

(2) The distance over which the excessive width exists is more than 5 feet.

§ 75.204 Roof bolting.

(a) For roof bolts and accessories addressed in ASTM F432-95, "Standard Specification for Roof and Rock Bolts and Accessories," the mine operator shall—

(1) Obtain a manufacturer's certification that the material was manufactured and tested in accordance with the specifications of ASTM F432-95; and

(2) Make this certification available to an authorized representative of the Secretary and to the representative of miners.

(b) Roof bolts and accessories not addressed in ASTM F432-95 may be used, provided that the use of such materials is approved by the District Manager based on—

(1) Demonstrations which show that the materials have successfully supported the roof in an area of a coal mine with similar strata, opening dimensions and roof stresses; or

(2) Tests which show the materials to be effective for supporting the roof in an area of the affected mine which has similar strata, opening dimensions and roof stresses as the area where the roof bolts are to be used. During the test process, access to the test area shall be limited to persons necessary to conduct the test.

(c)(1) A bearing plate shall be firmly installed with each roof bolt.

(2) Bearing plates used directly against the mine roof shall be at least 6 inches square or the equivalent, except that where the mine roof is firm and not susceptible to sloughing, bearing plates 5 inches square or the equivalent may be used.

(3) Bearing plates used with wood or metal materials shall be at least 4 inches square or the equivalent.

(4) Wooden materials that are used between a bearing plate and the mine roof in areas which will exist for three years or more shall be treated to minimize deterioration.

(d) When washers are used with roof bolts, the washers shall conform to the shape of the roof bolt head and bearing plate.

(e)(1) The diameter of finishing bits shall be within a tolerance of plus or minus 0.030 inch of the manufacturer's recommended hole diameter for the anchor used.

(2) When separate finishing bits are used, they shall be distinguishable from other bits.

(f) *Tensioned roof bolts.* (1) Roof bolts that provide support by creating a beam of laminated strata shall be at least 30 inches long. Roof bolts that provide support by suspending the roof from overlying stronger strata shall be long enough to anchor at least 12 inches into the stronger strata.

(2) Test holes, spaced at intervals specified in the roof control plan, shall be drilled to a depth of at least 12 inches above the anchorage horizon of mechanically anchored tensioned bolts being used. When a test hole indicates that bolts would not anchor in competent strata, corrective action shall be taken.

(3) The installed torque or tension ranges for roof bolts as specified in the roof control plan shall maintain the integrity of the support system and shall not exceed the yield point of the roof bolt nor anchorage capacity of the strata.

(4) In each roof bolting cycle, the actual torque or tension of the first tensioned roof bolt installed with each drill head shall be measured immediately after it is installed. Thereafter, for each drill head used, at least one roof bolt out of every four installed shall be measured for actual torque or tension. If the torque or tension of any of the roof bolts measured is not within the range specified in the roof control plan, corrective action shall be taken.

(5) In working places from which coal is produced during any portion of a 24-hour period, the actual torque or tension on at least one out of every ten previously installed mechanically anchored tensioned roof bolts shall be measured from the outby corner of the last open crosscut to the face in each advancing section. Corrective action shall be taken if the majority of the bolts measured—

(i) Do not maintain at least 70 percent of the minimum torque or tension specified in the roof control plan, 50

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percent if the roof bolt plates bear against wood; or

(ii) Have exceeded the maximum specified torque or tension by 50 percent.

(6) The mine operator or a person designated by the operator shall certify by signature and date that measurements required by paragraph (f)(5) of this section have been made. This certification shall be maintained for at least one year and shall be made available to an authorized representative of the Secretary and representatives of the miners.

(7) Tensioned roof bolts installed in the roof support pattern shall not be used to anchor trailing cables or used for any other purpose that could affect the tension of the bolt. Hanging trailing cables, line brattice, telephone lines, or other similar devices which do not place sudden loads on the bolts are permitted.

(8) Angle compensating devices shall be used to compensate for the angle when tensioned roof bolts are installed at angles greater than 5 degrees from the perpendicular to the bearing plate.

(g) *Non-tensioned grouted roof bolts.* The first non-tensioned grouted roof bolt installed during each roof bolting cycle shall be tested during or immediately after the first row of bolts has been installed. If the bolt tested does not withstand at least 150 foot-pounds of torque without rotating in the hole, corrective action shall be taken.

[53 FR 2375, Jan. 27, 1988, as amended at 55 FR 4595, Feb. 8, 1990; 63 FR 20030, Apr. 22, 1998]

§ 75.205 Installation of roof support using mining machines with integral roof bolters.

When roof bolts are installed by a continuous mining machine with integral roof bolting equipment:

(a) The distance between roof bolts shall not exceed 10 feet crosswise.

(b) Roof bolts to be installed 9 feet or more apart shall be installed with a wooden crossbar at least 3 inches thick and 8 inches wide, or material which provides equivalent support.

(c) Roof bolts to be installed more than 8 feet but less than 9 feet apart shall be installed with a wooden plank at least 2 inches thick and 8 inches

wide, or material which provides equivalent support.

§ 75.206 Conventional roof support.

(a) Except in anthracite mines using non-mechanized mining systems, when conventional roof support materials are used as the only means of support—

(1) The width of any opening shall not exceed 20 feet;

(2) The spacing of roadway roof support shall not exceed 5 feet;

(3)(i) Supports shall be installed to within 5 feet of the uncut face;

(ii) When supports nearest the face must be removed to facilitate the operation of face equipment, equivalent temporary support shall be installed prior to removing the supports;

(4) Straight roadways shall not exceed 16 feet wide where full overhead support is used and 14 feet wide where only posts are used;

(5) Curved roadways shall not exceed 16 feet wide; and

(6) The roof at the entrance of all openings along travelways which are no longer needed for storing supplies or for travel of equipment shall be supported by extending the line of support across the opening.

(b) Conventional roof support materials shall meet the following specifications:

(1) The minimum diameter of cross-sectional area of wooden posts shall be as follows:

| Post length (in inches) | Diameter of round posts (in inches) | Cross-sectional area of split posts (in square inches) |
|-------------------------|-------------------------------------|--|
| 60 or less | 4 | 13 |
| Over 60 to 84 | 5 | 20 |
| Over 84 to 108 | 6 | 28 |
| Over 108 to 132 | 7 | 39 |
| Over 132 to 156 | 8 | 50 |
| Over 156 to 180 | 9 | 64 |
| Over 180 to 204 | 10 | 79 |
| Over 204 to 228 | 11 | 95 |
| Over 228 | 12 | 113 |

(2) Wooden materials used for support shall have the following dimensions:

(i) Cap blocks and footings shall have flat sides and be at least 2 inches thick, 4 inches wide and 12 inches long.

(ii) Crossbars shall have a minimum cross-sectional area of 24 square inches and be at least 3 inches thick.