

Risk-Based Explosives Safety Modeling

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Abstract

The Risk-Based Explosives Safety Criteria Team (RBESCT) has published Version 1.0 of the Safety Assessment for Explosives Risk (SAFER) model.

This paper outlines the approach and methodology used in the model. A probabilistic approach to risk assessment is used according to these formulas:

$$E_f = \Sigma E_p \times P_{f/e} \times P_e$$

$$P_{f(max)} = E_{p(max)} \times P_{f/e} \times P_e$$

where

E_p	=	expected exposure of an individual
$E_{p(max)}$	=	maximum expected exposure of an individual
$P_{f/e}$	=	probability of fatality given an event
P_e	=	probability of an event
E_f	=	expected fatalities
$P_{f(max)}$	=	maximum probability of fatality for an individual

Each of these terms is calculated using a series of algorithms that are defined in this paper.



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