

How big can you make the MegaDitch?

The product has been specifically engineered to have the potential to be infinitely expandable. Base sections are each approximately 6.3' x 9.3' and have the design ability to overlap and connect to other base and sidewall (5' x 9.3') pieces. The first application was two base sections wide and one sidewall high. For example, another project could be 20 base sections wide and 4 sidewalls high, the possibilities are endless.

How did the first installation go? What were some of the challenges?

The first installation in Quebec, Canada went well. It was a Mine reclamation and rehabilitation project with a very large concern of controlling erosion and sediment runoff. MegaDitch was the only sustainable solution to channel the runoff.

The installation occurred November/December 2010, so the largest installation challenge was fighting the weather conditions. Severe cold with the addition of rain and ice is not ideal for product installation. However, these issues were overcome and the installation was complete before the ditch was completely frozen over, covered with ice and snow.

The angular deflections were derived by cutting the bases and sidewalls to accommodate 5 degrees of turn every 10 feet. This process could be performed several times in a row to make a sharper turn but the labor would be more intensive.

How does MegaDitch hold up in different weather climates, and how long will it last? What is the estimated useful service life of the product material?

The SmartDitch MegaDitch is made of HDPE, which is very durable and extremely resistant to chemicals and corrosion. Accelerated laboratory testing projects a minimum lifespan of 20 years. UV stabilizers are also included to inhibit the physical and chemical process of UV-induced degradation. The inherent physical properties of HDPE manufactured SmartDitch will also allow it to perform well in both hot and cold environments.

Is it possible to install in a wet application?

The current hybrid sealant does not cure fully when being installed on a wet surface and will be more prone to separation from the material and will increase the possibility of some leaking. As long as careful precautions are taken to make sure the sealant is kept dry as it sets, installing in a wet environment should not be a problem.

What is the MegaDitch made from?

All SmartDitch products are manufactured from high density polyethylene plastic at Penda Corporation, an ISO 9001 rated factory.

How thick is the material, and how much does it weigh?

The extruded sheet is run at a robust 225 gauge. The parts are roughly 75 lbs. The product is shipped on pallets and is easily handled by just two people.

MegaDitch™ FAQ's

How deep should the anchors be and how many per panel?

This will be heavily site dependant, once our Engineering team has the details of each particular application factory recommendations will be made. For a basic one-base-wide and one-sidewall-high application anchors should be drove ~3 feet deep with 3 anchors across the top and 1 per base section.

Any concerns with the lateral earth pressures on the steep sidewalls, and are the screws enough to hold the base without additional anchors?

The screws should provide adequate force with the addition of a few anchors in the base. Installing two screws for every rib on the floor along with the water mass in the ditch should provide an adequate holding force.

Many precautions can be taken to ensure a successful installation and our Engineering team will review all sites to make any necessary recommendations.

Will any industrial and construction sites have a need for MegaDitch?

Yes, storm water runoff is a big concern. Many sites need to move a lot of storm water and not disrupt the habitat. Increased EPA guidelines have created a great need for erosion and sediment control products. If water can be moved from running through a construction site to around the site the water would not have to be treated and that would greatly reduce costs and concerns.

Airports and military installations have a significant amount of impervious surfaces as well that would benefit from MegaDitch.

What are some Engineering suggestions if lateral drainage into the MegaDitch is a big concern?

Evaluate installing the MegaDitch in conjuncture with riprap or geotextile fabric. Geotextiles should be either woven or nonwoven polyester, polypropylene, stabilized nylon, polyethylene, or polyvinylidene chloride with the following physical properties:

Minimum Grab Tensile Strength: (ASTM D 4632) 205 lb (900 N)

Minimum Puncture Strength: (ASTM D 4833) 80 lb (350 N)

Minimum Apparent Breaking Elongation: (ASTM D 4632) 15%

Maximum Apparent Opening Size No.: (ASTM D 4751) 30 (600 micrometers)

Minimum Permittivity: (ASTM D 4491) 0.12 s-1

NOTE: Riprap should be sized and carefully placed based on site conditions and expected flows.

What is the purpose of the ribbed design?

The ribs are engineered to maximize the flexibility potential of HDPE to create curves, but they also give extra strength / stability to the product. The corrugated design helps to control high velocity flows and creates a self scouring action so that in a rain event debris will be washed away. Another advantage is that it allows all SmartDitch product sizes to stack well for shipping purposes.