

The Myths and Facts about Rubberized Surfacing

020619

Hello, my name is Bill McGrath Jr., and I have been in the rubber surfacing business for over 35 years, originally as an installer and now as a manufacturer/distributor. My goal here is to help educate the industry on the Myths and Facts about Rubberized Surfacing.

I was first introduced to EPDM (Ethylene Propylene Diene Monomer) Rubber in the 1980's installing the product on pool decks and other concrete resurfacing applications. After years of installations I became frustrated with the wide variety of quality EPDM available and the issues with the products performance such as unpredictable color changes. I thought to myself, I love the concept, but could not stand the product.

Being involved heavily in research and development over the years in all types of rubber, I developed and introduced into the market back in 1998, the first truly light stable thermoplastic rubber known then as Nu-Crete which later became known as Pebble-Flex/Aqua-Flex. After parting ways with Pebble-Flex back in 2012, now 30+ years after installing my first rubber surfacing system I have taken all that I have learned to help create Flecks® Systems which is a 2nd generation thermoplastic rubber and the only true granulated thermoplastic rubber surfacing system available.

I have heard over the years many questions and answers regarding different types of synthetic rubber systems used in the surfacing industry, some true, some false and some misleading. I would like to set the record straight and help separate the difference between the myths and the facts.

Question:

What is the difference between an EPDM Rubber and a TPV Rubber?

Answer:

EPDM Rubber is a rubber made up of ethylene, propylene with a diene monomer which is produced through heat curing (Vulcanization) using a peroxide or sulfur curative agent. A true TPV is a combination of a plastic component (usually a polypropylene) and a rubber blended together using a peroxide curative agent. This process is widely used in automobile bumpers and for use in electrical wire insulation to name a few.

Question:

What are the benefits of using TPV's in safety surfacing compared to EPDM?

Answer:

Currently there are no true TPV's being used in the rubber re-surfacing industry today.

Question:

What do you mean? There are companies who advertise the use of TPV's in safety surfacing and for water play.

Answer:

The product marketed as TPV is in fact not a TPV. The "TPV" is actually an EPR Rubber (Ethylene Propylene Rubber). This is basically the same as EPDM but without the diene monomer. It does not have any plastic components in the formulation. These companies, I have been told, are using the term TPV as a marketing tool, that's all.

The Myths and Facts about Rubberized Surfacing

020619

Question:

What about other thermoplastic rubbers compared to EPDM and EPR (“TPV”)?

Answer:

There are a few thermoplastic rubbers being used in today’s market which are round-like pebbles/spheres. One is a urethane based rubber and another is polyolefin. Both are resistant to U.V. (Sunlight). The first true thermoplastic rubber developed by me and trademarked and sold as Pebble-Flex has performed very well over the years. The problems of fungi and bacteria growth as well as other issues have been addressed when developing our new 2nd generation thermoplastic rubber called Flecks®.

Question:

How does the new Flecks® compare to the other thermoplastic rubbers available?

Answer:

The new Flecks® Thermoplastic Rubber (TPR) was developed to overcome the problems associated with the other systems being used. Our Flecks® TPR is granulated making it provide better slip resistance compared to the round thermoplastic surfaces. In addition, we have included anti-microbial additives into both our rubber and urethane binder to keep our surfaces free from mold and bacteria and safe for children. Compared to Polysofts’ thermoplastic polyolefin rubber, Our Water Flecks® system offers superior chlorine resistance for use in aquatic surfacing. As far as safety surfacing, we offer a new foam cushioned layer, EnviroFluff®, which will not break down over time and does not contain any harmful ingredients compared to the SBR (recycled tires) the other used by the other safety surfacing systems.

Question:

What about the SBR rubber used as a cushion layer? I have heard after 2 years’ safety surfaces using SBR does not pass the CPSC guidelines for impact attenuation, ASTM F1292 standards, is this true?

Answer:

In most cases that’s true. Nine out of Ten surfaces tested fail after two years due to the SBR losing its physical properties, becoming brittle and deteriorating from the environment and chemicals in the ground breaking the surface down over time.

Question:

Why after a while do I see the top layer of rubber surfaces become loose and start to crumble? Is this because they are not U.V. Resistant?

Answer:

Yes, in most cases it has to do mainly with the types of binders that are being used and also the effects of U.V. Sunlight. This is a widespread problem with EPDM and EPR (“TPV”) surfaces due to the binders used. The EPDM granule is also affected by U.V. and will begin to breakdown and become brittle over time regardless of the binders used. If you have ever seen a rubber band left outside, it becomes brittle and loses its physical properties. This is the same effect U.V. has on EPDM rubber.