National Fire Protection Association

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TO: NEC® Code-Making Panel 1

FROM: Kimberly Shea, Administrator, Technical Projects

DATE: January 25, 2016

SUBJECT: NFPA 70 Second Draft TC Ballot Final Results (A2016)

According to the final ballot results, all ballot items received the necessary affirmative votes to pass ballot.

The attached report shows the number of affirmative, negative and abstaining votes as well as the explanation of the vote for **each** revision.

To pass ballot, **each** revision requires: (1) a simple majority of those eligible to vote and (2) an affirmative vote of $^{2}/_{3}$ of ballots returned. See Sections 3.3.4.3 (c) and 4.3.10.1 of the ***Regulations Governing the Development of NFPA Standards***.

Second Revision No. 6-NFPA 70-2015 [Definition: Accessible, Readily (Readily Accessible).]

Accessible, Readily (Readily Accessible).

Capable of being ~~easily~~ reached quickly for operation, ~~service~~ renewal , or inspections without requiring those to whom ready access is requisite to actions such as to ~~the~~ use ~~of~~ tools (other than keys) , ~~the need~~ to climb over or under, ~~the need~~ to remove obstacles, or ~~the use of portable laddersor similar equipment~~ to resort to portable ladders, and so forth .

Informational Note: Use of keys is a common practice under controlled or supervised conditions and a common alternative to the ready access requirements under such supervised conditions as provided elsewhere in the NEC.

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Nov 12 18:01:10 EST 2015

Committee Statement

Committee Statement: The Panel considered the relevant points made in Public Comments 1731, 1039, 199, and 300 and maintains that the definition of Accessible, Readily in the 2014 NEC is appropriate with minor revisions. The new words “other than keys” addresses the concerns about use of keys expressed in Public Comments 1731 and 199. CMP-1 is maintaining the text ”to whom ready access is prerequisite” addressing concerns identified in Public Comments 1039, 1731, and 300. CMP-1 affirms that the definition as revised provides consistent and appropriate application of requirements that use the term. The new informational note provides users with clarification about how to treat supervised or controlled conditions that exist in the NEC that modify a general requirement by specific conditions that recognize controlled access, often gained by use of keys.

Response Message:

Public Comment No. 300-NFPA 70-2015 [Definition: Accessible, Readily (Readily Accessible).]

Public Comment No. 199-NFPA 70-2015 [Definition: Accessible, Readily (Readily Accessible).]

Public Comment No. 1039-NFPA 70-2015 [Definition: Accessible, Readily (Readily Accessible).]

Public Comment No. 1731-NFPA 70-2015 [Definition: Accessible, Readily (Readily Accessible).]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
0 Not Returned
11 Affirmative All

0 Affirmative with Comments

1 Negative with Comments

0 Abstention

Affirmative All

Anthony, Michael A.

Barrios, Louis A.

Boyce, Kenneth P.

Deike, Jr., Roland E.

Gallo, Ernest J.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sayler, Kent A.

Sood, Mohinder P.

Negative with Comment

Hickman, Palmer L.

The Correlating Committee should review this action as it appears to change the definition in an unintended manner. When comparing "Capable of being reached quickly for operation, renewal, or inspections without requiring those to whom ready access is requisite to actions such as…" with "Capable of being reached quickly for operation, renewal, or inspections without requiring actions such as…" it would appear that the Panel 1 action in this FR adding the words "to whom ready access is requisite" allows something that is required to be readily accessible to be accessed by anyone NOT requiring ready access to do so by using a tool, climbing over or under, resort to a portable ladder, or remove obstacles and it would be considered readily accessible even when accessing it in this manner. I do not believe it was the intent of Panel 1 that something be considered readily accessible by definition whereby someone not requiring ready access can access it by those means.

Second Revision No. 7-NFPA 70-2015 [Definition: Equipment.]

Equipment.

A general term, including fittings, devices, appliances, luminaires, apparatus, machinery, and the like used as a part of, or in connection with, an electrical installation.

~~Informational Note: In addition to the items listed in the definition, equipment also describes air conditioning units, power outlets (such as recreational vehicle site supply equipment or marine power outlets), transformers, and other enclosures that contain electrical products.~~

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Nov 12 19:09:03 EST 2015

Committee Statement

Committee Statement: CMP-1 accepts the recommendation in Public Comment 1520 thereby removing the informational note that resulted from FR 10.

Response Message:

Public Comment No. 1520-NFPA 70-2015 [Definition: Equipment.]

Ballot Results

This item has passed ballot

12 Eligible Voters
0 Not Returned
12 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Affirmative All

Anthony, Michael A.
Barrios, Louis A.
Boyce, Kenneth P.
Deike, Jr., Roland E.
Gallo, Ernest J.
Hickman, Palmer L.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sayler, Kent A.

Sood, Mohinder P.

Second Revision No. 24-NFPA 70-2015 [Definition: Voltage, Nominal.]

Voltage, Nominal.

A nominal value assigned to a circuit or system for the purpose of conveniently designating its voltage class (e.g., 120/240 volts, 480Y/277 volts, 600 volts).

Informational Note No. 1: The actual voltage at which a circuit operates can vary from the nominal within a range that permits satisfactory operation of equipment.

Informational Note No. 2: See ANSI C84.1-2011, *Voltage Ratings for Electric Power Systems and Equipment (60 Hz).*

Informational Note No. 3: Certain battery units may be considered to be rated at nominal 48 volts dc, but may have a charging float voltage up to 58 volts. In dc applications, 60 volts is used to cover the entire range of float voltages.

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 13 20:40:44 EST 2015

Committee Statement

Committee Statement: CMP 1 addressed the content for PC 1063 that was applicable to Article 100 and 110 and understands there is more content to PC 1063 that will be addressed by other panels. The informational note has been added to improve clarity. No change was made to Section 110.27(A) since the first draft language made the change to 50 to 1000 volts, nominal. CMP 1 requests that the Correlating Committee correlate this action.

Response Message:

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
0 Not Returned
11 Affirmative All
0 Affirmative with Comments
1 Negative with Comments
0 Abstention

Affirmative All

Anthony, Michael A.

Boyce, Kenneth P.

Deike, Jr., Roland E.

Gallo, Ernest J.

Hickman, Palmer L.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sayler, Kent A.

Sood, Mohinder P.

Negative with Comment

Barrios, Louis A.

The proposed Informational Note No. 3, and in particular the second sentence, potentially introduces more confusion than clarity. It is not entirely clear what is intended by the second sentence.

Second Revision No. 2-NFPA 70-2015 [Section No. 110.3]

110.3 Examination, Identification, Installation, ~~and~~ Use, and Listing (Product Certification) of Equipment.

(A) Examination.

In judging equipment, considerations such as the following shall be evaluated:

(1) Suitability for installation and use in conformity with the provisions of this *Code*

Informational Note No. 1: Equipment may be new, reconditioned, refurbished, or remanufactured.

Informational Note No. 2: Suitability of equipment use may be identified by a description marked on or provided with a product to identify the suitability of the product for a specific purpose, environment, or application. Special conditions of use or other limitations and other pertinent information may be marked on the equipment, included in the product instructions, or included in the appropriate listing and labeling information. Suitability of equipment may be evidenced by listing or labeling.

(2) Mechanical strength and durability, including, for parts designed to enclose and protect other equipment, the adequacy of the protection thus provided

(3) Wire-bending and connection space

(4) Electrical insulation

(5) Heating effects under normal conditions of use and also under abnormal conditions likely to arise in service

(6) Arcing effects

(7) Classification by type, size, voltage, current capacity, and specific use

(8) Other factors that contribute to the practical safeguarding of persons using or likely to come in contact with the equipment

(B) Installation and Use.

Listed or labeled equipment shall be installed and used in accordance with any instructions included in the listing or labeling.

(C) Listing.

Product testing, evaluation, and listing (product certification) shall be performed by recognized qualified electrical testing laboratories and shall be in accordance with applicable product standards recognized as achieving equivalent and effective safety for equipment installed to comply with this *Code* .

Informational Note: The Occupational Safety and Health Administration (OSHA) recognizes qualified electrical testing laboratories that perform evaluations, testing, and certification of certain products to ensure that they meet the requirements of both the construction and general industry OSHA electrical standards. If the listing (product certification) is done under a qualified electrical testing laboratory program, this listing mark signifies that the tested and certified product complies with the requirements of one or more appropriate product safety test standards.

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:

Zip:

Submittal Date: Thu Nov 12 13:25:18 EST 2015

Committee Statement

Committee Statement: In exercising their approving authority in 90.4, the AHJ depends on listing and product certification as the most common basis for approvals of installations in accordance with the National Electrical Code. The additional list item (C) Listing provides clarification about requirements for listing (product certification) being accomplished by qualified electrical testing laboratories and that the product testing and certification process is in accordance with appropriate product standards. The new informational note provides users with information about a list of nationally recognized testing laboratories that meet or exceed OSHA criteria. Product listing (certification) is the most common basis for AHJ approvals and the product listing must meet or exceed the minimum product safety requirements developed by recognized standards development organizations.

With regard to PC 814, Panel 1 did not agree that Informational Note 1 should be deleted. The committee reaffirms the need for the new Informational Note No. 1 following 110.3(A) to clarify that the general term equipment can apply to new equipment and also used, refurbished, or reconditioned, remanufactured equipment.

With regard to PC 949, the intent of the submitter is met with the acceptance of SR 2.

Response Message:

Public Comment No. 814-NFPA 70-2015 [Section No. 110.3]

Public Comment No. 938-NFPA 70-2015 [Section No. 110.3]

Public Comment No. 949-NFPA 70-2015 [New Section after 110.3(B)]

Ballot Results

This item has passed ballot

12 Eligible Voters
0 Not Returned
10 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
0 Abstention

Affirmative All

Anthony, Michael A.

Barrios, Louis A.

Boyce, Kenneth P.

Deike, Jr., Roland E.

Gallo, Ernest J.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sood, Mohinder P.

Affirmative with Comment

Hickman, Palmer L.

We ask the Correlating Committee to review whether "(Product Certification)" where added in this FR is new information and whether it is intended to infer that listing is synonymous with "product certification."

Sayler, Kent A.

The informational note should be removed as it can be interpreted as stating that OSHA is the only organization capable of recognizing testing laboratories. The NEC is an international Code and may be used where OSHA regulations do not apply

Second Revision No. 3-NFPA 70-2015 [Section No. 110.12 [Excluding any Sub-Sections]]

Electrical equipment shall be installed in a neat and workmanlike manner.

Informational Note: Accepted industry practices are described in ANSI/NECA ~~1-2010~~ 1-2015 , *Standard for Good Workmanship in Electrical Construction,* and other ANSI-approved installation standards.

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Nov 12 14:51:16 EST 2015

Committee Statement

Committee Statement: The 2015 edition has been reaffirmed by ANSI.
Response Message:

Public Comment No. 495-NFPA 70-2015 [Section No. 110.12 [Excluding any Sub-Sections]]

Ballot Results

This item has passed ballot

12 Eligible Voters
0 Not Returned
12 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Affirmative All

Anthony, Michael A.
Barrios, Louis A.
Boyce, Kenneth P.
Deike, Jr., Roland E.
Gallo, Ernest J.
Hickman, Palmer L.
Hittinger, David L.
Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sayler, Kent A.

Sood, Mohinder P.

Second Revision No. 11-NFPA 70-2015 [Section No. 110.16(B)]

(B) Service Equipment.

In other than dwelling units, in addition to the requirements in (A), a permanent label shall be field or factory applied to service equipment rated 1200 amps or more. The label shall meet the requirements of 110.21(B) and contain the following information:

(1) Nominal system voltage

(1) ~~Arc flash boundary~~

(1) ~~At least one of the following:~~

(0) ~~Available incident energy and the corresponding working distance~~

(0) ~~Minimum arc rating of clothing~~

(0) ~~Site-specific level of PPE~~

(2) Available fault current at the service overcurrent protective devices

(3) The clearing time of service overcurrent protective devices based on the available fault current at the service equipment

(4) The date the label was applied

Exception: Service equipment labeling shall not be required if an arc flash label is applied in accordance with acceptable industry practice.

Informational Note No. 1: *NFPA 70E* ~~2012~~ -2015 , *Standard for Electrical Safety in the Workplace*, provides guidance, such as determining severity of potential exposure, planning safe work practices, arc flash labeling, and selecting personal protective equipment.

Informational Note No. 2: ANSI Z535.4 ~~1998~~ 4-2011 , *Product Safety Signs and Labels*, provides guidelines for the design of safety signs and labels for application to products.

Informational Note No. 3: Acceptable industry practices for equipment labeling are described in *NFPA 70E* -2015 *Standard for Electrical Safety in the Workplace* . This standard provides specific criteria for developing arc-flash labels for equipment that provides nominal system voltage, incident energy levels, arc-flash boundaries, minimum required levels of personal protective equipment, and so forth.

Supplemental Information

File Name	Description
SR-11_110.16_B_Panel_1.docx	For staff use

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 13 16:45:05 EST 2015

Committee Statement

Committee Statement: This Second Revision makes installation-related revisions and clarifications to FR55 as suggested in First Revision Public Input, First Revisions and ballot comments.

The addition of available fault current and clearing time has been added. This, like all revisions in this SR, does not represent new material. FR55 contained a requirement to label incident-energy which is based upon current and time.

Changing from incident energy to available fault current and clearing time simplifies the installation for the installer. In order to get an incident energy value both the available fault current and clearing time are determined and then a calculation is performed. It is simply the requirement to calculate incident energy with known values of current and time that is removed, thereby removing from the installer the requirement to calculate.

The label is permitted to be either field or factory applied.

Clarifying language has also been added to recognize that (B) only applies to “other than dwelling units.”

Language was added for the label to contain the date the label was applied.

An equipment rating was established to limit the installations in which this requirement would apply. FR55 would have applied at any equipment rating, including those below 1,200 amperes. The addition of the 1200-amp threshold is not new material as it does not increase the application of this requirement, it significantly reduces the number of installations in which it would apply.

Informational Note No. 3 was added to provide guidance on acceptable industry practices for developing arc-flash labels, incident energy levels, arc-flash boundaries, and minimum required levels of personal protective equipment and so forth.

Dates were edited to reflect current editions.

Response Message:

Public Comment No. 1747-NFPA 70-2015 [Section No. 110.16]

Public Comment No. 327-NFPA 70-2015 [Section No. 110.16(B)]

Public Comment No. 86-NFPA 70-2015 [Section No. 110.16(B)]

Public Comment No. 356-NFPA 70-2015 [Section No. 110.16(B)]

Public Comment No. 266-NFPA 70-2015 [Section No. 110.16(B)]

Public Comment No. 951-NFPA 70-2015 [Section No. 110.16(B)]

Public Comment No. 1058-NFPA 70-2015 [Section No. 110.16(B)]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
0 Not Returned
10 Affirmative All
1 Affirmative with Comments

1 Negative with Comments

0 Abstention

Affirmative All

Anthony, Michael A.

Boyce, Kenneth P.

Deike, Jr., Roland E.

Gallo, Ernest J.

Hickman, Palmer L.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sood, Mohinder P.

Affirmative with Comment

Barrios, Louis A.

While we support the effort by CMP1 to establish a compromise position, there are a number of issues with the resultant change. 1. The proposed change creates labeling requirements that would be substantially different than NFPA 70E. While the new Exception in 110.16(B) helps to alleviate this issue, having significantly different information specified by the standards is not good for the industry. 2. The "available fault current" was selected for 110.16(B)(2) because CMP1 suggests this information is already available and required for service equipment in NEC 110.24(A). However, 110.24(A) requires field marking with the "maximum available fault current". Is the intent that the "available fault current" in 110.16(B)(2) is the same as the "maximum fault current" in 110.24(A). If the intent is that these are the same currents, the wording needs to be aligned between the two sections. Also the Informational Note in 110.24(A) clearly indicates that "maximum available fault current" is related to the proper selection of equipment and its short circuit ratings. Depending on system configuration, impedance and protection techniques used, the minimum (and not the maximum) level of fault current may result in the highest level of incident energy. Therefore, requiring the label to include "available fault current", which may mean the maximum current or some other current that is not clearly identified, may not result in the appropriate levels of PPE.

Negative with Comment

Sayler, Kent A.

Labeling on manufactured equipment is specified in applicable product standards. Introducing the factory to the labeling process is impractical because they may not have information on the end use devices and settings. Providing clearing time on a label is not currently required by other applicable industrial practices because overcurrent devices may have variable settings that can be modified rendering the label incorrect.

Second Revision No. 9-NFPA 70-2015 [Section No. 110.21]

110.21 Marking.

(A) Equipment Markings.

(1)

The manufacturer's name, trademark, or other descriptive marking by which the organization responsible for the product can be identified shall be placed on all electrical equipment. Other markings that indicate voltage, current, wattage, or other ratings shall be provided as specified elsewhere in this *Code*. The marking or label shall be of sufficient durability to withstand the environment involved.

(2)

Reconditioned equipment shall be marked with the name, trademark, or other descriptive marking by which the organization responsible for reconditioning the electrical equipment can be identified, along with the date of the reconditioning.

Reconditioned equipment shall be identified as "reconditioned" and approval of the reconditioned equipment shall not be based solely on the equipment's original listing.

Exception: In industrial occupancies, where conditions of maintenance and supervision ensure that only qualified persons service the equipment, the markings indicated in 110.21(A)(2) are not required.

Informational Note: Industry standards are available for application of reconditioned and refurbished equipment. Normal servicing of equipment that remains within a facility should not be considered reconditioning or refurbishing.

(B) Field-Applied Hazard Markings.

Where caution, warning, or danger signs or labels are required by this *Code*, the labels shall meet the following requirements:

(1) The marking shall warn of the hazards using effective words, colors, symbols, or any combination thereof.

Informational Note: ANSI Z535.4-2011, *Product Safety Signs and Labels*, provides guidelines for suitable font sizes, words, colors, symbols, and location requirements for labels.

(2) The label shall be permanently affixed to the equipment or wiring method and shall not be handwritten.

Exception: Portions of labels or markings that are variable, or that could be subject to changes, shall be permitted to be handwritten and shall be legible.

(3) The label shall be of sufficient durability to withstand the environment involved.

Informational Note: ANSI Z535.4-2011, *Product Safety Signs and Labels*, provides guidelines for the design and durability of safety signs and labels for application to electrical equipment.

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 13 13:34:34 EST 2015

Committee Statement

Committee Statement: SR 9 incorporates suggestions from PCs 582, 707 and 1550.

This provides additional guidance for reconditioned equipment. When a listed product is reconditioned (such as being rebuilt, refurbished or remanufactured) after it leaves a factory where the listing mark was applied, the organization responsible for the testing and inspection (as detailed in NEC Section 90.7) does not know if the product continues to meet the applicable certification requirements unless the reconditioning has been specifically evaluated by an organization properly equipped and qualified for making such determinations. Therefore, the AHJ should not rely solely on the equipment's original listing mark as the basis of approval of the "reconditioned equipment."

Industrial facilities may regularly maintain and refurbish equipment as part of a regular maintenance cycle for safety and reliability. Providing company name and trademark labels on equipment that is regularly maintained and/or refurbished by the owner/operator as part of a regular equipment maintenance program does not enhance the traceability of the work or improve the safety of the installation.

The language is added in the informational note to make it clear that normal service work such as replacing a fuse, circuit breaker or other routine work is generally not considered refurbishing or reconditioning of equipment.

Response Message:

Public Comment No. 582-NFPA 70-2015 [Section No. 110.21(A)(2)]

Public Comment No. 707-NFPA 70-2015 [Section No. 110.21(A)(2)]

Public Comment No. 1550-NFPA 70-2015 [Section No. 110.21]

Ballot Results

This item has passed ballot

12 Eligible Voters
0 Not Returned
10 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
0 Abstention

Affirmative All

Anthony, Michael A.

Barrios, Louis A.

Boyce, Kenneth P.

Deike, Jr., Roland E.

Gallo, Ernest J.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sayler, Kent A.

Affirmative with Comment

Hickman, Palmer L.

In the new sentence "Normal servicing of equipment that remains within a facility should not be considered reconditioning or refurbishing.", we suggest the intent of "within a facility" may be misleading, misunderstood and misapplied. We suggest the wording should be revised as follows: "Normal servicing of equipment that remains within the same facility should not be considered reconditioning or refurbishing." For example, something serviced "in a facility" in another country and installed "in a facility" in the United States where the equipment was removed to be serviced could meet the informational note as accepted by Panel 1 in this FR.

Sood, Mohinder P.

New sentence uses the word "reconditioned" three times. Recommend replacing this word in the second line of the sentence to "this" so that it will read as: Reconditioned equipment shall be identified as "reconditioned" and approval of this equipment shall not be based solely on the equipment's original listing.

Second Revision No. 10-NFPA 70-2015 [Section No. 110.24]

110.24 Available Fault Current.

(A) Field Marking.

Service equipment at other than dwelling units shall be legibly marked in the field with the maximum available fault current. The field marking(s) shall include the date the fault-current calculation was performed and be of sufficient durability to withstand the environment involved. The calculation shall be documented and made available to those authorized to design, install, inspect, maintain, ~~and~~ or operate the system.

Informational Note: The available fault-current marking(s) addressed in 110.24 is related to required short-circuit current ratings of equipment. *NFPA 70E* ~~2012~~ -2015 , *Standard for Electrical Safety in the Workplace,* provides assistance in determining the severity of potential exposure, planning safe work practices, and selecting personal protective equipment.

(B) Modifications.

When modifications to the electrical installation occur that affect the maximum available fault current at the service, the maximum available fault current shall be verified or recalculated as necessary to ensure the service equipment ratings are sufficient for the maximum available fault current at the line terminals of the equipment. The required field marking(s) in 110.24(A) shall be adjusted to reflect the new level of maximum available fault current.

Exception: The field marking requirements in 110.24(A) and 110.24(B) shall not be required in industrial installations where conditions of maintenance and supervision ensure that only qualified persons service the equipment.

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 13 14:36:04 EST 2015

Committee Statement

Committee Statement: CMP-1 changed the word "and" to "or" to indicate that the calculation should be available to staff that do any of the identified actions. The date for 70E was changed to reflect the current edition.
Response Message:

Public Comment No. 496-NFPA 70-2015 [Section No. 110.24(A)]

Public Comment No. 85-NFPA 70-2015 [Section No. 110.24(A)]

Public Comment No. 1748-NFPA 70-2015 [Section No. 110.24]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters

0 Not Returned
12 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Affirmative All

Anthony, Michael A.
Barrios, Louis A.
Boyce, Kenneth P.
Deike, Jr., Roland E.
Gallo, Ernest J.
Hickman, Palmer L.
Hittinger, David L.
Iverson, Donald R.
Pierce, James F.
Sassaman, Harry J.
Sayler, Kent A.
Sood, Mohinder P.

Second Revision No. 12-NFPA 70-2015 [Section No. 110.26(A)(4)]

(4) Limited Access.

Where equipment operating at 1000 volts, nominal, or less to ground and likely to require examination, adjustment, servicing, or maintenance while energized is required by installation instructions or function to be located in a space with limited access, all of the following shall apply:

(a) Where equipment is installed above a lay-in ceiling, there shall be an opening not smaller than 559 mm × 559 mm (22 in. × 22 in.), or in a crawl space, there shall be an accessible opening not smaller than 559 mm × 762 mm (22 in. × 30 in.).

(b) The width of the working space shall be the width of the equipment enclosure or a minimum of 762 mm (30 in.), whichever is greater.

(c) All enclosure doors or hinged panels shall be capable of opening a minimum of 90 degrees.

(d) The space in front of the enclosure shall comply with the depth requirements of Table 110.26(A)(1). The maximum height of the working space shall be the height necessary to install the equipment in the limited space. A horizontal ceiling structural member or access panel shall be permitted in this space.

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 13 17:58:31 EST 2015

Committee Statement

Committee Statement: The language in the first revision does not indicate why such equipment would be in a space with limited access that does not comply with other Code requirements for adequate working space. The added wording is intended to clarify that the equipment is required to be installed in an area with limited access in order to serve the function for which it is intended or to comply with manufacturer's installation instructions.

Response Message:

Public Comment No. 708-NFPA 70-2015 [Section No. 110.26(A)(4)]

Ballot Results

This item has passed ballot

12 Eligible Voters
0 Not Returned
10 Affirmative All
1 Affirmative with Comments
1 Negative with Comments

0 Abstention

Affirmative All

Anthony, Michael A.

Boyce, Kenneth P.

Deike, Jr., Roland E.

Gallo, Ernest J.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sayler, Kent A.

Sood, Mohinder P.

Affirmative with Comment

Barrios, Louis A.

The additional clause has made this a very cumbersome sentence that is hopefully simplified during the next Code cycle.

Negative with Comment

Hickman, Palmer L.

We cannot think of an instance where installation in a space with limited would be required by installation instructions. In addition, we are concerned that "or function" is vague and unenforceable.

Second Revision No. 13-NFPA 70-2015 [Section No. 110.26(B)]

(B) Clear Spaces.

Working space required by this section shall not be used for storage. When normally enclosed live parts are exposed for inspection or servicing, the working space, if in a passageway or general open space, shall be suitably guarded. ~~Permanent and conspicuous signs shall be provided. The sign shall meet the requirements in~~ ~~110.21(B)~~ ~~and shall read as follows:~~

~~NOTICE~~

~~ELECTRICAL EQUIPMENT WORKING SPACE AND~~

~~EGRESS AREA — NO OBSTRUCTION OR STORAGE ALLOWED~~

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 13 18:04:23 EST 2015

Committee Statement

Committee Statement: The requirement in the First Draft for signage to be installed in locations that are dedicated to clear space working areas has not been shown to be an effective means of ensuring compliance with the Section. The code does not prohibit the installation of signage at the building owner's option. It is essential that the requirement for clear space remain in the Code.

Response Message:

Public Comment No. 1568-NFPA 70-2015 [Section No. 110.26(B)]

Public Comment No. 768-NFPA 70-2015 [Section No. 110.26(B)]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
0 Not Returned
11 Affirmative All
0 Affirmative with Comments
1 Negative with Comments
0 Abstention

Affirmative All

Anthony, Michael A.

Barrios, Louis A.

Boyce, Kenneth P.

Deike, Jr., Roland E.

Gallo, Ernest J.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sayler, Kent A.

Sood, Mohinder P.

Negative with Comment

Hickman, Palmer L.

We conclude that the text struck in this SR would have provided for a safer installation. In addition, the Committee Statement indicates that this signage requirement "...has not been shown to be an effective means..." We suggest that this signage has not been in the NEC and therefore Panel 1 could not likely have come to this conclusion based on experience. In fact, this signage has not proven to be ineffective either.

Second Revision No. 14-NFPA 70-2015 [Section No. 110.26(E)(2)]

(2) Outdoor.

Outdoor installations shall comply with 110.26(E)(2)(a) through (c).

(a) *Installation Requirements.* Outdoor electrical equipment shall be the following:

(1) Installed in ~~suitable~~ identified enclosures

(2) Protected from accidental contact by unauthorized personnel~~,~~ or by vehicular traffic

(3) Protected from accidental spillage or leakage from piping systems

(b) *Work Space.* The working clearance space shall include the zone described in 110.26(A). No architectural appurtenance or other equipment shall be located in this zone.

Exception: Structural overhangs or roof extensions shall be permitted in this zone.

(c) *Dedicated Equipment Space.* The space equal to the width and depth of the equipment, and extending from grade to a height of 1.8 m (6 ft) above the equipment, shall be dedicated to the electrical installation. No piping or other equipment foreign to the electrical installation shall be located in this zone.

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 13 18:23:13 EST 2015

Committee Statement

Committee Statement: The vague and possibly unenforceable term “suitable” is replaced with the defined and enforceable term “identified” to comply with the NEC Style Manual and to add consistency throughout the code. Outdoor use enclosures are tested for exclusion of rain, and are inherently protected against accidental spillage or leakage from piping systems. Exclusion of architectural appurtenances is covered in the Exception.

Response Message:

Public Comment No. 1469-NFPA 70-2015 [Section No. 110.26(E)(2)]

Public Comment No. 1749-NFPA 70-2015 [Section No. 110.26(E)(2)]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
0 Not Returned
12 Affirmative All
0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Affirmative All

Anthony, Michael A.

Barrios, Louis A.

Boyce, Kenneth P.

Deike, Jr., Roland E.

Gallo, Ernest J.

Hickman, Palmer L.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sayler, Kent A.

Sood, Mohinder P.

Second Revision No. 15-NFPA 70-2015 [Section No. 110.26(F)]

(F) Locked Electrical Equipment Rooms or Enclosures.

Electrical equipment rooms or enclosures housing electrical apparatus that are controlled by a lock(s) shall be considered accessible to qualified persons.

~~**(1)**~~

~~Electrical equipment rooms or enclosures housing electrical apparatus that are controlled by a lock(s) shall be considered accessible to qualified persons.~~

~~**(2)**~~

~~The entrance to all buildings, vaults, rooms, or enclosures containing exposed live parts or exposed conductors operating at 601 to 1000 volts, nominal, shall be kept locked unless such entrances are under the observation of a qualified person at all times. Permanent and conspicuous danger signs shall be provided. The danger sign shall meet the requirements in 110.21(B) and shall read as follows:~~

~~DANGER — HIGH VOLTAGE — KEEP OUT~~

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 13 18:27:27 EST 2015

Committee Statement

Committee Statement: The first revision added unnecessary requirements for systems operating under 1000 volts, nominal. Creating similar requirements to 110.34(C) for an intermediate voltage level of 601-1000V may create confusion.

Response Message:

Public Comment No. 812-NFPA 70-2015 [Section No. 110.26(F)]

Public Comment No. 1575-NFPA 70-2015 [Section No. 110.26(F)]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
0 Not Returned
12 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Affirmative All

Anthony, Michael A.

Barrios, Louis A.

Boyce, Kenneth P.

Deike, Jr., Roland E.

Gallo, Ernest J.

Hickman, Palmer L.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sayler, Kent A.

Sood, Mohinder P.

Second Revision No. 16-NFPA 70-2015 [Section No. 110.27(A)]

(A) Live Parts Guarded Against Accidental Contact.

Except as elsewhere required or permitted by this *Code,* live parts of electrical equipment operating at 50 to 1000 volts, nominal shall be guarded against accidental contact by approved enclosures or by any of the following means:

(1) By location in a room, vault, or similar enclosure that is accessible only to qualified persons.

(2) By permanent, substantial partitions or screens arranged so that only qualified persons have access to the space within reach of the live parts. Any openings in such partitions or screens shall be sized and located so that persons are not likely to come into accidental contact with the live parts or to bring conducting objects into contact with them.

(2) ~~By insulating covers over exposed conductive parts, removable only by qualified persons having access to the space, such that it is possible to expose only one phase or polarity at a time.~~

(3) By location on a balcony, gallery, or platform elevated and arranged so as to exclude unqualified persons.

(4) By elevation above the floor or other working surface as follows:

a. A minimum of 2.5 m (8 ft) for 50 volts to 300 volts between ungrounded conductors

b. A minimum of 2.6 m (8 ft 6 in.) for 301 volts to 600 volts between ungrounded conductors

c. A minimum of 2.62 m (8 ft 7 in.) for 601 volts to 1000 volts between ungrounded conductors

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 13 18:32:39 EST 2015

Committee Statement

Committee Statement: The requirement in list item (3) is adequately covered by the other parts of this section. Protection of specific equipment is identified by other sections of the code and the applicable product standards. SR 16 removes the item 3 that was added in FR 48.

Response Message:

Public Comment No. 709-NFPA 70-2015 [Section No. 110.27(A)]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
0 Not Returned
12 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Affirmative All

Anthony, Michael A.

Barrios, Louis A.

Boyce, Kenneth P.

Deike, Jr., Roland E.

Gallo, Ernest J.

Hickman, Palmer L.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sayler, Kent A.

Sood, Mohinder P.

Second Revision No. 17-NFPA 70-2015 [Section No. 110.28]

110.28 Enclosure Types.

Enclosures (other than surrounding fences or walls covered in 110.31) of switchboards, switchgear, panelboards, industrial control panels, motor control centers, meter sockets, enclosed switches, transfer switches, power outlets, circuit breakers, adjustable-speed drive systems, pullout switches, portable power distribution equipment, termination boxes, general-purpose transformers, fire pump controllers, fire pump motors, and motor controllers, rated not over 1000 volts nominal and intended for such locations, shall be marked with an enclosure-type number as shown in Table 110.28.

Table 110.28 shall be used for selecting these enclosures for use in specific locations other than hazardous (classified) locations. The enclosures are not intended to protect against conditions such as condensation, icing, corrosion, or contamination that may occur within the enclosure or enter via the conduit or unsealed openings.

Table 110.28 Enclosure Selection

Provides a Degree of Protection Against the Following Environmental Conditions	For Outdoor Use									
	Enclosure Type Number									
	3	3R	3S	3X	3RX	3SX	4	4X	6	6P
Incidental contact with the enclosed equipment	X	X	X	X	X	X	X	X	X	X
Rain, snow, and sleet	X	X	X	X	X	X	X	X	X	X
Sleet*	—	—	X	—	—	X	—	—	—	—
Windblown dust	X	—	X	X	—	X	X	X	X	X
Hosedown	—	—	—	—	—	—	X	X	X	X
Corrosive agents	—	—	—	X	X	X	—	X	—	X
Temporary submersion	—	—	—	—	—	—	—	—	X	X
Prolonged submersion	—	—	—	—	—	—	—	—	—	X

Provides a Degree of Protection Against the Following Environmental Conditions	For Indoor Use									
	Enclosure Type Number									
	1	2	4	4X	5	6	6P	12	12K	13
Incidental contact with the enclosed equipment	X	X	X	X	X	X	X	X	X	X
Falling dirt	X	X	X	X	X	X	X	X	X	X
Falling liquids and light splashing	—	X	X	X	X	X	X	X	X	X
Circulating dust, lint, fibers, and flyings	—	—	X	X	—	X	X	X	X	X
Settling airborne dust, lint, fibers, and flyings	—	—	X	X	X	X	X	X	X	X
Hosedown and splashing water	—	—	X	X	—	X	X	—	—	—
Oil and coolant seepage	—	—	—	—	—	—	—	X	X	X
Oil or coolant spraying and splashing	—	—	—	—	—	—	—	—	—	X
Corrosive agents	—	—	—	X	—	—	X	—	—	—
Temporary submersion	—	—	—	—	—	X	X	—	—	—
Prolonged submersion	—	—	—	—	—	—	X	—	—	—

*Mechanism shall be operable when ice covered.

Informational Note No. 1: The term *raintight* is typically used in conjunction with Enclosure Types 3, 3S, 3SX, 3X, 4, 4X, 6, and 6P. The term *rainproof* is typically used in conjunction with Enclosure Types 3R and 3RX. The term *watertight* is typically used in conjunction with Enclosure Types 4, 4X, 6, and 6P. The term *driptight* is typically used in conjunction with Enclosure Types 2, 5, 12, 12K, and 13. The term *dusttight* is typically used in conjunction with Enclosure Types 3, 3S, 3SX, 3X, 5, 12, 12K, and 13.

Informational Note No. 2: Ingress protection (IP) ratings may be found in ~~ANSI/NEMA~~ ANSI/IEC 60529, *Degrees of Protection Provided by Enclosures*. IP ratings are not a substitute for Enclosure Type ratings.

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 13 18:38:15 EST 2015

Committee Statement

Committee Statement: The correct standard designation is ANSI/IEC 60529 and this text has been changed accordingly.
Response Message:

Public Comment No. 92-NFPA 70-2015 [Section No. 110.28]

Ballot Results

This item has passed ballot

12 Eligible Voters
0 Not Returned
12 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Affirmative All

Anthony, Michael A.
Barrios, Louis A.
Boyce, Kenneth P.
Deike, Jr., Roland E.
Gallo, Ernest J.
Hickman, Palmer L.
Hittinger, David L.
Iverson, Donald R.
Pierce, James F.
Sassaman, Harry J.
Sayler, Kent A.
Sood, Mohinder P.

Second Revision No. 19-NFPA 70-2015 [Section No. 110.31 [Excluding any Sub-Sections]]

Electrical installations in a vault, room, or closet or in an area surrounded by a wall, screen, or fence, access to which is controlled by a lock(s) or other approved means, shall be considered to be accessible to qualified persons only. The type of enclosure used in a given case shall be designed and constructed according to the nature and degree of the hazard(s) associated with the installation.

For installations other than equipment as described in 110.31(D), a wall, screen, or fence shall be used to enclose an outdoor electrical installation to deter access by persons who are not qualified. A fence shall not be less than 2.1 m (7 ft) in height or a combination of 1.8 m (6 ft) or more of fence fabric and a 300 mm (1 ft) or more extension utilizing three or more strands of barbed wire or equivalent. The distance from the fence to live parts shall be not less than given in Table 110.31.

Table 110.31 Minimum Distance from Fence to Live Parts

	Minimum Distance to Live Parts	
Nominal Voltage	m	ft
1001–13,799	3.05	10
13,800–230,000	4.57	15
Over 230,000	5.49	18

Note: For clearances of conductors for specific system voltages and typical BIL ratings, see ~~ANSI C2-2007~~ ANSI/IEEE C2-2012 , *National Electrical Safety Code.*

Informational Note: See Article 450 for construction requirements for transformer vaults.

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 13 19:06:37 EST 2015

Committee Statement

Committee Statement: The footnote in the table was updated to reflect the current edition and designation. This is in response to PC 39 that also had content that was addressed in SR 18.
Response Message:

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
0 Not Returned
12 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Affirmative All

Anthony, Michael A.

Barrios, Louis A.

Boyce, Kenneth P.

Deike, Jr., Roland E.

Gallo, Ernest J.

Hickman, Palmer L.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sayler, Kent A.

Sood, Mohinder P.

Second Revision No. 18-NFPA 70-2015 [Section No. 110.31(A)(5)]

(5) Transformers.

Where a transformer is installed in a vault as required by Article 450, the vault shall be constructed in accordance with the requirements of Part III of Article 450.

Informational Note No. 1: For additional information, see ANSI/ASTM E119-~~2011a~~ -2015 , *Method for Fire Tests of Building Construction and Materials*, and NFPA 80-~~2013~~ -2016 , *Standard for Fire Doors and Other Opening Protectives*.

Informational Note No. 2: A typical 3-hour construction is 150 mm (6 in.) thick reinforced concrete.

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 13 18:47:15 EST 2015

Committee Statement

Committee Statement: The references to ANSI/ASTM E119 standard and NFPA 80-2016 in the Informational Note were updated. See SR 19 for change made to footnote to table in 110.31 submitted in PC 39.

Response Message:

Public Comment No. 39-NFPA 70-2015 [Section No. 110.31]

Public Comment No. 800-NFPA 70-2015 [Section No. 110.31(A)(5)]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
0 Not Returned
12 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Affirmative All

Anthony, Michael A.

Barrios, Louis A.

Boyce, Kenneth P.

Deike, Jr., Roland E.

Gallo, Ernest J.

Hickman, Palmer L.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sayler, Kent A.

Sood, Mohinder P.

Second Revision No. 20-NFPA 70-2015 [Section No. 110.31(D)]

(D) Enclosed Equipment Accessible to Unqualified Persons.

Ventilating or similar openings in equipment shall be designed such that foreign objects inserted through these openings are deflected from energized parts. Where exposed to physical damage from vehicular traffic, suitable guards shall be provided. Equipment located outdoors and accessible to unqualified persons shall be designed such that exposed nuts or bolts cannot be readily removed, permitting access to live parts. Where equipment is accessible to unqualified persons and the bottom of the enclosure is less than 2.5 m (8 ft) above the floor or grade level, the enclosure door or hinged cover shall be kept locked. Doors and covers of enclosures used solely as pull boxes, splice boxes, or junction boxes shall be locked, bolted, or screwed on. Underground box covers that weigh over 45.4 kg (100 lb) ~~shall~~ meet this requirement.

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 13 19:14:41 EST 2015

Committee Statement

Committee Statement: In the last sentence of (D), the word "shall" is unnecessary. The covers meet the intent of the previous requirement by virtue of their weight, and code users are being informed that this is true. If "shall" remains in the language, it could be erroneously construed to mean that the covers must be locked, bolted or screwed on even if they do weigh over 100 pounds.

Response Message:

Public Comment No. 710-NFPA 70-2015 [Section No. 110.31(D)]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
0 Not Returned
12 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Affirmative All

Anthony, Michael A.

Barrios, Louis A.

Boyce, Kenneth P.

Deike, Jr., Roland E.

Gallo, Ernest J.

Hickman, Palmer L.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sayler, Kent A.

Sood, Mohinder P.

Second Revision No. 23-NFPA 70-2015 [Section No. 110.34(B)]

(B) Separation from Low-Voltage Equipment.

Where switches, cutouts, or other equipment operating at 1000 volts, nominal, or less are installed in a vault, room, or enclosure where there are exposed live parts or exposed wiring operating at over 1000 volts, nominal, the high-voltage equipment shall be effectively separated from the space occupied by the low-voltage equipment by a suitable partition, fence, or screen.

Exception: Switches or other equipment operating at ~~600~~ 1000 volts, nominal, or less and serving only equipment within the high-voltage vault, room, or enclosure shall be permitted to be installed in the high-voltage vault, room, or enclosure without a partition, fence, or screen if accessible to qualified persons only.

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 13 19:50:34 EST 2015

Committee Statement

Committee Statement: This change editorially correlates the exception with the text as intended by PI 1523.
Response Message:

Ballot Results

This item has passed ballot

12 Eligible Voters
0 Not Returned
12 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Affirmative All

Anthony, Michael A.
Barrios, Louis A.
Boyce, Kenneth P.
Deike, Jr., Roland E.
Gallo, Ernest J.
Hickman, Palmer L.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sayler, Kent A.

Sood, Mohinder P.

Second Revision No. 21-NFPA 70-2015 [Section No. 110.34(E)]

(E) Elevation of Unguarded Live Parts.

Unguarded live parts above working space shall be maintained at elevations not less than required by Table 110.34(E).

Table 110.34(E) Elevation of Unguarded Live Parts Above Working Space

Nominal Voltage Between Phases	Elevation	
	m	ft
1001–7500 V	2.7	9
7501–35,000 V	2.9	9 ft 6 in.
Over 35 kV	~~2.9 m~~ Add 9.5 ~~mm/kV~~ mm per kV above 35 kV	~~9 ft 6 in.~~ Add 0.37 ~~in./kV~~ in. per kV above 35 kV

Supplemental Information

File Name	Description
SR-21_Table_110.34_E_Panel_1-NP.docx	For staff use

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 13 19:18:30 EST 2015

Committee Statement

Committee Statement: These plus signs in the “Over 35kV” row were inadvertently omitted in the FR. The table was revised to clarify the elevation over 35kV.

Response Message:

Public Comment No. 711-NFPA 70-2015 [Section No. 110.34(E)]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
0 Not Returned
12 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Affirmative All

Anthony, Michael A.

Barrios, Louis A.

Boyce, Kenneth P.

Deike, Jr., Roland E.

Gallo, Ernest J.

Hickman, Palmer L.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sayler, Kent A.

Sood, Mohinder P.

Second Revision No. 22-NFPA 70-2015 [Section No. 110.73]

110.73 Equipment Work Space.

Where electrical equipment with live parts that is likely to require examination, adjustment, servicing, or maintenance while energized is installed in a manhole, vault, or other enclosure designed for personnel access, the work space and associated requirements in 110.26 shall be met for installations operating at 1000 volts or less. Where the installation is over 1000 volts, the work space and associated requirements in 110.34 shall be met. A manhole access cover that weighs over ~~45~~ 45.4 kg (100 lb) ~~shall~~ meets the requirements of 110.34(C).

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 13 19:39:56 EST 2015

Committee Statement

Committee Statement: A simple declarative sentence structure is preferred. See 3.3.1 of the NEC Style Manual. The word "shall" is unnecessary. Covers that weigh over 45.4 kg (100 lb) meet the intent of the requirement by virtue of their weight.

45 kg is changed to 45.4 kg for consistency with 110.31[D].

Response Message:

Public Comment No. 303-NFPA 70-2015 [Section No. 110.73]

Public Comment No. 712-NFPA 70-2015 [Section No. 110.73]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
0 Not Returned
12 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Affirmative All

Anthony, Michael A.

Barrios, Louis A.

Boyce, Kenneth P.

Deike, Jr., Roland E.

Gallo, Ernest J.

Hickman, Palmer L.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sayler, Kent A.

Sood, Mohinder P.

Second Revision No. 1-NFPA 70-2015 [Section No. 90.7]

90.7 Examination of Equipment for Safety.

For specific items of equipment and materials referred to in this *Code*, examinations for safety made under standard conditions provide a basis for approval where the record is made generally available through promulgation by organizations properly equipped and qualified for experimental testing, inspections of the run of goods at factories, and service-value determination through field inspections. This avoids the necessity for repetition of examinations by different examiners, frequently with inadequate facilities for such work, and the confusion that would result from conflicting reports on the suitability of devices and materials examined for a given purpose.

It is the intent of this *Code* that factory-installed internal wiring or the construction of equipment need not be inspected at the time of installation of the equipment, except to detect alterations or damage, if the equipment has been listed by a qualified electrical testing laboratory that is recognized as having the facilities described in the preceding paragraph and that requires suitability for installation in accordance with this *Code*. Suitability shall be determined by application of requirements that are compatible with this *Code* .

Informational Note No. 1: See requirements in 110.3.

Informational Note No. 2: *Listed* is defined in Article 100.

Informational Note No. 3: Informative Annex A contains ~~an informative~~ a list of product safety standards ~~for electrical equipment~~ that are compatible with this *Code* .

Submitter Information Verification

Submitter Full Name: CMP 1
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Nov 12 12:46:34 EST 2015

Committee Statement

Committee Statement: CMP 1 reconsidered this text at the public comment stage and agrees with the substantiation provided in PC 573.

Response Message:

Public Comment No. 573-NFPA 70-2015 [Section No. 90.7]

Ballot Results

This item has passed ballot

12 Eligible Voters
0 Not Returned
11 Affirmative All
0 Affirmative with Comments

1 Negative with Comments

0 Abstention

Affirmative All

Anthony, Michael A.

Boyce, Kenneth P.

Deike, Jr., Roland E.

Gallo, Ernest J.

Hickman, Palmer L.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sayler, Kent A.

Sood, Mohinder P.

Negative with Comment

Barrios, Louis A.

The correct action should have been either to reject the modifications to Informational Note No. 3 or to HOLD as this can be considered new material. The panel has not actually had the time to verify that all of the product safety standards listed in Annex A are indeed "compatible with this Code" as the change implies. To go from language that indicates Annex A is a list of safety standards to one that is a list "compatible with the Code" is a substantial change that has not been validated by public review.

Second Revision No. 4-NFPA 70-2015 [Annex A]

Informative Annex A Product Safety Standards

Informative Annex A is not a part of the requirements of this NFPA document but is included for informational purposes only.

This informative annex provides a list of product safety standards used for product listing where that listing is required by this *Code*. It is recognized that this list is current at the time of publication but that new standards or modifications to existing standards can occur at any time while this edition of the *Code* is in effect.

This informative annex does not form a mandatory part of the requirements of this *Code* but is intended only to provide *Code* users with informational guidance about the product characteristics about which *Code* requirements have been based.

Product Standard Name	Product Standard Number
Aboveground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings	UL 2515
Adjustable Speed Electrical Power Drive Systems — Part 5-1: Safety Requirements — Electrical, Thermal and Energy	UL 61800-5-1
Antenna-Discharge Units	UL 452
Arc-Fault Circuit-Interrupters	UL 1699
Armored Cable	UL 4
Attachment Plugs and Receptacles	UL 498
Audio, Video and Similar Electronic Apparatus — Safety Requirements	UL 60065
Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements	UL 62368-1
Automatic Electrical Controls	UL 60730-1
Batteries for Use in Electric Vehicles	UL 2580
Batteries for Use in Light Electric Rail (LER) Applications and Stationary Applications	UL 1973
Belowground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings	UL 2420
Bidirectional Electric Vehicle (EV) Charging System Equipment	UL Subject 9741
Busways	UL 857
Cables — Thermoplastic-Insulated Underground Feeder and Branch-Circuit Cables	UL 493
Cables — Thermoplastic-Insulated Wires and Cables	UL 83
Cables — Thermoset-Insulated Wires and Cables	UL 44
Cable and Cable Fittings for Use in Hazardous (Classified) Locations	UL 2225
Cable Routing Assemblies and Communications Raceways	UL 2024
Cables for Non–Power-Limited Fire-Alarm Circuits	UL 1425
Cables for Power-Limited Fire-Alarm Circuits	UL 1424
Capacitors	UL 810
Cellular Metal Floor Raceways and Fittings	UL 209
Circuit Breakers for Use in Communication Equipment	UL 489A
Circuit Integrity (CI) Cable — Fire Tests for Electrical Circuit Protective Systems	Subject 1724
Circuit Integrity (CI) Cable — Tests for Fire Resistive Cables	UL 2196
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Communications Cables	UL 444
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Product Standard Name	Product Standard Number
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Cover Plates for Flush-Mounted Wiring Devices	UL 514D
Data-Processing Cable	UL 1690
Distributed Generation Wiring Harnesses	Subject 9703
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Electric Generators	UL 1004-4
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Electric Sign Components	UL 879
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Energy Storage Systems and Equipment	UL 9540
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Product Standard Name	Product Standard Number
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Fire Resistive Cables, Test for	UL 2196
Fixture Wire	UL 66
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Information Technology Equipment Safety — Part 21: Remote Power Feeding	UL 60950-21
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Photovoltaic Wire	UL 4703
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Portable Power-Distribution Equipment	UL 1640
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Protectors for Coaxial Communications Circuits	UL 497C
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Reference Standard for Electrical Wires, Cables, and Flexible Cords	UL 1581
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Roof and Gutter De-Icing Cable Units	Subject 1588
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Stage and Studio Luminaires and Connector Strips	UL 1573
Standby Batteries	UL 1989
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Surge Arresters — Gapped Silicon-Carbide Surge Arresters for AC Power Circuits	IEEE C62.1
Surge Arresters — Metal-Oxide Surge Arresters for AC Power Circuits	IEEE C62.11
Surge Protective Devices	UL 1449
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Product Standard Name	Product Standard Number
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Vacuum Cleaners, Blower Cleaners, and Household Floor Finishing Machines	UL 1017
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Wind Turbine Generating Systems — Large	UL 6141
Wind Turbine Generating Systems — Small	UL 6142
Wire Connectors	UL 486A, UL 486B
Wireways, Auxiliary Gutters, and Associated Fittings	UL 870

Submitter Information Verification

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Submittal Date: Thu Nov 12 15:01:07 EST 2015

Committee Statement

Committee Statement: The word "potentially" was removed from a document title to match current title of ANSI/ISA 12.27.01.

Response Message:

Public Comment No. 38-NFPA 70-2015 [Annex A]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
0 Not Returned
12 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Affirmative All

Anthony, Michael A.

Barrios, Louis A.

Boyce, Kenneth P.

Deike, Jr., Roland E.

Gallo, Ernest J.

Hickman, Palmer L.

Hittinger, David L.

Iverson, Donald R.

Pierce, James F.

Sassaman, Harry J.

Sayler, Kent A.

Sood, Mohinder P.