Contents

3.1 Introduction

This chapter provides an overview of terms and definitions for safety valves and other pressure relief devices according to the most important codes and standards.
Technical terms are not defined identically in different codes and standards. In some cases the same term is used for different meanings. The terms and definitions in this document are listed in alphabetical order and allow to see the differences between the standards.

3.2 List of Referenced Codes and Standards

The terms listed are based on the following codes and standards with edition.

Name	Edition	Title
ASME BPVC.XIII-2025	2025	ASME Boiler and Pressure Vessel Code
API STANDARD 520 Part I	10/2020	Sizing, Selection, and Installation of Pressure-Relieving Devices
API STANDARD 526[1)]	08/2023	Flanged Steel Pressure-relief Valves
AD 2000- Merkblatt A2 (English Edition)	01/2020	Safety devices against excess pressure - Safety valves -
DIN EN ISO 4126-1	12/2016	Safety devices for protection against excessive pressure, Part 1: Safety valves (ISO 4126-1:2013) + Amd 1:2016); English version EN ISO 4126-1:2013 + A1:2016, English translation of DIN EN ISO 4126-1:2016-12
DIN EN ISO 4126-4	12/2013	Safety devices for protection against excessive pressure, Part 4: Pilot operated safety valves
ISO 4126-9	2008	Safety devices for protection against excessive pressure, Part 9: Application and installation of safety devices excluding stand-alone bursting disc safety devices

Table 3.2-1: List of referenced codes and standards

1): API 526 refers to API 520 Part I.

The following standards containing safety valve terminology have been withdrawn or will be withdrawn and are not considered:

Name	Edition	Title
ANSI B95.1	1977	Terminology for Pressure Relief Devices
DIN 3320-1	1984	Safety Valves; Safety Shut-Off Valves; Definitions, Sizing, Marking
ASME PTC 25-2023	2023	Pressure Relief Devices, Section 2, Definitions and Description of Terms

Table 3.2-2: List of not referenced codes and standards

3.3 Overview Terms and Definitions

For the actual definition of the term see the page specified in the right hand column of the table below.

Term	Specified in						See page
	ASME XIII	API 520	ISO 4126 Part 1	ISO 4126 Part 4	ISO 4126 Part 9	AD 2000-A2	
Accumulated pressure					x		3.4-1
Accumulation		x					3.4-1
Actual discharge area	x	x					3.4-1
Adjusting ring	x						3.4-1
Adjustment screw	x						3.4-1
Assembler	x						3.4-1
Assisted safety valve			x				3.4-1
Back pressure	x	x					3.4-1
Backflow preventer	x						3.4-2
Balanced bellows			x				3.4-2
Balanced direct spring-loaded pressure relief valve	x						3.4-2
Balanced pressure-relief valve		x					3.4-2
Bellows	x						3.4-2
Bench testing	x						3.4-2
Blowdown	x	x	x	x			3.4-2
Blowdown ring	x						3.4-3
Body	x						3.4-3
Bonnet	x						3.4-3
Bore area	x	x					3.4-3
Bore diameter	x						3.4-3
Breaking pin	x						3.4-3
Breaking pin device	x	x					3.4-3
Breaking pressure	x						3.4-4
Buckling pin	x						3.4-4
Buckling pin device	x	x					3.4-4
Buckling pressure	x						3.4-4
Built-up back pressure	x	x	x	x			3.4-4
Burst pressure	x	x					3.4-4
Bursting disk device	x						3.4-5
Burst pressure tolerance		x					3.4-5
Cap	x						3.4-5
Capacity / relieving capacity		x					3.4-5
Capacity test pressure	x						3.4-5
Certification Mark	x						3.4-5
Certified (discharge) capacity		x	x	x			3.4-5
Certified flow resistance, *KR*	x						3.4-6
Chatter	x						3.4-6
Closing pressure		x					3.4-6
(Certified) Coefficient of discharge	x	x	x	x			3.4-6
Cold differential test pressure CDTP	x	x	x	x			3.4-6
Combination device	x						3.4-7
Compressibility factor	x						3.4-7
Constant backpressure	x						3.4-7
Controlled safety valves						x	3.4-7
Conventional direct spring-loaded pressure relief valve	x						3.4-7
Conventional pressure-relief valve		x					3.4-7
Cracking pressure	x						3.4-7

Term	Specified in						See page
	ASME XIII	API 520	ISO 4126 Part 1	ISO 4126 Part 4	ISO 4126 Part 9	AD 2000-A2	
Curtain area	x	x					3.4-7
Cycling		x					3.4-8
Design pressure		x					3.4-8
Developed lift	x						3.4-8
Diaphragm	x						3.4-8
Diaphragm-type direct spring-loaded pressure relief valve	x						3.4-8
Direct loaded safety valve			x				3.4-8
Direct spring-loaded device	x						3.4-8
Direct spring-loaded pressure relief valve	x						3.4-8
Direct-acting safety valves						x	3.4-8
Discharge area	x						3.4-8
Disk	x						3.4-9
Disk holder	x						3.4-9
DN (nominal size)				x			3.4-9
Dome	x						3.4-9
Dual certified pressure-relief valves		x					3.4-9
Dynamic blowdown	x						3.4-9
Effective coefficient of discharge		x					3.4-9
Effective discharge area	x	x					3.4-9
Effective seat area	x						3.4-10
Fail-safe					x		3.4-10
Field test connection	x						3.4-10
Field testing	x						3.4-10
First steady stream	x						3.4-10
Flow area			x	x			3.4-10
Flow capacity	x						3.4-10
Flow capacity testing	x						3.4-11
Flow diameter			x	x			3.4-11
Flow path	x						3.4-11
Flowing pilot				x			3.4-11
Flow-rating pressure	x						3.4-11
Flow resistance	x						3.4-11
Flutter	x						3.4-11
Frangible disk device	x						3.4-11
Full-bore device	x						3.4-11
Full-bore pressure relief valve	x						3.4-11
Full-lift device	x						3.4-12
Full-lift pressure relief valve	x						3.4-12
Full lift safety valves						x	3.4-12
Fusible plug device	x						3.4-12
Gag	x						3.4-12
Guide	x						3.4-12
Huddling chamber	x	x					3.4-12
Initial audible discharge pressure	x						3.4-12
Inlet area	x						3.4-12
Inlet size	x	x					3.4-12
In-place testing	x						3.4-13
In-service testing	x						3.4-13
Internal spring pressure relief valve	x						3.4-13
Knife blade	x						3.4-13
Leak test pressure	x	x					3.4-13
Lift	x	x	x	x			3.4-13
Lifting device	x						3.4-13
Lot of rupture disks	x	x					3.4-13

Term	Specified in						See page
	ASME XIII	API 520	ISO 4126 Part 1	ISO 4126 Part 4	ISO 4126 Part 9	AD 2000-A2	
Low-lift device	x						3.4-14
Low-lift pressure relief valve	x						3.4-14
Main valve	x						3.4-14
Manufacturing design range		x					3.4-14
Marked breaking pressure	x						3.4-14
Marked burst pressure	x	x					3.4-14
Marked relieving capacity	x						3.4-14
Marked set pressure	x						3.4-14
Maximum allowable pressure, PS			x	x	x		3.4-15
Maximum allowable accumulated pressure, PS,accum					x		3.4-15
Maximum allowable working pressure, MAWP		x					3.4-15
Maximum/minimum allowable temperature, TS					x		3.4-15
Maximum operating pressure		x					3.4-15
Measured relieving capacity	x						3.4-15
Minimum net flow area	x	x					3.4-15
Modulating				x			3.4-15
Modulating pressure-relief valve		x					3.4-16
Non-flowing pilot				x			3.4-16
Nonfragmenting rupture disk		x					3.4-16
Non-reclosing pressure relief device	x	x					3.4-16
Normal cubic meters per minute, Nm^3/min		x					3.4-16
Normal operating condition	x						3.4-16
Nozzle	x						3.4-16
ON/OFF				x			3.4-16
Opening pressure	x	x					3.4-16
Opening sensing pressure				x			3.4-17
Operating pressure	x						3.4-17
Operating ratio of a pressure-relief valve		x					3.4-17
Operating ratio of a rupture disk		x					3.4-17
Operating temperature	x						3.4-17
Orifice area	x						3.4-17
Outlet size	x	x					3.4-17
Overpressure	x	x	x	x			3.4-17
Pilot	x						3.4-18
Pilot-operated device	x						3.4-18
Pilot-operated pressure relief valve	x	x					3.4-18
Pilot operated safety valve				x			3.4-18
Pin-actuated device		x					3.4-18
Pin device	x						3.4-18
Piston	x						3.4-18
Popping pressure	x						3.4-19
Power-actuated pressure relief valve	x						3.4-19
Pressure-containing member	x						3.4-19
Pressure relief device, PRD	x	x					3.4-19
Pressure relief system	x						3.4-19
Pressure relief valve, PRV	x	x					3.4-19
Pressure-retaining member	x						3.4-19
Pressurized equipment	x						3.4-19
Primary pressure	x						3.4-19
Proportional safety valves						x	3.4-20
Rated lift	x						3.4-20
Rated pressure	x						3.4-20
Rated relieving capacity	x	x					3.4-20
Reclosing pressure relief device	x						3.4-20

Term	Specified in						
	ASME XIII	API 520	ISO 4126 Part			AD 2000-A2	See page
			1	4	9		
Reduced-bore device	x						3.4-20
Reduced-bore pressure relief valve	x						3.4-20
Redundancy					x		3.4-20
Reference conditions	x						3.4-21
Referencing Code or Standard	x						3.4-21
Relief valve	x	x					3.4-21
Relieving conditions	x	x					3.4-21
Relieving pressure	x		x	x			3.4-21
Required (relieving) capacity / relief rate / load		x					3.4-21
Resealing pressure	x						3.4-21
Reseating pressure	x		x	x			3.4-22
Restricted-lift pressure relief valve	x						3.4-22
Rupture disk	x	x					3.4-22
Rupture disk device	x	x					3.4-22
Rupture disk holder	x	x					3.4-22
Safety					x		3.4-22
Safety device					x		3.4-23
Safety relief valve	x	x					3.4-23
Safety system					x		3.4-23
Safety valve	x	x	x				3.4-23
Seat	x						3.4-23
Seat angle	x						3.4-23
Seat diameter	x						3.4-23
Secondary pressure	x						3.4-24
Set pressure	x	x	x	x			3.4-24
Shear pin	x						3.4-24
Shear pin device	x						3.4-24
Shell	x						3.4-24
Simmer	x	x					3.4-24
Specified burst pressure	x	x					3.4-25
Specified disk temperature		x					3.4-25
Spindle	x						3.4-25
Spring	x						3.4-25
Spring-actuated device	x						3.4-25
Spring button	x						3.4-25
Spring step	x						3.4-25
Spring washer	x						3.4-25
Standard cubic feet per minute / SCFM		x					3.4-25
Standard safety valves						x	3.4-25
Start-to-discharge pressure	x						3.4-26
Start-to-leak pressure	x						3.4-26
Static blowdown	x						3.4-26
Stem	x						3.4-26
Superimposed back pressure	x	x	x	x			3.4-26
Supplementary loaded safety valve			x				3.4-26
Temperature and pressure relief valve	x						3.4-26
Theoretical discharge capacity			x	x			3.4-27
Theoretical relieving capacity	x						3.4-27
Two-phase	x						3.4-27
Vacuum support	x						3.4-27
Variable back pressure	x						3.4-27
Warn	x						3.4-27
Yield temperature	x						3.4-27
Yoke	x						3.4-27

Table 3.3-1: List of terms

3.4 Description Terms and Definitions

Accumulated pressure

ISO 4126-9, 2008, 3.17
Pressure in the equipment to be protected which can exceed maximum allowable pressure for a short duration during the operation of safety devices.

Accumulation

API 520, 2020, Part I, 3.1.1
The pressure increase over the MAWP of the vessel, expressed in pressure units or as a percentage of MAWP or design pressure. Maximum allowable accumulations are established by applicable codes for emergency operating and fire contingencies.

Actual discharge area

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The measured minimum cross-sectional area that determines the flow through a pressure relief device.

API 520, 2020, Part I, 3.1.2
Actual orifice area / actual discharge area
The cross-sectional area (based on the measured diameter) within the pressure-relief device flow path that limits the fluid flow through the pressure-relief device. NOTE: The value is normally measured and recorded as part of the certification test by an independent organization following the procedures specified in the device's code of construction.

Adjusting ring

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A ring used to control the opening characteristics or the reseat pressure, or both, of a direct spring-loaded valve.

Adjustment screw

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A screw used to adjust the set pressure or the reseat pressure of a reclosing pressure relief device.

Assembler

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
An organization that holds an ASME Certificate of Authorization to apply the Certification Mark and is responsible for assembly, adjustment, testing, sealing, and shipping of pressure relief devices certified under this Section.

Assisted safety valve

ISO 4126-1, 2016, 3.3
Safety valve which, by means of a powered assistance mechanism, may additionally be lifted at a pressure lower than the set pressure and will, even in the event of failure of the assistance mechanism, comply with all the requirements for safety valves given in ISO 4126.

Back pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The pressure existing at the outlet of a pressure relief device due to pressure in the discharge system. Back pressure includes built-up back pressure and superimposed back pressure.

API 520, 2020, Part I, 3.1.3

The pressure that exists at the outlet of a pressure-relief device as a result of the pressure in the discharge system. Backpressure is the sum of the superimposed and built-up backpressures.

ISO 4126-1, 2016, 3.11
Pressure that exists at the outlet of a safety valve as a result of the pressure in the discharge system.
Note 1 to entry: The back pressure is the sum of the superimposed and built-up back pressure.

ISO 4126-4, 2013, 3.14
Pressure that exists at the outlet of a safety valve as a result of the pressure in the discharge system.
Note 1 to entry: The back pressure is the sum of the superimposed and built-up back pressures.

Backflow preventer

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A part or feature of a pilot-operated pressure relief valve used to prevent the valve from opening and flowing backward when the pressure at the valve outlet is greater than the pressure at the valve inlet.

Balanced bellows

ISO 4126-1, 2016, 3.14
Device which minimizes the effect of back pressure on the set pressure and/or the operation of a safety valve.

Balanced direct spring-loaded pressure relief valve

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A direct spring-loaded pressure relief valve that incorporates means (e.g., balancing bellows, piston, diaphragm) of minimizing the effect of back pressure on the operational characteristics (opening pressure, reseating pressure, and relieving capacity).

Balanced pressure-relief valve

API 520, 2020, Part I, 3.1.4
A spring-loaded pressure-relief valve that incorporates a bellows or other means for minimizing the effect of backpressure on the operational characteristics of the valve.

Bellows

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A flexible pressure-containing component of a valve used to isolate the valve's bonnet from the valve's discharge or to prevent changes in set pressure when the valve is subjected to a superimposed back pressure or to prevent corrosion between the disk holder and guide.

Bench testing

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
Testing of a pressure relief device on a test stand using an external pressure source with or without an auxiliary lift device to determine some or all its operating characteristics.

Blowdown

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The difference between measured set pressure of a pressure relief valve and measured reseating pressure after having been subjected to a pressure equal to or greater than the set pressure. Blowdown is usually expressed as a percentage of set pressure or in pressure units.

- dynamic blowdown: the difference between the set pressure and reseating pressure of a pressure relief valve when the valve is overpressured to the flow-rating pressure.
- static blowdown: the difference between the set pressure and the reseating pressure of a pressure relief valve when the valve is not overpressured to the flow-rating pressure.

API 520, 2020, Part I, 3.1.5
The difference between the set pressure and the closing pressure of a pressure-relief valve, expressed as a percentage of the set pressure or in pressure units.

ISO 4126-1, 2016, 3.15
Difference between set and reseating pressures. Note 1 to entry: Blowdown is normally stated as a percentage of set pressure except for pressures of less than 3 bar when the blowdown is expressed in bar.

ISO 4126-4, 2013, 3.17
Difference between set and reseating pressures. Note 1 to entry: Blowdown is normally stated as a percentage of set pressure except for pressures of less than 3 bar when the blowdown is expressed in bar.

Blowdown ring

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
See adjusting ring.

Body

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A pressure-retaining or pressure-containing member of a pressure relief device that supports the parts of the valve assembly and has provisions for connecting to the primary and secondary pressure sources, as applicable. Also called valve body.

Bonnet

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A component of a direct spring-loaded valve or of a pilot in a pilot-operated valve that supports the spring. It may or may not be pressure containing.

Bore area

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The minimum cross-sectional flow area of a nozzle (see Figure I-2-1).

API 520, 2020, Part I, 3.1.6
Bore area / nozzle area / nozzle throat area / throat area
The minimum cross-sectional flow area of a nozzle in a pressure-relief valve.

Bore diameter

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The minimum diameter of a nozzle.

Breaking pin

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The load-carrying element of a breaking pin non-reclosing pressure relief device.

Breaking pin device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A device designed to function by the breakage of a load-carrying section of a pin that supports a pressure-containing member.

API 520, 2020, Part I, 4.4.3.1

A breaking pin device is a nonreclosing PRD with a movable disc held in the closed position by a pin loaded in tension. When pressure reaches the set pressure of the device, the pin breaks and the disc opens. Breaking pin devices are generally used in combination with a PRV where valve tightness is of concern, for example, in corrosive or vibrating environments such as on fluid transport vessels.

Breaking pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The value of inlet static pressure at which a breaking pin or shear pin device functions.

Buckling pin

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The load-carrying element of a buckling pin device.

Buckling pin device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A device designed to function by the buckling of an axially loaded compressive pin that supports a pressure-containing member.

API 520, 2020, Part I, 4.4.2.1.1
Buckling pin devices, as shown in Figure 30, are compression-loaded, pin-actuated devices and are the most extensively used type of pin-actuated device. Compression-loaded buckling pin devices are very stable and well suited to applications that have both cyclic operating conditions, and an operating pressure to set pressure ratio greater than or equal to 90%.

Buckling pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The value of inlet static pressure at which a buckling pin device functions.

Built-up back pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
Pressure existing at the outlet of a pressure relief device caused by the flow through that device into a discharge system.

API 520, 2020, Part I, 3.1.7
The increase in pressure at the outlet of a pressure-relief device that develops as a result of flow after the pressure relief device opens.

ISO 4126-1, 2016, 3.12
Pressure existing at the outlet of a safety valve caused by flow through the valve and the discharge system.

ISO 4126-4, 2013, 3.15
Pressure existing at the outlet of the main valve caused by flow through the main valve and the discharge system.

Burst pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The value of inlet static pressure at which a rupture disk device functions.

API 520, 2020, Part I, 3.1.8
The value of the upstream static pressure minus the value of the downstream static pressure just prior to when the disk bursts. When the downstream pressure is atmospheric, the burst pressure is the upstream static gauge pressure.

Bursting disk device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
See rupture disk device.

Burst pressure tolerance

API 520, 2020, Part I, 3.1.9
The variation around the marked burst pressure at the specified disk temperature in which a rupture disk shall burst.

Cap

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A component used to restrict access and protect the adjustment screw in a reclosing pressure relief device. The cap may or may not be a pressure-containing part.

Capacity / relieving capacity

API 520, 2020, Part I, 3.1.10
The flow rate of a fluid through a pressure-relief device or a pressure-relief system under a given set of conditions and fluid properties.

Capacity test pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
See flow-rating pressure

Certification Mark

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
An ASME symbol identifying a product as meeting ASME BPVC requirements

Certified (discharge) capacity

ISO 4126-1, 2016, 3.21
That portion of the measured capacity permitted to be used as a basis for the application of a safety valve. Note 1 to entry: It may, for example, equal the:
a) measured flow rate times the derating factor; or b) theoretical flow rate times the coefficient of discharge times the derating factor; or c) theoretical flow rate times the certified de-rated coefficient of discharge.

ISO 4126-4, 2013, 3.23
Portion of the measured capacity permitted to be used as a basis for the application of a pilot operated safety valve. Note 1 to entry: It may, for example, equal the: a) measured flow rate times the de-rating factor; or b) theoretical flow rate times the coefficient of discharge times the de-rating factor; or c) theoretical flow rate times the certified de-rated coefficient of discharge.

API 520, 2020, Part I, 3.1.11
Certified capacity / certified relieving capacity
The capacity of a pressure-relief device determined using the certification test fluid (commonly air, steam, or water), at the certification test overpressure, with the certified coefficient of discharge, and with the actual orifice area, all in accordance with the applicable code of construction.
Note 1: It does not include any derating factors based on the physical installation such as a rupture disk upstream of a pressure-relief valve or backpressure on a balanced bellows valve. This capacity is provided by the pressure-relief device vendor and is stamped on the pressure-relief device nameplate.
Note 2: The certification overpressure for ASME BPVC, Section VIII valves is typically the greater of 10 % or 3 psi.

Certified flow resistance, KR

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A dimensionless term that expresses the number of velocity head lost due to flow through a non-reclosing pressure relief device.

Chatter

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
Abnormal rapid reciprocating motion of the movable parts of a pressure relief valve in which the disk contacts the seat.

API 520, 2020, Part I, 3.1.13
The opening and closing of a pressure-relief valve at a very high frequency (on the order of the natural frequency of the valve's spring mass system).

Closing pressure

API 520, 2020, Part I, 3.1.14
The value of decreasing inlet static pressure at which the valve disc reestablishes contact with the seat of at which lift becomes zero as determined by seeing, feeling, or hearing.

(Certified) Coefficient of discharge

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
Coefficient of discharge
The ratio of the measured relieving capacity to the theoretical relieving capacity.

API 520, 2020, Part I, 3.1.12
Certified coefficient of discharge
The published value for the ratio of the measured relieving capacity to the theoretical relieving capacity of an ideal nozzle, multiplied by a capacity derating factor if required by the code of construction.
Note: This value is determined by an independent organization following the capacity certification requirements in the device's code of construction.

ISO 4126-1, 2016, 3.20
Coefficient of discharge
Value of actual flowing capacity (from tests) divided by the theoretical flowing capacity (from calculation).

ISO 4126-4, 2013, 3.22
Coefficient of discharge
Value of actual flowing capacity (from tests) divided by the theoretical flowing capacity (from calculation).

Cold differential test pressure CDTP

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The inlet static pressure at which a pressure relief valve is adjusted to open on the test stand. This test pressure includes corrections for service conditions of superimposed back pressure or temperature, or both.

API 520, 2020, Part I, 3.1.15
The pressure at which a pressure relief valve is adjusted to open on the test stand. The CDTP includes corrections for the service conditions of backpressure or temperature or both.

ISO 4126-1, 2016, 3.9

Inlet static pressure at which a safety valve is set to commence to open on the test bench. Note 1 to entry: This test pressure includes corrections for service conditions, e.g. back pressure and/or temperature.

ISO 4126-4, 2013, 3.12
Inlet static pressure at which a pilot operated safety valve is set to commence to open on the test bench. Note 1 to entry: This test pressure includes corrections for service conditions, e.g. back pressure and/or temperature.

Combination device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
One non-reclosing pressure relief device in series with one pressure relief valve.

Compressibility factor

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The ratio of the specific volume of a given fluid at a particular temperature and pressure to the specific volume of that fluid as calculated by ideal gas laws at that temperature and pressure.

Constant backpressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A superimposed backpressure that is constant with time.

Controlled safety valves

AD 2000-A2, 2020, 3.2.2
Controlled safety valves consist of the main valve and a control device. They also include direct-acting safety valves with supplementary loading in which, until the response pressure is reached, an additional force increases the closing force. […]

Conventional direct spring-loaded pressure relief valve

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A direct spring-loaded pressure relief valve whose operational characteristics are directly affected by changes in the back pressure.

Conventional pressure-relief valve

API 520, 2020, Part I, 3.1.16
A spring-loaded pressure-relief valve whose operational characteristics are directly affected by changes in the backpressure.

Cracking pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
See opening pressure.

Curtain area

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The area of the cylindrical or conical discharge opening between the seating surfaces created by the lift of the disk above the seat (see Figure I-2-1).

API 520, 2020, Part I, 3.1.17
The area of the cylindrical or conical discharge opening between the seating surfaces above the nozzle seat created by the lift of the disc.

Cycling

API 520, 2020, Part I, 3.1.18
The relatively low frequency (a few cycles per second to a few seconds per cycle) opening and closing of a pressure-relief valve.

Design pressure

API 520, 2020, Part I, 3.1.19
Pressure, together with the design temperature, used to determine the minimum permissible thickness or physical characteristic of each vessel component as determined by the vessel design rules. The design pressure is selected by the user to provide a suitable margin above the most severe pressure expected during normal operation at a coincident temperature. It is the pressure specified on the purchase order. This pressure may be used in place of MAWP in all cases where the MAWP has not been established. The design pressure is equal to or less than the MAWP.

Developed lift

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The actual travel of the disk from closed position to the position reached when the valve is at flow-rating pressure.

Diaphragm

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A flexible metallic, plastic, or elastomer pressure-containing member of a reclosing pressure relief device used to sense pressure or provide opening or closing force.

Diaphragm-type direct spring-loaded pressure relief valve

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A direct spring-loaded pressure relief valve that uses a diaphragm to boost the lifting forces on the disk and/or isolate the bonnet area from service fluids.

Direct loaded safety valve

ISO 4126-1, 2016, 3.2
Safety valve in which the loading due to the fluid pressure underneath the valve disc is opposed only by a direct mechanical loading device such as a weight, lever and weight, or spring.

Direct spring-loaded device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A device actuated by static differential pressure or static inlet pressure in which the disk is held closed by a spring. Upon actuation, the disk is held open by a latching mechanism.

Direct spring-loaded pressure relief valve

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A pressure relief valve in which the disk is held closed by a spring.

Direct-acting safety valves

AD 2000-A2, 2020, 3.2.1
Direct-acting safety valves are safety valves in which a direct mechanical loading (a weight, a weight and lever or a spring) acts as a closing force against the opening force acting on the underside of the valve disc.

Discharge area

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
See Actual discharge area and Effective discharge area.

Disk

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A movable component of a pressure relief device that contains the primary pressure when it rests against the nozzle.

Disk holder

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A movable component of a pressure relief device that contains the disk (definition does not apply to rupture disks).

DN (nominal size)

ISO 4126-4, 2013, 3.24
Alphanumeric designation of size that is common for components used in a piping system, used for reference purposes, comprising the letters DN followed by a dimensionless number having an indirect correspondence to the physical size of the bore or outside diameter of the component end connection.
Note 1 to entry: The dimensionless number does not represent a measurable value and is not used for calculation purposes. Note 2 to entry: Prefix DN usage is applicable to components bearing PN designations according to ISO 7268. Note 3 to entry: Adapted from ISO 6708:1995, definition 2.1.

ISO 4126-1, 2016, 3.22
Alphanumeric designation of size that is common for components used in a piping system, used for reference purposes, comprising the letters DN followed by a dimensionless number having an indirect correspondence to the physical size of the bore or outside diameter of the component end connection.

Dome

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The volume on the side of the unbalanced moving member opposite the nozzle in the main relieving valve of a pilot-operated pressure relief device.

Dual certified pressure-relief valves

API 520, 2020, Part I, 3.1.20
Pressure-relief valves that are both vapor flow certified and liquid flow certified where dual certification is achieved without making any modifications or adjustments to the relief device when switching fluids during the flow testing.

Dynamic blowdown

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The difference between the set pressure and reseating pressure of a pressure relief valve when the valve is overpressured to the flow-rating pressure.

Effective coefficient of discharge

API 520, 2020, Part I, 3.1.21
The value for the ratio of the estimated relieving capacity to the theoretical relieving capacity of an ideal nozzle. NOTE: API 520 provides effective coefficients of discharge.

Effective discharge area

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A nominal or computed area of flow through a pressure relief device, differing from the actual discharge area, for use in recognized flow formulas to determine the capacity of a pressure relief device.

API 520, 2020, Part I, 3.1.22
Effective discharge area / effective orifice area
A nominal cross-sectional area within the pressure-relief device flow path that limits the fluid flow through the pressure-relief device. NOTE: API 526 provides effective orifice areas for a range of valve sizes in terms of letter designations, “D” through “T” that allow calculations to be performed per the preliminary sizing equations.

Effective seat area

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A computed area for use in calculating the set pressure of a given pressure relief valve when the valve is tested using an auxiliary lift-assist device.

Fail-safe

ISO 4126-9, 2008, 3.3
Status such that the pressure equipment remains in a safe condition in case of failure of any safety system component or energy source.

Field test connection

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A device for in-service or bench testing of a pilot-operated pressure relief device to measure the set pressure.

Field testing

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
Testing of a pressure relief device installed on a system to determine some or all of its operating characteristics. Field testing may be accomplished by either of the following methods: in-place testing, in-service testing.

First steady stream

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The value of increasing static inlet pressure of a pressure relief valve at which liquid discharge flow is continuous and separates from the valve outlet flange or pipe nipple at approximately a 90-deg angle to the outlet centerline.

Flow area

ISO 4126-1, 2016, 3.17
Minimum cross-sectional flow area (but not the smallest area between disc and seat) between inlet and seat which is used to calculate the theoretical flow capacity, with no deduction for any obstruction.

ISO 4126-4, 2013, 3.19
Minimum cross-sectional flow area (but not the smallest area between disc and seat) between inlet and seat which is used to calculate the theoretical flowing capacity of the main valve, with no deduction for any obstruction.

Flow capacity

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The relieving capacity of a pressure relief device measured at the flow-rating pressure, expressed in gravimetric or volumetric units.

Flow capacity testing

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
Testing of a pressure relief device to determine its operating characteristics, including measured relieving capacity.

Flow diameter

ISO 4126-1, 2016, 3.18
Diameter corresponding to the flow area.

ISO 4126-4, 2013, 3.20
Diameter corresponding to the flow area.

Flow path

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The three-dimensional and geometric characteristics of a device that affects the measured relieving capacity. The flow path is defined from the cross section of the inlet to the cross section of the outlet, including all streamlines in the flow.

Flowing pilot

ISO 4126-4, 2013, 3.3
Pilot which discharges the fluid throughout the relieving cycle of the pilot operated safety valve.

Flow-rating pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The inlet stagnation pressure at which the relieving capacity of a pressure relief device is measured.

Flow resistance

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
See certified flow resistance.

Flutter

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
Abnormal, rapid reciprocating motion of the movable parts of a pressure relief valve in which the disk does not contact the seat.

API 520, 2020, Part I, 3.1.23
The abnormal, rapid reciprocation motion of the moveable parts of a pressure-relief valve, during which the disk does not contact the seat or the upper stop.

Frangible disk device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
See rupture disk device.

Full-bore device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A device in which the flow path area below the seat is equal to the flow path area of the inlet to the device.

Full-bore pressure relief valve

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A pressure relief valve in which the bore area is equal to the flow area at the inlet to the valve, and there are no protrusions in the bore.

Full-lift device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A device in which the actual discharge area is independent of the lift of the disk.

Full-lift pressure relief valve

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A pressure relief valve in which the actual discharge area is the bore area.

Full lift safety valves

AD 2000-A2, 2020, 3.1.2
Full lift safety valves more or less suddenly reach the degree of lift necessary for the mass flow to be diverted following response within a pressure rise of 5%. The amount of lift up to the sudden opening (proportional range) shall not be more than 20 % of the total lift.

Fusible plug device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A device designed to function by the yielding or melting of a plug, at a predetermined temperature, that supports a pressure-containing member or contains pressure by itself.

Gag

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A device used on reclosing pressure relief devices to prevent the device from opening.

Guide

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A component in a direct spring- or pilot-operated pressure relief device used to control the lateral movement of the disk or disk holder.

Huddling chamber

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The annular pressure chamber between the nozzle exit and the disk or disk holder that produces the lifting force to obtain a pop action.

API 520, 2020, Part I, 3.1.24
An annular chamber located downstream of the seat of a pressure-relief valve for the purpose of assisting the valve to achieve lift.

Initial audible discharge pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The value of increasing static inlet pressure of a pressure relief valve at which the discharge becomes continuous by hearing with the naked ear as specified by the Manufacturer.

Inlet area

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The cross-sectional flow area at the inlet opening of a pressure relief device.

Inlet size

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The nominal pipe size of the inlet of a pressure relief device, unless otherwise designated.

API 520, 2020, Part I, 3.1.25

The nominal pipe size (NPS) of the device at the inlet connection, unless otherwise designated.

In-place testing

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
Testing of a pressure relief device installed on but not protecting a system, using an external pressure source, with or without an auxiliary lift device to determine some or all of its operating characteristics.

In-service testing

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
Testing of a pressure relief device installed on and protecting a system, using system pressure or an external pressure source, with or without an auxiliary lift device to determine some or all of its operating characteristics.

Internal spring pressure relief valve

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A direct spring-loaded pressure relief valve whose spring and all or part of the operating mechanism is exposed to the system pressure when the valve is in the closed position.

Knife blade

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A component with multiple blades used with reverse-acting rupture disks to cut the disk when it reverses.

Leak test pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The specified inlet static pressure at which a quantitative seat leakage test is performed in accordance with a standard procedure.

API 520, 2020, Part I, 3.1.26
The specified inlet static pressure at which a seat leak test is performed.

Lift

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The actual travel of the disk from closed position to the position reached when the valve is relieving.

API 520, 2020, Part I, 3.1.27
The actual travel of the disc from the closed position when a valve is relieving.

ISO 4126-1, 2016, 3.16
Actual travel of the valve disc away from the closed position.

ISO 4126-4, 2013, 3.18
Actual travel of the main valve disc away from the closed position.

Lifting device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A device to apply an external force to the stem spindle of a pressure relief valve to manually operate the valve at some pressure below the set pressure. Also called lifting lever.

Lot of rupture disks

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions

Those disks manufactured of the same material, at the same time, and of the same size, thickness, type, heat, and manufacturing process, including heat treatment.

API 520, 2020, Part I, 3.1.28
Disks manufactured at the same time and of the same size, material, thickness, type, heat and manufacturing process, including heat treatment.

Low-lift device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A device in which the actual discharge area is dependent on the lift of the disk.

Low-lift pressure relief valve

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A pressure relief valve in which the actual discharge area is the curtain area.

Main valve

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
That part of a pilot-operated pressure relief device through which the rated flow occurs during relief.

ISO 4126-4, 2013, 3.2
Parts of a pilot operated safety valve, through which the discharge capacity is achieved.

Manufacturing design range

API 520, 2020, Part I, 3.1.29
The pressure range in which the rupture disk shall be marked. Manufacturing design ranges are usually catalogued by the manufacturer as a percentage of the specified burst pressure. Catalogued manufacturing design ranges may be modified by agreement between the user and the manufacturer.

Marked breaking pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The value of pressure marked on a breaking pin or a shear pin device or its nameplate.

Marked burst pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The value of pressure marked on the rupture disk device or its nameplate or on the tag of the rupture disk, indicating the burst pressure at the coincident disk temperature.

API 520, 2020, Part I, 3.1.30
Marked burst pressure / rated burst pressure
The burst pressure established by tests for the specified temperature and marked on the disk tag by the manufacturer. The marked burst pressure may be any pressure within the manufacturing design range unless otherwise specified by the customer. The marked burst pressure is applied to all of the rupture disks of the same lot.

Marked relieving capacity

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
See rated relieving capacity.

Marked set pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The value of pressure marked on the pressure relief device or its nameplate, indicating the nominal pressure at which the device opens.

Maximum allowable pressure, PS

ISO 4126-1, 2016, 3.6
Maximum pressure for which the protected equipment is designed.

ISO 4126-4, 2013, 3.8
Maximum pressure for which the protected equipment is designed.

ISO 4126-9, 2008, 3.15
Maximum pressure for which the equipment is designed as specified by the manufacturer.

Maximum allowable accumulated pressure, PS,accum

ISO 4126-9, 2008, 3.18
Maximum allowable value of the accumulated pressure in the equipment being protected which is fixed by national codes, regulations or directives.

Maximum allowable working pressure, MAWP

API 520, 2020, Part I, 3.1.31
The maximum gauge pressure permissible at the top of a completed vessel in its normal operating position at the designated coincident temperature specified for that pressure. The pressure is the least of the values for the internal or external pressure as determined by the vessel design rules for each element of the vessel using actual nominal thickness, exclusive of additional metal thickness allowed for corrosion and loadings other than pressure. The MAWP is the basis for the pressure setting of the pressure-relief devices that protect the vessel. The MAWP is normally greater than the design pressure but can be equal to the design pressure when the design rules are used only to calculate the minimum thickness for each element and calculations are not made to determine the value of the MAWP.

Maximum/minimum allowable temperature, TS

ISO 4126-9, 2008, 3.16
Maximum/minimum temperatures for which the equipment is designed, as specified by the manufacturer.

Maximum operating pressure

API 520, 2020, Part I, 3.1.32
The maximum pressure expected during normal system operation.

Measured relieving capacity

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
See flow capacity.

Minimum net flow area

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The calculated net area after a complete activation of the rupture disk or pin device with appropriate allowance for any structural members that may reduce the net flow area through the device.

API 520, 2020, Part I, 3.1.33
The calculated net area after a complete burst of a rupture disc with appropriate allowance for any structural members that may reduce the net flow area through the rupture disk device.

Modulating

ISO 4126-4, 2013, 3.6

Action characterized by a gradual opening and closing of the disc of the main valve which is a function of the pressure, proportional but not necessarily linear. Note 1 to entry: This is an action of the pilot operated safety valve.

Modulating pressure-relief valve

API 520, 2020, Part I, 3.1.34
A pressure-relief valve that opens and flows in proportion to the inlet pressure for some or all parts of the valve's operating range from set pressure to overpressure at full lift.

Non-flowing pilot

ISO 4126-4, 2013, 3.4
Pilot in which the fluid flows only during the opening and/or closing of the pilot operated safety valve.

Nonfragmenting rupture disk

API 520, 2020, Part I, 3.1.35
A rupture disk designed and manufactured to be installed upstream of other piping components. Nonfragmenting rupture disks do not impair the function of pressure-relief valves when the disk ruptures.

Non-reclosing pressure relief device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A pressure relief device designed to actuate and remain open after operation. A manual resetting means may be provided.

API 520, 2020, Part I, 3.1.36
A pressure-relief device that remains open after operation. A manual resetting means may be provided.

Normal cubic meters per minute, Nm^3/min

SI unit for volumetric flow rate of gas at a temperature of 0°C and an absolute pressure of 101.3 kPa, expressed in cubis meters per minute.

Normal operating condition

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A sustained or expected condition that is a stable mode of operation of the equipment or system being protected.

Nozzle

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A primary pressure-containing component in a pressure relief valve that forms a part or all of the inlet flow passage.

ON/OFF

ISO 4126-4, 2013, 3.5
Action characterized by stable operation resulting in fully open or fully closed main valve position. Note 1 to entry: this is an action of the pilot operated safety valve.

Opening pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The value of increasing inlet static pressure of a pressure relief valve at which there is a measurable lift or at which the discharge becomes continuous as determined by seeing, feeling, or hearing.

API 520, 2020, Part I, 3.1.38
The value of increasing inlet static pressure at which there is a measurable lift of the disc or at which discharge of the fluid becomes continuous, as determined by seeing, feeling or hearing.

Opening sensing pressure

ISO 4126-4, 2013, 3.9
Pressure at which the pilot commences to open in order to achieve the set pressure.

Operating pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The normal or expected pressure of the fluid in the system or vessel during operation.

Operating ratio of a pressure-relief valve

API 520, 2020, Part I, 3.1.39
The ratio of maximum system operating pressure to the set pressure.

Operating ratio of a rupture disk

API 520, 2020, Part I, 3.1.40
The ratio of the maximum system operating pressure to a pressure associated with a rupture disk (see Figure 27 and 29). For marked burst pressures above 40 psi, the operating ratio is the ratio of maximum system operating pressure to the disk marked burst pressure. For marked burst pressures between 15 psi and 40 psi, the operating ratio is the ratio of maximum system operating pressure to the marked burst pressure minus 2 psi. For marked burst pressures less than 15 psi, the operating ratio should be determined by consulting the manufacturer.

Operating temperature

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The normal or expected temperature of the fluid in the system or vessel during operation. Also called working temperature.

Orifice area

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
See effective discharge area.

Outlet size

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The nominal pipe size of the outlet of a pressure relief device, unless otherwise designated.

API 520, 2020, Part I, 3.1.41
The NPS of the device at the discharge connection, unless otherwise designated.

Overpressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A pressure increase over the set pressure of a pressure relief device, usually expressed as a percentage of set pressure.

API 520, 2020, Part I, 3.1.42
The pressure increase over the set pressure of the relieving device. Overpressure is expressed in pressure units or as a percentage of set pressure. Overpressure is the same as accumulation only when the relieving device is set to open at the MAWP of the vessel.

ISO 4126-1, 2016, 3.7

Pressure increase over the set pressure. Note 1 to entry: Overpressure is usually expressed as a percentage of the set pressure.

ISO 4126-4, 2013, 3.10
Pressure increase over the set pressure, usually expressed as a percentage of the set pressure.

Pilot

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The pressure- or vacuum-sensing component of a pilot-operated pressure relief valve that controls the opening and closing of the main valve.

Pilot-operated device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A device in which the disk is held closed by system pressure and the holding pressure is controlled by a pilot actuated by system pressure. The pilot may consist of one of the non-reclosing relief devices listed in this section.

Pilot-operated pressure relief valve

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A pressure relief valve in which the disk is held closed by system pressure, and the holding pressure is controlled by a pilot valve actuated by system pressure.

API 520, 2020, Part I, 3.1.43
A pressure relief valve in which the major relieving device or main valve is combined with and controlled by a self actuated auxiliary pressure relief valve (pilot).

Pilot operated safety valve

ISO 4126-4, 2013, 3.1
Self-actuated device comprising a main valve and an attached pilot. Note 1 to entry: The pilot responds to the pressure of the fluid without any other actuating energy than the fluid itself and controls the operation of the main valve. The main valve opens when the fluid pressure that keeps it closed is removed or reduced. The main valve re-closes when the pressure is re-applied. Note 2 to entry: See figure 1 for a list of main components.

Pin-actuated device

API 520, 2020, Part I, 3.1.44
A nonreclosing pressure-relief device actuated by static pressure and designed to function by buckling or breaking a pin which holds a piston or a plug, in place. Upon buckling or breaking of the pin, the piston or plug instantly moves to the full open position.

Pin device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A device actuated by static differential pressure or static inlet pressure and designed to function by the activation of a load-bearing section of a pin that supports a pressure-containing member. A pin is the load-bearing element of a pin device. A pin device housing is the structure that encloses the pressure-containing members.

Piston

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The moving element in the main valve of a pilot-operated, piston-type pressure relief valve that contains the seat that forms the primary pressure containment zone when the piston is in contact with the nozzle.

Popping pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The value of increasing inlet static pressure at which the disk moves in the opening direction at a faster rate as compared with corresponding movement at higher or lower pressures.

Power-actuated pressure relief valve

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A pressure relief valve actuated by an externally powered control device.

Pressure-containing member

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A component that is exposed to and contains pressure.

Pressure relief device, PRD

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A general term for a device designed to prevent pressure or vacuum from exceeding a predetermined value by the transfer of fluid during emergency or abnormal conditions.

API 520, 2020, Part I, 3.1.45
A device actuated by inlet static pressure and designed to open during emergency or abnormal conditions to prevent a rise of internal fluid pressure in excess of a specified design value. The device also may be designed to prevent excessive internal vacuum. The device may be a pressure-relief valve, a nonreclosing pressure-relief device, or a vacuum-relief valve.

Pressure relief system

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The fluid flow path and its associated equipment for relieving excessive pressure from the pressurized equipment to final point of discharge. The associated equipment typically includes one or more pressure relief devices, piping, and piping components, and may include a muffler, liquid separator, scrubber, thermal oxidizer, flare, and/or other equipment necessary to safely discharge the effluent.

Pressure relief valve, PRV

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A pressure relief device designed to actuate on inlet static pressure and reclose after normal conditions have been restored. It may be one of the following types and have one or more of the following design features:[…].

API 520, 2020, Part I, 3.1.46
A pressure-relief device designed to open and relieve excess pressure and to reclose and prevent the further flow of fluid after normal conditions have been restored.

Pressure-retaining member

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A component that holds pressure-containing members together but is not exposed to the pressure.

Pressurized equipment

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
Equipment designed to operate with internal pressure that is above and/or below atmospheric pressure, such as, but not limited to, vessels, boilers, tanks, and piping.

Primary pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The pressure at the inlet in a pressure relief device.

Proportional safety valves

AD 2000-A2, 2020, 3.1.3
Proportional safety valves reach the degree of lift necessary for the mass flow to be diverted following response within a pressure rise of not more than 10 % (see Clause 2.3 for exception). They open more or less steadily, depending on the pressure rise; no sudden opening occurs without an increase in pressure over a range of more than 10 % of the lift.

Rated lift

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The design lift at which a valve attains its rated relieving capacity.

Rated pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The pressure at which a non-reclosing pressure relief device operates to allow relief of pressure at the specified temperature.

Rated relieving capacity

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
That portion of the measured relieving capacity permitted by the applicable code or regulation to be used as a basis for the application of a pressure relief device.

API 520, 2020, Part I, 3.1.47
Rated capacity / rated relieving capacity
The capacity of the pressure-relief device determined using the properties of the actual fluid flowing through the pressure-relief device at the certification test overpressure. The overpressure is specified by the applicable code of construction. This capacity can be determined using the effective coefficient of discharge and effective orifice area, or the certified coefficient of discharge and actual orifice are (see 5.2).
NOTE 1: The certification test overpressure for ASME BPVC, Section VIII valves is typically the greater of 10% or 3 psi.
NOTE 2: The rated capacity retains the code-required capacity derating.

Reclosing pressure relief device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A pressure relief device designed to actuate and reclose after operating.

Reduced-bore device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A device in which the flow path area below the seat is less than the flow path area of the inlet to the device.

Reduced-bore pressure relief valve

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A pressure relief valve in which the flow path area below the seat is less than the flow area at the inlet to the valve.

Redundancy

ISO 4126-9, 2008, 3.5
Provision of more than one device or system such that the necessary function will still be provided in case of failure of one or more of these devices.

Reference conditions

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
Those conditions of test medium that are specified by either an applicable standard or an agreement between the parties to the test, which may be used for uniform reporting of measured flow test results.

Referencing Code or Standard

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The code or standard that adopts requirements of Section XIII by reference.

Relief valve

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A spring-loaded pressure relief valve actuated by the static pressure upstream of the valve. The valve opens normally in proportion to the pressure increase over the opening pressure. A relief valve is used primarily with incompressible fluids.

API 520, 2020, Part I, 3.1.48
A spring-loaded pressure-relief valve actuated by the static pressure upstream of the valve. The valve opens normally in proportion to the pressure increase over the opening pressure. A relief valve is used primarily with incompressible fluids.

Relieving conditions

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The inlet pressure and temperature on a pressure relief device during an overpressure condition. The relieving pressure is equal to the valve set pressure or burst (or the rupture disk burst pressure) plus the overpressure (The temperature of the flowing fluid at relieving conditions may be higher or lower than the operating temperature).

API 520, 2020, Part I, 3.1.49
The inlet pressure and temperature on a pressure-relief device during an overpressure condition. The relieving pressure is equal to the valve set pressure (or rupture disk burst pressure) plus the overpressure. The temperature of the flowing fluid at relieving conditions may be higher or lower than the operating temperature.

Relieving pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
Set pressure plus overpressure.

ISO 4126-1, 2016, 3.10
Pressure used for the sizing of a safety valve which is greater than or equal to the set pressure plus overpressure.

ISO 4126-4, 2013, 3.13
Pressure used for the sizing of a pilot operated safety valve which is greater than or equal to the set pressure plus overpressure.

Required capacity / required relieving capacity / required relief rate / required relief load

API 520, 2020, Part I, 3.1.50
The fluid flow rate that is required to pass through the pressure-relief device for a particular overpressure scenario.

Resealing pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The value of decreasing inlet static pressure at which no further leakage is detected after closing of the pressure relief valve.

Reseating pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The value of decreasing inlet static pressure at which the valve disk reestablishes contact with the seat or at which lift becomes zero.

ISO 4126-1, 2016, 3.8
Value of the inlet static pressure at which the disc re-establishes contact with the seat or at which the lift becomes zero.

ISO 4126-4, 2013, 3.11
Value of the inlet static pressure at which the main valve disc re-establishes contact with the seat or at which the lift becomes zero.

Restricted-lift pressure relief valve

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A full-lift pressure relief valve whose lift is restricted such that the capacity is reduced proportionally to the ratio of restricted lift to full lift.

Rupture disk

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The pressure-containing element in a rupture disk device that is designed to burst at its rated pressure at a specified temperature.

API 520, 2020, Part I, 3.1.51
A pressure-containing, pressure- and temperature-sensitive element of a rupture disk device.

Rupture disk device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A device containing a disk that ruptures when the static differential pressure between the upstream and downstream side of the disk reaches a predetermined value. A rupture disk device includes a rupture disk, a rupture disk holder (as applicable), and all other components that are required for the device to function in the prescribed manner.

API 520, 2020, Part I, 3.1.52
A nonreclosing pressure-relief device actuated by static differential pressure between the inlet and outlet of the device and designed to function by the bursting of a rupture disk. A rupture disk device includes a rupture disk and a rupture disk holder.

Rupture disk holder

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The structure that clamps a rupture disk in position.

API 520, 2020, Part I, 3.1.53
The structure which encloses and clamps the rupture disk in position. Some disks are designed to be installed between standard flanges without holders.

Safety

ISO 4126-9, 2008, 3.14
Freedom from unacceptable risk. NOTE: See ISO/IEC Guide 51.

Safety device

ISO 4126-9, 2008, 3.1
Device that serves as the ultimate protection to ensure that the maximum allowable accumulated pressure is not exceeded. EXAMPLE: Safety valves, bursting disc safety devices, etc.

Safety relief valve

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A pressure relief valve characterized by rapid opening (popping) or by gradual opening that is generally proportional to the increase in pressure. It can be used for compressible or incompressible fluids.

API 520, 2020, Part I, 3.1.54
A spring-loaded pressure-relief valve that may be used as either a safety or relief valve depending on the application.

Safety system

ISO 4126-9, 2008, 3.2
System including the safety devices and the interconnections between the equipment to be protected and any discharge connection to the nearest location of a safe disposal place. NOTE: This location can either be an atmospheric outlet or the connection into a safe collecting system or flare.

Safety valve

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A pressure relief valve characterized by rapid opening (popping) and normally used to relieve compressible fluids.

API 520, 2020, Part I, 3.1.55
A spring-loaded pressure-relief valve actuated by the static pressure upstream of the valve and characterized by rapid opening or pop action. A safety valve is normally used with compressible fluids.

ISO 4126-1, 2016, 3.1
Valve which automatically, without the assistance of any energy other than that of the fluid concerned, discharges a quantity of the fluid so as to prevent a predetermined safe pressure being exceeded, and which is designed to re-close and prevent further flow of fluid after normal pressure conditions of service have been restored. Note 1 to entry: The valve can be characterized either by pop action (rapid opening) or by opening in proportion (not necessarily linear) to the increase in pressure over the set pressure.

Seat

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The pressure-sealing surfaces of the fixed and moving pressure-containing components.

Seat angle

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The angle between the axis of a valve and the seating surface. A flat-seated valve has a seat angle of 90 deg (see Figure I-2-1).

Seat diameter

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The smallest diameter of contact between the fixed and moving portions of the pressure-containing elements of a valve.

Secondary pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The pressure existing in the passage between the actual discharge area and the device outlet in a pressure relief device.

Set pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The value of increasing (or decreasing) inlet static pressure at which a pressure relief device displays one of the operational characteristics as defined by 40-cc pressure, breaking pressure, bubble pressure, buckling pressure, burst pressure, first-steady stream, initial audible discharge pressure, opening pressure, popping pressure, or start-to-leak pressure.

API 520, 2020, Part I, 3.1.56
The inlet gauge pressure at which the pressure-relief device is set to open under service conditions.

ISO 4126-1, 2016, 3.5
Predetermined pressure at which a safety valve under operating conditions commences to open.
Note 1 to entry: It is the gauge pressure measured at the valve inlet at which the pressure forces tending to open the valve for the specific service conditions are in equilibrium with the forces retaining the valve disc on its seat.

ISO 4126-4, 2013, 3.7
Predetermined pressure at which the main valve of a pilot operated safety valve under operating conditions commences to open. Note 1 to entry: It is the gauge pressure measured at the main valve inlet at which the pressure forces tending to lift the main valve disc for the specific service conditions are in equilibrium with the forces retaining the main valve disc on its seat.

Shear pin

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The load-carrying element of a shear pin device.

Shear pin device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A device designed to function by the shearing of a load-carrying member that supports a pressure-containing member.

Shell

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
An assembly of pressure-containing members that isolate primary or secondary pressure from atmosphere. Examples of these members include, but are not limited to, the body, nozzle, bonnet, and cap for a direct spring-loaded pressure relief valve using a pressurized bonnet; the nozzle and disk for a direct spring-loaded pressure relief valve using a yoke or open bonnet; and the body and cap of the main valve and the body of the pilot for a pilot-operated pressure relief valve.

Simmer

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The audible or visible escape of fluid between the seat and disk at an inlet static pressure below the popping pressure and at no measurable capacity. Can also be a warning that the pressure relief device is about to relieve. Simmer applies to safety or safety relief valves on compressible fluid service.

API 520, 2020, Part I, 3.1.57
The audible or visible escape of compressible fluid between the seat and disc of a pressure-relief valve that may occur at an inlet static pressure below the set pressure prior to opening.

Specified burst pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The value of increasing inlet static pressure, at a specified temperature, at which a rupture disk is designed to function.

API 520, 2020, Part I, 3.1.58
The burst pressure specified by the user. The marked burst pressure may be greater than or less than the specified burst pressure but shall be within the manufacturing design range. The user is cautioned to consider manufacturing design range, superimposed backpressure, and specified temperature when determining a specified burst pressure.

Specified disk temperature

API 520, 2020, Part I, 3.1.59
The temperature of the disk when the disk is expected to burst. The specified disk temperature is the temperature the manufacturer uses to establish the marked burst pressure. The specified disk temperature is rarely ever the design temperature of the vessel and may not even be the operating temperature or relief temperature, depending on the relief system configuration.

Spindle

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A part whose axial orientation is parallel to the travel of the disk. A spindle may be used in one or more of the following functions: assist in alignment, guide disk travel, or transfer internal or external forces.

Spring

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The element in a pressure relief valve that provides the force to keep the disk on the nozzle.

Spring-actuated device

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A device that is opened or assisted in opening by a spring.

Spring button

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
See spring step.

Spring step

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A load-transferring component in a pressure relief valve that supports the spring.

Spring washer

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
See spring step.

Standard cubic feet per minute, SCFM

API 520, 2020, Part I, 3.1.60
USC unit for volumetric flow rate of gas at a temperature of 60°F and an absolute pressure of 14.7 psi, expressed in cubic feet per minute.

Standard safety valves

AD 2000-A2, 2020, 3.1.1

Normal safety valves reach the degree of lift necessary for the mass flow to be diverted following response within a pressure rise of not more than 10 % (see Clause 2.3. for exception). No further requirements are made of the opening characteristics.

Start-to-discharge pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
See opening pressure.

Start-to-leak pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The value of increasing inlet static pressure at which the first bubble occurs when a pressure relief valve is tested by means of air under a specified water seal on the outlet.

Static blowdown

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The difference between the set pressure and the reseating pressure of a pressure relief valve when the valve is not overpressured to the flow-rating pressure.

Stem

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
See spindle.

Superimposed back pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The static pressure existing at the outlet of a pressure relief device at the time the device is required to operate. It is the result of pressure in the discharge system from other sources.

API 520, 2020, Part I, 3.1.61
The static pressure that exists at the outlet of a pressure-relief device at the time the device is required to operate. Superimposed backpressure is the result of pressure in the discharge system coming from other sources and may be constant or variable.

ISO 4126-1, 2016, 3.13
Pressure existing at the outlet of a safety valve at the time when the device is required to operate. Note 1 to entry: It is the result of pressure in the discharge system from other sources.

ISO 4126-4, 2013, 3.16
Pressure existing at the outlet of the main valve at the time when the device is required to operate. Note 1 to entry: It is the result of pressure in the discharge system from other sources.

Supplementary loaded safety valve

ISO 4126-1, 2016, 3.4
Safety valve which has, until the pressure at the inlet to the safety valve reaches the set pressure, an additional force which increases the sealing force. Note 1 to entry: This additional force (supplementary load), which may be provided by means of an extraneous power source, is reliably released when the pressure at the inlet of the safety valve reaches the set pressure. The amount of supplementary loading is so arranged that if such supplementary loading is not released, the safety valve will attain its certified discharge capacity at a pressure not greater than 1,1 times the maximum allowable pressure of the equipment to be protected. Note 2 to entry: Other types of supplementary loaded safety devices are dealt with in ISO 4126-5.

Temperature and pressure relief valve

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions

A pressure relief valve that may be actuated by pressure at the valve inlet or by temperature at the valve inlet.

Theoretical discharge capacity

ISO 4126-1, 2016, 3.19
Calculated capacity expressed in mass or volumetric units of a theoretically perfect nozzle having a cross-sectional flow area equal to the flow area of a safety valve.

ISO 4126-4, 2013, 3.21
Calculated capacity of a theoretically perfect nozzle having a cross-sectional flow area equal to the flow area of a main valve of a pilot operated safety valve. Note 1 to entry: It is expressed in mass or volumetric units.

Theoretical relieving capacity

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The computed capacity expressed in gravimetric or volumetric units of a theoretically perfect nozzle having a minimum cross-sectional flow area equal to the actual discharge area of a pressure relief valve or net flow area of a non-reclosing pressure relief device.

Two-phase

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
Term used to describe a fluid that contains a combination of both liquid and gas phases in a single flow stream.

Vacuum support

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A component of a rupture disk to prevent flexing due to upstream vacuum or downstream back pressure.

Variable back pressure

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A superimposed back pressure that will vary with time.

Warn

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
See simmer.

Yield temperature

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
The temperature at which the fusible material of a fusible plug device becomes sufficiently soft to extrude from its holder and relieve pressure. Also called melt temperature.

Yoke

ASME BPVC.XIII 2025 Mandatory Appendix I Definitions
A pressure-retaining component in a pressure relief device that supports the spring in a pressure relief valve or pin in a non-reclosing device but does not enclose them from the surrounding ambient environment.