By Royal Appointment to
HRH The King
Supplier of Biochar Products
Carbon Gold Ltd
North Somerset, England

SPECIFICATION DEFENCE BRIEF

Carbon Gold biochar at cost review

Carbon Gold biochar is one of those line items that gets questioned at cost review. The day-one saving is visible. The lifecycle exposure of removing it is not. This brief is for the specifier, arborist, ecologist or project manager defending the inclusion, and for contractors who need a credible, evidence-led answer when value engineering is on the table.

CRITICAL FOR BNG PROJECTS. Where Carbon Gold biochar has been specified into a Biodiversity Net Gain habitat management plan, removal or substitution requires written approval from the ecologist of record and may necessitate revision of BNG habitat unit calculations. The QS does not have authority to make this change unilaterally. Framework: POST PN 0728 (UK Parliament, Sept 2024).

Why plain biochar is not a like-for-like substitute

Plain biochar is raw, uninoculated carbon. On its own it can lock up nutrients and moisture in the short term before any biology colonises it. A like-for-like swap for Carbon Gold enriched biochar can be detrimental rather than beneficial.

> *Biochar has no brain. It will suck up everything, good or bad, initially, and by the time it is doing anything good the tree, turf or plants have died.*

Carbon Gold enriched biochar arrives with all the beneficial work already done: pre-charged at manufacture with the Carbon Gold proprietary blend, which includes Trichoderma and Mycorrhizal Fungi. The biology is in place before the biochar goes near the soil. It is the reason no equivalent substitution is permitted for Tree Soil Improver.

What Carbon Gold biochar contributes

Establishment-phase survival of trees and turf. Water-holding capacity in dry conditions. Habitat for soil microbes and mycorrhizae. Soil structure and aggregation. Carbon-stable contribution to durable soil quality over project lifecycles. Resilience, not cure.

Specifying the rate

Tree pits are commonly specified under NBS Q31 (Planting / Tree planting soil amendment). For Carbon Gold dose rates, see:

- **Tree Soil Improver Application Guide v1.0.** At-planting baseline approximately 2.5 litres per planting hole, scaled to hole size. 10% by soil volume for topsoil mixing. 5% by soil volume for established trees treatment.
- **Tree Soil Improver Application Calculator v1.0.** Per-tree-size rates by container, whip height or tree girth.

If the spec cites NBS Q31, the line is a Tree Soil Improver line, not a generic biochar line. No equivalent substitution permitted.

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What is at risk if it is removed

Day-one saving against downstream exposure, by project type.

Project type	Downstream exposure
Urban / structural tree planting	Replacement tree cost £150 to £300 plus at 30 to 60L stock, plus labour. Lost canopy years and CAVAT value. Bartlett field data shows mortality moves substantially without root-zone amendment.
BNG habitat creation	Substitution requires ecologist sign-off (see page 1). 30-year monitoring failure risk. Section 106 and planning condition compliance risk.
Sports turf rootzone	Faster rootzone degradation. More disease pressure, more applications, more lost playing days. Carbon Gold turf is used at Ascot, Premier League pitches, Royal Parks, and Forest Green Rovers.
Post-construction landscape	Slower establishment of soft and hard landscape planting. Higher long-term water demand under climate stress. Defect-period failure and end-of-warranty remedial works.

Three options if cost truly has to change

Option 1. Concentrate. Keep Carbon Gold biochar in highest-risk positions (street trees, BNG enhancement areas, contaminated or compacted sites). Reduce or remove in lower-risk areas. Not applicable in BNG plans without ecologist approval.

Option 2. Moderate the rate. Frenkel and Graber dose-response research supports inclusion at around 5% v/v. Reduce to 3 to 4% in lower-risk areas, keep full rate where it matters most.

Option 3. Substitute the compost line. Where the spec includes generic compost or soil conditioner, replace that line with Carbon Gold Soil Improver. Approximately cost-neutral, delivers the resilience benefit without a separate line item.

Published evidence base

Independent field trials by Bartlett Tree Research Laboratory under Dr Glynn Percival at the University of Reading: European beech transplant survival, urban tree establishment, apple-scab field observation, and Chalara-affected ash on a Woodland Trust site in Essex. Reported in Pro Arb, HortWeek and the Guardian.

Peer-reviewed review: Schaffert, Lukac, Percival and Rose 2022, Arboriculture & Urban Forestry 48(3). Mechanism reference: Joseph 2021, GCB Bioenergy. Water-retention meta-analysis: Razzaghi 2020, Geoderma.

Findings reported here are the researchers' observations.

Trade dispatch within 2 working days. Pallet logistics for orders over 100kg. Specification queries and datasheets on request. v1.0, June 2026

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