

INTERNATIONAL STANDARD

**ISO
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Hard coal — Determination of the swelling properties using a dilatometer

Houille — Détermination des propriétés de gonflement à l'aide d'un dilatomètre



Reference number
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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

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Introduction

The Audibert-Arnu dilatometer test was adopted as ISO Recommendation ISO/R 349 : 1963 which was transformed into an International Standard ISO 349 : 1975. When reviewed in 1980, it was generally acknowledged that similar tests, using slightly different equipment and techniques, were used in various countries. One test in widespread use was that which measures the swelling properties of hard coal using the Ruhr dilatometer.

A thorough survey of the construction and operation of this instrument was made between 1973 and 1978 by a working group in the United Kingdom. Eleven laboratories participated in the work, including two which operated the Audibert-Arnu dilatometer as described in ISO 349. In the course of considerable inter-laboratory testing, the results indicated that values of contraction and dilatation found with the Audibert-Arnu dilatometer were higher and lower respectively than those found with the modified Ruhr dilatometer (the version described in this International Standard).

These differences were attributed to the fact that the excess material from the tapered test piece is removed from the wider end in the Audibert version of the dilatometer test and from the narrower end in the Ruhr version. The latter procedure ensures a test piece of greater and more uniform volume.

It is not intended that ISO 349 be withdrawn immediately, however it is suggested that the test be gradually phased out and replaced by that described in this International Standard, a test which has been tried and proven, particularly in the United Kingdom and the Federal Republic of Germany, and shown to be reliable and suitable for measuring the swelling properties of all types of hard coal.