

Abstract

Even today, dry ice blasting can be used in a multitude of fields of application. However, its limited abrasiveness as well as the undefined and non-reproducible characteristics of the blasting medium pose an obstacle to expansion into potentially new areas. The dissertation therefore pursued the goal of providing further insights on the effects of selected influencing factors on the properties of dry ice pellets and the blasting result. Initially, possible influencing factors of production and storage parameters were compiled, analyzed, and selected. Subdivided into the properties of dry ice pellets and the blasting result, potential command variables were first gathered and selected in the same manner as for the influencing parameters. The provision of suitable measurement methods allowed the quantitative determination of the predefined command variables. The acquired knowledge expands the understanding of the production and storage process of dry ice pellets and forms the basis for an adaptable blasting medium of constant quality. This opens up new opportunities for optimizing current applications for dry ice blasting and could tap into new fields of application as well.