SOFT CONTAINED PLAY EQUIPMENT**

### 1. INTRODUCTION

This practice establishes maintenance and cleaning procedures for Soft Contained Play Equipment.

*This consumer safety performance specification establishes nationally recognized safety standards for public use "Soft contained Play equipment". These standards are intended to minimize the potential for injury or illness. Due to the nature of the materials, it is necessary to perform regular and routine maintenance to insure continued safe and sanitary operations.*

### 2. MAINTENANCE/ HYGIENE

2.1 The designer or manufacturer of each play system shall provide to the original owner/operator, maintenance/hygiene instructions.

*It is the manufacturer's/designer's responsibility to supply the first owner/operator, information regarding routine inspection, maintenance and cleaning procedures to insure the continued safe operation of the "SCPE". The manufacturer/designer has no reasonable way of maintaining responsibility for their equipment other than to the first owner/operator. Therefore, their responsibility for supplying maintenance/hygiene information shall extend only to the first owner/operator.*

2.1.1 The manufacturer's Maintenance Instructions should include recommendations for cleaning & sanitizing solutions known to be compatible with materials used in the construction of the play equipment.

*The manufacturer must provide the original owner/operator a list of substances compatible with regular routine cleaning for the materials used. There are certain common cleaning compounds that are not recommended with certain plastics and the owner/operator should be made aware of these. ie: acetone and other solvents.*

August 1, 1995

Group Task Force on Access/Egress  
Soft Contained Play Equipment  
Minutes from June 27-28, 1995

Our group continued in discussions of the parameters that could be presented to provide access and egress, primarily to the upper levels of the play system. Our concerns centered around keeping the equipment as safe as possible, without limiting the creativity of the design.

We reviewed the definitions and standards that we had previously agreed upon in May.

This summer we will be establishing rationale to better support the proposals presented in June. We hope to have these ready to submit for a vote in September.

Members present:

Jill Boedeker	Tenderfun Soft Playgrounds
Mike Hayward	Paris Playground Equipment
David Hamilton	Pentes Design
Lloyd Reese	Iron Mountain Forge

protective barrier, as defined in ASTM F 1487. Also, slides that contain the user against falls are allowed greater freedom in height/length ratio and maximum slope than slides that do not contain the user.

2.4.2.2 Slides that do not contain the user for the entire length of the slide except the exit region shall meet the following criteria:

- 1) meet the slide chute requirements of ASTM F 1487, section 8.5.4
- 2) meet the use zone requirements of ASTM F 1487, section 9.6
- 3) cover the use zone with protective surfacing to meet the impact attenuation requirements of F 1292 with the maximum height of the slide as the fall height.

**Rationale:** Slides that do not protect the user from falls to the surface shall be placed with proper use zones and impact attenuating surfaces, as required for public use playground equipment

(to be added to 2.6, Balance Beams, as approved at June meeting)

2.6.3 Balance beams shall be padded with a firm, stable, slip resistant material.

(Note: 'firm, stable, slip resistant' is currently being defined by the F 1292 group, and will be used here, when available)

**Rationale:** Balance beams shall be padded in order to minimize the likelihood of injuries occurring due to impacts from falls onto the balance beam. Within the context of soft, contained play systems, a hard object that protrudes up from the floor of a play space large enough to stand in would present a sudden departure from the soft materials and crawling spaces that are typical in this type of equipment.

2.2.3 Impact attenuation shall be provided under upper body equipment to meet ASTM F 1292. The height of the highest point on the grip surface shall be used as the fall height.

**Rationale:** Even though upper body equipment is inside the contained play system, it provides a significant fall height that must be protected against.

2.2.4 The maximum height of upper body equipment shall be 84 inches (213.4 cm) above the protective surfacing.

**Rationale:** ASTM F 1487, section 8.3.3. With no distinct age separation in this standard, the 84 inch height allows for the widest range of users.

2.2.5 The maximum height of take-off/landing structures for upper body equipment shall be no greater than 36 inches (910 mm) above the protective surfacing.

**Rationale:** ASTM F 1487, section 8.3.4. With no distinct age separation in this standard, the 36 inch height allows for the widest range of users.

## 2.4 SLIDES

2.4.1 At the slide entrance, there shall be a means to channel the user into a sitting position (for example: guardrail, hood, tube, etc.).

**Rationale:** ASTM F 1487, section 8.5.3.2. There shall be a means to channel the user into a sitting position at the top of the slide chute entrance to assure that the user is seated before beginning descent, in order to reduce the likelihood of falls down or over the side of the slide. This also prevents the user from sliding down the slide in a standing position.

2.4.2 All slides shall meet the requirements of either 2.4.2.1 or 2.4.2.2.

2.4.2.1 Slides that contain the user for the entire length of the slide except the exit region shall meet the requirement of ASTM F 1487, section 9.6.2 and 9.1.1 for slide use zone and either:

a) have a completely bounded cross section,

or

b) have sidewalls of a height 38 inches (965 mm) or greater above the bedway that are non-climbable.

**Rationale:** To avoid the more strict fall zone requirements of 2.4.2.2, slides may fully contain users from falling out of the slide. This may be accomplished through the use of a fully bounded 'tube' or the use of a sidewall equivalent to a

2.1.2 Padded rungs that are used for hand support shall be between 0.95 and 1.55 inches (24.1 mm and 39.4 mm) in diameter when fully compressed.

**Rationale:** A padded rung should not be any smaller or larger, when in use, than a hard rung, for the same rationale used in section 2.1.1.

2.1.3 Padded rungs that are used for hand support shall have a diameter no larger than 2 inches (5.1 cm) when not compressed.

**Rationale:** An uncompressed padded rung may be larger than that allowed for a hard rung since it will compress while in use. According to anthropometric data for the middle finger-thumb grip length, an uncompressed dimension of 2 inches would accommodate the majority of two-year-olds, the youngest users likely to be able to use a climbing rung event.

2.1.4 Single ropes, straps, or similar devices for climbing shall be securely anchored at both ends. If the rope or strap can be looped back on itself, the maximum loop formed shall not allow the passage of the small torso probe (see x x).

**Rationale:** It is important that ropes, often used in soft, contained play systems, shall not pose a hanging hazard.

## 2.2 UPPER BODY EQUIPMENT (for example horizontal ladders and track rides)

2.2.1 The center to center distance between rungs on upper body equipment with fixed handholds shall be no greater than 15 inches (380 mm).

**Rationale:** ASTM F 1487, section 8.3.1. The 15 inch maximum distance between rungs on upper body equipment with fixed handholds is based on the frontal grip reach (14.9 inches) of the probable minimum user, a 5th percentile 4 year old (according to COMSIS, the typical users of upper body devices are not likely to be young preschoolers). Frontal grip reach gives some indication of the maximum distance that users can reach forward as they attempt to grasp the next rung, and therefore is a reasonable and somewhat conservative measure of reaching distance.

2.2.2 The horizontal distance from the leading edge of the take-off and/or landing structure out to the first handhold of upper body equipment shall be no greater than 10 inches (250 mm).

**Rationale:** ASTM F1487, section 8.3.2. The horizontal distance from the leading edge of the takeoff and/or landing structure out to the first handhold of the upper body equipment shall be no greater than 10 inches to ensure that the smallest users can effectively reach the first handhold.

Minutes from the Equipment Working Group  
ASTM F15.36 on Soft, Contained Play Equipment  
June 28,29, 1995

During the general session of F15.36 the following sections of the proposed Equipment section were approved as written in the March minutes or with slight editorial changes:

1.1, 1.2, 1.3, 2.3, 2.4.5, 2.4.6, 2.4.7, 2.4.8, 2.5, 2.6.1, 2.6.2, 4.0, and 5.0.

Additionally, the Equipment working group proposes the following sections that were not approved at the June meeting. These sections have been discussed again in our group and amended. We will bring them up for a vote at the September meeting. Sections that passed at the June meeting and those that pass at the September meeting will form the basis of the Equipment section of F15.36.

(to be added under section 1.0, Equipment, as approved at June meeting)

1.4 If any flexible material or device in a contained play system can be stretched by a force of 50 lbf (222 N) applied with the torso probe (as defined in section X.X) to the point of contacting any hard object outside of the contained play event, that hard object shall be padded. Flexible portions of contained play systems shall not be placed adjacent to potential impact hazards such as glass windows, furniture, and traffic areas.

**Rationale:** Objects outside of a flexible portion of a soft, contained play system present an impact hazard if they can be impacted by users within the system. Adopting the Test Procedure for Completely Bounded Nonrigid Openings from ASTM F1487, Section 6.1.2.1, provides a way to quantify if a hard object outside of the container presents a hazard.

## 2.0 EQUIPMENT REQUIREMENTS ADOPTED FROM ASTM F-1487

### 2.1 CLIMBERS

2.1.1 Hard rungs that are used for hand support shall be between 0.95 and 1.55 inches (24.1 mm and 39.4 mm) in diameter.

**Rationale:** ASTM F 1487, section 8.2.1. Rungs that are used for hand support shall have a diameter between 0.95 and 1.55 inches in that the grip strength of both preschool and school age children peaks at the 1.2 inch diameter. This also allows the major portion of the minimum user's hand (in both age groups) to enclose the rung.

Subcommittee F15.36  
Entrapment & Accessibility Working Group  
Minutes - 28 June 1995

**Attending:** Celestine Trainor  
Beth Roberts  
Ester Grossman  
Steve Lauzun  
David Hamilton  
Elaine Sherman

**Negatives:** *Item #4* - negatives from Lloyd Reese and Mike Hayward were found to be persuasive, so the group will rework this item.

*Item #2* - negative from Larry Steingraber was found to be persuasive. The group will withdraw this section. Negatives from Roberts, Reese and Hayward were read by the group and will be considered as this section is re-written.

**New Business**

*Assessable Route:* Must be provided to the point of entry into the SCPS. Requirements for this route are as per F1487.

*Getting onto the SCPS:* all entry points shall have transfer points.

*Ground Level Play Activities:*

All shall be accessible. Reach ranges as per F1487.

Min. width is 36 in. May be reduced to 32 in. for a max. length of 24 in.

At a play event, a wheelchair must have a space of 30 x 43 in., which does not reduce the width of the path to less than 36 in.

Distance to a 60 in. diameter or T-shaped passing space to be based on the work of the group addressing Designated Evacuation Routes.

Meeting Adjourned at 5:00 p.m.

Notes by Steve Lauzun

Term	Definition	Comments/Status	Ref. Sub. Comm.
Hand Support	(n) - a material or item that can be grasped to help maintain balance and support in maintaining specific body posture.	Access/Egress Sub. Committee review and/or confirm.	Access/Egress
Materials, Flexible		Need definition from Material Sub. Committee.	Material
Play Area, Contained	(n) - The activity area for the intended users of the play system.	Entrap/Access Sub. Committee. (recommends deletion)	Entr/Access
Play Element, Passive		Need definition from Equipment Sub. Committee.	Equipment
Play Event		Need definition from Equipment Sub. Committee.	Equipment
Play System		(Recommends deleting) Entr/Access Sub. Committee.	Entr/Access
Protective Surfacing	Material(s) to be used within the use zone of play equipment. Discussion - Protective surfacing shall meet the minimum impact attenuation requirements of specification ASTM F1292.	Need motion and discussion at 9/20/95 meeting.	Equipment
Special Care Area	(n) - a component or area that would require different or special attention, inspection, maintenance and hygiene, i.e., ball pits, inflated pillows, climbing ropes.	Maint/Hygiene (Recommends deleting this definition)	Maint/Hygiene
Structure		Need definition from Equipment Sub. Committee.	Equipment

**ASTM F15.36 on Soft Contained Play Systems  
(Terms Needing Additional Follow-Up)  
Terminology Subcommittee**

Term	Definition	Comments/Status	Ref. Sub. Comm.
Capacity		Need definition from Material Sub. Committee.	Material
Crawl	<i>(n)</i> - Any contained element with the purpose of horizontal or near horizontal transition.	Equipment Sub. Committee review and/or confirm.	Equipment
Designated Play Surface	Any elevated surface for standing, walking, sitting or climbing, or flat surface greater than 2 in. wide having less than 30° angle from horizontal.	Need motion and discussion at 9/20/95 meeting.	Equipment
Element		Need definition from Equipment Sub. Committee	Equipment
Element, Active Play		Need definition from Equipment Sub. Committee.	Equipment
Elements, Suspended		Need definition from Material Sub. Committee.	Material
Fall Height	The vertical distance between a designated play surface and the protective surfacing beneath it.	Need motion and discussion at 9/20/95 meeting.	Equipment
Ground Level		Need definition from Accessibility/Entrapment	Entr/Access

**ASTM F15.36 on Approved Soft Contained Play Systems  
Terminology Subcommittee**

<b>Term</b>	<b>Definition</b>	<b>Comments/Status</b>	<b>Ref. Sub-Comm.</b>
Play Area	<i>(n)</i> - A designated space intended for children's play.	Voted 5/17/95 *	Entr/Access
Preventive Maintenance	<i>(n)</i> - A planned program of inspections and maintenance intended to keep equipment functioning properly and to forestall equipment failures.	Voted 5/17/95 *	Maintenance/ Hygiene
Webbing	<i>(n)</i> - A woven narrow gage flat fabric.	Voted 1/11/95 *	Equipment
Zone, Non-use	<i>(n)</i> - Locked or secured area around or underneath the play system where unauthorized access is not allowed.	Voted 6/14/94 *	Entr/Access
Zone, Use	<i>(n)</i> - the area beneath and immediately adjacent to the play structure that is designated for unrestricted circulation around the equipment and on whose surface it is predicted that a user would land when falling from or exiting the equipment.	Voted 6/14/94 *	Entr/Access

\* Initial acceptance with majority vote from F15.36 sub-committee.

ASTM F15.36 on Approved Soft Contained Play Systems Terminology Subcommittee			
Term	Definition	Comments/Status	Ref. Sub-Comm.
Accessible	<i>(adj)</i> - Relating to a part or portion of the play systems. (1) capable of being contacted by any body part, or (2) usable by persons with disabilities	Voled 6/14/94 * Change proposed for 6/28/95 Mtg.	Entr/Access
Ball Pool	<i>(n)</i> - Any contained area with loose balls for the purpose of play or transition.	Voled 6/14/94 *	Equipment
Barrier, Protective	<i>(n)</i> - an enclosing device that is intended to prevent both inadvertent and deliberate attempts to pass through the device.	Voled 6/14/94 *	Material
Climb	<i>(n)</i> - Any component with the purpose of ascending or descending transition.	Voled 6/14/94 *	Equipment
Component	<i>(n)</i> - a part of a play system, any portion thereof that generates specific activity and does not stand alone.	Voled 6/14/94 *	Equipment
Fabric, Mesh	<i>(n)</i> - A woven fabric with a permeable network made from interlacing threads or mono filament fibers.	Voled 9/28/94 *	Equipment
Fabric, Solid	<i>(n)</i> - A coated or laminated closed weave fabric.	Voled 1/11/95 *	Equipment
Maintenance, Preventative	<i>(n)</i> - a planned program of inspections and maintenance intended to keep equipment functioning properly and to forestall equipment failures.	Voled 6/14/94 *	Equipment
Netting	<i>(n)</i> - An open work fabric made of threads, cords, or mono filament fibers woven or knotted together at regular intervals.	Voled 9/28/94 *	Equipment
Net, Webbing	<i>(n)</i> - A lattice of webbing sewn or otherwise affixed together at overlapping conjunctions.	Voled 9/28/94 *	Equipment

Minutes of Terminology Working Group at June 28, 1995  
Session of F15.36 Sub-Committee

There were no negatives on the two balloted definitions presented as item No. 5 and No. 6 of the May 17, 1995 Subcommittee ballot. These terms ("Preventive Maintenance" and "Play Area") have been moved to the category of initial acceptance by the 15.36 subcommittee.

The Equipment Working Group has proposed the following three new definitions for motion and discussion at the September 20, 1995 meeting (all taken from F1487):

**Designated Play Surface:**

Any elevated surface for standing, walking, sitting or climbing, or flat surface greater than 2 in. wide having less than 30° angle from horizontal.

**Fall Height:**

The vertical distance between a designated play surface and the protective surfacing beneath it.

**Protective Surfacing:**

Material(s) to be used within the use zone of play equipment. Discussion - Protective surfacing shall meet the minimum impact attenuation requirements of specification ASTM F1292.

We also found a negative which was not previously addressed, from the 12/1/94 ballot, item No. 6 "Netting". The negative from W. Connell of Burger King Corp. states "since the netting opening dimension is not indicated, the opening could be so small that child could not grasp." I will address this with the Equipment Group at the September meeting.

Attached is the current list showing the status of our definitions.

Submitted by: Phil Tate, Substitute Chairperson

for state of Maryland) stated that he had established some criteria and he would share it with the other Fire Marshals.

The Fire Safety Group has collected all related state, federal, ASTM, and NFPA codes, regulations, and standards that the current materials meet. These codes, regulations, and standards will be used as the basis for the ASTM standards.

- Foam - California Technical Bulletin 117  
California Technical Bulletin 133
  
- Vinyl - NFPA 701, Chap. 4  
ASTMF 501-88  
CA Admin. Code Title 19, Para. 1237.1  
Fed. Std. 191A, Method 5903
  
- Plastic/  
Roto-Molded - ASTM E-84 Class C  
Flamespread 100  
Smoke Density 500
  
- Nets - Federal Test Method 191  
Method 5903
  
- Acrylic  
Windows - NFPA
  
- Polycarbonate  
Windows - ASTM E-84 - Class A, B, C  
NFPA  
ASTM D 1929/D635  
UL-94  
Boca CC-1  
SBCC CC-1  
ICBO
  
- Mesh - NFPA 101  
ASTM E-84 Class A

The Fire Safety Committee will be meeting August 24, 1995, at McDonald's headquarters in Oakbrook, Illinois to begin writing standards.

## MINUTES

### SUBCOMMITTEE F15.36 SOFT CONTAINED PLAY EQUIPMENT FIRE SAFETY WORKING GROUP

Wednesday, June 28, 1995

On Wednesday, June 28, 1995, and Thursday, June 29, 1995, the ASTM Subcommittee F15.36 Soft Contained Play Equipment met at ASTM headquarters in Philadelphia, PA.

The afternoon of June 28, 1995, the subcommittee split up into our respective working groups. The Fire Safety Working Group had two guest speakers, Charles D. Shedd and Henry Roux. Charles D. Shedd, the Technical Manager of Muelstein (a division of Exxon), was our first guest speaker. Muelstein is a resin supplier for polyethylene plastic which is used to produce tubes and junction boxes. Charles Shedd, a knowledgeable individual with many years of experience in the technical aspects of plastics, discussed the effects of adding flame retardant on roto molded plastic. He stated the following.

1. Currently Muelstein does not have this material available, nor did he believe that any resin supplier would, at this time, be able to supply this composite.
2. The structural integrity of the plastics would be reduced by approximately 10%.
3. The cost of the FR material, when and if ever available, would be approximately twice the cost of non-fire retardant resin.
4. Adding fire retardant increases the toxicity of the smoke produced in a fire.

This was disappointing news to all members of the Fire Safety Working Group, although it was not unexpected. The group had hoped that by adding fire retardant the plastic would be able to meet ASTM E-84 Class C which allows for a flamespread of 100 and smoke density of 500.

Our second speaker, Henry Roux of Roux International Inc., has many professional connections and is acquainted with most of the nation's State Fire Marshals. Henry related that he recently attended a NFPA conference in Denver, Colorado which was attended by many State Fire Marshals. Henry surveyed the audience asking for a show of hands of the Fire Marshals familiar with Soft Contained Play Equipment. Most of the Fire Marshals in attendance were familiar with Soft Contained Play Equipment. Henry asked the conference attendees if some common ground could be established among the various states. Rocco Gabriel (Fire Marshal

**STEPS:**

**APPROVAL OF CHARTER BY OFFICE OF MANAGEMENT AND BUDGET**

**NOTICE IN FEDERAL REGISTER SOLICITING MEMBERSHIP (GROUPS IDENTIFIED)**

**BOARD APPROVAL FOR REGULATORY NEGOTIATION COMMITTEE COMPOSITION**

**CONVENE GROUP FOR FIRST MEETING**

**TIME FRAME (6-9 MONTHS)  
MEETINGS ONCE A MONTH (2-3 DAYS)**

**FINAL REPORT - NOTICE OF PROPOSED RULEMAKING**

**READY FOR PUBLICATION IN THE FEDERAL REGISTER FOR COMMENT**

**FINAL RULE - MINIMUM OF ONE YEAR AFTER PUBLICATION OF PROPOSED RULE**

## **PROPOSED PLAN FOR PLAY SETTING RULEMAKING**

### **NEXT STEP: REGULATORY NEGOTIATION**

**"Reg neg brings together representatives of the agency (and enforcing agency) and the various affected interests in a cooperative effort to develop regulations that not only meet statutory requirements, but also are accepted by the people who ultimately will have to live with the regulations."**

**The goal of the negotiators is to reach consensus on the text of a "proposed" rule through a process of evaluating their own priorities and making trade-offs to achieve an acceptable result. Competing interests try to work out a practical solution to the problem necessitating regulatory action.**

#### **\_LONG TERM BENEFITS OF NEGOTIATED RULEMAKING:**

- \* MORE INNOVATIVE APPROACHES THAT MAY REDUCE COMPLIANCE COSTS,**
- \* LESS TIME, MONEY, AND EFFORT SPENT ON DEVELOPING AND ENFORCING RULES,**
- \* EARLIER IMPLEMENTATION,**
- \* HIGHER COMPLIANCE RATES, AND**
- \* MORE COOPERATIVE RELATIONSHIPS BETWEEN THE AGENCY AND OTHER AFFECTED PARTIES.**

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Washington, D.C. 20207

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4. **Elevated Surfaces** - Platforms more than 30" above the ground should have guardrails to prevent falls.

5. **Potential Head Entrapment Hazards** - In general, openings that are closed on all sides, should be less than 3-1/2" or greater than 9". Openings that are between 3-1/2" and 9" present a head entrapment hazard because they are large enough to permit a child's body to go through, but are too small to permit the head to go through. When children enter such openings, feet first, they may become entrapped by the head and strangle.

6. **Potential Entanglement Hazards** - Open "S" hooks, especially on swings, and any protrusions or equipment components/hardware which may act as hooks or catch-points can catch children's clothing and cause strangulation incidents. Close "S" hooks as tightly as possible and eliminate protrusions or catch-points on playground equipment.

7. **Pinch or Crush Points** - There should be no exposed moving parts which may present a pinching or crushing hazard.

8. **Playground Maintenance** - Playgrounds should be inspected on a regular basis. If any of the following conditions are noted, they should be removed, corrected or repaired immediately to prevent injuries:

- Hardware that is loose or worn, or that has protrusions or projections.
- Exposed equipment footings.

- Scattered debris, litter, rocks, or tree roots.
- Rust and chipped paint on metal components.
- Splinters, large cracks, and decayed wood components.
- Deterioration and corrosion on structural components which connect to the ground.
- Missing or damaged equipment components, such as handholds, guardrails, swing seats.

For more detailed information on playground safety, refer to the CPSC's *Handbook for Public Playground Safety*. To obtain a copy, send a postcard with your name, address, and name of publication to U.S. Consumer Product Safety Commission, Washington, DC 20207.

To report a dangerous product or a product-related injury and for information on CPSC's fax-on-demand service, call CPSC's hotline at (800) 638-2772 or CPSC's teletypewriter at (800) 638-8270. To order a press release through fax-on-demand, call (301) 504-0051 from the handset of your fax machine and enter the release number. Consumers can obtain releases and recall information via Internet gopher services at [cpsc.gov](http://cpsc.gov) or report product hazards to [info@cpsc.gov](mailto:info@cpsc.gov)

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- Certain manufactured synthetic surfaces also are acceptable; however, test data on shock absorbing performance should be requested from the manufacturer.

2. **Fall Zones** - A fall zone, covered with a protective surfacing material, is essential under and around equipment where a child might fall. This area should be free of other equipment and obstacles onto which a child might fall.

Stationary climbing equipment and slides should have a fall zone extending a minimum of 6' in all directions from the perimeter of the equipment.

Swings should have a fall zone extending a minimum of 6' from the outer edge of the support structure on each side. The fall zone front and back of the swing should extend out a minimum distance of twice the height of the swing as measured from the ground to the top of the swing support structure.

3. **Swing Spacing** - To prevent injuries from impact with moving swings, swings should not be too close together or too close to support structures. Use the following guide:

- No more than two swing seats suspended in the same section or bay of the support structure. Use the following clearances for conventional to-fro swings:

- Horizontal distance between adjacent swing seats - at least 24".

- Horizontal distance between swing seat and adjacent structural component - at least 30".

- No more than one tire swing suspended in same section or bay of support structure. Distance between the outer-most edge of a tire swing and the adjacent upright of the support structure - at least 30" when the tire is swung to a position closest to the support structure.

- No swings attached to multi-activity equipment.

- No heavy animal swings with rigid metal framework.





# TIPS FOR PUBLIC Playground Safety

Publication # 324

# Fact Sheet

Each year, about 200,000 children are treated in U.S. hospital emergency rooms for playground equipment-related injuries - an estimated 148,000 of these injuries involve public playground equipment and an estimated 51,000 involve home playground equipment. Also, about 15 children die each year as a result of playground equipment-related incidents. Most of the injuries are the result of falls. These are primarily falls to the ground below the equipment, but falls from one piece of equipment to another are also reported. Most of the deaths are due to strangulations or falls.

The U.S. Consumer Product Safety Commission (CPSC) offers consumers these playground safety tips from its *Handbook for Public Playground Safety*.

1. **Protective Surfacing** - Since almost 60% of all injuries are caused by falls to the ground, protective surfacing under and around all playground equipment is the most critical safety factor on playgrounds.

- Asphalt and concrete are unacceptable. They do not have any shock absorbing properties. Similarly, grass and turf should not be used. Their ability to absorb shock during a fall can be reduced considerably through wear and environmental conditions.
- Certain loose-fill surfacing materials are acceptable, such as the types and depths shown in the table:

**Fall Height In Feet From Which A Life Threatening Head Injury Would Not Be Expected**

Type of Material	6" DEPTH	9" DEPTH	12" DEPTH
Double Shredded Bark Mulch	6	10	11
Wood Chips	6	7	12
Fine Sand	5	5	9
Fine Gravel	6	7	10

U.S. Consumer Product Safety Commission

Washington, DC 20207

Hotline: 1-800-638-2772

Attendance List

F15.36 on Soft-Contained Play Systems

June 28-29, 1995

Roger Amorosi  
Jay E. Blanke  
Frederick W. Boedeker  
Jonathan E. Brooks  
Keith Burnett  
Reg R. Ghosh  
Jack E. Gonzenbach  
Esther F. Grossman  
David M. Hamilton  
Mike K. Hayward

*Celestine Trainor*  
~~Scott R. Hieb~~  
Walter J. Henderson  
Richard J. Henry  
Marylou Iverson  
Scott C. Kistler  
Lawrence D. Krause  
Kenneth S. Kutska  
Steven T. Lauzun  
Wayne L. Mitchell  
Kevin Owens

Robert M. Pepper  
Mark A. Rappaport  
Lloyd W. Reese  
Elizabeth L. Roberts  
Elaine M. Sherman  
Larry Steingraber  
Robert J. Stluka  
Phillip G. Tate  
Frances Wallach

Visitors

Barry Segal  
Ken Trigg  
Lance Saylor

Marc Folkers  
Peggy Greenwell  
Monty Christiansen

Charels Shedd  
Thomas Kalousek  
Cleve King