



Ten Cate Thiolon® Product Advisory

Requirements of rubber infill materials

Rubber infill; an important system component

Rubber infill can not only make or break sport technical characteristics and the performance of the artificial turf pitch, it can also be a hazard for the UV stability and durability of the artificial turf fibers.

Rubber infill material; 2 types of rubber

In the market for artificial turf systems, mainly 2 kinds of rubber are used: virgin EPDM rubber and regenerated SBR rubber.

To evaluate possible effects of rubber infill materials on Thiolon® LSR® sports fibers, an investigation was carried out by Ten Cate Thiolon®.

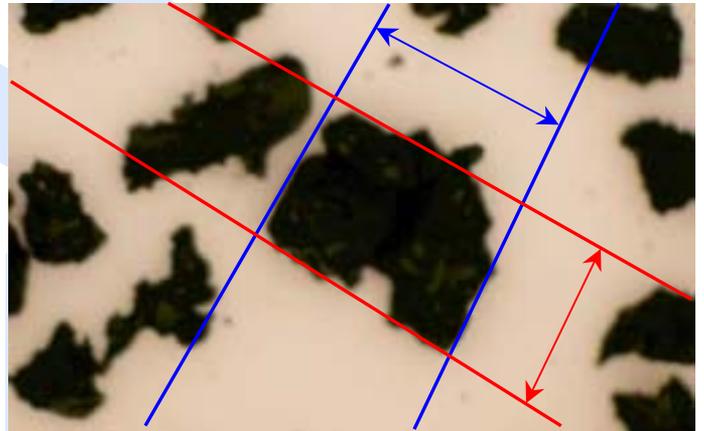
Extractable, leachable components

The processing oil can leach out of the rubber. In laboratory tests, these oils can be extracted from the rubber. Apart from the extracted quantity, the type of extracted (leachable) component is also important. Tests in the Thiolon® laboratory showed that SBR rubber showed a weight decrease of 5.3 % after extraction. The extracted material is brown and consists of aromatic and naphthenic oil. The EPDM rubber showed a weight decrease of 9.6 % after extraction. The extracted material is transparent and consists purely of paraffin oil.

TIP: Tests on the effect of these oils on the artificial turf and its life expectancy show no negative effect of any of these oil types on Thiolon® LSR® fibers.



Picture Ten Cate Thiolon®



Picture Ten Cate Thiolon®

Wear and powdering

Both EPDM and SBR rubber are originally manufactured for a different use. Car tires are manufactured to resist extensive and long use. EPDM infill material is made especially for the use in artificial grass. Consequently, SBR rubber has a higher resistance to wear and tear.

Morphology

Stud roll tests showed that baculiform particles generate more wear of the artificial grass than "normal" spherical particles. In order to judge the shape of rubber particles, we can calculate the "roundness".

$$\text{Roundness} = \frac{\text{Smallest particle dimension (red lines)}}{\text{Largest particle dimension (blue lines)}}$$

Particle size distribution

Thiolon® advises to use rubber particles that show a distribution of particle sizes between 0.25 and 3.0 mm. An infill rubber with these particle sizes can be considered as a good quality infill material.

TIP: Particles smaller than 0.25 mm are considered as dust and can build a health risk.

TIP: Chemicals within rubber infill materials could affect the UV stability of (non LSR®) artificial grass fibers, especially that of PP fibers.