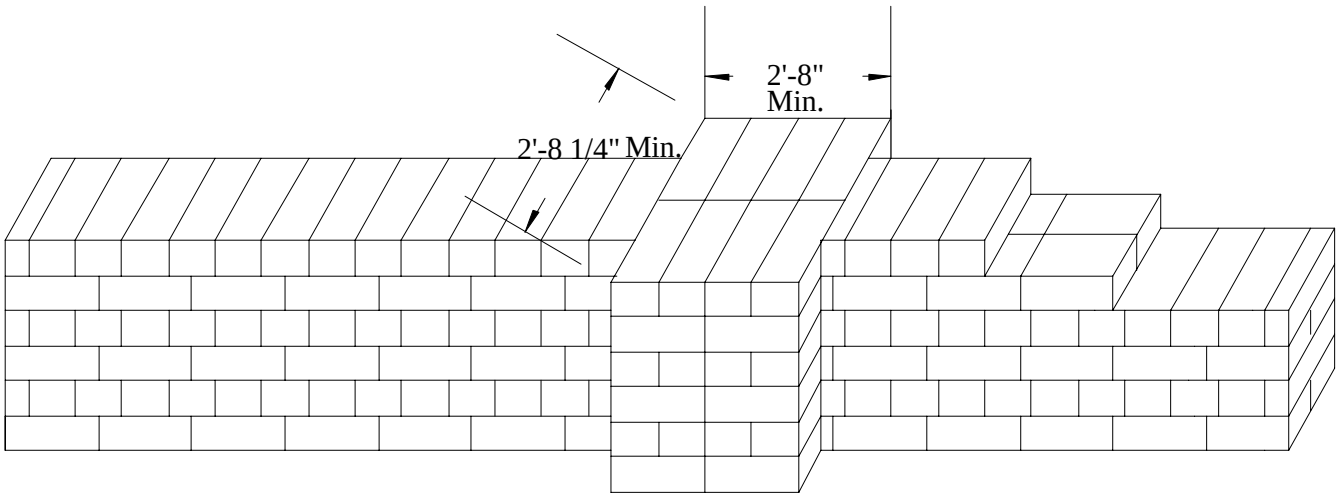
Virginia Department of Mines, Minerals and Energy

HAZARD **A**LERT **L**IVE **T**OMORROW

SEAL CONSTRUCTION AND SAFETY



Seal built with 6” X 8” X 16” solid concrete blocks. Blocks are laid in a transverse pattern with all joints mortared.

Proper seal construction is critical to the safety of underground mine personnel. All seals shall be constructed in accordance with the applicable sealing plan as approved by the Department of Mines, Minerals and Energy and Mine Safety and Health Administration. The quality, integrity and effectiveness of seals depend on several factors, including but not limited to the following: (1) mine personnel receiving proper training and understanding of seal construction requirements; (2) preparation of the area for seal construction and; (3) following all requirements of the sealing plan. Each type of seal has specific construction requirements as specified in the applicable sealing plan.

The following are several of the “general requirements” of solid concrete block and pumped seals:

- **Seals shall be located at least ten (10) feet or more from the corners of pillars.**
- **Seals must be protected from adverse roof and floor conditions by no less than two (2) rows of timbers set on four (4) foot centers or a specific number of cribs installed on both sides of the seals, as specified in the plan.**

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For additional information or assistance, contact the Division of Mines, Big Stone Gap (276) 523-8227 or Keen Mountain Office (276) 498-5433

ACCIDENT REDUCTION PROGRAM

Virginia Department of Mines Minerals and Energy

- **All loose, broken material shall be removed from the ribs, roof and floor in the immediate construction area and/or a distance as specified in the applicable sealing plan.**
- **Water shall be drained from the inby face of the seal, where standing water could weaken the seal or floor, into the open portion of the mine by using an appropriately sized metal, non-corrosive pipe with a minimum 16 inch deep water trap. The drain and trap shall be located in the seal having the lowest elevation.**
- **A test pipe, for sampling pressure differentials and air quality behind the sealed area, shall be installed in the seal constructed in the area of highest elevation. The test pipe shall be copper tubing with a minimum 14 inch diameter and with a wall thickness of at least 0.49 inches. The outlet valve shall resist a static pressure of 75 psig. The tube shall be at least six (6) inches below roof level, but not more than 1/3 of the height of the seal. The tube shall be parallel to the roof and rib having the highest elevation and its distance from the rib having the highest elevation shall be at least 1/5 the length of the seal. The tube shall extend a sufficient distance (at least 15 feet) behind the seal to allow evaluation of air quality in the sealed area.**
- **Pumped seals, not approved for bulkheads, will not be used where water will accumulate against the back of the seal.**
- **Care should be taken when examining and/or working in the area of seals to ensure the safety of the miners performing tasks. Never assume the integrity of the seal(s) or the quality of the air in the area of the seals. Always examine and test for safe conditions.**

Ventilation – Tests – Examinations:

- **Adequate ventilation shall always be maintained at seals.**
- **The person(s) conducting preshift and/or weekly examinations of seals shall examine for hazardous conditions, methane and oxygen deficiency and determine if air is moving in it's regular course and in sufficient volume in each split.**
- **A preshift examination shall be conducted at seals located along intake air courses where intake air passes by a seal to ventilate working sections where anyone is scheduled to work during the oncoming shift.**
- **A weekly examination shall be conducted at each seal located along return and bleeder air courses and at each seal located along intake air courses not examined during preshift examinations.**