



**Valve tests according to
API 641, API 607, DIN EN ISO 15848-1, DIN EN ISO 10497,
TA Luft and user defined procedures**

RANGE OF SERVICES

Issue: January 2022

Valve Test according to ISO 15848-1 (dated July 2017)

Test according to ISO 15848-1 for isolating valves (CO1)

- Valve size: max. DN150/PN250 bzw. DN250/PN25
- Assembly of the valve in the test rig
- (1) Preliminary test at RT: Leakage measurement at the valve stem and the body seal
- (2) 50 mechanical cycles at RT, leakage measurement at the valve stem
- (3) Adjust test temperature, leakage measurement at the valve stem
- (4) 50 mechanical cycles at test temperature, leakage measurement at the valve stem
- (5) Cooling down to RT, leakage measurement at the valve stem
- Repeat steps (2) to (4)
- (6) Cooling down to RT, 5 mechanical cycles at RT, leakage measurement at the valve stem and the body seal

Test according to ISO 15848-1 for isolating valves (Extension CO2)

- Continuation of the test after finish CO1
- (2) 795 mechanical cycles at RT, leakage measurement at the valve stem
- (3) Adjust test temperature, leakage measurement at the valve stem
- (4) 500 mechanical cycles at test temperature, leakage measurement at the valve stem
- (6) Cooling down to RT, leakage measurement at the valve stem and the body seal



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Test according to ISO 15848-1 for isolating valves (Extension CO3)

- Continuation of the test after finish CO2
- (2) 500 mechanical cycles at RT, leakage measurement at the valve stem
- (3) Adjust test temperature, leakage measurement at the valve stem
- (4) 500 mechanical cycles at test temperature, leakage measurement at the valve stem
- (6) Cooling down to RT, leakage measurement at the valve stem and the body seal

ISO 15848-1 für isolating valves – temperature classes

Endurance classes temperature classes

CO1	RT to 200 °C
CO2	RT to 200 °C
CO3	RT to 200 °C
Total	RT to 200 °C

CO1	RT to 400 °C
CO2	RT to 400 °C
CO3	RT to 400 °C
Total	RT to 400 °C

CO1	-29 °C to RT
CO2	-29 °C to RT
CO3	-29 °C to RT
Total	-29 °C to RT

CO1	-46 °C to RT
CO2	-46 °C to RT
CO3	-46 °C to RT
Total	-46 °C to RT

CO1	-196 °C to RT
CO2	-196 °C to RT
CO3	-196 °C to RT
Total	-196 °C to RT



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Test according to ISO 15848-1 for control valves (CC1)

- Valve size: max. DN150/PN250 bzw. DN250/PN25
- Assembly of the valve in the test rig
- (1) Preliminary test at RT: Leakage measurement at the valve stem and the body seal
- (2) 5,000 mechanical cycles at RT, leakage measurement at the valve stem
- (3) Adjust test temperature, leakage measurement at the valve stem
- (4) 5,000 mechanical cycles at test temperature, leakage measurement at the valve stem
- (5) Cooling down to RT, leakage measurement at the valve stem
- Repeat steps (2) to (4)
- (6) Cooling down to RT, leakage measurement at the valve stem and the body seal

Test according to ISO 15848-1 for control valves (Extension CC2)

- Continuation of the test after finish CC1
- (2) 20,000 mechanical cycles at RT, leakage measurement at the valve stem
- (3) Adjust test temperature, leakage measurement at the valve stem
- (4) 20,000 mechanical cycles at test temperature, leakage measurement at the valve stem
- (6) Cooling down to RT, leakage measurement at the valve stem and the body seal



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Issue: January 2022

Test according to ISO 15848-1 for control valves (Extension CC3)

- Continuation of the test after finish CC2
- (2) 20,000 mechanical cycles at RT, leakage measurement at the valve stem
- (3) Adjust test temperature, leakage measurement at the valve stem
- (4) 20,000 mechanical cycles at test temperature, leakage measurement at the valve stem
- (6) Cooling down to RT, leakage measurement at the valve stem and the body seal

ISO 15848-1 für control valves – temperature classes

Endurance classes	temperature classes
CO1	RT to 200 °C
CO2	RT to 200 °C
CO3	RT to 200 °C
Total	RT to 200 °C
CO1	RT to 400 °C
CO2	RT to 400 °C
CO3	RT to 400 °C
Total	RT to 400 °C
CO1	-29 °C to RT
CO2	-29 °C to RT
CO3	-29 °C to RT
Total	-29 °C to RT
CO1	-46 °C to RT
CO2	-46 °C to RT
CO3	-46 °C to RT
Total	-46 °C to RT
CO1	-196 °C to RT
CO2	-196 °C to RT
CO3	-196 °C to RT
Total	-196 °C to RT



Deutsche
Akkreditierungsstelle
D-PL-12008-01-00

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Issue: January 2022

TA Luft Test (dated 2021)

Valve test procedure acc. to DIN EN ISO 15848-1

- Leak rate criteria > CH
- Temperature class: > 200 °C or < 200 °C
- Endurance Class according to ISO 15848-1
- Test Medium: Helium or Methane
- Test pressure > 40 bar or < 40 bar

Additional options for valve tests acc. to VDI 2440

- Additional stem cycles, 1,000 pcs.
- Additional temperature cycle
- Additional leakage measurement 24 h test medium Helium,
test pressure max 160 bar,
- Additional charge medium nitrogen
- Additional charge medium methane



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Issue: January 2022

Valve Test according to ISO 15848-2 (dated November 2015)

Test according to ISO 15848-2 Production acceptance test of valves

- Test Medium: Helium (He)
- Test pressure: 6 bar (unless otherwise agreed between -
manufacturer and customer)
- Test temperature: RT
- Fitting size max. DNXXX / PNXXX

- Installation of the valve in the test bench
- (1) Concentration measurement at the stuffing box packing with
the sniffing method
- (2) 5 times full opening and closing of the pressurized valve
- (3) Concentration measurement at the stuffing box packing with
the sniffing method
- (4) Concentration measurement at the body seal(s) with the
sniffing method



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Issue: January 2022

Valve Test according to API 641 (dated 2016)

Test according to API 641

- Valve type: ?
- Medium: ≥ 97 % Methane (CH₄)
-
- Assembly of the valve in the test rig
- (1) Preliminary function test
- (2) leakage measurement at RT
- (3) 100 mechanical cycles at test temperature, leakage measurement dynamic and static sealings
- (4) Adjust test temperature, leakage measurement at the body sealing
- (5) 100 mechanical cycles at test temperature, leakage measurement dynamic and static sealings
- (6) Cooling down to RT - Repeat steps (2) to (6) two times
- (7) leakage measurement at the body sealing at RT
- (8) 10 mechanical cycles at test temperature, leakage measurement dynamic and static sealings
- (9) Function test



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Issue: January 2022

Fire Safe Test on valves

Fire Test according to API 607 (dated 2016)

- Medium: Water
-
- Assembly of the valve in the test rig
- (1) Function test
- (2) Fire ignition of the valve (30 min)
- (3) Cooling down to RT
- (4) Function test of the valve and seat gasket

Fire Test according to DIN EN ISO 10497 (dated June 2010)

- Medium: Water
-
- Assembly of the valve in the test rig
- (1) Function test
- (2) Fire ignition of the valve (30 min)
- (3) Cooling down to RT
- (4) Function test of the valve and seat gasket



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Preparation

- of the valve (vacuum chamber, connection to the actuator, flange sealings, mounting temperature sensors)
- of the test rig (gas connection, heating, isolation)

Test Report

- documentation of the boundary conditions
- compilation of the test results
- english or german

Certificate / Confirmation

- only in conjunction with a test report
- same language as test report

For every valve test, the costs in the amount of € 1.040,00 for preparation are charged. A test report or a certificate is charged in addition.

For high quantity tests, please call for special prices.

Temperature range of valve testing: -196 °C to 450 °C.

Special tests, High Pressure tests, Special valve sizes and long term tests on request.

Additional heating costs with big and heavy valves might be charged in addition.

The prices are FCA Lauffen without packing excluding VAT and customs. Subject to change.

The range of services offered as part of the accreditation of the test laboratory can be found in the annex to the accreditation certificate. Within the flexible accreditation areas marked in the appendix to the accreditation certificate, the test laboratory is permitted to use the standardized test procedures with variable issue dates, assumed that the measuring principle is already included in the scope of accreditation.