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## **Metallic and other inorganic coatings — Test methods for measuring thermal cycle resistance and thermal shock resistance for thermal barrier coatings**

*Revêtements métalliques et autres revêtements inorganiques —  
Méthodes d'essai pour mesurer la résistance au cyclage thermique et la  
résistance au choc thermique des revêtements barrières thermiques*



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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 14188 was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*.

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## Introduction

Thermal barrier coatings are highly advanced material systems, generally applied to surfaces of hot-section parts made of nickel or cobalt based superalloys, such as blades, vanes and combustors in gas turbines and aero-engines, operated at elevated temperatures.

The purpose of these coatings is to insulate metallic components for an extended period at elevated temperatures by employing thermally insulating materials which can sustain an appreciable temperature difference between load bearing alloys and coating surfaces. By shielding these parts, these coatings permit the use of high operating temperatures by restricting exposure of structural parts to these temperatures, thereby extending their lives.

This International Standard specifies test methods, applicable to these thermal barrier coatings, for measuring thermal cycle resistance and thermal shock resistance using appropriate heating and cooling procedures.