Oil Field Chain and Sprockets

API SPECIFICATION 7F
EIGHTH EDITION, NOVEMBER 2010

EFFECTIVE DATE: MAY 1, 2011

ERRATA, MAY 2013

REAFFIRMED, APRIL 2016

AMERICAN PETROLEUM INSTITUTE

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Introduction

This specification is under the jurisdiction of the API Subcommittee on Drilling Structures and Equipment.

The purpose of this specification is to provide standards for roller chains suitable for use in oil field drilling and producing operations.

Much of the engineering material pertaining to roller chains and sprockets was base on ASME B29.1 and the book *Chains for Power Transmission and Material Handling*, published by the American Chain Association. Additionally, portions of ASME B29.1 are requirements of this specification as referenced herein.

Some of the performance related characteristics of the chains that are contained in this document are specific to oil field chains and to their application to oil field drives. This information cannot be found in other publications and imposes performance testing that goes beyond the basic requirements found in any other standards or specifications.

A section on drive design has not been included in this edition of the specification due to the great variety of applications and the complexity of the subject drives.

Conversions of U.S. Customary Units (USC) to International System (SI) metric units are provided for reference only throughout the text of this specification in parentheses, e.g., 6 in. (152.4 mm). SI equivalents have also been included in all tables. Formulas and certain relationships are intentionally presented only in U.S. Customary Units to preclude any ambiguity between them and tabulated values. Conversion factors are provided below if SI equivalents are desired for the calculated unit values.

U.S. Customary Units are in all cases preferential and shall be standard in this specification. Products are to be marked in the units in which ordered unless there is an agreement to the contrary between the Purchaser and the Manufacturer.

1 in. (in.)	=	25.4 millimeters (mm) exactly
1 foot (ft)	=	0.3048 meters (m) exactly
1 pound force (lbf)	=	4.448222 Newtons (N)
1 foot•pound force (ft•lbf) torque	=	1.355818 Newton•meters (N•m)
1 horsepower (hp) (550 ft•lbf/s)	=	0.7456999 kilowatts (kW)
1 gallon per minute (gpm)	=	0.0630920 cubic decimeters/second (dm^3/s)

The following formula was used to convert degrees Fahrenheit (F) to degrees Celsius (C):

$°C = 5/9 (°F – 32)$

Oil Field Chain and Sprockets

1 Scope

This specification covers the manufacture of the components for, and the assembly and packaging of, single and multiple strand, number 40 through 240, standard and heavy series roller chains for oil field applications, including chain designation, chain length tolerance, tensile strength specifications, pin and bushing press-out specifications and dynamic test requirements.

For informational purposes, Annex A provides recommendations for installation, lubrication, and maintenance of oil field chain drives and Annex B includes a basic description of roller chain sprockets.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

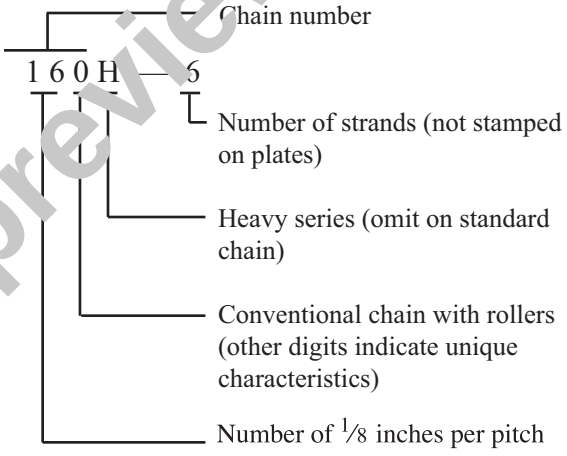
ASME[1] B29.1, *Precision Power Transmission Roller Chains, Attachments and Sprockets*

ASME B29.26, *Fatigue Testing Power Transmission Roller Chain*

3 Roller Chain

3.1 Chain Designation

Chain covered by this specification is identified by the designation shown in the following example and in more detail in ASME B29.1.



3.2 Heavy Series Chains

Heavy series chains are made in ¾ in. (19.05 mm) and larger pitches and differ from standard series chains in thicknesses of link plates. Their value is only in the acceptance of higher loads during low-speed operation.

[1] ASME International, 3 Park Avenue, New York, NY, 10016-5990, www.asme.org.