Good day, IPEMA Members -

We have been very closely monitoring the issue regarding some wood fiber that apparently caught fire on a playground in Texas earlier this week. Based on our knowledge of the incident, we are issuing the attached position statement to each of you. We will only release this statement to the media if it is requested from us.

We encourage each of you to develop your own position statement, if you feel the need, and have attached an example received from Zeager Bros. as well as some research information that was shared by Zeager Bros. If any of you have research or information regarding this matter that you would like us to keep on file, please send it to info@ipema.org.

We hope the attached information is beneficial to you.

Sincerely,

Denise Calabrese
Executive Director

To Whom It May Concern:

The International Play Equipment Manufacturers Association (IPEMA) has been monitoring the information being disseminated about a combustion of wood fiber which occurred at Anderson Elementary School in Arlington, Texas.

It is the position of IPEMA that judgment regarding the safety of Engineered Wood Fiber (EWF) be reserved until such time as the cause of the fire is definitively determined. We strongly believe that it is erroneous to make a negative judgment about the use of EWF based upon innuendo and guesswork. EWF has been used in many applications over the years and we feel confident that it is a safe product.

For more information about Engineered Wood Fiber and this specific occurrence, please visit these links:

http://www.dallasnews.com/sharedcontent/dws/fea/home/gardening/stories/081507dnlivmulch.3392bbfc.html
http://www.dallasnews.com/sharedcontent/dws/dn/latestnews/stories/081407dnmetplaygroundfire.2f9b9ce8.html
http://www.villageofhinsdale.org/download/Files/Mulchfires.pdf
http://www.dof.virginia.gov/fire/resources/pub-Mulch-Fires.pdf
http://www.kristv.com/Global/story.asp?S=6927492&nav=Bsmh
http://www.realcities.com/mld/dfw/news/17617658.htm?template=contentModules/printstory.jsp
http://www.statesman.com/news/content/news/stories/local/08/15/0815playg
http://usatoday.feedroom.com/?fr_story=FRsupt210402&rf=sitemap

We are also including two memos from an IPEMA member firm with research and information they have conducted related to this matter.

IPEMA recommends that safety surfacing be used in all playgrounds and that proper care and maintenance be followed at all times to ensure safety. Our organization holds safety in the highest regard and conducts a voluntary certification program validates that the following types of safety surfacing: engineered wood fiber, poured-in-place surfacing, engineered rubber/rubber chips, rubber tiles and unitary manufactured surfaces. IPEMA certified surfacing is tested by a third-party validator and tested according to the American Society for Testing and Materials (ASTM) International standards.

IPEMA is a nonprofit, tax exempt association that represents and promotes an open market for manufacturers of playground equipment and safety surfacing, and to educate society on the value of play throughout one's life. To view a listing of IPEMA members and certified products, visit www.ipema.org.

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Memo from Zeager Brothers

Several of our customers have requested that we comment on the video footage of a playground fire in Arlington, TX. Following are some questions and observations concerning the video:

1. Were the initial attempts to suppress the fire successful or did the fire flame up again? An indicator of whether or not a fire was caused by spontaneous combustion can be its behavior when suppression of the fire is attempted. Initial attempts (with water, carbon dioxide or solid chemical) may only momentarily suppress the flames because the reacting material is located underneath in the middle of the mass. According to the surveillance video, the fire began to subside on its own before the fire personnel arrived on the seen. This would not indicate a fire due to spontaneous combustion or self-heating.
2. Is there any charred wood found in the middle of the engineered wood fiber layer? If it was spontaneous combustion, the heat is greatest in the middle of the material that is literally heating itself. As the temperature in the middle of the mass increases, it would need to reach the point of charring the wood. After reaching a temperature high enough to char the wood, it would then spread throughout the engineered wood fiber and toward the surface where it may or may not break out into flame. If there is no evidence of charred wood in the middle of the layer of engineered wood fiber, the possibility of spontaneous combustion can be ruled out.
3. Did the playground equipment or surfacing contain any wood paint, stains, varnishes or treatments? Many paints and varnishes use drying oils, such as linseed oil, soya bean oil and tung oil, because of their drying effects. Drying oils are the non-saturated oils found in vegetable and animal products. These oils are susceptible to spontaneous combustion because they rapidly oxidize and could oxidize faster than the surrounding air can dissipate the heat generated from the oxidation, resulting in the temperature running away so to speak and reaching the point of ignition. This does not seem likely on the surfacing or equipment of a playground because there would be plenty of air available to dissipate the heat preventing the temperature from running away.
4. According to the surveillance video, the fire was already burning at the beginning of the video, how then can one conclude from the video how the fire started? There should be a search for evidence and clues to determine how the fire started.
5. According to the surveillance video, the smoke was black throughout the entire burn period. Why would the smoke be black if it was wood burning without any accelerants since a natural wood burning will produce a white or grey smoke? The black smoke indicates an accelerant on the wood and the plastic from the playground equipment.
6. According to the surveillance video, the fire spread rapidly across the engineered wood fiber and then rapidly subsided. Why would it have subsided on its own to the point that the only fire remaining when fire personnel arrived was around the play equipment? This again does not indicate spontaneous combustion since most of the engineered wood fiber would have burned and would certainly not have extinguished itself if it ignited itself. Further, it would likely have flamed up again after the first attempt to extinguish the fire as explained in question number 1. The fact that the fire on the wood surface extinguished itself indicates that the heat source was only on the surface and derived from something like an accelerant, that when consumed, left the fire without sufficient fuel to continue burning.
7. Why did the fire start and end around the play equipment? Again this would indicate arson since the intent of the individual would be to destroy the playground equipment, therefore leading them to apply most of the accelerant on the equipment, which is where the fire started and ended according to the surveillance video.
8. Was the wood fiber tested for accelerants? It may be too late for this, but testing may or may not reveal traces of flammable substances.
9. Was the surveillance video reviewed for evidence prior to the fire? For example, were vehicles or people seen passing by the playground? Is it not important to look for other clues regarding the start of the fire?
10. The surveillance video does not show how the fire started, it simply shows the fire after it started. If the assumption of how the fire started is wrong, this could happen again and school may be in cession at that point and the outcome could be worse. For example, if the cause was arson as the color of the smoke and the subsidence of the fire shown in the surveillance video suggests, is anyone even looking for the person? And if not, how do we know that they will not strike again? It is important that the investigation be taken seriously and that a thorough investigation take place before ruling out the most likely causes? The correct cause must be identified so precautions can be taken to prevent this from happening again. Simply removing one of the items, the engineered wood fiber in this case, does not remove the risk of this happening again, if the cause was arson. Playground equipment can be burned regardless of what type of surfacing is underneath it.

Zeager is a leading manufacturer of playground surfacing, including engineered wood fiber, with over 20 years of experience supplying surfacing across the United States and Canada. Recently some have rushed to conclusions and spread fear concerning the possibility of spontaneous combustion of engineered wood fiber on playground surfaces. Following is a response from Zeager regarding this notion and regarding the Arlington, TX playground fire.

We do know that the engineered wood fiber used at Anderson Elementary in Arlington, TX was not supplied by Zeager. Zeager has been in conversation with the company that supplied and installed the engineered wood fiber on the playground at Anderson Elementary. The supplier has seen the playground and they do not believe the fire was caused by spontaneous combustion and they do not believe that the engineered wood fiber installed on the school district's playgrounds should be removed and replaced with pea gravel. It should be noted that pea gravel would not meet ADA requirements for playground surface accessibility. Our research on the subject of spontaneous combustion has revealed several interesting findings. These findings do not support the theory that spontaneous combustion could occur even under a "perfect storm" scenario in engineered wood fiber playground surfacing.

There are two basic types of ignition, that due to external heating and that due internal heating (self-heating). Most ignitions are due to external heating. Following is a summary of our findings.

1. A recent study[1] which examined results from a century's worth of research on this topic has concluded that the lowest temperature at which wood will ignite due to external heating is approximately 250ºC (482ºF). [1]Babrauskas, V., Ignition of Wood: A Review of the State of the Art, J. *Fire Protection Engineering* 12, 163-189 (2002).
2. The temperature and length of time at that temperature before wood will ignite due to self-heating varies with the size of the wood piece. The smaller the size of the wood or the shorter the time frame, the higher the temperature necessary for ignition to occur. [2]McNaughton, G.C., Ignition and Charring Temperatures of Wood, *Wood Products* Vol. 50, 21-22 (1945).
3. Testing at the Forest Products Laboratory[2] on kiln-dried wood pieces approximately 1/8x1/4 by 3 inches (a little longer than the dimensions of engineered wood fiber but very close otherwise) were subjected to temperatures below the 482ºF required for ignition from external heating mentioned above, for long periods of time. At 107ºC (225ºF), after 1,050 days, the wood began to assume a light chocolate shade. At 120ºC (248ºF), after 1,235 days, the wood became embrittled and developed a dark chocolate color. At 140ºC (284ºF), after 320 days, the wood lost 45% of its weight and became like charcoal but did not ignite during exposure. And at 150ºC (302ºF), after 165 days, the wood lost 65% of its weight and became like charcoal but did not ignite. Engineered wood fiber on a playground surface would not reach temperatures high enough or for a long enough period of time in order to become charred, much less ignite after becoming charred. Where on earth could you have a temperature of 284ºF or higher continuously for 24 hours a day and for 320 days? [2]McNaughton, G.C., Ignition and Charring Temperatures of Wood, *Wood Products* Vol. 50, 21-22 (1945).
4. In compost piles, the temperatures are intentionally kept between 130ºF and 160ºF without risk of spontaneous combustion. Further, water serves to cool the temperature of the compost.[3] This does not support the theory that maybe large amounts of rain combined with hot weather could result in spontaneous combustion. [3]Cornell Waste Management Institute, Compost Fact Sheet #3: Improving and Maintaining Compost Quality (2004).
5. Zeager's WoodCarpet® engineered wood fiber has been tested according to two different flammability standards and has proved to be both non-flammable and resistant to flammability.