

# End Adapters for Flumes



End adapters are specially shaped transitions that are molded or secured to the inlet and outlet ends of flumes to connect them to inline piping so that flow can be accurately measured.

End adapters serve to transition flow from a round pipe to the rectangular (Cutthroat, Montana, or Parshall) or trapezoidal cross-section of a flume in a controlled manner.

The smoothness of the transition from pipe to channel is key to accurate flow measurement. Transitions that are abrupt either in the lateral contraction of the flow stream or in rise into the flume can create poor velocity profiles and undue turbulence.

Likewise, transitions that are too short and do not allow the flow to fully develop before it enters the flume will create accuracy problems that can be difficult to correct – particularly on mixed industrial or sanitary flows.

Openchannelflow's end adapters are designed to provide a maximum of flow conditioning utilizing both radius inlet wing walls and a 1:4 rise into the flume.

Radius wing walls have been shown to better transition flow into flumes without the generation of waves / troughs that flat sided, vertical wing walls can generate at the where the inlet end adapter connects to the flume.

Additionally, a gradual 1:4 slope into the flume minimized the generation of turbulence as the flow rises up into the flume.

## End Adapters are Available For:

- Cutthroat
- Montana
- Parshall
- Trapezoidal

H and Palmer-Bowlus flumes utilize a somewhat different method of connecting to piping - bulkheads.

Bulkheads are flat vertical plates attached to the inlet / outlet of the flume or approach section.



Flumes - Shelters - Fiberglass Manholes - Enclosures - Weirs - Gauges

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## Materials of Construction:

- Aluminum
- Galvanized Steel
- Fiberglass (FRP / GRP)
- PVC
- Stainless Steel



## Staged End Adapters

For space constrained applications where a flume is to be installed in a manhole or wetwell and a traditional end adapter cannot be accommodated, Openchannelflow offers staged end adapters.

Staged end adapters provide controlled entry / exit from the pipe to the flume without the need for field forming.

The inlet staged end adapter is chemically bonded to the flume and is bolted to the manhole / wetwell wall. The outlet staged end adapter, if provided, is loosely bolted to the flume at the factory. The end adapter is then removed from the flume before installation begins. Once the inlet staged end adapter / flume has been bolted into place, the outlet staged end adapter is then moved into place, bolted to the flume and then then bolted the manhole / wetwell wall.

Staged end adapters are available for a select range of flumes styles and sizes, including:

- Cutthroat flumes (18-inch, 36-inch, and 54-inch lengths)
- Parshall and Montana flumes (1-inch to 9-inches)
- Trapezoidal Flumes (Small, Large, and Extra Large 60° V)

for specifics on flume style / size / manhole diameter combinations available, contact Openchannelflow.

When using staged end adapters it is important to understand that due to their shorter length and lower profile, they do not provide the same level of flow conditioning as traditional Openchannelflow end adapters. Staged end adapters work best when used in applications where upstream and down stream conditions are nominal.

## Connections

Openchannelflow end adapters can be provided with a range of connection types, including: pipe stubs, fixed and Van Stone flanges, and caulking collars. In addition, for applications where a flume is to set inline with a channel, open end adapters can also be provided.



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