

SHEATHED EXPLOSIVE PLAN

_____ Company Name	_____ Mine Name or Number
_____ Date	_____ DM Mine Index Number

The following procedures, as required by §45.1-161.129.B of the Coal Mine Safety Laws of Virginia, will be followed when sheathed explosives are used:

1. All sections of the Coal Mine Safety Laws of Virginia, pertaining to explosives, and blasting will be complied with.
2. Sheathed explosives units will be primed and placed in position for firing only by a certified shot-firer or a person working in the presence of and under the direction of a certified shot-firer.
3. Rock dust will be thoroughly applied to the roof, ribs, and mine floor within 40 feet of the area where the sheathed explosive units are to be used.
4. Sheathed explosive units will not be primed until immediately before the units are placed in position to be fired. Sheathed explosive units will not be primed if the unit is damaged or deteriorated.
5. Only instantaneous detonators will be used to fire sheathed explosive units.
6. The entire detonator will be inserted into the detonator well of the unit and be held securely in place when a sheathed explosive unit is primed.
7. No more than one sheathed explosive unit will be fired at one time.

Attachment A – Explosives and Blasting

Coal Mine Safety Laws of Virginia

§ 45.1-161.129. Blasting practices; penalty.

A. All explosives shall be of the permissible type except where addressed in the plan for shaft and slope development required by § 45.1-161.250 B.

B. All explosives shall be used as follows:

1. Explosives shall be fired only with electric detonators of proper strength;
2. Explosives shall be fired with permissible shot-firing units, unless firing is done from the surface when all persons are out of the mine, or in accordance with a plan approved by the Chief;
3. Boreholes in coal shall not be drilled beyond the limits of the cut where the coal is cut nor into the roof or floor;
4. Boreholes shall be cleaned, and shall be checked to see that they are placed properly and are of correct depth in relation to the cut, before being charged;
5. All blasting charges in coal shall have a burden of at least eighteen inches in all directions if the height of the coal permits;
6. Boreholes shall be stemmed with at least twenty-four inches of incombustible material, or at least one-half of the length of the hole shall be stemmed if the hole is less than four feet in depth. The Chief may approve the use of other stemming devices;
7. Examinations for gas shall be made immediately before firing each shot or group of multiple shots, and after blasting is completed;
8. Shots shall not be fired in any place where a methane level of one percent or greater can be detected with a permissible methane detector;
9. Without approval, charges exceeding one and one-half pounds, but not exceeding three pounds, shall be used only if (i) boreholes are six feet or more in depth; (ii) the explosives are charged in a continuous train, with no cartridges deliberately deformed or crushed; (iii) all cartridges are in contact with each other, with the end cartridges touching the back of the hole and the stemming, respectively; and (iv) permissible explosives are used; however, the three-pound limit shall not apply to solid rock work;

10. Any solid shooting shall be done in compliance with conditions prescribed by the Chief;
11. Shots shall be fired by a certified underground shot firer;
12. Boreholes shall not be charged while any other work is being done at the face, and the shot or shots shall be fired before any other work is done in the zone of danger from blasting except that which is necessary to safeguard the miners;
13. Only nonmetallic tamping bars, including a nonmetallic tamping bar with a nonsparking metallic scraper on one end, shall be used for charging and tamping boreholes;
14. The leg wires of electric detonators shall be kept shunted until ready to connect to the firing cable;
15. The roof and faces of working places shall be tested before and after firing each shot or group of multiple shots;
16. Ample warning shall be given before shots are fired, and care shall be taken to ascertain that all miners are in the clear;
17. All miners shall be removed from the working place and the immediately adjoining working place or places to a distance of at least 100 feet and accounted for before shots are fired;
18. Mixed types or brands of explosives shall not be charged or fired in any borehole;
19. Adobe (mudcap) or other open, unconfined shots shall not be fired in any mine except those types approved by the Mine Safety and Health Administration and the Chief;
20. Power wires and cables that could contact blasting cables or leg wires shall be de-energized during charging and firing;
21. Firing shots from a properly installed and protected blasting circuit may be permitted by the Chief;
22. No miner shall return, or shall be allowed to return, to the working place after the firing of any shot or shots until the smoke has reasonably cleared away;
23. Before returning to work and beginning to load coal, slate or refuse, a miner shall make a careful examination of the condition of the roof and do what is necessary to make the working place safe; and
24. An examination for fire shall be made of the working area after any blasting.

C. It shall be unlawful for an operator, his agent, or mine foreman to cause or permit any solid shooting to be done without first having obtained a written permit from the Chief. It shall be unlawful for any miner to shoot coal from the solid without first obtaining permission to do so from the operator, his agent, or mine foreman. A violation of this subsection is a Class 1 misdemeanor.

(Code 1950, §§ 45-53.1, 45-53.5; 1954, c. 191; 1966, c. 594, § 45.1-48; 1978, c. 729; 1981, c. 179; 1984, c. 229; 1993, c. 442; 1994, c. 28; 1999, c. 256.)

§ 45.1-161.130. Blasting cables.

Blasting cables shall be:

1. Well insulated and as long as may be necessary to permit the shot firer to get in a safe place around a corner;
2. Short-circuited at the battery end until ready to attach to the blasting unit;
3. Staggered as to length or the ends kept well separated when attached to the detonator leg wires; and
4. Kept clear of power wires and all other possible sources of active or stray electric currents.

(Code 1950, § 45-53.6; 1954, c. 191; 1966, c. 594, § 45.1-49; 1994, c. 28.)

§ 45.1-161.131. Misfires.

A. Where misfires occur with electric detonators, a waiting period of at least fifteen minutes shall elapse before a miner shall be allowed to return to the shot area. After such failure, the blasting cable shall be disconnected from the source of power and the battery ends short-circuited before electric connections are examined.

B. Explosives shall be removed by firing a separate charge at least two feet away from, and parallel to, the misfired charge or by washing the stemming and the charge from the borehole with water, or by inserting and firing a new primer after the stemming has been washed out.

C. A very careful search of the working place, and, if necessary, of the coal shall be conducted after the coal reaches the tipple after blasting a misfired hole to recover any undetonated explosive.

D. The handling of a misfired shot shall be directly supervised by the mine foreman or a certified person designated by him.

(Code 1950, § 45-53.7; 1954, c. 191; 1966, c. 594, § 45.1-50; 1994, c. 28.)