Maximising BREEAM Certification with Copper Plumbing: A Comprehensive Guide

Introduction

This report outlines how copper plumbing can support projects in achieving BREEAM certification by contributing to key categories, including Materials, Water, Waste, and Energy. Copper's exceptional durability, recyclability, and efficiency align with BREEAM's sustainability principles, helping design and engineering project teams earn valuable credits.

Categories with Direct Contribution to BREEAM Credits

Materials (Mat): Up to 8 Credits

Copper's long lifespan, high recyclability, and closed-loop production make it an ideal material for improving building sustainability.

MAT 01 **Environmental Impacts & LCA - Up to 5 credits:** Copper reduces lifecycle impacts through its durability, corrosion resistance, and recyclability. LCA reports often highlight copper's benefits, particularly when sourced with high recycled content.

Documentation Required:

- Life Cycle Assessment (LCA) reports covering the entire lifecycle of copper products
- Environmental Product Declarations (EPDs) from manufacturers

MAT 02 **Responsible Sourcing of Construction Products - Up to 2 credits:** Sourcing copper from suppliers with certifications such as **BES 6001** or **Cradle to Cradle (C2C)** supports responsible sourcing requirements. Recycled copper with verified certifications further enhances compliance.

Documentation Required:

- Supplier certificates such as BES 6001 or Cradle to Cradle (C2C)
- Records verifying recycled content and ethical sourcing practices

MAT 05 **Designing for Durability and Resilience - 1 credit:** Copper's natural resistance to corrosion and suitability for high-stress environments, such as hospitals or commercial buildings, contribute to durability credits.

Documentation Required:
- Design specifications demonstrating copper's application in high-durability areas
- Manufacturer warranties and maintenance protocols

Water (Wat): Up to 5 Credits

Copper's structural integrity and compatibility with modern monitoring technologies support BREEAM's water efficiency and conservation goals.

WAT 01 **Water Consumption - Up to 3 credits:** Copper pipes' leak-resistant properties support efficient water use, helping reduce overall consumption. Manufacturer technical documentation can verify copper's performance.

Documentation Required:
- Technical documentation from manufacturers detailing copper's low leakage rates
- Water efficiency performance assessments

WAT 02 **Water Monitoring - 1 credit:** Copper plumbing integrates effectively with modern water monitoring equipment, supporting accurate usage tracking across building zones.

Documentation Required:
- Plumbing schematics showing copper pipe integration with monitoring systems
- Manufacturer specifications for monitoring equipment

WAT 03 **Water Leak Detection and Prevention - 1 credit:** Copper's durability enhances leak detection system performance in high-pressure installations. Records of system integration support BREEAM assessment.

Documentation Required:
- Installation records highlighting leak detection systems using copper infrastructure
- Leak detection system specifications and performance results

Waste (Wst): Up to 4 Credits

Copper's ability to be infinitely recycled without performance loss supports BREEAM's circular economy objectives and construction waste management targets.

WST 01 **Construction Waste Management - Up to 4 credits:** Copper offcuts and recovered materials from installations can be fully recycled, reducing construction waste. Documenting recycling rates supports waste management credits.

Documentation Required:

- Waste management plans outlining copper recycling strategies
- Records of copper waste volumes and recycling rates
- Documentation demonstrating compliance with circular economy principles

Categories with Conditional Impact on BREEAM Credits

Energy (Ene): Up to 4 Credits

While copper enhances building energy efficiency, its contribution to BREEAM energy credits depends on the broader system design and supporting performance data.

ENE 01 **Reduction of Energy Use and Carbon Emissions - Up to 3 credits:** Copper's high thermal conductivity boosts the efficiency of HVAC and hot water systems, but the overall system's performance determines credit eligibility.

Documentation Required:

- Energy performance models quantifying copper's impact on system efficiency
- Manufacturer technical specifications for copper components in HVAC systems

ENE 04 **Low Carbon Design - 1 credit:** Copper plays a supporting role in heat exchangers and solar thermal collectors, contributing to energy-efficient, low-carbon building designs.

Documentation Required:

- System performance data highlighting energy savings achieved with copper systems
- Low-carbon design plans incorporating copper-based technologies

Material Efficiency (Mat 06): 1 Credit

Copper's potential to reduce material use can contribute to BREEAM credits, but this is contingent on project-wide material efficiency strategies.

MAT 06

Material Efficiency - 1 credit: Whole-building material efficiency is key to earning this credit. Copper's contribution must be demonstrated within the overall material use strategy.

Documentation Required:

- Material efficiency plans showing copper's contribution to reduced material usage
- Construction records documenting material savings achieved with copper installations

Key Considerations for Maximising Copper's Contribution to BREEAM Certification

- **Source Responsibly:** Use copper from suppliers certified under BES 6001 or with Cradle to Cradle (C2C) certification for recycled content.
- **Collaborate Early:** Engage with plumbing, HVAC, and sustainability consultants from the design phase to optimise copper's integration into building systems.
- **Document Thoroughly:** Ensure submission of all required documentation, including LCA reports, EPDs, and certificates of recyclability, to support copper's contribution to BREEAM credits.
- **Focus on Proven Contributions:** Prioritise BREEAM categories where copper's benefits are well-documented, such as Materials, Water, and Waste Management.

Conclusion

Copper plumbing can contribute up to **22 BREEAM** credits across the Materials, Water, Waste, and Energy categories. By sourcing responsibly, collaborating early, and providing thorough documentation, project teams can effectively demonstrate copper's role in achieving BREEAM credits and drive sustainable building performance.

Up to 22 BREEAM Credits

COPPER FOR SUSTAINABLE PLUMBING