

ALLOWABLE VARIATIONS IN SCALE READING  
[In percent]

Methane in mixtures	Minimum indication	Maximum indication
0.25	0.10	0.40
.50	.35	.65
1.00	.80	1.20
2.00	1.80	2.20
3.00	2.70	3.30
4.00	3.70	4.30

(i) Tests shall be made at several percentages within the range of the indicating detector and at temperatures between the limits of 50° and 70 °F. by increments of 5°. Ten determinations shall be made at each percentage. Neither the average of the 10 readings nor more than 2 readings for each percentage shall exceed the limits of error given in the table.

(ii) The average number of determinations that may be made with an indicating detector without replacement of any part shall be not less than 30, and the average number that may be made without recharging the battery shall be not less than 15.

(iii) The scale shall not be subdivided into smaller divisions than the general accuracy of the indicating detector warrants.

(3) *Mechanical strength.* Detectors and indicating detectors shall be subjected to the following mechanical tests: Four of each of those parts or groups of assembled parts that are not normally strapped to the user shall be dropped 20 times on a wood floor from a height of 3 feet. Parts that are strapped to the user may be subjected to a jarring or bumping test to demonstrate adequate strength. The average number of times that any one of the detectors can be dropped before breakage or material distortion of essential parts shall be not less than 10.

(e) *Attachments for illumination.* If detectors are provided with attachments for illuminating purposes, such attachments shall be subject to the same requirements as those applying to that type of lamp under the lamp schedule then in force.

**§ 22.8 Material required for MSHA records.**

In order that MSHA may know exactly what it has tested and approved, it keeps detailed records covering each

investigation. These records include drawings and actual equipment as follows:

(a) *Drawings.* The original drawings submitted with the application for the tests and the final drawings which the manufacturer must submit to MSHA before the approval is granted to show the details of the detector as approved, are retained. These drawings are used to identify the detector in the approval and as a means of checking the future commercial product of the manufacturer.

(b) *Actual equipment.* If MSHA so desires, parts of the detectors that are used in the tests will be retained as records of the equipment submitted. If the detector is approved, MSHA will require the manufacturer to submit one of his detectors, with the approval plate attached, as a record of his commercial product.

**§ 22.9 How approvals are granted.**

All approvals are granted by official letter from MSHA. A detector will be approved under this part only when the testing engineers have judged that it has met the requirements of the schedule and MSHA's records are complete, including drawings from the manufacturer that show the detector as it is to be commercially made. No verbal reports of the investigation will be given and no informal approvals will be granted. As soon as the manufacturer has received the formal approval, he shall be free to advertise his detector as permissible.

[Sched. 8C, Oct. 31, 1935, as amended by Supp. 1, 20 FR 2575, Apr. 19, 1955]

**§ 22.10 Approval plate.**

(a) *Attachment to be made by manufacturers.* (1) Manufacturers shall attach, stamp, or mold an approval plate on each permissible methane detector. The plate shall bear the emblem of the Mines Safety and Health Administration and be inscribed as follows:

Permissible Methane Detector (or Permissible Methane Indicating Detector) Approval No. \_\_\_\_\_ issued to the \_\_\_\_\_ Company.

(2) When deemed necessary, an appropriate caution statement shall be