





Natural gas and propane installation code





Legal Notice for Standards

Canadian Standards Association (operating as "CSA Group") develops standards through a consensus standards development process approved by the Standards Council of Canada. This process brings together volunteers representing varied viewpoints and interests to achieve consensus and develop a standard. Although CSA Group administers the process and establishes rules to promote fairness in achieving consensus, it does not independently test, evaluate, or verify the content of standards.

Disclaimer and exclusion of liability

This document is provided without any representations, warranties, or conditions of any kind, express or implied, including, without limitation, implied warranties or conditions concerning this document's fitness for a particular purpose or use, its merchantability, or its non-infringement of any third party's intellectual property rights. CSA Group does not warrant the accuracy, completeness, or currency of any of the information published in this document. CSA Group makes no representations or warranties regarding this document's compliance with any applicable statute, rule, or regulation.

IN NO EVENT SHALL CSA GROUP, ITS VOLUNTEERS, MEMBERS, SUBSIDIARIES, OR AFFILIATED COMPANIES, OR THEIR EMPLOYEES, DIRECTORS, OR OFFICERS, BE LIABLE FOR ANY DIRECT, INDIRECT, OR INCIDENTAL DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES, HOWSOEVER CAUSED, INCLUDING BUT NOT LIMITED TO SPECIAL OR CONSEQUENTIAL DAMAGES, LOST REVENUE, BUSINESS INTERRUPTION, LOST OR DAMAGED DATA, OR ANY OTHER COMMERCIAL OR ECONOMIC LOSS, WHETHER BASED IN CONTRACT, TORT (INCLUDING NEGLIGENCE), OR ANY OTHER THEORY OF LIABILITY, ARISING OUT OF OR RESULTING FROM ACCESS TO OR POSSESSION OR USE OF THIS DOCUMENT, EVEN IF CSA GROUP HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES.

In publishing and making this document available, CSA Group is not undertaking to render professional or other services for or on behalf of any person or entity or to perform any duty owed by any person or entity to another person or entity. The information in this document is directed to those who have the appropriate degree of experience to use and apply its contents, and CSA Group accepts no responsibility whatsoever arising in any way from any and all use of or reliance on the information contained in this document.

CSA Group is a private not-for-profit company that publishes voluntary standards and related documents. CSA Group has no power, nor does it undertake, to enforce compliance with the contents of the standards or other documents it publishes.

Intellectual property rights and ownership

As between CSA Group and the users of this document (whether it be in printed or electronic form), CSA Group is the owner, or the authorized licensee, of all works contained herein that are protected by copyright, all trade-marks (except as otherwise noted to the contrary), and all inventions and trade secrets that may be contained in this document, whether or not such inventions and trade secrets are protected by patents and applications for patents. Without limitation, the unauthorized use, modification, copying, or disclosure of this document may violate laws that protect CSA Group's and/or others' intellectual property and may give rise to a right in CSA Group and/or others to seek legal redress for such use, modification, copying, or disclosure. To the extent permitted by licence or by law, CSA Group reserves all intellectual property rights in this document.

Patent rights

Attention is drawn to the possibility that some of the elements of this standard may be the subject of patent rights. CSA Group shall not be held responsible for identifying any or all such patent rights. Users of this standard are expressly advised that determination of the validity of any such patent rights is entirely their own responsibility.

Authorized use of this document

This document is being provided by CSA Group for informational and non-commercial use only. The user of this document is authorized to do only the following:

If this document is in electronic form:

- load this document onto a computer for the sole purpose of reviewing it;
- search and browse this document; and
- print this document if it is in PDF format.

Limited copies of this document in print or paper form may be distributed only to persons who are authorized by CSA Group to have such copies, and only if this Legal Notice appears on each such copy.

In addition, users may not and may not permit others to

- alter this document in any way or remove this Legal Notice from the attached standard;
- sell this document without authorization from CSA Group; or
- make an electronic copy of this document.

If you do not agree with any of the terms and conditions contained in this Legal Notice, you may not load or use this document or make any copies of the contents hereof, and if you do make such copies, you are required to destroy them immediately. Use of this document constitutes your acceptance of the terms and conditions of this Legal Notice.



Revision History

CSA B149.1:20, Natural gas and propane installation code

Administrative update — May 20

Index added.

The following is a list of revisions, additions and deletions to CSA B149.1:20:

Administrative update — May 2021

Index

```
Α
ΔΙ
```

```
Abbreviations
    organizations, I.1.1
    words and phrases, I.1.2
Accessibility. See also Installation
    access opening, 4.14.3
    fixed access to rooftop installations, 4.14.5(a)
    ladders, 4.14.5(b)
    passageway to appliance, 4.14.4
    service platform, 4.14.7
    for servicing, 4.14.1, 4.14.2
    walkway for rooftop installations, 4.14.6
Accessory, definition, 3
Air supply. See also Ventilation
    appliances
        boilers, 8.2
        central-heating furnaces, 8.2
        with draft-control devices, 8.2.2, 8.2.5, 8.2.6(b), Tables 8.1, 8.3
        hot water heaters, 8.2
        with input ≤ 400 000 Btuh, 8.2
        with input exceeding 400 000 Btu/h, 8.4
        without draft control devices, 8.2.2, 8.2.5, Tables 8.2, 8.4
    combustion air, 4.15.2, 4.25.2, 4.25.5, 6.27.2, 7.3.2, 7.3.3, 7.13.3, 7.14.3, 7.20.7, 7.27.6, 8.3.4, 8.4.1,
    8.5.5, 8.5.6, 8.8.2, 8.10.12, 8.21.2, 8.23.6
        definition, 3
        requirements for appliances, Tables 8.2, 8.4
    combustion-air supply equipment, 8.3.4
    dampers, louvres and grilles, 8.5
    definition, 3
    ducts, 8.3
        requirements, 8.3.1, 8.3.2, 8.4.5
        round duct equivalents, Tables 8.1, 8.2
        square or rectangular ducts, 8.3.2
    engineered installations, 8.7
    excess air, definition, 3
    flue gas dilution air, 3
    general requirements, 8.1
    inlet openings, 8.3.5, 8.3.6, 8.4.1–8.4.5
    interference prohibited, 8.1.3
    by mechanical means, 8.8
    multi-storey installations, 8.21.1
    openings, 8.3
    outdoor air supply
        free area for appliance with draft control, 8.2.2, 8.2.5
        free area for appliance without draft control, 8.2.2, 8.2.5
    ventilation air, definition, 3
Aircraft hangar, See Building
```

```
Aircraft storage or servicing areas, 4.13.4
Airflow-sensing device, 8.8.1
Allowable pressure and pressure drop, 6.5, Table 6.1
Appliance regulator, See Pressure regulator
Appliances. See also Air supply; Boilers; Chimneys; Clothes dryers; Cooking appliances; Counter
appliances; Furnaces; Gas logs and decorative appliances; Heaters; Hotplates; Incinerators; Ranges;
Stationary gas engine; Venting; Vents and Chimneys
    accessibility, 4.14
    allowable pressure and pressure drop, 6.5.1, 6.5.2
    approval, 4.2
    automatic fire-extinguishing systems, 4.19
    Category I appliances
        definition, 3
        type of venting system to be used, 8.10.3, Table 8.5
        vent connector, 8.18.21
        vent sizing, 8.13, Annex C
    Category II appliances
        definition, 3
        type of venting system to be used, Table 8.5
    Category III appliances
        definition, 3
        type of venting system to be used, Table 8.5
    Category IV appliances
        definition, 3
        type of venting system to be used, Table 8.5
    clearances to combustible material, 4.13
    combined heating systems, 4.18
    connections, 6.11, 6.21
    conversions, 4.5.3, 4.5.4, 7.6.2, 7.6.3
    definition, 3
    dirt pockets, 6.13
    illuminating appliances, 6.13.1
    inspection of damaged and used equipment, 4.5.5, 4.5.6
    multi-storey installations, 8.21
    operation at shows, exhibitions or other similar events, 7.35, Annex M
    outdoor installations, 4.15
    protection from physical damage, 4.23
    residential refuelling appliances (RFAs), 10.1.2
    self-energized pilots, 4.20
    manual shut-off valves, 6.18
    suitability of use, 4.5
    support, 6.11.6
    suspended, 6.21.3(b)
    unvented appliances, 6.20.2
    used, 4.5.6
    vehicle fuelling appliance (VFA), 10.1.1, 10.1.3-10.1.6, 10.1.8(e), 10.1.9(a), 10.3.1, 10.4
    venting, 8.9
    volume of gas required, 6.4.2
Approval
```

```
deviations, 4.2.2
    equipment, 4.2.1
Approved, definition, 3
Assembly building, See Building
Authority having jurisdiction, 4.2.2, 4.2.3, 4.5.5, 4.13.2, 4.21.2, 4.21.3, 6.4.3, 6.15.8, 6.16.4, 7.2.2.1,
7.2.2.3, 7.2.5.2, 7.35, 8.7, 8.9.1, 8.13.1, 8.13.2, 8.18.7, 8.21.6, 8.24.4, 8.24.5, 9.3.3, 9.3.4, 9.3.5, 9.4.1,
and 10.3.1
    definition, 3
Authorized person, 4.6.2
Automatic fire-extinguishing systems
    installation, 4.19.1
    valves, 4.19.2, 4.19.3
Automatic flue damper, See Flue damper
Automatic vent damper device, 8.26
    Electrically operated vent damper device, 8.26.1
        definition, 3
    definition, 3
    Thermally actuated vent damper device, 8.26.3
        definition, 3
В
Back check valve, See Valves
Baffle (neutral pressure point adjuster), 8.27.2
    definition, 3
Barometric damper. see Draft regulators
Bathroom
    definition, 3
    installation of decorative appliance, 7.25.4
    installation of room heater, 7.24.1
    installation of water heater, 7.27.1
Bedrooms
    definition, 3
    installation of decorative appliances, 7.25.4
    installation of water heater, 7.27.1
    prohibited installation of hotplates, 7.29.2
    prohibited installation of ranges, 7.33.1
Bed-sitting rooms
    definition, 3
    installation of decorative appliances, 7.25.4
    installation of hotplates, 7.29.2
    permitted installation of ranges, 7.33.1
Bleed vent, 3, 5.5.1
Boilers
    air supply determination, 8.2
    clearances, 7.1.3
    connection to flue outlet, 8.18.18
    conversions, 7.6.1
    definition, 3
    installation, 7.1
```

4

```
Branch line, 6.3.8.2, 6.8.8, 7.18.6
    definition, 3
Branch piping outlets, 6.10
Building
    aircraft hangar, 7.23.5, 7.23.6
        definition, 3
    appliance venting, 8.9.1
    assembly building, 6.17.1, 6.17.2, Table 5.1
        definition, 3
    care or detention occupancy building, 6.17.1, 6.17.2, 7.23.1, 8.9.1 (c), Table 5.1
        definition, 3
    commercial building, Table 5.1
        definition, 3
    definition, 3
    delivery pressure, 5.1, Table 5.1
    emergency generators, 7.2.3.1
    industrial building, 7.21.2, 7.22.1
        definition, 3
    odorization, 4.24.1
    requirements for gas engines and turbines in, 7.2.5
    residential building, 6.11.3, 6.17.3
        definition, 3
    shut-off valve, 6.18.8
    underground piping and tubing, 6.15
    vents outside, 8.17
Building opening, 6.23.4, 8.14.10, 9.3.3(b), 12.4.15.6, Table 5.3
    definition, 3
Burner, 6.23.4, 6.23.7, 7.8.1
    conversion, 7.7, 8.23.6, Table 8.6
        definition, 3
    fan-assisted burner, 7.8.1(b)
        definition, 3
    forced-draft burner, 8.29.1
        definition, 3
    natural-draft burner, 7.8.1(a)
        definition, 3
Bushings
    materials, 6.9.10
    prohibited nesting, 6.14.2
C
Car wash, 7.23.4
Carbon dioxide generators, 7.3, 8.9.1(d)
Carbon monoxide sensors, 7.20.13, 7.21.12
Care or detention occupancy building, See Building
Catalytic heater, See Heater
Category I appliances, See Appliances
Category II appliances, See Appliances
Category III appliances, See Appliances
```

```
Category IV appliances, See Appliances
Certified, definition, 3
Chase, piping, 6.7.2, 6.7.5
Chassis-mounted camper, See Recreational vehicle
Chimney draft, See Draft
Chimneys. See also Venting; Vents and chimneys
    clean-out opening, 8.12.7, 8.19.1
    combination gas- and oil-burning appliances, 8.10.2
    condensate drain, 8.12.7
    connections, 8.19
    construction, 8.12.1, 8.12.7
    conversions, 7.6.3
    definition, 3
    factory-built chimney, 7.2.5.9, 8.11, 8.12.9, 8.15.2, 8.26.2, 8.26.3
        definition, 3
    flue serving, 8.12.2-8.12.4
    inspection before connecting, 8.12.2, 8.12.9
    lining, 8.12.8, 8.12.10, Annex C
    masonry or concrete chimney, 8.12.1, 8.12.9
        definition, 3
    metal chimney (smokestack), 8.12.1, 8.12.9
        definition, 3
        liner, 8.12.10
    semi-detached house, 8.12.11
    sizing, Annex C
    support, 8.15.1, 8.15.3
    unsafe, 8.12.9
    vent connectors, 8.19
    venting systems and air supply, 7.2.1.3, 8
Clearances
    appliances
        boilers, 7.1.3
        central furnaces, 7.13.2
        clothes dryers, 7.4.2, 7.5.4
        construction heaters and torches, 7.18.3
        commercial cooking appliances, 7.32
        counter, 7.10
        direct gas-fired industrial air heaters, 7.21.5
        direct gas-fired process air heaters, 7.22.4
        direct-fired make-up air heaters, 7.20.10
        duct furnace, 7.15.6
        horizontal furnaces, 7.16.4
        hot plates, 7.29.3
        incinerators, 7.30.6
        infrared heaters, 7.23.1(i), 7.23.4, 7.23.5, 7.23.7
        with input ≤ 400 000 Btuh, 4.13.3
        lighting, 7.31.3
        pool heaters, 7.26.2
        refrigerator, 7.34.1
```

```
residential range, 7.33.4-7.33.7
        room heaters, 7.24.7, 7.24.8
        special venting system, 8.18.9
        unit heaters, 7.28.3, 7.28.4
        vent connector, Table 8.6
        water heaters, 7.27.4
    combustible material (general requirements), 4.13, Table 4.1
    conversions, 4.3.5, 4.3.6, 4.5.3, 4.5.4, 7.6.1
    from discharge, Table 5.3
    locations
        aircraft hangar, 7.23.5
        aircraft storage or servicing area, 4.13.4
        garage or car wash, 7.23.4
        roof edge, 4.14.6(b)
    reduced clearances, 4.13.2, Table 4.1
    Type B vent connector, 8.18.10
    vent connectors, 8.18.11-8.18.13
Close nipple, prohibited, 6.14.7
Clothes dryers
    commercial type, 7.4
    domestic type, 7.5
    moisture exhaust ducts, 7.4.4-7.4.5, 7.5.1-7.5.3
Combined heating systems, 4.18
Combustible, definition, 3
Combustible dust or fibres, 4.9.2
Combustion air, See Air supply
Combustion products
    definition, 3
    discharge directly into space, 8.24.5
    outdoor discharge for direct-fired door air heater, 7.19.3
Combustion safety control, 8.8.1
    definition, 3
Commercial- and industrial-type appliance or equipment, 6.18.2, 8.27.1
    definition, 3
Commercial building, See Building
Commercial cooking appliance, 6.18.3, 6.21.5, 6.21.6, 7.32
    definition, 3
Common discharge header, 5.4.2
Common vent. See also Venting; Vents and chimneys, 8.10.6, 8.14.13, 8.16.1, 8.16.2, 8.20, 8.21.3
    multi-storey installations, 8.21
Component, definition, 3
Compressors, 7.2.2, Annex N
Concealed piping or tubing, 6.7.1
    definition, 3
Condensate, 7.12.1, 8.12.7
    definition, 3
Connectors. See also Appliances; Installation, 6.11.2, 6.22.2, 6.27.1
    commercial cooking appliances, 6.18.3, 6.21.5, 6.21.6
    construction heaters, 7.18.6
```

```
corrugated metal, 6.21.3
    cutting/welding systems, 6.2.11
    gas, 6.21, definition, 3
    mobile homes, 6.21.8
    natural gas compressors, 9.1
Construction heaters and torches, See Heater
Container, definition, 3
Continuous pilot, See Pilot
Control circuit, low-voltage, 6.14.6
Conversion burners, 7.7
Conversions, 7.6
    appliance rating plate, 4.5.4
    boilers, 7.6.1
    certification or approval, 4.5.3
    electrical appliances, 4.3.5(d)
    fuel oil systems, 4.3.5(b)
    furnaces
        general requirements, 7.6.1–7.6.3
        oil-fired, 7.7.2
    warm air, 7.8
    installers responsibilities, 4.3.5-4.3.8
    ranges, 7.9
Cooking appliances
    commercial type 7.32, definitions, 3
        appliances with casters, 6.21.5
        clearances, 7.32
        installation, 7.32.1-7.32.3
        shut-off valve, 6.18.3(a)
    residential-type ranges, 7.33
        clearances, 7.33.4-7.33.7
        installation, 7.33.1, 7.33.2
Corrosion, 6.16.2
Corrosive chemical, 6.7.3
Corrosive location, 4.9
Corrugated metal gas connector, 6.21.3
Counter appliances, 7.10
Cutting burrs, 6.8.1
Cutting/welding systems, 6.2.11
Cylinder valve, See Valves
Cylinders
    definition, 3
    natural gas. See Natural gas cylinders
D
Damaged appliances, 4.5.5
Dampers
    air supply openings, 8.5.1
    automatic vent/flue dampers
        electrically operated, 8.26.1
```

```
general requirements, 8.26.2, 8.26.4
        thermally operated, 8.26.3
    definition, 3
    manually operated flue dampers, 8.27
        baffles, 8.27.2
        where prohibited, 8.27.1
    where prohibited, 8.22
Decorative appliances. See Gas logs and decorative appliances
Definitions, 3
Delivery pressure, 5.1
    additional requirements for 2 psig (14 kPa) or less, 5.2.2
    additional requirements greater than 2 psig (14 kPa), 5.2.3
    definition, 3
Depressurization, definition, 3
Design pressure, 6.9.4
    definition, 3
Deviations, 4.2.2
Direct gas-fired industrial air heater (DFIAH), See Heater
Direct gas-fired process air heater (DFPAH), See Heater
Direct vent appliances
    location, 7.11
    venting requirements, 8.9.2, 8.14.9, 8.14.12, 8.23.1, Table 8.5
Direct-fired appliance, definition, 3
Direct-fired make-up air heater (DFMAH), See Heater
Direct-fired vaporizer, See Vaporizer
Direct-vent appliance, 4.25.1, 7.2.4.4, 7.11, 8.1.2, 8.9.2, 8.14.9, 8.14.12, 8.23.1, 8.24.1, Table 8.5
    definition, 3
Dirt pockets
    definition, 3
    requirements, 6.13
Discharge
    combustion products, 8.24.5
    from relief devices, 5.4.2
    hydrostatic relief devices, 5.4.2
    overpressure protection devices, 5.6.4, Table 5.3
    purging, 6.23.4
    vehicle fuelling appliances, 10.2.1, 10.3.1, 10.3.4, 10.4(c)
Diversity of load, 6.4.3
Draft hoods, See Draft-control device
Draft regulators, See Draft-control device
Draft-control device, 8.2.2, 8.2.5, 8.2.6, 8.4.2, 8.4.3, 8.24.1, Tables 8.1, 8.2, 8.3, 8.4
    definition, 3
    draft hoods, 8.23
        attachment to venting system, 8.9.3, 8.18.15
        definition, 3
        general dimensions, Annex F
        prohibited on incinerator, 7.30.3
        sizing, 8.18.6
        use with common gas vent, 8.21.1
```

```
use with Type B vent, 8.10.7, 8.18.3
    draft regulators, 8.25
        definition, 3
        incinerators, 7.30.3, 8.25
        installation, 8.25
        where prohibited, 8.23.8
    installation of, 8.28
Drafts
    chimney draft, definition, 3
    control devices, 8.28
    definition, 3
    induced- or forced- devices, 8.29
    mechanical draft, definition, 3
        forced draft
            definition, 3
            devices, 8.29
        induced draft
            definition, 3
            devices, 8.29
            draft hoods, 8.23.2
    special venting systems, 8.10.5
Drip pockets
    definition, 3
    requirements, 6.13.2-6.13.6
Ducts. See Air supply; Venting; Vents and chimneys
Ductwork connections, 4.17
Dust pocket. See Dirt pockets
Dwelling unit, 6.7.2, 6.18.3, 7.18.9, 7.34.2, 8.5.5, 8.12.3, 8.12.4, 8.12.6, 8.21.3, 8.26.1, 8.26.4, 8.30.1,
8.31.1
    definition, 3
    defective heat exchanger, 4.21.1
Ε
Electric switch (near gas leakage), 4.12.3
Electrical appliances (conversions), 4.3.5(d)
Electrical connections and components, 4.7
Electrical ground, 6.14.6
Electrically operated vent damper device, See Automatic vent damper device
Elevator shaft
    installation of DFIAH, 7.21.11
    installation of DFMAH, 7.20.12
    prohibited installation of piping and tubing, 6.7.2
Emergency generators, 7.2.3, 8.5.6
    definition, 3
Emergency shut-off valve, See Valves
Enclosure, definition, 3
Engine, 7.24, 7.25
    definition, 3
    reciprocating engine, definition, 3
```

```
turbine engine, definition, 3
Equipment, definition, 3
Equivalent length resistance of bends, fittings, and valves, 6.3.7
Excess air, See Air supply
Excess-flow valve, See Valves
Exhaust hood or canopy, 8.24.4, 8.30
Expanding pilot, See Pilot
Explosive mixture, 4.9.2
F
Factory-built chimney, See Chimneys
False ceiling space, 6.7.6, 8.10.13, 8.23.6
    definition, 3
FAN Max, definition, 3
FAN Min, definition, 3
Fan-assisted appliances, Annex C
Fan-assisted burner, 7.8.1(b)
    definition, 3
Fan-assisted combustion system, definition, 3
FAN+FAN, definition, 3
FAN+NAT, definition, 3
Fast-closing valve, See Valves
Fireplaces
    conditions created by, 8.6
    definition, 3
    installation of decorative appliance, 7.25.2
    installation of room heater, 7.24.2, 7.24.4-7.24.5
    venting requirements, 8.9.1, 8.12.3
Fittings
    definition, 3
   job-fabricated welded, 6.8.8
    manufacturer fabricated, 6.8.7
    material requirements, 6.2
    natural gas vehicle refuelling appliances (VRAs), 10.3.3
    plastic fittings, 6.2.15
    pressure ratings (copper), 6.2.7
    resistance (expressed in equivalent length of pipe), Tables A.4, A.16, B.1, B.2, B.11
    steel fittings, 6.2.2
    transition fittings, 6.15.12
    underground systems, 6.15.2, 6.15.3
    welded gas piping systems, 6.8.7, 6.8.8
Fixed-liquid-level gauge, 4.25.2
    definition, 3
Flame safeguard (not provided), 4.19.1. see also Combustion safety control
Flammable liquid, 9.4.1
    definition, 3
Flammable vapours, 4.9.2, 4.16.2, 4.16.3, 7.2.1.5
Flashpoint, definition, 3
Floor furnace, 7.13.4, 8.18.12, Table 8.6
```

```
definition, 3
Flue, definition, 3
Flue backflow preventer, 8.10.6
    definition, 3
Flue collar, 7.8.1, 7.8.3, 8.9.3, 8.14.6, 8.18.5, 8.18.6, 8.18.15, 8.23.5
    definition, 3
Flue damper, 8.26, 8.27
    automatic flue damper, 8.26
        definition, 3
    definition, 3
    manually operated flue damper, 8.27
        definition, 3
Flue gas
    definition, 3
    dilution air, 3
    temperature, Table 8.5
Forced draft, See Draft
Forced-draft burner, definition, 3
Fuel oil systems (conversions), 4.3.5(b)
Fuelling appliances. see Residential fuelling appliance (RFA); Vehicle fueling appliance (VFA)
Furnaces
    air supply requirements, 8.2
    central furnace installation, 7.13
    construction, 7.13.5
    conversions
        forced-air, 7.6.1(b), 7.8.3, 7.8.4
        gravity, 7.6.1(c), 7.8.6
        high temperature limit control, 7.8.6
        revertible flue, 7.8.1
        warm air, 7.8
    definition, 3
    downflow, 7.14
    duct, 7.15
    horizontal, 7.16
    used with cooling units, 7.12
    wall, 7.17
G
Gallon, definition, 3
Garages
    appliances in, 4.16
    definition, 3
    installation of infrared heaters, 7.23.4, 7.23.7
    installation of unit heaters, 7.28.3
    private garage, definition, 3
    repair garage, 4.16.3
        definition, 3
    storage garage, 4.16.2
        definition, 3
```

```
installation of DFIAH, 7.21.12
        installation of DFMAH, 7.20.13
Gas connector, 6.2.22, 6.11.2, 6.21
    definition, 3
Gas convenience outlet, 6.11.2, 6.11.4
    definition, 3
Gas engine, See also Stationary gas engine, 7.25
Gas hose, 6.20
    definition, 3
    installation of infrared heaters, 7.23.3
    installation of compressor, 9.1.5
Gas logs and decorative appliances, 7.25
    drip and dirt pockets, 6.13.1
    installation, 7.25.1
    markings, 7.25.2, 7.25.4, 7.25.5
Gas piping system, 6
    definition, 3
    mobile homes, 4.8.1
    purging after leak testing, 6.23
    rooftop, 6.25
    volume of gas for sizing, 6.4
    welding, 6.9.3
Gaskets, 6.9.7
Generators, 7.2, Annex N
    carbon dioxide, 7.3
    combustion air, 8.5.6
    emergency, 7.2.3
Grain dryers, 5.1.6
Greenhouses
    carbon dioxide concentration, 7.3.3
    carbon dioxide generators, 7.3.1, 7.3.2, 7.3.3
    venting requirements, 8.9.1(d)
Grilles (for air supply openings), 8.5.1, 8.5.2
н
Hazardous location, 4.9
Hazards, from prohibited use of appliance, 4.5.2
Heat exchangers
    defective, 4.21
    repair, 4.21.2, 4.21.3
    replacement, 4.2.1
Heat reclaimers, 8.31
    definition, 3
    installation, 8.31.2
    where prohibited, 8.31.1
Heaters
    aircraft storage or servicing areas, 4.13.4
    cargo heater, 4.25.7, 4.25.8
    catalytic heater, definition, 3
```

```
construction heaters and torches, 6.20.3(c), 7.18
        definition, 3
        installation, 7.18.1-7.18.6, 7.18.9
        lessor responsibilities, 7.18.7
        user responsibilities, 7.18.8
    definition, 3
    direct gas-fired industrial air heater (DFIAH), 7.21
        definition, 3
        air supply, 7.21.3, 7.21.6
        clearances, 7.21.5
        installation, 7.21.2, 7.21.9, 7.21.11, 7.21.12, 7.21.13
    direct gas-fired process air heater (DFPAH), 7.22
        definition, 3
        air supply, 7.22.2
        clearances, 7.22.4
        installation, 7.22.1, 7.22.4, 7.22.6, 7.22.7, 7.22.8
        spray applications, 7.22.8-7.22.11, 7.22.16, 7.22.18
    direct-fired door air, 7.19
    direct-fired make-up air heater (DFMAH), 7.20
        definition, 3
        air supply, 7.20.2, 8.8.2
        clearance, 7.20.10
        installation, 7.20.1, 7.20.4, 7.20.5, 7.20.12, 7.20.13, 7.20.14
        spray application, 7.20.4
    infrared heater, 7.23
        definition, 3
        carbon dioxide concentration, 7.23.1(e)
        as construction heater, 7.23.1(d)
        installation, 7.23.3, 7.23.4, 7.23.5, 7.23.7
    pool, 7.26
        flue gas discharge opening, 8.14.10
        indoor, 7.26.7
        installation, 7.26.1-7.26.9
        outdoor, 7.26.3, 7.26.5, 7.26.6, 7.26.9, 8.14.10
    radiant heater, 8.9.1
        definition, 3
    room, 7.24
        radiant, 7.24.3, 7.24.4, 7.24.8
    unit, 7.28
    water, 7.27
        air supply requirements, 8.2
        clearance, 7.27.4
        installation, 7.27.1, 7.27.3, 7.27.5, 7.27.6, 7.27.7
High pressure regulator, See Pressure regulator
Hose. See also Piping and tubing, gas hose
    for construction heaters, 7.18.5, 7.18.6
    for cutting/welding systems, 6.2.11
    metallic, 6.20.5, 6.20.6
    pressure rating, 6.27.1
```

```
prohibited in concealed locations, 6.20.5(b)
    propane applications, 6.20.7, 6.20.8
    replacement, 6.20.4
    shut-off valves, 6.20.3
    unvented appliances, 6.20.2
    vehicle fuelling appliances
        installation, 10.3.2
        testing, 10.4
    where permitted, 6.20.1-6.20.3, 6.20.5
Hotplates, 7.29
Hydrostatic relief devices. See Pressure controls and relief devices
Hydrostatic relief valve, See Valves
Ignition, 4.10, 4.12.1, 4.16.2, 4.25.10, 6.14.6, 6.23.4, 6.23.7, 7.2.4.4, 7.8.1, 7.21.7, 7.22.10, 8.26.4, 9.5.3
    definition, 3
    intermittent ignition, definition, 3
    interrupted ignition, definition, 3
Impedance upon a regulator, 5.6.2
Incinerators
    draft regulators, 8.25
    installation, 7.30
    vent connector, 7.30.4, 7.30.5, 8.16.1, 8.18.2, 8.18.12
    venting, 7.30.4, 7.30.5, 8.10.2, 8.10.11
Indirect vaporizer, See Vaporizer
Indirect-fired appliance, definition, 3
Induced draft, See Draft
Industrial appliance. See Commercial- and industrial-type appliance or equipment
Industrial building, See Building
Infrared heater, See Heater
Inspection and examination
    chimneys, 8.12.2, 8.12.9
    converted appliances, 7.6.2, 7.6.3
    cylinders, 9.2.1, 9.2.4, 9.3.1
    damaged and used appliances, 4.5.5, 4.5.6
    piping, tubing, and fittings, 6.1.2
    plastic piping and tubing, 6.26
Installation
    accessibility
        general requirements, 4.14.1-4.14.4
        special requirements, 4.14.5, 4.14.6
    automatic fire-extinguishing systems, 4.19
    boilers, 7.1
    central furnaces, 7.13
    combined heating systems, 4.18
    compressors, 7.2.1, 7.2.2
    connection to chimney flue, 8.12.4-8.12.6
    conversions, 4.3.5, 4.3.6
    draft hoods, 8.23.3, 8.23.6, 8.23.7
```

```
draft regulators, 8.25
engines, 7.2.1
filter, 6.8.6
generators, 7.2.1
locations
    above floor, 4.14.7
    bathrooms, 7.25.4, 7.27.1
    bedrooms, 7.25.4, 7.27.1, 7.29.2, 7.33.1
    bed-sitting rooms, 7.25.4, 7.29.2, 7.33.1
    classroom, 6.18.10
    combustible floor, 4.13.3
    false ceiling space, 6.7.6
    fireplaces, 7.24.2
    garages, 4.16, 7.28.3
    hazardous locations, 4.9
    high altitude, 4.22
    laboratory, 6.18.10
    masonry floors, 4.13.3
    mobile homes, 4.8, 4.25
    outdoor, 4.15
    recreational vehicles, 4.8, 4.25
    roof, 4.14.6
    rooftop gas piping systems, 6.25, Annex G
    semi-detached houses, 8.12.11
    spray booth, 7.20.4
    suspended, 6.21.3(b), 7.28.1
meters and service regulators, 4.6, Annex D
natural gas compressors, 9.1.4
piping and tubing
    chases, 6.7.2, 6.7.5
   concealed or enclosed, 6.7.1, 6.7.3, 6.22.5
   joints and connections, 6.9
    locations, 6.7
    preventing strain, 6.11.6
    prohibited in elevator shafts, 6.7.2(b)
    prohibited practices, 6.14
    protection, 6.16
    required practices, 6.8
    on rooftops, 6.25
    testing, 6.22
    underground installations, 6.15
pressure boosters, 7.2.1, 7.2.2
pressure regulators, 5.2
smoking and other sources of ignition, 4.10
special venting systems, 8.10.4, 8.10.14, 8.18.9. see also Venting
turbines, 7.2
vehicle refuelling appliances, 10.1, 10.3.1
    safety equipment, 10.5
vent connectors. See also Vent connectors; Venting
```

```
in ducts or shafts, 8.10.12
        general requirements, 8.18
    venting systems
        general requirements, 8.9.3-8.9.5
        multi-storey venting systems, 8.21
    vents and chimneys, 8.14. See also Chimneys; Vents and chimneys
Installers
    definition, 3
    personnel training, 4.4.2
    quality of labour, 4.4.1
    responsibilities, 4.3
    compliance with Code, 4.3.1
    converting appliances, 4.3.5, 4.3.6
    gas-tightness testing, 4.3.7
    instructions for users, 4.3.2
    manufacturer's instructions, 4.3.3
    pressure testing, 4.3.7
    selecting replacement parts, 4.3.4
Insulating millboard, 7.33.7, Tables 4.1, 8.7
    definition, 3
Interlocks
    damper and louvre, 8.5.4, 8.26.4
    exhaust and direct-fired make-up air heater, 7.20.6
    exhaust canopy, 8.30.1-8.30.3
    with propane supply, 4.25.6
    valve, 4.19.2
Intermittent ignition, See Ignition
Intermittent pilot, See Pilot
Internal excess-flow valve, See Valves
Internal relief valve, See Valves
Internal valve, See Valves
Interrupted ignition, See Ignition
Interrupted pilot, 8.26.4
    definition, 3
J
Jointing sealant, 6.9.6
Jointing tape, 6.9.6
Κ
Kitchens
    installation of DFIAH, 7.21.13
   installation of DFMAH, 7.20.14
L
Leak detection, 4.12
    prohibited use of match or other source of ignition, 4.12.1
    required light, 4.12.2
    required electric switch 4.12.3
```

```
Leak Limiter, Annex K
Leakage area (equivalent), 8.2.1(b)
Lighting and light fixtures, 7.31
Lightning Strikes
    CSST 4.7.4
Line pressure regulator, See Pressure regulator
Line relief valve, See Valves
Lock-up regulator, See Pressure regulator
Louvres (for air supply openings), 8.5.1-8.5.3
    Interlocking, 7.20.8, 7.21.8, 7.22.6.2, 7.22.7.1, 8.5.4
Lubricated-plug-type valve, See Valves
M
Manual reset valves, 4.19.2, 6.19
Manual shut-off valves, 6.11.2, 6.18
Manually operated flue damper, See Flue damper
Manufacturer's instructions, 4.1.3, 4.1.4
Markings
    identification of piping or tubing, 6.17.1
    conversion of warm air furnaces, 7.8.4
    cylinders, 9.3.6
    downflow furnace, 7.14.1
    direct gas-fired process air heaters (DFPAH), 7.22.13
    gas logs and decorative appliances, 7.25.2, 7.25.4
    heaters installed in fireplaces, 7.24.2
    infrared heaters 7.23.3
    natural gas cylinders, 9.2.3
    vehicle refuelling, 10.5
Masonry or concrete chimney, See Chimneys
Maximum operating pressure
    compressors and cylinders, 9.1.6
    definition, 3
Mechanical air intake, 6.23.4, 9.3.3
    definition, 3
Mechanical draft, See Draft
Metal chimney (smokestack), See Chimneys
Meters. See also Pressure controls and relief devices
    installation, 4.6, Annex D
    location, Annex D
    protection, Annex D
    standard service pressure, Annex D
Mobile homes, See Mobile housing
Mobile housing, 8.31.1
    definition, 3
    mobile home, 4.25
        connectors, 6.21.8
        definition, 3
        furnace conversion, 7.7.2
        heat reclaimers, 8.31.1
```

```
installation of appliances, 4.8
        propane line, 6.27.2
    mobile industrial or commercial structure, definition, 3
    multiple-section mobile home, definition, 3
    swing-out and expandable room-section mobile home, definition, 3
Mobile industrial or commercial structure, See Mobile housing
Mobile outdoor food service unit, 6.27
    definition, 3
Moisture exhaust duct
    clearance to service regulator, 7.5.2
    clearance to pressure regulator 5.2.1.4
    commercial-type clothes dryer, 7.4.3-7.4.5, 7.4.7, 8.9.3
    domestic-type clothes dryer, 7.5.1-7.5.3, 8.9.3
    not considered a connector, 8.9.3
Monitoring regulator, See Overpressure protection device
Motorized home, See Recreational vehicle
Multiple-section mobile home, See Mobile housing
Multi-story installations, 8.21
Ν
NAT Max, definition, 3
NAT+NAT, definition, 3
Natural draft, See Draft
Natural draft burner
    revertible, 7.8.1(a)
    definition, 3
Natural gas compressors,
    installation, 9.1
Natural gas cylinders
    connections for use, 9.5
    filling, 9.3
    requirements, 9.2
    storage, 9.4
Natural gas systems
    Piping, 6.1
        requirements, 6.2.3
        sizing, 6.3, Annex A
    pressure boosters, 7.2, Annex N
    pressure regulators, definition 3
        General 5.2, Annex K
        Additional requirements 5.2.2, 5.2.3, 5.2.4
    venting pressure control devices, 5.5
Natural gas vehicle refuelling appliances (VRA)
    installation, 10.1
    piping, tubing, and hose, 10.3
    pressure relief devices, 10.2
    refuelling of vehicles, 10.6
    safety equipment, signs and symbols, 10.5
    testing, 10.4
```

```
Noncombustible, definition, 3
Non-motive engines and turbines, 7.2.4
0
Odorization, 4.24
Openings. See also Air supply
    into a chimney flue, 8.12.5
    near ceiling for draft control device, 8.2.6(b)
Operating control, definition, 3
Overpressure protection device, 5.3, Annex K
    definition, 3
    monitoring regulator, 5.5.4.2, 7.2.3.3
        definition, 3
    overpressure relief device, Annex K
        definition, 3
        emergency generator 7.2.3.3
        venting of, 5.5.2
    overpressure shut-off device, 5.5.4.2, 5.6.4, 7.2.3.3, Annex K
        definition, 3
    setpoint requirements, Table 5.2
Overpressure relief device, See Overpressure protection device
Overpressure shut-off device, See Overpressure protection device
Pilot, definition, 3
    continuous pilot, 5.5.1.2, 6.23.7, 8.26.4
        definition, 3
    expanding pilot, definition, 3
    intermittent pilot, 6.23.4, 8.26.4
        definition, 3
    interrupted pilot, 8.26.4
        definition, 3
    proved pilot, definition, 3
Pipe wrap tape, 6.16.8, 6.16.9
    definition, 3
Piping, definition, 3
Piping and tubing
    additions to existing installations, 6.6.1, 6.22.4
    allowable pressure and pressure drop, 6.5
    allowance for fittings, 6.3.2(a)
    appliance connections, 6.11
    chases, 6.7.2, 6.7.5
    concealed locations, 6.7.1, 6.22.5
    copper tubing
        external coating, 6.2.8
        general requirements, 6.2.4, 6.2.7, 6.9.9
        protection by a sleeve, 6.16.7
        sizing for natural gas systems, Annex A
        sizing for propane systems, Annex B
```

```
design sizing, Annex E
drip and dirt pockets, 6.13
expansion and flexibility, Annex G
extensions, 6.6
field bending prohibited, 6.14.5
general requirements, 6.1, 6.2
identification, 6.17
installation
    bushings, 6.9.10, 6.14.2
    concealed or enclosed, 6.7.1, 6.7.3, 6.22.5
    entering a building, 6.15.8
    filter, 6.8.6
    hollow walls, 6.16.4
   jointing sealant, 6.9.6
   joints and connections, 6.9
   location, 6.7
    practices, 6.8
    prohibited locations, 6.7.2, 6.7.3
    prohibited practices, 6.14
    protection, 6.16
    rooftops, 6.5, G.2
    solid flooring, 6.7.4
    spacing of supports, 6.8.3, Table 6.2
    supports, 6.8.9, 6.16.3
    through walls and ceilings, 6.12.2, 6.15.9, 6.16.8
    underground installations, 6.2.7, 6.2.17, 6.15, 6.16.2
    welding, 6.9.2-6.9.4
material requirements, 6.1
for natural gas compressors, 9.1.2, 9.1.6
for natural gas vehicle fuelling appliances, 10.3, 10.4
outlets, 6.12
    branch piping, 6.10
    multiple, 6.18.10
plastic piping
   connections to steel or copper, 6.15.12
    general requirements, 6.2.14-6.2.20, 6.9.11, 6.15.14, 6.16.10
    inspection, 6.26
    prohibited for liquid propane, 6.2.16
    prohibited use, 6.2.19
    replacement, 6.26
    sizing
        general requirements, 6.3.5
        for natural gas, Annex A
        for propane, Annex B
   storage and protection from sunlight, 6.16.11, 6.16.12
    underground, 6.15.13
prohibited use as electrical ground, 6.14.6
prohibition of repair, 6.14.1
purging
```

```
after leak testing, 6.23
        by flaring, 6.23.5
        for purpose of repair, alteration or abandonment, 6.24
    reuse, 6.1.2
    sizing, 6.3
        extensions, 6.6.1
        for natural gas systems, 6.3.8.1, Annex A
        plastic piping, 6.3.5
        for propane systems, 6.3.8.2, Annex B
        regulators, 6.3.4
    steel
        general requirements, 6.2.12, 6.9.1, 6.9.10
        sizing
            for natural gas systems, Annex A
            for propane systems, Annex B
        underground, 6.16.2
    steel tubing, 6.2.11
    testing
        leak tests, 6.22.3
        pressure tests, 6.22.1, 6.22.2
Piston engine. See Reciprocating engine
Point of transfer
    definition, 3
Pool heaters, 7.26
    flue gas discharge opening, 8.14.10
    installation, 7.26.1-7.26.9
Power venters, 8.14.12, 8.24.2, 8.29.2
    definition, 3
Pressure
    cylinders used indoors, 9.3.2
    between first-stage and second-stage regulators, 5.1.5
    for individual appliances, 6.5.1
    inside buildings, 5.1.1, 5.1.2, Table 5.1
    propane systems, 5.1.5
    to regulator, 5.6.1
Pressure boosters, 7.2, Annex N
Pressure controls, 5.2.1. See also Regulators; Valves
    appliance and pilot pressure regulator, 5.7
    hydrostatic relief devices, 5.4
    line relief valve, 5.2.1.8, 5.3.4
    overpressure protection devices, 5.3
    pressure regulator, 5.2
        2 psig (14 kPa) systems, 5.2.2.4, 5.2.2.5
        natural gas cylinder connected for use, 9.5.1
    prohibit bypassing pressure regulator, 5.2.1.5
    service regulator
        clearances, 5.6.4
        installations, 4.6
    system regulator
```

```
installation, 5.1.4, 5.2.1.9
        operating pressures not in excess of 0.5 psig (3.5 kPa), 5.5.1.2
        prohibited bypassing, 5.2.1.5
    vehicle fuelling appliances, 10.2
Pressure controls and relief devices
    venting
        discharge, 5.5.3.2
        general requirements, 5.2.1
        natural gas systems, 5.7.2
        outdoor termination, 5.6
        propane systems, 5.7.1
Pressure drop. See also Allowable pressure and pressure drop
    for operating pressures 14 in w.c. (3.5 kPa), 6.3.2
    for operating pressures 14 in w.c. (.5 kPa), 6.3.3
    during testing, 6.22.1
Pressure gauge, 6.22.2(b)
Pressure recorder, 6.22.2(c)
Pressure regulator, 5.2, Annex K
    appliance and pilot, 5.7
    appliance regulator, definition, 3
        definition, 3
    high pressure regulator, 5.2.3.2, 5.2.3.4, 5.3.1, 6.8.10, Annex K.2.3, K.5
    definition, 3
    in natural gas applications, 5.7.2
    in propane applications, 5.7.1
    line pressure regulator, 5.2.2.2
        definition, 3
        venting exemptions for, 5.5.4
    lock-up regulator, 5.2.1.6
        definition, 3
    requirements for natural gas applications, 5.2.4
    service regulator
        definition, 3
        installations, 4.6, 5.6.4, Annex D, Annex K
Pressure testing. See Testing
Private garage, See Garages
Prohibited practices, 6.14
Propane
    liquid, 5.1.6, 5.4.1, 6.2.5, 6.2.16, 6.20.7
    odorization, 4.24
Propane systems
    conversions, 4.3.5(c)
    delivery pressure and overpressure protection, 5.1.4
    gas hose, 6.20.7, 6.20.8
    hydrostatic relief devices, 5.4
    liquid supply, 5.1.6, 5.4.1, 6.2.5, 6.2.16, 6.20.7
    manual shut-off valves, 6.18.7
    piping
        general requirements, 6.2
```

```
prohibited plastic piping, 6.2.16, 6.2.18
        sizing, 6.3, Annex B
    pressure inside buildings, 5.1.1, 5.1.2, Table 5.1
    pressure regulators, 5.2, 5.6.1
    pressure testing, 6.22
    venting pressure control device, 5.5.3.1, 5.5.3.2
Propane torch, 7.18.10
Propane-fuelled engine
    exhaust discharge, 7.2.5.4-7.2.5.10
    fire protection, 7.2.5.3
    relief valve, 7.2.4.4
    ventilation, 7.2.5.2
Protection
    of appliances, 4.23
    of piping and tubing, 6.16
Proved pilot, See Pilot
Purge, definition, 3
Purge burner, 6.23.5
    definition, 3
Purging
    after leak testing, 6.23
    by flaring, 6.23.5
    gas piping system requiring, Table 6.4
    from piping or tubing system, 6.24
    for purpose of repair, alteration or abandonment, 6.24
    where burner or pilot is not available, Annex H
Q
Quick-disconnect device, 6.11.2, 6.11.3, 6.11.5, 6.18.7
    definition, 3
R
Radiant heater, See Heater
Rain cap, 5.5.3.2, Figure 8.1
Ranges. See also Cooking appliances, 4.25.9, 6.18.3, 6.21.5, 7.32
    control valve at rear, 7.9.1
    conversion, 7.9
    insulating millboard, 7.33.7, Tables 4.1, 8.7
        definition, 3
    permitted installation in bed-sitting rooms, 7.33.1
        definition, 3
    prohibited installations in bedrooms, 7.33.1
        definition, 3
Rated pressure, 5.1.3, 5.2.2.2, 5.2.3.2, 5.2.3.3, 5.2.3.5, Annex K
    definition, 3
Readily accessible, 4.25.7, 6.11.2, 6.13.3, 6.18.2, 6.18.3, 6.18.4, 6.18.5, 6.18.10, 6.23.7, 7.9.1, 8.9.5,
12.4.15.3, 12.4.15.4, Annex H
    definition, 3
Reciprocating engine, See Engine
```

```
Recreational vehicle, 4.8, 4.25, 6.27
    chassis-mounted camper, definition, 3
    definition, 3
    heat reclaimers, 8.31.1, 8.31.2, definition 3
    motorized home, definition, 3
    slide-in camper, definition, 3
    tent trailer, definition, 3, 4.25.1
    travel trailer, definition, 3
Reference publications, 2
Refrigerators, 7.34
Regulators. See also Pressure controls, 5.5, 5.5.3, Annex K
    installation, Annex D
    pressure, Annex D
    protection, Annex D
Relief device, 5.5.3.1, 5.5.3.2, 5.6.1, 5.6.3, 7.2.3.3, 7.27.2, 10.2.3, Figure K.1
    definition, 3
    hydrostatic, 5.4, 5.5.3.1, 5.5.3.2, 6.20.7, Table 6.3
    definition 3
Repair garage, See Garages
Replacement parts, 4.3.4
Residential appliance, 6.18.2, 8.26.2, 8.27.1
    definition, 3
Residential building, See Building
Residential fuelling appliance (RFA), 10
    definition, 3
Residential-type ranges, 7.33
Rooftop units, 4.14.5, 4.14.6, 6.5, 6.16.3, 7.2.1.7, G.2, Table 5.1
S
Safe location, 5.4.1, 5.5.1.1, 5.5.2.1, N.2.9
    definition, 3
Safety devices
    isolation of, 4.11
Safety limit control, 4.7.2, 4.11
    definition, 3
Safety shut-off valve, See Valves
Second stage propane regulator, 5.1.5
    definition, 3
Self-energizing pilots, 4.20
Service regulator, See Pressure regulator
SI (metric) equivalents, 1.5
Sizing
    chimneys, Annex C
    piping and tubing, 6.3, 6.4, Annexes A, B
    vent connectors, 8.18.4–8.18.8
    vents and chimneys, 8.13
Slide-in camper, See Recreational vehicle
Smoking, 4.10, 6.23.4, 9.3.6, 10.5, Annex H
Special venting system, See Venting
```

```
Spray area
    definition, 3
    DFPAH application, 7.22.11, 7.22.16
    installation, 7.22.8
Stairwells
    installation of DFIAH, 7.21.11
    installation of DFMAH, 7.20.12
    installation of piping and tubing, 6.7.2(a)
Stationary gas engine
    exhaust piping, 7.2.4.3, 7.2.5.6-7.2.5.10
    general requirements, 7.2.4.2
    ventilation, 7.2.1.3
Stop-fill valve, See Valves
Storage garages, See Garages
Street elbow, prohibited, 6.14.7
Street tee, prohibited, 6.14.7
Structure, definition, 3
Supply pressure, 5.5.1.2, 5.7.1.1, 6.3.4, 6.8.10, K.3.1, Table 6.1
    definition, 3
Swing-out and expandable room-section mobile home, See Mobile housing
Tank, definition, 3, 6.18.9, 6.20.6, 6.20.8
Tent trailer, See Recreational vehicleTesting
    dial test, 6.22.3(b)
    gas piping, tubing, hose VFA equipment and components, 10.4
    gas-tightness testing, 4.3.7
    installer's responsibilities, 4.3.7, 4.3.8
    piping and tubing installations, 6.22
    pressure testing
        before and after connecting appliances, 6.22.2, 6.22.3, Table 6.3
        purging of gas piping system 6.23
        general requirements, 4.3.7
Thermally actuated vent damper device, See Automatic vent damper device
Training, 4.4
Travel trailer, See Recreational vehicle
Tubing
    definition, 3
    identification of, 6.17
    protection of, 6.16
    purging of gas from, 6.24
    responsibilities of the installer 4.3.1, 4.3.5
    for RFAs and VFAs, 10.3, 10.4
    testing of, 6.22
    underground, 6.15
Turbine engine, See Engine
Two-stage regulation, 5.2.2.3
    definition, 3
Type B vent, See Vents
```

```
Type BH vent, See Vents
Type BW vent, See Vents
Type L vent, See Vents
U
Underground installations
    backfill material, 6.15.6
    brazing, 6.15.3
    copper tubing, 6.2.8
    corrosion control, 6.16.2
    depth of cover, 6.15.4
    fittings
        compression, 6.15.2
        flared, 6.15.3
        press-connect, 6.15.2, 6.15.3
    piping and tubing, 6.15
    plastic piping or tubing, 6.2.17
    riser, 6.18.9
٧
Valve, definition, 3
Valve train, 5.2.3.3, 6.18.2, 6.22.3, Annex N
    definition, 3
Valves. See also Pressure controls
    automatic fire-extinguishing systems, 4.19
    automatic shut-off, 6.19
    back check valve, 6.8.5, 9.3.3
        definition, 3
    ball, 6.18.4
    cylinder valve, 6.27.1, 9.4.6, 9.5.1
        definition, 3
    emergency shut-off valve, definition, 3
    excess flow valve, 9.5.1(d)
        definition, 3
    fast-closing valve, 4.19.2
        definition, 3
    flow resistance, A.4, B.4
    hydrostatic relief valve, 5.4, 5.5.3, 6.20.7
        definition, 3
    internal excess-flow valve, definition, 3
    internal relief valve, 5.2.1.8, 5.3.4, 5.5.1.3, 5.5.2.1, 5.5.2.3, 5.6.4
        definition, 3
    internal valve, definition, 3
    line relief valve, 5.2.1.8, 5.3.4, 5.5.2.1, 5.5.2.2, Annex K
        definition, 3
    lubricant, 6.9.8
    lubricated-plug-type valve, 6.18.4
        definition, 3
    manual reset, 6.19
```

```
manual shut-off, 4.19.3, 5.2.1.7, 6.8.10, 6.11.2, 6.15.13, 6.18, 6.20.3, 6.20.5, 6.23.4, 7.2.3.1, 7.2.3.2,
    7.18.6
    prohibited isolation, 4.11
    range burner, 7.9.1
    relief, 5.3.4, 5.5.2
    safety shut-off valve, 4.11, 7.8.1, 7.24.5, Annex L, Annex N
        definition, 3
    spring-loaded, 6.18.6
    stop-fill valve, definition, 3
Vaporizer, 6.2.18, 6.20.8
    definition, 3
    direct-fired vaporizer, definition, 3
    indirect vaporizer, definition, 3
Vehicle fueling appliance (VFA), 10.1
    definition, 3
    operation, 10.6
    piping, tubing and hose, 10.3
    signage, 10.4
    testing of piping, tubing, hose and fittings, 10.4
    venting of pressure relief devices, 10.2
Vent connectors
    adapters, 8.15.4, 8.15.5
    added resistance to flow, 8.18.14
    Category I appliances, 8.18.21
    chimney connections, 8.12.4, 8.19
    clearances, 8.18.10-8.18.11, Tables 8.6, 8.7
    common, 8.16.2, 8.20, Annex C
    common vent or chimney, 8.16.1, Annex C
    corrosion resistance, 8.18.1
    definition, 3
    installation, 8.18.14-8.18.21, 8.18.23
    interconnected, 8.20
    joints and seams, 8.10.13
    material requirements, 8.18.1-8.18.3, 8.18.22
    positive pressure and special venting systems, 8.24.3
    prohibited installation, 8.10.12, 8.18.23
    protection, 8.18.12, 8.18.13, Table 8.7
    sizing, 8.18.4-8.18.8, Annex C
    slip joint, 8.18.20
    thimbles, 7.30.4, 8.18.12
    through combustible wall, 8.18.12
    through unheated space, 8.18.21
Ventilated space, 5.2.2.5, 5.2.4.1, 5.5.4, 5.6.4, 5.7.1.3, 5.7.2, 8.24.5
    definition, 3
    leak limiters, K.5
Ventilation. See also Air supply
    appliances exceeding 400 000 Btu/h, 8.4
    definition, 3
    direct fired process air heater, 7.22.8, 7.22.17
```

```
ducts in concrete for piping and tubing, 6.7.4
    engines and turbines of all inputs, 7.2.1.3, 7.2.1.5, 7.2.1.9
    infrared heaters, 7.23.1
    pressure booster, 7.2.2.2
    rooms containing engines, 7.2.5.2, 7.2.5.3
    vehicle fuelling appliances, 10.1.9
    wash-mobile or food serve vehicle, 4.25.6
Ventilation air, See Air supply
Venting, pressure control devices
    pressure control devices, 5.5
    vehicle fuelling appliances, 10.2
Venting, flue gases
    appliances, 8.9
    into canopies, 8.30
    definition, 3
    draft hoods, 8.23
    draft regulators, 8.23.8, 8.25
    draft-control devices, 8.28
    general requirements, 8.9, 8.24, Annex C
    incinerators, 7.30.4–7.30.5
    induced- or forced-draft devices, 8.29
    metal pipe requirements, 8.10.11
    methods, 8.10, Table 8.5
    multi-storey, 8.21, Annex C
    outside buildings, 8.17
    sizing tables, Annex C
    special venting systems, 8.10.4, 8.10.5, 8.10.6, 8.10.14, 8.14.2, 8.14.3, 8.14.5, 8.18.9, 8.24.3,
    Table 8.5
        clearance, 8.18.9
        definition, 3
        vent, 8.14.2, 8.14.3, 8.14.5, 8.14.11, 8.14.12, 8.18.9, 8.24.1, 8.24.3
    wall furnaces, 7.17.3
Vents and chimneys
    chimney connections, 8.19
    connection to appliances, 8.1.5
    installation in dormant flue, 8.14.13
    requirements, 8.11
    shape, 8.13.3
    sizing
        Category I appliances, Annex C
        more than one appliance, 8.13.2, Annex C
        single appliance, 8.13.1
        venting capacity, 8.13.3
    support, 8.15
    termination
        chimney height, 8.14.1, 8.14.4
        prohibited locations, 8.14.8, Figure 8.2
        vent caps, 8.14.11
        vent height, 8.14.1-8.14.7, Figure 8.1
```

```
through exterior walls, 8.14.12
    Type B vent
        clearances, 8.18.10
        common gas vent 8.21.5
        definition, 3
        indoor-installed, 8.17.2
        multi-storey venting, 8.21.5
        with single-wall vent connector, 8.15.5
        usage, 8.10.7, Table 8.5
    Type BH vent, 8.10.3, Table 8.5
        definition, 3
    Type BW vent, 7.17.3, 8.10.8, Table 8.5
        definition, 3
    Type L vent
        definition, 3
        common gas vent 8.21.5
        indoor-installed, 8.17.2
        multi-storey venting, 8.21.5
        usage, 8.10.9, 8.10.10, Table 8.5
Vehicle refuelling appliances, 10.2.2
W
Wash-mobile, 4.25.6, 6.27
    definition, 3
Water heaters, 7.27
Welding, 6.8.7, 6.9.2-6.9.4
Welds, acceptance criteria for visual inspection, Annex J
Yard/pound units
    SI (metric) equivalents, 1.5
    as standard, 1.5
Zero governor, N.2.2
    definition, 3
```

