

The Forensic Examination of Tool Marks

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Different types of examinations, including examinations of mechanical traces, are conducted in the forensic laboratory. Mechanical traces are damages, caused by a tool, on the object under examination. The examiners at the forensic laboratory analyze mainly those mechanical traces, which occur during criminal offences, work accidents, traffic accidents, explosions, and fires. Proper equipment (in particular, an optical stereo microscope and a comparison microscope), as well as long term experience and expertise of the examiner, are crucial for conducting successful laboratory analyses. Examiners in the forensic laboratory provide expert opinions based on a microscopic analysis of the mechanical traces at issue. General and individual characteristics of the examined traces are determined by microscopic analysis. Depending on the general characteristics of the traces, it is possible to determine the type of tool which was used in the criminal act, and, depending on the individual characteristics of the traces, it is possible to identify the tool which made the conflicting traces.

Keywords: forensic examination, mechanical traces, tool, microscope

UDC: 343.983.2