

In underground coal mines, controlling and surveillance of firedamp or toxic gases, ventilation, climate control and early fire indication are some of the major problems facing miners and mining companies. The aim of this project was to improve safety, taking into account the competitiveness of coal production by:

- improving the quality of surveillance of underground ambient air, to detect as early as possible hazardous gas concentrations and/or concealed fires;
- increasing the safety of miners and mining by determining the flow characteristics of firedamp in the rock mass and optimising the drainage volume in high-production rate faces;
- technical solutions to reduce the thermal strain for workers and the development of thermal risk assessment methodology;
- developing technical methods and equipment for a permanent controlling and/or diagnosis of sensitive electrical equipment.

The research has successfully shown how mine safety can be enhanced by using optimum methods of methane drainage, achieved for standard long wall and sub-level caving methods. Allied to this work was the successful development and certification of equipment that can be used for surveillance in mine atmospheres containing methane. In terms of working, emergency and rescue situations in mines subjected to high heat stress conditions, a range of protective measures have been successfully identified. Finally, a highly sensitive system for measuring, analysing and early detection of gases especially with respect to combustion products has been developed, which is of paramount importance due to the continued occurrences of mine fires.

Price (excluding VAT) in Luxembourg: EUR 20



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EC
Optimisation of surveillance, technical equipment and procedures to prevent workers from danger attributed to fire, hazardous or toxic gases, firedamp or climatic conditions EUR 23353



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