XXXVIII
LYON • 2025 • SEPT. • 8–11TH
IULTCS CONGRESS

# Leather as Bio-based material in an EN 16848 standard context

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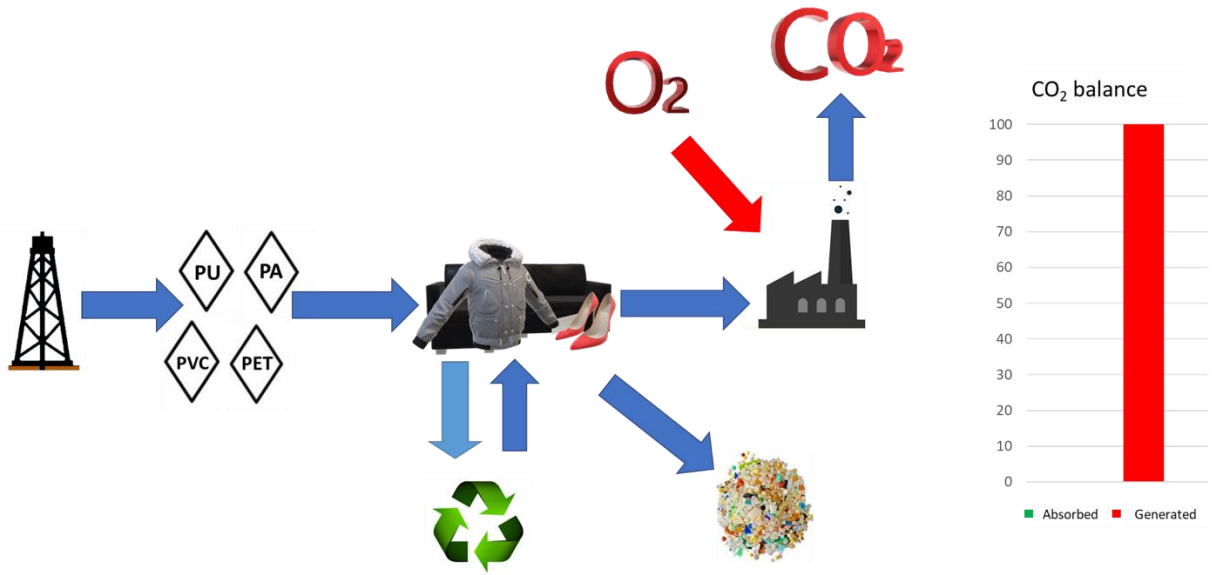
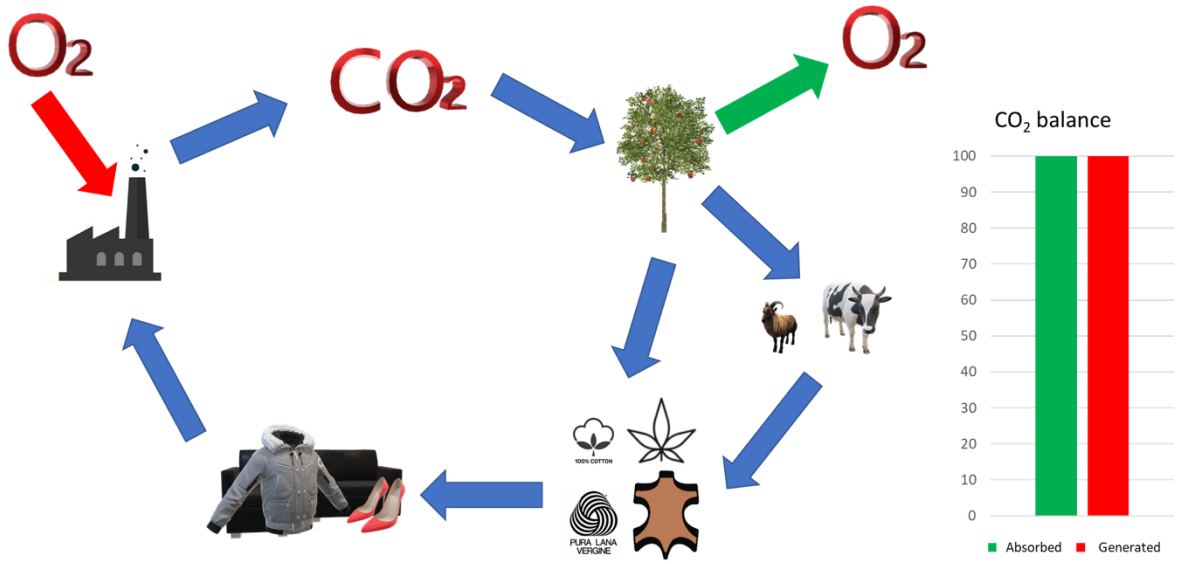
# Linear vs circular models

Petroleum is originated from natural biomass living several million years ago, belonging to a past equilibrium




Its derivatives persist as macroplastics, gradually turning into micro and nanoplastics with heavy environmental consequences...




The use of bio-based raw materials contributes to the reduction of atmospheric carbon

Bio-based materials ensure intrinsic carbon neutrality and circularity

# About Bio-based materials...

**Bio-based materials are wholly or partially derived from biological resources such as plants, animals, or microorganisms.**

**Leather demonstrated to be one of the highest bio-based content and thus circular material.**

**In a circularity point of view, Leather and Leather waste should be considered as a resource to achieve the most virtuous end-of-life options management.**

**How shall we communicate it?**

# Adopting CEN TC 411 standards

**The primary purpose of Technical Committee CEN/TC 411 is to develop standards for bio-based products covering horizontal aspects, including terminology, sampling, bio-based and biomass content, sustainability criteria, and transparency in communication of sustainability characteristics.**

**The adoption of CEN TC 411 standards allows the deep study of bio-based materials in a prospective of communication transparency of the sustainability and circularity performances.**

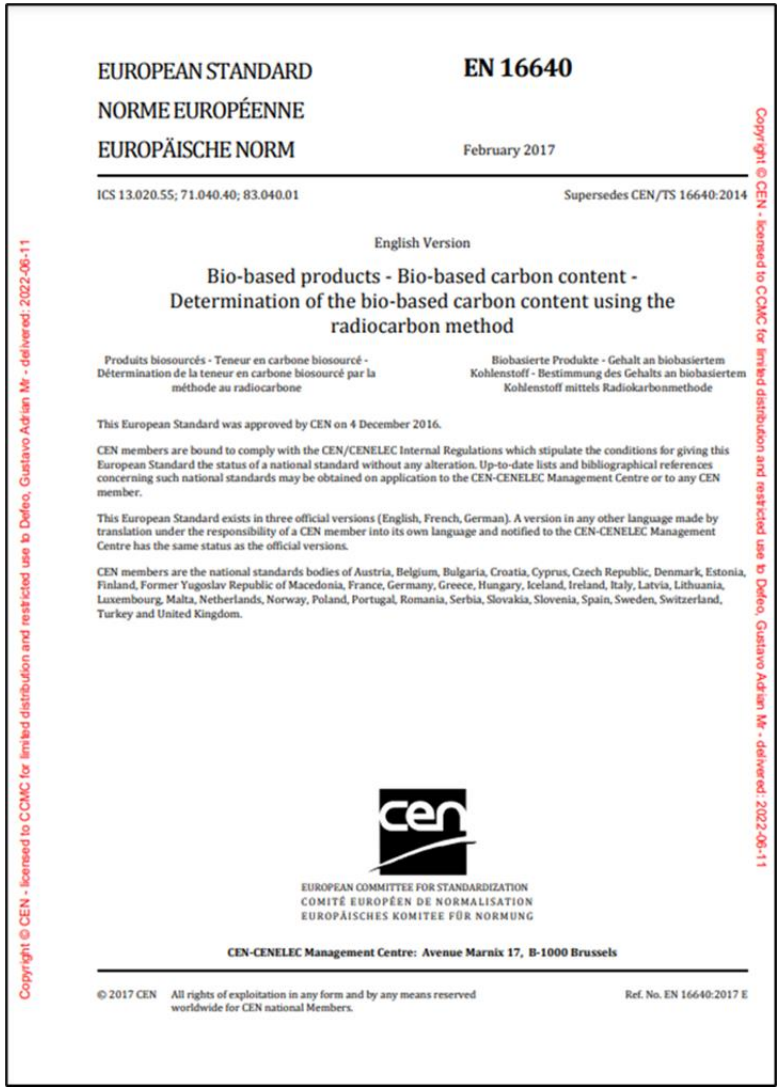
# Adopting CEN TC 411 standards

## EN 16575 - Bio-based products — Vocabulary

## EN 16751 - Bio-based products — Sustainability criteria

**This standard sets horizontal sustainability basis applicable to all bio-based products excluding food. It considers environmental, social and economic criteria for bio-based products.**

## EN 16640 – Bio-based products — Determination of the bio-based carbon content of products using the radiocarbon method



EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

**EN 16640**

February 2017

ICS 13.020.55; 71.040.40; 83.040.01

Supersedes CEN/TS 16640:2014

English Version

Bio-based products - Bio-based carbon content - Determination of the bio-based carbon content using the radiocarbon method

Produits biosourcés - Teneur en carbone biosourcé - Détermination de la teneur en carbone biosourcé par la méthode au radiocarbone

Biobasierte Produkte - Gehalt an biobasiertem Kohlenstoff - Bestimmung des Gehalts an biobasiertem Kohlenstoff mittels Radiokarbonmethode

This European Standard was approved by CEN on 4 December 2016.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels



Ref. No. EN 16640:2017 E

# Adopting CEN TC 411 standards

**EN 16785-1, Bio-based products — Bio-based content — Part 1: Determination of the bio-based content using the radiocarbon analysis and elemental analysis**

**EN 16785-2, Bio-based products — Bio-based content — Part 2: Determination of the bio-based content using the material balance method**

**EN 16935 – Requirements for Business-to-Consumer communication and claims**

**EN 16848 – Requirements for Business to Business communication of characteristics using a Data Sheet**

## EN 16848 – Requires to communicate a minimum set of information to ensure transparency in sustainability claims:

**Biomass type** (Animals, plants, trees, algae, marine organisms, microorganisms)

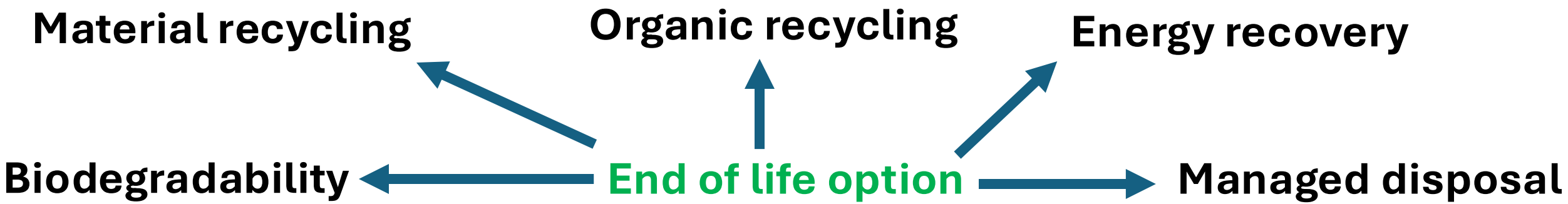
**Biomass origin** - Geographic origin

**Bio-based content**

- Minimum verifiable bio-based carbon in relation to the total carbon (EN 16640)
- Minimum verifiable biomass in relation to the total mass of the product (EN 16785-1/2)

## Biomass sustainability

**Information on aspects of Biomass sustainability (EN 16751)**




**Additional information** Certifications references, LCA information

# EN 16848 declaration example

| Data Sheet for Business to Business declaration for bio-based products according to EN 16848 | | |
|---|---|---|
| **BIO-BASED PRODUCT IDENTIFICATION** | | |
| **Product name (s)** | Vacchetta X | |
| Supplier name and contact for further information | XY Tannery Address / contacts | |
| Intended use | Apparel material | |
| Biomass type (s) - | Bovine hides Vegetable tanned | |
| Biomass origin (s) - | > 55% Bovine hides farmed and slaughthered in Normandie, France | |
| | >27 % Extract from Quebracho tree - *Schinopsis balancae* from Chaco region, Argentina | |
| | > 8% Extract of Chestnut tree - *Castanea sativa* from Piemonte, Italy | |
| **BIO-BASED CARBON CONTENT** | | |
| Minimum verifiable bio-based carbon in relation to the total carbon (%) | > 92% | EN 16640 |
| **BIO-BASED CONTENT** | | |
| Minimum verifiable biomass in relation to the total mass of the product | > 95% | EN16785-1 |
| **BIOMASS SUSTAINABILITY** | | |
| Information on aspects of biomass sustainability | Biomass fraction: | > 55 % Bovine hides from regenerative farming, byproduct of beef industry |
| | Standard / certification system: | EN 16751 |
| | Biomass fraction: | > 27 % Quebracho extract produced with sustainable practises |
| | Standard / certification system: | EN 16751 |
| | Biomass fraction: | > 8 % Chestnut extract produced with sustainable practises |
| | Standard / certification system: | PEFC |
| **END OF LIFE OPTIONS** | | |
| Material recycling | Not relevant | |
| Organic Recycling - Industrial compostability | Environment | Microrganisms in aerobic conditions |
| | Compostability | 100% |
| | Standard: | ISO 20200 |
| | Test duration: | 32 days |
| | Phytotoxicity test: | Pass |
| | Ecotoxicity tests | OECD 208:2006 |
| | Verify local regulations and authorised Composting facilities. | |
| Organic Recycling - fertilizer Reg.(EU) 2019/1009) | Test result: | Pass |
| | Verify feasibility with authorised local fertilisers producers | |
| Energy recovery | Calorific value - ISO 17225-1 | 22,3 Mj/kg |
| | Renewable energy - | > 95 % |
| | | 1757,8 g $CO_2$/kg |
| | | 264 g $NO_2$/kg |
| Biodegradability characteristics for products used in nature | Environment | Microrganisms in aerobic conditions |
| | Biodegradation | > 70% |
| | Standard: | ISO 20136:2017 |
| | Test duration: | 6 months |
| Managed disposal | Disposal charcteristics | To be defined |
| Additional information | Ecoleather standard - UNI 11427 | Certified |
| | LCA | To be defined |
| | | |
| | ISSUED BY:.....IN COMPLIANCE WITH EN 16848. | |
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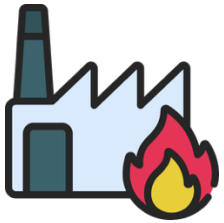
# EN 16848 in an eco-design prospective

**End-of-life options information in EN16848 reserves vital information for designers, for waste management and not only:**

**Landfill**

**Biodegradation**

**Recycle**



**Incineration**

**Energy recovery**

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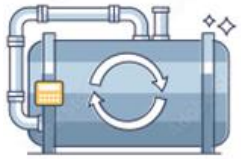
**Compost**



**Biochar**

**Organic recycling**

**Biogas**

**Biostimulant**

**Fertilizer**

# EN 16848 in an eco-design prospective

## End-of-life options information in EN16848 reserves vital information for designers, for waste management and not only:


**Material producer** → **EN 16848** → **Eco-design** → **EN 16935** → **Consumer**

- EN 16848 → Information of End-of-life and impact of materials
- EN 16935 → Information of End-of-life and impact of goods

# Thank you for your attention

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