



National Playground Safety Week April 19-25, 2009

ADA Approved Surface Materials

Engineered Wood Fiber
Shredded Rubber
Unitary Surfaces
All public playground
surfaces must meet:
ADA requirements &
ASTM F1292, F1487
& F1951-99.

The ASTM standards
can be referenced at:

www.astm.org

**For more information on
ADA accessible playground
safety surfacing contact your
regional PARTAS Consultant**

Gerald Parish, Manager,
PARTAS, (731) 512-1370,
Gerald.Parish@tn.gov

Mackel Reagan, PARTAS
Consultant - Middle TN
(615) 532-0755,
Mackel.Reagan@tn.gov

April Johnson, PARTAS
Consultant – East TN,
(865) 594-2144,
April.Johnson@tn.gov

Recreation Educational Services ADA Accessible Playground Safety Bulletin

Fall Related injuries

The CPSC's study (Tinsworth and McDonald 2001) reported that 79% of injuries on public playground equipment and 81% of the injuries on home equipment were related to falls. Most injuries (68%) occurred during falls to the surface beneath the equipment. A survey of other recently published studies also shows that a majority of injuries (70% on average) are due to falls. Because head-impact injuries from a fall have a potential for being life threatening, the more shock-absorbing a surface can be made, the more the likelihood the severity of the injury will be reduced. A study by the U.S. Public Interest Research Group (PIRG) and the Consumer Federation of America (CFA) showed the danger

posed by inadequate surfacing on most U.S. playgrounds. 92% of the playgrounds lacked adequate protective surfacing. And only 3%



of the playgrounds with loose-fill protective surfacing were maintained at an adequate depth. A 2001 study by the U.S. National Institutes of Health (NIH) determined that surface material on public playgrounds was a good predictor of severity of playground injuries, more so than height of equipment. In April of 1991 the

[ASTM](#) published a new standard for playground surfacing. The standard, F1292, provided the testing methods necessary to test the shock absorbing properties of surfacing, to measure the impact attenuation abilities of a playground surface. The G-max for the test is 200 (as previously recommended by the CPSC), and the laboratory tests are clearly defined. This standard is primarily directed to the producers of playground surfaces, and they will then be able to certify to purchasers that their products meet the 200g benchmark. To determine the required depth of surfacing for your play structure refer to the USCPSC handbook for Public Playground web link at the bottom of this page.

In the interest of public safety, IPEMA provides third-party Product Certification services for U.S. and Canadian public play equipment and U.S. public play surfacing materials. Both programs are administered by Detroit Testing Laboratory, Inc. All surfacing on public playgrounds should meet standards listed below. Ask your manufacturer for IPEMA Certification before purchasing their product. For more information contact, <http://www.ipema.com/>

- **ASTM F1487-07, excluding sections 7.1.1, 10 and 12.6.1** - Standard Consumer Safety Performance Specification for Playground Equipment for Public use
- **ASTM F1292-04** - Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment
- **ASTM F2075-04**- Standard Specification for Engineered Wood Fiber for Use as a Playground Safety Surface Under and Around Playground Equipment

Loose fill ADA accessible materials

Certified tested engineered wood fiber (EWF) and shredded rubber mulch are the most common forms of ADA accessible loose fill materials. EWF is by far the most common and use form of ADA accessible materials. In general EWF is initially cheaper than the rubber form of shredded materials.

DISADVANTAGES:

The following conditions may reduce cushioning potential:

- Environmental conditions; rainy weather, high humidity, freezing temperatures.
- Normal use over time

ADVANTAGES:

- Low initial cost and easy installation.
- Good drainage.
- Attractive appearance
- Readily available.



Unitary Surfaces

Unitary surfaces are continuous, monolithic surfaces, usually made of rubber composite materials. A typical installation has a cushioning layer of shredded or granular recycled rubber loosely bound with a polyurethane binder. A top layer of polyurethane bound EPDM rubber provides a durable, accessible wear course. Although expensive to install, unitary surfaces require minimal maintenance and typical installations easily meet accessibility criteria. They must be relatively thick (i.e. expensive) to meet critical fall height specifications in excess of eight feet.

Poured-in-place surfaces. These smooth, seamless surfaces look much like outdoor carpeting.

Pre-manufactured tiles. These products are similar in appearance to poured-in-place surfaces, but their shock absorbing characteristics are predictable because the tiles are manufactured under controlled conditions

DISADVANTAGES:

- Initial cost relatively high.
- Under surfacing may be critical for thinner materials.
- Often must be used on almost level uniform surfaces.
- May be flammable.
- Full rubber tiles may curl up and cause tripping.
- Some designs susceptible to frost damage

ADVANTAGES:

- Low maintenance.
- Easy to clean.
- Consistent shock absorbency.
- Material not displaced by children during play activities.

