



National Fire Protection Association

1 Batterymarch Park, Quincy, MA 02169-7471
Phone: 617-770-3000 • Fax: 617-770-0700 • www.nfpa.org

MEMORANDUM

TO: NFPA Technical Committee on Handling and Conveying of Dusts, Vapors, and Gases
FROM: Joanne Goyette, Administrator, Technical Projects
DATE: December 22, 2011
SUBJECT: NFPA **654** ROC TC FINAL Supplemental Ballot Results (A2012)

The Final Results of the NFPA 654 ROC Supplemental Letter Ballot are as follows:

28 **Members Eligible to Vote**
2 **Not Returned** (L. Floyd and T. Slavin)
24 **Affirmative on All**
2 **Negatives** (T. Scherpa and J. Sutton) (on one or more comments as noted in the attached report)
0 **Abstentions**

There are two criteria necessary to pass ballot [(1) affirmative $\frac{2}{3}$ vote and (2) simple majority].

- (1) The number of affirmative votes needed for the proposal/comment to pass is **18**.
(28 eligible to vote - 2 not returned - 0 abstentions = $26 \times 0.66 = 17.16$)
- (2) In all cases, an affirmative vote of at least a simple majority of the total membership eligible to vote is required. This is the calculation for simple majority:
[28 eligible \div 2 = 14 + 1 = **(15)**]

Reasons for negative votes, etc. from alternate members are not included unless the ballot from the principal member was not received.

According to the final ballot results, all ballot items received the necessary $\frac{2}{3}$ required affirmative votes to pass ballot.

654-24 Eligible To Vote:28 Affirmative: 24 Negative: 2 Abstain: 0 Not Returned: 2

6.2.3 (Log # CC5)

Not Returned

Floyd, L.

Slavin, T.

Negative

Scherpa, T. The annex material that was removed in the supplemental ballot provides cautionary information regarding the limitations of the 35-ft minimum separation distance. I do not remember the specific discussions regarding this annex material during the committee meeting or whether it was intended to be included or excluded, but I think it clearly illustrates the problem with a one-size-fits-all number for separation and in part addresses the issues raised in Jeff Sutton's negative vote. For these reasons I prefer the version of 654-24 (Log #CC5) that appeared in the original ballot.

Sutton, J. The ROP report prohibited separation to be used to protect the surrounding areas from a dust explosion hazard area. While this may be overly conservative in some situations, a minimum distance of 35 ft. separation allowed by this ROC report goes too far the other way. If a dust explosion occurs, 35 ft. separation is very likely to be inadequate and all of the provisions of 6.2.3.1.1 of this ROC should be evaluated to establish what the correct separation distance should be, if any.

Affirmative with Comment

Febo, Jr., H. The first sentence of A.6.2.3.2 is not good English or even understandable. Annex comments are supposed to clarify, not confuse. I suggest the wording be modified as follows:

~~A.6.2.3.2 The assertion of separation must recognize the dust accumulation on all surfaces in the intervening distance,~~
To qualify as separation all components in the intervening distance must qualify as having the surface color discernable
including floors, beam flanges, piping, ductwork, equipment, suspended ceilings, light fixtures and walls.

Hart, P. I agree with the Febo comment that the first sentence of A.6.2.3.2 is difficult to understand, and agree with his suggested changes as shown below:

~~A.6.2.3.2 The assertion of separation must recognize the dust accumulation on all surfaces in the intervening distance,~~ To qualify as separation all components in the intervening distance must qualify as having the surface color discernable including floors, beam flanges, piping, ductwork, equipment, suspended ceilings, light fixtures and walls.

Ural, E. The presentation I made to the Committee during the ROC meeting highlighted how the required separation distance between the dust explosion hazard or flash fire hazard area and surrounding exposures can be determined by an engineering evaluation. My presentation also highlighted that the term Separation Distance has different meanings to different people and different applications. For example when the term is used, people may understand the distance beyond which:

- Fire Resistant Garments are not needed
- Electrical classification is not needed
- Dust deposits will not become airborne
- Airborne dust deposits will not be ignited, or
- Hot work is presumed safe (35 ft per NFPA 51).

These meanings do not necessarily result in the same separation distance. In addition to the items listed in the proposed text, necessary separation distance is strongly affected by dust cloud transport due to air currents or due to primary event, dimensions of the dust layers, geometry and confinement around the dust combustion zone, cloud expansion due to combustion, and availability of ignition sources.

The de minimis 35 ft separation distance may arguably be OK for operations involving welding, cutting, and other hot work. However, data and engineering evaluation shows that 35 ft separation distance is nowhere near adequate for most secondary deflagration scenarios addressed in this standard.