

# Blowout Prevention Equipment Systems for Drilling Wells

API STANDARD 53  
FOURTH EDITION, NOVEMBER 2012



AMERICAN PETROLEUM INSTITUTE

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Upstream Segment

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## Introduction

This standard represents a composite of the practices employed by various operating and drilling companies in drilling operations. This standard is under the jurisdiction of the API Drilling and Production Operations Subcommittee.

The objective of this standard and the recommendations within is to assist the oil and gas industry in promoting personnel safety, public safety, integrity of the drilling equipment, and preservation of the environment for land and marine drilling operations. In the context of blowout prevention systems, this objective is best attained through a combination of equipment reliability and management of risk. This standard is published to facilitate the broad availability of proven, sound engineering and operating practices that meet the stated objective through practices that improve reliability and reduce risk to acceptable levels. This standard does not present all of the operating practices that can be employed to successfully install and operate blowout preventer systems in drilling, completion, and well testing operations. Practices set forth herein are considered acceptable for accomplishing the jobs described; however, equivalent alternative installations and practices can be used to accomplish the same objectives. Individuals and organizations using this standard are cautioned that operations must comply with requirements of federal, state, or local regulations. These requirements should be reviewed to determine whether violations may occur.

The First Edition of API 53, published in February 1976, superseded API Bulletin D13, *Installation and Use of Blowout Preventer Stacks and Accessory Equipment*, February 1966. The Second Edition of API 53 was issued in May 1984 and the Third Edition of API 53 was issued in March 1997. This edition supersedes all previous editions of this standard.

Drilling operations are being conducted with full regard for personnel safety, public safety, and preservation of the environment in such diverse conditions as metropolitan sites, wilderness areas, ocean platforms, deepwater sites, barren deserts, wildlife refuges, and arctic ice packs. The information presented in this standard is based on this extensive and wide-ranging industry experience.

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# Blowout Prevention Equipment Systems for Drilling Wells

## 1 Scope

### 1.1 Purpose

**1.1.1** The purpose of this standard is to provide requirements on the installation and testing of blowout prevention equipment systems on land and marine drilling rigs (barge, platform, bottom-supported, and floating).

**1.1.2** Blowout preventer equipment systems are comprised of a combination of various components. The following components are required for operation under varying rig and well conditions:

- a) blowout preventers (BOPs);
- b) choke and kill lines;
- c) choke manifolds;
- d) control systems;
- e) auxiliary equipment.

**1.1.3** The primary functions of these systems are to confine well fluids to the wellbore, provide means to add fluid to the wellbore, and allow controlled volumes to be removed from the wellbore.

**1.1.4** Diverters, shut-in devices, and rotating head systems (rotating control devices) are not addressed in this standard (see API 64 and API 16RCD, respectively); their primary purpose is to safely divert or direct flow rather than to confine fluids to the wellbore.

### 1.2 Well Control

Procedures and techniques for well control are not included in this standard since they are beyond the scope of equipment systems contained herein.

### 1.3 BOP Installations

This standard contains a section pertaining to surface BOP installations followed by a section on subsea BOP installations.

### 1.4 Equipment Arrangements

Recommended equipment arrangements as set forth in this publication are adequate to meet specified well conditions. It is recognized that other arrangements can be equally effective in addressing well requirements and achieving safety and operational efficiency.

### 1.5 Extreme High- and Low-temperature Operations

**1.5.1** Although operations are being conducted in areas of extreme high and low temperatures, a section specifically applicable to these service conditions is not included since current practice generally results in protecting the existing BOP equipment from these environments.

**1.5.2** High and low temperature values are identified in API 16A for metallic and nonmetallic parts. The use of metallic and nonmetallic components shall be verified for use in temperatures above or below those identified in API 16A.