

PATHWAY INTERCEPTION MEASURES

28. WILLOW FILTER BED

Willow filter beds are areas of densely planted willow trees. They help to slow the flow of water, allow sediment to settle out and any traces of dissolved nutrients to be taken up by growing vegetation. They act as a filter and allow for polishing of water from farm roadways and clean concreted yard areas.

All farms must adhere to the most current Nitrates Regulations regarding storage of silage effluent, dairy washings, slurry and farmyard manure. This measure is not to address any issues that are currently a GAP regulation requirement.

REQUIREMENTS

- Willow filter beds are a suitable measure for free draining soils, where small scale wetland ponds may not be so effective due to the high infiltration rates; however willow filter beds may be used in any circumstances where there is sufficient soil depth to get them established.
- Willow filter beds are not suitable for streams or other permanent watercourses or drains with a gravel bed.
- Willow filter beds can be sited in existing man-made farm drains that do not support or have the capacity to support fish life. If in any doubt contact IFI for clarification.
- Willow filter beds can also be sited on green field sites. Ensure sufficient soil depth to establish willow cuttings and always consider suitability of location in terms of vulnerable aquifers, proximity to karst areas, proximity to waterways and tall hedgerows; soil type, percolation rate and depth; topography of the land and other similar factors.
- The size of the willow filter bed should allow an internal effective area of $\geq 10\%$ of the runoff area, whether from farm roads or clean yard areas.
- Where possible, the willow filter bed should be long and thin but where more width is available or where awkward corners are being used, the shape may be amended. In these circumstances increase the size to 15% of the runoff area if possible, to compensate for reduced evapotranspiration effectiveness.
- A wetland planted silt trap (10m x 4-8m wide) for fines should be installed, where appropriate, at the head of the willow bed, to protect the bed from silt accumulation over time. This includes a sump/scrape at the head of the wetland planted silt trap.
- Any build-up of sediment in the initial planted silt trap should be removed periodically and as required to avoid the willow bed becoming a source of nutrients rather than a sink.
- Site gradient must be considered in terms of the required number of bunds and the required number of willow filter beds. On sloping sites, place bunds at intervals to enable a series of basins (each level within their own bunding area) to be built with minimum of earth movement.
- Bund height of 0.5m but may be up to 1m in certain scenarios. The higher bund will allow for more storage of water.
- Ensure bunds are well compacted and allowed to vegetate.
- Ensure that the bed of the basins used are level and that the embankments are not less than 300mm high around the perimeter of each basin.
- Ensure water flowing through the willow bed is dispersed evenly and not making a single path through the willow bed. During storm events the water should sit to a depth of 10-30cm across the entire bed, and then draw down afterwards to soil level.
- Densely plant the willow filter bed with *Salix* species.
- Plants must be purchased from DAFM registered professional operators. All plants must have accompanying plant passports. Participants that are approved for Measure 28: Willow Filter Bed, will no longer have to meet the Irish Provenance or Irish Origin requirement when purchasing plants from DAFM registered professional operators for Willow (*Salix viminalis*).

- Plant 6 rows of willows at 0.8m – 1m (80-100cm) spacing between rows and 0.5m (50cm) spacing within each row.
- 2400 willow cuttings required for an area 4-8m x 200m. 1200 willow cuttings required for an area 4-8m x 100m.
- The willow trees should be coppiced on a 3-5yr rotational basis, depending on inflow, to ensure active growth and uptake of any potential traces of nutrients. Use a circular saw or chainsaw for coppicing & remove cuttings. Cut willow may be chipped for use on the farm, cut for firewood if large enough and dried for 2 years before use, or piled up as a wildlife haven at a distance of $\geq 10\text{m}$ from the willow bed or any waterway.
- For health and safety reasons, it is recommended to fence off the area using Measure 30, etc.
- Please note that minor adjustments may be required during installation, depending on specific site conditions.
- Permission required prior to any work if within or close to any protected area, Natura 2000 site or archaeological site.
- Please note, site location could impact the effectiveness of the willow filter bed measure. The department guidance S133 provides some details on Site Restrictions at <https://assets.gov.ie/95195/3f86e4a7-9a32-462c-8d46-9ab5298fa34c.pdf>.



PAYMENT RATE

- Min 30m up to a max of 200m.
- €34/m.
- Applicant must apply for fencing of the Willow Filter Bed separately through Measure 30 etc.

VALIDATION

Relevant geotagged photo showing clearly the measure that has been applied for & proof of costs (receipts/invoices).



FOR MORE INFORMATION:

Speak to your advisor today or check out the Farming for Water website www.farmingforwater.ie for further information. Phone our office on **062 33063** - Office hours 9:00am – 4:30pm.



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