ANSI/MSS SP-69-2003

Pipe Hangers and Supports – Selection and Application

NOTICE:
This Standard Practice will be withdrawn as an active American National Standard effective 3/11/2014. The contents of this Standard Practice is now part of ANSI/MSS SP-58-2009, which can officially be utilized and referenced in place of SP-69. The withdrawn standard will remain available from MSS as a historical document.

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This MSS Standard Practice was developed under the consensus of the MSS Technical Committee 403 and the MSS Coordinating Committee. The content of this Standard Practice is the result of the efforts of competent and concerned volunteers to provide an effective, clear, and non-exclusive specification that will benefit the industry as a whole. This MSS Standard Practice is intended as a basis for common practice by the manufacturer, the user, and the general public. The existence of an MSS Standard Practice does not in itself preclude the manufacture, sale, or use of products not conforming to the Standard Practice. Mandatory conformance is established only by reference in a code, specification, sales contract, or public law, as applicable.

Unless otherwise specifically noted in this MSS SP, any standard referred to herein is identified by the date of issue that was applicable to the referenced standard(s) at the date of issue of this MSS SP. (See Annex A.)

U.S. customary units in this SP are the standard; the metric units are for reference only.

Non-toleranced dimensions in this Standard Practice are nominal, and, unless otherwise specified, shall be considered “for reference only”.

In this Standard Practice all notes, annexes, tables, and figures are construed to be essential to the understanding of the message of the standard, and are considered part of the text unless noted as "supplemental". All appendices appearing in this document are construed as "supplemental". Supplemental" information does not include mandatory requirements.

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FOREWORD

This Standard Practice was developed by a cooperative effort of representatives of the pipe hanger manufacturers. It is based on the best practice current at this time and on the collective experience of the industry. There are three companion standards – MSS SP-58 and MSS SP-89 relate to hanger materials, design, manufacture, fabrication and installation; MSS SP-127 relates to the design, selection, and application of bracing for piping systems subject to seismic – wind – dynamic loading. In addition, the MSS Technical Committee 403 has developed guidelines for pipe supports contractual relationship and on hanger terminology as covered in MSS SP-77 and MSS SP-90 respectively.

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PIPE HANGERS AND SUPPORTS – SELECTION AND APPLICATION

1. SCOPE

1.1 This Standard Practice presents the recommended practice for the selection and application of pipe hangers and supports for all service temperatures.

2. OBJECTIVE

2.1 To serve as a pipe hanger and support specification for selection and application, by being referenced in whole or in part.

2.2 To serve as a guide to proven industry practice during engineering design and writing of job specifications covering the hanging, supporting and controlling the movement of piping systems.

2.3 To provide the erector with information on types of hanger and support components to be used for specific application and installations, where such information is not otherwise provided.

2.4 To serve as a companion document to MSS SP-58 which provides recommendations for material, design and manufacture of standard types of pipe hanger components.

2.5 To serve as a companion document to MSS SP-89 which provides recommendations for fabrication and installation of pipe hangers and supports.

2.6 To serve as a companion document to MSS SP-127 which provides recommendations for the design, selection, and application of bracing for piping systems subject to seismic - wind - dynamic loading.

3. CLASSIFICATION OF PIPING SYSTEMS

For the purpose of pipe hanger and support selection, this Standard Practice establishes an identification of piping systems according to the operating (service) temperatures of the piping contents as follows:

3.1 Hot Systems

A-1. 120° F (49° C) to 450° F (232° C)
A-2. 451° F (233° C) to 750° F (399° C)
A-3. Over 750° F (399° C)

3.2 Ambient Systems

B. 60°F (16°C) to 119°F (48°C)

3.3 Cold Systems

C-1. 33° F (1° C) to 59° F (15° C)
C-2. -19° F (-28° C) to 32° F (0° C)
C-3. -39° F (-39° C) to -20° F (-29° C)
C-4. -40° F (-40° C) and below (Cryogenic Range)

4. GENERAL REQUIREMENTS

4.1 Where applicable, selection and application of pipe hangers and supports may be required to conform to Codes and Standards, such as:

a) ASME B31 Codes for Pressure Piping
b) ASME Boiler and Pressure Vessel Codes
c) UL 203 Standard for Pipe Hanger Equipment for Fire Protection Service
d) Factory Mutual FM1951/1952/1953 Approval Standard for Pipe Hanger Components for Automatic Sprinkler Systems
e) NFPA 13
f) National and Local Building Codes
g) All Other Applicable Codes

4.2 The selection of pipe hangers and supports shall be based upon the overall design concept of the piping systems and any special requirements which may be called for in the specifications. The supporting systems shall provide for, and control, the free or intended movement of the piping including its movement in relation to that of connected equipment.

4.3 A careful study shall be made of the piping layout in relation to the surrounding structure and adjacent piping and equipment before selecting the type of support to be used at each hanger point.

4.4 Hangers, supports, anchors and restraints shall be selected to withstand all static and specified dynamic conditions of loading to which the piping and associated equipment may be subjected.