

Centrifugal Pumps (Newtonian Liquids)

---

## **100.0 Purpose and Scope**

### *101.0 Purpose*

101.1 This testing procedure provides methods of conducting and interpreting field tests on centrifugal pumps with actual pumped fluids. Measuring methods practical for field test conditions are presented to guide the user. These tests may be desired for the following purposes:

101.1.1 Checking a new pump for operability, to determine if a pump will function both mechanically and hydraulically to do the job for which it was intended.

101.1.2 Testing a pump for overall system performance, to determine if the pump will deliver all the fluid that it was designed to deliver under various load conditions as demanded by the process.

101.1.3 Testing to establish operating characteristics, such as total head, capacity, and power requirements. Net Positive Suction Head Required may be determined as part of this procedure when test code accuracy (see section 102.2) is not required. Such measurements can also help resolve operating problems.

101.1.4 Information obtained when testing a pump as part of a regularly scheduled maintenance program may be used to evaluate the mechanical condition of the pump.

101.1.5 Periodic testing to establish a performance history which can be used to monitor a change in the pumping conditions, and energy consumption. Performance testing can be used to determine if a change in the process has occurred.

101.2 Refer to 805.1 for procedures used by many manufacturers to test new equipment at the point of manufacture from which performance curves are published.

### *102.0 Scope*

102.1 This procedure recommends methods for conducting and reporting field tests on centrifugal pumps handling Newtonian fluids.

102.2 It should be noted that the preferred method of establishing pump performances is under controlled test facility conditions. Testing can generally be accomplished by the pump manufacturer at the factory and may be witnessed by the purchaser. It should also be noted that this field test procedure should not be used when test code accuracy is required. For details on test code accuracy (see reference 805.1) or American Society of Mechanical Engineers Centrifugal Pumps performance test code, (see reference 805.3) that defines accuracy required of such tests.

102.3 Safety and environmental concerns are listed in Sections 301.1 and 301.2.

### 103.0 *Liability*

AIChE and members of the various committees involved make no representation, warranties or guarantees, expressed or implied, as to the application or fitness of the testing procedures suggested herein for any specific purpose or use. Company affiliations are shown for information only and do not imply procedure approval by the companies listed. The user ultimately must make his own judgment on the specific testing procedures he wishes to utilize for specific applications.