



UL 1062

STANDARD FOR SAFETY

Unit Substations

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UL Standard for Safety for Unit Substations, UL 1062

Third Edition, Dated January 29, 1997

Summary of Topics

This revision of ANSI/UL 1062 dated August 21, 2020, is being issued to align with service equipment requirements from NFPA 70; Section [17](#).

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The revisions are substantially in accordance with Proposal(s) on this subject dated May 15, 2020.

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ANSI/UL 1062-2020

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UL 1062

Standard for Unit Substations

Prior to the first edition, the requirements for the products covered by this standard were derived from the Standard for Enclosures for Electrical Equipment, UL 50 (when the title for UL 50 was Cabinets and Boxes); the Standard for Specialty Transformers, UL 506; the Standard for Service Equipment, UL 869; and the Standard for Dead-Front Switchboards, UL 891.

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Second Edition – April, 1993

Third Edition

January 29, 1997

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The most recent designation of ANSI/UL 1062 as an American National Standard (ANSI) occurred on July 20, 2020. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at <https://csds.ul.com>.

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INTRODUCTION

1 Scope

1.1 These requirements cover unit substations of 1000 kVA single phase and 3000 kVA 3-phase maximum having a maximum nominal primary or secondary rating of 600 volts. Their construction, installation, and use are intended to be in accordance with the National Electrical Code, ANSI/NFPA 70.

1.2 *Deleted*

2 General

2.1 Components

2.1.1 Except as indicated in [2.1.2](#), a component of a product covered by this standard shall comply with the requirements for that component. See Appendix [A](#) for a list of standards covering components used in the products covered by this standard.

2.1.2 A component is not required to comply with a specific requirement that:

- a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or
- b) Is superseded by a requirement in this standard.

2.1.3 A component shall be used in accordance with its rating established for the intended conditions of use.

2.1.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

2.2 Units of measurement

2.2.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

2.2.2 All applicable alternating-current electrical measurements are in root-mean-square (rms) units unless otherwise stated.

2.3 Undated references

2.3.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

3 Glossary

3.1 For the purpose of this standard the following definitions apply.

3.2 DUMMY FUSE – A current-carrying part made of copper having such dimensions that it will fit its fuse mounting means with the same conditions of pressure, contact, and cross-sectional areas as are obtained on terminals of the fuse that it is intended to replace.

3.3 FILLER PLATE – A plate intended to close an opening that would otherwise be closed by the subsequent installation of a circuit breaker or other device.

3.4 NEUTRAL – Neutral refers to the grounded circuit conductor, such as:

- a) The center point of a wye-connected system; or
- b) The corner of a delta-connected system; or
- c) The midpoint of a 3-wire, single phase or the midpoint of one side of a delta-connected system; or
- d) The grounded side of a 2-wire circuit.

3.5 UNIT SUBSTATION – A transformer in combination with primary or secondary overcurrent protective devices or switching devices housed in a single enclosure.

CONSTRUCTION

4 General

4.1 A unit substation shall be complete when it is shipped from the factory. If a switch, circuit breaker, or the like, mounted in a unit substation must be interconnected in order for it to perform its intended function, such interconnecting busing or wiring shall be complete before it is shipped from the factory.

Exception No. 1: A unit substation may have provision for the installation of a switch or circuit breaker in the secondary. If appropriate, markings as covered in [40.4.5](#) and [40.11.1](#) – [40.11.5](#) shall be provided.

Exception No. 2: A unit substation employing circuit breakers or switches of different physical size that require branch bus bars of different physical size or shape, or in which circuit breakers or switches rated at more than 200 amperes may be added by bolted connections, is acceptable without the branch bus bars necessary for such additions being mounted in place when the unit substation is shipped from the factory provided branch bus bars complying with [15.3.19](#) are available, and markings as covered in [40.11.1](#) and [40.11.2](#) are provided.

4.2 A unit substation shall be designed so that any component intended to be field installed can be installed by the use of ordinary tools such as pliers, a screwdriver, or a wrench.

4.3 If a branch bus bar as covered in Exception No. 2 to [4.1](#) needs a barrier to comply with the spacing requirements in Spacings, Section [21](#), the barrier shall be attached to the unit substation or to the field-installed branch bus bar.

4.4 In a space that can physically accommodate a branch circuit switch or circuit breaker, but is not intended for this, any hole for securing a branch bus bar to the secondary bus bar shall be plugged with a solid metal rivet or one way screw. A dead-front shield over the portion of bus with holes is not acceptable in lieu of plugging or omitting the holes in the bus bars.

5 Materials

5.1 Materials used shall be combustion and moisture resistant.

Exception: The requirement does not apply to a minor part such as a handle, rubber-insulated wire, magnet insulation, and the like, or as otherwise permitted in these requirements.

6 Rust and Corrosion Resistance

6.1 Iron and steel parts of enclosing cases, walls, and barriers, all springs and other parts upon which mechanical operation may depend, and sheet steel parts of fastening devices, shall be protected against rust by enameling, galvanizing, sherardizing, plating, or equivalent means. Corrosion resistance requirements for an enclosure designated as Type 3R are covered in [8.5.8](#) – [8.5.12](#). Corrosion resistance requirements for an enclosure designated as Type 3RX are covered in Type 3RX Enclosures, Section [8.5A](#).

7 Mechanical Assembly

7.1 A unit substation shall be constructed to provide strength and rigidity in order that it will keep its shape and that doors will close tightly.

7.2 Metal into which a screw is threaded shall provide for the engagement of at least two full threads. A rivet, screw, bolt, or similar fastener in a sheet metal enclosure shall have a diameter at least 50 percent greater than the thickness of the finished sheet metal with which it is used.

Exception: A fastening device as described in [7.3](#) is acceptable.

7.3 With regard to [7.2](#), a different type of fastening device may be used if employed with a conventional screw. Other types of fastening devices may be used if investigated for the particular application. A single-threaded sheet metal nut designed to slip over the edge of sheet metal to receive a retaining screw may be used to secure a dead front to supports, a unit such as a switch or circuit breaker to a mounting panel, or a mounting pan to an enclosure if:

- a) The nut is protected against corrosion by enameling, galvanizing, sherardizing, plating, or other equivalent means.
- b) The threads do not strip when a torque of 30 pound-inches (3.4 N·m) is applied.

7.4 Sheet metal may be extruded at a tapped hole to provide the thickness necessary for two full threads, provided the original metal is not less in thickness than the pitch of the thread.

7.5 Unless otherwise noted, an electrical component shall be securely mounted and prevented from turning.

7.6 A unit substation shall be provided with a means for lifting by forklift or cable and shall be marked in accordance with [40.18.1](#). A lifting means, if provided for lifting by cable, shall be provided with a minimum 5/8 inch (15.9 mm) diameter hole. The lifting means shall be subjected to the test specified in the Lifting Hook or Bracket Test, Section [34](#).

Exception: The test specified in the Lifting Hook or Bracket Test, Section [34](#), need not be conducted on a unit substation intended only for lifting from underneath by a forklift or other means.

8 Framework and Enclosure

8.1 Frame

8.1.1 The framework of a unit substation shall provide strength for the support of all the component parts of the device and the operation of all switching mechanisms in the intended manner.

8.2 Enclosure

8.2.1 A unit substation shall have an enclosure of moisture resistant material. The enclosure shall house all uninsulated live parts.

Exception: A bottom for the enclosure need not be provided for a unit substation intended to be pad mounted if the walls will be flush or within 3/8 inch (9.6 mm) of the pad and if the unit substation is marked in accordance with [40.14.3](#).

8.2.2 If a unit substation is intended to be mounted on a concrete pad, aluminum parts of an enclosure shall be located at least 1/4 inch (6.4 mm) above the mounting pad.

Exception: Aluminum parts of an enclosure coated with a metallic or nonmetallic coating may be in contact with a concrete pad if the coating is tested to demonstrate resistance to corrosion equivalent to that of galvanized (G90) steel 0.061 inch (1.55 mm) thick.

8.2.3 The enclosure shall be provided with mounting or securing means.

8.2.4 With regard to [8.2.3](#), for a wall mounted unit substation, the construction shall be such that, if the enclosure is mounted on a plane surface, it will make contact at points of support only, and shall maintain a clearance of not less than 1/4 inch (6.4 mm) at other points. The means for mounting shall be subjected to the test specified in the Wall-Mounting Means Test, Section [35](#).

8.2.5 An enclosure of polymeric material shall be made the subject of an investigation in accordance with the Standard for Polymeric Materials – Use in Electrical Equipment Evaluations, UL 746C. Among the factors to be taken into consideration are:

- a) Mechanical strength,
- b) Resistance to impact at low temperature,
- c) Moisture absorptive properties,
- d) Resistance to distortion at temperatures to which the material will be subjected under conditions of normal or abnormal use,
- e) Resistance to arcing,
- f) Aging characteristics, and
- g) Combustibility.

8.3 Sheet metal

8.3.1 A sheet metal enclosure shall be made of iron, steel, brass, copper, or aluminum.

Exception: Other materials may be employed if, upon investigation, the material is found to be acceptable for the purpose and the enclosure is found to be equivalent to the sheet metals specified.

8.3.2 A sheet metal enclosure shall have a minimum thickness as specified in [Table 8.1](#) or [Table 8.2](#).

Exception No. 1: An enclosure without supporting frame may be thinner than specified in [Table 8.1](#) and [Table 8.2](#) if it complies with the requirements in the Compression Test, Section [31](#), and the Deflection Test, Section [32](#), but not less than 0.053 inch (1.35 mm) for uncoated steel, 0.56 inch (1.42 mm) for coated steel, and 0.075 inch (1.91 mm) for aluminum, copper, or brass.

Exception No. 2: The thickness of a cover, door, front, or panel may be as specified in [8.3.5](#) and [8.3.6](#).

Table 8.1
Minimum thickness of sheet metal for enclosures – carbon steel or stainless steel

Without supporting frame ^a		With supporting frame or equivalent reinforcing ^b		Minimum thickness, inch (mm)							
Maximum width ^a ,		Maximum length,						Maximum width ^{a,c} ,		Maximum length ^c ,	
inches	(cm)	inches	(cm)	inches	(cm)	inches	(cm)	Uncoated	Metal coated		
18.0	45.7	Not limited ^d		27.0	68.6	Not limited ^d		0.053	1.35	0.056	1.42
20.0	50.8	25.0	63.5	29.0	73.7	36.0	91.4				
22.0	55.9	Not limited ^d		33.0	83.8	Not limited ^d		0.060	1.52	0.063	1.60
25.0	63.5	31.0	78.7	35.0	88.9	43.0	109.2				
25.0	63.5	Not limited ^d		39.0	99.1	Not limited ^d		0.067	1.70	0.070	1.78
29.0	73.7	36.0	91.4	41.0	104.1	51.0	129.5				
33.0	83.8	Not limited ^d		51.0	129.5	Not limited ^d		0.080	2.03	0.084	2.13
38.0	96.5	47.0	119.4	54.0	137.2	66.0	167.6				
42.0	106.7	Not limited ^d		64.0	162.6	Not limited ^d		0.093	2.36	0.097	2.46
47.0	119.4	59.0	149.9	68.0	172.7	84.0	213.4				
52.0	132.1	Not limited ^d		80.0	203.2	Not limited ^d		0.108	2.74	0.111	2.82
60.0	152.4	74.0	188.0	84.0	213.4	103.0	261.6				
63.0	160.0	Not limited ^d		97.0	246.4	Not limited ^d		0.123	3.12	0.126	3.20
73.0	185.4	90.0	228.6	103.0	261.6	127.0	322.6				

^a The smaller dimension of a rectangular sheet metal piece that is part of an enclosure other than as covered in [8.3.7](#). Adjacent surfaces of an enclosure may have supports in common and be made of a single sheet.

^b Refer to [8.3.3](#) and [8.3.4](#).

^c Length of sides to be measured between supporting frames as shown in [Figure 8.1](#).

^d "Not limited" applies only if the edge of the surface is flanged at least 1/2 inch (12.7 mm) or fastened to adjacent surfaces not normally removed in use.

Table 8.2
Minimum thickness of sheet metal for enclosures – aluminum, copper, or brass

Without supporting frame ^a		With supporting frame or equivalent reinforcing ^b		Minimum thickness, inch (mm)					
Maximum width ^a ,		Maximum length,				Maximum width ^{a,c} ,		Maximum length ^c ,	
inches	(cm)	inches	(cm)	inches	(cm)	inches	(cm)	inch	(mm)
18.0	45.7	Not limited ^d		42.0	106.7	Not limited ^d		0.075	1.91
20.0	50.8	25.0	63.5	45.0	114.3	55.0	139.7		
25.0	63.5	Not limited ^d		60.0	152.4	Not limited ^d		0.095	2.41
29.0	73.7	36.0	91.4	64.0	162.6	78.0	198.1		
37.0	94.0	Not limited ^d		87.0	221.0	Not limited ^d		0.122	3.10
42.0	106.7	53.0	134.6	93.0	236.2	114.0	289.6		
52.0	132.1	Not limited ^d		123.0	312.4	Not limited ^d		0.153	3.89
60.0	152.4	74.0	188.0	130.0	330.2	160.0	406.4		

^a The smaller dimension of a rectangular sheet metal piece that is part of an enclosure other than as covered in [8.3.7](#). Adjacent surfaces of an enclosure may have supports in common and be made of a single sheet.

Table 8.2 Continued on Next Page

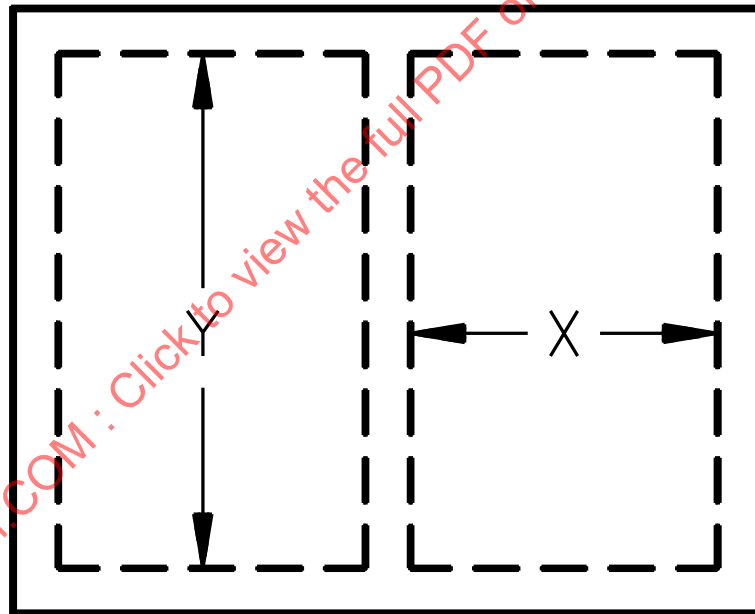
Table 8.2 Continued

Without supporting frame ^a		With supporting frame or equivalent reinforcing ^b		Minimum thickness, inch (mm)
Maximum width ^a , inches (cm)	Maximum length, inches (cm)	Maximum width ^{a,c} , inches (cm)	Maximum length ^c , inches (cm)	
^b Refer to 8.3.3 and 8.3.4 . ^c Length of sides to be measured between supporting frames as shown in Figure 8.1 . ^d "Not limited" applies only if the edge of the surface is flanged at least 1/2 inch (12.7 mm) or fastened to adjacent surfaces not normally removed in use.				

8.3.3 A supporting frame shall be formed of angles, channels, folded rigid sections of sheet metal, or the equivalent, rigidly fastened together and having the same outside dimensions as the enclosure surfaces.

Figure 8.1

Length or width between support frames



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NOTE – X, Y – Length or width between supporting frames, see note c, [Table 8.1](#) and [Table 8.2](#).

8.3.4 With reference to [8.3.3](#) and [Table 8.1](#) and [Table 8.2](#), a construction is not considered to have a supporting frame if it is:

- a) A single sheet with single formed flanges (formed edges);
- b) A single sheet that is corrugated or ribbed; or
- c) An enclosure formed or fabricated from sheet metal.

8.3.5 With regard to [Table 8.1](#) and [Table 8.2](#), part of a door, front, panel, or cover that has a supporting frame may employ metal having a thickness not less than 0.056 inch (1.42 mm) if zinc-coated steel, 0.053 inch (1.35 mm) if uncoated steel, or 0.075 inch (1.91 mm) if aluminum, copper, or brass when:

- a) The door, front, panel, or cover has the strength and rigidity to maintain its shape when open or unmounted; and
- b) The construction complies with the test specified in [32.2](#).

Exception: A door that is not part of the required enclosure is not required to comply with this requirement.

8.3.6 If a door covers a small opening only, such as an opening for a latch and lock, it shall have a thickness not less than 0.035 inch (0.89 mm) if zinc-coated steel, 0.032 inch (0.81 mm) if uncoated steel, or 0.050 inch (1.27 mm) if aluminum, copper, or brass.

8.3.7 If two or more covers or panels are provided to close a single opening, the thickness of each cover or panel shall be no less than a single sheet, that would cover the complete opening, as specified in the "without supporting frame" columns of [Table 8.1](#) or [Table 8.2](#). The adjacent edges of such multiple panels or covers shall comply with one of the following conditions:

- a) Be flanged at least 1/2 inch (12.7 mm).
- b) Be supported against an inward force at 10 inch (254 mm) maximum intervals.
- c) Overlap each other at least 1/2 inch and be secured together at 10 inch maximum intervals.
- d) Comply with the deflection test specified in [32.2](#).

Exception: The cover thickness may comply with Exception No. 1 to [8.3.2](#) or with [8.3.5\(b\)](#).

8.3.8 Sheet metal, where formed into angles or corners, shall show no evidence of fracture.

8.3.9 Slight surface crazing is not considered to be evidence of fracture.

8.4 Specific environmental conditions

8.4.1 An enclosure shall be marked as specified in [40.15.1](#) for a specific environmental condition as specified in [Table 8.3](#). An enclosure that complies with the requirements for more than one type of enclosure may be marked accordingly with multiple type designations. An enclosure marked with a Type number shall comply with the applicable tests specified in [Table 8.3](#).

8.5 Type 3R enclosures

8.5.1 A unit substation marked as Type 3R as specified in [40.16.1](#) shall comply with [8.5.2](#) – [8.5.14](#) and shall comply with the Rain Test, Section [26](#). A switch, circuit breaker, receptacle (complete with its associated attachment-plug), fuseholder, or similar device, as well as any opening associated with an

operating handle, shall be in place for the Rain Test, or shall be shielded from rain using means previously shown to provide suitable protection.

8.5.2 In an enclosure intended for horizontal pad mounting, any live part shall be located at least 4 inches (102 mm) above the enclosure mounting surface.

**Table 8.3
Enclosure types**

Type number	Intended use and description	Tests, as specified in	
		UL 50 ^a	UL 1062 ^b
1	Indoor use primarily to provide a degree of protection against contact with the enclosed equipment and against a limited amount of falling dirt.	Corrosion Protection – 5.3 or Rust Resistance – Section 38	–
2	Indoor use to provide a degree of protection against limited amounts of falling water and dirt.	Corrosion Protection – 5.3 or Rust Resistance – Section 38, and Drip – Section 31	–
3R	Outdoor use to provide a degree of protection against falling rain undamaged by the formation of ice on the enclosure.	Icing Test, Section 34	Rain Test, Section 26 and Protective Coating, 8.5.8 – 8.5.12
3RX	Indoor or outdoor use to provide a degree of protection against falling dirt, rain, sleet, and snow; undamaged by the formation of ice on the enclosure; has additional protection against enclosure corrosion.	Icing Test, Section 34 and Corrosion Resistance Test, Section 39	Rain Test, Section 26 and Protective Coating, 8.5.8 – 8.5.12
^a Tests shall be conducted in accordance with the applicable requirements specified in the Standard for Enclosures for Electrical Equipment, UL 50.			
^b Tests shall be conducted in accordance with the applicable requirements specified in the Standard for Unit Substations, UL 1062.			

8.5.3 A hole for conduit in an enclosure shall be threaded unless it is entirely located below the lowest live part within the enclosure, or unless it accommodates a specific hub or closure fitting. The area surrounding a threaded conduit hole shall be reinforced to provide metal at least 1/4 inch (6.4 mm) thick. A threaded hole for conduit shall be provided with a conduit end stop unless the thread is tapered.

8.5.4 A gasket of thermoplastic material or composition may be accepted after consideration of the effects of heat aging, distortion under conditions of use, and the means of securing the gasket to the cover or enclosure.

8.5.5 If an enclosure is provided with a rubber or rubber-like gasket, the quality of the gasket shall be such that samples subjected to a temperature of 70 ±1°C (158 ±1.8°F) in circulating air for 168 hours will have a tensile strength of not less than 60 percent and an elongation of not less than 75 percent of the values determined with unaged samples.

8.5.6 In an enclosure, a hinge or other attachment shall be resistant to corrosion.

8.5.7 Metals shall not be used in combinations such that galvanic action may cause an adverse effect on any part of the product.

8.5.8 A sheet steel enclosure marked Type 3R shall be made corrosion resistant by one of the following coatings:

a) Hot-dipped, mill-galvanized sheet steel conforming with the coating designation G90 in the Specification for Sheet Steel, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process, ASTM A653/A653M, with not less than 40 percent of the zinc on any side, based on the minimum single-spot test requirement. The weight of the zinc coating may be determined by any method; however, in case of question, the weight of coating shall be established in accordance with the Standard Test Method for Weight (Mass) of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings, ASTM A90/A90M-93.

b) A zinc coating, other than that provided on hot-dipped, mill-galvanized sheet steel, uniformly applied to an average thickness of not less than 0.00061 inch (0.0155 mm) on each surface, with a minimum thickness of 0.00054 inch (0.014 mm). The thickness of coating shall be established by the Coating Thickness Test, Section [30](#).

c) A zinc coating conforming with (1) or (2) and with one coat of an organic finish of the epoxy or alkyd-resin type or other outdoor paint applied after forming on each surface. The acceptability of the paint may be determined by consideration of its composition or by corrosion tests if these are considered necessary.

1) Hot-dipped, mill-galvanized sheet steel conforming with the coating designation G60 or A60 in ASTM A653/A653M, with not less than 40 percent of the zinc on any side, based on the minimum single-spot test requirement. The weight of zinc coating may be determined by any method; however, in case of question, the weight of coating shall be established in accordance with the test method in ASTM A90/A90M-93.

2) A zinc coating, other than that provided on hot-dipped, mill-galvanized sheet steel, uniformly applied to an average thickness of not less than 0.00041 inch (0.010 mm) on each surface with a minimum thickness of 0.00034 inch (0.009 mm). The thickness of the coating shall be established by the Coating Thickness Test, Section [30](#).

d) A cadmium coating not less than 0.0010 inch (0.025 mm) thick on both surfaces. The thickness of coating shall be established by the Coating Thickness Test, Section [30](#).

e) A cadmium coating not less than 0.00075 inch (0.019 mm) thick on both surfaces with one coat of outdoor paint on both surfaces, or not less than 0.00051 inch (0.013 mm) thick on both surfaces with two coats of outdoor paint on both surfaces. The thickness of the cadmium coating shall be established by the Coating Thickness Test, Section [30](#), and the paint shall be as described in (c).

f) Other finishes, including paints, metal finishes, or combinations of the two may be accepted when comparative tests with galvanized sheet steel (without annealing, wiping, or other surface treatment) conforming with (a), indicate they provide equivalent protection. Such comparative tests are specified in the Standard for Organic Coatings for Steel Enclosures for Outdoor-Use Electrical Equipment, UL 1332.

8.5.9 An annealed coating on sheet steel that is bent or similarly formed or extruded, or rolled at edges of holes after annealing shall be additionally painted in the affected area if the process damages the zinc coating.

8.5.10 If flaking or cracking of the zinc coating at the outside radius of the bent or formed section is visible at 25 power magnification, the zinc coating is considered to be damaged. Sheared or cut edges and punched holes are not required to be additionally protected.

8.5.11 If the hot-dipped, mill-galvanized G90 coating on drawn, formed, extruded, or rolled sheet steel becomes damaged during handling or fabrication to the extent that the base metal is exposed, at least one coat of an organic finish of the epoxy or alkyd-resin type, or other outdoor paint, shall be applied after fabrication to the entire area where the damage to the coating occurred.

Exception: Exposed base metal of an uncoated cross-section surface at a cut edge or at a drilled opening is acceptable.

8.5.12 Sheet steel that employs a hot-dipped, mill-galvanized G90 coating that is drawn, formed, extruded, or rolled shall be additionally painted with one coat of an organic finish of the epoxy or alkyd-resin type or other outdoor paint in the areas that are affected by a process that damages the coating as determined by the requirement in [8.5.10](#).

8.5.13 Aluminum in an enclosure shall not be in contact with concrete. A metallic or nonmetallic coating used to separate aluminum from a concrete pad shall be tested to demonstrate resistance to corrosion equivalent to that of galvanized (G90 zinc coating) steel 0.061 inch (1.55 mm) thick.

8.5.14 In an enclosure marked Type 3R, guides for latch rods shall be located so that the latch rods will not be deformed by a direct pull of 200 pounds (890 N) applied to the door handle for 1 minute in the direction that the door will open.

8.5A Type 3RX enclosures

8.5A.1 A unit substation enclosure marked as Type 3RX shall be fabricated of:

- a) American Iron and Steel Institute (AISI) Type 304 Stainless steel;
- b) Polymeric materials; or
- c) Materials that comply with:
 - 1) [8.5.8](#) and
 - 2) The requirements of the Corrosion Resistance Test, Section 39 of the Standard for Enclosures for Electrical Equipment, UL 50

Other than the corrosion resistance requirements, a unit substation enclosure marked as Type 3RX shall comply with the requirements of Type 3R Enclosures, Section [8.5](#).

8.6 Components mounted on doors and covers

8.6.1 An electrical component shall be mounted independent of a door or removable cover.

Exception No. 1: A meter base may be mounted on a door as covered in [8.6.5](#).

Exception No. 2: Metering and monitoring equipment provided by the serving agency (electric utility or power company) may be mounted on a door or cover.

Exception No. 3: A component may be mounted on a hinged door if it complies with [8.6.2](#) – [8.6.4](#), and [8.6.6](#).

Exception No. 4: A meter, selector switch, pilot light, or push button station may be mounted on an unhinged cover not exceeding 12 inches (305 mm) high nor 24 inches (610 mm) wide provided a fuse is not located behind the cover.

8.6.2 With regard to Exception No. 3 to [8.6.1](#), a wire subject to flexing when the cover is opened shall:

- a) Be stranded and if larger than 6 AWG (13.3 mm²) shall have copper conductors of the extra flexible type;