AS/NZS 2425:2015

Australian/New Zealand Standard™

Bar chairs in reinforced concrete—Product requirements and test methods

STANDARDS Australia

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This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee BD-084, Steel Reinforcing and Prestressing Materials. It was approved on behalf of the Council of Standards Australia on 7 April 2015 and on behalf of the Council of Standards New Zealand on 17 March 2015.
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The following are represented on Committee BD-084:

Australasian Wire Industry Association
Australian Chamber of Commerce and Industry
Australian Post Tensioning Association
Australian Steel Association
Austroads
Bureau of Steel Manufacturers of Australia
Business New Zealand
Cement and Concrete Association of New Zealand
Consult Australia
Galvanizers Association of Australia
Institution of Professional Engineers New Zealand
Master Builders Australia
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PREFACE

This Standard was prepared by the Standards Australia/Standards New Zealand Committee BD-084, Steel Reinforcing and Prestressing Materials.

The objective of this Standard is to specify product performance requirements and test methods for bar chairs and spacers in reinforced concrete.

Consideration was given to inclusion of durability requirements. However, the Committee resolved that specification of durability resided with the design Standards (such as AS 3600 *Concrete structures*, and NZS 3101 series, *Concrete structures Standard*), except for concrete bar chairs where impermeability is intrinsic to their performance and is not covered in the design Standards.

To permit (relevant) industries time to adjust to this new Standard giving consideration to existing stockholding and the need to ensure consistent supply, a realistic implementation phase of 18 months is proposed. Amendments to design Standards, which may reference this Standard and subsequent referencing in building regulations such as the National Construction Code (Australia) usually take significantly longer than the implementation phase proposed.

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FOREWORD

To date, there has been no minimum test Standard for the load-carrying performance of bar chairs in reinforced concrete used in Australia and New Zealand. Unsatisfactory manufacture and application of bar chairs, leading to the misplacement of steel reinforcement, may compromise structural strength and reduce the durability of reinforced concrete.

This Standard aims to put in place minimum acceptable load-carrying limits to avert these pitfalls.

As part of the preparation of this Standard, Committee BD-084 considered an extensive range of technical papers, company literature and available Standards throughout the world. Substantial research provided sufficient information for the committee to proceed in a direction suitable for Australia's requirements. The overall performance of any bar chair relies fundamentally on the correct placement and fixing of the steel reinforcement to the chair. This is particularly critical with continuous bar chairs because they rely on the load spread of a properly-tied reinforcement mat to ensure maintenance of cover during construction.

The Committee recognizes that construction practices are subject to frequent innovation; support for steel reinforcement is no exception. While the Committee cannot cover all possible innovations, the underlying principles of this Standard should be applied to evaluate the suitability of products not specifically addressed.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

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1 SCOPE

This Standard specifies requirements for bar chairs and spacers, including continuous bar chairs, and covers strength, permanent deflection, accuracy of manufacturing within acceptable tolerances (dimensions and stability), identification/batch/supplier traceability and fixing. Minimum requirements for load capacity testing of bar chairs and spacers are specified to ensure that cover to reinforcement in reinforced concrete structural elements is maintained within acceptable tolerances under the application of prescribed construction loads.

This Standard also sets out durability requirements for concrete bar chairs.

NOTES:

1 Durability requirements have been included as they are not adequately covered by design Standards.

2 The Standard is not intended to apply to site-manufactured bar chairs where product quality, dimensional tolerances and performance cannot be assured. If site-casting of concrete chairs is being considered, the principles of this Standard should apply.

3 This Standard does not cover non-typical, custom or 'engineer-specified' chairs and supports such as used in heavily reinforced structures; however, such supports should always comply with the placing tolerances of AS 3600 or NZS 3101, as appropriate.

4 This Standard does not cover chairs, spacers or supports covered by specific product Standards such as AS/NZS 4058 and AS 4198.

5 The different means by which compliance with this Standard may be demonstrated by the manufacturer or supplier are as follows:

(a) Evaluation by means of statistical sampling.

(b) The use of a product certification scheme.

(c) Assurance using the acceptability of the supplier's quality system.

(d) Other such means proposed by the manufacturer or supplier and acceptable to the customer.

2 NORMATIVE REFERENCES

The following are the normative documents referenced in this Standard:

NOTE: Documents referenced for informative purposes are listed in the Bibliography.

ASTM
C1202 Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration

AASHTO
T259 Standard Method of Test for Resistance of Concrete to Chloride Ion Penetration

NORDTEST
NT BUILD 443 Concrete, Hardened: Accelerated Chloride Penetration