

## MODEL EXPERIMENTS FOR EXPLOSION RESISTANT BUILDINGS

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In modern explosive processing factories accidental detonation over huge amount of explosive substances must be avoided.

For economic reasons extended safety distances between processing units are not feasible in populated areas. A modern approach to achieve safety is therefore to use small spacings in connection with a variety of explosion resistant buildings.

This concept shall be applied for the construction and enlargement of an ammunition factory. Several units are to be incorporated into one connected plant, together with numerous explosive depots. In order to elaborate an appropriate design, the expected blast must be known. Dedicated near field data are obtained by experiments only.

Piezo-electric pressure gauges measurements in steel models (scale 1:26) give an estimate of the pressure situation in the neighborhood of an explosive accident. Different layouts are investigated and quantitative or qualitative data presented.

Finally, concepts for explosion resistant buildings (cubicles) are tested. In reinforced concrete models (scale 1:5) adequate explosive charges were detonated to observe the behavior under explosion condition.

The load density was increased until fragmentation and complete destruction occurred.