

§ 56.14100

30 CFR Ch. I (7-1-10 Edition)

**SAFETY DEVICES AND MAINTENANCE
REQUIREMENTS**

by an authorized representative of the Secretary.

§ 56.14100 Safety defects; examination, correction and records.

(a) Self-propelled mobile equipment to be used during a shift shall be inspected by the equipment operator before being placed in operation on that shift.

(b) Defects on any equipment, machinery, and tools that affect safety shall be corrected in a timely manner to prevent the creation of a hazard to persons.

(c) When defects make continued operation hazardous to persons, the defective items including self-propelled mobile equipment shall be taken out of service and placed in a designated area posted for that purpose, or a tag or other effective method of marking the defective items shall be used to prohibit further use until the defects are corrected.

(d) Defects on self-propelled mobile equipment affecting safety, which are not corrected immediately, shall be reported to and recorded by the mine operator. The records shall be kept at the mine or nearest mine office from the date the defects are recorded, until the defects are corrected. Such records shall be made available for inspection

§ 56.14101 Brakes.

(a) *Minimum requirements.* (1) Self-propelled mobile equipment shall be equipped with a service brake system capable of stopping and holding the equipment with its typical load on the maximum grade it travels. This standard does not apply to equipment which is not originally equipped with brakes unless the manner in which the equipment is being operated requires the use of brakes for safe operation. This standard does not apply to rail equipment.

(2) If equipped on self-propelled mobile equipment, parking brakes shall be capable of holding the equipment with its typical load on the maximum grade it travels.

(3) All braking systems installed on the equipment shall be maintained in functional condition.

(b) *Testing.* (1) Service brake tests shall be conducted when an MSHA inspector has reasonable cause to believe that the service brake system does not function as required, unless the mine operator removes the equipment from service for the appropriate repair;

(2) The performance of the service brakes shall be evaluated according to Table M-1.

TABLE M-1

Gross vehicle weight lbs.	Equipment speed, MPH										
	10	11	12	13	14	15	16	17	18	19	20
Service Brake Maximum Stopping Distance—Feet											
0-36000	34	38	43	48	53	59	64	70	76	83	89
36000-70000	41	46	52	58	62	70	76	83	90	97	104
70000-140000	48	54	61	67	74	81	88	95	103	111	119
140000-250000	56	62	69	77	84	92	100	108	116	125	133
250000-400000	59	66	74	81	89	97	105	114	123	132	141
Over 400000	63	71	78	86	94	103	111	120	129	139	148

Stopping distances are computed using a constant deceleration of 9.66 FPS² and system response response times of .5.1, 1.5, 2, 2.25 and 2.5 seconds for each increasing weight category respectively. Stopping distance values include a one-second operator response time.

TABLE M-2—THE SPEED OF A VEHICLE CAN BE DETERMINED BY CLOCKING IT THROUGH A 100-FOOT MEASURED COURSE AT CONSTANT VELOCITY USING TABLE M-2. WHEN THE SERVICE BRAKES ARE APPLIED AT THE END OF THE COURSE, STOPPING DISTANCE CAN BE MEASURED AND COMPARED TO TABLE M-1.

Miles per hour	10	11	12	13	14	15	16	17	18	19	20
Seconds Required to Travel 100 Feet	6.8	6.2	5.7	5.2	4.9	4.5	4.3	4.0	3.8	3.6	3.4

(3) Service brake tests shall be conducted under the direction of the mine operator in cooperation with an according to the instructions provided by the MSHA inspector as follows:

(i) Equipment capable of traveling at least 10 miles per hour shall be tested with a typical load for that particular piece of equipment. Front-end loaders shall be tested with the loader bucket empty. Equipment shall not be tested when carrying hazardous loads, such as explosives.

(ii) The approach shall be sufficient length to allow the equipment operator to reach and maintain a constant speed between 10 and 20 miles per hour prior to entering the 100 foot measured area. The constant speed shall be maintained up to the point when the equipment operator receives the signal to apply the brakes. The roadway shall be wide enough to accommodate the size of the equipment being tested. The ground shall be generally level, packed, and dry in the braking portion of the test course. Ground moisture may be present to the extent that it does not adversely affect the braking surface.

(iii) Braking is to be performed using only those braking systems, including auxiliary retarders, which are designed to bring the equipment to a stop under normal operating conditions. Parking or emergency (secondary) brakes are not to be actuated during the test.

(iv) The tests shall be conducted with the transmission in the gear appropriate for the speed the equipment is traveling except for equipment which is designed for the power train to be disengaged during braking.

(v) Testing speeds shall be a minimum of 10 miles per hour and a maximum of 20 miles per hour.

(vi) Stopping distances shall be measured from the point at which the equipment operator receives the signal to apply the service brakes to the final stopped position.

(4) Test results shall be evaluated as follows:

(i) If the initial test run is valid and the stopping distance does not exceed the corresponding stopping distance listed in Table 1, the performance of the service brakes shall be considered acceptable. For tests to be considered valid, the equipment shall not slide

sideways or exhibit other lateral motion during the braking portion of the test.

(ii) If the equipment exceeds the maximum stopping distance in the initial test run, the mine operator may request from the inspector up to four additional test runs with two runs to be conducted in each direction. The performance of the service brakes shall be considered acceptable if the equipment does not exceed the maximum stopping distance on at least three of the additional tests.

(5) Where there is not an appropriate test site at the mine or the equipment is not capable or traveling at least 10 miles per hour, service brake tests will not be conducted. In such cases, the inspector will rely upon other available evidence to determine whether the service brake system meets the performance requirement of this standard.

[53 FR 32521, Aug. 25, 1988; 53 FR 44588, Nov. 4, 1988]

§ 56.14102 Brakes for rail equipment.

Braking systems on railroad cars and locomotives shall be maintained in functional condition.

§ 56.14103 Operators stations.

(a) If windows are provided on operators' stations of self-propelled mobile equipment, the windows shall be made of safety glass or material with equivalent safety characteristics. The windows shall be maintained to provide visibility for safe operation.

(b) If damaged windows obscure visibility necessary for safe operation, or create a hazard to the equipment operator, the windows shall be replaced or removed. Damaged windows shall be replaced if absence of a window would expose the equipment operator to hazardous environmental conditions which would affect the ability of the equipment operator to safely operate the equipment.

(c) The operator's stations of self-propelled mobile equipment shall—

(1) Be free of materials that could create a hazard to persons by impairing the safe operation of the equipment; and

(2) Not be modified, in a manner that obscures visibility necessary for safe operation.