

Grasspave² and Sustainable Development

Sustainable Development might be quickly defined as development policy and actions which provide lower initial (product manufacturing and installation) and long term (maintenance) impacts upon the environment, without undue economic impact (short and long term) upon the project. Another definition might be an integration of environmental impact mitigation with life cycle costing.

Invisible Structures, Inc. is a manufacturer of products that protect the environment (primarily water and soil resources) using recycled materials whenever possible. The majority of our products, including Grasspave², are made with 100% recycled plastic that ISI collects from businesses in Colorado and recycles in-house.

Use of recycled materials to make products for construction presents a few interesting features - some paradoxes:

- recycled plastic is kept out of landfills (increasingly expensive to operate),
- recycled plastic reduces demand for oil consumption,
- recycled plastic reduces overall energy and capital investment to make a product,
- recycled plastic retains a vast majority of performance specifications - contrary to “trash” or “garbage” word associations,
- recycled plastic offers significant design advantages over traditional construction materials, such as concrete, asphalt, or metals, yet are considered “new”, or “developmental” (even after more than 20 years of use), and therefore “suspect” or “inferior”,
- new construction materials do not have the volume sales and distribution base needed for direct economic comparison to established products.

Products from Invisible Structures, Inc. feature the strength, efficiency and simplicity of the ring (cylinder) form, using the flexibility, light weight and high strength of plastic - specifically High Density Polyethylene (HDPE, recycle #2). HDPE also features excellent chemical resistance and low temperature impact resistance - necessary for products that often are placed in soil or water environments. ISI uses in-house injection molding processes for uniformity, and economic efficiencies of mass production technology. Our plastic products also offer very low weight for shipping, when combined with low freight rates leaving Denver, allowing ISI to deliver product economically to east and west coast locations.

Grasspave² is a structural system for reinforced grass surfaced porous pavements and stabilized turf applications such as swales and high volume pedestrian traffic areas, with features such as:

- porous to air and water movement
 - reduces storm water runoff, maintains site historical runoff values,
 - returns greater amounts of water to water table than historical paving materials,
 - supports tree and shrub root systems below,
 - maintains excellent root system and prevents compaction of root zone.

- generates oxygen and captures air pollutants
 - captures airborne dust and small debris,
 - converts CO₂ to oxygen.
- provides environmental cooling
 - 70 tons of air conditioning per acre of grass,
 - absorbs solar energy (used in food/growth production of grass),
 - reflects far less solar energy back to buildings or atmosphere than historic paving materials = lower air conditioning costs and cooler cities.
- improves water quality
 - minor solid pollutants are captured and integrated into root zone,
 - minor hydrocarbon fluids are filtered and broken down by enzymes and soil bacteria, before entering water tables.
- provides a living pavement surface
 - grass surfaces are self regenerating for decades without major reconstruction,
 - grass surfaces require only water, fertilizer and mowing for maintenance,
 - Grasspave2 is a truly flexible pavement, valuable in areas subject to frost heave and “plastic” soils,
 - grass surfaces are self healing and impossible to crack (earthquakes excepted).

Grasspave2 will provide ample environmental benefits, which have variable economic or even social impacts depending upon the project situation, and can be used with other ISI products to further enhance sustainable developments, including:

- Gravelpave2
- Slopetame2
- Draincore2, and
- Rainstore3.

Please contact our headquarters for further assistance in determining full value of the use of products from Invisible Structures, Inc. Phone: 303-373-1234, or Fax: 303-373-1223.
Thank you.

Invisible Structures, Inc.
14704-D East 33rd Place
Aurora, CO 80011

Toll Free USA/CAN: 800-233-1510
Ph: 303-373-1234, Fax: 303-373-1223
email: nvisible@ecentral.com
www.invisiblestructures.com