

# SIFON

## DRAIN BELT



### THE OLD WAY

Traditionally subsurface drainage has been accomplished using panel drains, French drains or perforated pipe. All of these products rely on the same principles, water would enter the drain through a filter material or stone aggregate and be drained away by gravity. These drainage methods, while effective in the short term, have a number of disadvantages associated with them.

### DISADVANTAGES OF TRADITIONAL DRAINAGE

- Limited lifespan due to clogging
- Bulky design requires significant amount of space to transport and store
- Costly installation materials required such as stone aggregate, adapters, filter envelopes, etc.
- Delicate construction can lead to crushing by installation equipment and other heavy loads
- High particulate count in effluent due to turbulent water flow leads to clogging and sediment loss.

### THE NEW WAY

SIFON Drain Belt radically departs from the old way by changing the way drainage is accomplished. SIFON Drain Belt uses capillary and siphon actions to actively drain excess water quickly and efficiently. Instead of waiting

for the water to enter the drain, the SIFON Drain Belt actually pulls water from the ground with its siphoning action. Utilizing the capillary action, water is placed under control creating an efficient and turbulence free environment to evacuate excess water without clogging. SIFON Drain Belt does not require stone aggregate or filters. All that is needed is free draining sand, SIFON Drain Belt belt and solid wall PVC. Foot by foot, SIFON Drain Belt is more efficient and longer lasting than traditional drainage materials.

### ADVANTAGES OF SIFON DRAIN BELT MICRO SIPHON DRAIN BELT

- RESISTS CLOGGING- Capillary action pulls water vertically from the ground, separating (instead of filtering) the water from the soil, leaving behind any material that could clog the belt.
- FLEXIBLE- Made of extruded PVC, SIFON Drain Belt is very flexible and will contour to the shape of the ground where it is installed. This cuts down on unnecessary digging and excavation.
- LAMINAR FLOW- SIFON Drain Belt's micro-siphon design ensures a smooth laminar flow of the drainage water. This feature ensures a long lasting and efficient drainage system.
- DURABLE- Because of its low profile design, SIFON Drain Belt is extremely durable. With a compressive strength of 61,440 psf, SIFON Drain Belt is one of the most crush resistant materials on the market today.
- EASY TO TRANSPORT AND STORE- A roll of SIFON Drain Belt (330 feet long) is only 20 inches in diameter.



# DRAINAGE FACT SHEET

## PRODUCT FEATURES

SIFON Drain Belt drains excess water in a whole new way. It accomplishes this by utilizing both capillary and siphoning actions to literally pull water from the ground. These actions are accomplished by the patented design of the belt itself. One side of the belt is solid while the other side has small slits running the length of the belt that lead to larger micro channels. The SIFON Drain Belt belt is installed with these slits facing downwards. When water reaches the belt, capillary action pulls the water into the belt.

Once water enters the belt, it travels down along its length at a slight grade. At the termination of the belt, there is a drop in elevation that leads into the collection pipe (this is done at the time of installation). When water reaches this drop, it accelerates causing a siphon action along the length of the belt (20 ft. max horizontal). That pulls the water behind it. This siphon action, along with the capillary action, actively pulls water from the ground. Because the SIFON Drain Belt belt has so many micro channels, 132 for an 8 inch belt, it can pull water from the ground faster than other conventional systems. In fact that the micro channel inlet area comprises over 20% of the active draining surface of the belt, whereas traditional perforated pipe has only 5-7% inlet area. This large ratio of inlet space and accelerated water flow ensures fast and effective drainage. SIFON Drain Belt's



SIFON Drain Belt in the TOTAL BUNKER SYSTEM

design creates a laminar flow of water into the collection pipes. This means that the flow of the water is very smooth and not turbulent (which causes clogging). Conventional perforated pipe, when under head pressure, pushes water into the pipe and causes turbulence which, in turn, causes clogging. This unique characteristic of SIFON Drain Belt provides smooth and efficient drainage indefinitely.

## PRODUCT SPECIFICATIONS

This chart shows the efficiency of SIFON Drain Belt in sand and clay. The theoretical flow rate is what results with gravity drainage. The measured flow rate shows SIFON's actual performance in laboratory tests. This shows how SIFON is faster and more efficient than traditional gravity drainage. SIFON is also very compression resistant. Its low profile design, with the arched support of the micro channels, makes it one of the strongest drainage materials.

SIFON: MEASURED FLOW RATES*						
TYPE OF TEST	LENGTH (cm)	PERMEABILITY (m/sec)	EFFECTIVE AREA OF BELT (cm <sup>2</sup> )	THEORETICAL FLOW RATE (L/min)	MEASURED FLOW RATE (L/min)	EFFICIENCY
Embedded in sand horizontally	20	1.18 x 10 <sup>-4</sup>	440	0.312	1.04	3.33
Embedded in clay horizontally	20	5.00 x 10 <sup>-6</sup>	440	0.013	0.45	34.6
Embedded in clay vertically	17	5.00 x 10 <sup>-6</sup>	900	0.027	1.80	66.6

Note\* Theoretical flow rate = Permeability x effective area of belt.  
Efficiency = Measured flow rate / Theoretical flow rate



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PHYSICAL PROPERTIES		
SPECIFICATION	UNIT	AVERAGE DATA
Width	Inches	8.0 (+/-5%)
Thickness	Inches	1/16 (+/-5%)
Length	Feet	328
Effective (inlet) Area	In <sup>2</sup> /ft	20%
Compressive Strength	psf	61,440
Tensile Strength	psf	12,288
Acid Resistance		Good
Composite Material		Durable Plastic Compound

Specifications are subject to change as necessary without notification