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Experimental methods for material measurements at high strain-rate

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The detailed mechanical characterization of a material is the very first step in the design of structural components.

Depending on the type of application (dynamic, impact, thermal loading, fatigue...) different types of tests, experimental methods, and testing equipments are required. After a general introduction about the effects of dynamic

loading on material behaviour, several related test methods will be outlined and discussed. The experimental equipment, available at the Reliability and Safety Laboratory of Politecnico di Torino for static and dynamic characterization of materials, will be described in detail and some examples of the most interesting results will be

presented, with particular attention to metals, polymers, and various types of composites and joints.

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