

Technical Guide

PORTADA 

The logo symbol for PORTADA, consisting of a stylized white 'M' shape with a diagonal cutout on the right side.

The temporary dam solution

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PORTADA 

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Introduction

PortaDam is OnSite's leading and proprietary temporary dam system.

This unique solution has been designed, engineered, and tested for the specific purpose of constructing a barrier to hold back water. It creates an effective temporary dam, providing a safe and dry working area for inspection, maintenance and civil construction activities in waterways, rivers, canals, reservoirs and docks with minimal damage to the water bed.

OnSite's full turnkey temporary dam service:

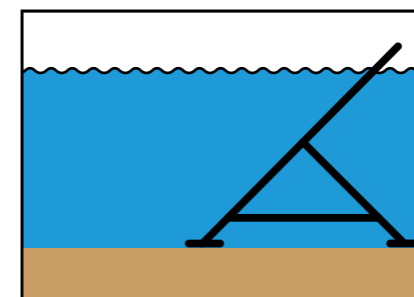
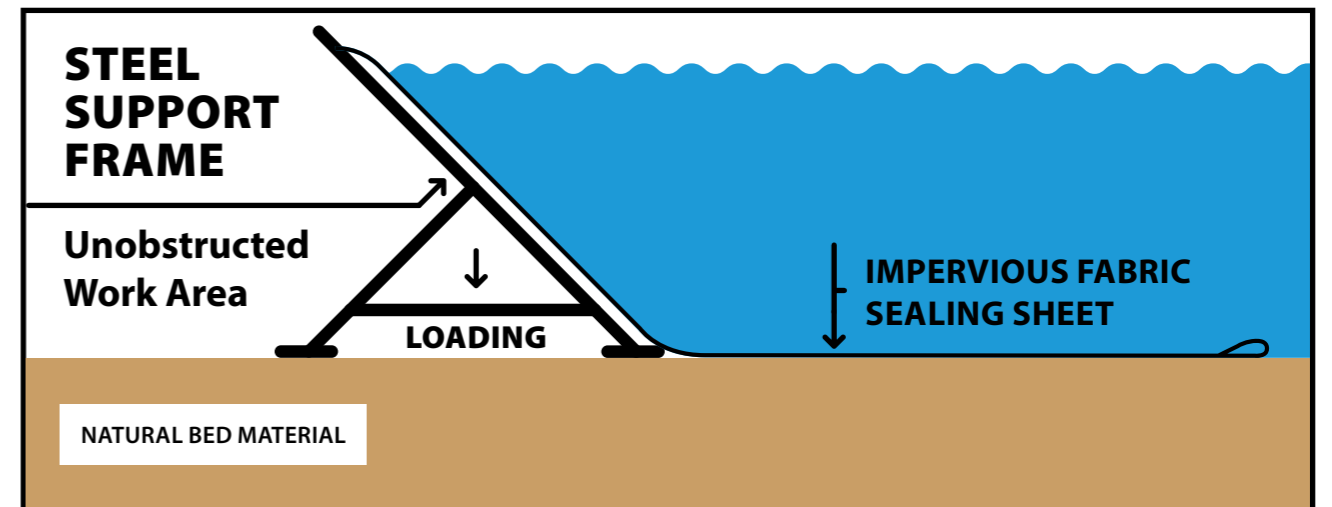




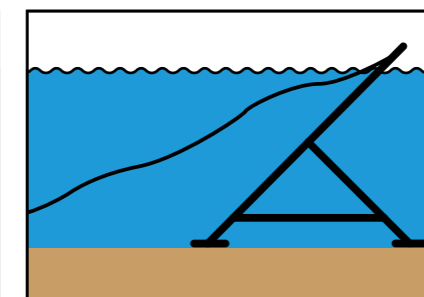
Dimensions

The PortaDam system comprises of welded rectangular steel “A” frames, placed at pre-calculated intervals. A tailored membrane is then suspended from the frames and lies along the “A” frame and the underlying surface to create a hydrostatic seal.

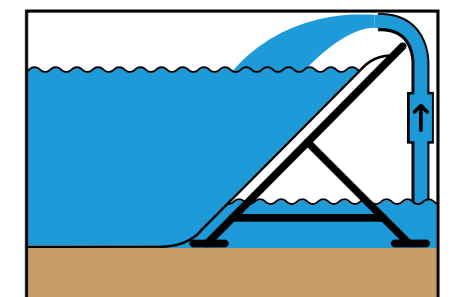
Once installed, the design transfers hydraulic loading to a near-vertical load; creating a freestanding dam that requires no additional bracing or supports.



Framework Installation



Membrane Placement



De-watering & Sealing

Installation size - The interconnecting steel “A” frames can be formed into a continuous structure of varying lengths and heights. Sealing fabrics are joined together to produce the required length.

Maximum number of coupled units - Unlimited.

PortaDam height range - The standard size frames are 1.5m, 2.1m and 2.5m. The sealing fabric can be set at any required height level on the frames giving the system more flexibility.

Flexibility with angles in the horizontal plane - PortaDam can be constructed to account for curves, arcs, or corners.

Interconnecting flume pipes - These can be set up between PortaDam installations in certain applications to allow continual flow between the two PortaDams reducing the need for costly over-pumping.



Installation

Pre-installation surveys - A thorough survey is undertaken before every installation to ascertain, amongst other things: bed type, water depths, access, topography.

Installation times - will be calculated on completion of a site survey to better inform clients' programmes of work.

De-watering - The OnSite PortaDam team will be available for the de-watering phase using pumps supplied by the client.

After initial de-watering, a 12 hour stand down period will be observed before integrity checks are undertaken and the dam is signed off for safe use.

Post Installation - After installation, safety training and sign off, the client and/or main contractor will be left equipped to carry out daily assessment audits and to maintain pumps to manage any seepage.

OnSite can also be available to carry out safety checks if required, particularly reassuring for longer term installations.

Resource requirements - Installation, normally involves up to a 5 person specialist team dependent upon site and installation size.

Transportation requirements - Are dependent on dam dimensions and size. Equipment can be transported in 3.5t van, 7.5t and 28t HGV vehicles.

Installation costs - PortaDam is available on a hire basis. Trained teams carry out the installation and projects are quoted on a job-by-job basis.



Compliance

Equipment - PortaDam is one of the safest temporary dam solutions available in the UK and certified by numerous bodies to satisfy Temporary Works Design Certificates (TWDC).

The PortaDam system has been tested:

- In 1972 at the National Physics Laboratory at Teddington, UK.
- At the National Physics Laboratory at Teddington, UK, by the United States Army Corps of Engineers (Engineer Research and Development Centre) where it was regarded as the best performing system in comparison laboratory and field testing.
- This resulted in a very comprehensive report, can be downloaded at their website: www.erd.c.usace.army.mil.

Many thousands of meters of PortaDam have been installed and the system has a long history of use for canal and river engineering projects since the early 1970s due to its tried and tested performance in service.

Installation Teams - All installations are undertaken by OnSite's dedicated teams of trained, qualified and vastly experienced waterways professionals.

With nearly 50 years' design and installation experience, OnSite maintains the highest standards of health and safety, customer care and environmental responsibility with levels of quality that set an industry benchmark.

Training and experience of the installation teams is key to providing an effective temporary dam so that our clients' can confidently place their personnel and equipment in a safe and dry working area.

OnSite's PortaDam operatives have a minimum of two years installation training as well as the following certification as a minimum standard:

- Confined space working
- Safe working in water
- Water rescue
- Construction Skills Certification Scheme (CSCS)
- On-going monitoring and assessment



Key Features

- A complete turnkey; supply-installation-maintenance service.
- For use in flowing or still water up to a standard water depth of 2.5m and unlimited in length.
- All components are portable, no lifting machinery is required reducing environmental impacts and allowing remote access installation.
- Minimal impact to water bed.
- Temporary Works Design Certification for both impounded water and dynamic water environments.
- Site specific Temporary Works Design Certification where required.
- In use since 1973 with thousands of metres successfully installed.
- Short- or long-term installations (longest duration to date is 2 years).
- Designed to allow overtopping and flow-through to reduce flood risk during high water levels.



Benefits

Portable

- Quick & easy to mobilise and transport to site – responsive for emergency requirements.
- Access to remote sites is simple, even the largest of frames can be handled manually.
- Installation can be undertaken from a boat or floating pontoon in difficult access sites.
- Speed of installation and dismantling.

Flexible

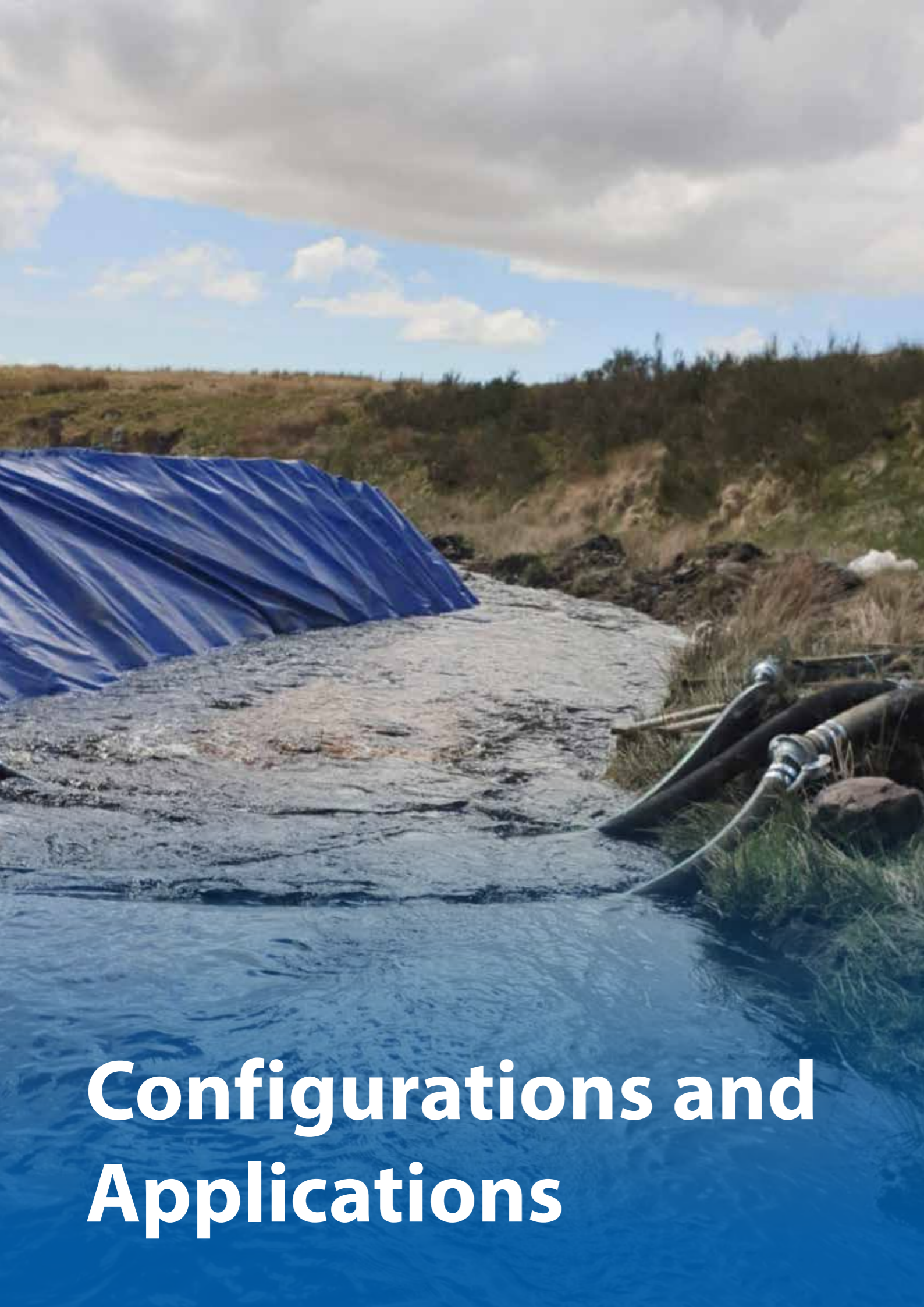
- Can be installed to client specific requirements around irregular objects.
- Fabric membranes can be joined together to form a dam length to suit client specific requirements.

Environmentally Friendly

- Does not pollute the watercourse, does not deteriorate with time, is easily maintained and is re-usable.
- Is temporary and non-intrusive, causing minimal damage to the bed of the watercourse.
- Has a reduced site footprint, minimising disruption for users of the watercourse.
- Requires no heavy lifting equipment on site.

Cost Effective

- Quick, simple and effective



Configurations and Applications

Configurations



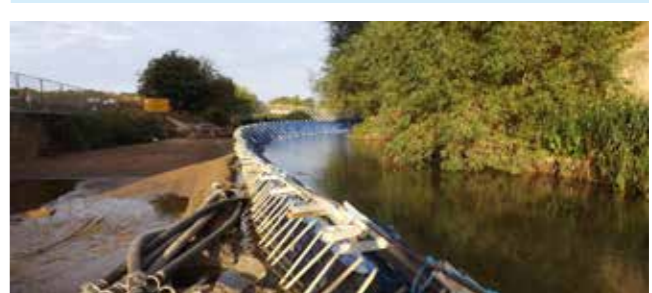
Coffer dams to unlimited length



Box dams



Flume dams



Channel diversions

Applications



Lakes and pond work



Weirs and fish passes



River diversion



Bridge works



Canals and locks



Flashy rivers



Bank works



Tidal locations



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