

INSTALLATION INSTRUCTIONS FOR PARSHALL FLUMES

We are frequently asked about the location of Parshall flumes in relation to approach flow conditions. There is no “rule of thumb”, but the United States Department of the Interior, Bureau of Reclamation's *Water Measurement Manual* states:

“It should be remembered that these (Parshall) flumes were intended for use as in-line structures in a stream or canal where reasonably smooth flow, uniformly distributed across the width and depth of the cross section, was the normal condition.....Each lineal inch of throat width was expected to pass essentially the same quantity of water as every other inch. Only under these conditions will the flume measure correctly..... Surges and waves of any appreciable size should be eliminated..... Also, the flow at the flume entrance should be free of “white” water and free from turbulence in the form of visible boils such as might occur below a control gate.”

In addition, it is highly recommended to construct upstream 45° wing walls and a 1:4 ramp into the flume as shown below.

It is very important that the floor of the converging section (called the crest) is absolutely level, front to back and side to side. It is also very important that the sides of the flume are plumb. When the flume is properly located, it must be securely fastened to prevent floatation or twisting during the grouting operation. The concrete should be poured in at least three stages. The most common installation mistake is to pour too much concrete at once and cause the sidewalls and/or the bottom to deflect.

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