



KIMO RESOLUTION 18/01

Microplastic Pollution from Artificial Grass Sports Fields

The artificial grass sports fields used widely across Europe are a significant source of microplastic pollution. These fields are becoming increasingly popular as a durable, year-round alternative to traditional grass sports fields. Each artificial grass surface consists of a mat of synthetic fibres held in place by a layer of sand. An additional layer of synthetic rubber granules (microplastics) is added to improve the suitability of the surface for sports. The granules are loosely held in place by the synthetic grass fibres but can be easily dislodged and transported away from the field by means of wind and rain, through general maintenance and on the shoes and clothes of players.

For an average sized sports field, between 1 and 5 tonnes of rubber granules are added to the field each year in order to replace the lost granulate indicating that between 1 and 4 per cent of the granules are lost each year. The most commonly used type of rubber granulate is made from a synthetic polymer called Styrene Butadiene Rubber (SBR). SBR granulate is manufactured by grinding up old tyres and can contain small quantities of harmful chemicals and heavy metals that leach out into the environment over time. Studies show that zinc, in particular, leaches out from the granulate into the surrounding environment in sufficiently high concentrations to harm soil biota and aquatic life.

Across Europe between 18,000 and 72,000 tonnes of granulate escape from artificial grass playing fields annually via grass verges, rubbish disposal, surface water drains and players' clothing. Field studies in the Netherlands found up to 70kg of granulate per year entering nearby water courses from a single pitch.

During the regular maintenance and use of artificial grass sports fields, tiny plastic fragments (microplastics) are created from the wear and tear of the synthetic fibres making up the 'grass' part of the artificial turf. These fibres are usually made from polypropylene. It is estimated that between 5 and 10 per cent of the synthetic grass fibres are degraded in this way annually.

Microplastics are defined as solid particles which are smaller than 5mm in diameter and are made from synthetic materials. The rubber polymer granules and synthetic grass fragments which are lost to the environment from artificial grass sports fields each year should therefore be recognised as a form of microplastic pollution affecting soil, waterways and ultimately the ocean.

The UN's Food and Agriculture Organisation recognises microplastics as one of the 'Chemicals of Emerging Concern' due to its detrimental effect on soil health. In the marine environment, microplastics substitute for natural prey of many organisms with negative effects on growth, reproduction and survival. Zooplankton ingest microplastics with potential ramifications throughout the food web. European Commission Decision 2010/477/EU relating to the Marine Strategy Framework Directive includes a requirement for EU states to monitor microplastics in order to ensure that they "do not cause harm to the coastal and marine environment".

Sustainable coastal communities depend on healthy marine ecosystems. In order to meet Sustainable Development Goal Targets 12.4, 12.5, 14.1 and in line with the precautionary principle, all reasonable



steps should be taken to reduce the emission of microplastics from artificial grass playing fields into the environment.

KIMO

Recognising the need to protect the marine environment from the increasing burden of microplastic pollution from artificial grass sports fields

Urges Sports Clubs and Municipalities, wherever possible, to:

- Use infill materials which reduce microplastic pollution
- Install perimeter barriers, exit grates and other physical infrastructure adjustments to reduce microplastic emissions from existing fields
- Provide maintenance staff with training regarding practical guidelines to mitigate the amount of infill lost during routine maintenance activities
- Ensure that infill is not lost to surface water drains which drain into watercourses and ultimately empty into the ocean
- Raise awareness of the problem of microplastic pollution and promote behaviours that reduce infill loss amongst users of artificial grass sports fields
- Incorporate microplastic pollution mitigation features as standard in all new fields
- Enforce existing legislation by establishing linkages between clubs, municipal sports departments and municipal environmental departments to ensure that environmental best practice for artificial turf playing fields is followed.
- Make an individualised 'Microplastic Reduction Action Plan' for each artificial grass playing field

And

Urges the European Commission and member states to:

- Promote and provide additional funding for natural grass playing fields where possible
- Promote measures to mitigate the emission of microplastics from artificial grass playing fields and provide relevant organisations with additional funding to include these measures in both new and existing playing fields

KIMO members:

- Agree to submit this Resolution to all National Governments, the European Commission and other relevant organisations.