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SMALL PUNCH TEST METHOD FOR METALLIC MATERIALS

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CEN WORKSHOP AGREEMENT

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English version

Small Punch Test Method for Metallic Materials

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties, the constitution of which is indicated in the foreword of this Workshop Agreement.

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Foreword

This CEN Workshop 21 on “Small Punch Test Method for Metallic Materials” has been established and a Business Plan approved by a Workshop of representatives of interested parties on 2004-09-24 [1], the constitution of which was supported by CEN following the public call for participation made on 2004-09-08.

Following a decision from the Workshop, it has been decided to re-publish CWA 15627:2006 in order to correct a typing error in a formula. This version corrects and supersedes the CWA published in December 2006.

The formal process followed by the Workshop in the development of the CEN Workshop Agreement has been endorsed by the National Members of CEN but neither the National Members of CEN nor the CEN Management Centre can be held accountable for the technical content of the CEN Workshop Agreement or possible conflict with standards or legislation. This CEN Workshop Agreement can in no way be held as being an official standard developed by CEN and it’s members. These organizations were drawn from a number of economic sectors including academia, accreditation authorities, aerospace, automotive, material producers, material testing laboratories, national standards institutions and power generation.

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The final review/endorsement round for this CWA was successfully closed on (2007-10-29).

This CWA has been developed with the aim of providing guidance in the selection of the experimental conditions in a special type of mechanical test, namely the Small Punch (SP) test, suitable to obtain robust, reproducible and accurate results. In addition to recommending in the main body of this document the experimental procedures (“code of practice”), in two separate annexes guidance is given in the interpretation of the SP test results (namely the question of the comparability with / derivation of fundamental material strength data, i.e. those from the standard tests), and guidance in the use of SP tests to address relevant technological issues (e.g. specimen sampling from components, characterization of heat affected zones in welds, SP test applicability for non isotropic materials ...).

Actually two main versions of this SP test were developed historically, covering the two distinct scopes of measuring mechanical properties of materials in the high temperature (time dependent, creep viscous) and low temperature (time independent) domains. Not only the experimental set up and test procedures have to be different in order to match the distinct aims and conditions of time-dependent and time-independent SP testing, but also the technological & market scenario (the demand of SP tests by industry) is often different too; consequently, depending on their business position and strategy, some labs had been developing (or newcomers may be willing to develop) the high temperature version, while others developed (or would like to develop) the low temperature version only.

Therefore, in view of the considerations above, the group of developers of this document felt convenient to provide a document made of two main and fully self-consistent parts, having the maximum flexibility of current use and of future development routes (modifications, standardizations):
Part A is for time dependent SP testing,
Part B is for time independent SP testing,
each part is equipped with its own Annexes, A1 and A2 for Part A and B1 and B2 for Part B,
it is noted only that A2 and B2 are identical.

This CEN Workshop Agreement is publicly available as a reference document from the National Members of CEN: AENOR, AFNOR, ASRO, BDS, BSI, CSNI, CYS, DIN, DS, ELOT, EVS, IBN, IPQ, IST, LVS, LST, MSA, MSZT, NEN, NSAI, ON, PKN, SEE, SIS, SIST, SFS, SN, SNV, SUTN and UNI