FAQ: End of Waste criteria & End-of-Life Tyre (ELT) Rubber

A strong circular economy in Europe, where waste is treated within EU borders, depends on a well-functioning single market for both waste and recycled materials. This need is reinforced by recent high-level analyses: both the Draghi report and the Letta report underline that creating a genuine single market for waste and recycled materials is essential for EU competitiveness and circularity, stressing that fragmented end-of-waste rules and barriers to cross-border waste movements undermine scale, investment, and recycling capacity. One of the key enablers of a single market is the development of EU-wide end-of-waste (EoW) criteria, which define the point at which certain waste ceases to be waste and becomes a product.

Developing harmonised EoW criteria for tyre-derived materials is essential to increase the uptake of ELT-derived materials in new products for high-value end-use markets. Several countries, including Spain, Italy and the UK have already introduced national EoW criteria for recycled rubber from tyres. However, harmonised criteria at EU level are crucial to remove trade and administrative barriers, achieve a well-functioning internal market, and ensure a level playing field across Member States. The objective should be to enable recycling, support the uptake of recycled materials, and foster research, innovation and industrialisation across materials and industries.

In 2022, the European Commission's Joint Research Centre (JRC) published a report[1] identifying a list of priority waste streams, with the aim to find the most suitable candidate streams for which further EU-wide EoW criteria could be developed. Rubber recovered or recycled from ELTs ranked third in the list - yet, more than three years later, work on this stream has not begun.

Tyres Europe and Recyclers Europe call for the development of EU-wide End of Waste (EoW) criteria for the End-of-Life Tyres (ELT)-derived materials stream. The rubber supply chain is ready for the next step in the advancement and uptake of the recycling of ELT-derived materials.

In addition, materials from chemical recycling operations such as pyrolysis and devulcanisation should also be recognised as End-of-Waste so long as they fulfil the definition of recycling in the Waste Framework Directive.[2]

Supporting documentation:

AECOM report for in depth information via link.

REACH guidance from CEN available via link

[1] Scoping possible further EU-wide end-of-waste and by-product criteria
https://publications.jrc.ec.europa.eu/repository/handle/JRC128647
[2] Waste Framework Directive (Directive 2008/98/EC) Art. 3(17)

1. What are End-of-Waste criteria?

EoW criteria determine the conditions a material must fulfil to cease to be waste after undergoing a recovery, operation. These criteria must be set so the material fulfils the conditions outlined in Art. 6 of the Waste Framework Directive:

- Common use for a specific purpose.
- Existing market or demand.
- Meets technical and legal standards for products.
- Use does not pose adverse environmental or health impacts.

Criteria used to substantiate the compliance with these conditions, usually referred to as EoW criteria may be:

- EU wide: currently exist for scrap metals, glass cullet, and copper scrap.
- National: many Member States develop their own criteria when EU rules do not exist and effectively increasing the number of different legislation that must be considered while setting harmonised criteria.
- Case-by-case: national or local authorities may assign EoW status following an application.

2. What is End-of-Waste (EoW) status and why does it matter?

The End-of-Waste status refers to the procedure through which the legal status of a material as waste changes to receive that of a product. Currently, the criteria for ELT-derived materials are not clear, nor harmonised across the EU. Once a material is given EoW status, there is proof that the recycled material is compliant with current regulations, is safe to use in further manufacturing applications, and ready to be treated as a **product** rather than **waste.**

For ELT derived materials, achieving EU-wide EoW criteria would:

- Ensure a level playing field for trade across Europe by establishing equal conditions and equivalent opportunities across borders.
- Reduce administrative burdens associated with the trade of recycled materials.
- Provide legal certainty to tyre and rubber products manufacturers incorporating recycled materials into new products under the same legal conditions across the EU, thereby enhancing circularity and traceability.
- Ensure that materials meet safety and quality criteria. Many regulations, like Declarations of Performance for construction products, or the REACH restriction on chemical substances only apply once the material has ceased being waste.

3. Why should the EU adopt harmonised EoW criteria for ELT derived materials?

As of today, the European regulatory framework is fragmented in this matter as several Member States have created their own EoW criteria. Harmonisation of these criteria would:

- Create a level playing field for recyclers and manufacturers.
- Improve market certainty.
- Enhance environmental protection through unified quality standards.
- Enhance traceability, e.g. through a notification system.
- Support innovation, especially in new applications like circular tyre production.
    - Needed to enable Ecodesign for Sustainable Products regulation

- Creation of market outlets as applications for ELT derived material such as infill material for sports surfaces will be banned as of October 2031[3].
- Need to build markets to keep the material in Europe and support Europe's strategic autonomy, which is one of the objectives of the future Circular Economy Action plan.

4. What are the EU tyre and tyre recycling industries doing to support the creation of EoW criteria?

- In some Member States, the tyre and tyre recycling industries have worked together to establish national EoW criteria (see End of Waste status report for full list).
- The tyre and tyre recycling industries stand united and ready to support the development of harmonised European EoW criteria.
- Multiple standards have been created under the CEN TC 366 working group.
- The EU tyre and tyre recycling industries are working in close cooperation with CEN TC 366 to create a European wide guidance on EoW criteria. Work has started at the end of 2025.

5. What regulation can drive the implementation of EoW criteria?

- The Waste Framework Directive defines when a material ceases to be waste (Article 6) and provides the legal mechanism for the European Commission to adopt harmonised EoW criteria at EU level.
    - Under Article 6 of Directive 2008/98/EC, the Commission may adopt implementing acts / regulations establishing uniform EoW criteria at EU level.
- EU-wide EoW is a critical prerequisite for ESPR. The Ecodesign for Sustainable Products Regulation (ESPR) will create demand-side drivers but will only function well as a market pull regulation once EoW criteria exist. Tyres, which have been included as priority product under ESPR are planned to have ecodesign criteria legislation as per 2027. According to the European Commission ESPR working plan.
- The upcoming Circular Economy Act (Q4 2026) aims to boost the internal market for secondary raw materials and enhance circularity and will likely become a major driver for implementing EoW criteria across all waste streams, including ELTs.

6. How is ELT derived material used today in Europe?

ELT derived material already has well established-, safe and economically important applications[4]:

- **Artificial turf infill** – 30%*
- **Sports and playground surfaces** – 20%
- **Moulded products (urban furniture, flooring, vehicle parts)** – 26%
- **Construction and civil engineering** – 12%
- **Rubber modified asphalt** – 2%

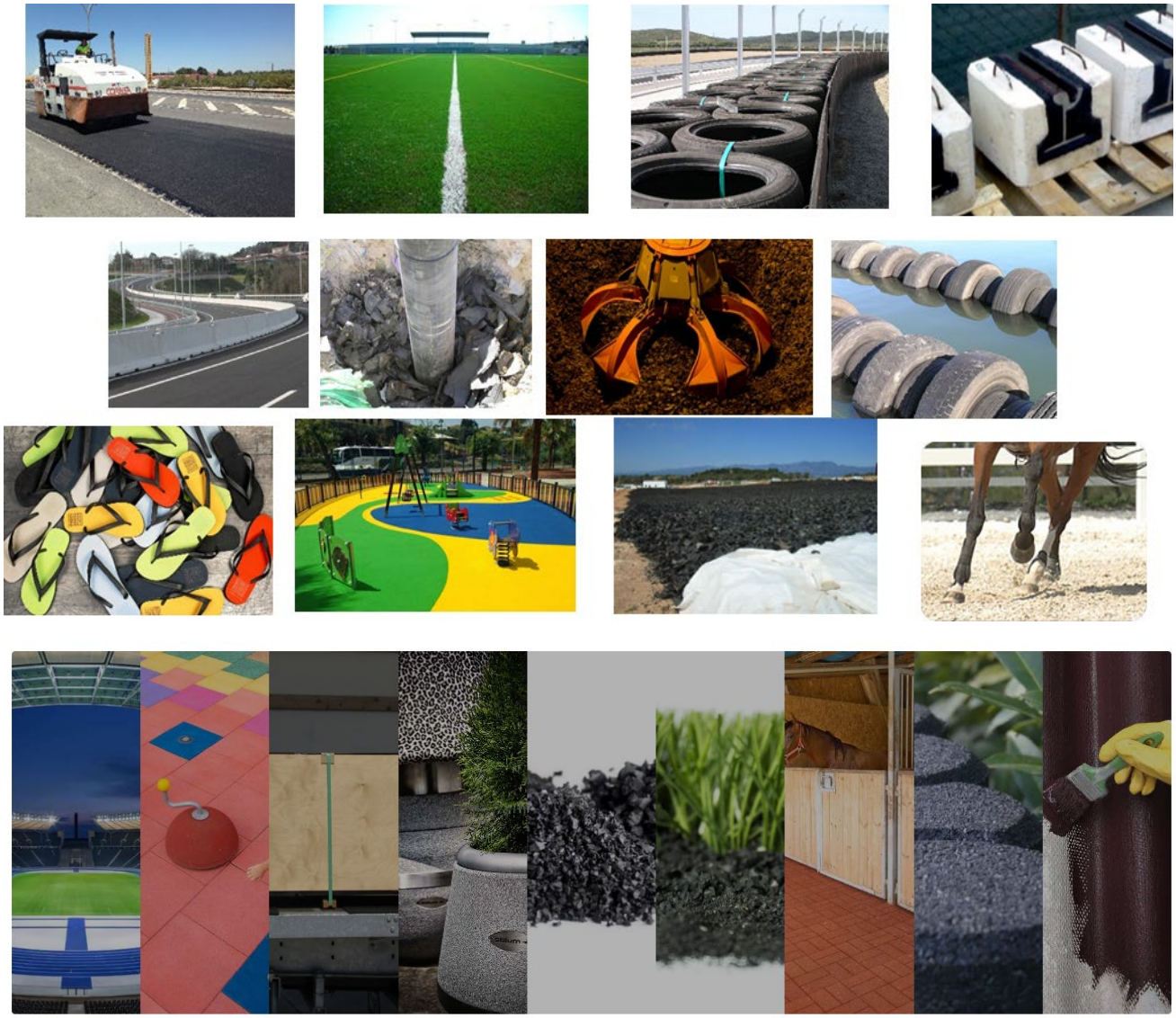
* Artificial turf infill is banned per October 2031 and will be phased out towards that date.

ELT derived materials are also an input into chemical recycling operations such as pyrolysis and devulcanisation. These processes use mechanically recycled material and provide materials such as recovered Carbon Black from pyrolysis and reclaimed rubber from devulcanisation. These materials can potentially be used in new rubber

[3] REACH Annex XVII, entry 78, paragraph 6(j)
[4] Based on Tyres Europe market assessment.

products such as tyres, further contributing to EU policy goals on recycling, reuse of secondary materials, and reduced reliance on imported raw materials.

Market development in other areas such as pyrolysis or rubber modified asphalt is needed. The use of pyrolysis output materials as feedstock for rubber products including tyres depends on harmonised EU-wide EoW criteria.



7. Is there a strong EU market for ELT derived material?

To date, there is a well-established EU market for ELT derived materials. The following can be considered as key indicators:

- Over **4 million tonnes** of used tyres generated in EEA annually.
- Of which **3.5 million tonnes** are end of life tyres.
- Around **50 %** of ELTs are recycled.
- ELT derived materials have a **positive market price** (€100–€1200/tonne).

A functioning market is a core requirement for EoW—and ELT derived materials clearly meet it. See the End of Waste report for more details.

8. What types of rubber granulate exist?

Rubber granulate can be subdivided into powder and granulates depending on the coarseness of the material. The coarseness, together with the textile and steel content determine the application level.

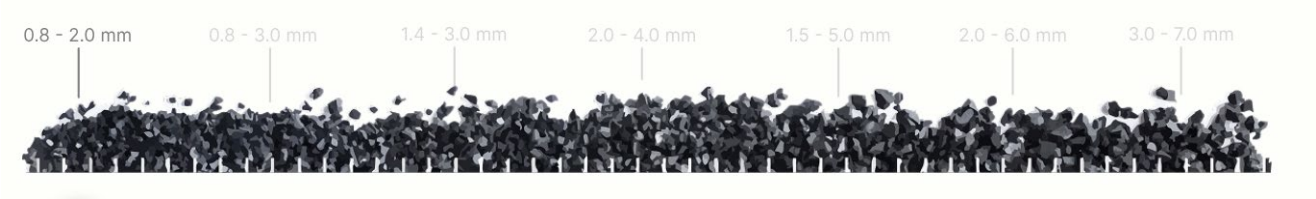


Figure 1 Source GENAN

9. Is ELT derived material safe?

Extensive scientific research confirms **no significant risks** when ELT derived material is used appropriately.

Major scientific conclusions:

- **ERASSTRI (EU-wide):** No health concerns for players or workers.
- **Health Risk Assessment (OEHHA)**: No significant health risks when using ELT derived material as infill.
- **RIVM (Netherlands)**: Exposure levels are negligible.
- **CONFOREACh-GVG**: No hazardous substances above regulatory thresholds.
- **Ecotoxicity tests:** No acute or chronic aquatic toxicity.

ELT derived material is **not classified as hazardous** under EU CLP rules. Moreover, rubber granules are produced from tyres which already are a safe and REACH compliant product.

10. Do national EoW schemes already exist in the EU?

Yes. Countries including **Italy**[5], **Spain**[6] and **Portugal**[7] have their own national EoW criteria for ELT derived Material. **France**[8] has initiated the process to introduce EoW criteria for granulates and pyrolysis oils derived from ELTs.

However, differences in:

- input materials,
- permitted uses,
- testing requirements,
- certification,

create **trade barriers and compliance costs**. EU-wide harmonisation would solve these issues.

[5] DECRETO 31 marzo 2020, n. 78
[6] Orden TED/1522/2021
[7] *Portaria n.°20/2018*
[8] Public consultation

11. What are the environmental benefits of ELT recycling?

Life-cycle studies[9] show that recycling ELTs is **far more climate friendly-** than co-incineration.

Key findings:

- ELT derived material substitutes virgin rubber in many applications, reducing pressure on **natural rubber**, a recognised **critical raw material**.
- Recycling ELT instead of incineration can cut emissions by up to **76–80%**.
- For example, **at least 834 kg CO_2 eq. saved** for every tonne of ELT recycled into infill.
- Rubber modified asphalt reduces emissions, extends road lifespan and there is a reduction in GWP of up to 83% when recycled rubber modifiers are used in place of SBS.
- LCA studies show benefits of pyrolysis to produce recovered Carbon Black when compared to incineration.
- ELT derived material substitutes virgin rubber, reducing pressure on **natural rubber.**

Recycling supports core EU climate and circularity goals, especially bringing significant volumes high-quality applications for demanding use conditions.

12. Does ELT derived material meet the EU's Article 6 EoW conditions?

For a full assessment see the End of Waste report:

- **condition (a):** ELT derived material is widely used for specific purposes ✔
- **condition (b):** Strong market exists ✔
- **condition (c):** Meets technical standards and REACH/CLP rules ✔
- **condition (d):** No adverse environmental or health impacts when managed properly ✔

Conclusion: ELT derived material is fully suitable for EU wide EoW criteria.

13. What are the key messages for policymakers?

- Existing science shows ELT derived material is **safe** and **environmentally beneficial**.
- Start establishing EU harmonised End-of-Waste Criteria (EoW) for all materials derived from End-of-Life of tyres, whether from mechanical or chemical recycling.
- Revise the EoW provisions of the Waste Framework Directive to contribute to building up a harmonised framework and create a genuine single market of secondary raw materials.
- EU wide EoW criteria will:
    - strengthen recycling markets,
    - reduce administrative burdens,

[9] Relevant examples of LCA:
Recycling Europe Factsheet - LCA tyre recycling environmental benefits
State of Knowledge Report on Rubber Modified Asphalt
Carbon footprint comparison of rubber asphalt modifiers factsheet
A comparative life cycle assessment of tyre recycling using pyrolysis compared to conventional end-of-life pathways
Tyre Stewardship Australia LCA Research
Life cycle assessment of nine recovery methods for end-of-life tyres

- avoid fragmentation;
- support the circular economy, especially as an enabler for Ecodesign criteria around recycled materials;
- encourage innovation in new applications like rubber modified asphalt (RMA).

- Harmonisation would enhance transparency and consumer confidence.
- Support the setting of impactful criteria for public procurement of circular goods.
- There is a need to clearly recognise chemical recycling of ELT derived material as a recycling operation as it fulfils the definition in the WFD.
- The EU tyre industry together with the EU recycling industry is requesting the Commission to develop EoW criteria for ELT-derived materials and use the appropriate legal instrument for its (quick) implementation.

14. What are the key messages for the public?

- ELT derived material is safely recycled into products people use every day.
- ELT derived materials reduce waste, save CO_2 emissions, and replace virgin rubber.
- Europe has strong standards around ELT derived materials ensuring quality and safety.

15. Examples of end markets

More information via:

https://initiative-new-life.de/en/

Sport surfaces

Indoor Sports Flooring

Safety floors and playgrounds

Equestrian Flooring

Sustainable building protection and green roofing

Asphalt Rubber

Thermal and acoustic insulation

Vibration absorption systems (railway tracks)

Security barriers and motorcyclist protection systems

Ornamentation and moulded products

Casters

Recycling Europe (formerly EuRIC) is the voice of Europe's recycling industry, including 80 national federations and companies across 24 EU & EFTA countries. From metals and paper to plastics, packaging, textiles, tyres, ships, construction & demolition waste, ELVs and WEEE, our members transform waste into resources—powering Europe's circular economy, ensuring resource autonomy, and boosting competitiveness and sustainable industrialisation across the continent.

Tyres Europe (formerly ETRMA) represents 14 corporate members whose global sales account for 70% of the worldwide tyre market, including 8 of the top 10 industry leaders. Collectively, these manufacturers maintain a robust presence in the European Union (EU) and candidate countries, operating over 70 production facilities and more than 20 R&D centres. In total, the tyre sector supports nearly 500,000 jobs across the EU, considering the entire European automotive servicing and mobility sector, more than 13,9 million job opportunities are created.