

**50 psi MINOVA MAIN LINE TEKSEAL®
(FOR LOCATIONS SUBJECT TO CONVERGENCE)
MSHA SEAL APPROVAL NUMBER 50-75.336.1.07.05.0**

50-psi Minova Main Line Tekseal (for locations subject to convergence)

This seal consists of Tekseal® material manufactured by Minova USA, Inc. (*Minova*) and is designed to withstand an overpressure of 50-psi from a mine explosion. Tekseal is a pumpable, cementitious grout. This plug-type seal design is only to be used at locations where a seal will be subject to significant convergence of the mine opening.

The required thickness of the seal and the construction requirements are detailed in the report titled "*50 psi MINOVA MAIN LINE TEKSEAL® SEALS SUBJECTED TO CONVERGENCE*," dated July 25, 2007. The required minimum thickness of the seal depends on the height and width of the mine opening at the seal location (after loose and unsuitable material has been removed) and is provided in a table provided by Minova. Minimum seal thicknesses are provided for entry sizes up to 30 feet in height and 28 feet in width. The design is based on the seal being subjected to a dynamic overpressure of 50 psi which is applied instantaneously and held for a duration of 1.5 seconds. The seal design is certified by a Registered (Licensed) Professional Engineer as being in accordance with current, prudent engineering practice.

Anchorage of the seal is provided by the shear strength of the Tekseal and the frictional interlock of the Tekseal with the irregularities in the rock and coal surface of the entry perimeter after all loose material is removed. The seal is designed specifically for the increased shear strength available from increased pressure on the seal when convergence of the mine opening occurs. Since this increased pressure is relied upon, the seal is not considered capable of withstanding the design pressure until convergence has occurred. If the amount or timing of convergence is uncertain, then a seal design that does not rely on convergence pressure needs to be used.

Construction of the seal consists of the erection of two (2) wooden frame and brattice cloth walls, or equal, for the containment of the Tekseal. Concrete block or Kennedy Metal stoppings or cribs lined with brattice cloth can be used in place of the wooden frame and brattice cloth walls. A mine operator may install the 50 psi Minova Main Line Tekseal provided its installation is approved in the mine ventilation plan, it is constructed following the installation procedures, and it complies with the provisions specified in Section 75.336 (b).

For detailed information on the use and application of this seal, please contact Mr. David Himes, Project Manager, Minova USA, Inc., 150 Carley Court, Georgetown, Kentucky 40324; phone number 800-626-2948. For more detailed information for mines in the western U.S., the contact is Mr. Joe Burdette, Plant Manager, 2306 Highway 6 & 50, PO Box 3124-1815021, Grand Junction, CO 81505; phone number 970-245-4007