

# Industry Standards and Definitions

	<b>NEMA Designation</b>	<b>Underwriters Laboratories Inc. UL 50 and UL 508</b>	<b>Canadian Standards Association CSA Standard C22.2 No 94</b>
<b>Type 1</b>	Indoor use to provide a degree of protection against contact with the enclosed equipment; in locations where unusual service conditions do not exist	Indoor use to provide a degree of protection against contact with the enclosed equipment and against a limited amount of falling dirt	General purpose enclosure; protects against accidental contact with live parts
<b>Type 2</b>	Indoor use to provide a degree of protection against contact with the enclosed equipment and against limited amounts of falling water and dirt	Indoor use to provide a degree of protection against limited amounts of falling water and dirt	Drip proof enclosure same as Type 1; indoor use to provide a degree of protection against dripping and light splashing of non-corrosive liquids and falling dirt
<b>Type 3</b>	Indoor or outdoor use to provide a degree of protection against windblown dust, rain and sleet; undamaged by the formation of ice on the enclosure (not sleet proof)	Indoor or outdoor use to provide a degree of protection against windblown dust, rain and sleet; undamaged by the formation of ice on the enclosure	Weatherproof enclosure; indoor or outdoor use to provide a degree of protection against rain, snow and blown dust; undamaged by the external formation of ice on the enclosure
<b>Type 3R</b>	Indoor or outdoor use to provide a degree of protection against falling rain and sleet; undamaged by the formation of ice on the enclosure	Indoor or outdoor use to provide a degree of protection against falling rain and sleet; undamaged by the formation of ice on the enclosure	Weather proof enclosure; indoor or outdoor use to provide a degree of protection against rain or snow; undamaged by the external formation of ice on the enclosure (CSA does not specify sleet resist)
<b>Type 3S</b>	Indoor or outdoor use to provide a degree of protection against windblown dust, rain and sleet; provides for operation of external mechanisms when ice laden	Indoor or outdoor use to provide a degree of protection against windblown dust, rain and sleet; external mechanisms remain operable while ice laden	Weather proof enclosure; indoor or outdoor use to provide a degree of protection against rain or snow; undamaged by the external formation of ice on the enclosure surface (CSA does not specify sleet proof)
<b>Type 4</b>	Indoor or outdoor use to protect the enclosed equipment against splashing water, seepage of water, falling or hose-directed water, and severe external condensation; these enclosures are sleet resistant but not sleet proof	Indoor or outdoor use to provide a degree of protection against splashing water, windblown dust and rain, and hose directed water; undamaged by the formation of ice on the enclosure	Watertight enclosure; indoor or outdoor use to provide a degree of protection against rain, snow, blown dust, splashing and hose directed water; undamaged by the external formation of ice on the enclosure
<b>Type 4X</b>	Indoor or outdoor use to provide a degree of protection against corrosion, windblown dust and rain, splashing water, and hose-directed water; undamaged by the formation of ice on the enclosure	Indoor or outdoor use to provide a degree of protection against splashing water, windblown dust and rain, and hose directed water; undamaged by the formation of ice on the enclosure; resists corrosion	Watertight enclosure; indoor or outdoor use to provide a degree of protection against rain, snow, blown dust, splashing and hose directed water; undamaged by the external formation of ice on the enclosure; resists corrosion
<b>Type 5</b>	Indoor use to provide a degree of protection against dust, falling dirt, and dripping non-corrosive liquids	Not typically used by UL.	Indoor use, so constructed that dust, readily ignitable fibers or combustible flyings cannot enter the enclosure

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<b>Type 6</b>	Indoor or outdoor use to provide a degree of protection against the entry of water during occasional temporary submersion at a limited depth	Indoor or outdoor use to provide a degree of protection against the entry of water during temporary submersion at a limited depth; undamaged by the formation of ice on the enclosure	No CSA equivalent
<b>Type 6P</b>	Indoor or outdoor use to provide a degree of protection against the entry of water during prolonged submersion at a limited depth	Indoor or outdoor use to provide a degree of protection against the entry of water during prolonged submersion at a limited depth	No CSA equivalent
<b>Type 7</b>	For use in indoor locations classified as Class I, Groups A, B, C and D, as defined in the National Electrical Code	Not typically used by UL	Similar to NEMA designation; refer to Canadian Electric Code C22.1 Sec. 18 (C22.2 No. 30)
<b>Type 8</b>	For use in indoor or outdoor locations classified as Class I, Groups A, B, C and D, as defined in the National Electrical Code – oil immersed	Not typically used by UL	Similar to NEMA designation; refer to Canadian Electric Code C22.1 Sec. 18 (C22.2 No. 30)
<b>Type 9</b>	For use in indoor locations classified as Class II, Groups E, F and G, as defined in the National Electrical Code	Not typically used by UL	Similar to NEMA designation dust tight (hazardous dust); refer to Canadian Electric Code C22.2 No. 25
<b>Type 10</b>	Mining enforcement safety administration approved	Not typically used by UL	No CSA equivalent specified for industrial control applications (See C22.5 for use of electricity in mines)
<b>Type 11</b>	Indoor use to provide, by oil immersion, a degree of protection to enclosed equipment against corrosive effects of liquids and gases	Indoor use to provide, by oil immersion, a degree of protection of the enclosed equipment against corrosive effects of corrosive liquids and gases	No CSA equivalent; similar to Type 4
<b>Type 12</b>	Indoor use to provide a degree of protection against dust, falling dirt and dripping non-corrosive liquids No knockouts	Indoor use to provide a degree of protection against dust, falling dirt and dripping non-corrosive liquids No knockouts	Indoor use to provide a degree of protection against circulating dust, lint, fibers, dripping and light splashes of non-corrosive liquids
<b>Type 12K</b>	Indoor enclosure with knockouts to provide a degree of protection against dust, falling dirt and dripping non-corrosive liquids other than at knockouts	Indoor use to provide a degree of protection against dust, falling dirt, and dripping non-corrosive liquids With knockouts	No CSA equivalent
<b>Type 13</b>	Indoor use to provide a degree of protection against lint, dust, seepage, external condensation and spraying of water, oil and non-corrosive coolant	Indoor use to provide a degree of protection against dust and spraying of water, oil and non-corrosive coolants	Indoor use to provide a degree of protection against circulating dust, lint, fibers, seepage and spraying of non-corrosive liquids including oils and coolants