

§ 7.408 Test for flame resistance of signaling cables.

(a) *Test procedure.* (1) Prepare 3 samples of cable each 2 feet long.

(2) Prior to testing, condition each test specimen for a minimum of 24 hours at a temperature of 70±10 °F (21.1±5.5 °C) and relative humidity of 55±10 percent. These environmental conditions shall be maintained during testing.

(3) Center the test specimen horizontally in the test chamber on the three rods. The three rods shall be positioned perpendicular to the longitudinal axis of the test specimen and at the same height, which permits the tip of the inner cone from the flame of the gas burner, when adjusted in accordance with the test procedure, to touch the test specimen. The specimen shall be maintained at this height for the duration of the flame test. The two outermost rods shall be placed so that 1 inch of cable extends beyond each rod. The third rod shall be placed at the midpoint of the cable. The specimen shall be free from external air currents during testing.

(4) Adjust the gas burner to give an overall blue flame 5 inches high with a 3-inch inner cone. There shall be no persistence of yellow coloration.

(5) Apply the tip of the inner cone from the flame of the gas burner for 30 seconds directly beneath the specimen centered between either and support and the center support.

(6) After subjecting the test specimen to external flame for the specified time, fully remove the flame of the gas from beneath the specimen without disturbing air currents within the test chamber.

(7) Record the amount of time the test specimen continues to burn after the flame from the gas burner has been removed. The duration of burning includes the burn time of any material that falls from the test specimen after the flame from the gas has been removed.

(8) Record the length of burned (charred) area of each test specimen measured longitudinally along the cable axis.

(9) Repeat the procedure for the remaining two specimens.

(b) *Acceptable performance.* Each of the three test specimens shall meet the following criteria:

(1) The duration of burning shall not exceed 60 seconds.

(2) The length of the burned (charred) area shall not exceed 6 inches.

§ 7.409 Approval marking.

Approved electric cables, signaling cables, and splices shall be legibly and permanently marked with the MSHA-assigned approval marking. For electric cables and signaling cables, the marking shall appear at intervals not exceeding 3 feet and shall include the MSHA-assigned approval number in addition to the number and size (gauge) of conductors and cable type. For cables containing electric conductors, the marking shall also include the voltage rating. For splices, the marking shall be placed on the jacket so that it will appear at least once on the assembled splice.

§ 7.410 Post-approval product audit.

Upon request by MSHA, but no more than once a year except for cause, the approval holder shall supply to MSHA for audit at no cost—

(a) 12 feet of an approved electric cable or approved signaling cable; or

(b) 3 splice kits of one approved splice kit design and 12 feet of MSHA-assigned cable that the splice kit is designed to repair.

§ 7.411 New technology.

MSHA may approve cable products or splice kits that incorporate technology for which the requirements of this subpart are not applicable if the Agency determines that they are as safe as those which meet the requirements of this subpart.

PART 11—[Reserved]

PART 15—REQUIREMENTS FOR APPROVAL OF EXPLOSIVES AND SHEATHED EXPLOSIVE UNITS

Subpart A—General Provisions

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