

Cooperation with Austin Detonator, s.r.o. from research to technology

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Introduction

- Austin Detonator is traditional manufacturer of initiation systems for industrial blasting operations.
- The non-military production beginnings date back to 1953, when the first detonator used in mining was made in Zbrojovka Vsetín.
- One of the main components of a detonator is an explosive, which is usually, from the point of view of safety, manufactured directly at the place of assembly of detonators. Historically used explosives: mercuric fulminate, lead azide, lead picraminate, lead trinitroresorcinat and 1- (5-tetrazolyl) -3-guanyltetrazene hydrate (tetrazene), no longer meet current environmental requirements.
- Therefore, intensive work has been done for several years on the replacement of the above-mentioned lead compounds.

From research to technology

- ICT Prague has been cooperating with Austin Detonator for a long time on the development of this ecologically acceptable explosive, without lead content.
- **2010** The beginning of the research, when there was talk of substitutes for lead azide and the selection of a suitable "green" explosive was started.
- **2012** Laboratory tests were performed on the possible preparation of this ecological explosive in small quantities, in the order of units of grams.
- **2013** Gradually, the amount of the substance produced increased, it was transferred from laboratory vessels to quarterly operating apparatus.
- **2014** The technological problems began to be solved, such as the choice of the dryer, the desensitization of the product enabling volume dosing and other necessary parts of the technological system, such as the chemical disposal of waste streams.
- **2015** The pilot plant was built for the production of this explosive, with a capacity of hundreds of grams.
- **2017** The site for the construction of a building for the production of "green" explosives began to be selected and basic construction work began. In parallel, the "basic design" of this technology was developed.
- **2018** The design and production of technological components began. At present, a project of a production unit is being prepared as a basis for construction management.
- **2022** According to Austin Detonator's plans, the new production unit could start operating.

