

**Peat Edge Re-Profiling - Method of Installation**  
**Restoration Technique 6**

*(This method of installation should be read in conjunction with Peatland Re-wetting Design  
[Specification Sheet – 06 – Peat Edge Re-Profiling](#))*

Peat edge re-profiling is often required where the peat has been subject to either peat extraction-usually hand cutting; or the re-wetting works are located on the edge of the site. The technique aims to remove or reduce any steep slopes or peat cut faces by re-profiling the peat surface. There is also a requirement to undertake re-wetting techniques which link in with other work on site. The usual re-wetting technique is the installation of deep trench bunds (*Technique 5*). The main aim is to reduce water loss from the peat surface, it is common at these locations for water to be lost underground through cracks or peat pipes.

Once the peat edge, peat hagg or cut face has been regarded water flow can be minimised through a deep trench bund near the top of the slope (with a borrow pit upslope) and a second deep trench bund placed lower down the slope (again with a corresponding borrow pit upslope of the bund). The deep trench restricts the water loss by creating an underground ‘wall’ of wet ‘putty’ peat which slows water movement. This improves hydrological connectivity and re-hydrates the entire peat resource with improved general watertable conditions. The long-term improvement in peat surface wetness should lead to peat forming conditions for suitable peat forming vegetation.

**Peat Edge Re-Profiling Location**

The technique of peat edge re-profiling will vary depending on the site location and surface conditions. There will be differences in the proposed design depending on the size and scale of the peat slope or peat edge. Some locations will only require small scale work with a single bund as being adequate. For more degraded sites and where the peat water loss is deeper there may be a requirement to employ a range of bunds and other re-wetting techniques. However, as a general rule the deep trench bund technique is used to reduce sub-surface water loss.

Since most of these areas have been highly modified, it is essential that before re-wetting proposals are designed there should be some in-depth investigation to determine the nature of the water loss and identify other constraints. If the site is located near adjacent non-peat land (e.g. farmland) the scheme must ensure there is no impact to these areas.

On peat slopes or re-profiled edges the usual bund layout will be individual bunds with bund fingers. The aim for the bund is to push water back up the slope and stop lateral movement. The bund or bunds should be installed at the correct location to achieve general peat re-wetting with a general rule of a 30cm fall in gradient between bunds. On areas where the gradient is less steep or there is generally only one fall across the surface, banded cells can be considered. The aim of the cells is to retain water within the cell and spread the re-wetting across a wide area. This will therefore create banded cells of different sizes and shapes to achieve this.

Deep trench bunds generally are used from 0.5m down to 3.5m and require a borrow pit to supply additional wet 'putty' peat. The top bund is generally 30cm high above the peat surface but some bottom bunds on peat slopes are higher up to 50cm. To ensure there is some structural strength and to improve water retention the bund peat should be 80-90cm wide. With the vegetation placed back on top, the bund may be wider.

### Installation Procedure

- The peat edge design will determine the actual shape and re-wetting features required but the following procedures will generally be required.
- The first operation is to remove or reduce the steep slope or peat cut face or peat hagg edge. The excavator takes off the top vegetation (if any) and places to one side. This should be undertaken from the top to the bottom creating a 4-5m wide strip of removed vegetation. Once the peat is exposed the slope or edge is re-profiled by pulling down the peat from the top to the bottom of the slope. This reduces the steepness or removes the peat edge. The re-graded peat is pressed firmly with the back of the bucket (best to use a wide ditching bucket 1.5m-1.8m wide).
- The re-graded slope aims to achieve a slope of about 30 degrees or less. This at some locations may not be possible but the manipulation of the edge will improve the general peat surface conditions.
- When the 4-5m wide strip has been re-graded the vegetation taken off is replaced, again from the top to the bottom. The turfs are firmly pressed in place. There will be a requirement to leave about 1m open to create an overlap, to allow the lifting of the next 4-5m wide strip. When this has been re-profiled the 1m strip is covered with the next 3-4m. The excavator works along the peat edge working the peat and replacing turfs.
- Once the peat edge or slope has been re-profiled the peat re-wetting features are installed.
- If the works are located on a peat slope then it is usual to install deep trench bunds with bund fingers. On some slopes there may be the opportunity to install banded cells usually 10mx10m in size and cut against the slope to achieve maximum water retention.
- For peat cut face or peat hagg areas where the feature is usually narrow there may only be space to install one top bund and one bottom bund. Usually these would be deep trench bunds with bund fingers.
- The top bund is usually installed first with the surface bund being about 30cm in height and the trench going deep enough to ensure the water loss feature is sealed (see Technique 5 for detailed information).
- To complete the peat edge work the bottom bund is installed using a deep trench bund with fingers. The surface bund height is usually higher to accommodate the fall of the slope. General height of bottom bund is about 50cm.
- On some projects the peat edge work may link in with other re-wetting features. These should be incorporated as per the agreed specification.

### Machinery & Equipment

All machinery must be low ground-pressure tracked machines with a PSI below 3.5. Bio-hydraulic oils must be used and the machines should be clean and free of oil/fuel leaks. Deep trench bunds

often require excavators in the 5-10 tonne range. Digger buckets should be chosen appropriately, according to the size of the dam required

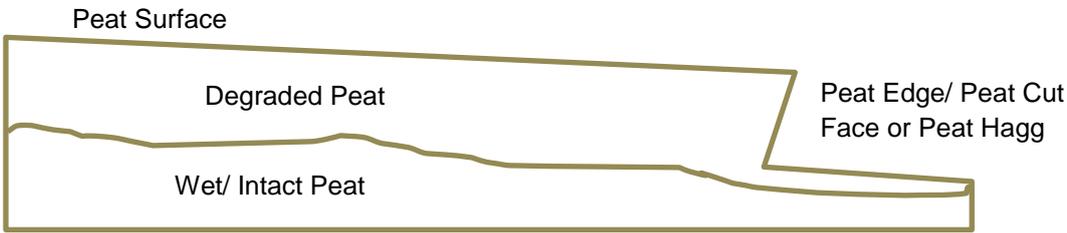


Fig. 1 (before)

Simplified profile of typical peat edge or peat cut face showing steep edge and degraded peat

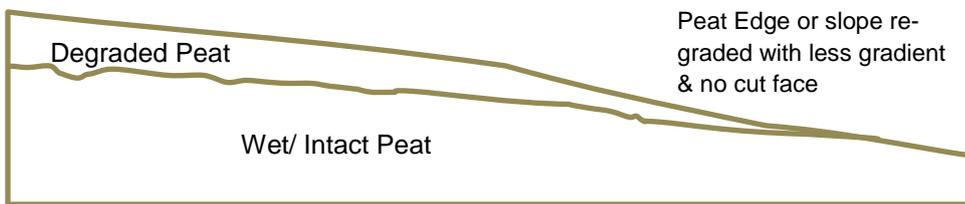


Fig. 2 (after)

Diagram showing re-profiled peat edge with a gentle slope. The proportion of degraded peat is much less and the peat has been compacted.



Fig. 3

One deep trench bund with bund finger over a peat slope on a lowland raised bog (SSSI site). The bund trench was dug about 2m deep, the surface bund is 60cm high and bund fingers are installed every 15m. The bund is set against the slope to achieve maximum water retention.

NOTE: the vegetation is placed on top but with some bare peat. This is not an issue since vegetation covers the bund within 1 year.



Fig. 4

Banded cells on a re-graded peat cut face with trees (lowland raised bog – SSSI site). There are 3 main bunds with the cells being about 20m wide and 10m long. The bund trench was dug about 2.5m deep, the surface bund is 60cm high and side bunds are installed every 20m. The bund is set against the slope to achieve maximum water retention.