



PROCESS
INDUSTRY
PRACTICES

November 2019

Hygienic Process

**PIP PHFS0001
Hygienic Pipe Support Details**

PURPOSE AND USE OF PROCESS INDUSTRY PRACTICES

In an effort to minimize the cost of process industry facilities, this Practice has been prepared from the technical requirements in the existing standards of major industrial users, contractors, or standards organizations. By harmonizing these technical requirements into a single set of Practices, administrative, application, and engineering costs to both the purchaser and the manufacturer should be reduced. While this Practice is expected to incorporate the majority of requirements of most users, individual applications may involve requirements that will be appended to and take precedence over this Practice. Determinations concerning fitness for purpose and particular matters or application of the Practice to particular project or engineering situations should not be made solely on information contained in these materials. The use of trade names from time to time should not be viewed as an expression of preference but rather recognized as normal usage in the trade. Other brands having the same specifications are equally correct and may be substituted for those named. All Practices or guidelines are intended to be consistent with applicable laws and regulations including OSHA requirements. To the extent these Practices or guidelines should conflict with OSHA or other applicable laws or regulations, such laws or regulations must be followed. Consult an appropriate professional before applying or acting on any material contained in or suggested by the Practice.

This Practice is subject to revision at any time.

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1. Scope

This Practice provides fabrication/installation details for piping supports used in a hygienic environment requiring clean or cGMP design. This Practice describes the minimum requirements to fabricate or install hygienic piping supports. These are different than traditional piping supports in that they avoid flat surfaces, crevices, and points of harborage.

2. References

Applicable parts of the following industry codes and standards shall be considered an integral part of this Practice. The edition in effect on the date of contract award shall be used, except as otherwise noted. Short titles are used herein where appropriate.

2.1 Process Industry Practices (PIP)

- PIP PNFS0001 – *Pipe Supports Details*

2.2 Industry Codes and Standards

- American Society of Mechanical Engineers (ASME)
 - BPE – *Bioprocessing Equipment*
- Manufacturers Standard Specifications
 - MSS SP-58 – *Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation*

3. Definitions

hygienic process: An industrial process that by design, materials of construction, operation, and further processing provide for the maintenance of cleanliness so that intermediate or end products produced by these systems will not adversely affect humans or animal health.

current Good Manufacturing Practices (cGMP): Current design and operating practices developed by the food, beverage, consumer products, and pharmaceutical industries to meet FDA requirements.

4. Considerations

- 4.1 The details provide a numbering system along with basic dimensional and engineering requirements for the design and engineering of hygienic pipe supports
- 4.2 Many variations of hygienic piping hangers and guides are also commercially available and are not called out in this practice
- 4.3 There are piping support details included showing pipe or tube as the supporting member but square structural members are also permitted rotated on a 45 degree angle or otherwise as oriented by the user. The intent of the support is to minimize flat surfaces that will accumulate material
- 4.4 The user is responsible to assess the hygienic process application and cleaning protocols for the appropriate selection of pipe supports surface finishes
- 4.5 The user is responsible to assess and determine piping loads, required piping flexibility requirements, and the adequacy of the support for stress considerations.