Enhancing Performance with Environmental Responsibility

Göteborg, 04 September 2024

Stefan Diderich
Director General ESTC
(EMEA Synthetic Turf Council)
Europe, Middle East & Africa

AGENDA

- ✓Introduction to ESTC
- ✓The Benefits of Sport & Turf
- ✓ESTC Sustainability Strategy
- ✓PEF: Product Environmental Footprint
- ✓Questions?

ABOUT ESTC

ESTC - EMEA SYNTHETIC TURF COUNCIL

- ESTC is the trade association for the synthetic turf industry in the EMEA region (Europe, Middle East & Africa). Its objective and purpose is to serve, promote, develop, grow and advocate for the synthetic turf industry. We work in both the sports and landscaping sectors.

WHAT WE DO

- We are member-driven organisation in various levels of the supply chain of synthetic turf, from polymers to synthetic turf yarns and carpet, installation and even recycling companies.

more than

170

members
in EMEA region

over

16 years

of experience
representing the
interests of the
Synthetic Turf Industry

ABOUT OUR MISSION & VISION

MISSION

Leading the evolution of turf, to create healthy & sustainable spaces.

VISION

Representing a turf industry which embodies excellence, sustainability, and innovation.

Through advocacy, education, and collaboration, we drive responsible practices and evidence-based progress, ensuring the enduring positive influence of turf solutions on communities and the environment.

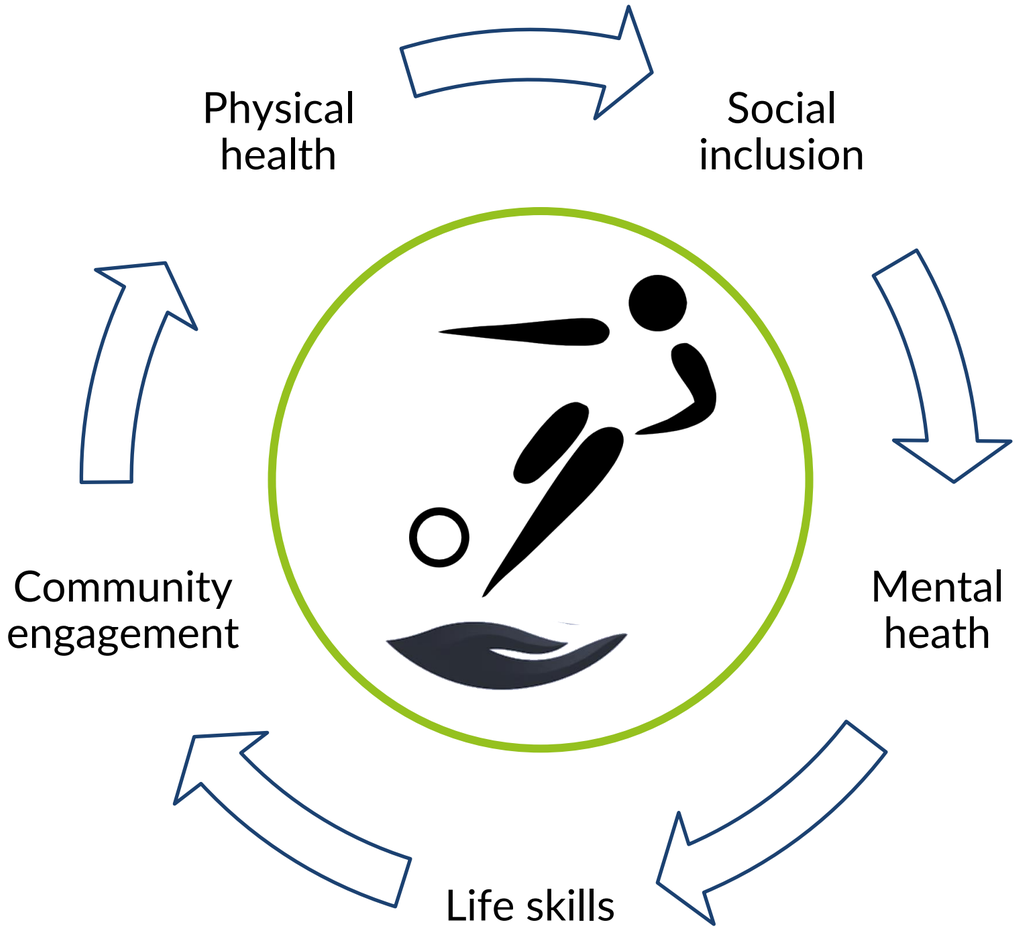
GOAL

- Promote Excellence
- Advance Sustainability
- Foster Innovation
- Advocate Responsibility and ethical practices
- Educate Stakeholders
- Collaborate for Impact

SPORT IS GOOD FOR SOCIETY

Physical activity saves £5.2 billion in healthcare & £1.7 billion in social care[2]

53% of children do not take part in the recommended 60 minutes of daily activity[1]



An active lifestyle can extend your life by 9 years[1]

11m adults do less than 30 minutes activity a week[1]

Sport England / DCMS Active Lives
2 **Identifying additional financing options for public sport and leisure services – Local Government Association**

TO PLAY SPORT YOU NEED GOOD FACILITIES:

- Consistent & safe performance
- Usable in most weather conditions
- Able to sustain high levels of use
- Simple maintenance

- Synthetic turf allows many communities to provide cost-effective, hard-wearing sports facilities.

- But synthetic turf is a man-made product, that needs to be used responsibly, in a way that minimises its impact on the environment.

- Demonstrating the real environmental impact of a product through its entire life is key to creating awareness and stimulating innovation.

Environmental Care

Centre of the strategy of ESTC

Proactive approach on environmental care

Promote benefits of synthetic turf & show accountability for industry

Understand and minimize any side effect of synthetic turf on the environment.

Microplastics Reduction

End-of-Life → Circularity

REACH Compliance → Safe Materials

PEFCR project → industry wide LCA

Product Environmental Footprint Category Rules (PEFCR) for Synthetic Turf

Understanding the Impact of PEF on Football Clubs and Field Owners

How Sustainable Practices like PEF Enhance Performance and Profitability

SUSTAINABILITY

- Environmental sustainability has become a major concern globally.
- Climate change, resource depletion, and environmental damage - to address these issues, the **European Union (EU) has developed tools to measure and promote sustainable production and consumption.**

LIFE CYCLE ASSESSMENT (LCA)

- A Life Cycle Assessment (LCA) is a method used to evaluate the environmental impacts of a product, process, or service throughout its entire life cycle. This includes every stage from raw material extraction (cradle) to production, use, and final disposal

PEF

- To ensure LCA studies are comparable, you need rules defining how a study should be undertaken and what impact categories need to be considered.
- PEF is a model of LCA developed by the European Commission's Joint Research Centre.
- PEF is now the EU LCA method to quantify the environmental impacts of products (goods or services) and organisations.
- A key component of PEF are Category Rules. These specify how a specific industry needs to undertake PEF studies on its products. ESTC has developed the Category Rules for synthetic turf surfaces.

PEF - THE AIM

The Product Environmental Footprint aims to:

STANDARDIZE
environmental impact evaluations for products and services.

PREVENT GREENWASHING
by providing a transparent framework.

HELP CONSUMERS
make informed, eco-friendly purchasing decisions.

ENCOURAGE
companies to innovate & reduce their environmental impacts through PEF assessments.

PEF METHOD - European Commission (europa.eu)

THE PROJECT TEAM

Domo / Sport and Leisure Group
FieldTurf
Polytan / Sport Group
Greenfields / TenCate Grass
Juta Grass
ReMatch Turf Recycling
UEFA

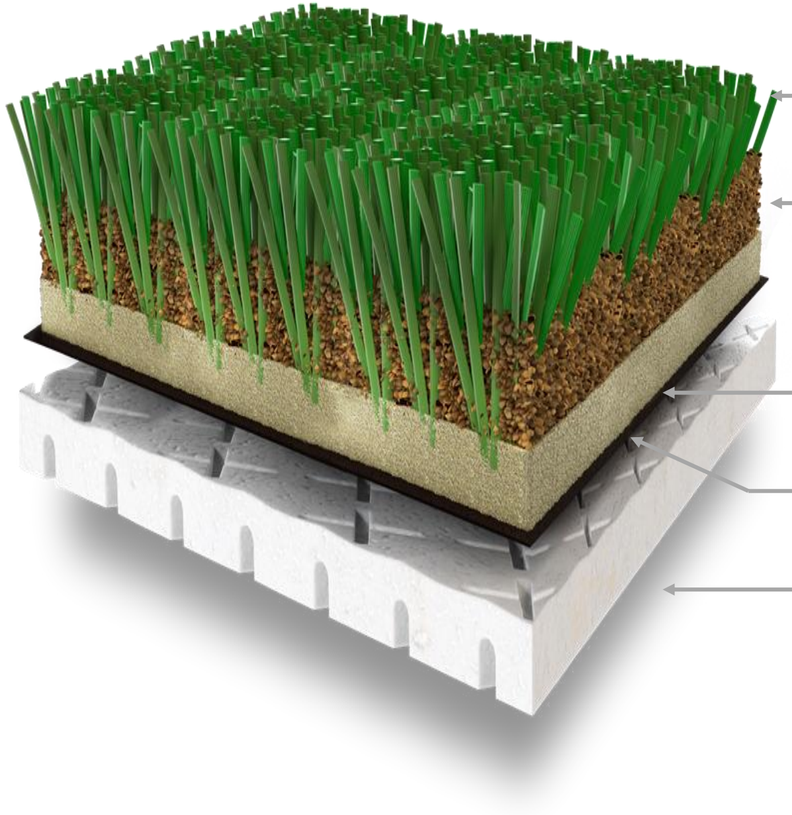
Our advisors

PRe-Sustainability
Anthesis Lavola

Our external review panel

Eco Matters NV
RDC Environmental BV
FIFA
The Football Foundation

PEF for Synthetic Turf



- Pile yarn
- Performance infill
- Stabilising infill
- Primary backing
- Secondary backing
- Shockpad

The PEFCR we have developed describes how a PEF study on a synthetic turf surface should be undertaken. It is a standardised approach for the whole industry, recognised by the European Commission.

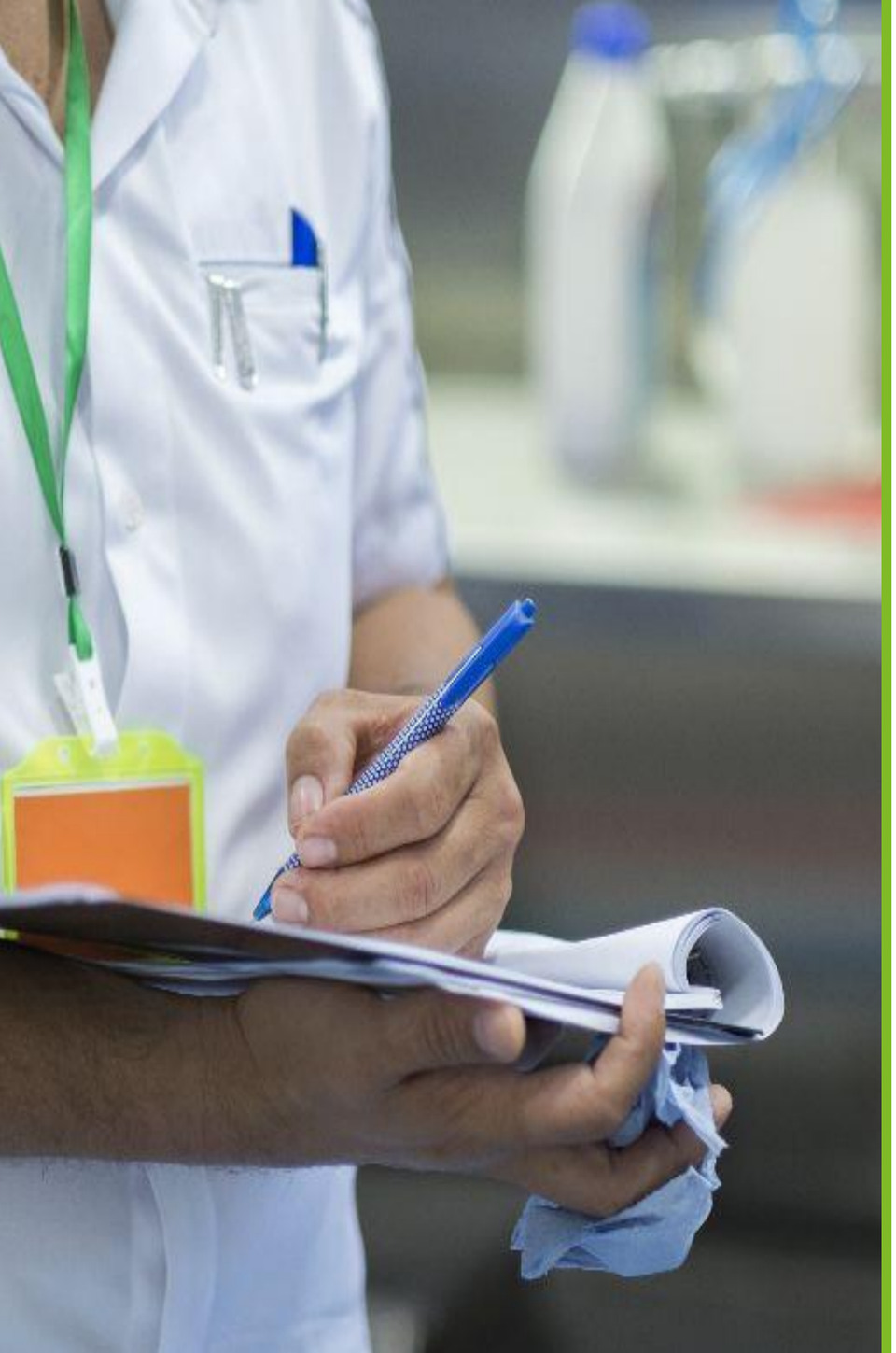
WHICH SEGMENTS OF THE INDUSTRY DOES PEFCR APPLY TO?

- PEF Category Rules for synthetic turf cover two sub-categories: sports and landscaping.
- The PEF CR is for the entire turf system, including shockpad (if applicable), backing layers, yarns, and infill (if applicable).
- The PEF does not include the construction of a field's base and drainage systems. These are always significantly influenced by site specific factors and should be analyzed on a project-by-project basis

PEF CATEGORY RULES HAVE BEEN CREATED FOR TWO SUB-CATEGORIES

LANDSCAPE

SPORTS



The mandatory life cycle stages included in an PEF study are:

1. Raw material acquisition and pre-processing

2. Manufacturing: all processes taking place from the entry to the exit gate of the production facility

3. Distribution: transport and storage of the finished product(s),

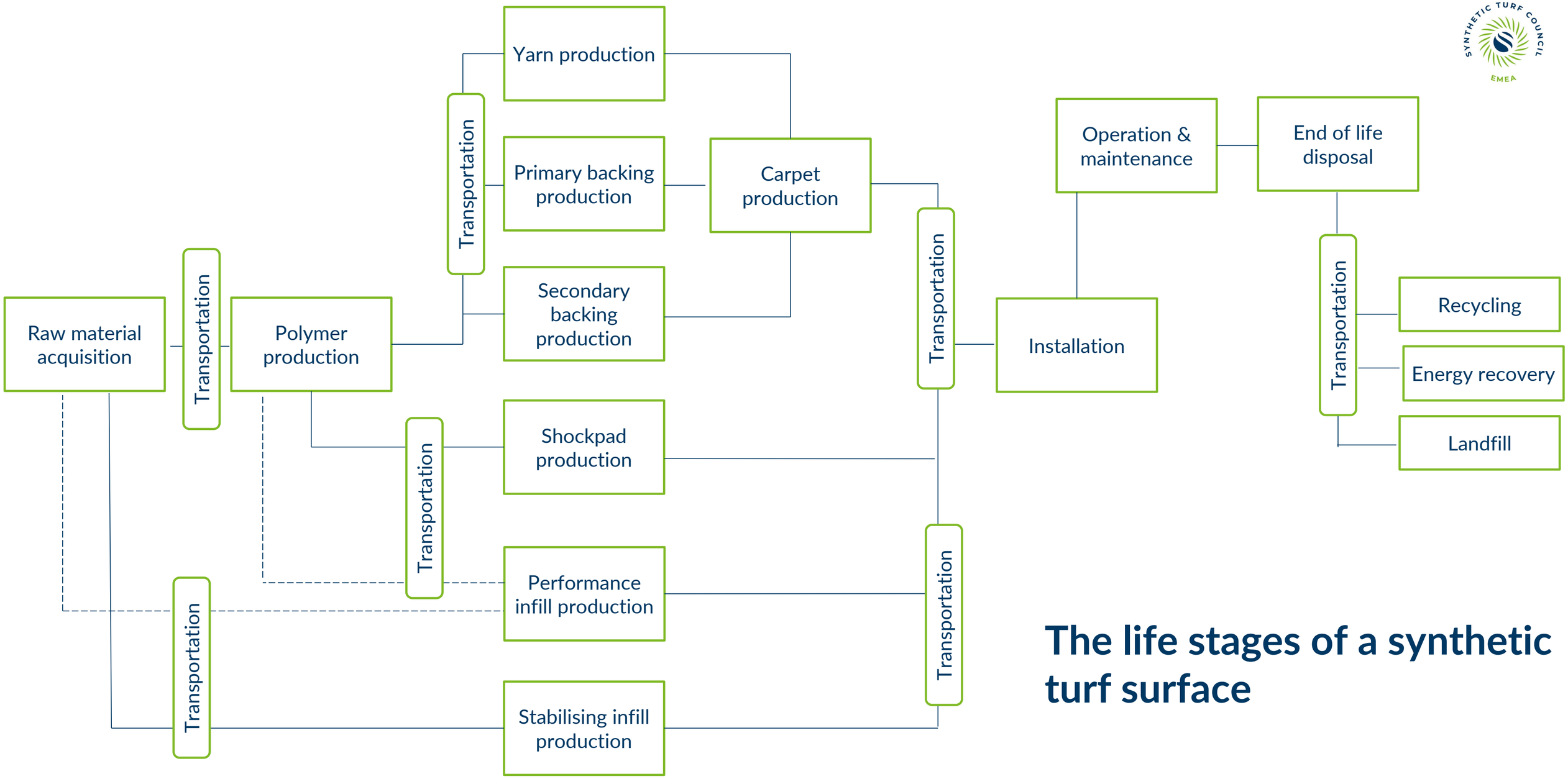
4. Use stage: product(s) use for the defined function and lifetime, including all necessary inputs (e.g., energy, maintenance materials, coolant).

5. End of life: all activities occurring from the moment the product(s) cease to perform its function and is disposed or recycled.

Data used in a PEF study needs to be EF compliant. There are two types:

Primary data – data based on company and site-specific foreground processes (i.e. under direct control of the organisation)

Secondary data – date from e.g. sector-specific databases or literature, used when primary data is not available (e.g. not run by the company).



The life stages of a synthetic turf surface

The 16 key environmental Impact Categories – as determined by the European Commission

	Climate Change	Measures the impact related to greenhouse gas emissions, such as carbon dioxide (CO_2) and methane (CH_4).		Ozone Depletion	Assesses the impact on the ozone layer.
	Human Toxicity (Cancer)	Evaluates the potential harm caused by exposure to substances that may lead to cancer.		Human Toxicity (Non-Cancer)	Considers the impact of exposure to substances that may cause non-cancer health effects.
	Particulate Matter	Examines the effects of fine particles in the air on human health.		Ionizing Radiation (Human Health)	Measures the impact of radiation exposure on human health
	Photochemical Ozone Formation (Human Health)	Assesses the formation of ground-level ozone and its impact on human health.		Acidification	Evaluates the acidifying effects on ecosystems and soil
	Eutrophication (Terrestrial)	Considers nutrient enrichment and its impact on terrestrial ecosystems.		Eutrophication (Freshwater)	Examines nutrient enrichment and its effects on freshwater ecosystems.
	Eutrophication (Marine)	Measures the fraction of nutrients reaching marine ecosystems and their effects on ecosystems.		Ecotoxicity (Freshwater)	Measures the toxicological harm to freshwater organisms.
	Land Use	Examines the land area required for a product's life cycle.		Water use	Assesses the depletion of available water and its impacts on human activities and ecosystem integrity
	Resource use (minerals and metals)	Assesses the depletion of physical (non-biological or abiotic) resources		Resource use (fossil)	Assesses the depletion of fossil resources.

CALCULATING A PRODUCT's ENVIRONMENTAL FOOTPRINT

Company specific data

For each component - at each stage of production, installation, use and end-of-life disposal

Common generic data (provided by EC datasets)

PEF data per impact category (x 16) per life cycle stage

PEF data per life cycle stage (x 14)

Overall PEF score

The preparation of our PEFCR was completed and approved by the European Commission in May 2024.

We are in the process of finalising a software tool to assist companies undertake PEF studies.

The project will go live in October 2024.

Visit www.estc.info/knowledge-centre/product-environmental-footprint/

UNDERSTANDING SYNTHETIC TURF PEF RESULTS

Functional unit: 1 m^2

Service life: 8 years (based on retaining EN 15330-1 compliant performance)

Total PEF score: PEF results are multiplied by a set of weighting factors, which reflect the perceived relative importance of the impact categories considered.

Weighted EF results may be directly compared across impact categories and be summed to obtain a single overall score. The weighted score is a unitless value.

PEF CATEGORIES AND INDICATORS

- Our Product Environmental Footprint (PEF) measures environmental performance across **17 impact categories,** at the request of the European Commission we included the potential for microplastic migration form a field.

- For synthetic turf the focus is on the overall PEF score and the **7 biggest impact categories.** These categories provide a comprehensive view of a product's environmental impact, helping companies and consumers identify the most environmentally compatible products.

ACIDIFICATION
Evaluates the acidifying effects on ecosystems and soil

WATER USE
Assesses the depletion of available water and its impacts on human activities and ecosystem integrity.

CLIMATE CHANGE
Measures the impact related to greenhouse gas emissions, such as carbon dioxide (CO_2) and methane (CH_4).

PARTICULATE MATTER
Examines the effects of fine particles in the air on human health.

RESOURCE USE (MINERALS AND METALS)
Assesses the depletion of physical (non-biological or abiotic) resources.

RESOURCE USE (FOSSIL)
Assesses the depletion of fossil resources.

MICROPLASTICS
With increasing impact microplastics are having on the environment, ESTC was asked by the European Commission to also assess the potential for synthetic turf surfaces to create microplastics due to polymeric infills and because of the pile yarns wearing through use and weathering.

TOTAL PEF SCORE

Product A

TOTAL PEF SCORE
3.01 x10-3

Representative Product

TOTAL PEF SCORE
4.07 x10-3

Product B

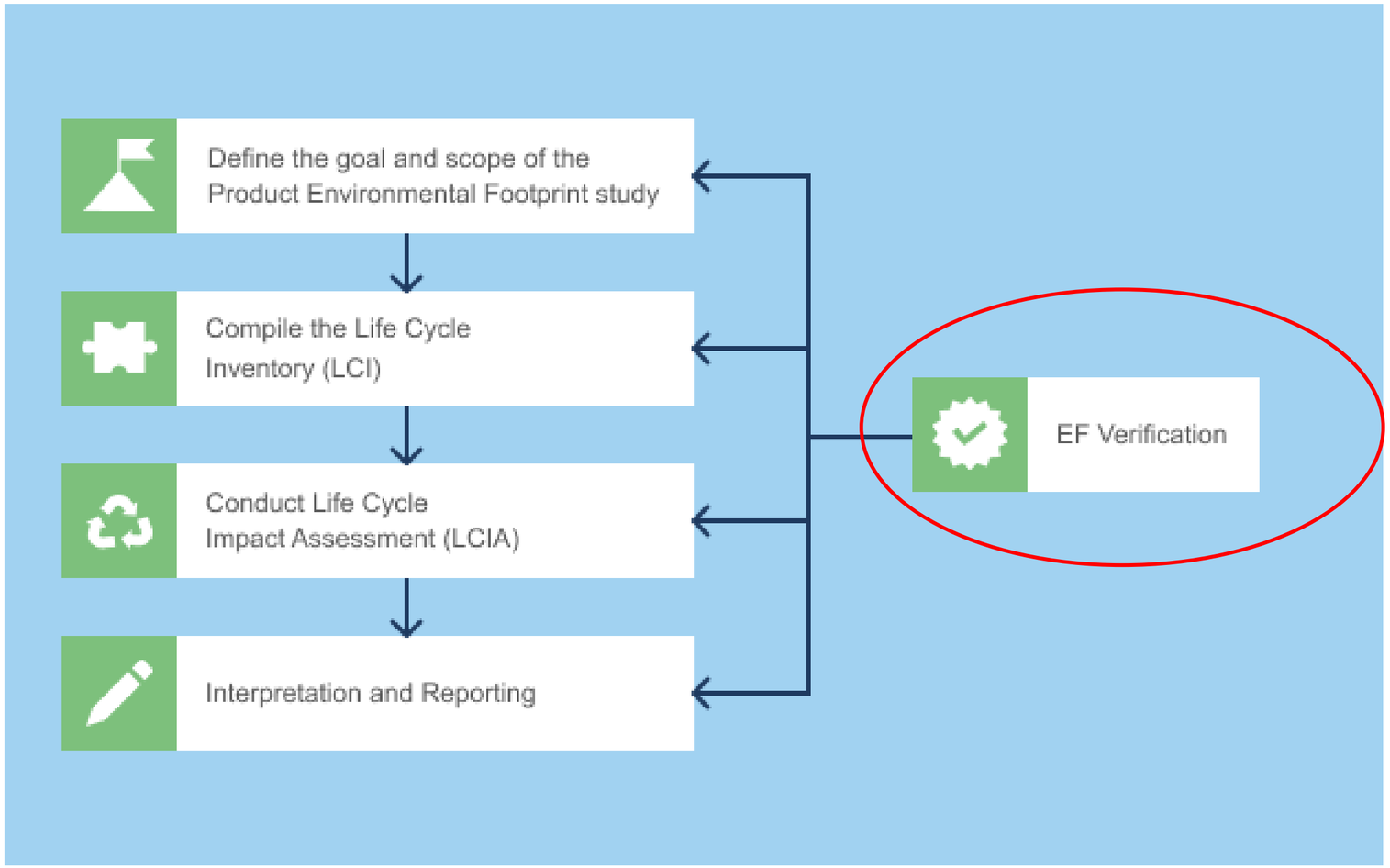
TOTAL PEF SCORE
7.19 x10-3

Lower PEF Score = better for the environment

Higher PEF Score = more impact on the environment

The PEF summary report contains:

- A full description of the product being analysed
- The overall PEF Single Score
- The cumulative scores for each of the six key impact categories
- The potential microplastics migration values
- The scores for each of the sixteen impact categories for each of the life cycles stages



THE PEFCR rules set by the European Commission require PEF reports to be verified, this brings confidence to the market.

ESTC is working with Eco Matters NV to develop a cost-effective verification process for industry.

You should only accept PEF reports that have been independently verified.

BENEFITS OF PEF-COMPLIANT SYNTHETIC TURF

BENEFITS OF PEF SCORED TURF

REDUCED ENVIRONMENTAL IMPACT

PEF-compliant synthetic turf systems are designed to lower carbon emissions, reduce water usage, and use more sustainable materials.

ENHANCED DURABILITY

PEF-compliant systems often have a longer lifespan, providing better value for investment.

HEALTH AND SAFETY

These systems are designed to meet higher health and safety standards, ensuring better player welfare.

IMPACT OF PEFCR FOR THE END USER OF SYNTHETIC TURF SYSTEMS

- As the sports industry embraces sustainability, and field owners are wishing to reduce their environmental impact. PEF offers a standardized way to help them achieve this.

PEF is a tool that helps end users include sustainability in their synthetic turf purchasing decisions.

A better PEF score indicates a more sustainable product.

To help end users, all products with a verified PEF score (ESTC members only) will be listed on the ESTC website: www.estc.info

By requesting the PEF value from suppliers, decision-makers can assess products based on quality, price, and environmental impact.

Request verified PEF results from your supplier to ensure the accuracy and true environmental sustainability of their products.

Any questions?

www.estc.info

info@estc.info