

Title	Control warp during production for fibreboard packaging		
Level	4	Credits	25

Purpose	People credited with this unit standard are able to: demonstrate knowledge of the actions needed to remove or reduce warp; and produce board without warp over extended periods at high production speeds.
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Classification	Fibreboard Packaging > Fibreboard Packaging Production
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Available grade	Achieved
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Prerequisites	Unit 340, <i>Demonstrate knowledge of safe working practices in the print industry</i> , or demonstrate equivalent knowledge and skills
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Guidance Information

- Candidates must follow any applicable and recognised codes of practice, and documented workplace health, safety, and environmental procedures for personal, product, workplace health, safety, and environmental matters, and the obligations required under current law including the Health and Safety in Employment Act 1992 and its subsequent amendments.
- The process for defining and calculating warp is as follows: when a warped board is laid on a level surface so as to form a shallow arch, the maximum vertical deviation from the horizontal is expressed as a percentage of the board dimension that forms the arch. Warp is assessed at take-off, and thus excludes 'post warp'.
- This unit standard covers cross directional (CD) warp, machine directional (MD) warp and diagonal warp.
- As equipment configuration and sophistication varies between workplaces, general control over warp is achieved by varying proportions of direct control over the different corrugator work stations, and by co-ordinating the efforts of other operators at these work stations.
- Definitions
Corrective measures available may be taken in any combination or sequence which is in accordance with workplace practices and machine requirements.
Cross directional (CD) warp refers to the line of curvature (warp) moving across the corrugator.

Diagonal warp (twist or propeller warp) refers to board where MD and CD edges are straight, however a line parallel to one edge and following the surface successively changes its slope over the sheet area.

Extended periods are defined as periods of at least one hour's duration, and including several paper changes.

Job requirements refer to specific requirements for the job at hand. These requirements may or may not be covered in the job documentation and may include special instructions, quality requirements expected by the customer, and/or production standards as set down by the workplace.

Machine directional (MD) warp refers to the line of curvature (warp) moving in the direction of the corrugator.

Plant listed maximum speed refers to the speed that is determined by each workplace as appropriate for specific production conditions taking into account paper grades, flutes, run length, and chop length.

Workplace practices refer to the documented procedures for the machine and/or workplace.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of the actions needed to remove or reduce warp.

Range cross directional (CD) warp, machine directional (MD) warp, diagonal warp.

Performance criteria

1.1 Awareness of forthcoming paper changes is demonstrated.

Range checking production documentation, communication with other corrugator crew members, identification of possible equipment adjustments.

1.2 Proactive corrective measures available in the workplace to reduce the risk of warp are taken in anticipation of paper changes.

Range changes in paper grade, type, width, and any combination; proactive corrective measures may include but are not limited to – tension control, moisture control, switching paper reels, machine specification checks.

1.3 The effects of the corrective actions available in the workplace are explained in terms of workplace practices.

Outcome 2

Produce board without warp over extended periods at high production speeds.

Performance criteria

- 2.1 Board is produced to meet the job requirements at not less than 80% of plant listed maximum speeds for extended periods, other than when changing paper.
- 2.2 Warp warnings are immediately responded to in accordance with workplace practices.
- 2.3 Communication and collaboration with other corrugator crew is made ensuring there are no delays to production.
- 2.4 Procedures to be followed in the event of failure to reduce warp are explained in terms of workplace practices.

Replacement information	This unit standard was replaced by skill standard 40351. This unit standard replaced unit standard 3779, unit standard 3786, and unit standard 21621.
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This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	20 September 2012	31 December 2027
Review	2	28 November 2024	31 December 2027

Consent and Moderation Requirements (CMR) reference	0005
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.