NOVA
BUILDING PRODUCTS

Acclimating Nova Siding/Decking

novausawood.com
3821 24th Ave, Forest Grove, OR 97116
503-419-6407

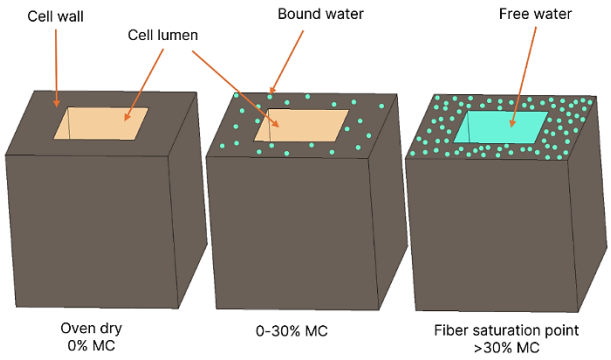
ACCLIMATING NOVA SIDING AND DECKING

MOISTURE RELATIONS OF WOOD

Water is an essential component of all parts of a living tree. In the xylem portion of the tree's stem water regularly composes over half of the total wet or "green" weight. In other words, the weight of water in green wood is often equal to or greater than the weight of the dry wood substance. After a tree is harvested, it will begin to purge liquid water instantly. Much of this water is held in the cell's lumen and often referred to as free water. Water contained in the cell wall is called bound water.

Free water is easily removed and therefore the first to be removed when wood begins to dry. When wood has dried to the point that no free water remains (<30% MC) it has reached fiber-saturation point (FSP), and only bound water is left in the cell walls. At this point the wood cell walls will be partially saturated with water and will shrink and swell with the introduction or removal of gaseous and liquid water.

This moisture relationship has a fundamental influence on dimensional stability and performance of wood and wood-based products. When wood is below FSP it will continue to shrink and/or swell with changes in ambient relative humidity and temperature. When wood has become acclimated to fluctuations in temperature and relative humidity and is no longer gaining or losing moisture, it has reached its equilibrium moisture content (EMC) and will remain dimensionally stable.



In order to make your Nova siding and decking perform the best, it needs to be acclimated to the end use environment. Acclimating is a crucial step that allows the wood to reach EMC in the environment that it will be installed in. Failure to acclimate appropriately may result in defects such as cupping, twisting, checking, fastener withdrawal, shrinking, and swelling, either before during, or after installation.

STORAGE OFF SITE

Ensure your product is stored and sealed properly. Siding and decking should be kept in a clean and dry location with the product still properly wrapped/end sealed. This includes storing for short periods of time. All siding/decking should be stored on a solid flat surface that is properly supported with blocking evenly spaced along the length of the units to mitigate warping.

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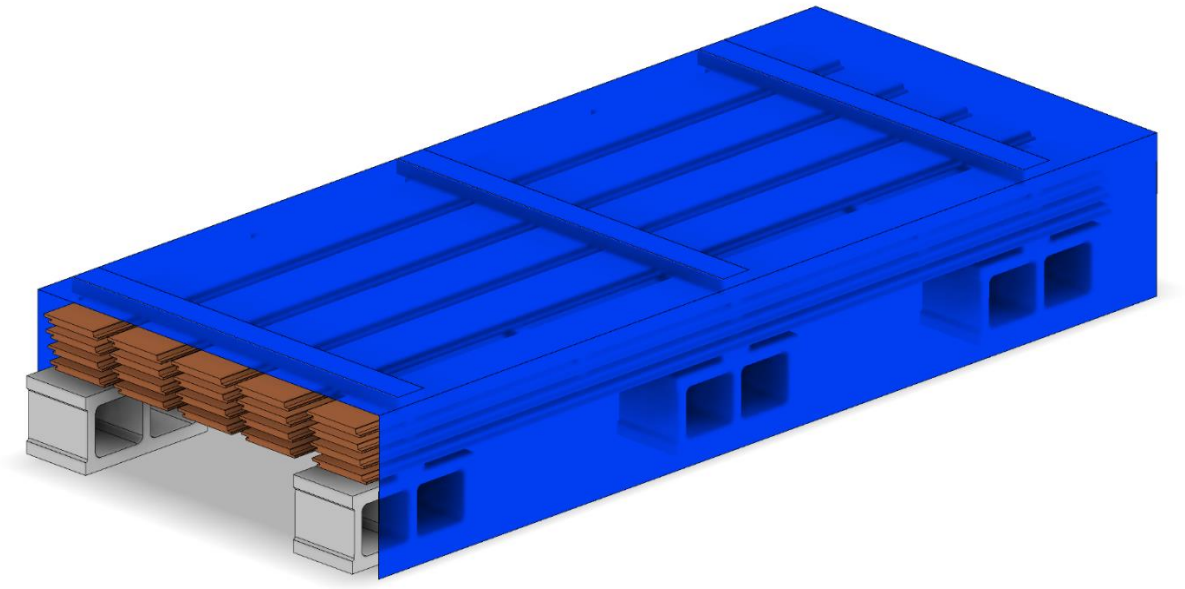
ACCLIMATING ON SITE

Wood siding or decking should always be given time to reach the EMC of the location where it will be installed. Upon receiving your material on the job site, remove the siding or decking from the packaging and visually inspect boards for defects, including boards from the top, bottom and middle. Restack the material with stickers (spacers between each layer) at least ¾" thick to promote air circulation on all sides of the boards. Stickers should be spaced no more than 12" apart to prevent the siding/decking from warping. The stack should be protected from direct sunlight and liquid water, including irrigation systems, all forms of precipitation, and dew formation.



Tarps or other coverings must not be in direct contact with the stack, or it will not receive sufficient air flow to acclimate properly. Place 2x4 material to ensure tarp material does not sit directly on the top of the stack. If stacked over concrete, use 2x4s or 2x6s on edge to elevate the first course at least 3-1/2" above the surface of the concrete. If the stack is placed over wet ground or wet concrete, lay down a vapor barrier so moisture doesn't transfer from beneath the stack. Wood shall be acclimated until it reaches EMC. Note that some species and products will take much longer to equilibrate than others.

Tropical hardwood species have been known to acclimate slower than domestic softwood species so consideration should be taken when planning your installation. Note that prefinished boards will also take significantly longer to reach EMC. It is never a good idea to base acclimation on time alone, but rather on observing changes in actual moisture content.

The chart below shows the equilibrium moisture content of wood at various temperatures and relative humidity levels. This chart can be used to determine the target moisture content (EMC) of the siding or decking at the time of installation.

RH(%)	AMBIENT AIR TEMP (°F)							
	30	40	50	60	70	80	90	100
5	1.4	1.4	1.4	1.3	1.3	1.3	1.2	1.2
10	2.6	2.6	2.6	2.5	2.5	2.4	2.3	2.3
15	3.7	3.7	3.6	3.6	3.5	3.5	3.4	3.3
20	4.6	4.6	4.6	4.6	4.5	4.4	4.3	4.2
25	5.5	5.5	5.5	5.4	5.4	5.3	5.1	5.0
30	6.3	6.3	6.3	6.2	6.2	6.1	5.9	5.8
35	7.1	7.1	7.1	7.0	6.9	6.8	6.7	6.5
40	7.9	7.9	7.9	7.8	7.7	7.6	7.4	7.2
45	8.7	8.7	8.7	8.6	8.5	8.3	8.1	7.9
50	9.5	9.5	9.5	9.4	9.2	9.1	8.9	8.7
55	10.4	10.4	10.3	10.2	10.1	9.9	9.7	9.5
60	11.3	11.3	11.2	11.1	11.0	10.8	10.5	10.3
65	12.4	12.3	12.3	12.1	12.0	11.7	11.5	11.2
70	13.5	13.5	13.4	13.3	13.1	12.9	12.6	12.3
75	14.9	14.9	14.8	14.6	14.4	14.2	13.9	13.6
80	16.5	16.5	16.4	16.2	16.0	15.7	15.4	15.1
85	18.5	18.5	18.4	18.2	17.9	17.7	17.3	17.0
90	21.0	21.0	20.9	20.7	20.5	20.2	19.8	19.5
95	24.3	24.3	24.3	24.1	23.9	23.6	23.3	22.9
98	26.9	26.9	26.9	26.8	26.6	26.3	26.0	25.6

FIGURES BASED ON DATA PROVIDED BY THE U.S. FOREST PRODUCTS LABORATORY

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CHECKING & TRACKING MC

After tasking, promptly check the moisture content of your wood siding or decking with a moisture meter, randomly selecting boards throughout the stack. Record, date, photograph, and average all results. Follow all of the manufacturer's recommendations to ensure proper use of the moisture meter. Ensure that you MC meter is set to the appropriate species or specific gravity. There are two common types of moisture meters.

- **Pin style meters** are more accurate but require driving pins into the wood. Checking MC from the back of the boards is advised to avoid damaging the intended surface.

- **Pinless or capacitance meters** typically have depth adjustment that can provide a more accurate reading. Never hold the board in hand or place on a damp substrate as the reading from the meter could be affected, as it detects moisture from behind the board. Measurements on or near knots should also be avoided. Once the average MC of the siding or decking is within 2% of EMC and the environmental conditions are not rapidly changing, installation may begin.

NOVA'S TIPS FOR SUCCESS

- Do not allow siding/decking to be exposed to direct sunlight, liquid water, including irrigation systems, all forms of precipitation, and dew formation.
- Do not allow material to contact the ground.
- Cover wet ground with a vapor barrier.
- Leave spacing between boards edgewise so that airflow is adequate.
- Be aware of EMC fluctuations in the region in which your installation will take place.
- In low EMC environments, consider 1x4, 1x6 or thermally modified products.
- Prefinish after acclimation for fastest results. Factory prefinished boards will take significantly longer to reach EMC.
- Do not measure MC on or near knots.

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