

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 140

FIELD AND LABORATORY MEASUREMENTS OF AIRBORNE AND IMPACT SOUND TRANSMISSION

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BRIEF HISTORY

The ISO Recommendation R 140, *Field and Laboratory Measurements of Airborne and Impact Sound Transmission*, was drawn up by Technical Committee ISO/TC 43, *Acoustics*, the Secretariat of which is held by the British Standards Institution (B.S.I.).

A tentative code for field and laboratory measurement of airborne and impact sound transmission, resulting from informal international discussions, has been in use in several European countries for a number of years. Proposals for standardization based on this code were first submitted to Technical Committee ISO/TC 43 at the time of its meeting, held in Berne, in September 1955. Following the discussion at this meeting, the Secretariat drew up a revised draft proposal, which it circulated to the members of the Technical Committee in 1956. As a result of comments sent in, the Secretariat set up a second revised draft proposal. This document was submitted to the Technical Committee during its meeting, held in Paris, in January 1957. The outcome of this was a third draft, this being then approved, subject to certain editorial modifications, for submission to the members of Technical Committee ISO/TC 43 for postal ballot, which led to its adoption as a Draft ISO Recommendation.

On 30 June 1958, this Draft ISO Recommendation (No. 219) was distributed to all the ISO Member Bodies and was approved, subject to some editorial amendments, by the following Member Bodies:

Austria	Italy	Spain
Burma	Japan	Sweden
Denmark	Netherlands	Switzerland
Finland	New Zealand	United Kingdom
France	Poland	U.S.A.
Germany	Portugal	U.S.S.R.
Hungary	Romania	

One Member Body opposed the approval of the Draft: Canada.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in January 1960, to accept it as an ISO RECOMMENDATION.

INTRODUCTION

Various workers in the field of research on sound insulation in buildings have for some years used similar methods for the measurement of sound transmission, but these methods have differed sufficiently to make direct comparisons of the results difficult if not impossible. The purpose of this ISO Recommendation is to define methods for the measurement of sound transmission in buildings and for the expression of the results, both for field and laboratory measurements in this sphere, so that data obtained by different workers may be directly compared.

It is hoped that this ISO Recommendation will not restrict in any way the development of new techniques for the measurement of sound transmission in buildings. In some respects the present methods are inadequate and these proposals will, no doubt, be revised as improved methods come into use.

For laboratory measurements of the insulation of a partition, the specification is confined to measurement of its sound insulation when flanking transmission is excluded (see clause 2.4).

In buildings, the sound insulation of a wall or floor alone cannot in general be determined, since a significant transmission between adjoining rooms may take place by paths other than directly through the intervening partition. Moreover, study may be required of transmission between rooms having no common partition, e.g. diagonal transmission. The significant quantity is then the difference between the space average sound pressure levels (see clause 2.1) in the source room and the receiving room. Since this depends on the total absorption in the receiving room, the measured values are adjusted to a reference value of the absorption to give a normalized value, so that the results of measurements at different places may be comparable.

In the case of sound produced by impacts, the method adopted is to specify a machine for producing standard impacts on a floor, and the transmission is characterized by the spectrum of the noise produced in the receiving room. For field measurements, the receiving room may be any room in the building and not necessarily the room directly beneath the floor being tested. Since the spectrum depends on the absorption in the receiving room, the measured values are adjusted to a reference absorption.
