Plastic Dams

Plastic dams are impermeable gully blocks constructed from sheets of plastic piling that lock together. Plastic piling can hold considerable volumes of water, creating large, deep pools. However, these must be spaced correctly or there will be a risk of one or more dams failing. They only work effectively where the base of the piling is on peat, not the mineral soil beneath.

The piling is driven into the peat using a rubber mallet or other heavy implement (using a rubber block to cushion the blows and help prevent the plastic from splitting), ensuring at least half its height is within the peat enabling the material to withstand the volume and pressure exerted by the water which will build up behind. As shown in Figure 1, below, the plastic must be driven into the sides of the gully far enough (at least one panel’s width) for structural strength and to prevent scouring around the sides. One or more panels in the centre of the dam should be driven slightly further into the peat to create a wide, low point allowing water to overflow in the middle of the dam, to prevent side-cutting. Stone, planks, heather bales etc, should be positioned beneath as splash plates where necessary to prevent undercutting.

Care should be taken to ensure that the dams are installed at an appropriate height (ie lower than the surrounding vegetation), to reduce their visual impact.

**PURPOSE**
- Good for creating pools
- Good for use in shallow peat pans, or near the heads of gullies

**ADVANTAGES**
- No vehicular access required – plastic piling can be airlifted to any location and installed using hand tools
- The most impermeable dam option

**DISADVANTAGES**
- Only suitable if there is sufficient peat depth
- Introduces an artificial material (plastic) onto the moor
- Can make it difficult to cross gullies on foot
- Plastic dams are susceptible to damage (by melting) from wildfires
- Plastic dams are more prone to damage than other dam types (though this is still uncommon)
- Plastic piling dams need to be installed with top-to-toe spacings, necessitating a large number of dams

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**Figure 1: Plastic pile dam construction**

- Approx 4cm drop in middle panel(s)
- Minimum of one panel keyed fully into vegetated gully side
- Splash plate (wooden or rock) to prevent erosion from water overflow
- Minimum of half of panel submerged into gully base
CASE STUDY: WEST NAB AND DEER HILL MOSS

In February 2016, plastic dams were installed on West Nab and Deer Hill Moss to block shallow pans and gullies near the heads of watercourses. Figures 2 and 3 show some of the dams shortly after installation.