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MEMORANDUM

TO: Code-Making Panel 18

FROM: Sarah Caldwell, *Committee Administrator*

DATE: August 3, 2021

SUBJECT: NEC® Proposed TIA No. 1598 **PRELIMINARY TC BALLOT RESULTS**

According to Section 5.6(a) in the NFPA *Regs*, the preliminary results show this TIA **HAS** achieved the $\frac{3}{4}$ majority vote needed on both Ballot Item No. 1 (**Technical Merit**) and Ballot Item No. 2 (**Emergency Nature**).

13 Eligible to Vote
0 Not Returned

Technical Merit:

0 Abstentions
10 Agree (*w/ comment: Potterf*)
3 Disagree (*Alley, Clemente, Hasan*)

Emergency Nature:

0 Abstentions
11 Agree (*w/ comment: Fahey*)
2 Disagree (*Clemente, Hasan*)

There are two criteria necessary to pass ballot [(1) simple majority (2) affirmative $\frac{3}{4}$ vote]. Both questions must pass ballot in order to recommend that the Standards Council issue this TIA.

- (1) In all cases, an affirmative vote of at least a simple majority of the total membership eligible to vote is required.

$$[13 \text{ eligible} \div 2 = 6.5 = \mathbf{(7)}]$$

- (2) The number of affirmative votes needed to satisfy the $\frac{3}{4}$ requirement is **10**.
(13 eligible to vote - 0 not returned - 0 abstentions = $13 \times 0.75 = 9.75$)

Ballot comments are attached for your review.

This proposed TIA has been published for public comment in the July 2021 issue of *NFPA News* with a Public Comment Closing Date of August 23, 2021. Any public comments received will be circulated to the committee. The Standards Council will consider the issuance of this TIA.

NFPA 70®-2020 Edition

National Electrical Code®

TIA Log No.: 1598

Reference: 406.9(C), Exception No. 2(new)

Comment Closing Date: August 23, 2021

Submitter: Kerry Stackpole, Plumbing Manufacturers International (PMI)

www.nfpa.org/70

1. Add a new Exception No. 2 to Section 406.9(C) to read as follows:

406.9 Receptacles in Damp or Wet Locations. ...

(C) Bathtub and Shower Space. Receptacles shall not be installed within a zone measured 900 mm (3 ft) horizontally and 2.5 m (8 ft) vertically from the top of the bathtub rim or shower stall threshold. The identified zone is all-encompassing and shall include the space directly over the tub or shower stall.

Exception No. 1: In bathrooms with less than the required zone the receptacle(s) shall be permitted to be installed opposite the bathtub rim or shower stall threshold on the farthest wall within the room.

Exception No. 2: In a dwelling unit, a single receptacle shall be permitted for an electronic toilet or personal hygiene device such as an electronic bidet seat. The receptacle shall be readily accessible and located on one of the following:

(1) The wall behind the toilet but not behind the tank

(2) The opposite side of the toilet from the bathtub or shower

Substantiation: It is quite common for a toilet to be located next to a bathtub or shower in a residential bathroom. The existing text in NFPA 70 could prevent the installation of a receptacle that is necessary for the operation of an electronic toilet (also known as a “smart toilet”) or personal hygiene device (e.g., electronic bidet seat) where a toilet is located within 3 feet horizontally of a bathtub or shower. Application of the receptacle placement requirements has the potential to place an undue burden on the consumer whereby additional cost may be incurred to position the receptacle in an acceptable location without considering potential structural barriers behind the wall that may further restrict installation. Therefore, the proposed exception is necessary to ensure that such plumbing products are permitted to be installed while not jeopardizing the level of electrical safety that the standard seeks [see below photo(s)/diagram(s) that provide clarity for the proposed exception]. As such, due to the proximity of the individual receptacle to the bathtub or shower, it would be required by NEC Section 210.8(A)(9) to be protected by a Class A GFCI device minimizing any potential shock hazard. Moreover, it is our understanding that products like electronic toilets and personal hygiene devices were not taken into consideration during the discussion of the proposal prior to adoption into the current standard.

Emergency Nature: The proposed TIA intends to correct a circumstance in which the revised NFPA Standard has resulted in an adverse impact on a product or method that was inadvertently overlooked in the total revision process or was without adequate technical (safety) justification of the action.

Making an allowance for these listed products (which are permitted in all major plumbing codes), which have been in the market for decades, is necessary for safeguarding public health and safety. People all over the United States use such products in their bathrooms, and they are necessary for people with special needs or abilities to maintain their dignity, privacy and self-reliance. Ease of cleaning for seniors is of immediate benefit and critical to their hygiene. Additional hygiene-oriented benefits are obtained by people experiencing colorectal issues such as hemorrhoids, irritable bowel syndrome (IBS) and inflammatory bowel disease (IBD),¹ as well as women experiencing severe constipation during pregnancy² or recovering from postpartum activity. These products also help to maintain hand hygiene³ which is critical for preventing the spread of disease. Many smart toilets include health monitoring features that analyze one's stool or urine to detect health issues such as sugar levels for a diabetic. Also, smart toilets have proven to be quite beneficial for those who are rehabilitating from a stroke.⁴ Personal hygiene devices are necessary for some in maintaining their cleanliness as they may not be able to use toilet paper due to medical reasons. Also, personal hygiene devices have been proven to lead to fewer instances of rashes, hemorrhoids, and urinary tract infections. The bottom line is these products are necessary for many individuals around the United States for maintaining their health, and the existing text in NFPA 70 would prevent the installation of such products in many residential bathrooms.



1 “How to Decide If You Need a Bidet,” by Amber J. Tresca, 2019, Verywell Health, <https://www.verywellhealth.com/do-i-need-a-bidet-1942839>

2 “The Effect of Bidet Use on Severity of Constipation and Quality of Life Among Pregnant Women,” by Sultan Alan, Ebru Gozuyesil and Sule Gokyildiz Surucu, August 2020, Yonago Acta Medica (YAM), Journal of Medical Sciences, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7435113/>

3 “The Use of Electric Toilet Seats with Water Supply Is Efficacious in Maintaining Hand Hygiene in Experimental Model,” by Shigeharu Oie, Hiromi Aoshika, Emiko Arita and Akira Kamiya, 2018, Japanese Journal of Infectious Diseases, https://www.jstage.jst.go.jp/article/yoken/71/4/71_JJID.2017.515/article/-char/en

4 “Technology-assisted toilets: Improving independence and hygiene in stroke rehabilitation,” by David Yachnin, Georges Gharib, Jeffrey Jutai and Hillel Finestone, August 2017, Journal of Rehabilitation and Assistive Technologies Engineering, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6453101/>

QUESTION NO. 1: I AGREE with the TECHNICAL MERITS of the Proposed TIA Log No. 1598 to add a new Exception No. 2 to Section 406.9(C).

Eligible to Vote: 13

Not Returned : 0

<u>Vote Selection</u>	<u>Votes</u>	<u>Comments</u>
Agree	10	
Paul Yesbeck		Agree
Donald Berlin		Agree
Frederick L. Carpenter		Agree
Randall K. Wright		Agree
Robert G. Fahey		Agree
Charles S. Kurten		Agree
William Ross McCordle		Agree
Paul Costello		Agree
Jason D Potterf		Agree. Due to the emergency nature of this amendment I think the text can be accepted as is, but at the next opportunity I think additional clarity could be achieved. Specifically, the phrasing for the second exception option essentially reads "The receptacle shall be readily accessible and located on... the opposite side of the toilet from the bathtub or shower." A literal reading of this would result in the outlet being allowed only on the actual toilet, when a reasonable person would realize this means the wall or cabinet on the opposite side of the toilet. It would also be prudent to indicate that outlets behind the tank should be placed on the side of the toilet furthest from the bathtub or shower.
Kenneth Peskin		Agree
Disagree	3	
Hakim Hasan		there is no technical merit to remove the restricted zone completely. The existing restricted zone is only 900 mm (3 ft) horizontally from the tub or shower stall. An installer should have no trouble installing a dedicated receptacle outside that boundary and suggest that the use of the term "Device" should be changed to "Appliance", since these products are considered personal hygiene appliances, not devices.

Kurt J. Clemente	The panel's intent was to exclude receptacles from the zone comprising the bathtub and shower space. Any device's need for a receptacle within this zone does not supersede the panel's concern. The existing exception addresses situations where the room is smaller than this zone, providing explicit direction for the placement of a receptacle in this event.
Ron D. Alley	An electronic toilet or bidet seat should be considered a fixed appliance. Requiring a "hardwire" type installation, rather than a cord-and-plug connection, will provide a needed extra layer of protection for the consumer. It is far too easy for the consumer to simply unplug the electronic toilet/bidet and plug a phone charger (for instance) into the outlet when it is in close proximity to the bath tub and the tub is occupied. The electronic toilet/bidet should also be GFCI protected. A recent fatality occurred when a teenage girl was using her phone on a charger while she was in the tub.

Abstain 0

QUESTION NO. 2: I AGREE that the subject is of an EMERGENCY NATURE for one or more of the reasons noted in the Instructions box.

Eligible to Vote: 13

Not Returned : 0

<u>Vote Selection</u>	<u>Votes</u>	<u>Comments</u>
Agree	11	
Paul Yesbeck	A	
Donald Berlin	A	
Frederick L. Carpenter	F	
Randall K. Wright	A	

Robert G. Fahey		F.The proposed TIA intends to correct a circumstance in which the revised NFPA Standard has resulted in an adverse impact on a product or method that was inadvertently overlooked in the total revision process or was without adequate technical (safety) justification for the action. The Tentative Interim Amendment should be accepted based on the fact the additional exception will allow devices to be installed which enhance the safety and wellness of certain demographic of users. This acceptance does in no way endorse any certain product, the acceptance only recognizes that there is a hardship for a certain number of individuals, and this TIA will enhance the safety and wellness of those individuals. IAEI Proposed TIA text: 406.9 Receptacles in Damp or Wet Locations. ... (C) Bathtub and Shower Space. Receptacles shall not be installed within a zone measured 900 mm (3 ft) horizontally and 2.5 m (8 ft) vertically from the top of the bathtub rim or shower stall threshold. The identified zone is all-encompassing and shall include the space directly over the tub or shower stall. Exception No. 1: In bathrooms with less than the required zone the receptacle(s) shall be permitted to be installed opposite the bathtub rim or shower stall threshold on the farthest wall within the room. Exception No. 2: In a dwelling unit, a single receptacle shall be permitted for an electronic toilet or personal hygiene device such as an electronic bidet seat. The receptacle shall be readily accessible and located on the opposite side of the toilet from the bathtub or shower
Charles S. Kurten		F. The proposed TIA intends to correct a circumstance in which the revised NFPA Standard has resulted in an adverse impact on a product or method that was inadvertently overlooked in the total revision process or was without adequate technical (safety) justification for the action.
William Ross McCorcle		F
Ron D. Alley		F.
Paul Costello		F. The proposed TIA intends to correct a circumstance in which the revised NFPA Standard has resulted in an adverse impact on a product or method that was inadvertently overlooked in the total revision process or was without adequate technical (safety) justification for the action.
Jason D Potterf		A and F
Kenneth Peskin		F.
Disagree	2	
Hakim Hasan		this is not emergency nature and I'm not in support of the proposal.
Kurt J. Clemente		The subject is not of an emergency nature because the author's proposed exception to 406.9(C) should not be accepted.
Abstain	0	

- A. The standard contains an error or an omission that was overlooked during the regular revision process.**
- B. The NFPA Standard contains a conflict within the NFPA Standard or with another NFPA Standard.**
- C. The proposed TIA intends to correct a previously unknown existing hazard.**
- D. The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation.**
- E. The proposed TIA intends to accomplish a recognition of an advance in the art of safeguarding property or life where an alternative method is not in current use or is unavailable to the public.**
- F. The proposed TIA intends to correct a circumstance in which the revised NFPA Standard has resulted in an adverse impact on a product or method that was inadvertently overlooked in the total revision process or was without adequate technical (safety) justification for the action.**