Association of Standardization and Certification

Canadian Standards Association

Underwriters Laboratories Inc.

Procedures for Harmonizing ANCE / CSA / UL Standards

March 1, 2008

Note: These procedures have been prepared jointly by ANCE, CSA, and UL. They may be freely copied and distributed for use.

Commitment for Amendments

These procedures are issued jointly by the Association of Standardization and Certification (ANCE), the Canadian Standards Association (CSA), and Underwriters Laboratories Inc. (UL). Comments or proposals for revisions on any part of the procedures may be submitted to ANCE, CSA, or UL at any time. Revisions to these procedures will be made only after review and approval by ANCE, CSA, and UL. Revisions of these procedures will be made by issuing revised or additional pages bearing their date of issue.

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Procedures for Harmonizing ANCE / CSA / UL Standards

1. Purpose

1.1 The purpose of these procedures is to aid in the development of both identical and equivalent standards by the Association of Standardization and Certification (ANCE), the Canadian Standards Association (CSA), and/or Underwriters Laboratories Inc. (UL). The intent of harmonization is to produce a harmonized set of requirements to enable manufacturers to build products that can be certified in all the countries involved, meeting fundamental needs in each of them. Extensive national differences do not support this intent. It is strongly recommended that the CANENA Technical Harmonization Committees (THCs) harmonize with International Electrotechnical Commission (IEC) standards to the fullest extent possible, as defined in 2.4. Should a proposed regional standard not be based on an IEC standard, technical reasons are stated in the preface. This also applies for any difference with respect to the relevant IEC standard used as a seed document.

CANENA (an acronym for the Spanish equivalent of Council for Harmonization of Electrotechnical Standards of the Nations of the Americas) is an industry-driven organization that facilitates and promotes the development of harmonized electrotechnical standards. Members of CANENA form Technical Harmonization Committees to address harmonization of specific standards. Because CANENA is not a Standards Development Organization (SDO), any document resulting from the THC harmonization process is normally used as a seed document by the responsible SDO in each country for further development and approval as a recognized standard for that country. It is expected that the published standard will be a harmonized document for the participating countries. See 1.6. For further information about CANENA, please refer to the CANENA By-Laws and CANENA Standardization Procedures, available through CANENA or at www.canena.org.

1.2 These procedures are to be used as the basis for all identical (2.5) and equivalent (2.3) standards that are either binational or trinational.

1.3 These procedures provide information on the following with regard to identical and equivalent standards:

(a) Definitions (Clause 2);

(b) The level of support from the three SDOs: ANCE, CSA, and UL (Clause 4);

(c) The procedures to be followed in initiating a harmonization project, as well as the procedures for developing the standard (Clause 5);

(d) The procedures to be followed in revising a published binational or trinational standard (Clause 6);

(e) The procedures to be followed when moving a standard from binational status to trinational status (Clause 7); and

(f) The format to be followed in the development of the standard itself (Clause 8).

1.4 These procedures are supplemented by the following reference publications:

(a) CANENA By-Laws and CANENA Standardization Procedures available at http://www.canena.org/ ;

(b) ANCE-CSA-UL Process Comparison Guide available at http://ulstandardsinfonet.ul.com/harm/index.html ;

(c) Revision Cycles for Binational and Trinational Standards Published by UL, CSA and ANCE available at http://ulstandardsinfonet.ul.com/harm/index.html ; and

(d) Provisions for Formatting and Editorial Leeway available at http://ulstandardsinfonet.ul.com/harm/index.html.

Additionally, individual project information is available at www.csa.ca/standards/canena/updates or

www.ance.org.mx/normalizacion .

1.5 Questions or comments regarding the harmonization procedures, project initiation, and requests for revisions should be directed to one of the following, as appropriate:

Name	Luis Ivan Hernandez	David Mascarenhas	Sonya Bird
SDO	ANCE	CSA	UL
Address	Av. Lazaro Cardenas No. 869 Fraccion 3 Col. Nva. Industrial Vallejo Deleg. Gustavo A. Madero Mexico, D.F.	5060 Spectrum Way, Suite 100 Mississauga, Ontario L4W 5N6, Canada	12 Laboratory Drive P. O. Box 13995 Research Triangle Park, NC 27709-3995, USA
Phone	(5255) 5747-4550 X 4684	416-747-4158	919-549-1685
Email	lihernandez@ance.org.mx	David.mascarenhas@csa.ca	sonya.m.bird@us.ul.com

1.6 Although CANENA has members from other countries, these procedures address practices for co-publication among ANCE, CSA, and UL. The involvement of another country or SDO in a THC does not automatically indicate co-publication with that country or SDO. Separate additional agreements by the three SDOs may be needed.

2. Definitions

The following definitions apply in these procedures:

2.1 Binational standard — a standard that has been submitted through the standards development process of, and published by, two of the SDOs listed in 1.1 and 2.10. There are two levels of harmonization for a binational standard, equivalent and identical, as defined in 2.3 and 2.5, respectively.

2.2 Editorial change — any change that does not alter the technical content of the standard. Examples of editorial changes include

(a) different font sizes, figure sizes, and table sizes and orientation;

(b) minor variations in format, such as indentation and pagination;

(c) font appearance (including the use of italic or bold text or uppercase or lowercase letters);

(d) the use of a symbol (e.g., A or %) rather than the word (Ampere or percent), or the word rather than the symbol;

(e) inclusion of inch-pound units for informational purposes. These units, if provided, are to be in accordance with the requirements given in Table 8.1 (Units of measurement);

(f) corrections of misprints or typographical errors;

(g) bilingual column headings or figure captions on a harmonized table or figure in a bilingual edition;

(h) change from first-angle to third-angle drawing;

(i) addition of a statement: "This is a first-angle drawing"; and

(j) substitution of a period (.) for a comma (,) as the decimal marker.

See 8.5 for additional information covering editorial changes.

2.3 Equivalent standard — a standard that is substantially the same in technical content, except as follows:

(a) Technical national differences are allowed for national differences resulting from conflicts in codes and governmental regulations as well as those recognized as being in accordance with NAFTA Article 905, for example, because of fundamental climatic, geographical, technological, or infrastructural factors, scientific justification, or the level of protection that

the country considers appropriate.

(b) Presentation is word for word except for editorial changes as noted in 2.2.

The references to multiple country standards or requirements in an equivalent standard are separated by "or".

It is recommended that the national differences in regional standards be minimized.

2.4 Fullest extent possible — the desired degree of harmonization between IEC and the proposed regional standard. Harmonization to the fullest extent possible requires that national differences from the IEC standard be minimal.

Harmonization to the fullest extent possible includes the consideration of the IEC standard and requirements as the source of any new requirements. That is, any new (additional) requirements should be based on IEC standards.

Horizontal standards (e.g., plastics) should be based on IEC standards. References to horizontal standards are to be part of a regional standard. A horizontal standard is a standard that is referenced frequently in other standards.

Technical reasons are to be stated in the preface should a proposed regional standard not be based on an IEC standard(s) and to explain at a high level the need for any national differences from the IEC standard(s). See ISO/IEC Directives, Part 2, *Rules for the structure and drafting of International Standards*, and ISO/IEC Guide 21, *Adoption of International Standards as regional or national standards,* for examples of technical reasons.

When applicable, regional standards are to take into consideration the *Canadian Electrical Code (CEC), Part I,* the *National Electrical Code (NEC)*, and the Mexican Standard for Electrical Installations NOM-001-SEDE.

2.5 Identical standard — a standard that is exactly the same in technical content except for national differences resulting from conflicts in codes and governmental regulations. Presentation is word for word except for editorial changes as noted in 2.2.

The references to multiple country standards or requirements in an identical standard are separated by "and".

2.6 National difference — a requirement that applies in a specific country and varies from a harmonized base requirement. The SDOs publish the requirement, specifying its applicability in each country. When an IEC standard is being adopted, the harmonized base requirement is the IEC requirement. When the base standard is not an IEC standard (i.e., there is no harmonized base requirement), the requirements for the countries involved are amalgamated (thereby acknowledging that the originating organization's standard is not considered superior). The requirements are maintained or deleted on the basis of a minimum level of safety as described in 5.2.1. National differences can be country specific or harmonized for all the countries. In cases where the national differences are extensive, the full text of the national differences may be replaced by a single reference to the source where the requirements may be obtained. See Table 8.1 and the examples of national differences in Annex A.

2.7 Publication Coordinator — an individual at one of the SDOs who is responsible for reviewing the format of the draft provided by the Secretariat and coordinating the processing of it with the other SDOs. The SDOs designate and agree on the Publication Coordinator and notify the Secretariat. The Publication Coordinator is also responsible for distributing material received from the THC to the other SDOs, and for coordinating the publication of material with the other SDOs so that a mutually agreed-upon publication date for the standard is determined. The Publication Coordinator develops the final standard for publication by each SDO (see 5.10.7). The Publication Coordinator is also responsible for returning any improperly formatted drafts to the Secretariat for correction prior to processing. The Publication Coordinator receives copies of all correspondence and reports of the THC, THSC, and THWG (see 2.11).

2.8 Regional standard — a binational (2.1) or trinational (2.14) standard.

2.9 Sponsoring trade group — the trade association that requests harmonization of requirements. There are normally multiple trade associations (one or more relevant from each country) involved in the harmonization process. Examples of trade associations are:

(a) Mexico: CANAME — Camara Nacional de Manufacturas Electricas (National Chamber of Electrical Manufacturers);

(b) Canada: EFC — Electro-Federation Canada (formerly EEMAC — Electrical and Electronic Manufacturers Association of Canada); and

(c) US: NEMA — National Electrical Manufacturers Association, ARI — Air–Conditioning and Refrigeration Institute.

2.10 Standards development organization (SDO) — an organization involved in the harmonization effort. The SDOs are ANCE (Association of Standardization and Certification), CSA (Canadian Standards Association), and UL (Underwriters Laboratories), depending on the country or countries concerned. See also 1.6.

2.11 THC (Technical Harmonization Committee) — the group of individuals who are responsible for developing the technical content of the proposed draft harmonized standard and for resolving all comments generated. The THC consists of industry representatives from each country involved, the Secretariat, the THC Chair, and representatives of the SDOs involved, if applicable. The THC should remain in existence after publication of the harmonized standard or be re-formed to serve as a forum for addressing necessary technical revisions to the standard.

Note: The definitive source for this term is the CANENA By-Laws and CANENA Standardization Procedures. This definition is provided here for convenience of reference.

Generally, technical work, including harmonization of standards and initiation of new standards development, is done within a CANENA Technical Harmonization Committee (THC), which is established with a specific scope by the CANENA Council or its Executive Committee. THCs report annually to the CANENA Council. All members of a THC or THSC shall be members in good standing of CANENA, except for SDO representatives on THCs or THSCs. A THC may establish Technical Harmonization Subcommittees (THSCs) or Working Groups (THWGs) as necessary to address specific standards, portions of standards, or any specific or general issue within the scope of the THC. Experts in the subject matter that are not members of CANENA shall be permitted to be members of a Working Group.

2.12 THC chair — the individual responsible for organizing the THC meetings and for the progression of the development of the harmonized standard. The THC Chair is appointed by CANENA.

Note: The definitive source for this term is the CANENA By-Laws and CANENA Standardization Procedures. This definition is provided here for convenience of reference.

2.13 THC secretariat — the individual responsible for

(a) issuing agendas (at least four weeks prior to the meeting) and meeting reports for THC meetings;

(b) collecting the THC comments and distributing them to the entire THC for consideration;

(c) making sure that the THC provides a draft of the harmonized standard in accordance with the processes and format defined in these procedures; and

(d) providing copies of THC meeting agendas, reports, and draft standards to the Publication Coordinator.

The Secretariat is a member of the THC or is contracted by the THC.

Note: The definitive source for this term is the CANENA By-Laws and CANENA Standardization Procedures. This definition is provided here for convenience of reference.

2.14 Trinational standard — a standard that has been submitted through the standards development process of, and published by, all three of the SDOs listed in 1.1 and 2.10. There are two

levels of harmonization for a trinational standard, equivalent and identical, as defined in 2.3 and 2.5, respectively.

3. References

3.1 Components

The following wording shall be used for the components requirements:

(a) For an identical standard:
Except as indicated in Clause X, a component of a product covered by this standard shall comply with the requirements for that component. See Annex __ for a list of standards covering components generally used in the products covered by this standard. A component shall comply with the ANCE, CSA, and UL standards.

(b) For an equivalent standard:
Except as indicated in Clause X, a component of a product covered by this standard shall comply with the requirements for that component. See Annex __ for a list of standards covering components generally used in the products covered by this standard. A component shall comply with the ANCE, CSA, or UL standards as appropriate for the country where the product is to be used.

The exception referred to in Items (a) and (b) establishes that components in products that are submitted for certification shall be suitable for the intended application. Components shall comply with the requirements of the applicable end-product standard and those requirements of the applicable component standard as appropriate for the country where the product is to be used in its end-use application.

3.2 Normative references

3.2.1 The wording of either Item (a) or (b) regarding normative references shall be used in the general requirements (see also Table 8.1 for information on normative references):

(a) For an identical standard:
Products covered by this standard shall comply with the referenced installation codes and standards noted (in this clause) (in Annex ___).

(b) For an equivalent standard:
Products covered by this standard shall comply with the referenced installation codes and standards noted (in this clause) (in Annex ___) as appropriate for the country where the product is to be used. When the product is intended for use in more than one country, the product shall comply with the installation codes and standards for all countries where it is intended to be used.

3.2.2 The following wording shall be used for normative references: "Where reference is made to any Standards, such reference shall be considered to refer to the latest editions and revisions thereto available at the time of printing, unless otherwise specified."

4. Support from standards development organizations (SDOs)

4.1 General

4.1.1 Clause 4 outlines the support that has been expressed by the three SDOs: ANCE, CSA, and UL. The level of participation of each SDO only applies if the harmonization effort involves that particular SDO (for example, if a binational effort has been initiated, one SDO would not be involved in the publication of the standard but may participate as an observer).

4.2 SDO representatives

4.2.1 Each SDO involved shall provide a technical representative to attend the meetings of the THC. If an SDO representative is not able to attend a meeting, representation of that SDO may in some cases be made through an industry member (an SDO committee member).

4.2.2 The SDO representative to a THC shall advise the Secretariat and the Chair when THC consensus recommendations conflict with SDO policy or prevailing technical interpretations.

4.2.3 As a general rule, a representative of an SDO shall not serve as the Secretariat of the THC unless external resources are not available to fund the Secretariat position.

4.2.4 One SDO shall be responsible for providing a Publication Coordinator. This position shall be determined jointly by the SDOs involved. For contact information, see 1.5.

4.2.5 Each SDO shall be responsible for providing the names of the technical and standards staff involved in the harmonization effort. These names, along with contact information consisting of address, phone number, fax number, and email address, shall be provided at the initiation of the project to the SDO contacts listed in 1.5.

4.2.6 The SDO contacts listed in 1.5 shall be responsible for maintaining a contact log of all binational and trinational efforts, summarizing the contact information required in 4.2.5. The UL contact shall administer this log. This log can be accessed at http://ulstandardsinfonet.ul.com/.

4.2.7 Each SDO representative shall be responsible for providing periodic status reports (with copies to their counterparts at the other SDOs) to the THC Chair and Secretariat, once the THC has submitted the draft standard to the SDOs for processing. The status report should clearly indicate the progress made to date, as well as an anticipated schedule for the next steps.

4.3 Revisions and interpretations

4.3.1 Once the development process begins for a binational or trinational standard, each SDO should attempt to limit revisions to its existing national standard, wherever possible and practical. When it is necessary to revise the existing national standard, the revisions should be shared with the THC and with the other SDOs so that the impact of the revisions on the binational or trinational effort can be determined.

4.3.2 The interpretation by the SDO of an identical or equivalent standard shall be based on the literal text to determine compliance with the standard in accordance with the procedural rules of the SDO. If more than one interpretation of the literal text has been identified, a revision shall be proposed as soon as possible to each of the SDOs (in accordance with Clause 6) to more accurately reflect the intent. (CSA may use an ORD (Other Recognized Document) for this purpose.) This statement regarding interpretations shall be part of the preface.

5. Development of a draft binational or trinational standard

5.1 General

5.1.1 Clause 5 outlines the major principles involved in the development of the binational or trinational draft document.

5.1.2 Each SDO shall be responsible for ensuring that its standards development process is followed.

5.2 Source and content of requirements

5.2.1 During the development and maintenance process for binational and trinational standards, it may be necessary to evaluate existing country standards to determine the requirements of a proposed standard or revision. If one standard from one organization is found to have more coverage or more stringent requirements, this standard shall not necessarily be considered the superior standard and prejudicially be determined to be the only acceptable standard. In the absence of any factors such as safety-related field data, all the source standards shall be considered equally acceptable for providing a minimum level of safety for the overlapping scope.

5.2.2 Technical reasons shall be given in the preface when a proposed regional standard is not based on the applicable IEC standard or to explain at a high level why one or more requirements deviate from the IEC standard. (See also 2.4 and 2.6.)

5.2.3 Standards shall not include requirements from certification programs, e.g., requirements for follow-up programs, factory tests, classified components, or factory identification markings. Reference to programs for products intended for specific countries may be included in an annex and may not be normative for all countries.

5.2.4 Where reference is made to a number of samples to be tested, that number shall be considered a minimum quantity. A statement to this effect shall also be included in the preface of the standard. See the example of the preface in Annex A for details.

5.3 Project initiation

5.3.1 When a particular industry determines that a binational or trinational standard would be beneficial, the sponsoring trade associations or industry groups from the countries involved shall send a letter to the CANENA Secretary and their country's SDO requesting that a binational or trinational project be started. The letter shall be sent to the SDO's representative identified in 1.5. A copy of the letter shall also be sent to the other SDOs affected. The project request letter should specifically request harmonization and should define the scope of the project. Additionally, the letter should list all the standards to be considered for the binational or trinational effort.

5.3.2 A manufacturer may also request an ANCE/CSA/UL standards project by completing the CANENA Standards Harmonization Request form located at: http://www.canena.org/canena/canenaprojectrequest.html.

5.3.3 The SDO shall acknowledge the request letter and indicate whether it supports the binational or trinational effort. At that time, the SDO shall inform the sponsoring trade association(s) or industry group(s) that CANENA will need to identify the THC Chair and Secretariat for the effort early in the process.

5.3.4 Additionally, on receipt of a harmonization request, the SDOs should survey their committees/constituents to determine the level of industry support (i.e., commitment and resources) before agreeing to work on harmonization. Each SDO is encouraged to contact individuals and associations active in its country to determine if they would like to participate in the THC. Names of those interested shall be sent to the sponsoring trade organization for consideration and possible inclusion in the THC membership.

5.3.5 The agreed-upon scope of harmonization projects shall be clearly stated. If the standard requirements of one SDO are outside the scope of the harmonization project, those requirements shall

not be introduced into the scope of the harmonized standard without agreement from all SDOs. In the event that a proposal is made to change the scope of the project, the steps outlined in 5.3.1 to 5.3.4 shall be repeated. If a proposed change in scope is not supported by an SDO, the SDO may choose to withdraw from the harmonization effort.

5.3.6 The SDOs shall agree on a Publication Coordinator and notify the THC Secretariat and/or Chair. The SDOs shall advise the THC Secretariat of additional staff in their organizations who shall receive all correspondence and reports of the THC, THSCs, and THWGs.

5.4 Clarification of copyright and ownership

5.4.1 If the binational or trinational standard is based on an IEC standard and text of the IEC standard is being reprinted in the binational or trinational standard, the SDOs shall request the use of the IEC text from the appropriate organization.

5.4.2 Each SDO affected generally authorizes use of copyrighted material to the trade associations or industry groups to allow the THC to use material copyrighted by each SDO. The copyright authorization shall be limited in that all of the following rights shall remain with the SDO:

(a) the intellectual property of the contributions of the THC;

(b) the copyright; and

(c) all publication rights.

5.4.3 Although the copyright remains with the SDO, on request the sponsoring trade associations or industry groups may be acknowledged in the preface to the binational or trinational standard.

5.4.4 Occasionally, a THC may need to review other published standards during the harmonization effort. In these cases, the THC should submit a request to the applicable SDO for permission to review the standard within the THC. If text from a standard other than the one being harmonized needs to be used within the body of the harmonized standard, the THC should request formal permission from the SDO to use the text.

5.5 Formation of the THC

5.5.1 After the SDOs have acknowledged their support and agreed on a Publication Coordinator, the THC shall be formed. The THC Chair and Secretariat shall be identified to the SDOs and the CANENA Executive Committee.

5.5.2 The THC shall remain in place for the duration of the standard to help with standard maintenance and the development of new proposals.

5.6 Development of the draft

5.6.1 During the preparation of the document, the THC Secretariat or designate shall use the appropriate format as defined in Clause 8.

5.6.2 During the initial stages of the development of the draft standard by the THC, it is recommended that the THC request the Publication Coordinator to conduct an early review of the layout and format of the draft. Any resulting changes are the responsibility of the THC.

5.6.3 In addition to the technical content of the proposed draft standard, the THC shall develop the rationale for the document as follows:

(a) For a standard that is based on an IEC standard, the rationale should explain the benefits of using the IEC standard as a basis and should provide a clear explanation of any national differences from the IEC requirements. When an IEC standard is being adopted, the harmonized base requirement is the IEC requirement.

(b) For a standard that is not based on an IEC standard, technical reasons shall be given as noted in 2.4 and 8.1.4. The rationale shall clearly explain the purpose of the harmonization effort, the source of the requirements, and any details to help the reviewer of the proposal.

(c) For a new requirement, the rationale shall clearly explain its purpose and shall provide the justification that will be needed by the SDOs to propose the requirement.

5.6.4 A national difference exists when a country requirement varies from the harmonized base requirement as noted in 2.6. When the base standard is not an IEC standard (i.e., there is no harmonized base requirement), the requirements for the countries involved shall be amalgamated in the draft document (thereby acknowledging that the originating organization's standard is not considered superior). The requirements shall be maintained or deleted on the basis of a minimum level of safety as described in 5.2.1. National differences may be country specific or harmonized for the countries involved.

5.6.5 Once the THC is satisfied with the draft standard, the Secretariat shall send an electronic copy to the Publication Coordinator. On receipt of the draft standard, the Publication Coordinator shall verify that the format of the standard is in accordance with the format defined in Clause 8.

5.6.6 If the draft standard is formatted properly, the Publication Coordinator shall distribute copies to the other SDOs involved. It is recommended that a copy of the cover letter or some other notification be sent to the THC Chair and Secretariat at this time as well so that they know the status of the draft.

5.6.7 If the draft standard is not formatted properly, the Publication Coordinator shall return the draft to the Secretariat with instructions to correct it. The Secretariat shall return a properly formatted draft indicating what changes were made to the document. Once the Secretariat submits a properly formatted document, the Publication Coordinator shall distribute copies to the other SDOs involved. All of the SDOs shall distribute the exact same wording of the proposals except as addressed by 2.2.

5.6.8 The Secretariat shall also send the rationale for significant technical requirements and changes to the Publication Coordinator.

5.7 Technical review and comment

5.7.1 To identify any concerns before the draft is balloted, each SDO shall conduct a preliminary technical review of the draft by the applicable SDO committees/constituents. For ANCE, this review is conducted by ANCE's Subcommittee; for CSA, this review is conducted by CSA's Technical Subcommittee (TSC); for UL, this review is conducted by the Standards Technical Panel (STP) and the subscribers to the standard.

5.7.2 Either prior to or during the preliminary technical review period, the individual SDOs shall convert the draft document file into the SDO's required file format. For example, if the THC Secretary prepared the draft document in MS Word, UL will convert the MS Word file into an SGML file so it can be balloted.

5.7.3 ANCE, CSA, and UL should collect the comments from their respective committees and constituents. Comments provided to an SDO may be considered confidential and an SDO may choose not to send a copy of the comments directly to the THC. Instead, a summary of the comments may be provided to the THC. Alternatively, comments may be sent directly from the commenters to the THC.

5.7.4 Each SDO determines if responses to comments are necessary and has the option of responding directly to straightforward comments instead of forwarding them to the THC. If the SDOs respond directly in writing to the comments, a copy or summary of the responses shall be sent to the THC Secretariat. Other comments (those that are not straightforward or are unresolved) may be summarized before being forwarded to the THC. When sending comments, consideration should be given to also providing a recommended resolution to expedite the process. If the THC responds to the comments, the responses shall be sent to the SDOs for distribution to the appropriate stakeholder(s).

5.7.5 The THC shall revise the draft, as appropriate, based on the comments received. The THC shall also provide a report to the SDOs explaining how comments were resolved and identifying any changes made due to comments.

5.7.6 Each SDO conducting a technical review shall be required to coordinate its efforts as defined in 5.7.1 to 5.7.5.

5.7.7 SDOs shall conduct their editorial reviews of the draft document prior to balloting and submit the editorially revised draft to the other SDOs for review. All questions on the editorially revised draft shall be resolved prior to balloting. All of the SDOs shall ballot the exact same wording of the proposals except as addressed by 2.2.

5.8 Ballot of the draft

5.8.1 Upon receipt of the revised draft, each SDO involved shall follow its own review process and circulate the draft to its committees/constituents for ballot or in the case of ANCE to public review.

5.8.2 The SDOs shall collect comments submitted.

5.8.3 Comments provided to an SDO may be considered confidential and an SDO may choose not to send a copy of the comments directly to the THC. Instead, a summary of the comments may be provided to the THC.

5.8.4 Each SDO has the option of responding directly to straightforward comments instead of forwarding them to the THC. If the SDOs respond directly to the comments, the SDOs shall agree on the responses and a copy or summary of the responses shall be sent to the THC Secretariat. Other comments (those that are not straightforward) may be summarized before being forwarded to the THC. When sending comments, consideration should be given to also providing a recommended resolution to expedite the process. In either case, the SDOs should forward the material to the THC Secretariat in a timely fashion.

5.9 Response to comments and revision of the draft

5.9.1 The THC shall discuss the comments received from the SDOs during the balloting or public review process and shall determine what changes are to be made to the draft, if any. It is important to note that the comments shall be addressed and resolved in accordance with each SDO's standards development procedures.

5.9.2 The THC shall send its replies to the comments to the appropriate SDOs. The SDOs, in accordance with their procedures, shall confirm that the responses are adequate to address the concerns raised. Each SDO (not the THC) shall respond to the committee/constituent comments in accordance with its own comment response procedures. The SDOs shall also try to reach agreement on the responses. Each SDO shall send a copy or summary of the responses to the THC Secretariat and the other SDOs.

5.9.3 It may be necessary for an SDO to work with the THC to improve or revise the responses before the responses are issued.

5.9.4 The Secretariat shall revise the draft as needed, taking care to use the latest draft balloted by the SDOs. The Secretariat shall continue to follow the format defined in Clause 8 and all revisions to the draft shall be clearly indicated.

5.9.5 Once the THC is satisfied with the draft standard, the Secretariat shall forward an electronic copy (preferably in MS Word) of the draft standard to the Publication Coordinator, along with any member reports that may disagree with the resolution of a comment. The THC shall also provide a report to the Publication Coordinator on how comments were resolved and what changes were made. A list of the THC members shall be provided with the draft. Active participating members shall be listed separately from non-participatory members.

5.9.6 On receipt of the draft standard, the Publication Coordinator shall verify that the format of the standard is in accordance with the format defined in Clause 8. If the draft standard is formatted properly, the Publication Coordinator shall distribute copies to the other SDOs involved. If the draft standard is not formatted properly, the Publication Coordinator shall return the draft to the Secretariat with instructions to correct the draft. The Secretariat shall return a properly formatted draft indicating

what changes were made to the document. Once the Secretariat submits a properly formatted document, the Publication Coordinator shall distribute copies to the other SDOs involved, along with all THC reports, a list of participating members, and any member reports that may disagree with aspects of the draft standard (i.e., unresolved comments).

5.9.7 The SDOs shall reach agreement on the document. Alternatively, if the draft was revised significantly, another review by the SDO constituents may be necessary. The SDOs shall determine if another review is necessary in accordance with their procedures. The SDOs shall notify the Publication Coordinator in a reasonable time frame if another review of the draft is necessary. If another review is necessary, see 5.8 to 5.9.6. It is possible that one SDO will require another review while the other SDOs will not.

5.10 Final review and publication of the harmonized standard

5.10.1 Once the review and balloting of the draft standard is completed, the Publication Coordinator shall send an electronic copy to the other SDOs.

5.10.2 Each SDO shall perform an editorial review of the material, as needed. The SDOs shall agree on any changes to be made. The SDOs should try to restrict the comments to an editorial nature at this stage. If a technical change is introduced during this step, each SDO shall be given the opportunity to have its committee(s) approve the revised text (see 5.8).

Note: Refer to the "Provisions for formatting and editorial leeway" document for guidance available at: http://ulstandardsinfonet.ul.com/harm/index.html

5.10.3 The Publication Coordinator shall then incorporate the necessary editorial changes and shall provide an electronic copy of the document to the other SDOs.

5.10.4 On receipt of the document from the Publication Coordinator, each SDO shall follow its final review and approval process.

5.10.5 If editorial changes are necessary based on the review referred to in 5.10.4, the Publication Coordinator shall consult with the other SDOs and shall make the changes in accordance with 5.10.3.

If the changes from the review referred to in 5.10.4 are not editorial, comments shall be reviewed and responded to in accordance with 5.8.3 to 5.9.3. Negative votes shall be appropriately dispositioned in accordance with the SDOs' procedures. The document shall be revised and submitted again for committee review in accordance with 5.9.4 to 5.10.4.

5.10.6 If changes are not required based on the review referred to in 5.10.4, national approval may be pursued by the SDOs. However, each SDO may agree to publish the standard pending national approval. When national approval is obtained, each SDO may make such editorial changes to the document (including the title page) as it deems appropriate in order to reflect this approval. The revised pages shall be sent to the Publication Coordinator and the other SDOs. Each SDO shall incorporate the other SDOs' subsequent national approval recognition.

5.10.7 The Publication Coordinator shall work with the other SDOs to determine a mutually agreed-upon publication date for the binational or trinational standard. The SDOs shall also agree on the date that the final standard should be provided by the Publication Coordinator to the other SDOs, as well as on the file type(s) (e.g., PDF) to be provided. The Publication Coordinator shall confirm the publication date in writing. A complete dated document that includes the title page, table of contents, and Preface shall be provided to the SDOs by the Publication Coordinator.

5.10.8 When a harmonized print and release date is not practical (for example, when more time is needed for translation or for obtaining national approval), the standard may be printed and released by the SDOs at different times, but only with agreement from all the SDOs involved. The publication date shall remain the same for each SDO.

5.10.9 Each SDO shall publish the standard as close to the publication date as possible.

5.11 Distribution of co-published material

5.11.1 Each SDO shall provide the other SDOs (i.e., the representative identified in 1.5) with a final electronic copy of the binational or trinational standard for their records.

5.11.2 Once the new requirements have been published, an editable electronic copy should be provided by the Publication Coordinator to the THC Chair and THC Secretary. The copies sent to the THC Chair and Secretary will ensure that they will be able to periodically review the requirements and, if warranted, reconvene the THC to develop proposed revisions to the requirements.

5.12 Comparison of UL, CSA, and ANCE standards development processes

5.12.1 A comparison of the methodology that the SDOs use during the entire process is available in the document titled, "Comparison of UL, CSA and ANCE Standards Development Process Guide." This process includes:

(a) conception of the idea;
(b) development of the preliminary draft;
(c) development of the draft used during the technical review;
(d) balloting the draft;
(e) responding to comments;
(f) reaching consensus; and
(g) publication of the new standard.

5.12.2 The purpose of the comparison document is to provide a visual perspective of when the various steps of each SDO are to take place in relation to the steps of the other SDOs. The comparison document identifies the phases where THC involvement is necessary and provides an estimate of the length of time for various steps. It provides a summary of the complexity of harmonization to all involved in the process. The comparison document can be accessed

(a) for UL at http://ulstandardsinfonet.ul.com/harm/index.html;
(b) for CSA at www.csa.ca/standards/canena; and
(c) for ANCE at www.ance.org.mx/normalizacion.

6. Revising a binational or trinational standard

6.1 General

6.1.1 Once a binational or trinational standard has been published, the need for the THC still exists. The THC should continue to be the forum for addressing technical issues related to the standard. For previously published standards, the THC may have been disbanded. When needed, the THC shall be reconvened to suitably represent industry views.

6.2 Revision cycles

6.2.1 Establishing revision cycles for a co-published standard is one method for coordinating activities among SDOs. Upon publication of a co-published standard, the THC or THSC (if applicable) is encouraged to establish a revision cycle for the co-published standard. See the document titled "Revision Cycles for Binational and Trinational Standards Published by UL, CSA and ANCE" for more information about revision cycles available at

(a) http://ulstandardsinfonet.ul.com/harm/RevisionCycles.pdf;
(b) http://www.canena.org/papers/;
(c) www.csa.ca/standards/canena; and
(d) www.ance.org.mx/normalizacion.

6.2.2 The purpose of the revision cycle document is to identify a sample revision cycle that can serve as a good basis for establishing actual revision cycles for published standards. It reinforces the need for the

ongoing involvement of the THC/THSC and provides guidance on establishing a plan for standards maintenance as the standard is published.

6.3 Proposing revisions

6.3.1 The same basic guidelines defined in Clause 5 for a new standard apply to a revision package.

6.3.2 In addition to proposals developed by the THC, proposals may be received by the SDOs from their committees and from other outside interests. Proposals not developed by the THC should be reviewed by the THC for possible inclusion in the next set of proposals. The required proposal submittal procedures of each SDO are to be followed. For example, for UL, all proposals are to be submitted via UL's CSDS.

6.3.3 If the proposed revision addresses an urgent safety issue or changes to government regulations, the SDO may use emergency means to publish the requirement for its country. The SDO shall notify the other SDOs involved and the THC Secretariat of the action to be taken at the earliest possible opportunity. See 6.3.7 and the document titled "Revision Cycles for Binational and Trinational Standards Published by UL, CSA and ANCE".

6.3.4 The current name and contact information of the Publication Coordinator shall be confirmed with the SDOs' representatives listed in 1.5.

6.3.5 When the SDO receiving the request does not support the change, the SDO may choose to respond to the requester by stating the rationale against the proposal or by forwarding the suggestion to the other SDOs or to the THC for discussion.

6.3.6 CSA and UL should determine early in the revision process, at least prior to work being done on the preliminary review document, if the output will be revised pages or a new edition. The ANCE output will always be a new edition. For a new edition, CSA procedures require the entire standard be balloted. For better coordination, the entire standard should be balloted by UL.

6.3.7 When an SDO makes a unilateral change to a binational or trinational standard, that standard shall no longer be identified as a binational or trinational standard by that SDO. The other SDOs shall be informed and shall republish the standard to reflect the change in the harmonization status of the standard. See 6.3.3.

6.4 Involving the THC

6.4.1 The SDOs shall obtain input/comments from the THC prior to the proposed revision undergoing the SDOs' review and approval process, unless the revisions are considered editorial. If the proposed revisions are editorial, the steps outlined in 5.10 shall be followed. If the proposed revisions are not editorial, the Publication Coordinator shall send the proposed revision material to the THC and other SDOs for input/comments.

6.4.2 The Publication Coordinator shall send the non-editorial proposed revision material to the THC Secretariat for THC review and comment. (In some cases, this step may be handled better in a meeting.) The THC shall send any comments and proposed changes to the SDOs for consideration. The SDOs shall review the THC comments and agree on necessary changes to the proposed revisions. (Additional input from the THC may be needed to reach agreement.) The Publication Coordinator shall send the proposed revision material to the SDOs for their review and approval processes in accordance with 6.4.3.

6.4.3 The proposed revision shall undergo review. Each SDO involved shall follow its review process and circulate the proposed revision to its committees/constituents for review and comment. The SDO shall collect comments from its review. Comments shall be resolved in accordance with 5.9.

7. Moving from a binational to a trinational standard

7.1 When two SDOs have already published a binational standard, the third SDO (or a trade association) may show interest in moving the standard to trinational status. Clause 7 addresses this situation.

7.2 If the third SDO is able to adopt the standard without change, the first two SDOs do not need to republish the standard. Instead, the three SDOs shall agree on a trinational publication date. The first two SDOs shall publish a new title page with the new date, all three SDO logos, and the statement given in 7.3. A revised preface may also need to be issued.

7.3 As required by 7.2, the following text shall appear on the title page:

> This standard was published as a binational standard by (SDOs) on (date). It has since been adopted by (SDO) on (date). As indicated by the three Standards Development Organization logos included on this title page, this standard is now considered a trinational standard.

7.4 Generally, when a third SDO intends to adopt a binational standard, some changes will be needed due to the country requirements of the third SDO or to updates that may be required. The procedures specified in Clause 6 shall be followed to address these revisions.

8. Format

8.1 General

8.1.1 A binational or trinational standard based on an IEC standard shall be prepared in accordance with the IEC format as defined in 8.2. A binational or trinational standard that is not based on an IEC standard shall be prepared in accordance with the format as defined in 8.4.

8.1.2 It is the responsibility of the THC Secretariat to format the standard properly.

8.1.3 The presentation of a binational or trinational standard, whether equivalent (see 2.3) or identical (see 2.5), shall be word for word, except for the editorial changes noted in 2.2 and 8.5. Due to this, it is possible that a binational or trinational standard will not print exactly the same way for each SDO. However, the organization (i.e., the sequence) of material shall be the same, except for the location of a figure or table where it is not possible to dictate the location, for example, because of SGML. This means that figures and tables may not be presented within the text by one SDO and at the end of the text by another.

8.1.4 Technical reasons shall be stated in the preface when a proposed regional standard is not based on the applicable IEC standard or to explain at a high level why one or more requirements deviate from the IEC standard. See 2.4.

8.2 IEC format

8.2.1 The IEC format shall be in accordance with the latest edition of the ISO/IEC Directives, Part 2, *Rules for the structure and drafting of International Standards*, as modified in this clause.

8.2.2 Table 8.1 details additions or modifications to the IEC format. See Annex D for a sample standard.

8.2.3 Annex B contains the IEC-based format guidelines.

Table 8.1

Formatting summary

Item	Description
Annex	An annex shall be declared informative or normative as appropriate. The normative annex(es) shall appear before the informative one(s). The title for an annex shall include the annex identification (for example, Annex A), a parenthetical note indicating normative or informative, and the annex title on the next line. The annex identification, title, and type shall all appear in the table of contents.
Components	A statement shall be made in the national differences portion of the standard (for an IEC adoption) or the body of the binational/trinational standard (for a standard that is not an IEC adoption) to make general reference to ANCE, CSA, and UL standards for components associated with the product category, if applicable. The generalized statement shall be supplemented by an annex listing the ANCE, CSA, and UL standards covering requirements for components likely to be applicable to the product category covered. See 3.1 and Annex A.
Contents	A contents page shall be included. Page numbers may differ in each SDO's version of the standard. The contents of the IEC standard may also be listed on the contents page in IEC-based standards.
Copyright page	The Commitment for Amendments statement shall be on the copyright page. The copyright page shall be on the back of the title page. The copyright statements for ANCE, CSA, and UL shall appear in the same order as the logos on the title page. The copyright date (year) for ANCE and UL consists of the first copyright date followed by the year of the most recent revisions. The copyright for CSA consists of the first copyright date.
Exceptions	Exceptions shall not be used. Instead, the text shall be incorporated into the requirement or shall be listed as a note, as appropriate.
Figures	Figures shall be located at the back of the standard following the text but preceding the annexes.
Footers	Footers shall not be used.
Forewords	Forewords are no longer included in co-published standards.
Headers	The header shall start on the first page following the copyright page (this is usually the contents page) and shall include the date, the designations, and the page number. The page number and the date shall alternate for odd and even pages so that the page number is on the outer part of the page. The header shall be underlined. The header shall be presented so that the designations are in the approximate center of the page, between the margins. The designations shall consist of the ANCE designation followed by a diamond shape, followed by the CSA designation and another diamond shape, followed by the UL designation. If only two SDOs are involved, only their two designations shall be included. The standard designations included in the header shall be the same as the standard designations shown on the title page of the standard. CSA's designation shall include the two-digit year of publication. When revising a co-published standard that was adopted using the previous formatting rules for headers, the header on the new revision pages may differ.
Language	Whenever possible, the language used shall be normative.
Markings	For essential markings on products, the use of symbols or pictograms rather

Item	Description
	than words is recommended. Markings required by the standard may have to be in other languages to conform with the language requirements where the product is to be used. Translations of markings or instructions may be provided. In standards involving CSA and ANCE, markings in French and Spanish shall be provided by CSA and ANCE for information purposes and shall be included in the CSA, ANCE, and UL published standards. It is important to note that in Canada there are two official languages, English and French. See 8.2.4.
National differences	National differences (see 2.6) shall clearly specify in which country or countries the requirement applies. All of the national differences shall be published by all of the SDOs. If an IEC standard is being adopted, the SDOs may choose to present the national differences in different locations. CSA generally inserts the national differences at the beginning of the standard. UL generally structures the standard so that the national differences are embedded in the text of the standard. In these cases where the SDOs choose to present the national differences in two very different formats, the following text shall be included on the preface page, following the Level of Harmonization statement: "All national differences from the IEC text are included in the (ANCE, CSA, and/or UL) versions of the standard. While the technical content is the same in each organization's version, the format and presentation may differ." If an IEC standard is being adopted, the national differences shall be numbered to correlate with the clause numbers of the IEC standard. The national differences shall clearly state how they are to be applied. Words such as "add", "delete", and "modify" should be used. See "CSA/UL Numbering Guidelines for National Differences to IEC Standards" and Annexes B and D. In a standard that is not an IEC adoption, the national differences shall be in the body of the standard. See Annexes A and C.
Normative References	All normative references shall be listed in the standard. All documents that are referenced in the text (including ANCE, CSA, and UL standards) shall be listed by full title and designation. Standards that are included in an annex for components but not referenced in the text need not be included in the normative references clause. The SDO standards shall be listed first, in the order of ANCE, CSA, and UL, followed by all other publications listed alphabetically by issuing body or author. See 3.2.
Numbering system	The numbering system of the IEC portion of the standard shall be identical to the IEC standard. The numbering system of the national differences in the standard shall correlate with the IEC text. For a standard that is not an adoption of an IEC standard, a primary subclause (e.g., 5.1) may be subdivided into secondary subclauses (e.g., 5.1.1, 5.1.2, etc.) up to the fifth level of subdivision, i.e., to six sets of digits (e.g., 5.3.3.1.2.5). Where the national differences require a clause(s) to be inserted into the middle or at the end of a clause sequence in the IEC standard, an identifier consisting of a letter added to the preceding IEC clause number shall be assigned to the national difference. For example, if the national difference is a clause to be added at the end of IEC sequence 3.2.1, 3.2.2, and 3.2.3, the number assigned to the national difference shall be 3.2.3A. If the national difference is to be inserted after 3.2.2, the number assigned shall be 3.2.2A. This method provides for appropriate placement and clear identification of national differences and ensures that clause numbers that IEC might use in a subsequent amendment are not assigned to a national difference.

Item	Description
	A similar method shall be used in revisions to binational and trinational standards in order to avoid unnecessary renumbering of clauses that are not being revised. If a clause is to be inserted after 3.2.2 and before 3.2.3, the number assigned to it shall be 3.2.2A. If a clause is to be inserted after 3.2.3, where 3.2.3 is the final clause in the sequence, the number assigned to the inserted clause shall be 3.2.4.
Organization and requirements	The standard shall include, in the following order: (a) a title page; (b) a copyright page; (c) a contents page; (d) a preface; (e) optionally national differences from the IEC text (in the CSA published version); and (f) the text of the IEC standard (including national differences in the UL and ANCE published versions). If an IEC standard is not being adopted, the full text of the binational/trinational standard with national differences shall be included.
Preface	The preface shall indicate the level of harmonization. The level of harmonization statement shall indicate that (a) the standard adopts the IEC text with national differences; or (b) the standard is in the IEC format but does not adopt IEC text. The statement shall also indicate if the standard is identical or equivalent. Statements regarding interpretations and reasons for differences from the IEC standard shall be provided. See the sample preface in Annex A.
Publication date	The publication date of the document shall be coordinated among the SDOs. This date is not required to be the first of the month. The determination of this date should take into consideration when the final standard will be made available to the other SDOs by the Publication Coordinator.
Scope	This element shall appear at the beginning of each standard and define without ambiguity the subject of the standard and the aspect(s) covered, thereby indicating the limits of applicability of the standard or particular parts of it. The scope shall not contain requirements. If necessary, a general section may follow the scope to house general requirements. The scope shall be succinct so that it can be used as a summary for bibliographic purposes. This element shall be worded as a series of statements of fact. Forms of expression such as the following shall be used: "This standard specifies the dimensions of …" a method of …" the characteristics of ..." establishes a system for …" general principles for …" gives guidelines for …" defines terms …" Statements of applicability of the standard shall be introduced by the following wording: "This standard is applicable to …" In addition, the scope shall establish the objective of the standard. The

Item	Description
	objective shall define clear and unambiguous provisions in order to facilitate international trade and communication. To achieve this objective, the standard shall (a) be as complete as necessary within the limits specified by its scope; (b) be consistent, clear, and accurate; (c) take full account of the state of the art; (d) provide a framework for future technological development; and (e) be comprehensible to qualified persons who have not participated in its preparation. The scope of a standard should also identify the scope of all annexes in the standard, if the scope would not be clear otherwise. For example, if an annex addresses high-voltage equipment, the scope should indicate that the standard applies to high-voltage equipment.
SDO-specific pages	When revisions or a new edition is issued for a binational or trinational standard, each SDO may have SDO-specific pages that need to be published by that SDO alone. Regardless of which organization has been identified as the Publication Coordinator, the SDO needing the SDO-specific pages is responsible for preparing these pages in accordance with its procedures. The pages shall include only that SDO in the header and shall not be considered part of the standard or revision package. Neither of the other SDOs shall publish these pages.
Tables	In a standard that is an adoption of an IEC standard, the tables shall be placed in the same position in which they appear in the IEC standard. In a standard that is not an adoption of an IEC standard, the tables shall be in accordance with the IEC format, meaning that they may appear in the body of the standard or at the back of the standard with the figures.
Text of IEC standard	The complete text of the IEC standard shall appear when the IEC standard is being adopted.
Title page	The SDOs involved shall be identified in alphabetical order (i.e., ANCE, CSA, UL) using rows. If only two SDOs are involved, only those two shall appear on the title page. The standard may be submitted by CSA to the Standards Council of Canada (SCC) and by UL to the American National Standards Institute (ANSI) for approval as a National Standard. When the standard is approved, the logos of the SCC and/or ANSI shall appear on the title page. The title of the standard shall be shown in the center of the page. ANCE shall show the title in both English and Spanish. The date of publication shall be shown centered below the title. If the title page is reprinted with revisions, the reprint date shall appear below the original date of publication of the standard.

Item	Description
Units of measurement	SI (metric) units shall be the normative units. The THC shall establish metric units that are measurable for the particular application of the standard. The values established should take into consideration existing test apparatus specifications and limitations. This may mean that a soft conversion from existing inch-pound units to metric units may not be appropriate. At the direction of the THC or industry, inch-pound units may be defined by the THC for information purposes only. Inch-pound units, if provided, may be shown in parentheses following the SI units, as an additional column in a table, or as an informative annex to the standard. If inch-pound units are provided, they shall be numerically the same for each SDO that chooses to publish them. When inch-pound conversions are included, the following statement shall appear in the general requirements clause of the standard: "The values given in SI (metric) units shall be normative. Any other values given shall be for information purposes only." ***Note: Inch-pound units are also referred to as yard-pound units.***

8.2.4 Table 8.2 provides information on markings. This information is for guidance in developing a proposed standard, and the wording shall not be included in the text of the standard.

Table 8.2
Markings

[Note: The following advisory note and the material in the corresponding annex shall appear in binational and trinational standards when applicable.]

7 Marking

Advisory Note: *In Canada, there are two official languages, English and French, and in Mexico, the official language is Spanish. Annex ____ provides translations in French and Spanish of the English markings specified in this standard. Markings required by this standard may have to be provided in other languages to conform with the language requirements of the country where the product is to be used.*

[Note: This example of Clause 7 is intended to demonstrate that only the markings are translated in Annex _____ . The complete clause is not translated in the annex unless the meaning of the cautionary markings would otherwise be ambiguous.]

7.1 A cautionary marking shall be prefixed by the word "CAUTION", "WARNING", or "DANGER" in letters not less than 3.2 mm high. The remaining letters of such a marking shall not be less than 1.6 mm high.

7.2 An appliance shall be rated in V and in A. The number of phases shall be included in the ratings if the appliance is intended for connection to a polyphase circuit, and the ratings shall include the frequency expressed in hertz (Hz).

7.3 A stationary appliance employing an attachment plug shall be marked in the installation instructions, markings, or on a hang tag or equivalent "Connect to individual branch circuit."

7.4 An appliance provided with double insulation shall be permanently marked with the words "Double Insulation. When servicing, use only identical replacement parts." The words "double-insulated" may be used instead of "double insulation".

Annex ____ (informative)
French translations and markings

7 Marking

7.1 Les mises en garde doivent débuter par les termes "ATTENTION", "AVERTISSEMENT" ou "DANGER" en caractères d'au moins 3,2 mm de hauteur; les autres caractères doivent avoir au moins 1,6 mm de hauteur.

7.3 "Connecter à une dérivation individuelle."

7.4 "Double isolation. N'utiliser que des pièces de rechange identiques."

8.3 National differences in IEC-based standards

8.3.1 The numbering scheme for the national differences shall be formatted according to "CSA/UL Numbering Guidelines for National Differences to IEC Standards" currently under development. The following standards are model documents for IEC-based standards:

(a) UL 60947-1, CAN/CSA-C22.2 No. 60947-1-07, ANCE NMX-J-XXX; and
(b) UL 60947-4-1A, CAN/CSA-C22.2 No. 60947-4-1-07, ANCE NMX-J-290.

8.4 Non IEC-based standards

8.4.1 Annex A contains the non IEC-based format guidelines, including guidelines for formatting National Differences.

8.4.2 Table 8.1 details additions or modifications to the IEC format. See Annex C for a sample standard of a non-IEC-based co-published standard using the non-IEC-based format.

8.5 Editorial leeway

8.5.1 The internal SDO document titled "Provisions for Formatting and Editorial Leeway" available at: http://ulstandardsinfonet.ul.com/harm/index.html provides guidance on the leeway that the SDOs allow regarding the editorial differences in their published standards or revision pages.

Annex A (informative)

Non IEC-based format guidelines

Association of Standardization and Certification
NMX-J-XXX-ANCE
XXXX Edition

Canadian Standards Association
CAN/CSA-C22.2
No. XXX-XX
XXXX **Edition**

Underwriters Laboratories Inc.
UL XXX
XXXX **Edition**

Title in Upper and Lower Case Letters

Publication Date (Month Day, Year)

(Title Page Reprinted: Month Day, Year)

Approved

By

Standards Council

of Canada

ANSI/UL XX-20XX

Commitment for Amendments

This standard is issued jointly by the Association of Standardization and Certification (ANCE), the Canadian Standards Association (CSA), and Underwriters Laboratories Inc. (UL). Comments or proposals for revisions on any part of the standard may be submitted to ANCE, CSA, or UL at any time. Revisions to this standard will be made only after processing according to the standards development procedures of ANCE, CSA, and UL. CSA and UL will issue revisions to this standard by means of a new edition or revised or additional pages bearing their date of issue. ANCE will incorporate the same revisions into a new edition of the standard bearing the same date of issue as the CSA and UL pages.

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Revisions of this Standard will be made by issuing revised or additional pages bearing their date of issue. A UL Standard is current only if it incorporates the most recently adopted revisions, all of which are itemized on the transmittal notice that accompanies the latest set of revised requirements.

The most recent designation of ANSI/UL XXXX as an American National Standard (ANSI) occurred on (Date). The ANSI approval for this standard does not include the cover page, transmittal pages, title page, superseded requirements, or the CRG.

This ANSI/UL Standard for Safety, which consists of the XXXX edition, is under continuous maintenance, whereby each revision is ANSI approved upon publication.

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 http://csds.ul.com.

The Department of Defense (DoD) has adopted UL XXXX on (Date). The publication of revised pages or a new edition of this Standard will not invalidate the DoD adoption.

To purchase UL Standards, visit Comm 2000 at http://www.comm-2000.com/help/how_to_order.aspx or call toll-free 1-888-853-3503.

Preface

[Note: This is an example of a preface that may be used for a binational or trinational standard.]

This is the harmonized ANCE, CSA, and UL standard for _____. It is the _____ edition of NMX-J-XXX-ANCE, the _____ edition of CAN/CSA-C22.2 No. XXX, and the ___ edition of UL XXXX. This edition of NMX-J-XXX-ANCE cancels the previous edition published in ___. This edition of CAN/CSA-C22.2 No. XXX supersedes the previous edition(s) published in ___. This edition of UL XXX supersedes the previous edition(s) published in _____. ***[Note: Include when a standard is being published.]***

This is the harmonized ANCE, CSA, and UL standard for _____. It is the _____edition of NMX-J-XXX-ANCE, the _____ edition of CAN/CSA-C22.2 No. XXX, and the ___ edition of UL XXXX This harmonized standard has been jointly revised on (month day, year). For this purpose, CSA and UL are issuing revision pages dated (month day, year), and ANCE is issuing a new edition dated (month day, year). ***[Note: Include when a standard is being revised.]***

This harmonized standard was prepared by the Association of Standardization and Certification (ANCE), the Canadian Standards Association (CSA), and Underwriters Laboratories Inc. (UL). ***[Note: The following statement is optional]*** The efforts and support of the (association or committee, e.g., CANENA Technical Harmonization Committee) are gratefully acknowledged.

The CSA standard also replaces the following Technical Information Letters (TILs), for products covered in this Standard:

- TIL No. A-XX "_____"
- TIL No. B-XX "_____"

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

The present Mexican Standard was developed by the CT _____ from the Comite de Normalizacion de la Asociacion de Normalizacion y Certificacion, A.C., CONANCE, with the collaboration of the _____ manufacturers and users.

This standard was reviewed by the CSA Subcommittee on _____, under the jurisdiction of the CSA Technical Committee on _____ and the CSA Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the CSA Technical Committee.

This standard will be submitted to the (Standards Council of Canada (SCC) for approval as a National Standard of Canada) (and to) (the American National Standards Institute (ANSI) for publication as an American National Standard). ***[Note: Omit this paragraph if SCC and ANSI approval have already been obtained or if national approval will not be pursued.]***

This standard has been approved as a National Standard of Canada by the Standards Council of Canada. ***[Note: Include only if SCC approved.]***

This standard has been approved by the American National Standards Institute (ANSI) as an American National Standard. ***[Note: Include only if ANSI approved.]***

Where reference is made to a specific number of samples to be tested, the specified number is considered a minimum quantity.

Note: Although the intended primary application of this standard is stated in its scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.

Level of harmonization
This standard uses the IEC format but is not based on, nor is it considered equivalent to, an IEC standard.

This standard is published as an (identical) (equivalent) standard for (ANCE, CSA, and UL).

[For an identical standard] An identical standard is a standard that is exactly the same in technical content except for national differences resulting from conflicts in codes and governmental regulations. Presentation is word for word except for editorial changes.

[For an equivalent standard] An equivalent standard is a standard that is substantially the same in technical content, except as follows: Technical national differences are allowed for codes and governmental regulations as well as those recognized as being in accordance with NAFTA Article 905, for example, because of fundamental climatic, geographical, technological, or infrastructural factors, scientific justification, or the level of protection that the country considers appropriate. Presentation is word for word except for editorial changes.

Reasons for differences from IEC
(Text to be added by CANENA THC. If there is no corresponding IEC standard, then that reason should be noted here.)

Interpretations
The interpretation by the standards development organization of an identical or equivalent standard is based on the literal text to determine compliance with the standard in accordance with the procedural rules of the standards development organization. If more than one interpretation of the literal text has been identified, a revision is to be proposed as soon as possible to each of the standards development organizations to more accurately reflect the intent. ***[Note: CSA may use an ORD (Other Recognized Document) for this purpose.]***

ANCE effective date
The effective date for ANCE will be announced through the Diario Oficial de la Federación (Official Gazette) and is indicated on the cover page.

CSA effective date
The effective date for CSA International will be announced through *CSA Informs* or a CSA certification notice.

UL effective date
As of (month day, year) all products Listed or Recognized by UL must comply with the requirements in this standard except for clauses, figures, and tables in the following list, which are effective (month day, year).

Clauses _____ , Figures _____ , and Tables _____

Between (month 1, year) and (month day, year), new product submittals to UL may be evaluated under all requirements in this standard or, if requested in writing, evaluated under presently effective requirements only. The presently effective requirements are contained in the _____ edition of UL _____.

A UL effective date is one established by Underwriters Laboratories Inc. and is not part of the ANSI approved standard.

Examples of Formatting National Differences

Note: Below is an example of national differences located in the standard when the standard is not based on an IEC standard.

[Clauses 1.1 – 9.1 of the standard]

9.2 In Mexico and the United States, flexible cord containing a grounding conductor shall not be assembled to:

a) A 30-A, 3-pole, 3-wire, 125/250-V fitting with a 10-30R contact configuration; or

b) A 50-A, 3-pole, 3-wire, 125/250-V fitting with a 10-50R contact configuration.

In Canada, this requirement does not apply.

9.3 In Canada, 15- or 20-A general-use cord sets shall comply with the requirements in 6.1.12.

In Mexico and the United States, compliance with this requirement is optional.

9.4 In the United States, a power-supply cord is either of the detachable or non-detachable type.

In Canada, a power-supply cord is either so named, or is of the special-use type.

Sample Annex for Components (if needed)

Annex A (normative)
Standards for components

A1. Component standards (for an equivalent standard)

The ANCE, CSA, and UL standards listed below are used for evaluation of components and features of products covered by this standard. Components need only comply with the applicable component standard acceptable in the country where the product is to be used. These standards shall be considered to refer to the latest edition and all revisions published to that edition.

ANCE standards
(Listed in numerical order by ANCE number. The number and title of the standard shall be provided.)

CSA standards
(Listed in numerical order by CSA number. The number and title of the standard shall be provided.)

UL standards
(Listed in numerical order by UL number. The number and title of the standard shall be provided.)

A2. Component standards (for identical standards)

The ANCE, CSA, and UL standards listed below are used for evaluation of components and features of products covered by this standard. Components shall comply with all the applicable ANCE, CSA, and UL component standards. These standards shall be considered to refer to the latest edition and all revisions published to that edition.

ANCE standards
(Listed in numerical order by ANCE number. The number and title of the standard shall be provided.)

CSA standards
(Listed in numerical order by CSA number. The number and title of the standard shall be provided.)

UL standards
(Listed in numerical order by UL number. The number and title of the standard shall be provided.)

Annex B (informative)

IEC-based format guidelines

Association of Standardization and Certification NMX-J-XXX-ANCE XXXX Edition

Canadian Standards Association CAN/CSA-C22.2 No. XXX-XX XXXX **Edition (IEC XXXXX-X-X:200X, MOD)**

Underwriters Laboratories Inc. UL XXX XXXX **Edition**

Title in Upper and Lower Case Letters

Publication Date (Month Day, Year)

(Title Page Reprinted: Month Day, Year)

This national standard is based on publication IEC XXXXX-X-X, XXXX Edition, (200X).

Approved

By

Standards Council

of Canada

ANSI/UL XX-20XX

Commitment for Amendments

This standard is issued jointly by the Association of Standardization and Certification (ANCE), the Canadian Standards Association (CSA), and Underwriters Laboratories Inc. (UL). Comments or proposals for revisions on any part of the standard may be submitted to ANCE, CSA, or UL at any time. Revisions to this standard will be made only after processing according to the standards development procedures of ANCE, CSA, and UL. CSA and UL will issue revisions to this standard by means of a new edition or revised or additional pages bearing their date of issue. ANCE will incorporate the same revisions into a new edition of the standard bearing the same date of issue as the CSA and UL pages.

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Revisions of this Standard will be made by issuing revised or additional pages bearing their date of issue. A UL Standard is current only if it incorporates the most recently adopted revisions, all of which are itemized on the transmittal notice that accompanies the latest set of revised requirements.

The most recent designation of ANSI/UL XXXX as an American National Standard (ANSI) occurred on (Date). The ANSI approval for this standard does not include the cover page, transmittal pages, title page, superseded requirements, or the CRG.

This ANSI/UL Standard for Safety, which consists of the XXXX edition, is under continuous maintenance, whereby each revision is ANSI approved upon publication.

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 http://csds.ul.com.

The Department of Defense (DoD) has adopted UL XXXX on (Date). The publication of revised pages or a new edition of this Standard will not invalidate the DoD adoption.

To purchase UL Standards, visit Comm 2000 at http://www.comm-2000.com/help/how_to_order.aspx or call toll-free 1-888-853-3503.

Preface

[Note: This is an example of a preface that may be used for a binational or trinational standard.]

This is the harmonized ANCE, CSA, and UL standard for _____. It is the _____ edition of NMX-J-XXX-ANCE, the _____ edition of CAN/CSA-C22.2 No. XXX, and the ___ edition of UL XXXX. This edition of NMX-J-XXX-ANCE cancels the previous edition published in ___. This edition of CAN/CSA-C22.2 No. XXX supersedes the previous edition(s) published in ___. This edition of UL XXX supersedes the previous edition(s) published in _____. This standard is based on IEC _____ , _____ edition. ***[Note: Include when a standard is being published.]***

This is the harmonized ANCE, CSA, and UL standard for _____. It is the _____edition of NMX-J-XXX-ANCE, the _____ edition of CAN/CSA-C22.2 No. XXX, and the ___ edition of UL XXXX This harmonized standard has been jointly revised on (month day, year). For this purpose, CSA and UL are issuing revision pages dated (month day, year), and ANCE is issuing a new edition dated (month day, year). ***[Note: Include when a standard is being revised.]***

This harmonized standard was prepared by the Association of Standardization and Certification (ANCE), the Canadian Standards Association (CSA), and Underwriters Laboratories Inc. (UL). ***[Note: The following statement is optional]*** The efforts and support of the (association or committee, e.g., CANENA Technical Harmonization Committee) are gratefully acknowledged.

The CSA standard also replaces the following Technical Information Letters (TILs), for products covered in this Standard:

- TIL No. A-XX "_____"
- TIL No. B-XX "_____"

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

The present Mexican Standard was developed by the CT _____ from the Comite de Normalizacion de la Asociacion de Normalizacion y Certificacion, A.C., CONANCE, with the collaboration of the _____ manufacturers and users.

This standard was reviewed by the CSA Subcommittee on _____, under the jurisdiction of the CSA Technical Committee on _____ and the CSA Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the CSA Technical Committee.

This standard will be submitted to the (Standards Council of Canada (SCC) for approval as a National Standard of Canada) (and to) (the American National Standards Institute (ANSI) for publication as an American National Standard). ***[Note: Omit this paragraph if SCC and ANSI approval have already been obtained or if national approval will not be pursued.]***

This standard has been approved as a National Standard of Canada by the Standards Council of Canada. ***[Note: Include only if SCC approved.]***

This standard has been approved by the American National Standards Institute (ANSI) as an American National Standard. ***[Note: Include only if ANSI approved.]***

Where reference is made to a specific number of samples to be tested, the specified number is considered a minimum quantity.

Note: Although the intended primary application of this standard is stated in its scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.

Level of harmonization

This standard adopts the IEC text with national differences.

This standard is published as an (identical) (equivalent) standard for (ANCE, CSA, and UL).

[For an identical standard] An identical standard is a standard that is exactly the same in technical content except for national differences resulting from conflicts in codes and governmental regulations. Presentation is word for word except for editorial changes.

[For an equivalent standard] An equivalent standard is a standard that is substantially the same in technical content, except as follows: Technical national differences are allowed for codes and governmental regulations as well as those recognized as being in accordance with NAFTA Article 905, for example, because of fundamental climatic, geographical, technological, or infrastructural factors, scientific justification, or the level of protection that the country considers appropriate. Presentation is word for word except for editorial changes.

All national differences from the IEC text are included in the (ANCE, CSA, and/or UL) versions of the standard. While the technical content is the same in each organization's version, the format and presentation may differ.

Reasons for differences from IEC
Text to be added by CANENA THC.

Interpretations
The interpretation by the standards development organization of an identical or equivalent standard is based on the literal text to determine compliance with the standard in accordance with the procedural rules of the standards development organization. If more than one interpretation of the literal text has been identified, a revision is to be proposed as soon as possible to each of the standards development organizations to more accurately reflect the intent. ***[Note: CSA may use an ORD (Other Recognized Document) for this purpose.]***

ANCE effective date
The effective date for ANCE will be announced through the Diario Oficial de la Federación (Official Gazette) and is indicated on the cover page.

CSA effective date
The effective date for CSA International will be announced through *CSA Informs* or a CSA certification notice.

UL effective date
As of (month day, year) all products Listed or Recognized by UL must comply with the requirements in this standard except for clauses, figures, and tables in the following list, which are effective (month day, year).

Clauses _____ , Figures _____ , and Tables _____

Between (month 1, year) and (month day, year), new product submittals to UL may be evaluated under all requirements in this standard or, if requested in writing, evaluated under presently effective requirements only. The presently effective requirements are contained in the _____ edition of UL _____.

A UL effective date is one established by Underwriters Laboratories Inc. and is not part of the ANSI approved standard.

IEC Copyright

For ANCE, the text, figures, and tables of International Electrotechnical Commission Publication 60___-__, (add title), copyright 200_, are used in this standard according to the guidelines provided in the ISO/IEC/POCOSA.

For CSA, the text, figures, and tables of International Electrotechnical Commission Publication 60___-__, (add title), copyright 200_, are used in this standard with the consent of the International Electrotechnical Commission. The IEC Foreword and Introduction are not a part of the requirements of

this standard but are included for information purposes only.

For UL, the text, figures and tables of IEC publication _____-_-_, Safety of _____ copyright ____ are used in this Standard with the consent of the IEC and the American National Standards Institute (ANSI). The IEC copyrighted material has been reproduced with permission from ANSI. ANSI should be contacted regarding the reproduction of any portion of the IEC material. The IEC Foreword and Introduction are not a part of the requirements of this Standard but are included for information purposes only. Copies of IEC Publication _____-_-_ may be purchased from ANSI, 25 West 43rd Street, 4th Floor, New York, New York, 10036, (212) 642-4900.

NATIONAL DIFFERENCES

In the ANCE, CSA and UL publications of this standard, National Differences from the text of International Electrotechnical Commission (IEC) Publication 60335-2-24, Safety Requirements for Household and Similar Electrical Appliances, Part 2: Particular Requirements for Refrigerating Appliances, Ice-Cream Appliances and Ice-Makers copyright 2006 are indicated by notations (differences) and are presented in bold text. The national difference type is included in the body.

There are five types of National Differences as noted below. The difference type is noted on the first line of the National Difference in the standard. The standard may not include all types of these National Differences.

DR - These are National Differences based on the **national regulatory requirements**.

D1 - These are National Differences which are based on **basic safety principles and requirements**, elimination of which would compromise safety for consumers and users of products.

D2 - These are national differences from IEC requirements based on existing **safety practices**. These requirements reflect national safety practices, where empirical substantiation (for the IEC or national requirement) is not available or the text has not been included in the IEC standard.

DC - These are National Differences based on the **component standards** and will not be deleted until a particular component standard is harmonized with the IEC component standard.

DE - These are National Differences based on **editorial comments or corrections**.

Examples of Formatting National Differences

Note: Below are examples of national differences in an IEC standard, illustrating the format/structure for CSA. The clause numbers correlate to the harmonized base requirement in the IEC standard. The national differences page(s) is followed by the entire text of the IEC standard. Note that the national differences are identical in the CSA and UL versions, other than format.

The following are Canadian, Mexican, and USA national differences to the requirements that appear in Clauses _____ and Annexes _____ of this standard.

1.1DV D2 ***Modification of 1.1 by adding the following sentence:***

This standard applies to equipment to be employed in accordance with CSA C22.1, *Canadian Electrical Code, Part I*, NOM-001-SEDE, *Standard for electrical installations*, and NFPA 70, *National Electrical Code*.

2.3DV D2 ***Modification of 2.3 by adding the following:***

Canada
CAN/CSA-C22.2 No. 0-M91 (R2001), *General Requirements — Canadian Electrical Code, Part II*
C22.2 No. 0.4-M1982, *Bonding and Grounding of Electrical Equipment (Protective Grounding)*
C22.2 No. 0.17-00, *Evaluation of Properties of Polymeric Materials*
Etc.

Mexico
NMX-J-009/248/1-ANCE, *Low voltages fuses — General requirements*
NMX-J-148-ANCE, *Busways — Specifications and test methods*
NMX-J-266-ANCE, *Molded case circuit breakers — Specifications and test methods*

USA
NFPA 70: 1990, *National Electrical Code*
UL 94, *Tests for Flammability of Plastic Materials for Parts in Devices and Appliances*
UL 498: 1986, *Attachment Plugs and Receptacles*
Etc.

3.2.6DV D2 ***Modification of 3.2.6 by adding the following definition:***

Field wiring terminal: Any TERMINAL to which a mains circuit wire is intended to be connected by an installer in the field.

5.1.2DV D2 ***Modification of 5.1.2 by adding the following sentence:***

The term "manufacturer" may refer to the distributor or other supplier of the equipment.

5.2DV D2 ***Modification of 5.2 by adding the following sentence:***

Warning markings shall have lettering in which the precautionary signal word shall be at least 2.75 mm high.

6.12DV D2 ***Modification of 6.12 by adding the following clause:***

A line-connected single-pole switch, the center contact of a lampholder, and an automatic control with a marked off position shall be connected to a TERMINAL or lead intended for connection to the ungrounded conductor of the supply circuit.

6.13DV D2 ***Replacement of 6.13 with the following:***

In Canada, (State specific requirement) [and/or]

In Mexico, (State specific requirement) [and/or]

In the United States, (State specific requirement).

6.14ADV D2 ***Addition the following clause (for an identical standard):***

Except as indicated in Clause X, a component of a product covered by this standard shall comply with the requirements for that component. See (Annex ___) for a list of standards covering components generally used in the products covered by this standard. A component shall comply with the ANCE, CSA, and UL standards.

6.14ADV D2 ***Addition the following clause (for an equivalent standard):***

Except as indicated in Clause X, a component of a product covered by this standard shall comply with the requirements for that component. See (Annex __) for a list of standards covering components generally used in the products covered by this standard. A component shall comply with the ANCE, CSA, or UL standards, as appropriate for the country where the product is to be used.

Annex J

Annex JDV D2 Addition of the following note to Table J.1:

Note 2A: The 120/240 V system refers to a four-wire, three-phase delta system with center point grounding on one phase.

Annex K

Annex KDV D2 Modification of Annex K by adding KDV.1 and KDV.2:

KDV.1 The ROUTINE TEST of Annex K is required between supply mains, connected together, and ACCESSIBLE conductive parts likely to become energized, including the protective grounding conductor.

KDV.2 The test shall be conducted when the equipment is complete (fully assembled) and with the supply mains switch in the on position. It is not intended that the equipment be unwired, modified, or disassembled for the test.

Full text of IEC standard to follow

Note : Below are examples of national differences in an IEC standard, illustrating the format/structure for UL. The entire body of the IEC standard is included, with the IEC text followed by the national difference. The clause numbers of the national differences directly correlate to the clause numbers of the IEC standard. Note that the national differences are identical in the CSA and UL versions, other than format.

1.1 Text of IEC clause

1.1DV D2 ***Modification of 1.1 by adding the following sentence:***

This standard applies to equipment to be employed in accordance with CSA C22.1, *Canadian Electrical Code, Part I*, NOM-001-SEDE, *Standard for electrical installations*, and NFPA 70, *National Electrical Code*.

2.3 Text of IEC clause

2.3DV DR ***Modification of 2.3 by adding the following reference publications:***

Canada
CAN/CSA-C22.2 No. 0-M91 (R2001), *General Requirements — Canadian Electrical Code, Part II*
C22.2 No. 0.4-M1982, *Bonding and Grounding of Electrical Equipment (Protective Grounding)*
C22.2 No. 0.17-00, *Evaluation of Properties of Polymeric Materials*
Etc.

Mexico
NMX-J-009/248/1-ANCE, *Low voltages fuses — General requirements*
NMX-J-148-ANCE, *Busways — Specifications and test methods*
NMX-J-266-ANCE, *Molded case circuit breakers — Specifications and test methods*

USA
NFPA 70: 1990, *National Electrical Code*
UL 94, *Tests for Flammability of Plastic Materials for Parts in Devices and Appliances*
UL 498: 1986, *Attachment Plugs and Receptacles*
Etc.

3.2.6ADV DE ***Addition of the following definition:***

Field wiring terminal: Any TERMINAL to which a mains circuit wire is intended to be connected by an installer in the field.

5.1.2 Text of IEC clause

5.1.2DV D2 ***Modification of 5.1.2 by adding the following sentence:***

The term "manufacturer" may refer to the distributor or other supplier of the equipment.

5.2 Text of IEC clause

5.2DV D2 ***Modification of 5.2 by adding the following sentence:***

Warning markings shall have lettering in which the precautionary signal word shall be at least 2.75 mm high.

6.12ADV D2 ***Addition of the following clause:***

A line-connected single-pole switch, the center contact of a lampholder, and an automatic control with a marked off position shall be connected to a TERMINAL or lead intended for connection to the ungrounded conductor of the supply circuit.

6.13 Text of IEC clause

6.13DV D2 ***Replacement of this clause with the following:***

In Canada, the following applies: **(State specific requirement) [and/or]**

In Mexico, the following applies: **(State specific requirement) [and/or]**

In the United States, the following applies: **(State specific requirement).**

6.14ADV DC ***Addition of the following clause (for an identical standard):***

Except as indicated in Clause X, a component of a product covered by this standard shall comply with the requirements for that component. See (Annex ____) for a list of standards covering components generally used in the products covered by this standard. A component shall comply with the ANCE, CSA, and UL standards.

6.14ADV DC ***Addition of the following clause (for an equivalent standard):***

Except as indicated in Clause X, a component of a product covered by this standard shall comply with the requirements for that component. See (Annex __) for a list of standards covering components generally used in the products covered by this standard. A component shall comply with the ANCE, CSA, or UL standards, as appropriate for the country where the product is to be used.

Annex J

Text of IEC Annex J

Annex JDV D2 Addition of the following note to Table J.1:

Note 2A: The 120/240 V system refers to a four-wire, three-phase delta system with center point grounding on one phase.

Annex K

Text of IEC Annex K

Annex KDV D2 Modification of Annex K by adding KDV.1 and KDV.2:

KDV.1 The ROUTINE TEST of Annex K is required between supply mains, connected together, and ACCESSIBLE conductive parts likely to become energized, including the protective grounding conductor.

KDV.2 The test shall be conducted when the equipment is complete (fully assembled) and with the supply mains switch in the on position. It is not intended that the equipment be unwired, modified, or disassembled for the test.

Note: Below are examples of national differences in an IEC standard, illustrating the format/structure for ANCE. The clause numbers correlate to the common base requirement in the IEC standard. The national differences page(s) is followed by the entire text of the IEC standard with the text of the national differences embedded. Additionally ANCE splits national differences under two categories: national notes (no technical differences) and national deviations (technical differences).

National notes

1 NN – 2.1.14

Add a note to clarify the term "artificial neutral".

2 NN – 6.1.2

Add a note to clarify the use of equipment above 1 000 m.

National deviations

1 DN – 2.1.15

Replace IEC 60335-1 by NMX-J-521/1-ANCE.

2 DN – 5.2

Delete items (b) and (c). Those markings are not required in Mexico.

Annex C (informative)

Example of a non-IEC-based co-published standard

Association of Standardization and Certification
NMX-J-543-ANCE
Second Edition

Canadian Standards Association
CSA C22.2 No. 65-03
Fourth Edition

Underwriters Laboratories Inc.
UL 486A-486B
First Edition

Wire Connectors

November 15, 2003

(Title Page Reprinted: August 25, 2006)

ANSI/UL 486A-486B-2006

Commitment for Amendments

This standard is issued jointly by the Association of Standardization and Certification (ANCE), the Canadian Standards Association (CSA), and Underwriters Laboratories Inc. (UL). Comments or proposals for revisions on any part of the standard may be submitted to ANCE, CSA, or UL at any time. Revisions to this standard will be made only after processing according to the standards development procedures of ANCE, CSA, and UL. CSA and UL will issue revisions to this standard by means of a new edition or revised or additional pages bearing their date of issue. ANCE will incorporate the same revisions into a new edition of the standard bearing the same date of issue as the CSA and UL pages.

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Revisions of this Standard will be made by issuing revised or additional pages bearing their date of issue. A UL Standard is current only if it incorporates the most recently adopted revisions, all of which are itemized on the transmittal notice that accompanies the latest set of revised requirements.

The most recent designation of ANSI/UL XXXX as an American National Standard (ANSI) occurred on (Date). The ANSI approval for this standard does not include the cover page, transmittal pages, title page, superseded requirements, or the CRG.

This ANSI/UL Standard for Safety, which consists of the XXXX edition, is under continuous maintenance, whereby each revision is ANSI approved upon publication.

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 http://csds.ul.com.

The Department of Defense (DoD) has adopted UL XXXX on (Date). The publication of revised pages or a new edition of this Standard will not invalidate the DoD adoption.

To purchase UL Standards, visit Comm 2000 at http://www.comm-2000.com/help/how_to_order.aspx or call toll-free 1-888-853-3503.

Preface

This is the harmonized ANCE, CSA, and UL standard for *Wire Connectors*. It is the second edition of NMX-J-543-ANCE, the fourth edition of CSA C22.2 No. 65, and the first edition of UL 486A-486B. This edition of NMX-J-543-ANCE cancels the previous edition published in 2004. This edition of CSA C22.2 No. 65 supersedes the previous edition published in 1993.

This harmonized standard was prepared by the Association of Standardization and Certification (ANCE), the Canadian Standards Association (CSA), and Underwriters Laboratories Inc., (UL).

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

The present Mexican Standard was developed by the CT 20 from the Comite de Normalizacion de la Asociacion de Normalizacion y Certificacion, A.C., CONANCE, with the collaboration of the connectors manufacturers and users.

This standard was reviewed by the CSA Subcommittee on C22.2 No. 65, under the jurisdiction of the CSA Technical Committee on Wiring Products and the CSA Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the CSA Technical Committee.

This standard will be submitted to the Standards Council of Canada (SCC) for approval as a National Standard of Canada.

This standard has been approved by the American National Standards Institute (ANSI) as an American National Standard.

A UL standard is current only if it incorporates the most recently adopted revisions, all of which are itemized on the transmittal notice that accompanies the latest set of revised requirements.

Where reference is made to a specific number of samples to be tested, the specified number is to be considered a minimum quantity.

Note: Although the intended primary application of this standard is stated in its scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.

Level of harmonization

This standard uses the IEC format but is not based on, nor is it considered equivalent to, an IEC standard.

This standard is published as an equivalent standard for ANCE, CSA, and UL. An equivalent standard is a standard that is substantially the same in technical content, except as follows: Technical national differences are allowed for codes and governmental regulations as well as those recognized as being in accordance with NAFTA Article 905, for example, because of fundamental climatic, geographical, technological, or infrastructural factors, scientific justification, or the level of protection that the country considers appropriate. Presentation is word for word except for editorial changes.

Reasons for differences from IEC

The Technical Harmonization Committee identified several IEC standards that address electrical wire connectors included in the scope of this standard. The IEC standards for electrical wire connectors are recognized as being generally system connectors in relation to the North American Electrical Codes with which they are intended to be installed. The THC agreed such future investigation will be facilitated by the harmonization of the North American Electrical Codes for wire connectors with IEC installation practices.

Interpretations

The interpretation by the standards development organization of an identical or equivalent standard is based on the literal text to determine compliance with the standard in accordance with the procedural rules of the standards development organization. If more than one interpretation of the literal text has been identified, a revision is to be proposed as soon as possible to each of the standards development organizations to more accurately reflect the intent.

ANCE Effective Date

The effective date for ANCE will be announced through the Diario Oficial de la Federación (Official Gazette) and is indicated on the cover page.

CSA Effective Date

The effective date for CSA International will be announced through *CSA Informs* or a CSA certification notice.

UL Effective Date

As of August 25, 2006 all products Listed or Recognized by UL must comply with the requirements in this standard except for clauses in the following list, which are effective October 10, 2006.

Clauses 6.2.5, 6.2.6, 10.42

A UL effective date is one established by Underwriters Laboratories Inc. and is not part of the ANSI approved standard.

1 Scope

1.1 This Standard applies to connectors for use with all alloys of copper or aluminum conductors, or both, for providing contacts between current-carrying parts, in accordance with the Canadian Electrical Code, Part I, C22.1, in Canada, the National Electrical Code, NFPA-70, in the United States of America, or the Standard for Electrical Installations, NOM-001-SEDE, in Mexico, as follows:

a) pressure wire connectors intended to hold one or more conductor(s);

b) connectors intended for use in appliances and equipment that comply with the requirements for such appliances and equipment;

c) soldering connectors;

d) splicing wire connectors intended for use with 4 AWG (21.2 mm^2) or larger conductors;

***Note: A splicing wire and cable connector taking a range of conductor sizes may include conductor sizes smaller than 4 AWG* (21.2 mm^2).**

e) neutral bars;

f) uninsulated connectors that are used in circuits rated 35 000 V and below;

g) ampere-rated connectors not intended for general use; and

h) insulation piercing connectors.

1.2 This Standard is intended for connectors suitable for use with conductors in the size ranges as follows:

a) Aluminum

1) 12 AWG (3.3 mm^2) and 10 AWG (5.3 mm^2) solid; and

2) 12 AWG (3.3 mm^2) to 2 000 kcmil (1 010 mm^2) stranded, Class B concentric, compressed, and unidirectional lay compact.

b) Copper

1) 30 AWG (0.05 mm^2) to 10 AWG (5.3 mm^2) solid; and

2) 30 AWG (0.05 mm^2) to 2 000 kcmil (1 010 mm^2) stranded, Class B concentric and compressed, and Class C concentric.

c) Compact-stranded copper conductors

1) in Canada for 8 AWG (8.4 mm^2) and larger;

2) in the United States for 2 AWG (33.6 mm^2) and larger; and

3) in Mexico for 8 AWG (8.4 mm^2) and larger.

d) Rigid (solid and stranded) metric wire falling within the ranges of the above AWG sizes.

***Note: For example, a connector rated for 6 AWG - 250 kcmil may be additionally rated for* 16 - 120 mm^2.**

e) Other class and strand configurations as indicated by marking.

1.3 This Standard is intended for connectors suitable for currents not exceeding the ampacity of insulated conductors rated 75°C or 90°C in accordance with the connector rating of the connector, if provided.

1.4 In the United States and Mexico, these requirements cover insulated connectors, insulating caps, and covers intended for use at 600 volts or less (1 000 volts in a sign or luminaire) and uninsulated connectors for use in general use circuits rated 2 000 volts nominal or less.

In Canada, these requirements cover insulated connectors, insulating caps, and covers intended for use at 600 volts or less (1 000 volts in a sign or luminaire) and uninsulated connectors for circuits rated 2 000 volts phase-to-phase or less. Uninsulated connectors may also be used in applications up to 5 000 volts phase-to-phase where allowed and installed in accordance with Section 36 of the Canadian Electrical Code, Part I, C22.1.

1.5 This standard also applies to uninsulated connectors (both terminal and splicing types) for use in circuits rated 35 000 volts or less.

1.6 This Standard does not apply to:

a) connectors intended for direct burial;

b) insulated connectors for voltage levels above 600 V (1 000 V in a sign, lighting fixture, or luminaire);

c) manual twist-on connectors;

d) built-in terminal connectors in devices rated less than 30 A intended for outlet box mounting or having provision for stress relief;

e) flat quick connect terminals; and

f) wire binding screw terminals.

2 Reference Publications

2.1 Normative references

2.1.1 For undated references to Standards, such reference shall be considered to refer to the latest edition and all revisions to that edition up to the time when this Standard was approved. For dated references to Standards, such reference shall be considered to refer to the dated edition and all revisions published to that edition up to the time the Standard was approved.

2.1.2 **ANCE (Association of Standardization and Certification)**

NMX-J-508-ANCE
Electrical Features – Safety Requirements – Specifications and Test Methods

2.1.3 **CSA (Canadian Standards Association)**

C22.1-02
Canadian Electrical Code, Part I (CEC)

CAN/CSA-C22.2 No. 0.17-00
Evaluation of Properties of Polymeric Materials

2.1.4 **UL (Underwriters Laboratories)**

UL 94
Tests for Flammability of Plastic Materials for Parts in Devices and Appliances

UL 746C
Polymeric Materials – Use in Electrical Equipment Evaluations

2.1.5 **NFPA (National Fire Protection Association)**

ANSI/NFPA 70-2005
National Electrical Code (NEC)

2.1.6 **NOM Standards – Mexican Secretary of Energy**

NOM-001-SEDE
Standard for Electrical Installations

2.2 Informative references

2.2.1 See Annex A for a listing of supplemental standards.

3 Units of Measurement

3.1 The values given in SI (metric) units shall be normative, except for AWG/kcmil conductor sizes. Any other values are for information only.

4 Definitions

4.1 The following terms and definitions apply in this Standard.

4.1.1 circular mil (cmil) - the area of a circle with a diameter of 0.001 inch.

4.1.2 connector - device for connecting a conductor to an equipment terminal or for connecting two or more conductors to each other.

4.1.3 control conductor - an unbroken conductor, which is included in the current-cycling test loop.

4.1.4 crimping die - that part of a crimping tool which forms the crimp(s) and usually incorporates the crimp anvil(s), the crimp indentor(s), and the positioner.

Note: Crimping dies may have separate or integral sections for compressing the insulation grip, if provided.

4.1.5 equalizer - a busbar that provides a point of equipotential and uniform current flow in a stranded conductor without adversely affecting the temperature of the connector(s).

4.1.6 packaging container - the container in which the unit containers are packaged.

4.1.7 rated current (ampere rating) - current assigned to the connector by the manufacturer.

4.1.8 splicing wire connector - establishes a connection between two or more conductors by means of mechanical pressure and is not intended to be permanently mounted.

4.1.9 stability factor S - the measure of temperature stability of a connector during the current-cycling test.

4.1.10 temperature rating - the maximum temperature of an insulated connector, assigned by the manufacturer.

4.1.11 temperature rise - denotes the difference of the temperature of the connector, measured under load, and the ambient temperature.

4.1.12 terminal connector - establishes a connection between one or more conductors to a terminal plate or stud, or to any similar device, by means of mechanical pressure.

4.1.13 unit container - the smallest container in which connectors are packaged.

4.1.14 voltage rating - the maximum voltage of an insulated connector.

Annex D (informative)

Example of an IEC-based co-published standard

Association of Standardization and Certification
NMX-J-521/2-24-ANCE-2006
Third Edition

Canadian Standards Association
CAN/CSA-C22.2 No. 60335-2-24-06
First Edition
(IEC 60335-2-24:2002, MOD)

Underwriters Laboratories Inc.
UL 60335-2-24
First Edition

Safety Requirements for Household and Similar Electrical Appliances, Part 2: Particular Requirements for Refrigerating Appliances, Ice-Cream Appliances and Ice-Makers
August 21, 2006

This national standard is based on publication IEC 60335-2-24, Sixth Edition (XXXX).

ANSI/UL 60335-2-24-2006

Approved by Standards Council of Canada

Commitment for Amendments

This standard is issued jointly by the Association of Standardization and Certification (ANCE), the Canadian Standards Association (CSA), and Underwriters Laboratories Inc. (UL). Comments or proposals for revisions on any part of the standard may be submitted to ANCE, CSA, or UL at any time. Revisions to this standard will be made only after processing according to the standards development procedures of ANCE, CSA, and UL. CSA and UL will issue revisions to this standard by means of a new edition or revised or additional pages bearing their date of issue. ANCE will incorporate the same revisions into a new edition of the standard bearing the same date of issue as the CSA and UL pages.

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Revisions of this Standard will be made by issuing revised or additional pages bearing their date of issue. A UL Standard is current only if it incorporates the most recently adopted revisions, all of which are itemized on the transmittal notice that accompanies the latest set of revised requirements.

The most recent designation of ANSI/UL XXXX as an American National Standard (ANSI) occurred on (Date). The ANSI approval for this standard does not include the cover page, transmittal pages, title page, superseded requirements, or the CRG.

This ANSI/UL Standard for Safety, which consists of the XXXX edition, is under continuous maintenance, whereby each revision is ANSI approved upon publication.

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 http://csds.ul.com.

The Department of Defense (DoD) has adopted UL XXXX on (Date). The publication of revised pages or a new edition of this Standard will not invalidate the DoD adoption.

To purchase UL Standards, visit Comm 2000 at http://www.comm-2000.com/help/how_to_order.aspx or call toll-free 1-888-853-3503.

Preface

This is the harmonized ANCE, CSA, and UL standard for particular requirements for refrigerating appliances, ice-cream appliances and ice makers. It is the third edition of NMX-J-521/2-24-ANCE, the first edition of CAN/CSA C22.2 No. 60335-2-24, and the first edition of UL 60335-2-24. It was developed in part from the fourth edition of *Household Refrigerators and Freezers*, CSA C22.2 No. 63-93, the tenth edition of the Standard for *Household Refrigerators and Freezers*, UL 250, and the latest edition of *Safety of Household and Similar Electrical Appliances - Part 2-24: Particular Requirements for Refrigerators, Freezers and Ice-makers*, NMX-J-521/2-24-ANCE. This ANCE edition supersedes the edition published in 2001. This CSA edition supersedes CAN/CSA-E335-2-24-94, *Safety of Household and Similar Electrical Appliances - Part 2: Particular Requirements for Refrigerators, Food-Freezers and Ice-makers*. This Standard is based on the sixth edition of the Standard for *Safety of Household and Similar Electrical Appliances, Part 2: Particular Requirements for Refrigerating Appliances, Ice-Cream Appliances and Ice Makers*, IEC 60335-2-24. At the time of this publication, IEC 60335-2-24:2002 (Edition 6) is available from IEC in English only. CSA will publish the French version when it becomes available from IEC.

This harmonized standard was prepared by the Association of Standardization and Certification (ANCE), the Canadian Standards Association (CSA), and Underwriters Laboratories Inc. (UL).

The CSA standard also replaces the following Technical Information Letters (TILs), for products covered in this Standard:

- TIL No. A-16 "Hospital grade power bars"
- TIL No. A-29A "Seasonal use cord sets"

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

This standard was reviewed by the CSA Subcommittee on Household Refrigerators and Freezers, under the jurisdiction of the CSA Technical Committee on Consumer and Commercial Products and the CSA Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the CSA Technical Committee.

This standard has been approved as a National Standard of Canada by the Standards Council of Canada.

This standard has been approved by the American National Standards Institute (ANSI) as an American National Standard.

Where reference is made to a specific number of samples to be tested, the specified number is considered a minimum quantity.

Note: Although the intended primary application of this standard is stated in its scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.

Level of harmonization

This standard adopts the IEC text with national differences.

This standard is published as an equivalent standard for ANCE, CSA, and UL.

An equivalent standard is a standard that is substantially the same in technical content, except as follows: Technical national differences are allowed for codes and governmental regulations as well as those recognized as being in accordance with NAFTA Article 905, for example, because of fundamental climatic, geographical, technological, or infrastructural factors, scientific justification, or the level of protection that the country considers appropriate. Presentation is word for word except for editorial changes.

All national differences from the IEC text are included in the ANCE, CSA, and UL versions of the standard. While the technical content is the same in each organization's version, the format and presentation may differ.

Reasons for differences from IEC
Differences from the IEC are being added in order to address regulatory and safety situations present in the US, Canada and Mexico.

Interpretations
The interpretation by the standards development organization of an identical or equivalent standard is based on the literal text to determine compliance with the standard in accordance with the procedural rules of the standards development organization. If more than one interpretation of the literal text has been identified, a revision is to be proposed as soon as possible to each of the standards development organizations to more accurately reflect the intent. ***[Note: CSA may use an ORD (Other Recognized Document) for this purpose.]***

ANCE effective date
The effective date for ANCE will be announced through the Diario Oficial de la Federación (Official Gazette) and is indicated on the cover page.

CSA effective date
The effective date for CSA International will be announced through *CSA Informs* or a CSA certification notice.

UL effective date
As of August 21, 2016 all products Listed or Recognized by UL must comply with the requirements in this standard.

Between August 21, 2006 and August 21, 2016, new product submittals to UL may be evaluated under all requirements in this standard or, if requested in writing, evaluated under presently effective requirements only.

A UL effective date is one established by Underwriters Laboratories Inc. and is not part of the ANSI approved standard.

IEC Copyright

For UL, the text, figures and tables of IEC publication 60335-2-24, Safety of Refrigerating Appliances, Ice Cream Appliances and Ice Makers copyright 2006 are used in this Standard with the consent of the IEC and the American National Standards Institute (ANSI). The IEC copyrighted material has been reproduced with permission from ANSI. ANSI should be contacted regarding the reproduction of any portion of the IEC material. The IEC Foreword and Introduction are not a part of the requirements of this Standard but are included for information purposes only. Copies of IEC Publication 60335-2-24 may be purchased from ANSI, 25 West 43rd Street, 4th Floor, New York, New York, 10036, (212) 642-4900.

For CSA, the text, figures, and tables of International Electrotechnical Commission Publication 60335-2-24, Safety of Refrigerating Appliances, Ice Cream Appliances and Ice Makers, copyright 2006, are used in this standard with the consent of the International Electrotechnical Commission. The IEC Foreword and Introduction are not part of the requirements of this standard but are included for information purposes only.

NATIONAL DIFFERENCES

In the ANCE, CSA and UL publications of this standard, National Differences from the text of International Electrotechnical Commission (IEC) Publication 60335-2-24, Safety Requirements for Household and Similar Electrical Appliances, Part 2: Particular Requirements for Refrigerating Appliances, Ice-Cream Appliances and Ice-Makers copyright 2006 are indicated by notations (differences) and are presented in bold text. The national difference type is included in the body.

There are five types of National Differences as noted below. The difference type is noted on the first line of the National Difference in the standard. The standard may not include all types of these National Differences.

DR - These are National Differences based on the **national regulatory requirements**.

D1 - These are National Differences which are based on **basic safety principles and requirements**, elimination of which would compromise safety for consumers and users of products.

D2 - These are National Differences based on **safety practices**. These are differences for IEC requirements that may be acceptable, but adopting the IEC requirements would require considerable retesting or redesign on the manufacturer's part.

DC - These are National Differences based on the **component standards** and will not be deleted until a particular component standard is harmonized with the IEC component standard.

DE - These are National Differences based on **editorial comments or corrections**.

INTERNATIONAL ELECTROTECHNICAL COMMISSION
SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES - Part 2: Particular Requirements for Refrigerating Appliances, Ice-Cream Appliances and Ice-Makers

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

The text of this part of IEC 60335 is based on the following documents:

FDIS	Report on Voting
61C/213/FDIS	61C/216/RVD

Full information on the voting for the approval of this standard can be found in the report of voting indicated in the above table.

NOTE 1 When "Part 1" is mentioned in this standard, it refers to IEC 60335-1.

This part 2 is to be used in conjunction with the latest edition of IEC 60335-2-24 and its amendments. It was established on the basis of the sixth edition of that standard.
See 1.101DV.
When a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. When this standard states "addition", "modification" or "replacement", the relevant text of part 1 is to be adapted accordingly.

NOTE 2 The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;

- unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;

- additional annexes are lettered AA, BB, etc.

NOTE 3 in this standard, the following print types are used:

- requirements: in roman type;

- test specifications in: italic type;

- notes: in smaller roman bold type.

Words in bold in the text are defined in clause 3. When a definition concerns an adjective, the adjective and the associated noun are also in bold.

A bilingual version of this publication may be issued at a later date.

DV.1 DE Add the following after the last item in the second note:
The numbering system in the standard uses a space instead of a comma to indicate thousands and uses a comma instead of a period to indicate a decimal point. For example, 1 000 means 1,000 and 1,01 means 1.01.

INTRODUCTION

This part 1 specifies the safety requirements that are generally applicable to all equipment within its scope. For certain types of equipment, these requirements will be supplemented or modified by the special requirements of one, or more than one, particular part 2 of the standard which must be read in conjunction with the part 1 requirements.

SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES - Part 2: Particular requirements for Refrigerating Appliances, Ice-Cream Appliances and Ice-Makers

1 Scope

This clause of part 1 is replaced by the following:
This International Standard deals with the safety of the following appliances, their **RATED VOLTAGE** being not more than 250 V for single-phase appliances, 480 V for other appliances and 24 V d.c. for appliances when battery operated:

a) **REFRIGERATING APPLIANCES** for household and similar use;

b) **ICE-MAKERS** incorporating a motor-compressor and ice-makers intended to be incorporated in frozen food storage compartments;

c) **REFRIGERATING APPLIANCES** and **ICE-MAKERS** for use in camping, touring caravans and boats for leisure purposes.

These appliances may be operated from the mains, from a separate battery or operated either from the mains or from a separate battery.
This standard also deals with the safety of **ICE-CREAM APPLIANCES** intended for household use, their **RATED VOLTAGE** being not more than 250 V for single-phase appliances and 480 V for other appliances.
It also deals with **COMPRESSION-TYPE APPLIANCES** for household and similar use, which use **FLAMMABLE REFRIGERANTS**.
This standard does not cover features of the construction and operation of those **REFRIGERATING APPLIANCES** which are dealt with in ISO standards.
Appliances not intended for normal household use but which nevertheless may be a source of danger to the public, such as appliances intended to be used by laymen in shops, in light industry and on farms, are within the scope of this standard.
As far as is practicable, this standard deals with the common hazards presented by appliances which are encountered by all persons in and around the home. However, in general, it does not take into account

a) the use of appliances by young children or infirm persons without supervision;

b) playing with the appliance by young children.

NOTE 1 Attention is drawn to the fact that

- for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements may be necessary;

- in many countries, additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour, the national authorities responsible for transportation.

NOTE 2 This standard does not apply to

- appliances intended to be used in the open air;

- appliances designed exclusively for industrial purposes;

- appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas);

- appliances incorporating a battery intended as a power supply for the refrigeration function;

- appliances assembled on site by the installer;

- appliances with remote motor-compressors;

- motor-compressors (IEC 60335-2-34);

- commercial dispensing appliances and vending appliances (IEC 60335-2-75);

- commercial ice-cream appliances.

1DV.1 D1 Modification - National Difference in the U.S. Add the following text after "playing with the appliance by young children":
The articulate probe of figure 12DV of UL 60335-1 shall replace test probe B of IEC 61032 when the product is:

a) A hand-held product;

b) A hand-held part of a product;

c) Used by children;

d) Accessible to children while the product is operating; or

e) One that has special concerns for the accessibility of live parts or mechanical hazards.

1DV.2 D1 Modification - National Difference in the U.S. Add the following below note 1:
This standard is applicable to household and similar electrical appliances and equipment which are designed to be installed in accordance with the National Electrical Code (NEC), ANSI/NFPA 70. Annex DVD of Part 1 provides examples of and references for regulatory requirements that may apply to appliances.

1.101DV D1 Addition - National Difference in Canada, Mexico, and the U.S.:
This part 2 is to be used in conjunction with the latest applicable country's edition of 60335-1 and its amendments. It was established on the basis of:

a) The fourth edition of IEC 60335-1;

b) The sixth edition of IEC 60335-2-24;

c) The fourth edition of UL 60335-1;

d) The latest edition of NMX-J-521/1-ANCE; and

e) CAN/CSA E60335-1/4E

2 Normative references
This clause of Part 1 is applicable except as follows.
Addition:

IEC 60079 (all parts),
Electrical apparatus for explosive gas atmospheres

IEC 60079-4A,
Electrical apparatus for explosive gas atmospheres - Part 4: Method of test for ignition temperature - First supplement

IEC 60079-15:1987[1)],
Electrical apparatus for explosive gas atmospheres - Part 15: Electrical apparatus with type of protection "n"

IEC 60079-20:1996,
Electrical apparatus for explosive gas atmospheres - Part 20: Data for flammable gases and vapours, relating to the use of electrical apparatus

IEC 60335-2-34,
Household and similar electrical appliances - Safety - Part 2-34: Particular requirements for motor-compressors

ISO 817:1974,
Organic refrigerants - Number designation

ISO 3864:1984,
Safety colours and safety signs

ISO 5149:1993,
Mechanical refrigerating systems used for cooling and heating - Safety requirements
[1)]IEC/TR 60079-15 has been superseded by a second edition, IEC 60079-15 (2001), which no longer corresponds to the references to the first edition cited here. It is foreseen that a future edition of IEC 60335-2-24 will make reference to the edition of IEC 60079-15 then current.

2DV D1 Addition - National Difference in Canada, Mexico, and the U.S.:

ANSI/ASHRAE 15,
Safety Code for Mechanical Refrigeration

ANSI Z97.1:1984,
Safety Performance Specifications and Methods of Test for Glazing Materials Used in Buildings

ASTM E681:1998,
Standard Test Method for Concentration Limits of Flammability of Chemicals (Vapors and Gases)

CSA B52-05,
Mechanical Refrigeration Code

CSA C22.2 No. 0.3-01,
Test Methods for Electrical Wires and Cables

CSA C22.2 No. 0.15-01,
Adhesive Labels

CAN/CSA C22.2 No. 0.17-00,
Evaluation of Properties of Polymeric Materials

CSA C22.2 No. 140.3-M1987 (R1999),
Refrigerant Containing Components for Use in Electrical Equipment

CSA C22.2 No. 213-M1987 (R1999),
Non-Incendive Electrical Equipment for Use in Class 1, Division 2 Hazardous Locations

NMX-J-521/2-24 ANCE,
Safety of Household and Similar Electrical Appliances, Part 2-24, Particular Requirements for Refrigerators, Freezers, Ice Makers and Ice Cream Makers

NMX-J-521/2-34-ANCE,
Safety of Household and Similar Electrical Appliances, Part 2-34, Particular Requirements for Motorcompressors

***Standard for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances,* UL 94**

***Standard for Refrigerant-Containing Components,* UL 207**

***Standard for Test for Surface Burning Characteristics of Building Materials,* UL 723**

***Standard for Short Term Property Evaluations of Polymeric Materials,* UL 746A**

***Standard for Polymeric Material, Use in Electrical Equipment Evaluations,* UL 746C**

***Standard for Marking and Labelling Systems,* UL 969**

***Standard for Electrical Wires, Cables, and Flexible Cords,* UL 1581**

***Standard for Electrical Equipment for Use in Class I and II, Division 2, and Class III Hazardous (Classified) Locations,* UL 1604**

2.101DV DC Addition - National Difference in Canada, Mexico, and the U.S.:
Where reference is made to ANCE, CSA, or UL Standards, such reference shall be considered to refer to the latest edition and all amendments published to that edition up to the time when this Standard was approved.

3 Definitions
This clause of part 1 is applicable except as follows:

3.1.9 Replacement:
NORMAL OPERATION: Operation of the appliance under the following conditions:

3.2.9.101 **NORMAL OPERATION OF A REFRIGERATING APPLIANCE**: Operation at an ambient temperature in accordance with 5.7, empty, with the doors and lids closed. User-adjustable temperature control devices which control the operation of the motor-compressor in **COMPRESSION TYPE APPLIANCES**, are short-circuited or otherwise rendered inoperative.

3.2.9.102 **NORMAL OPERATION OF AN ICE MAKER**: Operation at an ambient temperature in accordance with 5.7, with the supply water at a temperature of 15°C ±2°C.

3.2.9.102DV D2 Modification - National Difference in Mexico:
Replace "15°C ±2°C" with "15°C ±5°C".

3.2.9.103 **NORMAL OPERATION OF AN INCORPORATED ICE-MAKERS**: Operation at the normal temperature of the frozen food storage compartment, with the supply water at a temperature of 15°C ±2°C.

3.2.9.103DV D2 Modification - National Difference in Mexico:
Replace "15°C ±2°C" with "15°C ±5°C".

3.2.9.104 **NORMAL OPERATION OF AN ICE-CREAM APPLIANCE**: Operation of the appliance using the maximum quantity of the mixture of ingredients indicated in the instructions; the mixture used being that which gives the most unfavourable results, the mixture being at an initial temperature of 23°C ±2°C.

3.101 **REFRIGERATING APPLIANCE**: Enclosed thermally insulated appliance of suitable volume for household use, cooled by an incorporated device and having one or more compartments intended for the preservation of foodstuffs.

3.102 **COMPRESSION-TYPE APPLIANCE**: Appliance in which refrigeration is effected by the vaporization at low pressure in a heat exchanger (**EVAPORATOR**) of a liquid refrigerant, the vapour thus formed being restored to the liquid state by mechanical compression at a higher pressure and subsequent cooling in another heat exchanger (**CONDENSER**).

3.103 **ICE-MAKER**: Appliance in which ice is made by freezing water by a device consuming electrical energy and having a compartment for storing the ice.

3.104 **INCORPORATED ICE-MAKER**: **ICE-MAKER** especially designed to be incorporated into a frozen food storage compartment and without independent means for freezing water.

3.105 **HEATING SYSTEM**: Heating element with associated components such as timers, switches, **THERMOSTATS** and other controls.

(NOTE: The remainder of this example standard has been omitted.)