

NFPA 70®-2020 Edition

National Electrical Code®

TIA Log No.: 1535

Reference: 210.70(A)(2)(4)

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1. Revise 210.70(A)(2)(4) to read as follows:

210.70(A)(2) Additional Locations. ...

(4) Dimming of lighting outlets controlled installed in accordance with 210.70(A)(2)(3) shall not be ~~controlled~~ permitted by use of listed wall-mounted control devices unless ~~they~~ listed control devices provide ~~the full range of~~ dimming control at each control location specified in 210.70(A)(2)(3).

Substantiation: In 2020 *NEC®* 210.70, First Revision FR-7590 replaced the phrase “wall switch-controlled lighting outlet” replaced with the phrase “lighting outlet(s) ... controlled by ... listed wall-mounted control device(s)” throughout 210.70, to address Public Input PI- 4193-NFPA 70-2017 requesting accommodation of evolving automation and control technologies. This CMP-2 action was fully appropriate for the control locations indicated in 210.70(A)(2)(1) through (3). 2017 (and earlier) *NEC®* 210.70(A)(2)(4), however, does not serve to specify control locations but rather to clarify control capabilities applicable at those 210.70(A)(2)(3) stairway level locations. It would be hazardous potentially for stairway lighting to be incapable of maximum brightness because a dimmer switch at one level’s location limits the brightness attainable at all other stairway entry levels.

Consequently, in 2020 *NEC®* 210.70(A)(2)(4) it was incorrect to replace the phrase “lighting outlets ... controlled by ... dimmer switches ...” with the phrase “lighting outlets ... controlled by ... listed wall-mounted control devices ...”.

As 2020 *NEC®* 210.70(A)(2)(4) now reads, ALL listed wall-mounted control devices now specified in 2020 *NEC®* 210.70(A)(2)(3) will be mandated to “provide the full RANGE of dimming control”, in effect solely dimmer switches are to be installed to control stairway lighting outlets.

Aside from reversing that identifiable part of First Revision No. 7590-NFPA 70-2018, 2017 (and earlier) *NEC®* 210.70(A)(2)(4) was ambiguous. The pronoun “they” could interpreted to be either lighting outlets or the dimmer switches.

Further, 210.70(A)(2)(4) as worded in either 2020 or in 2017 (and earlier) does not achieve CMP-2’s intent that “at each location”, maximum-brightness illumination be attainable for the entire stairway. As 2017 (and earlier) *NEC®* 210.70(A)(2)(4) ambiguously read, if dimmer switches at each DIMMER SWITCH location could provide “the full range of dimming control” (dark, ¼ bright, ½ bright, ¾ bright, full-bright), that would be Code complaint at that ONE control location. But isn’t that inherent with any DIMMER SWITCH at its own location? What is intended however is that for a given stairway a dimmer switch set at, say, ⅓ brightness would

not limit other switches and controllers at all other stairway levels to that same maximum of $\frac{1}{8}$ brightness.

Therefore, whether a given stairway level location can provide a FULL RANGE of dimming control is a design consideration and irrelevant. What is safety-significant is whether a given stairway entry level location can provide MAXIMUM BRIGHTNESS control to illuminate that stairway.

Emergency Nature: The proposed TIA intends to correct a previously unknown existing hazard. 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. 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.

Erroneous 2020 NEC® 210.70(A)(2)(4) wording results in more confusion as to which type lighting controls are mandated for illumination on stairways. Further, 2020 and 2017 (and earlier) 210.70(A)(2)(4) wording ambiguity may not achieve the safety intent sought. The Emergency Nature consequences are that stairways may be illuminated at low brightness, resulting in falling injuries.