
Temperature verification method applied to dynamic fatigue testing

*Méthode de vérification de la température appliquée aux essais de
fatigue dynamique*



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Foreword

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This document was prepared by Technical Committee ISO/TC 164, *Mechanical Testing of Metals*, Subcommittee SC 05, *Fatigue, fracture and toughness testing*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

It is the aim of this document to provide methodologies to verify the error in indicated measurement relative to the actual temperature of the specimen test piece. Therefore, it is essential to account for all factors, inclusive of environmental effects; not limiting the assessment to, for example, the performance of a recording system and the thermoelectric coefficient of a batch of thermocouple wire.

Certain types of test and advanced simulation rely on accurately controlled and rapidly changing temperature during the test, usually synchronised with control of mechanical loading. Within the scope of this document, that would usually be a thermo-mechanical fatigue test.

Where temperature varies deliberately and rapidly during the test, it is appropriate to verify the degree of time lag in system temperature reading. Without this evaluation (and implicitly a correction) then either the apparent temperature accuracy or the phase accuracy may need to be unnecessarily reduced.

This document has been written with the intention of using congruent language and approach to that used for calibration of extensometers^[1] and verification of force measurement^{[2][3]}.

