MSS SP-58-2002

Pipe Hangers and Supports - Materials, Design, and Manufacture

Standard Practice
Developed and Approved by the
Manufacturers Standardization Society of the
Valve and Fittings Industry, Inc.
127 Park Street, NE
Vienna, Virginia 221*80*
***(703)*281-6613**

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.

This document has been substantially revised from the previous 1993 edition, INCLUDING A CHANGE IN ALLOWABLE STRESSES, WHICH MAY AFFECT PRODUCT LOAD RATINGS AND SAFETY FACTORS. It is suggested that if the user is interested in knowing what changes have been made, that direct page by page comparison should be made of this document.

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).

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". "Supplemental" information does not include mandatory requirements.

U.S. customary units in this SP are the standard; the melric (SI) units are only for reference.

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FOREWORD

This standard 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-69 and MSS SP-89 relate to hanger and support fabrication, selection, application, 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 Hanger Committee has developed guidelines for pipe supports contractual relationships and on hanger terminology as covered in MSS SP-77 and MSS SP-90 respectively.

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PIPE HANGERS AND SUPPORTS - MATERIALS, DESIGN, AND MANUFACTURE

1. SCOPE

1.1 This Standard Practice establishes the material, design, fabrication, and inspection criteria to be used in the manufacture of standard types of pipe hanger components.

1.2 This Standard Practice establishes the allowable tensile stress and design criteria for materials used in the design of hanger assemblies.

1.3 This Standard Practice also establishes minimum design load ratings for rigid pipe hanger assemblies (see Table 1).

1.4 This Standard Practice includes design criteria for springs and design characteristics for spring hangers.

1.5 Where applicable, design and manufacture of these products must also conform to Codes and Standards, such as:

ASME B3 1 Codes for Pressure Piping,

ASME Boiler and Pressure Vessel Codes,

U L 2 0 3 Standard for Pipe Hanger Equipment for Fire Protection Service,

Factory Mutual FM 1951/1952/1953 Approval Standard for Pipe Hanger Components for Automatic Sprinkler Systems,

Local Building Codes.

2. OBJECTIVES

2.1 To serve as a guide for pipe hanger material selection, design, and manufacturing.

2.2 To enable the user to specify a minimum level of acceptance for pipe hanger design and performance.

2.3 To define types of hangers and supports that are illustrated in the Type Chart, Figure 1. Hangers and supports shown on the Type Chart indicate general types only and manufacturers' other standard products shall be acceptable under this Standard Practice if they meet dimensional and load rating limitations set forth in this Standard Practice.

2.4 To serve as a companion document to MSS SP-69 that provides recommendations for the selection and application of the types of pipe hangers and supports illustrated in the Type Chart, Figure 1.

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

3. MATERIALS

3.1 Materials commonly used in manufacturing pipe hangers and supports are listed in Tables 2 and A2.

3.2 Other materials may be used provided they comply with the allowable stress requirements of Sections 4.4 or 4.6 ,

3.3 Transfer of compressive loading from piping and equipment through a non-metallic material to the metallic components of a piping support is permissible, provided the transfer material complies with the requirements of Section 4.12.