

COMPARISON OF NON-ELECTRIC AND ELECTRIC INITIATION SYSTEMS

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ABSTRACT

Recently there has been an unprecedented marketing effort to promote the advantages of various non-electric initiation systems. This activity has probably been influenced by a major manufacturer's decision to discontinue electric detonator production. Subsequently, distributors of explosive materials, rather than introducing new electric detonator brands, are emphasizing the use of existing non-electric systems. In many cases, such methods fill the need of explosive users in the quarry industry. However, the use of any initiation system should be based on performance, rather than the bent of the market or convenience to the supplier. This analysis is an evaluation of the performance of non-electric systems with emphasis on double trunk line and loop (redundant), as compared to precise electric detonators in use by Martin Marietta. Redundant non-electric detonators, even though more costly, offer the most reliable method of non-electric initiation. However, state-of-the-art precise electric detonators give the best overall performance, except in an environment involving extraneous electricity.