

Varden Plastic Block Technical Paper – for DIY Customers and Landscape Contractors:

Why Choose Varden Blocks Over Concrete

Varden plantable retaining wall blocks deliver three advantages that traditional concrete blocks can't match:

1. Lightweight and easy to handle – Each block weighs only a few pounds, so one person can carry dozens of blocks without equipment. A single pallet of 250 blocks covers 250 square feet of wall and weighs about 800 pounds total—far easier to transport and stage than concrete blocks weighing 50–100 pounds each.
2. Built to last – Made from tough, structural-grade polypropylene (PP) with UV stabilizers and impact resistance, Varden blocks won't crack from freeze-thaw cycles like concrete can. When properly installed and planted, the system is designed for multi-decade service life.
3. Living, cooling green walls – Every block is a planting pocket. Fill with soil or compost, plant your choice of groundcovers, perennials, or edibles, and watch the wall become a vertical garden that cools your yard, filters stormwater, and stores carbon instead of radiating heat like bare concrete.

Material and Durability

Varden blocks are injection-molded from structural PP—the same tough plastic used in automotive parts, industrial containers, and even food packaging. Our formulation includes:

- UV stabilizers to protect during storage, transport, and installation
- Impact modifiers for toughness and crack resistance
- Color pigments in gray, tan, brown, and green to blend with your landscape

Key performance features:

- Does not absorb water, so no freeze-thaw damage
- Chemically inert in soil—safe for vegetable gardens and edible plants
- Buried and shaded by plants once installed, minimizing long-term UV exposure

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When the wall is built to proper standards (good base prep, drainage, backfill), the blocks themselves can be expected to perform for many decades—potentially a century or more in typical residential and commercial landscape use.

Warranty: 2-year product warranty covering manufacturing defects.

Environmental Benefits: Less Concrete, More Life

Traditional concrete retaining walls carry a heavy environmental cost:

- Portland cement production releases massive CO₂ from high-heat kilns and limestone calcination.
- Aggregates must be mined, crushed, and hauled—often multiple times from quarry to plant to jobsite.
- Heavy blocks require diesel trucks and equipment for every project.

Varden's advantage:

- Dramatically lower shipping weight – One compact Varden pallet can build nearly as much wall as a full semi-load of concrete, slashing fuel use and transport emissions per square foot of wall.
- Carbon storage in soil and plants – Every block pocket holds soil that stores carbon as organic matter. Plants take in CO₂ every year, storing carbon in roots and biomass. Over decades, a living Varden wall becomes a long-term carbon sink.
- Cooling and habitat – Planted walls cool the local microclimate through transpiration, intercept rainfall, and provide habitat for pollinators and beneficial insects—benefits bare concrete can never deliver.

Bottom line: Even though PP is a petroleum-based material, the total environmental footprint of a Varden wall—when accounting for reduced shipping, avoided cement impacts, and decades of carbon storage in soil and plants—is typically lower than a comparable concrete wall.

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Common Questions

Q: Won't plastic degrade in sunlight?

A: Varden blocks use UV-stabilized PP designed for outdoor use. Once installed, blocks are buried in soil and shaded by plants, dramatically reducing UV exposure compared to fully exposed plastic products.

Q: Is it strong enough?

A: Yes. PP is tough and impact-resistant, and Varden blocks are engineered to work with standard retaining wall design practices (proper base, drainage, backfill). Many installations have proven field performance.

Q: Will plastic harm plants or soil?

A: No. PP is chemically inert and widely used in food-contact applications and nursery containers. It does not leach into soil under normal landscape conditions.

Q: How long will it last?

A: When properly installed and maintained, the blocks themselves are expected to perform for many decades—potentially 100+ years. Unlike concrete, PP does not crack from freeze-thaw cycles.

Get Started

Varden blocks ship direct to your site on compact pallets. For installation guides, planting recommendations, and project support, visit www.verdtech.com or contact our team.

Transform retaining walls from dead weight into living infrastructure.