

ISSS Technical Conference 2018 in Cagliari, October 25/26, 2018

Summary of Günther Preisser

EPDM- Granules in Sport Surfaces

Fifty years ago, in 1968, on the occasion of the Olympic Games in Mexico, the first elastic granules from recycled "end of life tires (ELT)", as well as specially formulated EPDM-granules have been used/developed for synthetic tracks. Since that time, colored EPDM granules are nearly irreplaceable at high quality sport surfaces.

Why are EPDM-granules the first choice for the application in sport fields?

EPDM, a Terpolymer of Ethene, Propene and a Diene in the side group of the molecule, has an absolutely saturated hydrocarbon main chain backbone. This is responsible for the excellent weatherability, i.e. resistance against ozone, oxygen, UV and temperature. EPDM- elastomers are characterized by a very good longtime high- and low temperature resistance and good constancy to all polar chemicals. In nonpolar media, such as mineral oils, EPDM is unstable.

These extraordinary properties have been the reason for the enormous global growth in consumption, since the start of production in 1963, up to 1,53 million kt/year in 2017, to the third largest volume of all synthetic rubbers. The continuous improvement of the polymerization process with new catalyst systems, as metallocenes and ACE-catalysts, lead to many different EPDM grades with improved characteristics.

The fifty year longtime experience in the application of EPDM-granules in sport surfaces lead also to a continuous material improvement. Today all relevant requirements, standards and specifications can be met.

In the future, further improvements can be expected of EPDM rubber and blends with thermoplastic elastomers, as TPE and TPV. For the granules themselves, different sizes (~~stripes, turf~~), self gliding surfaces, and spongy, water absorbing granules are possible. Using of biobased EPDM, including fillers and plastisizer from natural sources, could change the bad reputation it has when media discredit EPDM as harmful.

The presentation explains the various factors involved with formulating EPDM products (especially those used for sport surface granules) and their influence on the quality of EPDM granules.