

**COMMUNITY PRESERVATION COMMITTEE
TOWN OF NEEDHAM, MASSACHUSETTS**

**Minutes of Meeting
February 13, 2013**

Present: Mark Gluesing – Chairman, Janet Bernardo – Vice Chairman, Reg Foster, Mike Retzky, Sam Warner, Lita Young

Absent: Carol Boulris, Gary Crossen, Paul Siegenthaler

Guest: Connie Barr, Needham School Committee
Lee Newman, Director of Planning and Community Development
Debbie Schmill, Needham Community Farm

Town Staff: Patricia Carey – Staff Liaison
Nicole DiCicco – Recording Secretary

The meeting convened at 7:30PM in the Highland Meeting Room located in Town Hall.

Chairman's Updates: Mr. Gluesing is currently working on an updated version of a funding concept list that includes past debt service, past and estimated future budgets, and proposed Town priority projects for the Committee to review. Once the updated listing is complete, the Committee can discuss any form of a plan to prepare to fund upcoming proposals.

Review of New Proposals

FY2013-4, Community Housing Specialist: Mr. Gluesing introduced Planning and Community Development Director Lee Newman who gave an overview on the proposal, and of the HUD funds which would be made available to the Town with the assistance of a Community Housing Specialist. Highly recommended by the State, having a Housing Specialist allows for state grant money to be applied for and used by the Town to manage 40B housing available in Needham, as well as seeking new opportunities.

FY2013-12, Community Farm Soil Quality Improvements: Mr. Retzky introduced Debbie Schmill of the Needham Community Farm who gave an overview on the proposal, history of the current farm property and detailed all the factors prohibiting the Community Farm volunteers from having optimum growing conditions. Ms. Schmill mentioned alternate methods for improving the soil conditions, so will submit a revised proposal through the project liaison Mr. Retzky.

Mr. Gluesing suggested that Ms. Schmill compile lists of all the current and future youth, adult and family programming and the many different items being grown on-site being offered by the farm in order for the Committee to gain a better idea of the site's regular community usage. In addition to the usage listing, it was suggested that a

list also be made of all the food products grown by the farm and who/ what local organizations benefit from having the Community Farms fresh produce available.

FY2013-9, Newman Pre-School Surfacing: As the primary project contact, Park & Recreation Department Director Patricia Carey presented a general background of the Newman Preschool Playground to the Committee including its current layout and surfacing ideas. *[see Addendum 1.a & 1.b]*

FY2013-6, Open Space and Recreation Plan: No additional information.

FY2013-7, Reservoir Trail Design; Ridge Hill Loop Design: No additional information.

FY2013-8, Newman Fields & Eastman Conservation Trails: No additional information.

FY2013-11, Mills Park Design: No additional information.

Next Steps: Mr. Gluesing asked for each project liaison to prepare an informative project packet and submit to him by February 19th so that the packets can be presented to the Finance Committee during the meeting that he, Ms. Bernardo and Ms. Carey will be attending on February 27th. Ms. Carey and Ms. DiCicco will begin preparing the Town Meeting Member notification mailing for the upcoming, March 13th public hearing. Ms. Bernardo added that she highly recommends that every Committee member visit each of the project sites prior to this hearing, if they haven't already, in order to get an accurate visual on what is being proposed in each project.

Minutes – January 30, 2013: Mr. Retzky made a motion to approve the minutes of the January 30, 2013 meeting. The motion was seconded by Ms. Bernardo and was approved unanimously.

Upcoming Schedule:

- Meeting: Wednesday, February 27th, 8:00PM – Highland Room, Town Hall
- Public Hearing: Wednesday, March 13th, 7:30PM – Highland Room, Town Hall

Adjournment: Mr. Warner made a motion to adjourn the meeting at 9:10PM. Ms. Bernardo seconded the motion and the meeting was adjourned at 9:10PM.

Respectfully submitted,

Nicole DiCicco
Recording Secretary

FY2013-9 Newman Pre-School Surfacing

Liaison: Sam

Primary Contact: Patty Carey

How will MAAB approval be acquired for the surface chosen?

Information has been sent with options, for their guidance.

What information has MAAB provided to date?

None. The board directed their staff to set up a meeting with us, but that has not happened. Information has been mailed for their review, to remind them about the need for the meeting and to, hopefully, speed up the decision making process by providing options for their review.

Who currently serves this role?

The Park and Recreation Department, with assistance from DPW and private contractors, is responsible for playground maintenance at all parks and schools. Oversight on new playgrounds and donations is handled by Patty with assistance from Nicole who is a Certified Playground Safety Inspector.

How large an area is involved?

It is a small space that is also narrow, decreasing the number of options available.

Is there an accessible path to the playground?

Under the federal standards that we use, there are accessible routes to the playground equipment with the wood fiber surfacing. MAAB now has a more stringent regulation but has not provided guidance to communities as of this date.

Material, costs, timing???

Because of the small site, it is likely there will be two options: a solid poured-in-place rubber surface and a synthetic grass recently used on the new playgrounds at Newman for older children. On larger playgrounds, synthetic grass is typically less expensive, but in this small space, the estimate is actually higher. Poured-in-place is estimated at \$46,000 and synthetic grass is estimated at \$49,000. As these are just individual estimates, the amount requested for funding will need to be higher than that, to insure the project could be completed with the company awarded the contract after the RFP process. All unused funds would be returned to the CPA fund. The estimate includes the product and installation. MAAB is requiring a solution be installed during Summer 2013.

What is the condition of the existing playground equipment? Is there an expectation of replacing any of it in the near future?

The current condition is very good. The teachers at the preschool are usually looking for new options, but there isn't space remaining. They would need to submit their request through the capital planning process with the School Department.

Are there any special maintenance issues with the likely surfacing?

Synthetic grass requires raking of high impact areas. Poured-in-place requires washing for sanitary purposes, as materials stay on the surface. If vandalized, it is more difficult to repair poured-in-place.

If the CPC does not recommend funding, would the School Committee still be required to do this project with another source of funding?

Yes, and they have not found a source of that funding at this time, as they had other priority capital projects needing funding prior to getting this notification from MAAB.

Would the School Committee seek funds to supplement what is available from the CPC, in order to leverage the CPC funds?

There are not any current options.

Does the School Committee have any comments or concerns?

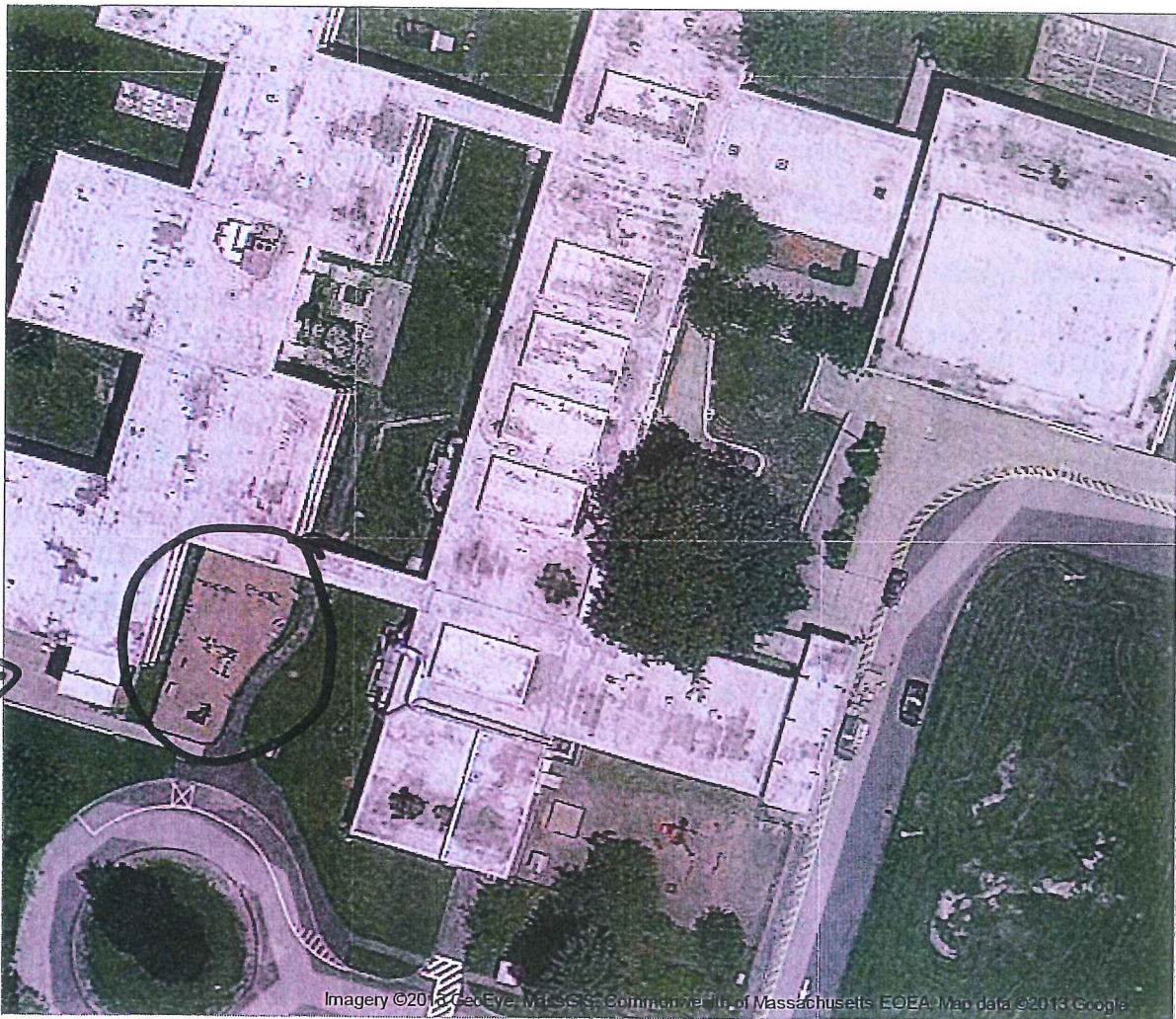
The Needham School Committee and school administration supports making this playground accessible for all preschoolers and appreciates the CPC considering a request for funding.

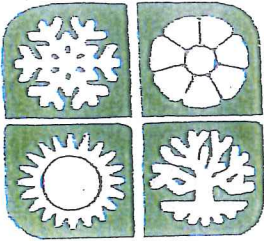
Newman School, Central Avenue, Needham, MA - Google Maps

<https://maps.google.com/maps?hl=en&tab=w1>

Google

To see all the details that are visible on the screen, use the "Print" link next to the map.





NEEDHAM PARK AND RECREATION COMMISSION

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Patricia M. Carey, C.P.R.P.
Director
Karen A. Peirce, C.P.R.P.
Assistant Director

January 18, 2013

Mr. Thomas P. Hopkins, Director
MA Architectural Access Board
One Ashburton Place, Room 1310
Boston, Massachusetts 02108

Re: Docket Number V12 245, Newman Elementary School, 1155 Central Avenue,
Needham, MA

Dear Mr. Hopkins,

The information that follows and that is attached is in reference to the decision of the MA Architectural Access Board on November 20, 2012 in reference to the Preschool playground at the Newman School.

“GRANT: a time variance for compliance with 521 CMR Section 19.7 until the summer school break of 2013, for the compliant route to be provided. In addition, the Board encouraged the meeting with the AAB staff to discuss compliant surface routes after the first of the year. The Board staff will contact Mr. Popper to arrange the meeting.”

The Needham Park and Recreation Department, with the assistance of the Department of Public Works and private contractors, is responsible for the maintenance of Needham's school and park playgrounds. On our staff, we have a Certified Playground Safety Inspector, a certification program provided by the National Playground Safety Institute.

The Town of Needham follows five primary sets of national standards.

- **ASTM F 1487:** Standard Consumer Safety Performance Specification for Playground Equipment Use
- **ASTM F 2223:** Standard Guide for ASTM Standards on Playground Surfacing
- **ASTM F 1292:** Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment
- **ASTM F 1951:** Standard Specifications for Determination of Accessibility of Surface Systems Under and Around Playground Equipment
- **U.S. Consumer Product Safety Commission:** Public Playground Safety Handbook

Nationally, there are more than 150,000 reported injuries to children on an annual basis, and about 3/4ths of those injuries are related to falls. The other injuries relate to impact with moving equipment or other children, or injuries due to damaged or vandalized playground equipment.

When choosing the surface material, Needham must review many issues for each particular location, including but not limited to:

- The age group that the playground intends to service;
- The ability to access the play equipment;
- The ability to avoid tripping hazards;
- The location in relation to direct sun, reducing the retention of heat;
- The ability to maintain, and provide sanitary conditions;
- IPEMA certification*;
- Available funds

* IPEMA, the International Play Equipment Manufacturers Association, provides 3rd party Product Certification services for U.S. and Canadian public play equipment and public play surfacing materials in the U.S. They service IPEMA-certified member companies, affiliated playground industry groups and anyone with an interest in playground equipment regulations.

OPTIONS

The MA Architectural Access Board has chosen to interpret compliancy in a variation from other states, Needham seeks your guidance on what surfacing options would be considered compliant. The Needham Commission on Disabilities has not been updated with this information, so is not able to provide guidance to us. I have also spoken to representatives of several companies that sell playground equipment in Massachusetts, and they could not give specific recommendations, either.

On the following pages, I have outlined six options. The photos are from playground catalogues and none of these playgrounds are located in Massachusetts. Several of the photos are from a company that partners with Boundless Playgrounds, a national non-profit that works with communities to create exciting, accessible playgrounds. www.boundlessplaygrounds.org

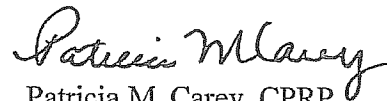
Needham's preferred option is the "hybrid" option, which seems to be the option used for many of the Boundless Playgrounds. In the case of the Newman Preschool playground, the site is too small to create individual pathways. The most likely options for this particular playground are the poured-in place rubber surface or the synthetic grass surface. The estimates for either option are almost identical for this small site, and will likely cost more than \$50,000. We are currently in the process of investigating how to locate the funding in the short period of time provided for installing a solution.

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Please review the options and provide guidance on what would meet the MAAB criteria for compliancy.

Thank you.

Sincerely,


Patricia M. Carey, CPRP
Director

cc: Dan Gutekanst, Superintendent of Schools
Kate Fitzpatrick, Town Manager
David Tobin, Town Counsel
Steve Popper, Director of Design and Construction
David Roche, Building Commissioner
Needham Commission on Disabilities

NEEDHAM PUBLIC SCHOOLS NEEDHAM PARK AND RECREATION

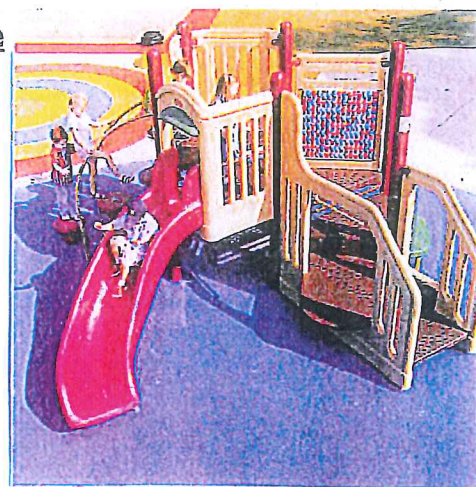
PLAYGROUND SURFACING OPTIONS

All Options

- Product must be IPEMA certified for quality assurance
- Product must meet ASTM F-1292 for critical fall heights; requirements for depth depend on height of equipment; purpose is to decrease injuries from fall
- Product must meet ASTM F-1951 for determination of playground surface accessibility; purpose is to provide accessible route to play features
- Must conform to Americans with Disabilities Act
- Installer must follow guidelines in order to meet above standards
- All products require subsurface preparation
- *Note: intention of photos is to display surface options; all playground features may not be accessible*

Poured-In Place Rubber Surface

- Two layer system
- Top layer: Ethylene Propylene Diene Monomer
- Lower layer: Styrene Butadiene Rubber
- Numerous color options, custom design options
- Difficult to repair vandalized areas
- Specialized cleaning process for sanitation
- Some products do not meet criteria for fall heights
- Can retain heat in direct sun
- Must be professionally installed
- Most expensive option



Synthetic Grass Surface

- Latest addition to surfacing options
- Two layer system
- Top layer: polyethylene monofilament fibers
- fiber lengths average 1.75 inches long
- Lower layer: soft pad for shock absorption
- Pervious surface, allowing for increased sanitary conditions
- Requires maintenance to prevent compaction
- Some products do not meet criteria for fall heights
- Can retain heat in direct sun
- Must be professionally installed
- Expensive option



Rubber Tile Surfacing

- Standard size squares, typically 24" x 24"
- Accessory edge pieces for accessibility
- Site must be square; tiles can't be cut to fit
- 100% Styrene Butadiene Rubber - tire rubber
- Polyethylene surface
- Multiple color options
- Damaged tile can be replaced
- Specialized cleaning process for sanitation
- Some products do not meet criteria for fall heights
- Can retain heat in direct sun
- Professional installation not required
- Moderately priced option



Loose Rubber Fill Surfacing

- Loose fill option
- Typically a recycled tire rubber product
- Multiple color options
- Requires more maintenance than solid surface
- Porous, sanitary
- Retains less heat than solid surface
- Professional installation not required
- Moderately priced option



Engineered Wood Fiber Surfacing

- Loose fill option
- Natural option, engineered for safety (not garden mulch)
- Requires regular maintenance to maintain accessibility
- Requires additional material annually
- Porous, sanitary
- Does not retain heat
- Professional installation not required
- Least expensive option
- *Companies are experimenting with adding a bonding agent to create a more resilient surface, but haven't been able to meet the criteria for critical fall heights, yet.*

Hybrid Surfacing

- Accessible pathways created with poured-in-place or rubber tile surface options
- High impact areas under swings and base of slides with poured-in-place or rubber tile surface
- Fall zones outside of pathways filled with engineered wood fiber product
- Provides easy to maintain areas where stability and durability are most needed
- Retains less heat than a solid surface
- Moderately priced option, with less challenges than other options





Standard Guide for ASTM Standards on Playground Surfacing¹

This standard is issued under the fixed designation F 2223; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

^{e1} NOTE—Mercury caveat was added editorially (1.5) in July 2007.

1. Scope

1.1 This guide covers standards for selecting and specifying surface systems under and around playground equipment.

1.2 This guide describes how to apply existing ASTM standards to evaluate the impact attenuation, accessibility characteristics and product characteristics when selecting surfacing systems for use under and around playground equipment.

1.3 This guide does not imply that an injury cannot be incurred when the surface system complies with standards referred to in this guide.

1.4 The values stated in inch-pound units are to be regarded as standard. The SI units given in parentheses are for information only.

1.5 **Warning**—Mercury has been designated by EPA and many state agencies as a hazardous material that can cause central nervous system, kidney, and liver damage. Mercury, or its vapor, may be hazardous to health and corrosive to materials. Caution should be taken when handling mercury and mercury-containing products. See the applicable product Material Safety Data Sheet (MSDS) for details and EPA's website (<http://www.epa.gov/mercury/faq.htm>) for additional information. Users should be aware that selling mercury or mercury-containing products, or both, in your state may be prohibited by state law.

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

F 963 Consumer Safety Specification for Toy Safety

F 1292 Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment

F 1487 Consumer Safety Performance Specification for Playground Equipment for Public Use

F 1918 Safety Performance Specification for Soft Contained Play Equipment

F 1951 Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment

F 2075 Specification for Engineered Wood Fiber for Use as a Playground Safety Surface Under and Around Playground Equipment

2.2 Canadian Standard:

CSA Z614 Children's Playspaces and Equipment³

2.3 Government Publications:

CPSC (US Consumer Product Safety Commission) Handbook for Public Playground Safety, Pub. No. 325⁴

US Code of Federal Regulations Part 3, 36 CFR Part 1191 Americans with Disabilities Act Accessibility Guidelines: Play Areas: (Final Rule)

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *acceleration*—the time rate of change of velocity.

3.1.2 *critical height*—the maximum height in full feet for a surfacing system that, when tested in accordance with Specification F 1292, no value shall exceed 200 g-max or 1000 HIC.

3.1.3 *deceleration*—the time rate of reduction of velocity.

3.1.4 *drop height*—the distance from which the instrumented headform is released to the surface.

3.1.5 *fall height*—the vertical distance between a designated play surface of the play equipment and the protective surfacing beneath it. In the case of swings, the vertical distance from the pivot point for the swinging element to the protective surface beneath it. The playground standard that has relevant jurisdiction should be consulted with relation to specific play structures.

¹ This guide is under the jurisdiction of ASTM Committee F08 on Sports Equipment and Facilities and is the direct responsibility of Subcommittee F08.63 on Playground Surfacing Systems.

Current edition approved May 1, 2004. Published May 2004. Originally approved in 2003. Last previous edition approved in 2003 as F 2223 – 03.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For Annual Book of ASTM Standards volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from Canadian Standards Association (CSA), 178 Rexdale Blvd., Toronto, ON Canada M9W1R3.

⁴ Available from the Consumer Product Safety Commission, Washington, DC 20207, website: www.cpsc.gov.

3.1.6 *g*—acceleration due to gravity at the earth's surface at sea level (32 ft/s² (9.8 m/s²)).

3.1.7 *g-max*—the multiple of *g* that represents a maximum deceleration experienced during an initial impact.

3.1.8 *headform*—the striking part of testing apparatus.

3.1.9 *head injury criteria (HIC)*—a measure of impact severity that considers the duration over which the most critical section of the deceleration pulse persists as well as the peak level of deceleration.

3.1.10 *impact attenuation*—the ability of a surface to reduce and dissipate the energy of an impacting body.

3.1.11 *impact velocity*—the velocity of a falling body immediately prior to striking the surface.

3.1.12 *loose fill system*—a surface system consisting of small independent, moveable components such as sand, gravel, wood chips, engineered wood fiber, rubber particles, and like materials.

3.1.13 *surface system*—all materials that contribute to the impact absorption of force to minimize the likelihood of a life threatening head injury under and around a piece of playground equipment.

3.1.14 *theoretical drop height*—equates the measured velocity of the headform to a height that would generate the same velocity if the test were performed at sea level and there was no friction to retard the headform during a drop from that height.

3.1.15 *unitary system*—a surface system consisting of one or more components bound together, such as foam composites, urethane/rubber systems such as prefabricated blocks, tiles, or mats or as poured in place, and like materials.

4. Significance and Use

4.1 This guide is to be used to assist the playground owner/operator, specifier, designer, etc., in determining the properties that can be considered with regard to the protective surfacing in the playground. It is the intent to outline the requirements associated with design, installation, and maintenance of the surface. This is not a technical document and technical information must be found in the various standards.

5. Background and Rationale

5.1 Since 1986, ASTM has been involved in the ongoing development and publishing of a standard specification for the impact attenuation of the surface systems installed under and around playground equipment. This is the work of the F08.63 subcommittee on playground surfaces. This subcommittee consists of a broad spectrum of members including testing laboratory personnel, scientists, engineers, manufacturers, safety experts, and owner/operators of playgrounds.

5.2 In 1986, Subcommittee F08.63 was given the responsibility to respond to the need for a standard for the impact-attenuating surface under and around playground equipment. Specification F 1292 was first published in 1991. Since then, the specification has been revised five times in '93, '94, '95, '96, and '99.

5.3 In 1998, the subcommittee published a provisional standard specification (PS 83) for determination of accessibility for wheelchair access of surface systems under and around playground equipment. The standard was elevated to a full standard (see Specification F 1951) in 1999.

6. Factors to Consider in the Selection and Specification of Surface Systems

6.1 *Types of Material*—Every surface system is unique in material, formulation, composition, and source of raw materials and should be tested to confirm conformance with the ASTM specifications as identified within this guide (Specifications F 1292, F 1951, and F 2075).

7. Impact Attenuation

7.1 The initial work of Subcommittee F08.63 was especially important since injuries sustained from falls to the surface were determined to be 60 % of all playground injuries.

7.2 There are two measurements considered in the guide. The first is the *g-max* and the second is the HIC or Head Injury Criteria. It should be recognized that serious injuries (for example, long bone injuries and so forth) might occur even though the playground surfacing system meets the requirements of Specification F 1292. Lower values of *g-max* and HIC signify better performance for impact absorption.

7.3 *The g-max*—The *g-max* is the measurement of the peak deceleration of an instrumented metal headform when it impacts the surface. When the object falls from the same height onto a hard surface such as concrete, the impact duration will be very short and therefore the peak deceleration (*g-max*) will be high, but an impact on a resilient surface that yields and deforms with the force, results in a longer impact and a lower peak deceleration (*g-max*).

7.4 *Head Injury Criteria (HIC)*—A measure of impact severity that considers the duration over which the most critical section of the deceleration pulse persists as well as the peak level of the deceleration.

7.5 *Critical Height*—The maximum height from which the instrumented metal headform, upon impact, yields either a *g-max* that does not exceed 200 *g*'s or HIC exceeding 1000, when tested in accordance with the procedure described in Specification F 1292. The United States Consumer Product Safety Commission states that "critical height—the fall height below which a life-threatening head injury would not be expected to occur."

7.5.1 The surfacing material used under and around a particular piece of playground equipment should have a critical height value of at least the height of the highest designated play surface on the equipment.

7.5.2 The CPSC Handbook for Public Playground Safety (see 2.3), Specification F 1487 for play structures, as well as other national standards (see Section 2), provide fall heights for various pieces of playground equipment.

7.6 Testing:

7.6.1 *Laboratory Testing (Three Temperatures)*—Specification F 1292 recognizes that children play in climates with diverse temperature ranges. For this reason, the materials that are used under playground equipment are required to be tested in a laboratory at the temperatures of 30°F, 72°F, and 120°F (−1°C, 23°C, and 49°C) to determine the height from which the *g-max* does not exceed 200 or the HIC does not exceed 1000. The determination of this height is the critical height. When selecting an appropriate playground surface system, the owner, specifier, or purchaser, or a combination

thereof, of the playground should ensure that the critical height meets or exceeds the fall height.

7.6.2 Minimum Performance Standards—Specification F 1292 states that the pass/fail measurements for the specification are minimums.

7.6.3 Field Testing—Specification F 1292 allows for the performance testing of the playground surface in the field. Both the *g*-max must not exceed 200 and the HIC must not exceed 1000 (the same as the laboratory test). The fall height is determined by the appropriate playground equipment standard (for example, in the United States, Specification F 1487, in Canada, CSA Z614), however, the purchaser may specify a higher drop height consistent with the specification at the time of purchase. The specification requires that the drops take place at a minimum of three locations for each play structure or functionally linked play structures in a playground site and shall include those areas that may exhibit less than optimal impact characteristics. These areas may be high traffic or compressed areas as well as areas containing seams, partitions, corners and fasteners, or anchors. The equipment operator shall be trained in the proper orientation of the test instrument by a competent agency.

7.6.3.1 A failure for impact attenuation of the field test will be where the average of the last two of three drops at the exact same location and drop height using the procedure in the standard from the drop height specified by the purchaser for the surface produces a *g*-max greater than or equal to 200 or a HIC greater than or equal to 1000. These tests can be carried out at any ambient temperature. If the surface fails, the guide requires the owner/operator of the playground to repair or replace the failed surface with a surface that will comply with the standard or take the applicable part of the playground (play structure and surface) out of service until the surface can be brought into compliance.

7.6.4 The guide allows for the surface material to be tested in a laboratory to simulate wet and frozen conditions.

8. Accessibility for Persons With Disabilities

8.1 In 1996, it was determined that there was a need for a performance standard to determine the suitability of surfacing for persons with disabilities. The result was Specification F 1951.

8.2 Laboratory Testing—The tests for determining accessibility for surfacing materials are performed on a prepared test bed of the material being tested. Testing is performed with the sample temperature in the range of 40 to 100°F. A rider, weighing 165 ± 11 – 4.4 lb, propels a wheelchair in a straight line, as well as turning 90°, on the sample surface. Five trials are run for each test, with the high and low values discarded, and an average is taken from the remaining three. For loose fill systems, the sample is prepared each time the test is performed. The work per foot required to navigate on the surface shall not exceed the work per foot required to navigate a 7.1 ± 0.2 % grade on a hard, smooth surface. The owner/operator of the loose fill surface material that meets Specification F 1951 must understand that maintenance such as smoothing and filling of depressions as a result of traffic and active play will be required.

8.2.1 Minimum Performance Standards—Specification F 1951 states that the pass/fail measurements for the standard are minimums. A requirement of Specification F 1951 is that the surface must also meet the requirements of Specification F 1292.

9. Criteria for Engineered Wood Fiber

9.1 In 2001, Subcommittee F08.63 approved and ASTM subsequently published a new specification, Specification F 2075 that describes the technical requirements for engineered wood fiber. There are a number of tests performed on the subject material and the owner/operator should request test certificates. This specification ensures the quality of product.

9.2 Laboratory Testing—The testing for this guide is performed in the laboratory for particle size and distribution, heavy metals, and tramp metal, and at the manufacturing facility.

9.2.1 Sieve Analysis—Testing is done by passing the material through a specified number of sieves to determine % of each particle size in the sample of the engineered wood fiber. The specification states the acceptable values.

9.2.2 Hazardous Metals—Heavy metals, such as, but not limited to, lead and mercury, are extracted from a sample of engineered wood fiber in a hydrochloric acid solution and analyzed for the presence of heavy metals. The specification states the acceptable levels of various chemical elements. (Acceptable levels were determined by reference to Specification F 963.)

9.2.3 Tramp Metal—Samples of engineered wood fiber are tested for the presence of ferrous metal by using a rare earth magnetic probe. The sample pile is probed 112 times. The number of tramp metal pieces ½ in. or greater in size may not exceed 0 for every 50 cubic yards analyzed.

9.2.4 Minimum Performance Standards—Specification F 2075 states that the pass/fail measurements for the specification are minimums. A requirement of Specification F 2075 is that the surface must also meet the requirements of both Specifications F 1292 and F 1951.

10. Records

10.1 For compliance to Specifications F 1292, F 1951, or F 2075, the owner/operator must obtain and inspect a copy of the test certificate/report and satisfy themselves that the tested product and proposed product for installation are one and the same. The owner/operator may elect to perform field-testing following installation and on an ongoing basis of the surface system to ensure the surface system meets the specifications claimed by the manufacturer/supplier with respect to Specification F 1292.

10.1.1 A requirement of Specification F 1487:

10.1.1.1 Section 9.1 requires that there be an obstacle free surface in the use zone that conforms to Specification F 1292.

10.1.1.2 Section 11.2.2 requires that the owner/operator shall install protective surfacing that conforms to Specification F 1292.

10.1.1.3 Section 13.2.1 states that the owner/operator shall maintain the protective surfacing within the use zone for each play structure in accordance with Specification F 1292 appropriate for the fall height of each structure.

10.1.2 The accessibility requirement of Specification F 1487:

10.1.2.1 Section 10.1.2 states that an accessible route shall conform to Specifications F 1292 and F 1951.

10.1.2.2 Section 11.2.2 states that the owner/operator install the protective surface to conform with Specification F 1951 where applicable.

10.1.2.3 Section 13.2.1 states that the owner/operator shall maintain the applicable surface to Specification F 1951.

11. Keywords

11.1 accessibility; g-max; HIC; impact attenuation; play-ground; shock attenuation; surface system; wood fiber

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