

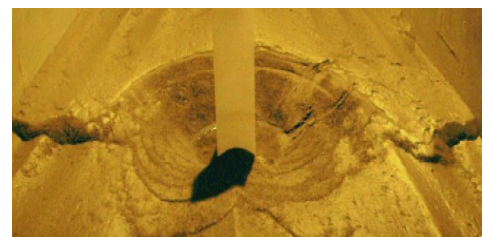
# Bridge Scour Protection

## Using Concrete Mattress



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### Fabriform



Concrete mattress is an effective protection against accelerated flows at bridge piers and other structures. The locally accelerated and turbulent flows around bridge piers during floods can cause undermining to structures. Due to its low construction depth, concrete mattress can be installed without significant excavation which may otherwise threaten undermining of the foundations.

For existing structures any foundation underscour voids can be surveyed and infilled with underscour repairs. See our website.

Mattress thicknesses are usually determined by a reference to proven performance and relevant design guides. CDF modelling has been utilised where accelerated flows are significant to larger structures, above 2-3 m/s. The scour apron is usually extended upstream and downstream to areas of lower scour potential for the formation of important toe edge details. The edge embedment protection should be greater than the scour potential at that point. (See edge details B103)

### Procedure

**Diver Pier Survey**—Survey bed & pier foundation levels (and any underscour voids) plus bed soil type and flow conditions.

**Mattress Design**—Design & fabricate mattress protection

**Mix Preparation**—Prepare fluid and pumpable micro concrete as outlined on B65 and B66.

**Position Forms**—Divers roll out mattress into place with toe trenches excavated and mattress zipped together.

**Pump Infill**—Pump fill mattress with micro concrete.

