

Improved Water Management for Slopes

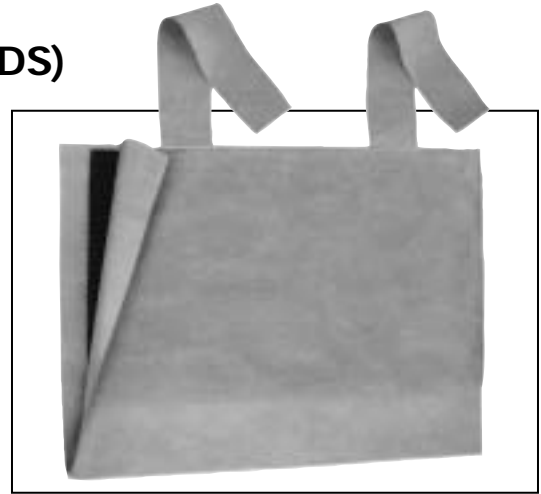
Subsurface Water Flow Applications

The Eljen Prefabricated Drain System (PDS)

The overall size of a standard Eljen PDS panel is 10'L x 4'H x 3/4"W.

The plastic, cusped core is enveloped by a geotechnical fabric, sewn closed at one end except for an opening at the bottom to allow for the insertion of 4" or 6" diameter corrugated, perforated tubing; the other end remains fully open.

There are two hanging straps at the top of each panel.



PDS Panel—Open end allows overlapping of units.

Eljen PDS Installation Instructions

1. A berm is cut across the slope with the soil placed on the bottom of the cut.
2. Eljen PDS panels are placed against the vertical side of the cut, inserting the sewn end of each new panel into the open end of the previously installed panel. The hanging straps are positioned on the top edge of the slope and are held in place by stakes.
3. Corrugated, perforated tubing is inserted at the bottom of the panels for the entire length of the system. When needed to carry away the water, non-perforated, corrugated tubing is attached for whatever length is necessary.
4. The soil is then pushed back to its original position, the hanging straps are released and buried during this procedure and the slope contour is restored.



Step 1—A berm is cut



Steps 2 Through 4—Installing and Backfilling the PDS

Benefits of the Eljen PDS

- One bulldozer replaces a trencher and one or more payloaders.
- Machine time to complete the project reduced by a factor of ten.
- No stone needed. Cost of truck hauling stone and cost of stone is eliminated.
- Since the corrugated, perforated tubing is shielded inside the Eljen PDS fabric, it will retain its effectiveness indefinitely. Perforated pipe in a rock-filled trench will lose its effectiveness because of gradual clogging.
- The wall of drainage created by the Eljen PDS provides more effective drainage than a stone-filled trench.
- Since the Eljen PDS installation can be easily and quickly inspected before backfilling, better quality control is achieved. It would be extremely difficult to determine if a properly-functioning, stone-filled trench has been constructed.

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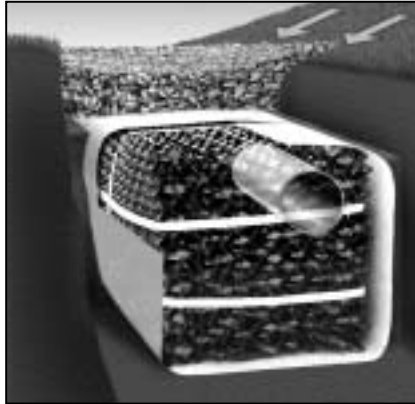
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Surface Water Flow Applications

The Eljen Reservoir System

The overall size of a standard Eljen Reservoir Unit is 4'L x 2'W x 1'H.

The unit is constructed of alternating sheets of plastic core: one with large cuspatations on both sides, the other with small cuspatations on both sides. This arrangement prevents nesting of the sheets, and provides 90% air space in the 8 cubic feet occupied by each unit.



Reservoir Installation Instructions

1. Cut a berm or trench across the slope, starting at the high end. Pile excavated soil on the downhill side of trench. Check trench grade to make sure the trench is sloping to one or more low points if water is to be drained. (See Fig. 1)

2. Cut a swath about six feet wide to a depth of four to six inches on the uphill side, allowing the soil to fall into the trench. (See Fig. 2)



Often, only one bulldozer is all that is required.

3. Create a mound on the downhill side using the excavated soil. (See Fig. 3)
4. Line the trench with geotechnical fabric from the top of the mound to about two feet above the top of the uphill side of the trench. (See Fig. 4)
5. Stack a minimum of six Eljen Reservoir Units (three units wide by two units high) for each four feet of trench length. (See Fig. 5)

OPTION: If the plan calls for draining off the water that will accumulate in the system (due to poor-draining substrate for example), non-perforated, corrugated tubing should be inserted in the end unit(s) at this stage.

6. Fold the fabric over the units, making sure there is overlap. (See Fig. 6)
7. Spread trap rock evenly over the System from the top of the mound to the top edge of the uphill swath. (See Fig. 7)

Benefits of the Reservoir System

- Limited space needed
- Reduces preparation time...Less labor needed
- Minimum number of machines and equipment needed
- Lightweight...Easy handling

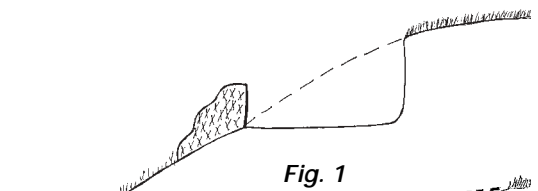


Fig. 1

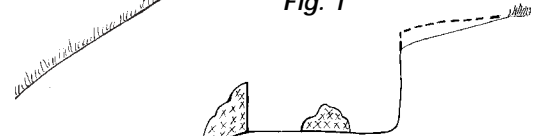


Fig. 2

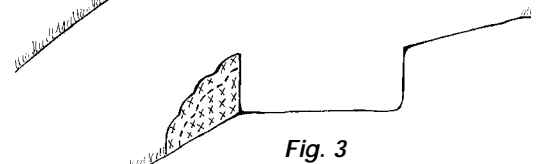


Fig. 3

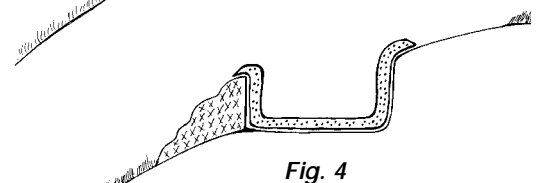


Fig. 4

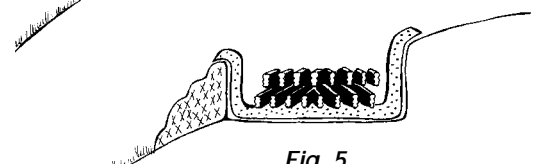


Fig. 5

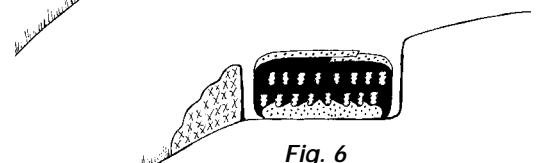


Fig. 6

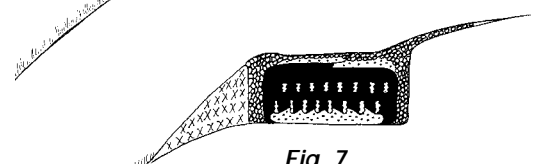


Fig. 7



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