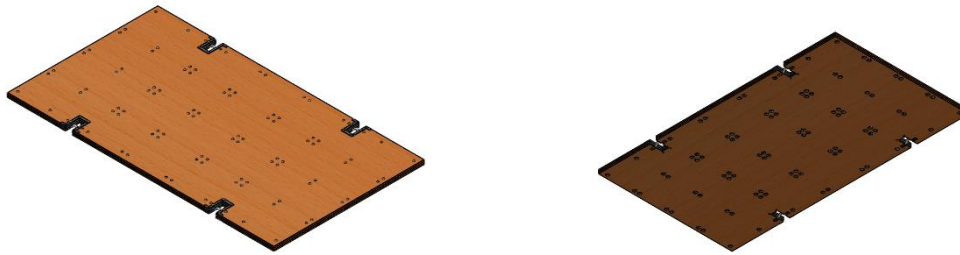


## **Bamboo Composite Mat Safety & Operating Instructions**

### **1.0 General Information of the Bamboo Composite Mat**



The rendered image on this document is for illustrative purpose only. Actual product may vary.

- The Bamboo composite mat is a single-sided use only, designed to distribute the load of the vehicle to the ground.
- Each Bamboo Composite Mat is manufactured using the laminated veneer Bamboo and provide a great amount of strength.
- Direction of travel on the mats can be lengthwise or crosswise.
- The allowed maximum load of 50T per mat is subjected to the ground conditions.

### **2.0 Specifications of the Bamboo Composite Mat**

Length (mm)	≈3902
Width (mm)	≈2210
Height (mm)	≈68
Weight (kg)	≈545
Density (kg/m <sup>3</sup> )	≈1000-1100

### **3.0 Safety Information for Bamboo Composite Mat**

- Contact your local depot for a free ground survey.
- The contractor is responsible for pre-planning against what can happen and prepare for it.
- A site-specific risk assessment must also be carried out before any installation.
- Before any usage, a ground and weather condition survey must be carried out in that particular region. The ground survey must include in-depth research consisting of any underground utilities such as gas pipes, water pipes, and electrical cables, etc.
- Work must be adequately planned and clear instruction must be given to the operator.
- Appointed a banksman to ensure the safety based on your site specific risk assessment.
- PPE (safety gloves and boots) must be worn prior to the start of laying mats. It is imperative that safety gloves are worn at all times when handling the Bamboo mats.
- The mats are too heavy for manual handling.
- The mats can be handled via Moffett, forklift, telehandler or crane using appropriate 6m x 4 Leg-Chain set.
- The mat can be used in all weather conditions, from the coldest regions to the warmest.
- The bamboo composite mats will sink in water.
- Spinning wheels will result in damage to the mats. Careful driving and movement are required on the mats at all times.
- Do not use an excavator to lift the corner of the mat. This will cause damage to the edge of the mat and the metal collar around the lifting point.
- Bamboo mats must not be used solely as crane outrigger pads, they must have extra support spreading the load.

## **4.0 Instructions and manual guide for installation, removal & cleaning**

### **4.1 Installation steps**

- ④ A visual site layout should be explored to determine the orientation of the first mat.
- ④ To allow for easier installation, where appropriate the roadway should start at the socket end and not the tongues. A later version of the panels do-not have sockets and tongues.
- ④ This combined with some preliminary sketches and/ or measurements will maximize the mat layout for the specific site. The surface of the tongues should be free of debris that could interfere with the proper connection.
- ④ Installation teams should assign a minimum of two team members to the task of aligning and positioning mats.
- ④ Handling the mats: a lorry mounted crane, using a 6m x 4 Leg-Chain set is recommended or using Moffett, telehandler or forklift. A maximum of two panels only must be lifted at one time when using a crane. The mats are transported to the desired location to be installed where they will be positioned and butted together. No specialist joining or lifting tools are required.

Due to the width of the mats, handling by forklift requires very good flat ground conditions for manoeuvring, the length of the mats means they are prone to becoming unstable during this procedure.

As a guide: -

- It is important that anyone involved with the use of forklift trucks receive adequate training in the safe use and operation/supervision of forklift trucks with an emphasis on the lifting of long or irregular loads including the foreseeable risks and controls to be adopted.
  - The mats must be carried as low as is practicable.
  - The mats must be centred equidistant on the forks, or the centre of gravity is placed mid-distance between the forks.
  - The mats are carried close to the heel forks and with a slight back tilt sufficient to stabilise the load.
  - The load should not be raised to allow it to pass over obstructions such as stored materials, vehicles, etc. If that is needed then the wrong lifting equipment and method has been selected.
  - Clear communication between the banksman and the forklift driver must be agreed upon beforehand.
  - The load may need to be secured in bundles to prevent shifting. However, a load that is several times longer than the fork width should not be clamped or secured to the forks as any dynamic forces (rocking or twisting) could be transmitted from the load into the fork carriage. This can make overturn of the machine more likely and may also cause hidden damage by inducing stress in the forks, the carriage and the boom or mast.
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- ④ The ground must be levelled to remove any uneven rutting, etc.
  - ④ The mats are intended to be butted together or overlapped by a minimum of 150mm. A limited number of mats have the tongue and socket joining. Connection of the mats occurs when the tongues fit in the square sockets and the square sockets and tongues are aligned.
  - ④ When joining the mats, it can sometimes become difficult to fit the tongue in place. This is likely due to ground variation or debris such as in muddy environments. It is helpful to ensure the ground is level at the joint.

**Also note, weather condition is unpredictable especially during the night with little or no warning.  
Always check weather forecast.**

#### **4.2 Removal of the Bamboo Composite Mat**

Bamboo Composite mats are removed in the opposite direction in which they were laid. In other words, unlocking the tongue and socket, thus freeing the next mat for removal. The mats can then be lifted out of arrangement safely.

Ground condition/suction will increase the force required to lift the mats.

#### **4.3 Cleaning, storage, snow/ice removal**

- Metal blades or excavator buckets must not be used to clean debris or snow off Bamboo Composite Mat.
- Bamboo Composite Mat can be cleaned using a powered pressure washer.
- Following heavy snowfall or snow/ ice, clean the Bamboo Composite Mat with a brush and hand shovel.
- Long roadways may be cleaned using a snowplough with a rubber or plastic strip fitted to avoid damage to the surface of the roadway.

##### **4.3.1 Storage of the mats whilst on site and at depots**

Store mats in a secure location after use. The mats must be correctly stored. They have a topside and an underside. The topside is identified by the domed heads of the bolts joining the panels together, along with the lifting points.

**Bamboo Composite Mat is not designed as a bridging solution and should not be considered for crossing large holes or gaps**

**Bamboo Composite Mat is perfect for rubber-tyred or rubber-tracked vehicle**

**Marwood Group always recommends that a site survey and a full risk assessment must be carried out including loading and ground conditions before using Bamboo Composite Mat. It is the end user's responsibility to make sure the mats are suitable for their intended use.**

**Contact your local Marwood Group Depot, for replacement & repair to mats and their components**

**Marwood Group Ltd now offers an installation service.**

**Damages are chargeable.**