

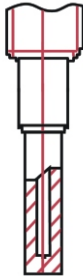
## INSERTION PROFILES

Less familiar, and more dangerous, are the vibrational effects to which wells are subjected. Fluid, flowing by the well, forms a turbulent wake (called the Von Karman Trail) which has a definite frequency based on the diameter of the well and the velocity of the fluid.

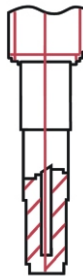
It is important that the well have sufficient stiffness so that the wake frequency will never equal the natural frequency of the well itself. If the natural frequency of the well were to coincide with the wake frequency, the well would vibrate to destruction and break off in the piping.



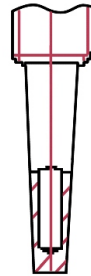
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The characteristics of the conditions should determine the selection of the insertion profile. The diagrams above demonstrate normal profile styles.

## TIP PROFILES



Flat



Spherical



Domed



Tip profiles also need to be considered when selecting a thermowell. The rule of thumb is that flat tips are better used for lower pressure applications, where flow characteristics around the thermowell don't create vortices.

Domed and spherical profiles should be used in medium and high pressure applications respectively where flow characteristics around thermowell can be important.