HDPE Drainage Products

Helping the World Move Water
At ADS, we continually enhance the products and services we offer to our customers, helping them to solve water management issues and ultimately improving the quality of life.

Our culture is results-oriented and promotes competitiveness and a desire to win, hard work, integrity and mental toughness.

As a company, we believe in certain CORE VALUES which guide our daily interactions with our employees, shareholders, customers and suppliers.

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Focus on long-term growth and profitability
• Profitable growth is essential
• Allows us to be financially responsible to our employees, shareholders, suppliers and customers
• Creates a better standard of living for our employees

Be sales and marketing driven
• Dedicate resources to expand market opportunities and exceed customer needs
• Help our customers by growing the market
• Commitment to a well-trained, professional sales force
• All employees must focus on the highest quality customer service

Commitment to innovation in product, process and technology
• Applies to both product and process enhancements throughout the organization
• Be willing to invest in projects with a longer-term horizon
• Evaluate and enhance process technology to improve productivity, reduce complexity, and lower costs

Quality throughout our products and organization
• Relates to all aspects of what we do, not just product quality

• Engineer and produce the highest quality products for our markets
• Hire outstanding employees and have the best trained workforce at every level
• Universally recognized as the best in our industry

Create an environment that promotes loyalty among employees, customers and suppliers
• Treat employees, customers and suppliers in a fair manner and expect the same in return
• Use clear communication with specific performance expectations

Sense of urgency in decision making and execution
• Examine options, set our course of action, and execute quickly
• React quickly to changing markets and conditions
• Willing to take risks

Control our own destiny for the long-term benefit of the shareholders and employees of ADS
• Allows ADS to live up to its other core values
• ADS has a strong belief in the benefits of employee ownership
• We know that superior performance allows us to better control our destiny
The science of materials engineering has totally changed the complexion of many U.S. industries. Nowhere is this more evident than in the construction market, where plastics are outperforming and outlasting traditional metal and mineral materials in a wide range of applications.

Without doubt, the workhorse of construction plastics is High Density Polyethylene (HDPE). And the company that has led the development of HDPE for drainage products is Advanced Drainage Systems, with a record of painstaking research and breakthrough applications dating back to the 1960s.

Today, more than ever, ADS pipe, fittings, and structures are becoming the preferred products throughout the stormwater drainage industry. The distinctive green stripe on the pipe is your assurance of the best in quality and service from the world’s leader in plastic drainage products.

**Markets we serve**

ADS HDPE drainage products are used in a wide variety of end-use applications:

- Storm and sanitary sewers
- Retention/detention systems
- Highway drainage
- Agriculture
- Recreation
- Mining
- On-site wastewater treatment
- Landfills and waste management
- Residential drainage

**Worldwide leadership**

Building upon a leadership position in the United States, ADS has extended its reach throughout the world. Supporting an extensive network of worldwide distributors, ADS operates manufacturing facilities in Mexico, Central America, Puerto Rico and South America. This commitment to growth continues to establish ADS as the world’s largest manufacturer of plastic drainage products.

**Customer service**

ADS supports the industry’s largest distributor network by operating over 40 manufacturing facilities and nearly 30 distribution centers. A team of more than 100 customer service representatives and well over 350 field sales and engineering professionals serve the growing needs of government agencies, private consulting engineers, and contractors with specification guidance, project design assistance, and overall technical support.

The following pages highlight the complete line of ADS drainage products, and explain the considerable advantages of HDPE for drainage applications.
Pipe is generally divided into two categories: rigid and flexible. A pipe is rigid when it will not accept any deflection without structural distress. Examples are concrete, clay, and cast iron. Flexible pipe will accept at least 2 percent deflection without structural distress. Steel, aluminum, and thermoplastics fall into this category. We can further divide flexible pipe into elastic materials, which are the metal pipes, and viscoelastic, represented by thermoplastic materials.

While rigid pipe can be traced back to the Roman Empire, high density polyethylene drainage pipe has only been in use since the 1950s. In this relatively brief period, HDPE has been the subject of exhaustive laboratory tests and field experiments. In real-world installations, the product has built an impressively successful record of trouble-free performance.

Today, we see an accelerating trend among construction engineers to replace steel and concrete piping with polyethylene because of its superior mechanical and chemical properties and cost-effective handling characteristics.

1. **Structural strength.** HDPE’s toughness and flexibility enable it to withstand fill heights of 100 feet or more. Tests at Utah State University show that heavy soil loads will fracture the wall of rigid pipe, but under identical conditions, will produce only moderate deflection in flexible polyethylene pipe. HDPE will not crack or break during proper installation, and maintains its impact strength at sub-zero temperatures.

2. **Abrasion resistance.** The following chart indicates that the
material loss rate of HDPE is only 15 to 25% that of reinforced concrete under controlled experiments. And decades of in-situ testing and real-world installations have demonstrated polyethylene’s interior toughness. It is used successfully with harsh mining and dredging slurries, and is virtually immune to damage from even the most aggressive sewer cleaning tools.

3. **Light weight.** Polyethylene weighs 50 to 75% less than comparable steel pipe, and is about one-tenth the weight of concrete. This translates into easier handling, smaller work crews, reduced heavy equipment requirements, and improved safety.

4. **Chemically inert.** HDPE is highly resistant to corrosion, and is immune to galvanic and electro-mechanical reaction. As seen in the diagram, polyethylene can safely be used with soils or effluents with a pH range of 1 to 14.

### Additional information available:


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**HDPE pipe’s durability is dramatically demonstrated by this highway cross drain installed in 1981 near an abandoned strip mine. The metal pipe used prior to this time had to be replaced every few years due to the highly acidic (an average pH of 2.1) and abrasive run-off from the mine. To this day, the polyethylene cross drain shows no sign of needing replacement.**
N-12® Smooth Interior Pipe

N-12 pipe has built an impressive service record in storm water and other drainage applications where hydraulics are important and durability is critical. The pipe is offered in diameters from 4" through 60", in 6m (19' 8") lengths and also in 13' lengths for smaller trench boxes.

**Corrugated exterior adds strength**

The natural toughness of HDPE is enhanced by the corrugated exterior which increases the structural strength of N-12 pipe. It is designed for use under both H25 and E80 live loads, or with fill heights of 50 feet or more. In fact, field research shows the pipe performing well at depths exceeding 100 feet. Even under harsh backfill conditions and shifting soils, N-12 pipe has continued to give outstanding performance.

**Smooth interior provides superior flow**

In order to meet the most demanding hydraulic requirements, N-12 pipe is manufactured with a smooth inner wall. This design insures maximum flow capacity, and PE's resistance to abrasion and corrosion will sustain this capacity for years into the future.

With a recommended 0.012 rating, the pipe is ideal for applications requiring low Mannings “n” values.

**Convenience on the jobsite**

N-12 pipe's light weight leads to a number of job site economies: more pipe per delivery truck, easier handling, smaller crews, less heavy equipment, less pipe damage, and better safety. The pipe cuts easily and requires no beveling for joining.

**Additional information available:**

1. AASHTO Specification M252
2. AASHTO Specification M294
3. ASTM D2412
4. ASTM D3212
5. ASTM F477
6. ASTM F2306
7. ADS Tech Note 2.115, “Comparative Pipe Stiffness”
8. ADS Form # 10244, “ADS N-12 Pipe”
10. ADS Tech Note 2.120, “Stormwater Retention/Detention Systems” by Ed Kampbell, P.E.
11. PennDOT Deep Burial Study
**Water-tight and soil-tight systems**

Continuing its commitment to investment in new technologies, ADS has developed polyethylene pipe joining systems unparalleled in the corrugated pipe industry. Today’s N-12 pipe provides unsurpassed joint integrity, with built-in bell joints and fast push-together installation.

**Soil-tight pipe.**

N-12 ST IB pipe, delivered with an integral bell-and-spigot joint, meets the most stringent soil-tight requirements. The reinforced bell resists distortion, chipping or cracking, and spans three corrugations, exceeding AASHTO M294 recommendations. The in-line bell design eliminates the need to dig bell holes in the trench. Joints are sealed by a factory-installed rubber O-ring gasket that meets all requirements of ASTM F477.

**Water-tight pipe.**

In the early 1990s, ADS pioneered the watertight joint for corrugated polyethylene pipe. Continuing development has resulted in today’s N-12 WT IB pipe, incorporating patented technology developed in the aerospace industry. The design is based on the flared bell and tapered spigot of N-12 ST IB pipe, with two important differences. The sealing area of the bell is reinforced with a proprietary 2” ceramic/polymer composite collar which improves the joint’s integrity and tolerance control. Secondly, a patented omni-directional gasket meeting ASTM F477 is factory-installed into the spigot, increasing its sealing force as hydrostatic pressure increases. The design meets or exceeds ASTM D3212 lab test and ASTM F1417 water-tight field test requirements, and fills an essential role in complying with the stricter demands of new EPA water quality guidelines.

**N-12 ST IB Soil-tight joint**

- Flared bell and tapered spigot for easy installation
- Bell spans three corrugations for maximum joint performance
- Rubber gasket meets ASTM F477
- Extra-tight fit for maximum hydraulic performance

**N-12 WT IB Water-tight joint**

- Tapered spigot helps make installation easy
- Flared bell spans three corrugations for maximum joint performance
- Ceramic/polymer composite adds strength and dimensional control
- Omni-directional gasket increases sealing force

Years of field and laboratory evaluations have made N-12 the most tested pipe in the industry.
Standard Corrugated Pipe

ADS single-wall corrugated HDPE pipe is ideal for drainage projects where flexibility, light weight, and low cost are important. It is available in 3" to 24" diameters, and sold in coils through 8" and 20-foot lengths in larger sizes.

Multiple drainage applications
ADS pipe has been used for decades on farms, golf courses, parks and playing fields to keep surfaces dry by channeling away excess underground moisture. Homeowners find it to be an economical, easy-to-install solution to all kinds of residential drainage problems: downspout run-offs, foundation and window well drains, driveway culverts, and wet spots on the lawn. ADS single-wall pipe is also used for highway edge drains and other construction applications where economy and durability are important.

Perforated and non-perforated
For subsurface water collection or leaching action, ADS pipe is offered with uniform slots and drilled holes. Non-perforated pipe is available when water must be moved by gravity flow from one point to another.

Additional information:
1. AASHTO Specification M252
2. AASHTO Specification M294
3. ASTM D2412
4. ASTM D405
5. ASTM D667
6. ADS Tech Note 2.115, “Comparative Pipe Stiffness”
7. ADS Tech Note 4.103, “Plastic Pipe Design” by James B. Goddard
StormTech underground chambers can function as storm water detention, retention, “first flush” storage systems, or a combination of these. They can be installed in commercial, municipal, industrial and residential projects. They are engineered to exceed AASHTO’s LRFD recommended design factors for Earth Loads and HS-20 live loads.

The chambers convey water laterally through their sidewall openings, as well as through the angular stone foundation and backfill, to maintain a constant elevation in a bed. They allow for the storage of large storm water volumes at minimum depths.

The durable, chemical-resistant polypropylene chambers are offered in two sizes: (1) the SC-740 chamber provides a minimum of 2.2 ft³/ft² of storage, and (2) the SC-310 low profile unit allows 1.3 ft³/ft² minimum of storage. Chambers can be cut at 6.5” intervals, providing excellent design flexibility for nearly all sites. They can be centralized or decentralized, configured into beds or trenches of varying sizes and shapes, and installed easily around utilities or other obstructions. Two people can safely and efficiently form rows of chambers without complicated connectors, special tools or heavy equipment.

**StormTech Isolator™ Row**

The Isolator Row is a patent-pending structure that acts as an extended subsurface detention basin, allowing water to exit through its surrounding filter fabric while sediment is trapped within. The Isolator Row inexpensively enhances TSS removal, and can be equipped with inspection ports for fast and easy maintenance and cleaning.

The geotextile covering prevents the migration of fines out of the row while maintaining adequate hydraulic flows. Several geotextiles can be specified for use with the Isolator Row, depending on soil and site conditions. A list of suitable geotextiles is available from ADS.

Additional information available from stormtech.com
ADS is profoundly aware of the impact that EPA Phase II stormwater management regulations will have on property owners and developers, and has been active in creating innovative products and processes to aid in runoff control and improved water quality.

Water Quality Units are designed to manage the quality of water discharged during a storm by removing sediments and hydrocarbons. A typical design involves an underground pipe assembly using weir plates and velocity control devices to separate out suspended pollutants. The system features access risers for easy cleaning and maintenance, and a bypass system to prevent re-suspension of captured pollutants by storms greater than the first flush. Design variations include filtering mechanisms to remove difficult particulates such as heavy metals and mercury.

**Proven effectiveness**

Field and laboratory tests have consistently verified the excellent performance of ADS Water Quality Units.

- Installed units in Davidson County, Tennessee, showed a mean TSS removal efficiency of 91.4%.
- Sediment removal lab tests in Massachusetts at varying flow rates yielded efficiencies from 81.9% to 90.3%.
- Oil capture was measured by an independent laboratory under a range of flow volumes. The mean capture rate was 79.8%.

Complete test reports are available from ADS.

**Additional information available:**

2. ADS Form #10505, “Water Quality Units”
4. ADS Form #10555, “Understanding EPA Phase II”
5. ADS Form AIG 2.01 “Water Quality Units Installation Guide”
6. ADS Form AIG 2.02 “Water Quality Units-Inspection & Maintenance”
Nyloplast® Surface Drainage Products

Nyloplast engineered drainage structures combine performance-proven ductile iron grates with rugged heavy-duty PVC bodies to offer a superior alternative to traditional costly and cumbersome concrete structures. The complete line includes inline drains, drain basins, curb inlet structures, road and highway structures, and drop-in grates in diameters ranging from 8" through 30".

All Nyloplast structures are customized to site-specific requirements, and their inlet and outlet adapters meet a wide variety of joint tightness requirements, including water-tight when correctly installed. These structures are routinely used in commercial and municipal site development, rehabilitation and remediation projects, along with landscaping and recreational applications. Following proper installation procedures, the road and highway structures are rated to handle H-25 loads.

Nyloplast engineered structures are delivered ready to install. No field fabrication or other job site work such as concrete grouting or brick and mortar is required. All structures are engineered to applicable ASTM standards and environmental regulations.

Add-a-Branch™

Contractors use the patented Add-a-Branch installation kit to easily adapt existing Nyloplast structures for new storm sewer inlets or outlets. The kit contains a coupler, rubber sealing gasket, and a self-adhesive hole template. Simply cut a hole through the template in the PVC structure body, seat and lubricate the gasket, and press the coupling firmly into the structure wall. The Add-a-Branch kit is available in 4" through 18" sizes to fit into Nyloplast structures from 8" through 30" diameter.

Snout® Structure

The Snout Structure is a Nyloplast catch basin with a plastic composite hood device attached to the inside wall of the catch basin structure designed to cover the outlet pipe in such a manner to prevent the exit of floating debris and oil.

Weir Structure

The Weir Structure is a Nyloplast catch basin with a panel or plate device secured inside the structure that is designed to divert inflowing water to a preferred outlet, or to regulate the outflow of water from the drainage system.
Storm water treatment is especially important in locations with higher pollutant concentrations, such as roadways, parking lots, and maintenance and loading areas. Catch basin inserts are increasingly being selected for these applications because of their adaptability to existing drainage systems, fast installation, high flow volume, relatively low cost, and pollutant removal performance.

**Storm-Pure**

The Nyloplast Division of Advanced Drainage Systems has developed a catch basin insert that provides all of the above benefits, and is particularly efficient at removing pollutants. The Storm-Pure catch basin insert is a two-stage unit that will fit into 24" nominal diameter catch basins (additional sizes to be developed as demand dictates).

The upper section consists of a perforated metal catch basket covered by a geotextile filter bag. This assembly captures sediment and debris while allowing filtered water to pass freely down through the center cone.

The lower stage contains a patented Mycelx® filter insert that attracts and holds tiny particles of hydrocarbons and oil-bound pollutants. The specially treated adsorbent material instantly bonds contaminant particles, resulting in an amazing 99.0% removal rate of total petroleum hydrocarbons.

Both stages are housed in a corrosion-resistant high density polyethylene body with overflow slots at the top to act as a bypass in unusually high flow conditions. The complete assembly will pass 230 gpm without bypassing the flow.

The Storm-Pure catch basin insert fits readily into standard 24" Nyloplast catch basins (including curb inlets and road and highway basins), providing a highly engineered solution for treating storm water.

Additional information available at:

www.nyloplast-us.com
DrainTech™ Drain Basins, Channels and Grates

DrainTech basins and channel drains provide economical surface water removal for homeowners who suffer the inconvenience and unpleasantness of flooded basements, wet yards or malfunctioning septic systems.

Manufactured from rigid, lightweight polyolefins, DrainTech basins and channels are easy to install, long lasting, require little maintenance and are available in multiple colors for use in turf, landscaping and hard surface areas. DrainTech structures are also available with a wide range of grates for various requirements, have a non-skid surface, and are compliant with the Americans with Disabilities Act.

Through the use of universal adapters, DrainTech structures can easily connect to the most common types of pipe used in landscaping and turf applications, including corrugated and smooth wall polyethylene pipe and Schedule 40 PVC pipe.

In areas plagued by poor draining soils with high clay contents or shallow impermeable layers, DrainTech basins can be fitted with specialty risers to allow for surface water collection at thin depths.

The DrainTech line of structures also includes valve boxes with risers for use in landscape irrigation systems, and meter pits for easy radio location by utility companies.

Additional information available from ADS:
ADS Form # 10559, “DrainTech™ Drain Basins, Channels and Grates”
www.draintech-us.com

DURASLOT® Surface Drains

These high-capacity drains are designed to remove storm water as it flows across paved or cleared areas, or as it collects in low spots. A heavy aluminum slot is mounted on top of N-12 corrugated polyethylene pipe to provide lightweight, corrosion-resistant performance.

Duraslot drains cost less than other systems which can support vehicular traffic, and is easy to install – ten-foot lengths can be handled without machinery and are quickly set in place.

Pipe diameters range from 4” to 30” and are complemented by a complete line of fabricated fittings. Slots are available in 2 1/2” heights for residential and pedestrian applications, and 6” heights for heavy H-20 loading.

Additional information available from ADS:
ADS Form # 10509, “DURASLOT” Surface Drains”
ARC 36 Leaching Chambers

Easy-to-install injection molded plastic chambers feature a true corrugated design for unmatched load-bearing strength, and the largest open bottom and louvered infiltrative surface area of any competing chamber. The ARC line currently includes 24", 36, and High-Capacity chambers with a 20-degree integral articulating joint ideal for either straight or contoured leach field applications. Chambers will accommodate both gravity-fed and pressure-dosed systems. The design incorporates a modified post and dome engagement mechanism for added strength at critical joint connections, a universal inlet/outlet end cap, and inspection vent ports on every unit with easy-to-remove knockouts. Convenient five-foot lengths are easy to handle. Units are quickly installed by one person into trench or bed applications.

BioDiffuser™ Leaching Chambers

Sturdy, lightweight plastic units provide optimum unmasked leaching surface. Effluent flows freely to uncompacted backfill through open bottoms and innovative sidewalls with louvers that prevent migration into the chamber. Installation requires no stone or gravel, and requires one person with only a backhoe, level, and a rake. Standard units measure 76" long x 34" wide with a choice of 11", 14", or 16" heights. Narrow trench models are 87" long x 12" high with a choice of 15" or 22" widths.

Multi-Pipe

Available in specially banded bundles of 9, 11, or 13 ten-ft. pieces, patented Multi-Pipe units provide high-capacity soil contact without the use of gravel. The units function as a trickle filter, dispersing effluent into the voids in and around the HDPE pipe. The pipe is engineered with holes and slots, allowing it to collect and disperse the effluent as it passes over the thousands of corrugations in each bundle.

SB2® Gravel-less Leach Bed Pipe

In many areas, the SB2 system can be a cost-effective alternative to conventional leach beds. The product consists of 8" or 10" single wall corrugated polyethylene pipe with specially located perforations, wrapped with ADS Drain Guard® non-woven geotextile. The outside diameters of the pipe provide an equivalent of 2 to 3 square feet of soil absorption area per lineal foot. The location of the drain holes (60 degrees off the bottom center line) provides added sludge storage capacity, which increases retention time. The Drain Guard protective wrap is sonically welded to the tubing, and allows free passage of effluent to the soil while limiting soil particle infiltration.

ADS 3000 TripleWall® Pipe

Using state-of-the-art extrusion technology, this three-layer HDPE pipe has unprecedented beam strength, far exceeding the stiffness requirements of ASTM F 810. A co-extruded smooth inner wall and corrugated center section is covered by an extrusion-laminated white outer wall. A deep bell coupling is spun-welded to the pipe and is designed to fit all standard 3" and 4" sewer and drain fittings. TripleWall pipe's exceptional stiffness permits assembly on work stands, and its light weight allows for one-man installation. It is produced in 3" and 4" diameters in 10 ft. lengths, either solid or with standard 5/8" perforations set 120° apart.

Additional information available:

1. ASTM F405
2. ASTM F449
3. ASTM F667
4. ASTM F810
5. ADS Product Note 3.111 “SB2 Installation Guidelines”
6. ADS # 10568, “BioDiffuser ARC 36 Leaching Chamber”
7. ADS # 10265, “On-Site Septic Systems”
8. ADS # 10228 “Triple Wall”
AdvanEDGE® Pipe

AdvanEDGE is a panel shape pipe offered in 12" and 18" heights, and in coils up to 400 ft. The primary benefit of its panel design is quick drainage response after introduction of water, making it ideal for time-critical applications such as high-traffic road and track beds. Other popular uses include building foundation drainage, golf courses, athletic fields, airport runways, railroad track ballast, and perimeter “curtain” drainage for landfills and leaching fields.

**Designed with a difference**

Competitive panel shape products depend on the tensile modulus of a geotextile wrap to maintain an open flow channel. When this low-modulus fabric collapses, the waterway is obstructed, reducing its hydraulic efficiency.

AdvanEDGE pipe does not rely on the geotextile for structural support. Its strength is derived from a corrugated cylinder maintained by pillars located strategically throughout the core. The result is a series of oval-shaped sections with all-direction strength. This completely enclosed waterway with fewer projections allows AdvanEDGE to function as a pipe, discharging more water to the outlet.

**Stronger material**

HDPE has an unbeatable combination of mechanical and chemical properties for drainage pipe applications. Many competitive geocomposite cores are made from less desirable materials such as low density PE or styrene.

**Superior flow**

The chart below shows AdvanEDGE’s hydraulic capacity vs. slope. AdvanEDGE has more than twice the hydraulic flow of competitive pipe.

![AdvanEDGE Pipe Flow Capacity Chart](chart.png)

**Economical installation**

The slim-line profile of AdvanEDGE pipe allows for installation in a narrow trench, easily dug with high-speed trenching equipment. It requires no gravel or select backfill, and can be installed directly against a wall or structural member. AdvanEDGE can also be installed horizontally directly on the subgrade beneath playing turf and golf greens. This orientation accelerates water removal and cuts labor costs because no trenches are required.

**Additional information available:**
1. "Geocomposite Edgedrain System Design" by James B. Goddard
2. Kentucky Transportation Center Report KTC-97-5, “Performance and Cost Effectiveness of Pavement Edge Drains”

### AdvanEDGE Couplings

(Fittings for AdvanEDGE Laid Flat are also available.)

- End Outlet
- Side Outlet
- End Cap
- Coupling
ADS offers the industry's most complete selection of joining systems for gravity-flow pipe. Standard lines provide soil tight performance.

**Standard Drainage Couplers and Fittings**

For many less critical drainage applications, ADS standard split couplers and fabricated fittings will provide excellent performance at the lowest installed cost. Split couplers are often used for field repairs, and for slope drains where extra pull-out resistance is needed.

**Additional information available:**

1. AASHTO Specification M252
2. AASHTO Specification M294
3. AASHTO Specification MP6
4. ASTM D2312
5. ASTM D2412
6. ASTM D3034
7. ASTM D3212
8. ASTM F477
9. ASTM F1417
10. ADS Tech Note 2.115, “Comparative Pipe Stiffness”
**Small Diameter N-12 Fittings**

ADS offers a full complement of injection molded fittings in 4” through 12” sizes. These fittings are available in both water-tight models which include an F477 gasket for attaching to the spigot end of the pipe, and soil-tight styles with cleats in the bells of the fittings. Item selection includes couplers, reducing couplers, tees, wyes, tee-wyes, 45° elbows, and 90° elbows.

The addition of these fittings results in an all-HDPE water- or soil-tight piping system from 4” through 60” diameters. There is no need to switch to SDR-35 PVC pipe in sizes under 15”, particularly since polyethylene offers several significant benefits over PVC: better impact strength, no edge beveling, and superior resistance to chemicals and abrasion.

**UNI-T™ Tapping Tee**

The UNI-T (“Uni-tee”) is a versatile polyurethane tapping tee that provides significant savings in installation time and inventory costs. It is available in 4”, 6” and 8” diameters and features a patented spacer ring system that assures a snug, soil-tight connection into 12” through 60” corrugated HDPE pipe.

The spacer rings can be individually removed or left in place to accommodate varying corrugation heights on the main line pipe. Each UNI-T comes with a Nyloplast adapter coupling for connecting 4”, 6” or 8” N-12 service pipe.

This innovative concept offers several benefits for suppliers and installers:

- **Reduced inventory.** Stock just three items for 4”, 6” and 8” service connections to 12” through 60” corrugated pipe. Replaces 15 items that would normally be stocked.

- **One-piece fitting.** Competitors have multiple components.

- **Minimal extension into main line.** 5% or less obstruction of flow.

- **Simple, fast installation.** No tools required. No clamps or mechanical devices. No special alignment necessary.

Additional information available from ADS:
ADS # 10557, “UNI-T Tapping Tee”
ADS offers the PROPEX® brand of construction fabrics and other geosynthetic products for soil stabilization and reinforcement, filtration, separation, erosion control, and subsurface drainage.

**Geotextiles**

Woven and non-woven geotextiles offer a range of styles to fit a variety of subsurface construction applications. Durably constructed of polypropylene, these geotextiles provide permanent, cost-efficient solutions that are completely environmentally compatible. These fabrics are resistant to naturally encountered chemicals, alkalies, acids, and biological degradation, and will meet or exceed AASHTO M 288 specifications.

**Geogrids**

These products feature large openings and are available in a variety of shapes and thicknesses. Geogrids provide strong soil support, with particular effectiveness in embankment reinforcement, erosion control, and shoreline protection under rip-rap.

To complement the standard geogrid line, ADS also markets the Secugrid® brand of biaxially oriented polypropylene geogrids from Naue GmbH in Germany.

Using patented manufacturing technology, these geogrids feature a heavy duty matrix of polymer straps with high tensile strength and very low elongation. Secugrid geogrids are especially well suited for demanding soil stabilization applications such as highway and road construction.

**Silt Fence**

Used to contain sediment runoff from construction borders and newly graded slopes, silt fence is available in 100-foot rolls with preassembled hardwood stakes and a choice of fabrics and other options.

**Erosion Control Mats**

Uniquely designed three-layer netting mats provide effective surface protection for slopes with existing vegetation or newly seeded soil.

**Filter Fabric Wraps**

Extra-strong synthetic materials are used with perforated drainage pipe to prevent infiltration of fine soil particles while allowing water to flow freely.

1. **Drain Guard®.** Designed for normal handling conditions, Drain Guard is a spunbound nylon wrap with a unique bonding process that provides ultraporous filtration while restraining and stabilizing sandy/silty soils.

2. **ADS Sock.** This is a machine-knitted polyester drain envelope that stretches to fit snugly over the pipe. It has extra toughness and flexibility to withstand unusually rough installation and handling conditions.

**Additional information available:**

2. ADS Form #1 0473, “ADS Geotextile Products”
3. ADS Form # 10242, “ADS Geogrids”
4. ADS Product Note 3.102, “ADS Drain Guard and Sock”
5. ADS Form # 10506 “Erosion Control Mats”
ADS is more than a products manufacturer. Over the past four decades, the company has committed substantial resources to expanding the market for HDPE drainage production applications historically dominated by concrete and metal pipe.

Our extensive Web site (www.ads-pipe.com) is a gold mine of product and application information for engineers, contractors and agency officials. ADS has made it a point to stay abreast of changing government regulations, particularly Phase II of the Environmental Protection Agency’s Clean Water Act, and has developed a number of design solutions that qualify as Best Management Practices. More and more specifiers are now looking to ADS for everything needed in a complete storm water management system.

Technical assistance
ADS has a team of 35 field engineers working to obtain state and regional specification acceptance. Along with their long-term involvement developing product specifications and industry standards with AASHTO and ASTM, ADS engineers are in daily contact with customers, offering professional guidance on new applications and unique installation situations. These often involve the design and construction of custom fittings, which are fabricated in special departments located at many of the company’s 40 manufacturing plants.

To assist design engineers and contractors, ADS has created a series of interactive design tools on CD-ROM. These include tutorials on retention/detention systems, water quality units, and three site development applications: residential, school and commercial. Each CD uses a dynamic rendering technique to show where and how various drainage products (pipe, fittings, chambers, structures, geosynthetics and water quality units) can be used. Included are product descriptions, installation details, technical reports, product notes, calculation tools, and insertable CadBlocks of all ADS products for direct use in all CAD design platforms.

Field support
In addition to the regional engineers, ADS customers receive support from more than 350 field sales representatives and product specialists based at our Customer Service Centers. These people provide on-site assistance to contractors, engineers and distributors on matters ranging from installation questions to emergency product needs. Deliveries are handled by the largest company-owned fleet in the industry: over 600 tractors, more than 1,000 dropside, flatbed and covered van trailers, and local delivery trucks located at each of our 30 Distribution Centers.
Tomorrow's drainage system today

Today, the science of materials engineering has totally changed the complexity of the construction industry, with plastics outperforming and outlasting traditional metal and concrete. ADS helps streamline the process with engineered plastic drainage products that offer superior hydraulic performance, lower installation and maintenance costs, and significantly longer service life. As a commitment to its heritage, ADS continues to advance the improvement of drainage systems throughout the world in both product and system design.

We invite your call to help solve problems or answer questions. To serve you better, ADS has a nationwide network of sales and manufacturing facilities, so wherever you are, we’re nearby.

THE MOST ADVANCED NAME IN DRAINAGE SYSTEMS®

Advanced Drainage Systems, Inc.
4640 TrueMan Blvd., Hilliard, OH 43026
800-821-6710 www.ads-pipe.com

Customer Service Offices

Midwest/Northeast Zone
London, OH 1-800-733-9554

Southern Zone
Franklin, TN 1-800-733-9987

Western Zone
Vancouver, WA 1-800-733-8523

Manufacturing Facility Locations

The Green Stripe on ADS corrugated pipe is your assurance of the best in quality and service from the world leader in polyethylene drainage products.

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