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API Specification

# 7-1

1st Edition, March 2006  
Specification for Rotary Drill Stem  
Elements

National Adoption of ISO 10424—Petroleum and  
natural gas industries—Rotary drilling equipment—  
Part 1: Rotary Drill Stem Elements

## Supplementary Requirements

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API Monogram® Required  Yes  No

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## 5.7 Supplementary requirements

### 5.7.1 General

The following supplementary requirements for kelly valves and other types of drill-string safety valves shall apply by agreement between the purchaser and the manufacturer and when specified on the purchase order.

### 5.7.2 Supplemental requirement for gas-tight sealing

Kelly valves and other types of drill-stem safety valves have not historically been designed with gas-tight sealing mechanisms. Valves that are designed to operate under these conditions are known as gas-tight valves. See 5.7.3 for optional performance verification testing that may be requested as a supplemental requirement by purchaser to verify gas-tight sealing design and for routine acceptance testing for each gas-tight valve supplied.

### 5.7.3 Performance verification testing of gas-tight sealing

Supplemental performance verification testing of drill-stem safety valves designed and manufactured in accordance with this part of ISO 10424 shall be carried out and/or certified by a quality organization independent of the design function. Since leak-testing at high pressure is potentially more hazardous with gas than with fluids of low compressibility, gas testing at high pressure shall be restricted to performance verification testing. Nitrogen or other suitable non-flammable gas should be used at ambient-temperature conditions. Otherwise, testing at low and high pressures shall be conducted in accordance with 5.4.3. No gas bubbles shall be observed in a 5 min test period.

For each valve manufactured to the same specifications as a valve that has been designed and verified as being capable of gas-tight sealing, a gas test at low pressure to 0,62 MPa (90 psi), using ambient-temperature air, shall be performed in accordance with appropriate subclauses in 5.4.3. No gas bubbles shall be observed in a 5 min test period.

### 5.7.4 Supplemental requirements for H<sub>2</sub>S trim

If valve trim materials conform to the requirements of ISO 15156-2 and/or ISO 15156-3 for H<sub>2</sub>S service, at conditions specified by the manufacturer, then the valve shall be designated “H<sub>2</sub>S trim”. H<sub>2</sub>S trim may be requested as a supplemental requirement by the purchaser.

NOTE For the purposes of this provision, NACE MR0175 is equivalent to ISO 15156-2 and ISO 15156-3.

H<sub>2</sub>S trim valves shall not be considered safe for use in a sour environment, as defined in ISO 15156-1, since the material used in the body of H<sub>2</sub>S trim valves is not suitable for sour service.

NOTE For the purposes of this provision, NACE MR0175 is equivalent to ISO 15156-1.

### **5.7.5 Supplemental marking**

Supplemental performance verification testing information shall be applied in a separate milled recess. Designations shall be used to indicate verified performance as follows:

- a) successful gas-tight sealing supplemental testing: “Gas-tight”;
- b) H<sub>2</sub>S trim supplemental requirement: “H<sub>2</sub>S trim”.