

Australian Standard™

Acoustic emission testing of fibreglass-insulated booms on elevating work platforms



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This Australian Standard was prepared by Committee MT-007, Non-destructive Testing of Metals and Materials. It was approved on behalf of the Council of Standards Australia on 15 October 2001 and published on 26 November 2001.

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Australian Aerospace Non-Destructive Testing Committee
Australian Industry Group
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Australian Nuclear Science & Technology Organization
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OF

AS 4748—2001

**Acoustic emission testing of fibreglass-insulated booms on elevating work
platforms**

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NOTES

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PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee MT-007, Non-destructive Testing of Metals and Materials. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian, rather than an Australian/New Zealand, Standard.

This Standard is published as an Australian Standard at the request of Standards New Zealand.

The objective of the Standard is to describe a procedure for the acoustic emission testing of the insulated fibreglass-reinforced plastic sections contained in the booms of elevating work platforms, to specify rejection criteria and give recommended testing intervals.

During the preparation of this Standard, cognizance was taken of the following American Standards:

ASTM

E750-98 Practice for characterizing acoustic emission instrumentation

F914-98 Test method for acoustic emission for insulated aerial personnel devices

In addition, some of the requirements of this Standard, in terms of figures, events and counts, are based on empirical results obtained by ATTAR (Australia) and Mercury Energy (New Zealand) over the period 1986 to 1996.

No international Standards (ISO) have been published on the subject.

Acoustic emission testing of fibreglass composite structures is an evolving science. Although some sources within the scientific community suggest that the test may require a longer hold time at the final load of the loading cycle, this Standard aligns with current established international practice for testing the booms of elevating work platforms. Users of the Standard should be aware that if strong scientific justification to extend the final loading cycle is produced, the Standard will be subject to an immediate corrigenda.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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FOREWORD

The acoustic emission test method provides a means of evaluating transient stress waves generated by the rapid release of energy from localized sources within the insulated boom section of the elevating work platform under controlled loading. The energy releases occur during intentional applications of a controlled, predetermined load and can be monitored and interpreted by qualified personnel.

The test method in this Standard utilizes objective criteria for evaluation and may be discontinued at any time to investigate a particular area of concern, or prevent a defect from continuing to ultimate failure or affecting the structural integrity or intended use of the elevating work platform.