

HM 160.45

Culvert



Description

■ full flow through culvert and partially filled culvert

Culverts are crossing structures in running waters and allow the passage of water. They may be pipes that are laid under a road, allowing the flume to cross.

The culvert may be flowed through partially or in full, depending on the discharge occurring. A partially filled culvert with free surface is treated in the same way as an open channel, while a full flow through culvert corresponds to a pipe flow. By contrast, a full flow through culvert and a culvert in which the inlet is completely submerged are classed as control structures. These result in a limiting of the discharge. There may also be a combination of these two states, so that the culvert is in part fully flowed through and in part partially filled.

The culvert HM 160.45 contains two different channel bodies. The cross-sectional area of both open cross-sections is the same. The transparent material allows to observe closely the flow and occurring hydraulic jumps in the culvert.

Learning objectives/experiments

- behaviour of open channel flow at reduced flow cross-sections
- free and submerged culvert inlet
- culvert outlet with free or submerged discharge
- different shapes of culvert cross-section
 - ▶ rectangular cross-section
 - ▶ circular cross-section

Specification

- [1] culvert for experimental flume HM 160
- [2] 2 transparent channel bodies made from PMMA
- [3] hollow channel body fitted with a rectangular cross-section
- [4] hollow channel body, fitted with a circular cross-section
- [5] both channel bodies with sealing lips

Technical data

Culvert cross-sections

- circular, inner diameter: 44mm
- rectangular, WxH: 39x39mm

LxWxH: 820x84x280mm (1 channel body)

Weight: approx. 9kg (total)

Scope of delivery

- 2 channel bodies
- 1 set of accessories
- 1 manual

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Required accessories

HM 160 Experimental flume 86x300mm