SMALL ANFO-CHARGES FOR SIMULATIONS

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ANFO is now an accepted inexpensive substitute for the simulation of the blast effects from bigger charges (tonnes) but its reproducibility has been questioned when it comes to smaller quantities (kg).
In this paper results from some tests are given where baskets or cardboard barrels filled with ANFO, casted cylinders of TNT or Comp B and, in some cases, GP bombs have been detonated in the same geometry.

The charges detonated were:
1) 250 kg and 500 kg bombs, ANFO and TNT cylinders of comparable size in- and outside an 100 m2 tunnel.
2) 25-100 kg ANFO and Comp B charges in a 240 m long 4.4 m2 tunnel.
3) Up to 100 kg ANFO and Comp B charges inside a 25 m3 chamber with a 0.2 m2 venting area.

No other effect of the relative size of the ANFO-charge was observed than what may be normal for explosive nor cast in one block. The ANFO equivalence factor estimated for big charges seems to be valid also for small charges as long as the oxygen deficiency of TNT and Comp B play no major part, i.e. at unconfined detonations. In closed volumes and at higher loading densities, however, ANFO is of course more powerful than e.g. TNT:
The results of the comparisons and the applicability of small ANFO charges as explosives for simulations are highlighted.