ASME B1.20.7-1991

(REVISION OF ANSI/ASME B1.20.7-1966)

REAFFIRMED 2024

HOSE COUPLING SCREW THREADS (INCH)

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

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The American Society of Mechanical Engineers

345 East 47th Street, New York, N.Y. 10017

Date of Issuance: April 16, 1992

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FOREWORD

(This Foreword is not part of ASME B1.20.7-1991.)

Local standards for small hose coupling threads in use prior to 1920 were summarized in a table in the Proceedings of the National Fire Protection Association, Vol. 24, 1920, p. 180. Of these, the Standard Iron Pipe Thread had been most widely used, and it had been reliably reported that this thread had been in use for small hose couplings since 1894 or earlier. In the case of the three-fourths-inch size, however, 11 and 11½ threads per inch, with a diameter of 1 1/16 in. were already in very extensive use for garden hose. It was reported that the first garden hose spray nozzle had been made prior to 1890 in the shops of the W. D. Allen Mfg. Co., Chicago.

In 1918 the Fire Dept. Supply and Linen Hose Section of the War Industries Board recommended that for the duration of the war "hydrants, hose valves, hose couplings, nipples, and nozzles 1¼ in. to 2 in., inclusive, to be iron pipe thread for new work, hose gauge or special threads only to be used for replacement or extension of existing plant equipment. The adoption of such a standard will result in the elimination of the various so-called hose threads which are used locally in the different sections of the country. Such a standard will also permit repairs or connections being made in the field by the use of wrought iron pipe connections or fittings. It will also result in considerable saving in correspondence and detail now necessary in endeavoring to ascertain what particular 'hose' standard thread is desired."

A blueprint of the nominal sizes and pitches of hose thread dimensions, dated March 5, 1918, of the National Association of Brass Manufacturers was furnished the National Screw Thread Commission in November, 1918. Limits of size for iron pipe thread sizes and pitches were designed as National hose coupling thread dimensions and adopted by the National Association of Brass Manufacturers March 18, 1920. These were in agreement with those in the Progress Report of the N.S.T.C., approved June 19, 1920, and published January 4, 1921 as NBS Miscellaneous Publication No. 42. A survey in 1925 of some of the members of the National Association of Brass Manufacturers showed these standards to be satisfactory. These threads from ½ to 2 in. diameter are now designated "NPSH."

In January 1927, The American Society of Mechanical Engineers requested the American Engineering Standards Committee (later changed to the American Standards Association) to authorize the organization of a Sectional Committee to complete the standardization of firehose couplings and to attempt to unify and complete the existing dimensions of small hose couplings. This authority was given and the Sectional Committee B33 was organized in October, 1928, under the sponsorship of The American Society of Mechanical Engineers, to prepare specifications for screw threads for small hose couplings ranging from ½ to 2 in. nominal size. A draft dated July 1935 was approved by the American Standards Association and issued as ASA B33.1-1935.

At its meeting of April 13, 1961, the ASA Mechanical Standards Board assigned responsibility for future revisions of the American Standards

B26-1925, Fire-Hose Couplings Screw Thread, and
B33.1-1935, Hose Coupling Screw Threads

to Sectional Committee B2. As a result, the name of the Committee was changed to Sectional Committee B2 on the Standardization of Pipe and Hose Coupling Threads.

Subcommittee 6 on Hose Coupling Threads was organized and held its first meeting on October 24, 1962 to undertake the revision of ASA B33.1-1935.

Subcommittee 7 on Fire Hose Coupling Threads was organized and held its first meeting on October 25, 1962 to undertake the revision of ASA B26-1925. It was arranged that Subcommittee 7 would include in its scope those thread sizes in ASA B33.1-1935 which are used primarily for fire protection purposes.

The proposed revision of B33.1, designated B2.4, was submitted to the sponsor organizations and the United States of America Standards Institute, and formally designated a USA Standard on December 30, 1966.

In 1973 the American National Standards Committee B2 was absorbed by ANSI Standard Committee B1 and reorganized as Subcommittee 20. B2.4 was reaffirmed without revision by Standard Committee B1 and redesignated as ANSI/ASME Standard B1.20.7 on August 5, 1983.

This revision was approved by the American National Standards Institute on September 19, 1991.

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Standardization and Unification of Screw Threads

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HOSE COUPLING SCREW THREADS

1 SCOPE

1.1 Purpose

The purpose of this document is to provide standards for application to the threaded parts of hose couplings, valves, nozzles, and all other fittings used in direct connection with hose intended for domestic, industrial, and general service in nominal sizes of ½, ⅝, ¾, 1, 1¼, 1½, 2, 2½, 3, 3½, and 4 in.

The normal sequence of connections, in relation to the direction of flow, is from an externally threaded nipple into an internally threaded coupling.

The basic dimensions are given in Table 1 while complete detailed dimensions and thread form are given in Tables 2 and 3.

1.2 Federal Government Use

When this Standard is approved by the Department of Defense and Federal Agencies and is incorporated into FED-STD-H28/10, Screw Thread Standards for Federal Services Section 10, the use of this Standard by the Federal Government is subject to all the requirements and limitations of FED-STD-H28/10.

1.3 Reference Documents

The latest issues of the following documents form a part of this Standard to the extent specified herein:

ANSI/ASME B1.7M	Nomenclature, Definitions, and Letter Symbols for Screw Threads
ANSI/ASME B1.3M	Screw Thread Gaging Systems for Dimensional Acceptability
ANSI/ASME B1.2	Gages and Gaging for Unified Inch Screw Threads
ASME/ANSI B47.1	Gage Blanks

2 THREAD DESIGNATIONS

Threads are designated NH, NHR, and NPSH. The significance of each designation is as follows:

NH	Standard hose coupling threads of full form and fire hose.
NHR	Standard hose coupling threads for garden hose application where the design utilizes thin walled material which is formed to the desired thread.
NPSH	Hose coupling joints ordinarily made with straight internal and external loose-fitting threads. By the use of this thread series, it is possible to join small hose couplings in sizes ½ to 4; inclusive, to ends of standard pipe having NPT threads using a gasket to seal the joint.

3 TOLERANCES

Figure 1 shows the relationship between external (nipple) and internal (coupling swivel) dimensions.

The pitch diameter tolerances for a mating nipple and coupling swivel are the same. Pitch diameter tolerances include lead and angle variations. Values for variations in lead and half-angles consuming one-half of the pitch diameter tolerance are shown in Table 5.

The tolerance relationships are as follows.