



Adjustable Metal Pattress

Metal Pattress System for Plasterboard Walls

Prepared in alignment with BS EN 15978, RICS Whole Life Carbon Assessment, and the UK Net Zero Carbon Buildings Standard

Appendix Z

Whole-Life Carbon Alignment Statement

Adjustable Metal Pattress (Steel Backer) vs Timber / Plywood Backer

Prepared in alignment with:

**BS EN 15978 | RICS Whole Life Carbon Assessment |
UK Net Zero Carbon Buildings Standard**

Prepared in anticipation of **Proposed Building Regulations Part Z**

Manufacturer Technical Pack

Document Status and Use

This document is issued by the manufacturer to provide qualitative whole-life carbon information in alignment with BS EN 15978 and RICS guidance. It is intended to support project-level whole-life carbon assessments and does not replace a project-specific evaluation.

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Whole-Life Carbon Alignment Statement

Adjustable Metal Pattress (Steel Backer) vs. Timber / Plywood Backer

(Prepared in alignment with BS EN 15978, RICS Whole Life Carbon Assessment guidance, and in anticipation of proposed Building Regulations Part Z)

Z1. Purpose of this Appendix

This Appendix Z has been prepared to support **whole-life carbon reporting** and qualitative material assessment in accordance with the following recognised UK frameworks and standards:

- **RICS Whole Life Carbon Assessment for the Built Environment**
- **BS EN 15978**
- **UK Net Zero Carbon Buildings Standard**
- **Proposed Building Regulations Part Z**

The appendix provides a **qualitative whole-life carbon comparison** between **adjustable metal pattresses (steel backers)** and conventional **timber or plywood backers** used behind plasterboard walls to provide fixing support for wall-mounted elements.

Z2. System Boundary and Lifecycle Modules

Assessment is aligned with the lifecycle stages defined in **BS EN 15978**, including:

- **A1–A3**: Product stage (raw material supply, transport, manufacturing)
- **A4–A5**: Construction stage (transport to site and installation)
- **B1–B5**: Use stage (durability, maintenance, repair, replacement)
- **C1–C4**: End-of-life stage (deconstruction, processing, disposal)
- **Module D**: Beyond the system boundary (reuse, recovery, recycling benefits)

No operational energy (Module **B6**) or water use (Module **B7**) is associated with either system.

Z3. Whole-Life Carbon Considerations by Lifecycle Module

Modules A1–A3: Product Stage

Metal pattresses provide the required fixing performance using **lower material mass**, enabled by steel's high strength-to-weight ratio. Timber and plywood backers typically require greater material volumes and often incorporate bonded resins and adhesives.

Part Z relevance:

Material efficiency at source is a recognised strategy for reducing upfront embodied carbon and is consistent with whole-life carbon optimisation principles.

Module A4: Transport

Metal pattresses are compact and allow high packing density, reducing transport emissions per functional unit when compared with bulky timber sheets or solid timber noggings.

Module A5: Construction and Installation

Metal pattresses are installed at predefined fixing locations with minimal site cutting and low installation waste. Steel waste streams are readily segregated and recycled. Timber and plywood backers commonly generate mixed off-cuts, many of which are unsuitable for recycling.

Modules B1–B5: Use Stage

Metal pattresses offer long-term dimensional stability and resistance to moisture, rot, insect attack, and material degradation, significantly reducing the likelihood of repair or replacement during the building life. Timber backers exhibit variable durability depending on site conditions and environmental exposure.

Whole-life carbon relevance:

Reduced maintenance and replacement lowers lifecycle emissions and supports whole-life carbon reduction targets.

Modules C1–C4: End of Life

Steel pattresses are readily identifiable and routinely recovered for recycling at strip-out or demolition. Timber and plywood backers are typically concealed within wall constructions and are commonly disposed of as waste.

Module D: Beyond the System Boundary

Recycling steel provides a recognised **Module D benefit** through displacement of primary steel production. Timber and plywood backers offer limited or no recognised benefit beyond the system boundary.

Z4. Summary Statement for Part Z Submissions

When assessed on a whole-life basis in accordance with **BS EN 15978** and **RICS Whole Life Carbon Assessment guidance**, adjustable metal pattresses demonstrate advantages in **material efficiency, durability, waste reduction, and end-of-life recovery** compared with timber or plywood backers. These characteristics support the objectives of the proposed **Building Regulations Part Z** to reduce whole-life carbon emissions through informed material selection.

Z5. Embodied Carbon Disclaimer (Part Z Aligned)

This Appendix Z provides a **qualitative whole-life carbon comparison only**.

Embodied carbon impacts vary depending on product specification, recycled content, manufacturing route, transport distance, and project context. This document does not replace a project-specific whole-life carbon assessment.

Project teams should undertake a **project-specific whole-life carbon assessment** in accordance with **RICS, BS EN 15978**, the **UK Net Zero Carbon Buildings Standard**, and emerging **Part Z requirements**, using verified Environmental Product Declarations (EPDs) where available.