

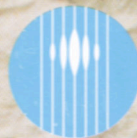
Guide to Concrete Repair and Protection



STANDARDS AUSTRALIA



STANDARDS NEW ZEALAND



CSIRO
AUSTRALIA

Division of Building, Construction
and Engineering



AUSTRALIAN CONCRETE
REPAIR ASSOCIATION

Guide to

**CONCRETE REPAIR
AND PROTECTION**

Guide to Concrete Repair and Protection

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STANDARDS AUSTRALIA



Standards Australia is an independent not-for-profit organisation, established in 1922. It operates formally under a Royal Charter as the Standards Association of Australia and has recognition as the peak standards body in Australia through a Memorandum of Understanding with the Commonwealth Government. The essence of its operation is to bring together individuals and organisations committed to a common objective - to establish Australian Standards as national benchmarks for products and services so as to enhance quality of life and industry efficiency.

Standards Australia has an important role internationally. It is responsible for ensuring that the Australian viewpoint is considered in the formulation of International Standards and that latest international experience is incorporated in Australian Standards. This role is vital in assisting Australian industry to compete in international markets. Standards Australia is a national member of the International Organisation for Standardization ISO and the International Electrotechnical Commission IEC.

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STANDARDS NEW ZEALAND



Standards New Zealand is the national body responsible for co-ordinating the development of standards. Established in 1932, Standards New Zealand is the trading arm of the Standards Council that operates under the Standards Act of 1988.

The aim of Standards New Zealand is to develop partnerships with the business community and government, to advance national prosperity by harnessing quality and technology through the development of efficient and effective standards and certification services.

As a not-for-profit organisation it is reliant on membership subscriptions, the sale of standards, certification services and contracts for service (with various industries, government departments, local bodies and businesses) for all its income.

Standards New Zealand is New Zealand's member of the International Organization for Standardization (ISO) and its sister organisation, the International Electrotechnical Commission (IEC). It is the national enquiry point for the World Trade Organisation (formerly GATT).

Standards New Zealand is accredited by the standards organisations in Britain, the United States, Germany, the Netherlands, Australia and Canada as a certification agent, carrying out audits to overseas standards on their behalf. This can be essential in obtaining admission to export markets.

Standards New Zealand is also a member of the Joint Accreditation System of Australia and New Zealand (JAS-ANZ). The JAS-ANZ Council is the first regional accreditation body established by the combined effort of two governments. Other countries are attempting to establish similar bodies.

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CSIRO AUSTRALIA

THE COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION

The Commonwealth Scientific and Industrial Research Organisation (CSIRO) was created by the Australian Government in 1926 to support Australia's primary needs. It has more than 7000 staff carrying out research in a wide range of areas that include construction, minerals, materials, energy, manufacturing, agriculture and natural resources.

Building, Construction and Engineering is a division of CSIRO, established to support, advance and innovate the construction and engineering industry. Over 300 staff, based in Melbourne, Sydney and Brisbane, combine to provide research, consulting and testing services in the areas of: building materials, including concrete, timbers, polymers and tiles; fire; heating, cooling and air quality; urban and infrastructure planning; IT applications for construction; fluid dynamics and mixing technologies; structural engineering; facade engineering; combustion; acoustics; water and wastewater systems and products.

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Statement of Aims

ACRA is committed to the pursuit of the following objectives:

- To promote best practices in all phases of concrete repair and protection, from counselling and evaluation through to implementation.
- To promote the exchange of information on concrete repair and protection.
- To provide, from ACRA Corporate Members, expertise to the construction and property market to effect state-of-the-art repairs and protection of concrete.
- To provide quality, state-of-the-art materials and workmanship in the repair and protection of concrete.
- To lobby governments and their departments to establish pre-qualification requirements for those tendering for concrete repair contracts.

ACRA Corporate Members

Repair Material Manufacturers



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Telephone (02) 9726 8899
Facsimile (02) 9726 4410



Parbury-Fosroc Technologies Pty Ltd
33 Lucca Road,
North Wyong NSW 2259
Telephone (043) 51 2800
Facsimile (043) 51 2024



Master Builders Technologies

Master Builders Technologies
MBT (Australia) Pty Limited
11 Stanton Road,
Seven Hills NSW 2147
Telephone (02) 9624 4200
Facsimile (02) 9624 7681



Sika Australia Pty Limited
55 Elizabeth Street
Locked Bag 482, BDC
Wetherill Park, NSW 2164
Telephone (02) 9725 1145
Facsimile (02) 9725 3330

Contractors



Incore
Integrated Concrete Repair Pty Ltd
146 Kerry Road,
Archerfield QLD 4108
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Facsimile (07) 3275 8666



Remedial Engineering Pty Ltd
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PREFACE

This document was prepared by the CSIRO Division of Building, Construction and Engineering, at the request of the Australian Concrete Repair Association (ACRA) who also provided technical, editorial and funding input. The document is intended for widespread use by all persons engaged in the maintenance, repair and protection of concrete in structures. However, this document nor any part of it should be used as a Standard or as part of any contract relating to the repair of concrete.

In preparing this document, one of the fundamental aims has been to provide a publication which can be read and understood by a diverse group of persons, ranging from professionals and technicians to those engaged in specifying or carrying out repairs to concrete structures, and those involved with the management of buildings and structures.

The guidance in this document has been significantly influenced by RILEM Technical Recommendation 124–SRC, *Guide to Repair Strategies for Concrete Structures Damaged by Reinforcement Corrosion*, 1993.

Previously available publications on investigatory and repair technologies for concrete are of overseas origin. The development and support of this document by ACRA underlines its belief that a document describing the local scenario of techniques and materials was necessary.

The document was reviewed by the following with regard to its suitability for use in New Zealand:
Cement and Concrete Association of New Zealand
Construction Techniques Group Ltd

Corporate Members of ACRA involved in arranging this document:

Epirez Construction Products Pty Ltd
TEC Fosroc Pty Limited
Incore (Thiess) Pty Ltd
MBT (Australia) Pty Limited
Remedial Engineering Pty Ltd
Sika Australia Pty Limited
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