1.0 OVERVIEW

1.1 Introduction

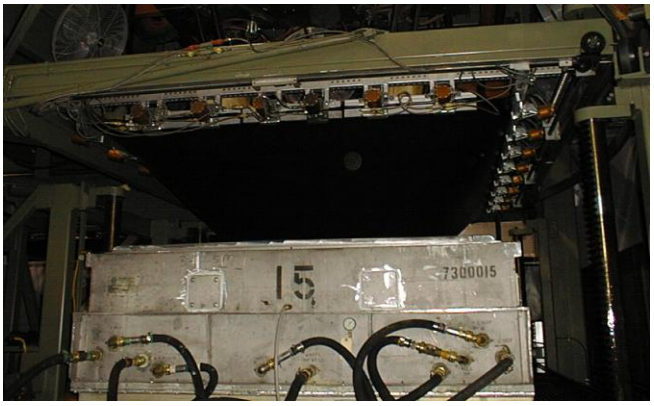
For too long, the challenges inherent to water conveyance have seemed insurmountable. Water in the wrong amounts or in the wrong places. Flow rates that are too quick or too slow and erosion problems caused by drainage flow problems. Until now traditional approaches and technologies in channel and ditch construction simply haven't delivered what's needed most: a safe, economical, easily installed and maintained, long-lasting and environmentally sound way to manage water flow.

The solution to these problems is SmartDitch; a flexible, thermoformed plastic HDPE channel system from Penda Corporation. While traditional water management products deteriorate and fail, the SmartDitch system guarantees a stronger, longer-lasting solution that can be used for new construction or rehabilitation. SmartDitch can be installed far more easily and quickly than traditional products, and offers significantly lower maintenance costs combined with versatility.

SmartDitch trapezoidal straight channel – 24" depth series model

1.2 Penda Corporation

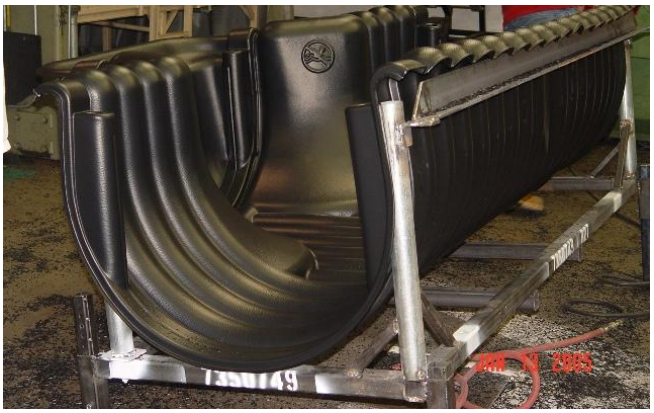
Penda Water Management is a strategic business unit of Penda Corporation, located in Portage, WI. For more than 30 years, Penda Corporation has been one of North America's largest and most advanced thermoforming plastics operations. Penda offers a wide array of quality manufacturing process and materials – from HDPE to ABS plastics, thermal plastic olefin (TPO) to co-extruded sheets using cap-stock layers, and textured surfaces to high-gloss molded in color. Our manufacturing expertise has made Penda the global leader for pick-up truck bedliners and the preferred supplier to the world's largest automotive manufacturers.



Framed SmartDitch sheeting entering tool for forming

Penda Corporation is uniquely suited to bring SmartDitch to the market. Penda is leveraging our globally recognized expertise in materials research, product development and manufacturing to deliver unmatched product benefits with SmartDitch channels.

Penda has 13 in-house, rotary sheet-fed, four-station vacuum formers. Our leading in-house forming capabilities enable us to deliver greater production efficiency on a full range of products. Every member of our team is committed to the total satisfaction of each of our thousands of customers worldwide. The proof of that commitment is seen in the many awards and recognitions our products have earned.



SmartDitch semi-circular tee-section channel in trim fixture

1.3 Water Management Vision

Penda's vision in bringing SmartDitch to the market is to provide its customers with water management solutions in a smarter way. Penda's guiding principles are to be Safe, Successful, and Smart in the products that we provide and how we conduct business. Penda is dedicated to bringing to market products that fulfill these guiding principles and provide our customers with solutions to their water management needs.

1.0 OVERVIEW

1.4 SmartDitch Applications

The SmartDitch channel/lining system developed by Penda Corporation is a reliable, easy to install, high performance way to manage water conveyance. Manufactured from high quality HDPE material and available in trapezoidal and semi-circular configurations, SmartDitch is durable, corrosion resistant and unaffected by acidic or alkaline soils and chemicals. SmartDitch offers many advantages over traditional water conveyance products.

Growing awareness of the benefits provided by SmartDitch has resulted in widespread use in the following applications:

- Drainage applications
- Erosion / sediment control
- Land development applications
- Irrigation / agriculture
- Miscellaneous applications: industrial site containment systems, landfill drainage systems, temporary flow diversions

In replacing other materials SmartDitch delivers a long, effective service life with low operating and maintenance costs. Where can SmartDitch work for you?

SmartDitch Drainage

SmartDitch narrows the performance gap between what traditional drainage channels provide and what today's engineers demand. Available in a trapezoidal configuration, SmartDitch is quickly replacing dumped stone and vegetated channels as a preferred product for drainage applications. Designed for superior hydraulics, durability, structural integrity and easy installation, SmartDitch provides excellent value and cost effective performance.

SmartDitch's hydraulic characteristics remain constant over time providing maximum drainage over the life of the system. The toughness of polyethylene withstands abrasive flows, corrosion, and even the most aggressive chemical attacks. SmartDitch prevents unwanted vegetation growth and the corrugated wall design produces a self scouring action that minimizes silt build up in the flowline.

When designing drainage projects with difficult access, in remote locations, or on uneven terrain and sloped conditions, SmartDitch's lightweight rugged construction allows for a quick installation in the most difficult situations.

<u>Project Applications:</u>

- Municipal stormwater systems
- Transportation system drainage
- Edge and slope drainage
- Site drainage for mine run-offs
- Drainage overflow channels

<u>Product Benefits</u>

- Hydraulic characteristics constant over time
- 0.022 Manning's "n" coefficient
- Reduces runoff velocities.
- Excellent abrasion resistance
- Withstands corrosion and chemical attacks
- Reduces maintenance costs

1.0 OVERVIEW

1.4 SmartDitch Applications (cont.)

SmartDitch Erosion / Sediment Control

SmartDitch can be used to form defined ditches that can control erosion, catch sediment, and provide superior drainage. Storm water runoff channels help prevent erosion, reduce the risks of structural instability and provide critical drainage for paved areas. SmartDitch meets all of these challenges.

High flows and undesirable soil conditions in drainage ditches can deteriorate the side walls and flow lines. SmartDitch's rugged HDPE construction resists the hydraulic forces of the flow and provides a stable channel that will provide years of maintenance free service.

As a slope or terrace drain, SmartDitch can be used to reduce erosion and be designed as a collector and outlet for the drainage system. SmartDitch's lightweight design makes it the perfect product to install on these difficult sites.

SmartDitch is also ideal on construction sites with potentially high volumes of loose sediment for a best management practice. A temporary perimeter ditch is installed to catch and retain the sediment before it runs off the site. During the project construction the ditches can be easily cleaned and maintained thus preventing costly fines or project delays.

Project Applications

- Roadside drainage ditch stabilization
- Slope and terrace drains
- Stream restoration & stabilization
- Jobsite sediment containment
- Private dam spillways and low flow channels
- Rehabilitation of concrete and/or earthen channels

Product Benefits

- Stable channel design
- Reduced run-off velocities
- Sediment containment
- Reduced channel maintenance
- Accommodates small changes in line and grade without fittings
- Cost-effective Design Life Costs

1.0 OVERVIEW

1.4 SmartDitch Applications (cont.)

SmartDitch Land Development

The demand for more developable land continues to grow every day requiring engineers and developers to look for innovative means to utilize ground previously considered unusable. SmartDitch can be installed to control drainage and erosion on sites with uneven terrain, large slopes, on property susceptible to flooding or bordering run-offs or spillways.

As part of development's stormwater drainage system, SmartDitch's hydraulic characteristics remain constant over time providing maximum drainage over the design life of the system. The toughness of polyethylene withstands abrasive flows, corrosion, and even the most aggressive chemical. SmartDitch prevents unwanted vegetation growth and the corrugated wall design produces a self scouring action that minimizes silt build up in the flowline.

As a slope or terrace drain, SmartDitch can be used to reduce erosion and be designed as a collector and outlet for the drainage system. SmartDitch's lightweight design makes it the perfect product to install on these difficult sites.

<u>Project Applications</u>

- Subdivision stormwater drainage
- Drainage for retail and business developments
- Edge and slope drainage
- Flood control
- Private dam spillways and low flow channels

<u>Product Benefits</u>

- Eco-friendly material and colors
- Hydraulic characteristics constant over time
- Flexible construction practices for difficult development sites
- Reduced maintenance costs
- Durable, Long-Life Material

1.0 OVERVIEW

1.4 SmartDitch Applications (cont.)

SmartDitch Irrigation / Agriculture

Agriculture in many parts of the country depends on the availability of irrigation water and channels are typically used to transport water from the sources to end users. Over time these channels can deteriorate due to erosion, ground movement caused by freeze/thaw cycles, or corrosion of the building materials. SmartDitch provides a durable solution to these problems and can increase water distribution in irrigation systems by as much as 90 percent.

SmartDitch's hydraulic characteristics remain constant over time providing maximum flow of water over the life of the system. The product's HDPE material withstands abrasive flows, corrosion, and even the most aggressive chemical attacks. SmartDitch also prevents unwanted vegetation growth and the corrugated wall design produces a self scouring action that minimizes silt build up in the flowline.

SmartDitch liners are easily installed in new construction applications or as slip liners in failed concrete or earthen channels, greatly reducing long term maintenance costs. SmartDitch's lightweight design makes it the perfect product to install in remote sites where accessibility is an issue.

Project Applications

- Irrigation Channels
- Flood Irrigation
- Drainage Channels
- Rehabilitation of Concrete and/or Earthen Channels

Product Benefits

- Hydraulic characteristics constant over time
- 0.022 Manning's "n" coefficient
- Resistant Abrasion, Punctures, and Freeze/Thaw
- Reduces water loss through seepage
- Low Maintenance Costs
- Cost-effective Design Life Costs