Plasti-Fab® INC.

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PARSHALL FLUME GENERAL COMMENTS

The Parshall Flume was originally designed for use in streams and open channels. It is still frequently installed in open channels. However, it is also suitable for in-line applications when proper end adapters are used to transition flow into and out of the flume. The flume uses a simple power equation, and can be used with any of the meters available today.

ADVANTAGES

1. The Parshall flume has one of the widest flow range capabilities and is available in standard flume sizes that will handle small flows down to a few gallons per minute or very large streams as high as 335 MGD.
2. The flume design accelerates flow as it passes through the throat thus making it "self-cleaning".
3. Within its flow range, the Parshall flume provides greater incremental flow resolution than other types of flumes.
4. Plasti-Fab has developed special adapters designed to reduce entrance velocity and turbulence in many common flow measurement applications.

DISADVANTAGES

1. The Parshall flume is a larger style of flume which at times may limit the number of sites where it can be used.
2. The Parshall flume has good flow resolution, but is often not the best choice for low flows.
3. The Parshall flume may be more expensive depending on site and installation requirements.

Application Notes: *Also see "General Flume Design Data"*

1. The 1" and 2" Parshall flumes are not recommended for sanitary waste or other high solids streams because of potential clogging.
2. Higher heads generated by a Parshall flume may cause upstream hydraulic problems in some cases.
3. To calculate submerged flow in a Parshall flume measurements at Ha and Hb are used to find the submergence percentage, Hb / Ha = % submerged flow. For flumes with throat sizes *1"* through 6" submergence takes place approximately at ± 55%. For flumes 9" though 30" submergence occurs at ± 65%. For larger flumes, submergence ranges from 70% - 80%. If submerged flow readings are unavoidable, a stilling well must be installed at the Hb point to get proper secondary readings.