

MaxFlex features an inner flexible wall instead of a solid single wall and, according to the company, increases flow rates by as much as 30 percent by eliminating friction against the single outer wall.



## Dual Walled Tile Provides Better Drainage

Timewell Drainage Products says its MaxFlex flexible dual wall tile provides the drainage flow benefits of dual wall pipe with single wall ease of installation.

The MaxFlex features an inner flexible wall instead of a solid single wall, which increases flow rates by as much as 30 percent by eliminating friction against the single outer wall.

Two special blends of HDPE plastic resin are used in the pipe makeup to let it bend enough for transporting in a coil.

Tile is available in 8, 10, 12 and 15-in. diameters ranging from 220 ft. to 690 ft. in length.

The MaxFlex can be placed into the ground behind a conventional trencher or tile plow. Timewell recommends a cutting width roughly 25 percent (or 3 in.) wider than the pipe's outside diameter to effectively clear away enough soil to accommodate the trailing

boot size.

Burial depths are impacted by compaction and backfill quality but are recommended at up to 8 ft.

The boot's internal pipe path should feature a minimum bend radius of 50 in. for a smooth transition during installation.

Timewell emphasizes that like any single wall piping, care should be taken to eliminate stretching as this can reduce strength and decrease longevity and effectiveness.

They deliver their drainage pipes, fittings and accessories throughout the Midwest and Southern U.S.

Interested parties should contact Timewell by using the sales representative locator tab on the contact page of their website.

Contact: FARM SHOW Followup, Timewell Drainage Products, 196 US 24 1075 N Ave., Timewell, Ill. 62375 (ph 800-720-8453; www.timewellpipe.com).

## SWAT Maps Offer Unique Field Info

Canadian technology company Croptimistic offers SWAT (Soil, Water and Topography) maps and SWAT Boxes and associated software to make them. SWAT maps integrate the soil, water and topography in fields into a single field map. They use electroconductivity (EC) sensing and RTK elevation capture or LiDAR. They provide field characteristics for use with variable rate fertilizer, seed, soil amendment, pesticide, or precision water management decisions.

"These layers are fundamental to understanding the unchanging, stable aspects of a field," says Evan MacDonald, Croptimistic Technology. "Other maps, such as yield maps, can be impacted by hundreds of different variables. Our maps focus on the soil, not the crop in season, seeding rates or starter fertilizer."

The SWAT Box is key to creating a SWAT map with SWAT Records software. It can be mounted on a truck, off-road vehicle, or farm equipment to collect needed data. The SWAT Box is mounted just above the soil, as opposed to traditional EC sleds, which drag across the field, reducing potential maintenance.

SWAT mapping is typically done by a crop consultant or by a Croptimistic staff member. Currently, the company has around 70 on staff, mostly in western Canada.

"Once a farmer sees his SWAT field maps, he understands how they can be used," says MacDonald. "Once a map is created, it doesn't have to be redone unless drain tiles have been installed or soil has been moved."

One way SWAT maps are used is to break fields into zones for soil sampling and precision seeding or application rates. Zones are based on water movement, elevation, organic matter and soil types.

"Typically, every field is broken into about five zones," says MacDonald. "SWAT field



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mapping generally falls in the \$11 to \$14 per acre range, depending on size and geography. It usually includes EC mapping, zone creation and initial soil sampling."

MacDonald points out that without the ability to address variability within a field, the SWAT Map has limited value. "If producers have variable rate seeding, spraying and nutrient application capability, we can provide practical solutions," he says.

The zones can also be used with soil moisture sensors and a software tool called SWAT Water. It utilizes several deep soil texture samples and sensor data to model the available soil moisture supply. Weekly water maps can then be developed for irrigation management or side dressing.

"Our main target for the use of the SWAT Maps is the producer," says MacDonald. "To deliver them, we have licensed the technology to around 60 licensed agronomists or consultants around the world. They offer the service to clients in the U.S., Canada, Australia and South Africa."

Contact: FARM SHOW Followup, Croptimistic Technology Inc., 502C 47th St. E, Saskatoon, Sask., Canada S7K 4L3 (ph 800-421-4099; support@swatmaps.com; www.swatmaps.com).

## New High-Tech Back Brace

Seoul and San Francisco-based industrial design studio BEBOP has designed and developed a wearable back support device, known as WIBS, to help labor-intensive workers.

The back support works as a compact exoskeleton and functions by using tensioned flexible rubber composites and mechanical gears. You can modify its strength through an analog controller located at the chest. Adjustable straps allow the brace to provide a near-universal fit for any user.

WIBS is designed for both support and comfort, meaning that workers can continue to wear it while taking breaks. The brace works without electronics and instead provides back support through tensioned flexible rubber composite and mechanical gears. This eliminates the need to charge batteries. The brace is made from durable materials that can withstand heavy use.

Because WIBS mechanically supports back muscles, it's ideal for physical labor jobs with many repetitive movements. BEBOP expects it will be used most by construction workers, warehouse workers, and courier service providers who frequently lift heavy objects.

Says BEBOP, "It's a very simple product that's intuitive to use without any unnecessary features and doesn't get in the way when you're just wearing it during breaks or tending to other tasks."

WIBS was publicly announced during the global tech event CES 2023 with functional prototypes. At publication, production models are under development and should



The brace works without electronics and instead provides back support through tensioned flexible rubber composite and mechanical gears.

be ready for production sometime in 2023.

Contact: FARM SHOW Followup, BEBOP, 4F, 17, Nonhyeon-ro 153-gil, Gangnam-gu, Seoul, Korea 06037 (seoul@bebopdesign.co; rich@bebopdesign.co; www.bebopdesign.co; www.wirobotics.com).

## Hand Pump Back-Up On Electric Well

While electric wells are unmatched from a convenience standpoint, they can leave you in a lurch if the power goes out. Some aim to counteract this problem by installing hand pumps on their electric wells. This ensures they always have a way to access their water supply no matter the status of the power supply.

While paying a professional to install a hand pump on an electric well can cost between \$500 to \$2,000 or more, the process isn't challenging for an experienced DIYer.

The first step is determining which type to install. Two main types of hand pumps are popular today: a lift pump and a piston pipe.

With a lift pump, pushing down on the handle fills a piston inside with water. Lifting the handle pushes water into the pipe. While lift pumps can theoretically lift water any distance, they are limited by the strength of the person using them. For this reason, most are only used for wells 25 ft. deep or shallower.

Piston pipes, in contrast, use a piston to push water up a pipe from the bottom. They require less force to operate, so they work with deeper wells, up to 300 ft. The largest ones can handle up to 30 gpm, although factors like the volume of the pump and the diameter of its piping will affect the output.

Another factor for cost and complexity is whether the hand pump will be installed indoors or outside. While indoor hand pumps are less common and can be cumbersome for daily use, they provide the convenience of a faucet regardless of whether you have the power to run it.

Outdoor pumps tend to be less expensive and easier to manage, although you must go outdoors to pump the water and then bring it where you need it, either by hand or with a hose.

Hand pumps themselves vary in price based on materials and features. Low-cost models only work when placed directly over the well and require significant strength to



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operate. Buy a better model and it will likely bring up more water for less effort overall.

Hand pumps work best when used regularly. Deposits can build up in the pipes over time, especially if your well has a high mineral concentration. Running the pump for a few minutes every week will ensure it's in working order when needed. That may not be a challenge, as many homeowners who install hand pumps find them useful for far more than emergencies.

Hand pumps are available for purchase at stores like Lehman's, Gemplers, and TSC and online from retailers such as Amazon, Northern Tool and Grainger.