

## MOISTURE MOVEMENT data

MOISTURE MOVEMENT RATING	TRADA formula	which means	example dimensions in mm	1% of dimensions that will be gained or lost by moisture change	notes
SMALL	1% movement for every 5% change in moisture content	a 1% reduction or increase in thickness and width for every 5% moisture content change, reduction or increase	20 x 100	0.2 x 1	for example a joinery blank
			27 x 150	0.27 x 1.5	for example a cladding blank
			55 x 600	0.55 x 6	for example a waney edge board
			150 x 200	1.5 x 2	for example a structural section
MEDIUM	1% movement for every 4% change in moisture content	a 1% reduction or increase in thickness and width for every 4% moisture content change, reduction or increase	20 x 100	0.2 x 1	for example a joinery blank
			27 x 150	0.27 x 1.5	for example a cladding blank
			55 x 600	0.55 x 6	for example a waney edge board
			150 x 200	1.5 x 2	for example a structural section
LARGE	1% movement for every 3% change in moisture content	a 1% reduction or increase in thickness and width for every 3% moisture content change, reduction or increase	20 x 100	0.2 x 1	for example a joinery blank
			27 x 150	0.27 x 1.5	for example a cladding blank
			55 x 600	0.55 x 6	for example a waney edge board
			150 x 200	1.5 x 2	for example a structural section

### Notes

Reference: applying TRADA moisture movement calculation and information

Movement is the dimensional change across the width and thickness of boards when the moisture content of timber changes in response to atmospheric conditions (statement TRADA).

Moisture movement is a relative term. Wood species have been given the broad classes of Small, Medium or Large movement - see TRADA species database

Rule of Thumb: within the moisture content range 5 - 30% the across the grain dimensions change according to the classifications above

AD = air dried

KD = kiln dried



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MOISTURE MOVEMENT data

/ Fresh Sawn

MOISTURE MOVEMENT RATING	TRADA formula	which means	example for fresh sawn timber at 100% moisture content dimensions in mm	1% of dimensions that will be gained or lost by moisture change	moisture movement calculation applied to fresh sawn timber	example shrinkage results for FS to AD sawn dimensions in mm *	notes
SMALL	1% movement for every 5% change in moisture content	a 1% reduction or increase in thickness and width for every 5% moisture content change, reduction or increase	20 x 100	0.2 x 1	to calculate shrinkage in the thickness: $((100-30) / 5 = 14) \times 0.2 = 2.8\text{mm}$	17.3 x 86	for example a joinery blank
			27 x 150	0.27 x 1.5	to calculate shrinkage in the width: $((100-30) / 5 = 14) \times 1.5 = 21\text{mm}$	23.2 x 129	for example a cladding blank
			55 x 600	0.55 x 6	to calculate shrinkage in the width: $((100-30) / 5 = 14) \times 6 = 84\text{mm}$	47.3 x 516	for example a waney edge board
			150 x 200	1.5 x 2	to calculate shrinkage in the depth: $((100-30) / 5 = 14) \times 2 = 28\text{mm}$	129 x 172	for example a structural section
MEDIUM	1% movement for every 4% change in moisture content	a 1% reduction or increase in thickness and width for every 4% moisture content change, reduction or increase	20 x 100	0.2 x 1	to calculate shrinkage in the thickness: $((100-30) / 4 = 17.5) \times 0.2 = 3.5\text{mm}$	16.5 x 82.5	for example a joinery blank
			27 x 150	0.27 x 1.5	to calculate shrinkage in the width: $((100-30) / 4 = 17.5) \times 1.5 = 26.3\text{mm}$	22.7 x 123.7	for example a cladding blank
			55 x 600	0.55 x 6	to calculate shrinkage in the width: $((100-30) / 4 = 17.5) \times 6 = 105\text{mm}$	45.4 x 495	for example a waney edge board
			150 x 200	1.5 x 2	to calculate shrinkage in the depth: $((100-30) / 4 = 17.5) \times 2 = 35\text{mm}$	124.7 x 165	for example a structural section
LARGE	1% movement for every 3% change in moisture content	a 1% reduction or increase in thickness and width for every 3% moisture content change, reduction or increase	20 x 100	0.2 x 1	to calculate shrinkage in the thickness: $((100-30) / 3 = 23.3) \times 0.2 = 4.7\text{mm}$	15.3 x 76.4	for example a joinery blank
			27 x 150	0.27 x 1.5	to calculate shrinkage in the width: $((100-30) / 3 = 23.3) \times 1.5 = 35\text{mm}$	20.7 x 115	for example a cladding blank
			55 x 600	0.55 x 6	to calculate shrinkage in the width: $((100-30) / 3 = 23.3) \times 6 = 139.8\text{mm}$	45.4 x 460.2	for example a waney edge board
			150 x 200	1.5 x 2	to calculate shrinkage in the depth: $((100-30) / 3 = 23.3) \times 2 = 46.6\text{mm}$	138.5 x 153.4	for example a structural section

Notes

Reference: applying TRADA moisture movement calculation and information

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Moisture movement is a relative term. Wood species have been given the broad classes of Small, Medium or Large movement - see TRADA species database

Rule of Thumb: within the moisture content range 5 - 30% the across the grain dimensions change according to the classifications above

AD = air dried

KD = kiln dried

\* in actuality the moisture movement calculation is based on studies of wood that has reached at least 30% moisture content already, so our information here for FS can only serve as an illustration of potential change, if applying the assumption that initial moisture evaporation is free water whereas later evaporation (at <30%) is of water from cell structure, which also means we would assume actual shrinkage to be less than shown here



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MOISTURE MOVEMENT data

/ Air dried 30%

MOISTURE MOVEMENT RATING	TRADA formula	which means	example for 30% moisture content dimensions in mm	1% of dimensions that will be gained or lost by moisture change	example moisture movement calculation	example change in dims from 30% AD down to 21% AD	notes
SMALL	1% movement for every 5% change in moisture content	a 1% reduction or increase in thickness and width for every 5% moisture content change, reduction or increase	20 x 100	0.2 x 1	to calculate shrinkage in the thickness: $((30 - 21) / 5 = 1.8) \times 0.2 = 0.4\text{mm}$	19.6 x 98.2	for example a joinery blank
			27 x 150	0.27 x 1.5	to calculate shrinkage in the width: $((30 - 21) / 5 = 1.8) \times 1.5 = 2.7\text{mm}$	26.5 x 147.3	for example a cladding blank
			55 x 600	0.55 x 6	to calculate shrinkage in the width: $((30 - 21) / 5 = 1.8) \times 6 = 10.8\text{mm}$	54 x 589.2	for example a waney edge board
			150 x 200	1.5 x 2	to calculate shrinkage in the depth: $((30 - 21) / 5 = 1.8) \times 2 = 3.6\text{mm}$	147.3 x 196.3	for example a structural section
MEDIUM	1% movement for every 4% change in moisture content	a 1% reduction or increase in thickness and width for every 4% moisture content change, reduction or increase	20 x 100	0.2 x 1	to calculate shrinkage in the thickness: $((30 - 21) / 4 = 2.3) \times 0.2 = 0.5\text{mm}$	19.5 x 97.7	for example a joinery blank
			27 x 150	0.27 x 1.5	to calculate shrinkage in the width: $((30 - 21) / 4 = 2.3) \times 1.5 = 3.5\text{mm}$	26.4 x 146.5	for example a cladding blank
			55 x 600	0.55 x 6	to calculate shrinkage in the width: $((30 - 21) / 4 = 2.3) \times 6 = 13.8\text{mm}$	53.8 x 586.2	for example a waney edge board
			150 x 200	1.5 x 2	to calculate shrinkage in the depth: $((30 - 21) / 4 = 2.3) \times 2 = 4.6\text{mm}$	146.5 x 195.4	for example a structural section
LARGE	1% movement for every 3% change in moisture content	a 1% reduction or increase in thickness and width for every 3% moisture content change, reduction or increase	20 x 100	0.2 x 1	to calculate shrinkage in the thickness: $((30 - 21) / 3 = 3) \times 0.2 = 1.2\text{mm}$	19.4 x 97	for example a joinery blank
			27 x 150	0.27 x 1.5	to calculate shrinkage in the width: $((30 - 21) / 3 = 3) \times 1.5 = 4.5\text{mm}$	26.2 x 145.5	for example a cladding blank
			55 x 600	0.55 x 6	to calculate shrinkage in the width: $((30 - 21) / 3 = 3) \times 6 = 18\text{mm}$	53.4 x 582	for example a waney edge board
			150 x 200	1.5 x 2	to calculate shrinkage in the depth: $((30 - 21) / 3 = 3) \times 2 = 6\text{mm}$	145.5 x 194	for example a structural section

**Notes**

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MOISTURE MOVEMENT data

/ Air dried 21%

MOISTURE MOVEMENT RATING	TRADA formula	which means	example for 21% moisture content dimensions in mm	1% of dimensions that will be gained or lost by moisture change	example moisture movement calculation	example change in dims from 21% AD down to 17% AD	notes
SMALL	1% movement for every 5% change in moisture content	a 1% reduction or increase in thickness and width for every 5% moisture content change, reduction or increase	20 x 100	0.2 x 1	to calculate shrinkage in the thickness: $((21 - 17) / 5 = 0.8) \times 0.2 = 0.2\text{mm}$	19.8 x 99.2	for example a joinery blank
			27 x 150	0.27 x 1.5	to calculate shrinkage in the width: $((21 - 17) / 5 = 0.8) \times 1.5 = 1.2\text{mm}$	26.8 x 148.8	for example a cladding blank
			55 x 600	0.55 x 6	to calculate shrinkage in the width: $((21 - 17) / 5 = 0.8) \times 6 = 4.8\text{mm}$	54.6 x 595.2	for example a waney edge board
			150 x 200	1.5 x 2	to calculate shrinkage in the depth: $((21 - 17) / 5 = 0.8) \times 2 = 1.6\text{mm}$	148.8 x 198.4	for example a structural section
MEDIUM	1% movement for every 4% change in moisture content	a 1% reduction or increase in thickness and width for every 4% moisture content change, reduction or increase	20 x 100	0.2 x 1	to calculate shrinkage in the thickness: $((21 - 17) / 4 = 1) \times 0.2 = 0.2\text{mm}$	19.8 x 99	for example a joinery blank
			27 x 150	0.27 x 1.5	to calculate shrinkage in the width: $((21 - 17) / 4 = 1) \times 1.5 = 1.5\text{mm}$	26.7 x 148.5	for example a cladding blank
			55 x 600	0.55 x 6	to calculate shrinkage in the width: $((21 - 17) / 4 = 1) \times 6 = 6\text{mm}$	54.5 x 594	for example a waney edge board
			150 x 200	1.5 x 2	to calculate shrinkage in the depth: $((21 - 17) / 4 = 1) \times 2 = 2\text{mm}$	148.5 x 198	for example a structural section
LARGE	1% movement for every 3% change in moisture content	a 1% reduction or increase in thickness and width for every 3% moisture content change, reduction or increase	20 x 100	0.2 x 1	to calculate shrinkage in the thickness: $((21 - 17) / 3 = 1.3) \times 0.2 = 0.3\text{mm}$	19.8 x 99	for example a joinery blank
			27 x 150	0.27 x 1.5	to calculate shrinkage in the width: $((30 - 21) / 3 = 1.3) \times 1.5 = 2\text{mm}$	26.7 x 148.5	for example a cladding blank
			55 x 600	0.55 x 6	to calculate shrinkage in the width: $((21 - 17) / 3 = 1.3) \times 6 = 7.8\text{mm}$	54.5 x 594	for example a waney edge board
			150 x 200	1.5 x 2	to calculate shrinkage in the depth: $((21 - 17) / 3 = 1.3) \times 2 = 2.6\text{mm}$	148.5 x 198	for example a structural section

Notes

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Rule of Thumb: within the moisture content range 5 - 30% the across the grain dimensions change according to the classifications above

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MOISTURE MOVEMENT data

/ Air dried 17%

MOISTURE MOVEMENT RATING	TRADA formula	which means	example for 17% moisture content dimensions in mm	1% of dimensions that will be gained or lost by moisture change	example moisture movement calculation	example change in dims from 17% AD down to 12% KD	notes
SMALL	1% movement for every 5% change in moisture content	a 1% reduction or increase in thickness and width for every 5% moisture content change, reduction or increase	20 x 100	0.2 x 1	to calculate shrinkage in the thickness: $((17 - 12) / 5 = 1) \times 0.2 = 0.2\text{mm}$	19.8 x 99	for example a joinery blank
			27 x 150	0.27 x 1.5	to calculate shrinkage in the width: $((17 - 12) / 5 = 1) \times 1.5 = 1.5\text{mm}$	19.7 x 148.5	for example a cladding blank
			55 x 600	0.55 x 6	to calculate shrinkage in the width: $((17 - 12) / 5 = 1) \times 6 = 6\text{mm}$	54.5 x 594	for example a waney edge board
			150 x 200	1.5 x 2	to calculate shrinkage in the depth: $((17 - 12) / 5 = 1) \times 2 = 2\text{mm}$	148.5 x 198	for example a structural section
MEDIUM	1% movement for every 4% change in moisture content	a 1% reduction or increase in thickness and width for every 4% moisture content change, reduction or increase	20 x 100	0.2 x 1	to calculate shrinkage in the thickness: $((17 - 12) / 4 = 1.3) \times 0.2 = 0.3\text{mm}$	19.7 x 98.7	for example a joinery blank
			27 x 150	0.27 x 1.5	to calculate shrinkage in the width: $((17 - 12) / 4 = 1.3) \times 1.5 = 2\text{mm}$	23.5 x 148	for example a cladding blank
			55 x 600	0.55 x 6	to calculate shrinkage in the width: $((17 - 12) / 4 = 1.3) \times 6 = 7.8\text{mm}$	54.3 x 600	for example a waney edge board
			150 x 200	1.5 x 2	to calculate shrinkage in the depth: $((17 - 12) / 4 = 1.3) \times 2 = 2.6\text{mm}$	148 x 197.4	for example a structural section
LARGE	1% movement for every 3% change in moisture content	a 1% reduction or increase in thickness and width for every 3% moisture content change, reduction or increase	20 x 100	0.2 x 1	to calculate shrinkage in the thickness: $((17 - 12) / 3 = 1.7) \times 0.2 = 0.3\text{mm}$	19.7 x 98.3	for example a joinery blank
			27 x 150	0.27 x 1.5	to calculate shrinkage in the width: $((17 - 12) / 3 = 1.7) \times 1.5 = 2.6\text{mm}$	26.5 x 147.4	for example a cladding blank
			55 x 600	0.55 x 6	to calculate shrinkage in the width: $((17 - 12) / 3 = 1.7) \times 6 = 10.2\text{mm}$	26.1 x 589.8	for example a waney edge board
			150 x 200	1.5 x 2	n/a this section size could not be kilned or achieve 12% moisture	n/a	for example a structural section

Notes

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