Influence of selected test parameters on measured values during the MSCR test

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Abstract. One of today's most commonly used test on a Dynamic Shear Rheometer (DSR) is the Multiple Stress Creep Recovery (MSCR) test. The test is described in the standard EN 16659, which is valid in the Czech Republic since October 2016. The principle of the test is based on repeated loading and recovering of a bitumen sample, according to which it is possible to determine the percentage of elastic recovery (R) and non-recoverable creep compliance (J_{nr}) of the bituminous binder. This method has been recently promoted as the most suitable test for assessing the resistance of bituminous binders to permanent deformation. The test is performed at higher temperatures and is particularly suitable for modified bituminous binders. The paper deals with the comparison of the different input parameters set on the DSR device - different levels of stress, temperature of test, the geometry of the measuring device and also a comparison of the results for a different number of loading cycles. The research study was focused mainly on modified bituminous binders, but to compare the MSCR test it is performed even with conventional paving grade binders.