



CARBON NEUTRAL TIMBER MATS



STRONGER. STANDARDIZED. SAFER. SUSTAINABLE.

EXECUTIVE SUMMARY

1. Carbon accounting and carbon¹ neutrality are rapidly evolving at the government, industry, banking, and social levels.
2. Shareholders, governments and consumers will be looking toward business for carbon solutions. It pays to be proactive.
3. World Forest Group (“WFG”) has incorporated a carbon neutral mindset into manufacturing and distribution processes; we now offer a *carbon neutral timber mat*.
4. A carbon neutral crane mat can be a positive and low-cost mechanism for carbon neutral operations, can differentiate vendors, and may provide values like lower cost of capital.
5. Carbon neutrality means that emissions and absorbing activities balance. Emissions typically come from fossil fuel use and absorption often comes from the biosphere.
6. Carbon credits or offsets come from recognized organizations that certify that the credits are valid, and that the activity involved really does absorb carbon.
7. Companies already pursuing a carbon reduction strategy will find that WFG mats can contribute to your initiative.

BACKGROUND ON EUCALYPTUS MATS

Eucalyptus is stronger and lighter than mixed hardwoods. By specifying mats using material strength rather than nominal size users can save significant money, reduce raw material use, reduce freight costs, and realize extended life-of-mat longevity.

Reduced raw material and freight coupled with longer reuse means lower total cost of ownership...and lower carbon emissions.

WHY A CARBON NEUTRAL CRANE MAT?

Owners, EPCs and contractors face increasing demands for carbon neutrality. A carbon neutral mat can be an inexpensive method to start work on CO₂ emissions. Carbon neutral mats can also differentiate vendors from another during bidding. Certain

¹ To convert carbon to carbon dioxide (the metric that most companies use) multiply by 3.6.

owners, like utilities, may find that CO₂ reductions are increasingly looked at by regulators. Large companies may discover lower cost of capital.

WHAT DOES “CARBON NEUTRAL” MEAN?

One definition says, “Carbon neutrality means having a balance between emitting carbon and absorbing carbon from the atmosphere in carbon sinks. Removing carbon di-oxide from the atmosphere and then storing it is known as carbon sequestration.”²

In respect to World Forest Group’s crane mats, it means attaining carbon neutral emissions through the entire production and distribution of our timber mats. First, we use a combination of carbon efficient production and distribution methods to reduce carbon emissions. Second, where we cannot reduce further – or where the reduction cannot reasonably be defended – we purchase carbon credits (or “offsets”) to offset the carbon emissions that cannot be eliminated.

WHATS A CARBON NEUTRAL MAT LOOK LIKE?

The same as our other mats.



² [Link](#)

WHAT'S A CARBON CREDIT OR CARBON OFFSET?

There are two general types of carbon credits or offsets.

The first are Voluntary Emissions Reductions (VERs), created by reducing emissions in a voluntary program through scientifically verified projects such as biological (e.g., tree planting) or physical processes (e.g., storing carbon dioxide underground). This is the type of carbon credit World Forest Group uses because we – nor most of our customers – are not required by any regulations or rules to reduce carbon emissions.

The second are Certified Emissions Reductions (CERs). These are “allowances” that are created by law or regulation and may sometimes be connected to verified projects.

If you have operations in the European Union, there are credits there, too.

WHO PROVIDES CARBON CREDIT ASSURANCES?

Organizations such as [Verra Registry](#), the [Verified Carbon Standard](#), or the [Gold Standard](#) are International Standards Organization certified to verify such credits. The credits are tracked on public registration sites. World Forest Group customers' credits are certified or verified by these organizations.

World Forest Group's carbon partner is [Climate Wedge](#), one of the original carbon emissions originators and providers. See their resumes [here](#), [here](#), [here](#), and [here](#).

WHY IS CARBON NEUTRALITY IMPORTANT?

At a societal level, increased CO₂ in the atmosphere has been linked to global climate change. The United Nations Intergovernmental Panel on Climate Change (IPCC) was created to study climate change and its impacts on the environment and society.

One of the key findings of the IPCC's studies is the need to reduce atmospheric CO₂ to minimize the long-term rise in worldwide temperatures.

World Forest Group believes the precautionary principle applies to carbon neutrality: It's better to be cautious because of the small potential costs versus the large benefits of carbon reduction.

PRIVATE & CONFIDENTIAL Carbon Neutral Timber Mat

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It's also smart to reduce your carbon footprint and work towards carbon neutrality...

1. To be a good corporate citizen,
2. Because final consumers are increasingly demanding it, and
3. Because lenders and shareholders are beginning to use climate impact in their lending and evaluation processes. Some companies are beginning to see cost of capital reductions as a result of their proactive efforts to reduce carbon.

Expect growing regulatory pressure for large privately held and publicly traded companies to account for and reduce their carbon emissions.

WHAT MAKES A WFG MAT CARBON NEUTRAL?

First, we make a mat from sustainably sourced Eucalyptus trees which sequester more carbon than the CO₂ created during the production and transportation of the mat.

WFG calculates carbon emissions from all aspects of the raw materials including its manufacturing and logistics footprints. This means that we calculate the carbon emitted during the manufacturing of the steel we use in bolts and endplates, the carbon emitted from the felling of the tree in the forest, through the mill where it is converted into timbers and then made into mats, through shipping to US ports and on to our final customer.

We include a "well to wheels" analysis, which includes carbon emitted during the production and transport of the fossil fuels until the fuel is used.³

Secondly, WFG Eucalyptus timber mats have three key attributes that result in lower total carbon emissions over the life of the mat.

1. World Forest Group mats are lighter than typical timber mats, reducing carbon emissions from transportation and repositioning of the mats as more Eucalyptus mats fit on a truck relative to mixed hardwood mats.
2. World Forest Group mats are stronger than mixed hardwood mats, therefore, for many applications, a thinner Eucalyptus mat can be used in place of a thicker mixed hardwood mat. A thinner mat reduces initial carbon emissions relative to mixed hardwoods and increases the weight advantages discussed above.

³ Well to wheels data is available at [US Department of Energy](#) and at the [European Union](#).

3. Because Eucalyptus mats are stronger, they last 25% - 200% longer than most other wooden mats and need to be replaced less frequently, greatly reducing the lifecycle carbon emissions relative to wood mats.

Long-term, we look for ways to reduce our carbon footprint through each component of the supply chain. In the short-term, we purchase high quality carbon credits to offset these emissions.

WHAT IS THE CARBON FOOTPRINT OF A TYPICAL 16'X4'X6" WORLD FOREST GROUP EUCALYPTUS MAT?

About 0.2 metric tons of CO₂ for about one mat. The breakdown is below:

Bolt steel footprint	0.010	MT CO ₂ /mat	5%
Bolt steel transport footprint via sea	0.007	MT CO ₂ /mat	4%
Well to wheels adjustment	0.022	MT CO ₂ /mat	11%
Total Brazil emissions	0.064	MT CO ₂ /mat	32%
Total Ocean (6000 kn.)	0.082	MT CO ₂ /mat	41%
Total USA land (300 miles)	<u>0.013</u>	MT CO ₂ /mat	7%
Total all	0.199	MT CO ₂ /mat	100%

SUMMARY

Carbon neutral mats can be a cost-effective method of starting low carbon work. Emissions from the production and transport of World Forest Group's mats can be offset with carbon credits. Using Eucalyptus mats also provides continuing lower carbon emissions through thinner mats and lower lifecycle transport costs than other matting solutions.

We are committed to work with you to improve our product to meet your and society's evolving carbon offset needs.

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