

## AS3727 PAVEMENT PART 1: RESIDENTIAL

The original 1993 guidelines have been updated and revised into a new mandatory Standard which was published on 13th December 2016. In terms of concrete pavements, a number of significant changes have been incorporated to address what are seen as poor industry practices that typically lead to unacceptable random cracking in often expensive decorative pavements. These include:

- Compliance with the acceptance criteria has been limited to a period of one year, in acknowledgement that longer term maintenance issues such as tree roots and poor drainage can adversely affect the pavement's performance.
- The term random cracking has been introduced to describe cracks that occur away from planned locations such as joints.
- The maximum width of random cracks has been set at 1 mm. Note that this may exceed an aesthetically acceptable crack width, but the width was made consistent with AS 2870, where cracks wider than 1 mm may indicate a potential problem.
- For weakened-plane type control joints (sawing, scoring or inserting a crack-inducing device into the surface of the concrete), reinforcement will no longer be permitted to extend across the joint. While most contractors adopt this practice to provide some form of load transfer at the joint location, poor installation on site and/or delayed saw cutting often renders the joint ineffective, resulting in random cracking of the adjacent pavement. Options for load transfer will now include aggregate interlock, keyways or dowels.
- The maximum joint spacing has been reduced from 6 m to 4.5 m in recognition that random cracking often occurred with the previous 6 m spacing.
- The minimum reinforcing mesh size has been increased from SL 52 to SL 62, to better control any random cracking that does occur and in conjunction with the requirements of AS/NZS 2425 for bar chairs, facilitate better placement and final location of reinforcement (in the correct position). Reinforcement in the wrong location does little to control the width of any random cracking that may occur.
- Concrete strengths for pavements used by light (25 MPa) and commercial (32 MPa) vehicles have been increased to be consistent with the abrasion provisions in AS 3600. The previous 20 MPa concrete strength is for pavements that are used only by pedestrians.

## NEW TECHNICAL NOTE TN7

### Stress Development and Lap Splicing of Straight D500N Tensile Reinforcing Bars to AS 3600-2009

The SRIA has now finalised this new Technical Note which provides guidance to Engineers on how to calculate development and lap lengths for reinforcing bars. The publication includes

valuable background information and numerous tables that list the required development and lap lengths for various bar sizes and  $c_d$  values, for a combination of  $k_1$  and  $k_7$  factors. Worked examples that outline the required calculations and demonstrate how the tables can be used to simplify calculations have also been included.

The publication is available for free download from the SRIA website (Resources > Publications > Technical Notes) following registration of contact details for advice of any future amendments or seminars on this topic.

## UPDATES

### AS 3727 Pavement Part 1: Residential

The revised AS 3727 Pavements Part 1: Residential has now been published and is available from SAI GLOBAL.

### AS 3600 Concrete structures

A meeting of the various working groups was held in December 2016 to report on progress and consider items that need to be progressed to meet the 2017 drafting deadlines.

### AS/NZS 4671 Steel reinforcing materials

A proposal to update various parts of this Standard is being developed for lodgement with Standards Australia in 2017.

### AS/NZS 1554.3 Structural steel welding – Welding of reinforcing steel

Work on revised text amendments is progressing and a final draft developed. A public comment release is expected early 2017.

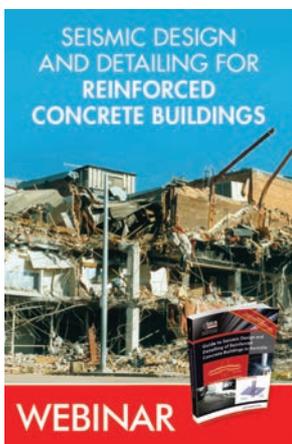
## THIRD PARTY CERTIFICATION

To guarantee the material quality of reinforcing products sold and used in Australia, and to reduce the exposure to risk from non-conforming products when certifying buildings and structures in compliance with Australian Standards, every Engineer should be insisting that the reinforcement is sourced from a processor that can supply a certificate from an independent third party certification scheme to verify that the reinforcement complies with the requirements of AS/NZS 4671 Steel reinforcing materials. A comprehensive, internationally recognised scheme is ACRS (Australasian Certification Authority for Reinforcing and Structural Steels) which is the scheme used by most reinforcement mills and processors in Australia. ACRS is an independent third-party, verification-based product certification scheme for reinforcing bar, wire and mesh to Australian Standards. The important aspect to reduce exposure to risk is to ensure that materials comply with the Australian Standards. We recommend that for major projects, the certificate is included in the job file for reference, and for minor works such as residential slabs, as a minimum you should ensure that the reinforcement is supplied by a processor that has ACRS or similar certification.

## HISTORICAL DATA ON REINFORCEMENT

In response to the many questions we receive concerning previous reinforcing types, the SRIA have commenced drafting of a new publication covering the development of steel reinforcement in Australia from the first reinforced concrete structure in Australia in 1896 to the present. For those design professionals retiring and wanting to find a good home for any treasured textbooks, Standards, reinforcement proprietary guidelines and resource material that may assist in the development of this publication, or dealing with steel reinforcement in general, please contact the SRIA on **(02) 9144 2602** or send us an email at **info@sria.com.au** and we will arrange to have the material collected and placed in the SRIA library. Also, if you are aware of any older or historic buildings that are being demolished, please let us know so that we can make contact with the companies concerned to try and obtain samples of the early cold-formed reinforcement for our collection and possible testing of early reinforcement properties.

## WEBINAR AVAILABLE



For those interested in learning more about the seismic design of reinforced concrete buildings in Australia, the SRIA has partnered with the CIA and a Webinar is available on their web site (**www.concreteinstitute.com.au**) which is based on the SRIA's new publication *Seismic Design and Detailing of Reinforced Concrete Buildings in Australia* and the series of very successful national and regional seminars held throughout 2016.

The speakers included some of Australia's leading experts in the field of seismic design and a copy of the publication is included in the cost of the webinar. Additional copies of the publication can be downloaded for free as a pdf document or purchased as a full colour printed copy for a nominal cost of \$37.00 including delivery anywhere within Australia from the SRIA's web site at **www.sria.com.au**.

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