Proposed European Union Restriction on polymeric infills (intentionally added microplastics)

Alastair Cox
ESTC Technical Director

What is a microplastic?

A. Polymer-containing particle of any composition with a continuous polymer surface coating of any thickness.

B. Polymer-containing particle with a polymer content of ≥ 1% w/w.

And where the polymer containing particles or fibres, has :

1. particles size is ≤ 5 mm
2. fibres length is ≤ 15 mm and length to diameter ratio is >3

Intentionally added microplastics:

Microplastics that are manufactured and used in (intentionally added) and un-restrained way in products.

- Microbeads in cosmetics
- Coatings on fertilisers
- Synthetic turf infill

Secondary (unintentional) microplastics:

Microplastics that occur through wear or degradation of polymeric materials

- Tyre abrasion
- Synthetic clothing fibres
- Carpet fibres – including synthetic turf

Why are they a problem?

Microplastics do not readily biodegrade. Their continued release contributes to permanent pollution of our ecosystems and food chains.

They have been found in marine, freshwater and terrestrial ecosystems as well as in food and drinking water. They can accumulate in aquatic life forms, including fish and shellfish, and work their way up into the human food chain.

Exposure to microplastics has been linked to a range of negative (eco) toxic effects on living organisms.

Each year, within Europe, around **220 000 tonnes** of microplastics end up in the environment *.

- Microplastics - ECHA (europa.eu)

Why synthetic turf infill?

- Surveys show there are over 40,000 full size sports fields in Europe + many thousands of mini-fields
- Over 85 % currently use polymeric infill
- Each full size field has (on average) 95,000 kg of infill. 1kg of ELT infill contains circa 500,000 granules
- ECHA estimate up to 16 000 tonnes (38% of all emissions) are lost from sports fields each year

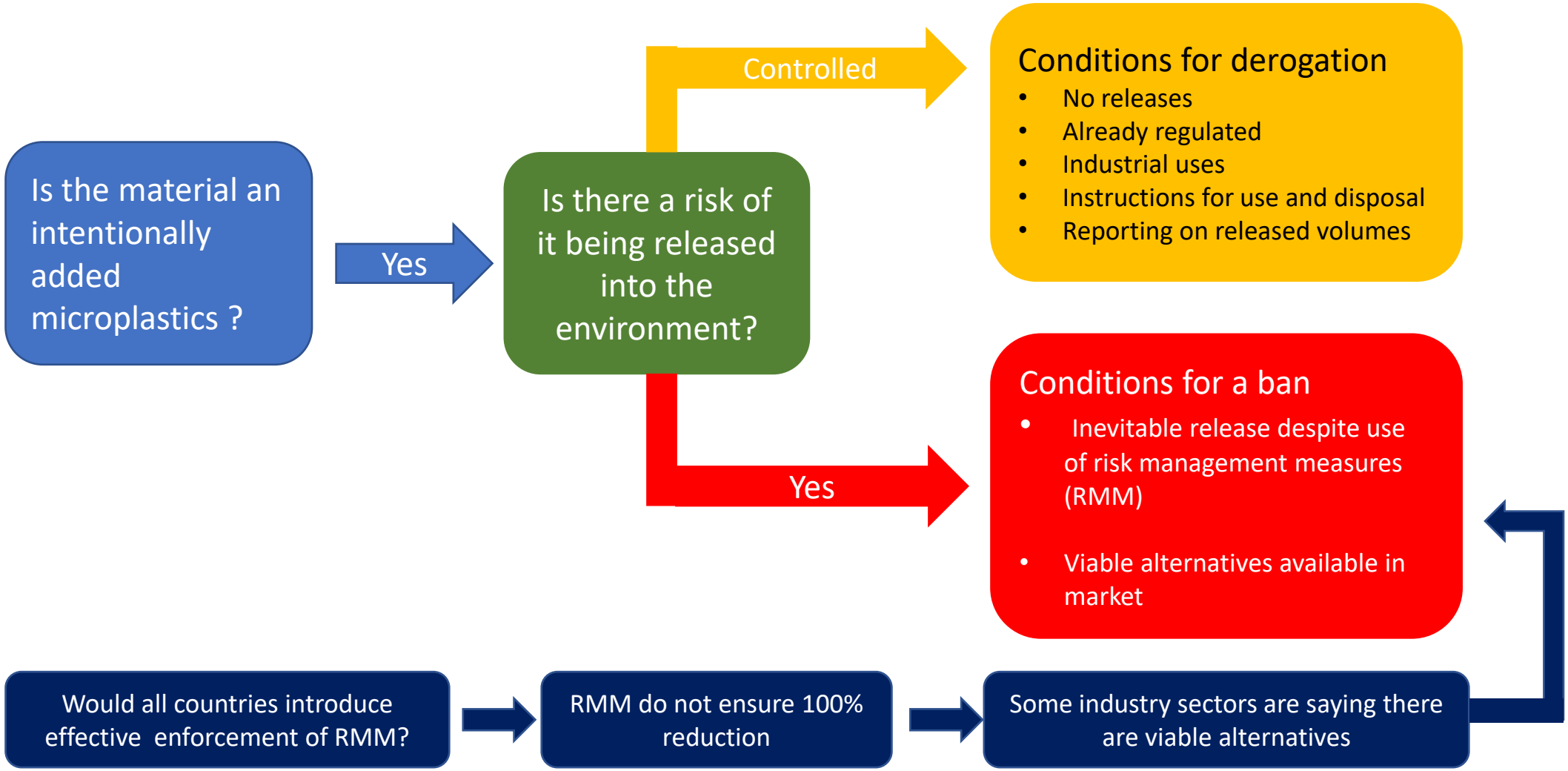
According to the European Union, synthetic turf fields are the largest user of intentionally added microplastics, and the largest source of environmental emissions.

Current position

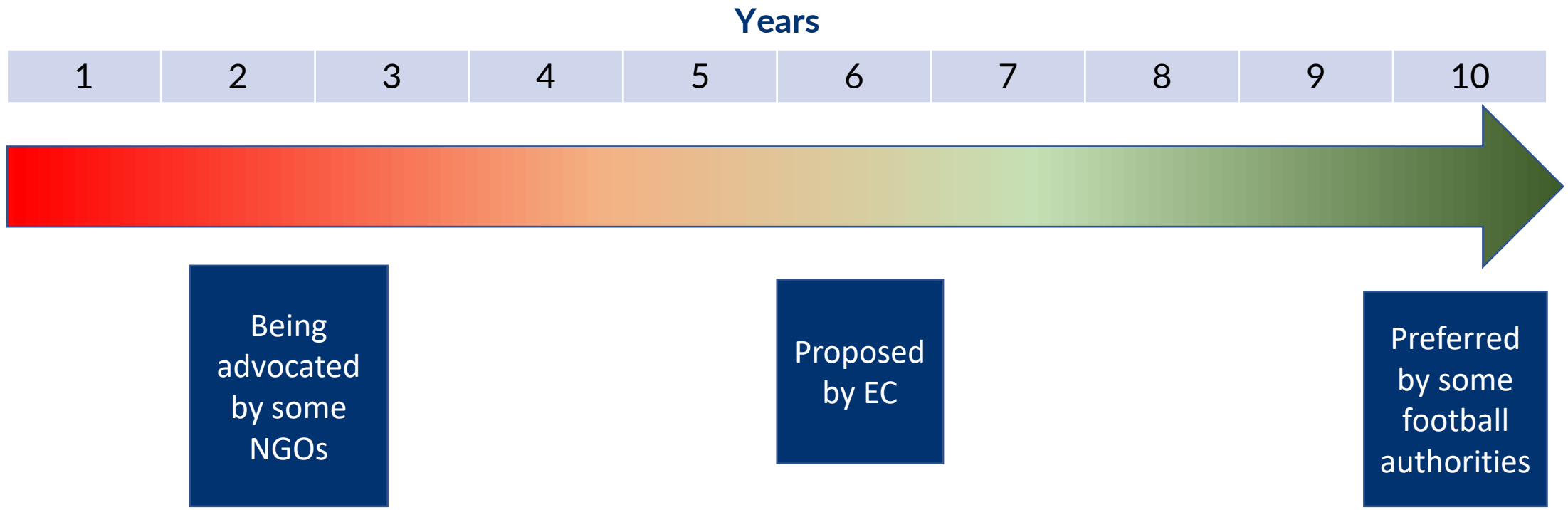
Having received the recommendations of the European Chemical Agency the European Commission has concluded that the most effective way of controlling the release of intentionally added microplastics from synthetic turf sports fields is by a ban on the sale synthetic polymer infill materials

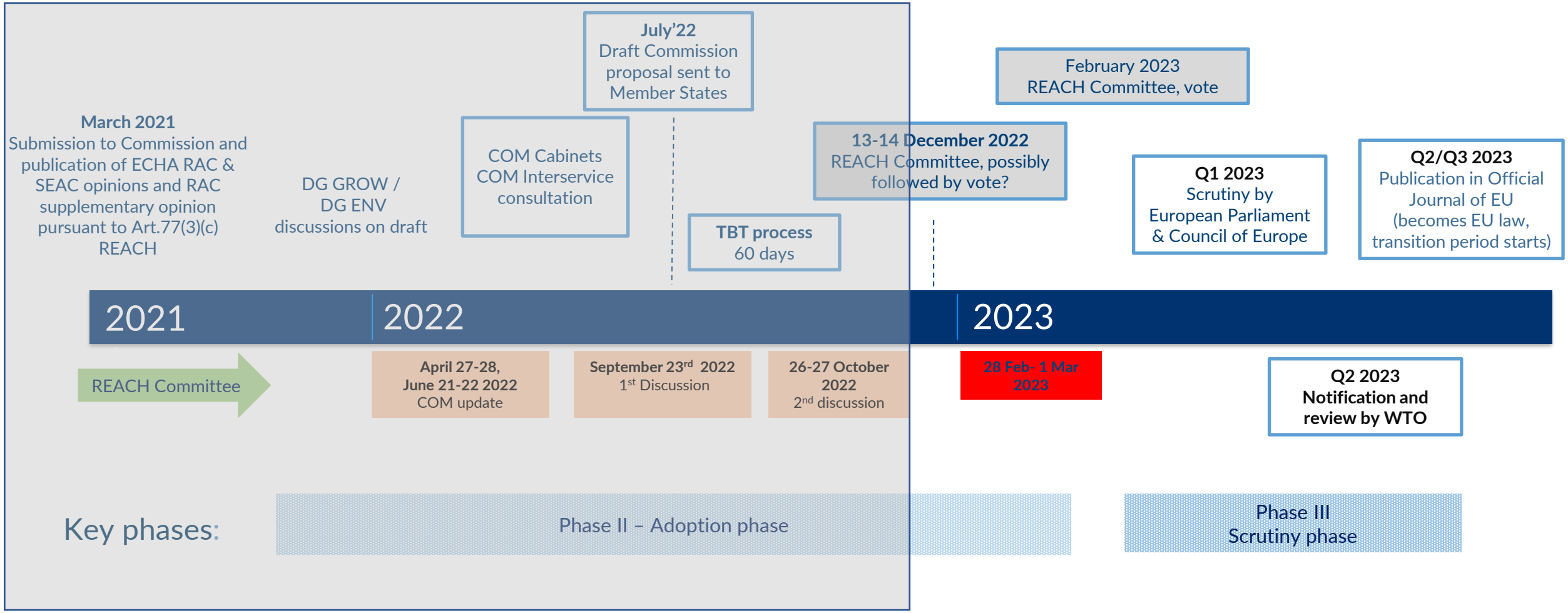
The ban to become effective six years after passing into European legislation.

Why has the EC reached this conclusion?



Transition period





Microplastics Restriction timeline

So what does this mean?

- The restriction, following any transition period, will prevent polymeric infill materials from the placed onto the European Union market i.e. you will not be able to buy new supplies of infill

- The restriction will not prevent the continued use of fields containing synthetic infill materials.

What types of infill will be banned?

Synthetic polymeric infills

- ELT
- EPDM
- TPE, etc

Polymeric coated infills

With either:

a. a particle of any composition with a polymer content of ≥ 1% w/w

a. a particle of any composition with a continuous polymer surface coating of any thickness

Ref. ECHA **ANNEX XV RESTRICTION REPORT - PROPOSAL FOR A RESTRICTION, 2019**

What about bio-degradable polymers?

To be considered bio-degradable, an infill will need to comply with at least one of five criteria.

These are demanding and include:

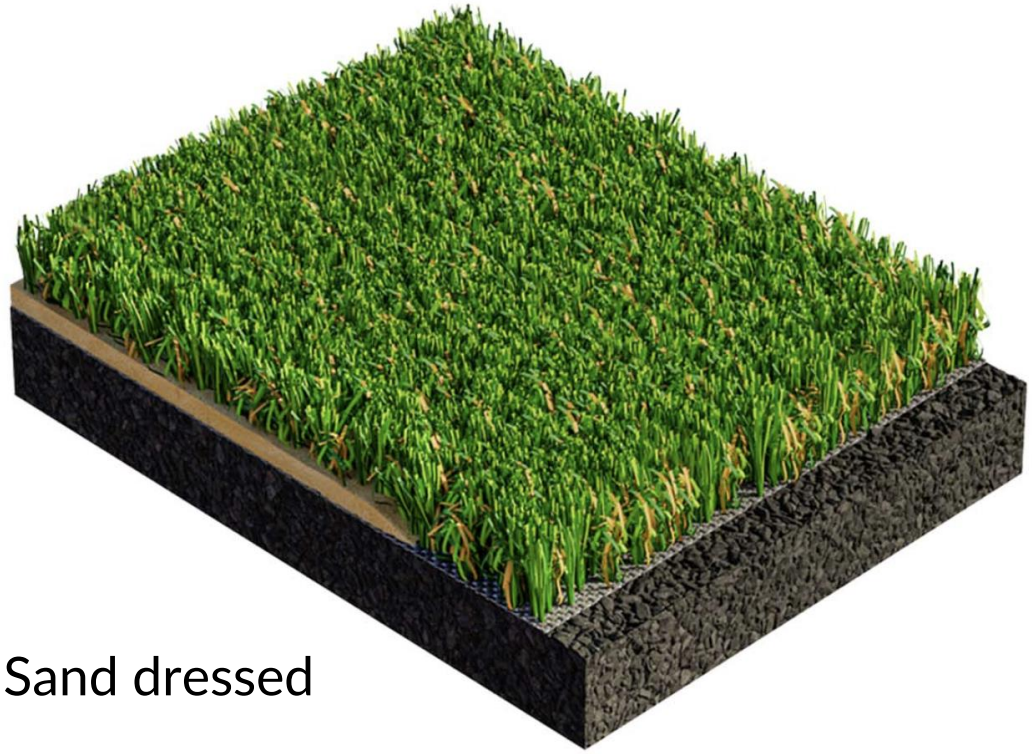
Ultimate degradation of ≥ 90 % within:

- 6 months in aquatic test
- 24 months in soil and water/sediment interface tests

Alternatives - vegetal infills

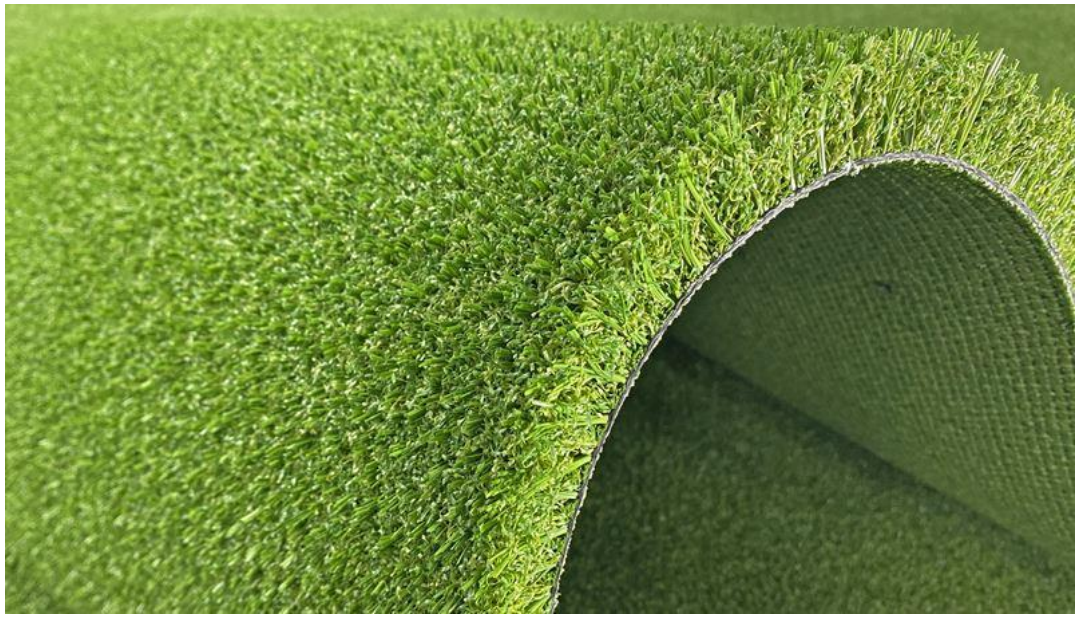
- Typical materials
- Coconut fibres
- Wood chips
- Granulated olive pits
- Granulated cork
- Granulated
- Walnut shells
- Sand

Alternative turf systems



Sand dressed

Non-filled



Alternative options & considerations

Vegetal infills	Sand dressed surfaces	Non-filled surfaces
Increased cost	Increased cost	High fibre content
Suitability for your climate	Need for a shockpad	Increased cost
Increased maintenance	Player concerns – abrasive?	Player perceptions
Need for a shockpad	Ability to retain good performance in the long-term	Limited ability to meet FIFA standards
Life expectancy	Increased fibre wear?	Ability to retain good performance in the long-term
Availability		
Transportation & carbon footprint		
Some need to be kept moist		

For further information

Info@estc.info