



CANADIAN ASSOCIATION OF PLAYGROUND PRACTITIONERS

L'ASSOCIATION CANADIENNE
DES RESPONSABLES D'AIRES
DE JEU POUR ENFANTS

January 2010

The following statement is presented in response to questions arising from a study published (Dec 15, 2009) by Dr. Andrew W. Howard that compares Fibar® Engineered Wood Fibre (EWF) to Granitic Sand (GS) with respect to upper extremity, long bone injuries.

Note A: *Fibar® is a specific proprietary product brand name of Engineered Wood Fibre playground surfacing material.*

Although it was used as a reference name throughout this study, it should not be considered as a generic term for this type of material.

Note B: *Granitic Sand is a geographically unique/specific type of sand material available.*

Important: It should NOT be confused with the more traditional types of sand (ie: limestone based) available throughout North America.

School Playground Surfacing and Arm Fractures in Children: A Cluster Randomized Trial Comparing Sand to Wood Chip Surfaces
<http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1000195>

Please note that within our playground industry, studies such as this one are welcomed and appreciated. Statistical injury data is the fundamental basis for the technical and dimensional criteria found within the National Standard of Canada for Children's Playspaces and Equipment (CAN/CSA-Z614). As such, we commend the efforts and time put into this study.

The Canadian Association of Playground Practitioners (CAPP) is a voluntary non-profit organization, comprised of individuals who share a common goal of the promotion of appropriate playground environments. These playground practitioners, by definition, have playground industry-related experience from a wide range of applications, including playground inspection, retrofit/repair, supervision, management, design, manufacture, and sales of related amenities. Some members have multi-disciplinary backgrounds, giving them the ability to consider a number of different aspects that go into creating and maintaining a successful playspace.

Collectively, members of the Canadian Association of Playground Practitioners conduct thousands of playground surface inspections annually. These inspection practices are performed to ensure compliance with the National Standard of Canada for Children's Playspaces and Equipment, CAN/CSA-Z614, which states the devices and procedures used to evaluate playspaces and protective surfacing.

Product Comparability

This study focuses on two very specific proprietary surfacing products, "Fibar®" and "Granitic" sand. Yet part of the title ("*... Comparing Sand to Wood Chip Surfaces*") and the author's conclusions both seem to suggest that the results should be interpreted so broadly as to change our National Playground Standard. As noted earlier Fibar® is simply one available type of EWF product, and similarly "Granitic" sand is simply one specific type of sand available. Neither should be used as a comparative reference for all similar material types inclusive.

Variations in Product & Conditions

The author of the study also does not include the grain size distribution of the "Granitic" sand used in the study, only acknowledging that the "Granitic" sand as "*specified for this study has very uniform and very round particles*". Sand is highly variable across Canada; it can vary pit-to-pit or even within the same pit. Particle size, shape, moisture content and even contamination can play a significant role in its ability to absorb and distribute impact. Sand surfacing also requires regular maintenance to redistribute material displaced during play. Loose-fill surfacing types in general (such as pea gravel, wood-fibre, and sand) are all subject to moisture content, compaction and displacement through weathering and normal usage. Compaction can greatly reduce shock absorbency while displacement moves surfacing material from areas of greater wear, reducing the depth and therefore protection in some crucial areas. It is noted that in the study recorded depths average 18cm (Table 1), where a minimum 30cm is not only recommended by CAN/CSA-Z614 (Table D.2), but by most protective surfacing manufacturers, suppliers and inspectors.

continued,

Canadian Association of Playground Practitioners

168 Brunswick Ave., London, Ontario N6G 3K9

Email: contact@capp-online.ca Website: www.capp-online.ca



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Availability of Materials

"Granitic" sand is a very unique type of sand and not readily available to all regions in Canada, whereas Engineered Wood Fibre is generally available across Canada and provides consistent test results for impact attenuation with a relatively modest amount of maintenance. This geographically limited availability of Granitic Sand makes it impractical Nationally as a material choice in many of our playspaces.

Accessibility

Providing accessibility to all users has long been recognised as a goal for playspace designers, manufacturers, and owner-operators. Annex H of the CAN/CSA Z614 Standard provides guidelines in this regard. The displacement properties of loose-fill surfacing such as sand or peastone actually impedes mobility and therefore these surfacing materials cannot be used to provide accessibility in playspaces.

Note: as the referenced study was intended and focused only on the injury data properties of these two surfaces, it is reasonable that this accessibility aspect was not considered. However, this aspect should remain a notable priority as in reality the Owner/Operator of a playspace look to incorporate accessibility requirements in their playgrounds.

On the other hand, the properties of EWF surfacing materials have been recognised as a semi-unitary type of accessible play surface, when properly installed. Currently in North America there are 3 separate standards that pertain to the quality and performance characteristics of EWF including accessibility, heavy and tramp metals testing, sieve analysis and impact attenuation. With the exception of impact attenuation testing, there are no other checks and balances currently available for granitic sand.

In conclusion, we feel that a continuation of studies, which analyse in depth, the various properties of these two products, and others, would provide additional valuable scientific background and contribute to playground safety in Canada and to the ongoing improvement of all playground surfacing materials. To improve the state of the art, these materials would have to provide qualities that help reduce debilitating or life-threatening injuries, reduce long bone injuries, and maintain accessibility for the disabled. Unfortunately, Granite Sand does not provide accessibility.

Across Canada, in the last decade many playgrounds have been upgraded and now provide a much safer play experience utilizing a variety of surfacing materials which meet the impact attenuation requirements of CAN/CSA-Z614. Owner/Operators need to know that their investments have and will result in fewer serious playground injuries. We feel further research is warranted before generalized recommendations can be made for changes to our National Playground Standard.

Signed,

David DiPaola,
current President of Canadian Association of Playground Practitioners

Note: signed on behalf of the Association, after an open membership review and consensus agreement of the above document.

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