

Part 8. Other structures

8.1 Other structures

Sabo structures shall, as necessary, be management use channels, access steps, fishways, fences, and so on.

(Reference 3.4) Sand catching works

Sand catching works, that are upstream sabo works executed when it is impossible to reduce the quantity of sediment that is run off to the allowed quantity of sediment in the downstream channel, are designed to fully satisfy their purpose accounting for the topography, geology, and vegetation of the river basin, the riverbed gradient, form of sediment runoff etc., and also accounting for safety, cost, and maintenance.

Sand catching works that deposit soil, sand, and gravel by expanding part of the channel are often constructed at the top ends of areas subjected to debris flows, fans, and channel works.

The capacity of sand catching works is determined by the predicted quantity of sediment that will be deposited, but it should be at least the capacity that permits its function to be recovered by removal work done once a year, and considering the convenience of the deposited sediment removal work, a transport channel and other structures are designed.

The plane shape of sand catching works is designed considering topographical conditions, but there are cases where it is square or shaped like a shogi-piece, sake bottle, or a stomach. (see Fig. 3-30).

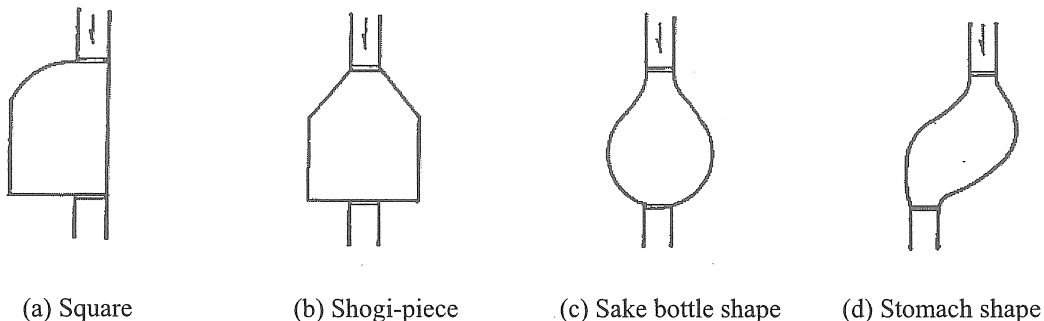


Figure 3-30. Examples of Plane Shapes of Sand Catching Works

To prevent excavation and removal of deposited sediment in sand catching works from obstructing the torrent banks upstream and downstream from the works, as necessary, sediment check dam work or groundsill work are executed as dividers in the upstream and downstream courses to maintain the torrent bed. If the inlet abruptly widens, sediment settles near the inlet and the deposition of the sediment advances upstream, reducing the river area in the upstream channel causing the water to overflow its banks. While it varies according to conditions of the torrent flow and the execution location, the widening angle θ of about 30° is appropriate based on past experience (see Fig. 3-31).

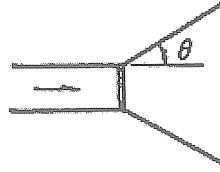


Figure 3-31. Widening Angle of Sand Widening Works

The following is the general sand catching works design procedure.

Table 3-11. Sand Catching Works Design Procedure

