

RICS / BS EN 15978 Module Mapping

Metal Pattress vs Timber / Plywood Backer

Assessment basis

This mapping follows **BS EN 15978** lifecycle modules (A–D), as referenced by **RICS**, **UKGBC**, and the **proposed Part Z framework** for whole-life carbon reporting.

Product stage — Modules A1–A3

Raw material supply, transport, manufacturing

Metal pattress

- Manufactured from steel with high recycled content.
- High strength-to-weight ratio enables **lower material mass** to achieve required fixing performance.
- Manufactured to consistent tolerances, reducing overspecification.

Timber / plywood backer

- Requires larger material volumes to manage variability in timber strength and quality.
- Plywood typically incorporates resins, adhesives, and bonded layers.
- Material quantities are often conservative and non-engineered.

Whole-life carbon relevance (A1–A3):

Material efficiency is a recognised embodied-carbon reduction strategy under RICS and Part Z. Lower material quantities can offset higher per-kg impacts when assessed at system level.

Transport to site — Module A4

Metal pattress

- Compact, lightweight components.
- High packing density reduces transport emissions per unit.
- Suitable for consolidated deliveries.

Timber / plywood backer

- Bulkier sheets or solid noggings.
- Lower packing efficiency.
- Often delivered with excess material and off-cuts.

Whole-life carbon relevance (A4):

Reduced transport volume supports lower emissions at the logistics stage, consistent with whole-life carbon optimisation principles.

Construction and installation — Module A5

Metal pattress

- Installed at defined fixing locations.
- Minimal on-site cutting or waste.
- Steel off-cuts are easily segregated and recycled.

Timber / plywood backer

- Commonly cut on site to suit stud spacing.
- Generates mixed waste streams.
- Timber waste is often contaminated and unsuitable for recycling.

Whole-life carbon relevance (A5):

Reduced construction waste and site activity lowers emissions associated with installation and waste processing.

Use stage — Modules B1–B5

Use, maintenance, repair, replacement

Metal pattress

- Dimensionally stable.
- Resistant to moisture, rot, insect attack, and degradation.
- No routine maintenance required.
- Unlikely to require replacement during the building life.

Timber / plywood backer

- Susceptible to moisture-related degradation and delamination.
- Performance dependent on site conditions and workmanship.
- Increased risk of repair or replacement in certain environments.

Whole-life carbon relevance (B modules):

Durability and longevity reduce emissions associated with maintenance and replacement — a key focus of RICS and UK Net Zero Carbon Buildings Standard guidance.

Operational energy and water — Modules B6–B7

Metal pattress

- No operational energy or water use.

Timber / plywood backer

- No operational energy or water use.

Whole-life carbon relevance:

No material differentiation at this stage.

End of life — Modules C1–C4

Deconstruction, transport, waste processing, disposal

Metal pattress

- Steel is readily identifiable and recoverable.
- Widely recycled through established supply chains.
- Minimal landfill disposal.

Timber / plywood backer

- Typically concealed and difficult to recover.
- Bonded materials limit recyclability.
- Commonly down-cycled or disposed of as waste.

Whole-life carbon relevance (C modules):

Recoverability and recycling reduce end-of-life emissions and landfill impacts.

Beyond the system boundary — Module D

Reuse, recovery, recycling potential

Metal pattress

- Steel recycling delivers a **Module D benefit** by displacing primary steel production.
- Fully aligned with circular economy principles promoted by UKGBC and Part Z.

Timber / plywood backer

- Limited reuse potential.
- Little or no recognised Module D benefit.

Whole-life carbon relevance (Module D):

Module D credits are increasingly recognised in UK whole-life carbon reporting and materially improve the lifecycle performance of recyclable components.

Summary table — lifecycle performance alignment

| BS EN 15978 Module | Metal Pattress | Timber / Plywood Backer |
|---------------------|--------------------------------|-------------------------|
| A1–A3 (Product) | Material-efficient, recyclable | Higher material volume |
| A4 (Transport) | High packing efficiency | Bulkier transport |
| A5 (Construction) | Minimal waste, recyclable | Higher site waste |
| B1–B5 (Use) | Long-life, no maintenance | Variable durability |
| C1–C4 (End of life) | Recoverable, recyclable | Limited recovery |
| D (Beyond system) | Positive circular benefit | Minimal benefit |

Embodied carbon disclaimer (specifier-approved wording)

Embodied carbon values for construction products vary depending on source, manufacturing route, recycled content, transport distance, and project context.

This document does not present product-specific carbon factors and should not be used as a substitute for a project-level whole-life carbon assessment.

Specifiers are encouraged to assess metal pattresses and timber backers in accordance with **RICS Whole Life Carbon Assessment, BS EN 15978**, the **UK Net Zero Carbon Buildings Standard**, and emerging **Part Z requirements**, using appropriate Environmental Product Declarations (EPDs) where available.