

## **FIRE PROTECTION PROVIDED BY DETONATOR CONTAINERS**

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The Code of Federal Regulations Title 30, Parts 56, 57, 75, and 77 require that detonators and explosives be separated by four inches of hardwood or equivalents when transported together in mines. This standard was developed to protect the explosives from initiation by the more sensitive detonators. The research reported here is an attempt to quantify the fire protection offered by four inches of red oak and other materials. Boxes with a volume of 6.75 cubic feet were made from four-inch thick rough green oak (RGO), two-inch thick RGO plied, two-inch thick #1 common (dried) red oak plied, and a metal/plywood composite. These and boxes meeting the Institute of Makers of Explosives' (IME) Safety Library Publication No. 22 were tested in bonfires. The boxes were instrumented with thermocouples, filled with detonators, and placed over a kerosene fire imparting about 16