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Australian Standard 1726–1981

SAA SITE INVESTIGATION CODE

STANDARDS ASSOCIATION OF AUSTRALIA
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THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL ORGANIZATIONS and departments were officially represented on the committee entrusted with the preparation of this standard:

Australian Geomechanics Society
Australian Road Research Board
Bureau of Mineral Resources
CSIRO, Division of Applied Geomechanics
Department of Minerals and Energy
Departments of Mines
Electricity Commission of N.S.W.
Engineering and Water Supply Department, S.A.
Geological Survey of W.A.
Institution of Engineers, Australia
Public Buildings Department, S.A.
Snowy Mountains Hydro-Electric Authority
State Electricity Commission of Victoria
State Rivers and Water Supply Commission, Victoria
Water Conservation and Irrigation Commission, N.S.W.

This standard, prepared by Committee CE/15, Site Investigations, was approved on behalf of the Council of the Standards Association of Australia on 9 December 1980, and was published on 1 April 1981.

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AUSTRALIAN STANDARD

CE/18

SITE INVESTIGATIONS

known as the

SAA SITE INVESTIGATION CODE

AS 1726—1981

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PREFACE

The first edition of this standard was prepared by the Association's Committee on Site Investigations at the instigation of the National Committee of the Australian Geomechanics Society (formerly the Australian National Society of Soil Mechanics and Foundation Engineering).

This second edition includes updated references, and appendices published as Addendum No 1 (February 1978) to AS 1726—1975. No technical changes are included.

The preparation of the standard presented many problems, mostly due to the vast number of possible cases created by natural variations in site conditions. Because of the variety of sites and conditions to be taken into account, some portions of the standard may be more discursive than it would otherwise be desired.

A standard such as this normally should define good up-to-date established practice. In site investigation, however, so many good and established practices have evolved with the variety of problems created by Nature that had an attempt been made to cover all these practices the standard would have been completely unwieldly and virtually useless. On the other hand, had a middle course been decided on, there would have been too many cases excepted and the purpose of the standard would not have been achieved. The aims of this standard are, therefore—

(a) to establish the essential features, the philosophy, and the concepts of site investigation;

(b) to outline the procedures and techniques of site investigation which are available;

(c) to indicate the circumstances in which the procedures and techniques are applicable.

The committee felt that the interests of users would be served if the references were given in the Sections concerned rather than at the end of the document.

This standard requires reference to the following standards:

AS 1141 Methods for Sampling and Testing Aggregates

AS 1152 Test Sieves

AS 1289 Methods of Testing Soils for Engineering Purposes

AS 1465 Dense Natural Aggregates for Concrete

AS 2121 SAA Earthquake Code

AS 2121M Seismic Zone Map of Australia

AS 2357 Mineral Fillers for Asphalt

BS 812 Methods for Sampling and Testing of Mineral Aggregates, Sands and Fillers

ASTM D 1195 Method for Nonrepetitive Static Plate Load Tests of Soils and Flexible Pavement Components, for Use in Evaluation and Design of Airport and Highway Pavements

ASTM D 806 Test Method for Cement Content of Soil-Cement Mixtures

ASTM D 2573 Method for Field Vane Shear Test in Cohesive Soil

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard for SITE INVESTIGATIONS

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard sets out recommended practices for site investigation.

The standard deals with subsurface investigation in some detail, but other aspects of site investigation are covered in general terms only. Consequently the standard may not provide sufficient detail in cases where there are specialized requirements, or where the site conditions differ significantly from those usually encountered.

Adherence to the standard should be considered as a necessary but not necessarily sufficient condition for the avoidance of an inadequate or inappropriate site investigation.

The standard has been prepared on the assumption that it will be used and interpreted mainly by professional engineers or by others from allied professions who are similarly qualified.

1.2 PURPOSE OF THE STANDARD. The purpose of the standard is to bring together in a relatively concise form those factors which should be considered in any site investigation and to give guidance on the methods which are available to carry out such an investigation.

1.3 DEFINITION. For the purpose of the standard, site investigation is defined as the examination of all those characteristics of a site which might affect the planning, design, construction and operation or performance of any engineering works on that site. It involves the systematic collection and appraisal of data relating both to natural and man-made materials and processes at the site.

Site investigation is not limited to determining subsurface conditions, but includes consideration of other aspects such as access, drainage, liability to flooding, availability of public utility services and construction materials. The relationship between various aspects of site investigation in the total engineering investigation is shown in Fig. 1.1.

1.4 NEED FOR SITE INVESTIGATION. A site investigation will usually have as its prime object one or more of the following:

(a) Determination of the conditions at the site of proposed new works for use in—
  (i) assessing the suitability of the site;
  (ii) planning and design of the works;
  (iii) preparation by construction organizations of their proposals for construction of the works.

(b) Determination of the cause of defects, or failure, in existing works as they relate to the site so that remedial measures can be devised.

(c) Assessment of the safety of existing works or of the effects of proposed modifications, and if action be found necessary, determination of the type of action required to increase their safety.

(d) Assessment of suitability and availability of materials for construction purposes.

In each case, the site investigation is necessary on the one hand to prevent the waste of money and resources due to unrealistically conservative design, and on the other, to enable the adequate and safe design of all the engineering components. To achieve these ends, each site investigation is aimed at obtaining an adequate prediction or understanding of the effects of interaction between the engineering structures and the site materials, and between the natural and imposed processes at the site, both during construction and during the life of the works.

Natural processes give to each site its own special characteristics and materials, and consequently each site must be investigated individually.

1.5 SUPERVISION OF SITE INVESTIGATION PROCEDURES. All site investigations should be supervised by qualified engineers experienced in this type of work, and who are fully familiar with the proposed works.