

**EC-3 COFFER DAM**

Refer to: ITD Standards and Specifications for Highway Construction, Sections 210 and 501.



Standard Symbol to be developed.

**Definition and Purpose**

A coffer dam is a temporary structure built into a waterway to contain or divert movement of water and to provide a reasonably dry construction area. Cofferd dams are commonly made of steel sheet pile, rock, gabions, concrete jersey barriers, vinyl tubes filled with water, or wood and may be lined with geotextile, plastic sheeting, or other materials to prevent water from entering the construction area.

**Appropriate Applications**

Cofferd dam construction may be required for activities such as stream alteration or construction of bridges, piers, or abutments that involve excavation or placement of soil and rock within a body of water.

**Limitations**

- Under some conditions, the design must be developed or approved by a qualified licensed engineer.
- The coffer dam should be sturdy enough to withstand water pressure and scouring.
- The use of a coffer dam below the high water mark of a stream or other water body (waters of the U.S.) should be carefully evaluated in coordination with the Corps of Engineers Section 404 permit. A Section 404 permit and accompanying IDEQ 401 Certification will be required. An Idaho Department of Water Resources Stream Alteration Permit may also be required.

**Design Parameters**

- Site specific design is required for a coffer dam.

BMP Objectives	
<input type="checkbox"/>	Perimeter Control
<input type="checkbox"/>	Slope Protection
<input type="checkbox"/>	Borrow and Stockpiles
<input type="checkbox"/>	Drainage Areas
<input checked="" type="checkbox"/>	Sediment Trapping
<input checked="" type="checkbox"/>	Stream Protection
<input type="checkbox"/>	Temporary Stabilizing
<input type="checkbox"/>	Permanent Stabilizing

- Cofferd dams should be designed to withstand currents and scour conditions expected under normal stream flow and annual high water. The functional life expectancy is generally 6 months or less.
- Construction materials commonly include steel sheet piles, rock, vinyl tubes, or wood. Piling could consist of standard steel sheet interlocked and driven into the soil or anchored to bedrock. Wooden structures may consist of planks or wood timbers. Concrete jersey barriers may be used, depending on the anticipated water flow, depth and appropriate fit and contact with the stream bed.
- The water side of the coffer dam may be lined with plastic sheeting or some other suitable material that would prevent water passage into the construction area.
- The coffer dam should be built as shown on the plans. Field adjustments shall be made as necessary. Vinyl tubes (bladders) shall be installed following manufacturer's recommendations and guidelines. Rocks or sharp objects shall be removed prior to installation.
- If dewatering is required while utilizing a coffer dam, meet dewatering requirements of the NPDES permit and/or 404 permit.

### **Maintenance and Inspection**

- Conduct inspections as required by the NPDES or 404 permit or contract specifications.
- Remove accumulated sediment and debris regularly and just prior to removing the coffer dam.
- Conduct required dewatering operations such that all permitting requirements are met.
- Upon removal of the coffer dam, stabilize the area and streambed and restore to as near-natural condition as possible. This may require some form of rock riprap and permanent revegetation if the stream bank has been disturbed.