

# Updates for All API Downstream Fugitive Emission Standards *(and maybe a few other ones)*

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## General

API 622, 624 and 641 were/are being modified to add a high temperature option for 2 reasons:

1. To align the test standards with the design standards
2. To provide test results for high temperature applications

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## High Temperature

750F packing temperature determined to correspond to  
800F valve service temperature

API 600, 602, etc. to be changed to 800F upper limit.

Testing done in API 641 and 624 will verify the valve  
performance at that temperature

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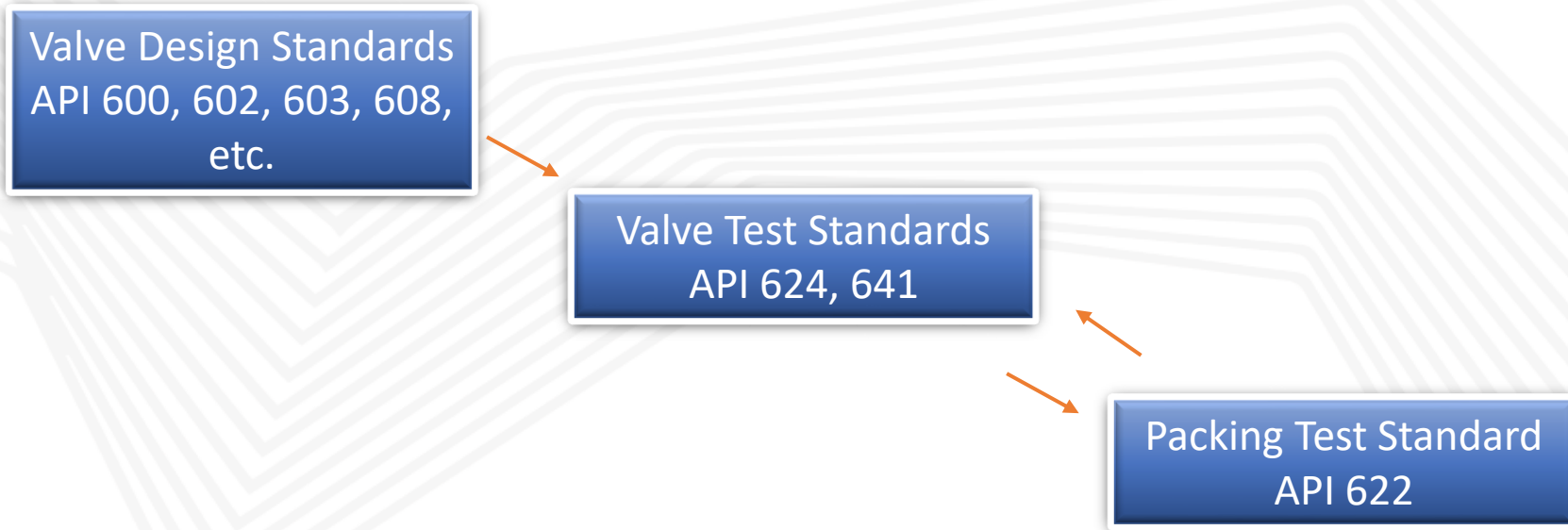
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## Connected Standards



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## API 622

- Addendum 1 included the addition of Annex C and some minor changes to the base document was released in March 2022
- Full revision change not till 2027 – Committee active
- Minor changes include some dimensional corrections to fixtures and an additional 24 hr -1100F weight loss test

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## API 622 Annex C – High Temperature Test

- Can be performed on new packing set or as continuation after 500F test
- 3 Thermal Cycles to 750F
- 12 hour min. time at temp.
- Gas changed out to He for high temp
- Pressure – 600 psig for leak reading, 200 at high temp.
- 100 PPMv max. allowable
- 1 packing nut adjustment allowed

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Expected release by end of 2022

## API 624 – 2<sup>nd</sup> Edition

- Retest Exemption – adding Belleville washers
- Partial Retest – change in sealing system design or gasket
- Defines 622 packing size to valve size (3/16 packing in valve qualified by 1/8” 622)
- 20” and larger valves tested with horizontal stems
- Packing certified to API 622 and/or 622HT

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## API 624 – Annex D. High Temperature

- Can be performed on new valve or as continuation after 500F test
- 1 Thermal Cycle to 750F
- 10 Mechanical Cycles
- 20 hour min. time at temp.
- Gas changed out to inert gas during high temp.
- Pressure – 600 psig for leak reading, 200 at high temp.
- 100 PPMv max. allowable
- 1 packing nut adjustment allowed – None for bonnet

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Expected end of 2022 release

## API 641

- If primary stem seal is graphite then 622 – 3<sup>rd</sup> edition certified
- Butterfly valve shafts horizontal
- Test pressure – 75% of working pressure at room and high temp. (100 psig min.) – Class 150-600s will not require recertification
- Retest Exemption – adding Belleville washers
- Partial Retest – change in seal materials

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## API 641 – Annex C. High Temperature

- Can be performed on new valve or as continuation after 500F test
- 1 Thermal Cycle to 750F
- 10 Mechanical Cycles
- 20 hour min. time at temp.
- Gas changed out to nitrogen or helium during high temp.
- Pressure – 75% rated pressure
- 100 PPMv max. allowable
- 1 packing nut adjustment allowed – None for bonnet/body

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## Other Fugitive Emission Standards

- API 6Y Fugitive Emissions Testing on Pipeline and Wellhead Equipment
- ISO / AWI 12101:2022 Industrial valves — Measurement, test and qualification procedures for fugitive emissions — Classification system and qualification procedures for type testing of stem seals for valves

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## API 6Y

- API Upstream committee started Spring 2022
- Combination of ISO 15848-1 and API 622/624
- For use with on/off, control valves and chokes
- Pressures up to 15000 psig
- Temperatures inline with API 6A
- Categories of endurance and leakages like ISO
- Test gas, qualifications TBD

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## ISO FE Packing Test

- Combination of ISO 15848-1 with API 622
- Seal materials besides graphite
- Different temperature/pressure options
- Test rig and/or tested in valves
- Estimated 1-2 year completion

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Questions?

Thank you

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