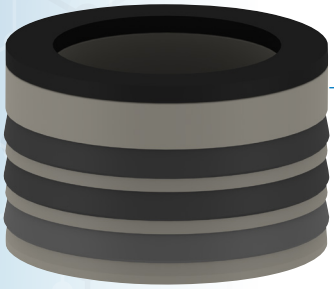
API 6A PR2 20,000psi Subsea Slab Gate Valve

Case studies

EGC Seal Design

Dual barrier stem seals with pressure energized primary seals and secondary live loaded seals.



Secondary Stem Seals: S19210

Primary Stem Seals: S20062

Valve Overview

Valve Type	Subsea Slab Gate Valve
Stem diameter	60 mm (2.362 in)
Housing Diameter	72 mm (2.835 in)
Design Pressure	1380 bar (20,000 psi)
Max. Test Pressure	2069 bar (30,000 psi)
Min. Temperature	-46°C (-50.8°F)
Max. Temperature	240°C (400°F)

Testing Details and Results

Hydrostatic Pressure Test, Primary Stem Seal

- Media: Water
- Temperature: 24°C (75°F)
- Test Details: Pressurize the test fixture to 30,000 psig and dwell for 1 hour.
- Results: PASSED. No nitrogen bubbles observed during test.

Hydrostatic Pressure Test, Secondary Stem Seal

- Media: Water
- Temperature: 24°C (75°F)
- Test Details: Pressurize the test fixture to 30,000 psig and dwell for 1 hour.
- Results: PASSED. No nitrogen bubbles observed during test.

Static Gas Test, Primary Stem Seal

- Media: N_2
- Temperature: 24°C (75°F)
- Test Details: Pressurize the test fixture to 20,000 psig and dwell for 1 hour.
- Results: PASSED. No nitrogen bubbles observed during test.

Static Gas Test, Secondary Stem Seal

- Media: N_2
- Temperature: 24°C (75°F)
- Test Details: Pressurize the test fixture to 20,000 psig and dwell for 1 hour.
- Results: PASSED. No nitrogen bubbles observed during test.

Ambient Temperature Cycle Test

- Media: N_2
- Temperature: 24°C (75°F)
- Number of cycles: 160
- Test Details: Pressurize the test fixture to 22,500 psig. Turn the valve stem one quarter turn clockwise and then back. Bleed pressure to 0 psig and dwell 5 minutes. Repeat for 160 cycles.
- Results: PASSED. No nitrogen bubbles observed during test.

Valve PR2 Validation

- Media: N_2
- Temperature: -18°C & 204°C (0°F & 400°F)
- Number of cycles: 160
- Test Pressure: 20,000 psi
- Test Details: 3000m water depth hyperbaric test
- Results: PASSED. No nitrogen bubbles observed during all pressure tests.

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