

Minutes
Electrical Power Working Group
Friday, 23 July 2010
Dallas/Ft. Worth Marriott Solana
Westlake, TX

Chairmen:

Mitch Hefter; Entertainment Technology (Royal Philips Electronics), representing USITT; P; U
Ken Vannice; Leviton Manufacturing Co., Inc.; P; MP

Recording secretary:

Karl G. Ruling; ESTA

Members attending:

James Davey; AC Power Distribution Inc.; P; CP
Jeff deRecat; Marinco (Actuant Corporation); P; MP (arrived at 9:07)
Nathan Leonard; Bender Group (Bender GmbH & Co. KG); P; MP
Elizabeth E. (Lizz) Pittsley; I; U
Art Wanuch; Entertainment Electrical Safety Committee of Ontario; A; G
Jody Williquette; Harting Inc., North America (Harting KGAA); P; G
Ed Garstkiewicz; Harting Inc., North America (Harting KGAA); A; G
Edwin S. Kramer; I.A.T.S.E. Local 1; P; U
Roger Lattin; I.A.T.S.E. Local 728; P; U
Alan M. Rowe; IATSE Local 728; A; U
Bob Luther; Lex Products Corp.; P; CP
Louis Bradfield; I; U
W. G. Krokaugger, P. E.; Mole-Richardson Co.; P; CP
Ron Bonner; PLASA; P; U
Michael Lay; Philips Strand Lighting (Royal Philips Electronics); P; MP
Michael Scudday; SSRC, Inc.; P; CP
Jerry Gorrell; Theatre Safety Programs; P; U

Visitors: None

1 Opening remarks

Mitch Hefter called the meeting to order at 8:05. He welcome all and commented on the weather outside.

2 Attendance and membership

2.1 Introduction of those present and taking attendance

A blue attendance sign-in sheet was circulated while those present introduced themselves.

2.2 Determination of quorum

Hefter asked for show of hands of voters. He counted them and then announced that a quorum was present.

2.3 Recognition of alternate voting members

Bob Luther and Art Wanuch were recognized. (The Harting representatives did not have voting privileges at this time in the meeting.)

2.4 Requirements for membership

Hefter reminded the assembly that membership is open to all who are affected by the work of the group. Voters who would be in the designer or dealer/rental company interest category in particular are encouraged to become members. Voting members are required to attend meetings and to vote on letter ballots. Voting members and their alternates may not miss three consecutive meetings or three consecutive letter ballots without a loss of voting status.

2.5 Changes to observer status

Members who have missed the previous two meetings and who will not have met the minimum attendance requirement for voters if this meeting is missed:

Torsten Gruhn and Joe Boardman; Bender GmbH & Co. KG
Keith S. Woods and Simon Hunt; IATSE Local 891

Bender had a new representative present, so there was no change to Bender's voting status.

Neither Woods nor Hunt were present, so IATSE Local 891 was moved to observer status.

2.6 Processing of new membership requests

The following applications had been received:

Jeff deRecat; Marinco (Actuant Corporation); Principal; MP
William Drake; Marinco (Actuant Corporation); Alternate; MP
Nathan Leonard, Bender Group., Principal

Leonard also asked that his colleagues, Joe Boardman and Torsten Gruhn, be returned to voting status to as alternates.

Eddie Kramer, moved that the membership requests be granted, with the exception that the Actuant representatives be accepted as observers, since they are not present to vote on any motions, and to reinstate the voting rights of the Harting representatives and Louis Bradfield. The motion was seconded and then approved with a show of hands.

[Louis Bradfield, the voters for Bender GmbH & Co. KG, and for Harting KGAA had lost voting rights after failing to vote on the letter ballot for the public review of BSR E1.24 - 201x (ballot EP/2010-7020), and having failed to vote on the previous two letter ballots, EP/2010-7003 and EP/2010-7002.]

Jeff de Recat arrived at 9:04. At that time, Michael Scudday moved that the Actuant representatives be given their requested voting status. The motion was seconded and then approved with a show of hands.

2.7 Consensus body

The full consensus body, including those not present, from item 7.3 on was as shown in the table below. The consensus body for minutes items 2.7 through 7.2 was the same but without the Actuant representatives.

Name	Company	Representing	Voting status	Int. cat.
James Davey	AC Power Distribution Inc.	AC Power Distribution Inc.	P	CP
Greg Mayberry	AC Power Distribution Inc.	AC Power Distribution Inc.	A	CP
Jeff deRecat	Marinco	Actuant Corporation	P	MP
William Drake	Marinco	Actuant Corporation	A	MP
George Long	Aggreko Event Services	Aggreko	P	DR
Wendy Holt	AMPTP/CSATF	Alliance of Motion Picture and Television Producers	P	G
Nathan Leonard	Bender Group	Bender GmbH & Co. KG	P	MP
Joe Boardman	Bender Inc.	Bender GmbH & Co. KG	A	MP
Torsten Gruhn	Bender Inc.	Bender GmbH & Co. KG	A	MP
Steve Terry	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	P	MP
Elizabeth E. (Lizz) Pittsley	Elizabeth Pittsley	Elizabeth Pittsley	I	U

Name	Company	Representing	Voting status	Int. cat.
Ian Foulds	IATSE Local 873	Entertainment Electrical Safety Committee of Ontario	P	G
Art Wanuch	Entertainment Electrical Safety Committee of Ontario	Entertainment Electrical Safety Committee of Ontario	A	G
Jody Williquette	Harting Inc., North America	Harting KGAA	P	G
Ed Garstkiewicz	Harting Inc., North America	Harting KGAA	A	G
Edwin S. Kramer	I.A.T.S.E. Local 1	I.A.T.S.E. Local 1	P	U
Roger Lattin	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	P	U
R. Bruce Prochal	IATSE Local 728	I.A.T.S.E. Local 728	A	U
Patric J. Abaravich	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	A	U
Alan M. Rowe	IATSE Local 728	I.A.T.S.E. Local 728	A	U
Ken Vannice	Leviton Manufacturing Co., Inc.	Leviton Manufacturing Co., Inc.	P	MP
Bill Grande	Leviton Manufacturing Co., Inc.	Leviton Manufacturing Co., Inc.	A	MP
Bob Luther	Lex Products Corp.	Lex Products Corp.	P	CP
Tyrone Mellon_Jr.	Lex Products Corp.	Lex Products Corp.	A	CP
Sean Sloat	Lex Products Corp.	Lex Products Corp.	A	CP
Louis Bradfield	Louis Bradfield	Louis Bradfield	I	U
W. G. Krokaugger, P. E.	Mole-Richardson Co.	Mole-Richardson Co.	P	CP
Alex Yoon	Mole-Richardson Co.	Mole-Richardson Co.	A	CP
Vincent J. Cannavale	Motion Laboratories	Motion Laboratories	P	CP
Peter Herrmann	Motion Laboratories	Motion Laboratories	A	CP
David Herrmann	Motion Laboratories	Motion Laboratories	A	CP
Ron Bonner	PLASA	PLASA	P	U
Michael Lay	Philips Strand Lighting	Royal Philips Electronics	P	MP
Michael Scudday	SSRC, Inc.	SSRC, Inc.	P	CP
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	P	U
Mitch Hefter	Entertainment Technology (Royal Philips Electronics)	USITT	P	U
		Total votes	21	
		Votes by interest categories	5	CP
			5	MP
			1	DR
			7	U
			3	G
			0	DE

3 Approval of the minutes from the previous meeting

See the draft minutes of the 31 March 2010 minutes, EPmin03-2010.pdf

Roger Lattin moved that the minutes be accepted as written. The motion was seconded and then approved with a voice vote.

4 Reading of the call for patents

Ken Vannice read the following statement aloud to the assembly:

"ESTA intends not to publish any standard that contains protected intellectual property, unless that information can be licensed by anyone for a reasonable fee. ESTA uses a process of open patent and copyright disclosures to implement its intent. ESTA does not conduct patent or copyright searches and does not warrant that its standards contain no protected intellectual property.

"In keeping with the open disclosures policy, I ask if anyone present wishes to notify this working group of the existence of a patent or copyright or other intellectual property that might protect material in a standard being developed by this working group. You need not be the holder of the patent or copyright to notify this working group of its existence."

There were no notifications.

5 Reading of the anti-trust statement

Ken Vannice read the following statement aloud to the assembly.

"The ESTA Board of Directors, the Technical Standards Committee, and the leadership of this working group will reject or nullify any actions that unlawfully restrain trade. Anyone who feels that such an action is being or has been taken is requested to bring that matter to the attention of the chair immediately. Anyone who feels that actions in restraint of trade have been taken and not properly annulled is requested to notify the TSC chair or ESTA president immediately.

"ESTA legal counsel has informed us that violations of the anti-trust laws can have serious consequences. Individuals engaged in certain unlawful conduct can be found criminally liable. An individual convicted of a criminal violation of the Sherman Act may be fined as much as \$1,000,000 and imprisoned for up to ten years. An easy-to-read pamphlet describing restraint of trade issues is available from the Technical Standards Manager."

The Technical Standards Manager held up some of the easy-to-read pamphlets to show that they were available at the meeting. None were requested, and no one reported any actions that might restrain trade.

6 Approval of agenda

Roger Lattin asked for a discussion of an EC&M article under Other business.

Eddie Kramer moved that the agenda as amended be accepted. The motion was seconded and then approved with a show of hands.

7 Old business - task group reports

7.1 EMC task group

Any news? See ITI_2010_4_16_letter.pdf and MexicoAdoptsWithMods.pdf

Ken Vannice added some background information about the MexicoAdoptsWithMods.pdf. He said that the disjoint between the Mexican adoption and the rest of North America should not be a problem.

7.2 ANSI E1.16-2002 (R2007)

No news or action.

7.3 BSR E1.18 portable feeder cable selection and use

E1.18-1 public review comment resolution ballot results. See:

YesResolsR1.pdf

E1-18-1NonYes1thru41.pdf

E1-18-1NonYes42thru72.pdf

E1-18-1NonYes73thru128.pdf
E1-18-1NonYes129thru155.pdf
E1-18-1NonYes156thru190.pdf
E1-18-1NonYes191thru226.pdf

Eddie Kramer moved that we accept the Yes resolutions (YesResolsR1.pdf) and then proceed with considering the other non-unanimous votes. The motion was seconded and then approved with a show of hands.

There was a discussion of how to move forward with the resolutions over which there was disagreement.

It was suggested that we give resolving the votes on the resolutions to a task group or group of task groups. This was rejected. It was pointed out that the votes were on the output of a task group, so assigning the resolution of the votes on task group actions to a task group is not likely to get us anywhere but into another vote to accept the task group responses to the vote on the task group responses. The working group has to resolve the issues.

It was suggested that the votes could be recirculated, and people could change their votes in light of the other votes and comments, with the outcome being a simple up or down based on the numbers. This was also rejected; the working group needs to have some discussion.

The consensus was that the working group as a body needs to consider each of the disputed resolutions, and would start at this meeting. This project was taken from the table while the rest of the agenda was accomplished, and then returned to after "Other business." There was a discussion and votes on the resolutions point by point at that time, getting through the first resolution vote summary document. (The completed resolution vote summary document, E1-18-1NonYes1thru41-voted.doc, is appended to these minutes after the working group membership list.)

There was discussion of how to proceed. It was decided that two-hour conference-call working group meetings shall be conducted on 22 September, 29 September, and 1 October, with the time to be 9:00 to 11:00 Pacific Time, which is noon to 14:00 Eastern Time, and 19:00 to 21:00 UK time.

7.4 ANSI E1.19 – 2009, Recommended Practice for the Use of Class A Ground-Fault Circuit Interrupters (GFCIs) Intended for Personnel Protection in the Entertainment Industry

No news or action.

7.5 BSR E1.24 - 20xx, pin connectors

Karl Ruling reported that the motion to offer the document for public review passed with the required supermajority. The motion is now on the TSC agenda.

7.6 BSR E1.32 luminaire inspection guidance

Public review progress report. The working group did what the TSC asked, and the public review is on the TSC agenda again.

8 New business

None.

9 Other business

Roger Lattin talked about an EC&M article in which a person argued that marinas should have GFCI on the mains supplying boat power. This proposal was in response to a guy being killed on a boat while working inside live conduit with a fish-tape. There was a discussion of what could be a reasonably foreseeable misuse of equipment.

10 Schedule for future meetings

Hefter announced that there would be conference-call working group meetings on 22 September, 29 September, and 1 October, from 9:00 to 11:00 Pacific Time (noon to 14:00 Eastern Time and 19:00 to 21:00 UK Time).

The face-to-face LDI working group meeting is scheduled for Friday 22 October 2010, from 19:00 to 23:00, at the Las Vegas Hilton hotel.

11 Adjournment

Jerry Gorrell moved that the meeting adjourn. The motion was seconded and then approved on a voice vote. Mitch Heffer declared the meeting adjourned at 12:07.

Working Group Membership and Contact Information as of 20 August 2010

Name	Company	Representing (This is the sort field.)	Voting status	Int. cat.
James Davey	AC Power Distribution Inc.	AC Power Distribution Inc.	P	CP
Greg Mayberry	AC Power Distribution Inc.	AC Power Distribution Inc.	A	CP
Jeff deRecat	Marinco	Actuant Corporation	P	MP
William Drake	Marinco	Actuant Corporation	A	MP
George Long	Aggreko Event Services	Aggreko	P	DR
Kenny Delahoussaye	Aggreko	Aggreko	O	DR
Richard L. Eberth_Jr.	North Shore Safety	Airpax Corporation	O	MP
Wendy Holt	AMPTP/CSATF	Alliance of Motion Picture and Television Producers	P	G
Mike Skinner	CBS Studio Center	Alliance of Motion Picture and Television Producers	O	U
André Broucke	André Broucke	André Broucke	O	G
Arnold Tang	Arnold Tang Productions	Arnold Tang Productions	O	G
Jiantong Wu	Beijing Special Engineering Design & Research Institute	Beijing Special Engineering Design & Research Institute	O	G
Nathan Leonard	Bender Group	Bender GmbH & Co. KG	P	MP
Joe Boardman	Bender Inc.	Bender GmbH & Co. KG	A	MP
Torsten Gruhn	Bender Inc.	Bender GmbH & Co. KG	A	MP
Lee J. Bloch	Bloch Design Group, Inc.	Bloch Design Group, Inc.	O	G
Marty Lazarus	Chicago Spotlight, Inc.	Chicago Spotlight, Inc.	O	DR
Eric Bouchard	Cirque du Soliel	Cirque du Soliel	O	CP
Wayne Kowalski	Coleman Cable Inc.	Coleman Cable Inc.	O	MP
Ford Sellers	Cornell University	Cornell University	O	U
Don Earl	Earl Girls, Inc.	Earl Girls, Inc.	O	DR
Edward R. Condit	Edward R. Condit	Edward R. Condit	O	U

Steve Terry	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	P	MP
Elizabeth E. (Lizz) Pittsley	Elizabeth Pittsley	Elizabeth Pittsley	I	U
Ian Foulds	IATSE Local 873	Entertainment Electrical Safety Committee of Ontario	P	G
Art Wanuch	Entertainment Electrical Safety Committee of Ontario	Entertainment Electrical Safety Committee of Ontario	A	G
Jody Williquette	Harting Inc., North America	Harting KGAA	P	G
Ed Garstkiewicz	Harting Inc., North America	Harting KGAA	A	G
Trevor Forrest	Helvar Lighting Control	Helvar Lighting Control	O	MP
Kirk D. Keen	Hollywood Lighting Services, Inc.	Hollywood Lighting, Inc.	O	DR
Pat Miller	Hubbell Wiring Devices	Hubbell Inc.	O	MP
Edwin S. Kramer	I.A.T.S.E. Local 1	I.A.T.S.E. Local 1	P	U
Roger Lattin	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	P	U
R. Bruce Prochal	IATSE Local 728	I.A.T.S.E. Local 728	A	U
Patric J. Abaravich	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	A	U
Alan M. Rowe	IATSE Local 728	I.A.T.S.E. Local 728	A	U
Keith S. Woods	Lakhri Impressions Ltd.	IATSE Local 891	O	U
Simon Hunt	IATSE Local 891	IATSE Local 891	O	U
John (Javid) D. Butler	Integrated Theatre, Inc.	Integrated Theatre, Inc.	O	CP
David Murray	IPC Resistors Inc.	IPC Resistors Inc.	O	CP
Jose J. Flores	Kino Flo, Inc.	Kino Flo, Inc.	O	MP
Ken Vannice	Leviton Manufacturing Co., Inc.	Leviton Manufacturing Co., Inc.	P	MP
Bill Grande	Leviton Manufacturing Co., Inc.	Leviton Manufacturing Co., Inc.	A	MP
Bob Luther	Lex Products Corp.	Lex Products Corp.	P	CP
Tyrone Mellon_Jr.	Lex Products Corp.	Lex Products Corp.	A	CP
Sean Sloat	Lex Products Corp.	Lex Products Corp.	A	CP
Louis Bradfield	Louis Bradfield	Louis Bradfield	I	U
Jim Holladay	Luxence	Luxence	O	G

Hiroshi Kita	Marumo Electric Co., Ltd.	Marumo Electric Co., Ltd.	O	MP
Michael J. Carnaby	Mikan Theatricals	Mikan Theatricals	O	DR
W. G. Krokaugger, P. E.	Mole-Richardson Co.	Mole-Richardson Co.	P	CP
Alex Yoon	Mole-Richardson Co.	Mole-Richardson Co.	A	CP
Vincent J. Cannavale	Motion Laboratories	Motion Laboratories	P	CP
Peter Herrmann	Motion Laboratories	Motion Laboratories	A	CP
David Herrmann	Motion Laboratories	Motion Laboratories	A	CP
Natti Pierce-Thomson	North American Theatre Technology	North American Theatre Technology	O	U
Marsha DuBois	Pintech Stage Connectors, Inc.	Pintech Stage Connectors, Inc.	O	CP
Steve DuBois	Pintech Stage Connectors, Inc.	Pintech Stage Connectors, Inc.	O	CP
Ron Bonner	PLASA	PLASA	P	U
James Eade	PLASA	PLASA	O	G
Paul F. Mardon	Pulsar Ltd.	Pulsar Ltd.	O	MP
Douglas Franz	QVC Network	QVC Network	O	U
Eric Tishman	Rosco Laboratories	Rosco Laboratories	O	MP
Richard B. Glickman	Gliconen Corporation	Rosco Laboratories	O	MP
Michael Lay	Philips Strand Lighting	Royal Philips Electronics	P	MP
Robert Barbagallo	Solotech Inc.	Solotech Inc.	O	DR
Michael Scudday	SSRC, Inc.	SSRC, Inc.	P	CP
Stephen Vanciel	Stephen Vanciel	Stephen Vanciel	O	U
Reuben Goldberg	Technic Services	Technic Services	O	U
Dominic Vincenty	TPS	Television Production Service	O	DR
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	P	U
Colin Waters	TMB	TMB	O	DR
Phillip M. Gallo	TMB	TMB	O	DR
Charles (Chuck) Kurten	Underwriters Laboratories, Inc.	Underwriters Laboratories, Inc.	O	G
Richard Wolpert	Union Connector Company (MO)	Union Connector Company	O	CP

Mitch Heffer	Entertainment Technology (Royal Philips Electronics)	USITT	P	U
William L. Maiman	William L. Maiman	William L. Maiman	O	U

Key to codes:

- | | | | |
|---|--------------------------|----|--|
| P | principal voting member | MP | mass-market producer interest category |
| A | alternate voting member | CP | custom-market producer interest category |
| I | individual voting member | DR | dealer or rental company interest category |
| O | observer, non-voting | U | user interest category |
| | | G | general-interest interest category |
| | | DE | designer interest category |

Appendix
Votes on the Tables of Non-Yes Votes, Ballot Items 1 through 41, Letter Ballot EP/2010-7002
 (EP/2010-7021)

1

<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	No with reasons	# 1 Single-conductor portable power feeder cable systems typically operate at hundreds of amps and voltages may be as high as 480 Volts to ground. The potential consequences of an accident due to an improperly used or installed system can be calamitous, with death, injury and property damage resulting. By making E1.18-1 a "guide", the requirements become optional. This document needs to become a Standard so it can give requirements and insure safe use of single-conductor portable power feeder cable systems.
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes with comments	To clarify that this is a document for the US, based on the NEC/NFPA 70 the title should end as follows:"...IN THE ENTERTAINMENT AND LIVE EVENT INDUSTRIES IN THE UNITED STATES OF AMERICA" This needs to be done as many times US centric documents are presented to us in Vancouver as being the correct way to deal with things electrical. More often than not, these documents do not meet the CEC and have no jurisdiction in Canada. This can be difficult to explain to people who do not understand the intricacies of the US and Canadian electrical codes.
Ken Vannice	Yes	
Lizz Pittsley	Yes	
Michael M. Lay	Yes	
Mitch Hefter	Yes	
Roger Lattin	Yes	
Steve Terry	Yes	
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes	
William Krokaugger	Yes	

There was heated discussion on whether a guide has persuasive weight equivalent to a standard. There was no consensus to change the votes, the super majority of which were Yes.

Appendix

2

<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	No with reasons	<p># 2</p> <p>This proposed resolution adds “Factors affecting the safe use of portable power feeder cable systems include: Mechanical strain, ambient temperature, operating above load ratings, improper spacing (lack of adequate cooling), inadequate planning for line loss (voltage drop), tripping hazards, mechanical damage (proper protection), worn or damaged equipment or cable, insufficient design allowance for cable bends, Improper identification (or none) on system components, incomplete or faulty connections and exceeding the thermal capacity of the cable.”</p> <p>Not all of the factors listed affect every single-conductor portable power feeder cable system.</p> <p>Add, “which may” between “factors” and “affecting.” Also change “affecting” to “affect.”</p> <p>The mention of “insufficient design allowance for cable bends” is misleading and should be removed. From IEEE Standard 575-2000, “IEEE Recommended Practice for Installation, Termination, and Testing of Insulated Power Cable as Used in Industrial and Commercial Applications,” “Table 6--Minimum bending radius of single and multiconductor non-metallic [without metallic armor] portable cable as a multiple of cable diameter” shows that cable used at under 5 kV has a multiplier of 6. Using sizes from a Southwire brochure for SC Entertainment Cable, 4/0, 2/0, and #2 have nominal overall diameters of 0.780, 0.665, and 0.560 inches respectively. Doing the math, gives us 4.68, 3.99, and 3.36 inches, quite a small bending radius and it’s hard to bend portable power feeder cable in a tighter bend.</p> <p>The concern over “design allowance for cable bends” is real when cable is installed in conduit with bends. There are sheaves or other curved surfaces around which the cable may be pulled under tension while being installed. Larger radii bends will be required for such conditions. However these are not appropriate for the way this kind of cable is used in the Entertainment Industry.</p>
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes	
Ken Vannice	Yes	
Lizz Pittsley	Yes	

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Michael M. Lay	Yes	
Mitch Heffer	Yes	
Roger Lattin	Yes	
Steve Terry	Yes	
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes	
William Krokaugger	Yes	

Eddie Kramer explained his objections. By show of hands the working group voted to make no further change to the resolution.

3

<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	No with reasons	<p># 3</p> <p>The statement “An increase of 10°C over the rated temp will reduce the expected lifespan of the cable by 50% and that effect is continued for every additional 10°C” is misleading. Not all sources agree with the 50% number.</p> <p>How long must the increase in temperature last to affect the cable life?</p> <p>In an article in “IEEE Transactions On Industry Applications, Vol. 25, No.5, September/October 1989” on “1987 Ampacity Tables-Demystifying the Myths” Donald W. Zipse points out, on page 915;</p> <p>"Remember, a 4000-A service is rated to carry 4000 A continuously, 24 hours a day, 365 days a year. Since most conductors do not carry their rated load continuously, there is little wonder that we have few, if any, failures....</p> <p>The deterioration of insulated electrical conductors is the result of heat as shown by the Rosch NEMA study. The heat generated is a function of <i>PR</i> losses. If a typical installation conductor is carrying only 50 percent of its rating, then the heating effect on the conductor is only 25 percent. Even at 75percent load, the heating effect is just over half, or 56 percent."</p>

Appendix

		Single-conductor portable power feeder cable systems are typically used for less than 12 hours a day and in most non-film use are used for 4 or less hours a day. The low duty-cycle of the cable makes the FPN unnecessary and it should be removed.
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes	
Ken Vannice	Yes	
Lizz Pittsley	Yes	
Michael M. Lay	Yes	
Mitch Hefter	No with reasons	Where is the technical substantiation for the values? No manufacturers' data was provided. FPN doesn't add significantly. Should be Rejected.
Roger Lattin	Yes with comments	Change isolation to insulation in the referenced 3.4.1 paragraph
Steve Terry	Yes	
Tyrone Mellon	Yes	
Vincent J. Cannavale	No with reasons	I feel the current temperature ratings are OK.
William Krokaugger	Yes	

There was discussion. Michael Lay moved that the resolution be accepted but without the FPN. Seconded. 13 Yes. 2 abstain. With a voting body of 22, this is a supermajority. The resolution is changed to "Operating cable while exceeding the thermal capacity causes premature failure of the insulation and over time will deteriorate the cables insulation property, creating a fire and shock hazard."

4
Accepted

5
Accepted

Appendix

6

<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	Yes	
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes	
Ken Vannice	Yes	
Lizz Pittsley	No with reasons	I believe the resolution to comment #37 (which is a repeat of this comment) is a more accurate assessment of the working group's stance on definitions: Comment Resolution: Accept in part. Definitions will be added for terms in the document not used in a generally accepted or known manner.
Michael M. Lay	Yes	
Mitch Heffer	Yes	
Roger Lattin	Yes	
Steve Terry	Yes	
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes	
William Krokaugger	Yes	

Lizz suggests that the resolution be changed to "Accept in part. Definitions will be added for terms in the document not used in a generally accepted or known manner." Seconded. Accepted by a supermajority with a show of hands.

7

Accepted

8

Accepted

9

Accepted

Appendix

10
Accepted

11
Accepted

12
Accepted

13
Accepted

14
Accepted

15
Accepted

16
Accepted

17
Accepted

18
Accepted

19

<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	Yes	
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes	

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Ken Vannice	Yes	
Lizz Pittsley	Yes	
Michael M. Lay	Yes	
Mitch Heffer	Yes	
Roger Lattin	Yes	
Steve Terry	No with reasons	The commenter is correct, but "which may be current carrying" only serves to confuse the reader in this definition. Suggest deleting those words.
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes	
William Krokaugger	Yes	

Jerry Gorrell moved that the resolution be left as it stands. Seconded. Approved by a supermajority with a show of hands.

20

<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	No with reasons	Anything to do with "sister-lugs" should be treated in a separate section from the main body of the document. The majority of the entertainment personnel are unlikely to encounter this type of connector and therefore, any treatment should be clearly delineated.
Edwin S. Kramer	Yes	
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes	
Ken Vannice	Yes	
Lizz Pittsley	Yes	
Michael M. Lay	Yes	
Mitch Heffer	No with reasons	UL 498 states: 2.6 CONFIGURATION, LOCKING—A device having a configuration that requires a motion other than a straight push or pull to connect or separate it when used with its mating part. Definition should be revised to reflect this definition.
Roger Lattin	Yes	
Steve Terry	Yes	
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes	

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William Krokaugger	Yes	
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Jerry Gorrell moved to leave the resolution unchanged. Seconded. Show of hands approved by a supermajority.

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<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	Yes	
George Long	Yes	
Jerry Gorrell	No with reasons	The (concept) term coincident demand has several meanings whether in IEEE usage or power company usage. Suggest better and more easily understood term of "peak demand" be used. Add definition - Peak Demand: The amount of power necessary to supply all devices at the time of maximum demand.
Keith S. Woods	Yes	
Ken Vannice	Yes	
Lizz Pittsley	Yes	
Michael M. Lay	Yes	
Mitch Hefter	Yes with comments	I agree with the resolution, but not the reasoning. The reasoning can be construed to mean the connected load is not the connected load, but some factor thereof. See negative comment on proposed new definition for coincident demand (item 22).
Roger Lattin	No vote	
Steve Terry	Yes	
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes	
William Krokaugger	Yes	

Jerry Gorrell moved that the resolution be accepted as written. Seconded. Approved with a show of hands.

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22

<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	No with reasons	Is it reasonable to conclude that any facet of the industry will adhere to this?
Edwin S. Kramer	Yes	
George Long	Yes	
Jerry Gorrell	No with reasons	The (concept) term coincident demand has several meanings whether in IEEE usage or power company usage. Suggest better and more easily understood term of "peak demand" be used. Add definition - Peak Demand: The amount of power necessary to supply all devices at the time of maximum demand.
Keith S. Woods	Yes	
Ken Vannice	Yes	
Lizz Pittsley	Yes	
Michael M. Lay	Yes	
Mitch Hefter	No with reasons	There is no existing text. I disagree with the use of coincident demand: The NEC only discusses noncoincident load in one section (220.60). The calculation of the connected load is already defined by the NEC and allows for demand factors, the use of noncoincidence is only one factor. By solely defining coincident demand as a replacement from the understood and Code defined term "connected load," the user may be misled into improper application of demand factors, and may also result in problems with the AHJ. In fact, with the "allowance " we already have from Table 400.5(B) that permits us to load single-conductor cables to a higher level than would otherwise be permitted elsewhere, I believe the use of demand factors of any sort must be undertaken with great care. Coincident demand can be risky if there is an "all on" action. Calculate the connected load with the appropriate conservative demand factors. Don't redefine the connected load as coincident load and raise concerns of double-dipping on demand factors.
Roger Lattin	Yes	
Steve Terry	Yes	
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes	
William Krokaugger	Yes	

Jerry Gorrell moved that the resolution be accepted as written. Seconded. Approved with a show of hands.

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<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	Yes	
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes	
Ken Vannice	Yes	
Lizz Pittsley	Yes	
Michael M. Lay	Yes	
Mitch Hefter	Yes	
Roger Lattin	Yes with comments	The other note that should be added is that the AHJ may not add anything that is less restrictive.
Steve Terry	Yes	
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes	
William Krokaugger	Yes	

Jerry Gorrell moved that the resolution be accepted as written. Seconded. Approved with a show of hands.

24

<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	Yes	
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes	
Ken Vannice	Yes	
Lizz Pittsley	No with reasons	If the crucial part of the definition is to state that the power source is the last switch or circuit breaker used to supply the portable power feeder cable system, is it necessary to state what is supplying the power to the last switch or circuit breaker? The power could be supplied by a generator, a transformer, or a company

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		switch. However, is that vital to this definition? See also resolution to comment #35.
Michael M. Lay	Yes	
Mitch Heffer	Yes	
Roger Lattin	Yes	
Steve Terry	Yes	
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes	
William Krokaugger	Yes	

Jerry Gorrell moved that the resolution be accepted as written. Seconded. Approved with a show of hands.

25

<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	Yes	
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	No with reasons	There should be wording for a reduction switch in the document when cable size is reduced. This wording could be something like: "When reducing cable size, the new branch circuit needs to be protected by a overcurrent protection device that is correct for the new cable in use."
Ken Vannice	Yes	
Lizz Pittsley	Yes	
Michael M. Lay	Yes	
Mitch Heffer	Yes	
Roger Lattin	No with reasons	I do not understand the comment resolution in red as presented. I think that the new text offered should be added. There should be a section for cable size reduction. This is a common issue in the field.
Steve Terry	Yes	
Tyrone Mellon	Yes	
Vincent J.	Yes	

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Cannavale		
William Krokaugger	Yes	

Roger Lattin moved that the resolution shall be changed to "Accept. In addition, the standard will be revised to include a section on reduction switches." Approved by a supermajority with a show of hands.

26

Accepted

27

<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	No with reasons	The use of the word "correction" implies minor adjustment versus 'change.' The definition offered is too broad. "A dimmer is not a voltage correction device" is an irrelevant statement.
Edwin S. Kramer	Yes	
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes	
Ken Vannice	Yes	
Lizz Pittsley	Yes	
Michael M. Lay	Yes	
Mitch Hefter	Yes	
Roger Lattin	Yes	
Steve Terry	No with reasons	Even the commenter's revised definition remains a mess. A device that mitigates harmonics should not be referred to as a "voltage correction device". A voltage correction device corrects RMS voltage and nothing else. Those devices include transformers and voltage regulators.
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes	
William Krokaugger	Yes	

Eddie Kramer moved that the resolution shall be to change the definition to state that a voltage correction device is a device other than a dimmer that corrects RMS voltage. Seconded. Accepted with a show of hands.

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<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	No with reasons	<p># 28</p> <p>Accept in principal. This standard is based on NFPA 70 The National Electrical Code®. The language of that code should be used where appropriate.</p> <p>Rewrite 1.3, 1.3.1, 1.3.2, and 1.3.3 using the wording from 90.5 of NFPA 70, The National Electrical Code®, 2008 Edition;</p> <p>“1.3 Mandatory Rules, Permissive Rules, and Explanatory Material.</p> <p>1.3.1 Mandatory Rules. Mandatory rules of this Standard are those that identify actions that are specifically required or prohibited and are characterized by the use of the terms <i>shall</i> or <i>shall not</i>.</p> <p>1.3.2 Permissive Rules. Permissive rules of this Standard are those that identify actions that are allowed but not required, are normally used to describe options or alternative methods, and are characterized by the use of the terms <i>shall be permitted</i> or <i>shall not be required</i>.</p> <p>1.3.3 Explanatory Material. Explanatory material, such as references to other standards, references to related sections of this Standard, or information related to a Standard rule, is included in this Standard in the form of fine print notes (FPNs). Fine print notes are informational only and are not enforceable as requirements of this Standard.”</p> <p>Keep the existing 1.34 and 1.35</p>
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes	
Ken Vannice	Yes with comments	These appear to now be 1.4.1 and 1.4.2. In 1.4.1 "indicate mandatory requirements" is there twice.
Lizz Pittsley	Yes	
Michael M. Lay	Yes	
Mitch Hefter	Yes	
Roger Lattin	Yes	
Steve Terry	No with reasons	We must diligently remove any mandatory requirements of this document that are not allowed by the NEC. Commenter's proposed wording is presumably aimed at CEC issues--and we are changing the document to be US specific. Therefore, the proposed wording is not needed.

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Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes	
William Krokaugger	Yes	

Lizz Pittsley moved that we change the comment resolution to use Eddie Kramer's language. Seconded. By show of hands the motion failed, so the proposed resolution stays.

29

<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	Yes with comments	# 29 The comment resolution of "reject" is correct, as is the statement, "This document is based on NFPA 70 The National Electrical Code®. "However, announcing that "A separate document based on Canadian code to be developed" commits the EPWG to coming up with one. I believe it is indeed a good idea and should be done, but committing to it is inappropriate for many reasons. Make the last sentence less definitive by changing it to "A separate document based on Canadian code is anticipated."
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	No with reasons	See comment on comment #1 or do the following in the fourth paragraph of the scope section of the document: It presently states: This standard is generally in accordance with the National Electrical Code© NFPA-70, an international code produced by the NFPA, commonly used in many parts of the USA. The application of this standard may be modified by regional and local codes. Rewrite should change last line to state: The application of this standard can be modified by regional and local codes, and is subject to the Canadian Electrical Code, CEC, in Canada, and all it's requirements.

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Ken Vannice	Yes	
Lizz Pittsley	Yes	
Michael M. Lay	Yes	
Mitch Heffer	Yes	
Roger Lattin	Yes	
Steve Terry	Yes	
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes	
William Krokaugger	Yes	

Jerry Gorrell moved that the resolution be accepted as written. Seconded. Approved with a show of hands.

30

<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	No with reasons	# 30 I don't understand this. The comment seems to be "Listed: see 1.3.5" with a Comment Resolution of Accept. But what does this mean? Can someone explain it to me?
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes	
Ken Vannice	Yes	
Lizz Pittsley	No with reasons	Reject. See resolution to comment #29. If we are resolving to reject comment #29, this resolution must follow suit.
Michael M. Lay	Yes	
Mitch Heffer	No with reasons	I have no idea what is being asked. Listed is already a definition under 1.3.5.
Roger Lattin	Yes	
Steve Terry	Yes	
Tyrone Mellon	Yes	
Vincent J.	Abstain	Unsure or the meaning?

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Cannavale	with reasons	
William Krokaugger	Yes	

Lizz Pittsley moved that the resolution shall be "Reject. Reject. This document is based on NFPA 70 The National Electrical Code®. A separate document based on Canadian code is to be developed." Seconded. Approved by a supermajority with a show of hands.

31

Accepted

32

<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	No with reasons	# 32 Hot pocket is a term used by just about all dimmer manufacturers to describe a non-dimmable output of a dimmer rack. The purpose of a definition section is to describe a term not in general use. Add a definition
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes	
Ken Vannice	Yes	
Lizz Pittsley	Yes	
Michael M. Lay	Yes	
Mitch Hefter	Yes	
Roger Lattin	No with reasons	The term, "hot pocket" is in general use and the FPN should be rewritten to include it. A hot pocket is a non-dimmed receptacle in a dimmer rack or pack that is not dimmed and may be used for testing purposes and/or for other types of utilization equipment not requiring dimmed power.
Steve Terry	Yes	
Tyrone Mellon	Yes	
Vincent J. Cannavale	Abstain with reasons	Unfamiliar with the term, it should be defined. †

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William Krokaugger	Yes	
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Jerry Gorrell moved that the resolution be accepted as written. Seconded. Approved with a show of hands.

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<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	Yes	
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes with comments	With the rewrite it now has correctly stated the grounding conductor definition. I will address my issues with the bonding conductor definition, which is part of my previous comment.
Ken Vannice	Yes	
Lizz Pittsley	Yes	
Michael M. Lay	Yes	
Mitch Hefter	Yes	
Roger Lattin	Yes	
Steve Terry	Yes	
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes	
William Krokaugger	Yes	

The resolution had been accepted. There was no further discussion.

34

<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	No with reasons	# 34 Comment 34 was "Load, connected and Load, maximum are the same thing. Load, maximum is redundant"

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		<p>and should be removed along with it's FPN.”</p> <p>In BSR E1.18-1r13 we find the definitions: load, connected: The sum of the loads on the branch circuits supplied. load, maximum: The total load possible to be required of the equipment if all outputs are fully loaded. <i>(FPN) In a 96 x 2.4 kW rack with eight 20 A hot pockets and two 20 A convenience outlets, there are 106 (96 + 8 + 2) 20 A possible loads = (106 x 20) / 3 = 700 A per leg for a 3ϕ supply. This rack has a maximum load of 700 A per leg</i></p> <p>In BSR E1.18-1r11 we find the definitions: Load, Connected: It is rare to utilize all the capacity of a piece of equipment; the connected load is the power actually needed. In a 96 x 2.4kW rack with eight 20A hot pockets and two 20A convenience outlets, when 20 PAR bars are plugged into it, the 120-1kW PAR's at Full draw 333A per leg for a 3ϕ supply. This rack has a connected load of 333A per leg. Load, Maximum: Is the total load possible. It is what the equipment can supply if all outputs are fully loaded, (which is very rare). In a 96 x 2.4kW rack with eight 20A hot pockets and two 20A convenience outlets, there are 106 (96 + 8 + 2) 20A possible loads = (106 x 20) / 3 = 700A per leg for a 3ϕ supply. This rack has a maximum load of 700A per leg.</p> <p>In either case the two definitions are not the same and there is no redundancy present. The first case (connected) is what is actually plugged into the rack while the second is what can be plugged in.</p> <p>Reject but add to the definition of Connected Load the last sentence of the old r11 definition of Connected Load as a FPN to give us: load, connected: The sum of the loads on the branch circuits supplied. <i>(FPN) In a 96 x 2.4kW rack with eight 20A hot pockets and two 20A convenience outlets, when 20 PAR bars are plugged into it, the 120-1kW PAR's at Full draw 333A per leg for a 3ϕ supply. This rack has a connected load of 333A per leg.</i></p>
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes	
Ken Vannice	No with reasons	The connected load on a 2.4kW dimmer is lets say 575W. The maximum load is 2.4kW.
Lizz Pittsley	Yes	

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Michael M. Lay	Yes	
Mitch Hefter	Yes with comments	Maximum load as is (was) defined here is the capacity of the equipment
Roger Lattin	No vote	
Steve Terry	No with reasons	Connected load and maximum load (also known as the nameplate rating of the equipment) are not the same thing.
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes	
William Krokaugger	Yes	

Lizz Pittsley moved that the resolution be accepted as written. Seconded. Approved with a show of hands.

35

<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	Yes	
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes	
Ken Vannice	Yes	
Lizz Pittsley	No with reasons	I do agree that the definition is clear that the power source is a switch or circuit breaker. I also agree with the comment that the definition could be simplified. See comments on resolution of comment #24.
Michael M. Lay	Yes	
Mitch Hefter	Yes	
Roger Lattin	Yes	
Steve Terry	Yes	
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes	
William Krokaugger	Yes	

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Lizz Pittsley changed her No to Yes. Thye resolution was accepted as written.

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<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	Yes	
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes	
Ken Vannice	Yes	
Lizz Pittsley	Yes	
Michael M. Lay	Yes	
Mitch Heffer	Yes	
Roger Lattin	No with reasons	See no with reason vote on comment #25
Steve Terry	Yes	
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes	
William Krokaugger	Yes	

Roger Lattin moved that the resolution shall be changed to "Accept in principle. See the resolution to comment 25." Seconded. Approved by a supermajority with a show of hands

37

Accepted

38

Accepted

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<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	No with reasons	<p># 39</p> <p>From the NEC Style Manual:</p> <p>"Ampacity. The term <i>ampacity</i>, as defined in Article 100, applies to the current-carrying capacity of conductors only. Therefore, this term shall be used in this sense, but only in this sense. (The ampacity of a No. 14 copper conductor with 60°C insulation is 20.) On the other hand, switches, motors, and similar equipment are not rated in ampacities. Instead, they have current ratings, voltage ratings, horsepower ratings, and so on. Such equipment, therefore, shall not be specified or referred to in "ampacity" values."</p> <p>Change the definition to:</p> <p>Ampacity. The current, in amperes, that a conductor can carry continuously under the conditions of use without exceeding its temperature rating.</p> <p>This will match the NEC.</p>
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes	
Ken Vannice	Yes	
Lizz Pittsley	Yes	
Michael M. Lay	Yes	
Mitch Heffer	Yes	
Roger Lattin	Yes	
Steve Terry	No with reasons	The definition is needed, but only wire or cable has ampacity while "devices" have "ratings".
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes	
William Krokaugger	Yes	

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Eddie Kramer moved that the resolution shall be "Accept in principle. We need a definition. The definition shall be: '**Ampacity**. The current, in amperes, that a conductor can carry continuously under the conditions of use without exceeding its temperature rating.'" Seconded. Approved by a supermajority with a show of hands.

39.5

<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes	
Edwin S. Kramer	No with reasons	# 39.5 How about using the NEC definition—"Connected to establish electrical continuity and conductivity"
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes	
Ken Vannice	Yes	
Lizz Pittsley	Yes	
Michael M. Lay	Yes	
Mitch Hefter	Yes	
Roger Lattin	Yes	
Steve Terry	Yes	
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes with comments	It works but I think it's too wordy.
William Krokaugger	Yes	

Eddie Kramer moved that the resolution be changed to "Accept in principle. We will add a definition from the NEC: 'Connected to establish electrical continuity and conductivity.'" Seconded. Approved by a supermajority with a show of hands.

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<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	No vote	
Edwin S. Kramer	No with reasons	# 40 How about using the NEC definition—“ Bonding Jumper . A reliable conductor to ensure the required electrical conductivity between metal parts required to be electrically connected.” Also, keep the definition of ground, but update it to match the NEC. Ground . The earth. Grounded (Grounding) . Connected (connecting) to ground or to a conductive body that extends the ground connection.
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	No with reasons	If it is not connected to ground what is it ultimately bonded to? All gensets, bull switches etc are service enclosures and are what is connected to ground, green coded lines running from this point are "bonds" not "grounds". There can only be one ground in a system, from the service enclosure to the system ground, all others are bonds, and are therefore connected to the service enclosure grounding. As such, all bonds are connected to ground.
Ken Vannice	Yes with comments	Add "...parts back to the source and may..."
Lizz Pittsley	Yes with comments	I believe this should read "...and may or may not be connected to a ground." This would be consistent with the "Grounding Conductor" definition.
Michael M. Lay	Yes	
Mitch Hefter	Yes with comments	Typo in new definition - should read "Bonding ...connected to grounded."
Roger Lattin	Yes	
Steve Terry	Yes with comments	To be clear: this definition should not replace "grounding conductor".
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes with comments	Again, I think it's too wordy.

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William Krokaugger	Yes with comments	In the "comment resolution" statement, the last word "grounded" should be "ground".
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Jerry Gorrell moved that the resolution shall be "Accept in part. The definitions provided shall be

'Bonding Jumper. A reliable conductor to ensure the required electrical conductivity between metal parts required to be electrically connected.

'Ground. The earth.

'Grounded (Grounding). Connected (connecting) to ground or to a conductive body that extends the ground connection."

Seconded. Accepted with a show of hands by a supermajority.

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<i>Voter</i>	<i>Vote</i>	<i>Comments</i>
Art Wanuch and Ian Foulds	Yes with comments	The term may not be used in the document but probably should be used to give clarity of how connection to earth is achieved.
Edwin S. Kramer	Yes	
George Long	Yes	
Jerry Gorrell	Yes	
Keith S. Woods	Yes with comments	Why not? This is a valid term and should be defined in the document as they are a necessary part of all electrical systems. The definition given by Mr. Dean is correct and should be used in the document as written.
Ken Vannice	Yes	
Lizz Pittsley	Yes	
Michael M. Lay	Yes	
Mitch Heffer	Yes	
Roger Lattin	Yes	
Steve Terry	Yes	
Tyrone Mellon	Yes	
Vincent J. Cannavale	Yes	
William Krokaugger	Yes	

Appendix

There was no motion made to change the accepted resolution. The yes votes were sufficient to accept the proposed resolution.