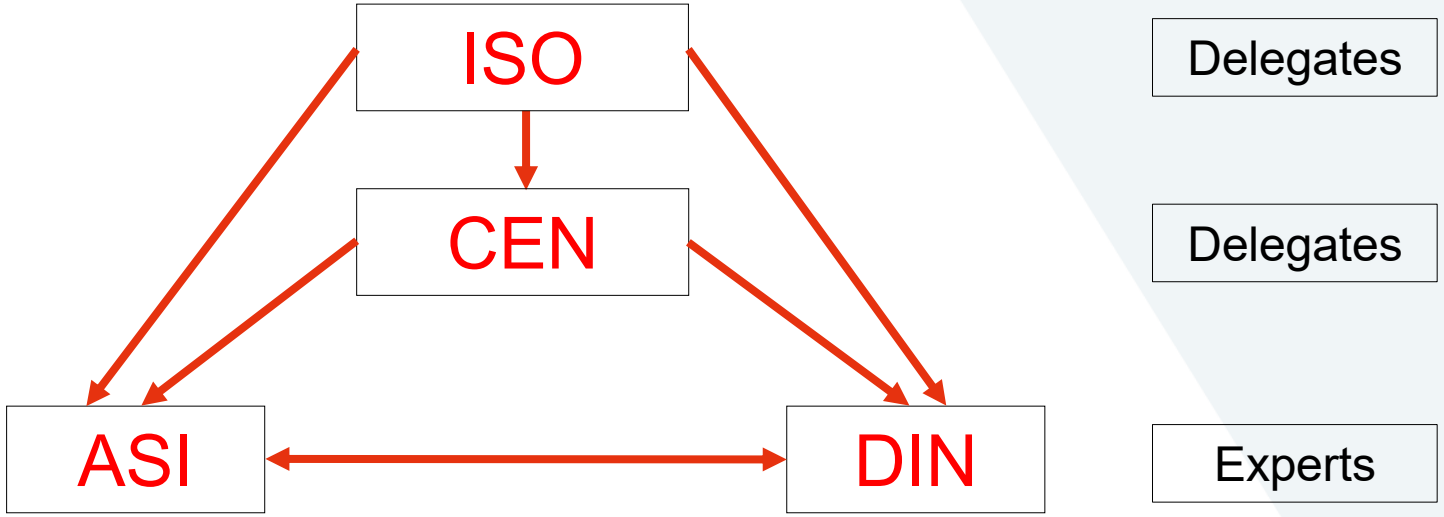
HBLFA Francisco Josephinum
Wieselburg

An Institution of the Austrian Federal Ministry of Agriculture and Forestry,
Climate and Environmental Protection,
Regions and Water Management

Biokohle – Aktuelle Internationale Normungsaktivitäten

HR DI Dr. Josef RATHBAUER
HBLFA Francisco Josephinum – BLT Wieselburg
01. October 2026, Biocharday Wien

Standardisation Hierarchy



For example: ÖNORM EN ISO 17225-1: 2021-11-01

Development / Creation of Standards

NWIP – New Work Item Proposal, project leader

WD – Working Draft

CD – Committee Draft

DIS – Draft International Standard

FDIS – Final Draft International Standard

Publication of the ISO-Standard

Duration: 36 months track; Systemtatic Review every 5 years

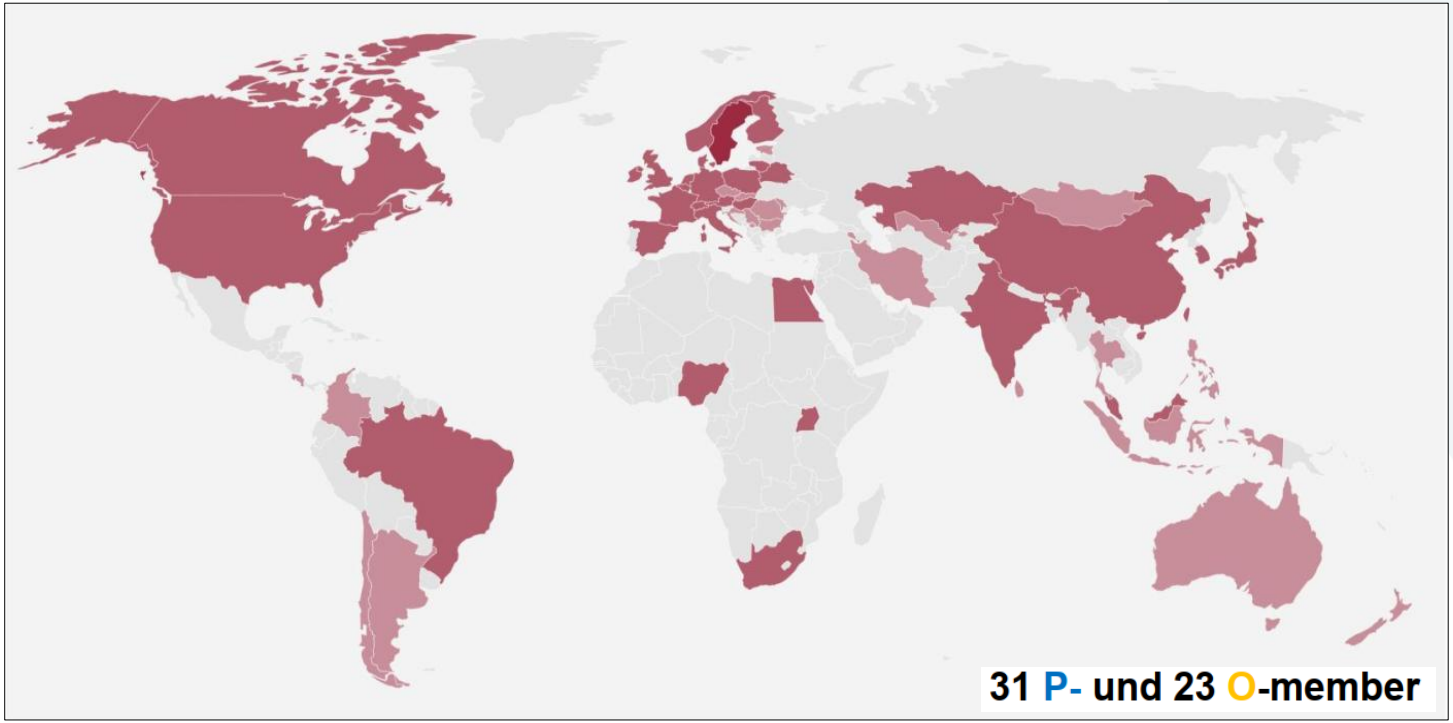
TS = Technical Specification; TR = Technical Report

ISO TC 238: Solid Biofuels *and Pyrogenic Biocarbon*

Scope: Standardization of terminology, specifications and classes, sampling and sample preparation, test methods, and safety aspects in the field of raw and processed materials originating from arboriculture, agriculture, aquaculture, horticulture, forestry to be used as a source of thermally and non-thermally treated solid biofuels and pyrogenic biocarbon.

ISO TC 238 started 2008; Adaptation May 2024 https://www.iso.org/committee/554401.html

ISO TC 238: Solid Biofuels *and Pyrogenic Biocarbon*



31 Participating members

23 Observing members

Status 06/2026

ISO TC 238: Task Group 1 (CA, SCC; 2021)

Large group of more than 80 experts; networking

Collection of specific papers and information about the needs of different industries and applications: e.g. soil amendment, metallurgic application, food additive, …

Intensive exchange with the specific working groups about development and adaptation of standards.

ISO TC 238: WG 1 Terminology (DE, DIN)

ISO 16559: Solid Biofuels and Pyrogenic Biocarbon – Vocabulary

Under revision, addition of several terms concerning Biochar, Biocoal, Biocarbon, … ← BIOKOHLE

ISO TC 238: WG 2 Specifications and Classes (FI, SFS)

ISO 17225: Solid Biofuels – Fuel Specifications and classes

Part 1: General requirements
Part 2: Graded wood pellets
Part 3: Graded wood briquettes
Part 4: Graded wood chips
Part 5: Graded firewood
Part 6: Graded non-woody pellets
Part 7: Graded non-woody briquettes
Part 8: Graded thermally treated and densified biomass …
Part 9: Graded hog fuel and wood chips for industrial use

ISO TC 238: WG 2 Specifications and Classes (FI, SFS)

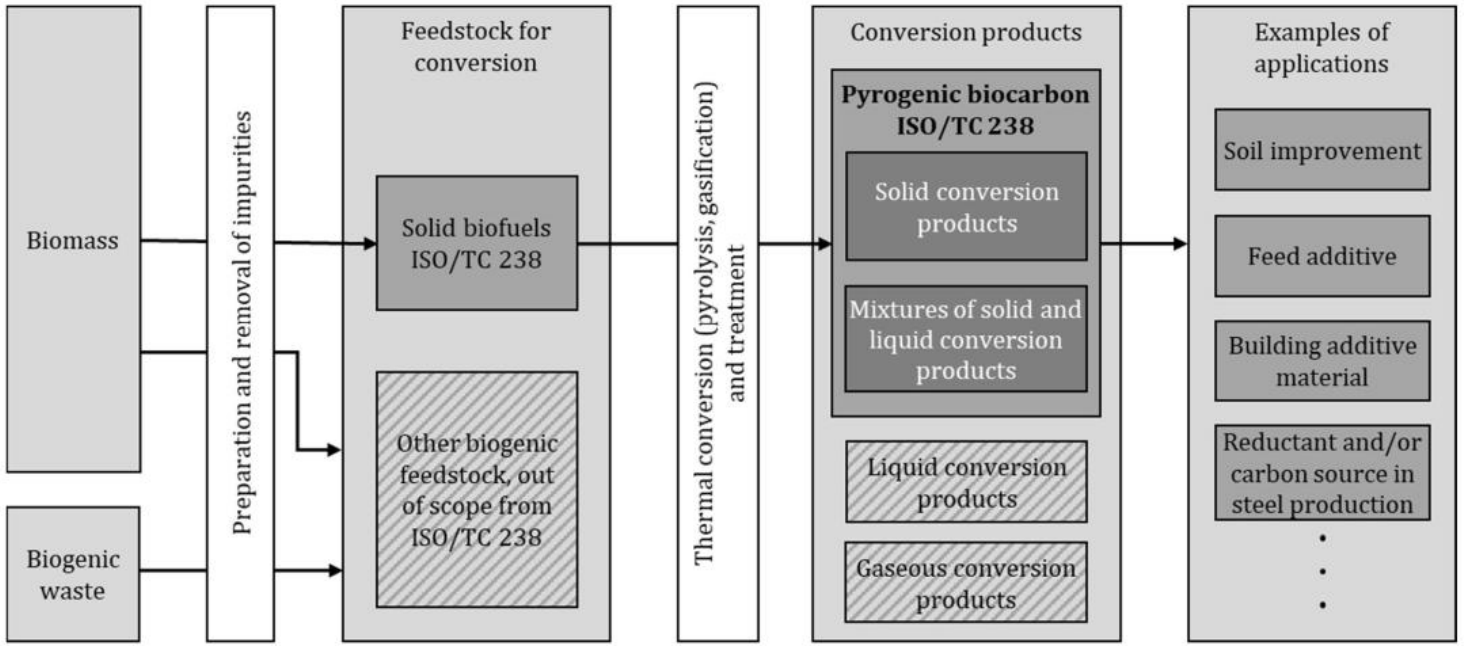


Figure 1 — ISO/TC 238 within the field of biomass - Pyrogenic biocarbon – industrial and material based applications

ISO 17222-1: WD, 2025

ISO TC 238: WG 2 Specifications and Classes (FI, SFS)

ISO TS 17222-1: Pyrogenic biocarbon — Specification and classification — Part 1: General Requirements (WD, DE) – Framework for complete specification of the material; origin, traded form and properties

ISO TS 17222-2: Pyrogenic biocarbon — Specification and classification — Part 2: Material-based classification (WD, FR) – Key properties of pyrogenic biocarbon materials placed on the market and to help end-users to select materials suitable for their needs.

ISO TC 238: WG 4 Physical and Mechanical Test Methods (CA, SCC)

Are the existing test methods suitable for pyrogenic biocarbon?
Are additional methods needed?

Moisture content | Bulk density | Particle size distribution for uncompressed fuels | Particle size distribution of disintegrated pellets | Mechanical durability of pellets and briquettes | Length and diameter of pellets | Particle density of pellets/briquettes | Content of heavy extraneous materials …

Solid-State electrical conductivity of pyrogenic biocarbon (NWIP) | *Random Reflectance (PWI)*

ISO TC 238: WG 5 Chemical Test Methods (NL, NEN)

Are the existing test methods suitable for pyrogenic biocarbon?
Are additional methods needed?

Ash content | Volatile matter | Calorific value | Ash melting behaviour | C-, N-, H-content | Content of major elements | Content of minor elements | Total content of S and Cl | Elemental composition by X-ray fluorescence …

Ultimate Analysis (total carbon, organic carbon, hydrogen, nitrogen, sulfur, oxygen; PWI) | *Proximate Analysis (moisture, ash, volatile matter; PWI)*

ISO TC 238: WG 6 Sampling and Sample Preparation (USA, ANSI)

Are the existing test methods suitable for pyrogenic biocarbon?
→ Round Robin tests

Sampling | Sample preparation | Simplified sampling

ISO TC 238: WG 7 Safety issues (SWE, SIS)

Are the existing test methods suitable for pyrogenic biocarbon?
Are additional methods needed?
→ Round Robin tests

Safe handling and storage of wood pellets in residential and other small-scale applications | - in commercial and industrial applications | Off-gassing and oxygen depletion | Self-heating of pelletized biofuels

Determination of self-heating and classification of pyrogenic biocarbon (PWI)

Summary / Conclusion

- There is an extensive set of existing standards for solid biofuels as basis for the standardisation of Biochar – Biocoal – Biocarbon.
- Several Standards for specifications and determination methods are under preparation respectively adaptation.
- How do get involved in standardisation? → Contact the manager of the committee of your national standardisation body which is the mirror committee of ISO TC 238.

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Regions and Water Management

HR DI Dr. Josef RATHBAUER
HBLFA Francisco Josephinum – BLT Wieselburg
Rottenhauserstraße 1, AT 3250 Wieselburg
Email: josef.rathbauer@josephinum.at

research & testing
BLT
wieselburg