

Australian Standard[®]

**CONVEYOR BELTING
GUIDE TO SPLICING STEEL
CORD BELTING**

This Australian Standard was prepared by Committee RU/2, Conveyor and Elevator Belting. It was approved on behalf of the Council of Standards Australia on 20 January 1988 and published on 15 July 1988.

The following interests are represented on Committee RU/2:

Australasian Institute of Mining and Metallurgy
Australian Coal Association
Bureau of Steel Manufacturers of Australia
Confederation of Australian Industry
CSIRO, Division of Applied Physics
Department of Industrial Relations and Employment, N.S.W.
Electricity Commission of New South Wales
Grain Handling Authority of New South Wales
Institution of Engineers, Australian
Plastics and Rubber Institute
State Electricity Commission of Victoria
Additional interests participating in preparation of Standard:
Manufacturers of conveyor belting and its components

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This Standard was issued in draft form for comment as DR 86035.

AS 3552—1988

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First published as AS 3552—1988.

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 5107 0

PREFACE

This Standard was prepared by the Association's Committee on Conveyor and Elevator Belting under the direction of Committee RU/-, Standards for the Rubber Industry.

This Standard was developed for use in conjunction with the manufacturer's splicing guide and is intended to be used by personnel involved in the supervision of belt splicing labour.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

CONVEYOR BELTING—GUIDE TO SPLICING STEEL CORD BELTING

1 SCOPE. This Standard sets out recommended procedures for splicing steel cord belting.

2 APPLICATION. The Standard is intended for the guidance of persons involved in the splicing of steel cord belting.

3 PRE-CHECKS.

3.1 Environment. The splice area should be protected from the following:

- (a) Dust (or any other airborne contaminants).
- (b) Water (rain, condensation, water on belt).
- (c) Wind (due to its possible effect on platen temperature).
- (d) Sparks or flames.
- (e) Direct sunlight.

In addition splicing should be carried out in an area with adequate lighting and ventilation.

NOTE: Basic safety precautions should be taken including the use of gloves wherever possible to minimize cuts to the hands, the wearing of safety glasses or goggles when buffing to prevent foreign bodies entering the eyes, and the use of appropriate masks when using toxic glues, cements, solvents, etc in confined spaces. Smoking should be prohibited and due care taken with regard to the possibility of sparks or flames because of the flammable nature of the splicing materials.

3.2 Splicing materials. These include gum rubbers, solvents, cements, covers. The operator should check that the shelf life of all components has not expired, and that materials are protected from the elements specified in Clause 3.1 above.

Materials with elapsed expiry date or of unknown age or storage conditions should not be used.

NOTES:

1. There are two shelf lives, one for non-refrigerated and one for refrigerated components.
2. All splicing materials, particularly those from a refrigerator, should be at or near ambient temperature during the laying up of the splice.

3.3 Equipment. Equipment should be pre-checked for the following:

- (a) *Power source.* Ensure continuity and capacity of outlet.
- (b) *Services.* Water and air are available.
- (c) *Vulcanizer.* Attention should be given to the following:
 - (i) All platens should be checked for equal temperature distribution at site, using suitably calibrated temperature devices.
 - (ii) All electrical equipment (controller, leads etc) should conform to the relevant statutory requirements.
 - (iii) All pressure sources should be checked to ensure that they attain pressures required for curing.

- (d) *Hand tools.* All equipment should meet the relevant statutory requirements, e.g. air, electrical.
- (e) *Splice table.* This should be—
 - (i) flat under all working conditions;
 - (ii) long enough for correct splicing;
 - (iii) wide enough for belt plus splice edge bars; and
 - (iv) securely fixed.
- (f) *Belt clamps.* Ensure belt clamps are strong enough to hold belt during splicing operation.
- (g) *Edge bars.* Ensure that the thickness of edge bars is not greater than that of the belt.

3.4 Belt/product compatibility. Compatibility should be checked as follows:

- (a) Ensure that belts and splicing material are compatible by reference to the supplier of the splicing material.
- (b) Ensure that rubber and steel cord are compatible. It is essential that a decision is made on using either a normal or a bare wire joint. The decision may generally be made by observing Table 1, but should also be based on the observed quality of the bonded layer adhesion to the cord.

TABLE 1
BELT/PRODUCT COMPATIBILITY

Belting	Splice
New—New	Normal
New—Old	Normal/Normal or bare
Old—Old	Normal or bare

3.5 Mechanical design of splice. Where belts with different cord numbers, cord sizes, cord construction, or differing covers are to be spliced, refer to the belt manufacturer.

4 SPLICE LAY-UP. Ensure that the following points are observed, with reference to the manufacturer's handbook as necessary:

- (a) The vulcanizer platen overlaps the parent belting at each end by at least 150 mm.
- (b) Alignment of belt ends is checked with string line.
- (c) Both belt ends are securely clamped.
- (d) Cord pattern is prepared.
- (e) Skive is prepared.
- (f) Cords are solutioned.
- (g) Cellophane, fabric and first cover are applied.
- (h) Cord position with string line is centred.
- (i) Cord is laid in accordance with splice diagram ensuring string line at least every fifth cable to ensure parallelism of cords.
- (k) Second cover, fabric and cellophane are applied.
- (l) Edge bars are installed and secured.