

How to Specify a Static Mixer

Written by Administrator

Monday, 08 June 2009 12:11 - Last Updated Tuesday, 02 February 2010 10:04

How to Specify a Static Mixer

Step 1 – Components to be Mixed

List the range of flowrates and physical properties (density* and viscosity*) of each component to be mixed. A Static [Mixer Sizing Questionnaire](#) is available for your convenience. Operating temperature and pressure are also required, or state 'ambient'.

* if similar to water state 'as water'.

Step 2 – Mixture Quality

It's difficult to imagine buying a pump without specifying the pressure requirements. But that's exactly what happens so many times with motionless mixers if the mixture quality is not specified. So why take a chance?

For most turbulent applications, the mixture quality can be defined by the variation coefficient (CoV), where a value of 0.05 is usually considered to be completely homogenous.

Many mixing applications are not time dependent - the required mixture quality, over the full range of flowrates, can be specified at either the mixer discharge or some clearly defined location further downstream. However, there are many dosing applications, in particular in water treatment, which require very short mixing times to ensure maximum effectiveness of the additive. It is therefore important to also specify the mixing time or distance downstream from the mixer, usually stated in pipe or channel hydraulic diameters, where the required mixture quality is to be achieved.

Don't use pressure drop for this purpose - it has nothing to do with mixture quality.

Don't use subjective descriptions e.g. efficiently mixed, thoroughly mixed, adequately mixed.

Don't use G factor – again, it has nothing to do with mixture quality.

Do specify the variation coefficient to define mixture quality.

Do specify the mixing time or location of the required variation coefficient.

How to Specify a Static Mixer

Written by Administrator

Monday, 08 June 2009 12:11 - Last Updated Tuesday, 02 February 2010 10:04

Step 3 – Mechanical Details

Preferred pipe diameter and / or maximum allowable pressure drop. Materials of construction / design condition. Injector requirement. Flange type and rating. Special tests and documentation requirements.

If in doubt, please contact Statiflo.