UPM CARGO HANDLING MANUAL – PLYWOOD

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Contents

Safety first

UPM's clear objective is zero fatal and serious accidents. We strive to reduce and eliminate accidents under our control through continuous improvement and effective risk management. We expect the same high safety culture from our business partners and their employees. Co-operating together in safety we can improve the safety of the whole supply chain ensuring safe workplace for all the workers.

For loading areas and warehouses one of the highest risk is collision between pedestrians and vehicles. Therefore any unnecessary and extra walking in loading areas and warehouses is prohibited. It is important to make yourself visible for others if there is a need to be outside of vehicle and communicate, for example with eye contact, to make sure that others have noticed you.

Personal protective equipment (PPE) has to be worn when in loading areas and warehouses. The required PPE varies between sites but the minimun requirement for PPE are

- High visibility vest or clothes
- Safety shoes

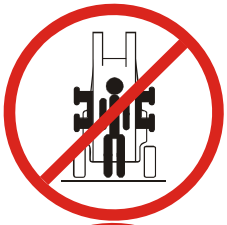
Additional can be required

- hard hat or bump cap
- safety goggles
- in case of noise, ear protection.

For chemical loading/unloading the required PPE depends on the chemical and can be, for example, chemical resistant clothes and hard hat with full face visir. Required PPE are instructed with signs at the gate of the site.

Following general handling safety cautions are valid for each manual sections:

While driving in the loading area the addressed speed limit has to be obeyed and extra attention to be paid for other traffic. The speed limits are site specific and are instructed with signs.



Driving and walking under hanging loads is prohibited.

During truck loading/unloading the fork lift driver has to pay extra attention to know where the truck drive is while loading at all times. It is prohibited for the truck driver to come into the trailer/container while fork lift is in it and the fork lift driver has to make sure the truck driver is not in the trailer/container before driving into the trailer/container.

It is important to follow the capacities whether it is fork lift, truck, or loading ramp etc.

All the instructions has to be followed to ensure safe working to prevent accidents. In many cases the reason for the instruction to be done has been an accident or near miss.

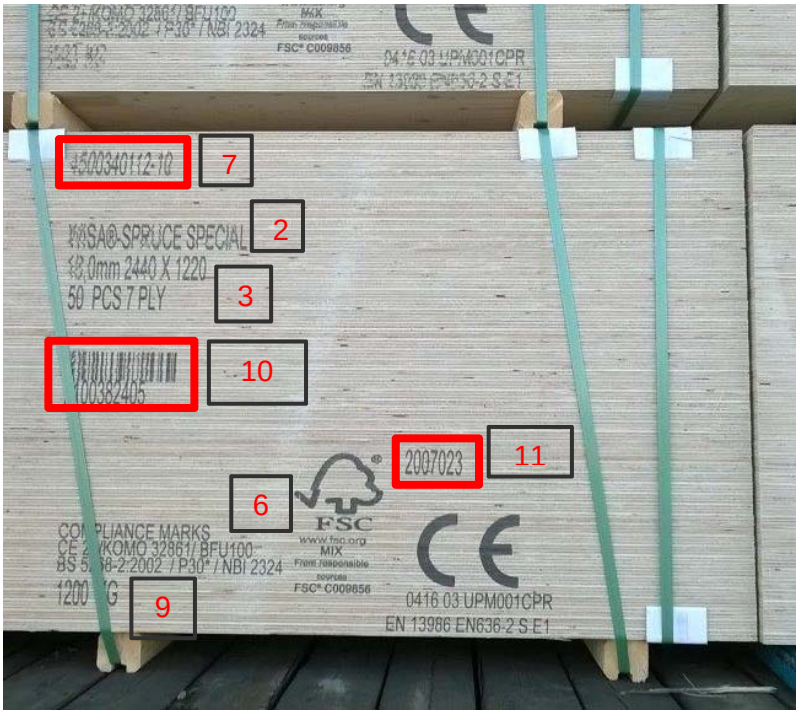
Everyone is obligated to report any accidents, near misses or observations. With reporting we can prevent accidents and improve safety.

1. PLYWOOD PACKAGE SPECIFICATIONS

The purpose of packaging is to protect the product against mechanical wear, tear, moisture and dirt. Plywood and wooden boards are always palletized. The boards are bound together mostly with plastic bands or straps, either wrapped or unwrapped.

Label

1. UPM Logo
2. Product/trade name
3. Product dimensions and amount: Thickness, length and width of a product, total amount of products in the package
4. Consignee references: Shipping marks, customer material number, customer bar code if available, also rows for free text if needed
5. Additional information: Country of origin, glue type, machining drawing, coating description etc.
6. Compliance marks: e.g. CE marking, Forest certification logo
7. Order number
8. Delivery address
9. Warning sign: Weight of package
10. Batch id: Bar code + numbers
11. Material number



Labels can include also Customer Specific Labels

Plywood basic package types

Pallet 0001

- Bed timbers
- Corner protectors and plastic bands
- Pallet cardboard and label

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Pallet 0002

- Bed timbers timber boards nailed
- Corner protectors and plastic bands
- Pallet cardboard and label

Pallet 1001

- Top protected with cardboard
- Corner protectors and plastic bands
- Pallet cardboard and label
- Longitudinal bands to coated products

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Pallet 4001

- Top protected with cardboard and plywood strips
- Bottom protected with cardboard
- Long sides protected with Craftply
- Bed timbers
- Corner protectors and plastic bands
- Longitudinal bands to coated products

Pallet 4002

- Bed timbers
- Four faces protected with plastic wrap, so called vertical wrapping
- Pallet cardboard and label under the wrap or between layers. When packing from stock cardboard under and label on the plastic wrap.

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Pallet 6002

- Top and bottom protected with cardboard
- Sides protected with plastic wrap
- Bed timbers and pallet boards nailed
- Corner protectors and plastic bands
- Pallet cardboard and label under plastic
- Longitudinal bands to coated products

Pallet 6004

- Top and sides protected with plywood
- Bottom protected with Craftply or plywood
- Bed timbers and pallet boards nailed
- Corner protectors and plastic bands
- Pallet cardboard and label to both sides

2. HANDLING OF PLYWOOD

2.1 Handling equipment’s

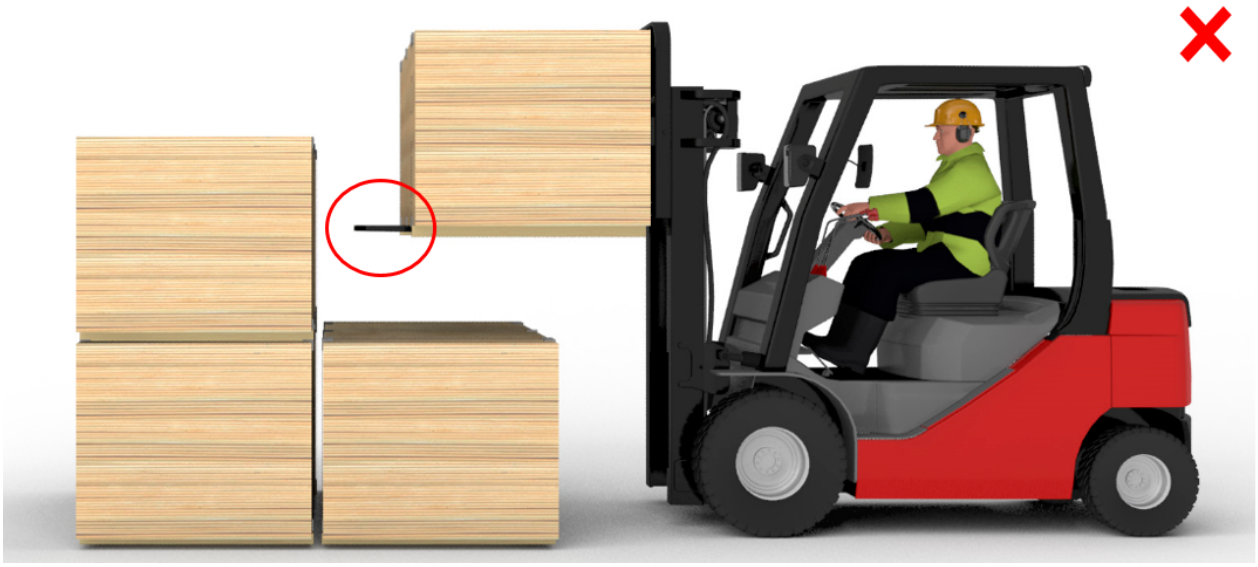
Proper size / width of forks must be used, adjustable fork width is recommended in order to ensure stabile handling.

2.2 Handling of plywood packages

Use correct length of forks to avoid punctures to next pallets or warehouse and vehicle walls. In case long forks must be used, adjustable supporting bars / other marking to forks is compulsory. In other words, the operator must ensure that the forks are not protruding and damaging pallets behind.

Ensure correct height and mast tilt during transport in order to avoid pallet damages!

When moving two pallets on top each other’s avoid sudden movements



Extra precaution must be followed when stacking the pales to avoid damages to bales behind

Picture 1. Forks protruding pallets causing risk to damage pallets behind.

Picture 2. Forks suitable for multipackage handling

Picture 3. Forks suitable for single pack handling

3. WAREHOUSING

3.1 WAREHOUSE REQUIREMENTS

3.1.1 BUILDING

The building should be well constructed so that the stored goods are protected even in extreme weather conditions. Ridged roofs are recommended but most important the rainwater drainage pipes and gutters have sufficient capacity and should be located on the exterior of the warehouse. Back flow backup systems are recommended.

3.1.2 FLOORING

The floor of the warehouse should be on a higher level than areas outside. It must withstand the weight of the stored cargo and of the machines operating inside the warehouse; the minimum requirement is **9 tonnes**/ square metres (2240 lbs/sqft). As floor material polished concrete, bitumen and concrete or plastic material are acceptable. No loose particles are allowed on the finishing surface of the floor. The maximum inclination of the floor is 1/200. Bare ground with adequate loading capacity is accepted for timber.

3.1.3 MARKINGS AND SAFETY AREAS

Areas for stored cargo must be well marked with painted lines and numbers. Free space by the walls and pillars must be clearly marked. Vulnerable places like pillars, electric boxes, water pipes etc. must be protected by guard rails and painted as hazards.

3.1.4 WAREHOUSE TRAFFIC

Doors and aisles for warehouse traffic must be wide enough for vehicles and forklifts to meet and pass and there must be sufficient operating space in the loading areas. A grid or floor drain positioned in the door openings is recommended to prevent water, sand and stones entering the warehouse on vehicle tyres. The trucks should have their lights on.
Corner and hanging ball mirrors and other safety equipment are required for dangerous places to ensure high quality and safe warehouse working. Any visitors to UPM operations should report first to the local office and adhere to site instructions. Unauthorized people are not allowed to walk or stay inside the warehouse. Working personnel and visitors must wear safety gear as per UPM / supplier regulations. Systems to prevent vehicle movement when loading are strongly recommended.

3.1.6 LIGHTING

Adequate lighting with minimum illumination of 200 candelas is required. Led, Fluorescent tube lamps and gas-discharge/luminous discharge lamps (HQL, NVA-T, HQI-T, HQI-BT types) are allowed. All lamps must have protective glass free covers. The safety margin from the highest point of the cargo stored to the lamps is one meter. Skylight and light colours for walls are highly recommended.

3.2 SAFETY AND SECURITY

3.2.1 WAREHOUSE LOCATION

Geographical and weather-related risks must be evaluated prior start using new warehouse facilities (i.e. flood, storms etc.). UPM logistics can provide detailed location analyse based on Nat Geo tool. There should be enough free space between warehouses and other buildings. The safety distance depends on the wall materials used and the fire resistance of used materials. Exact distances depend on local requirements.

3.2.2 FIRE PROTECTION

The warehouse and surrounding must be free of all kind of fire load. Fuelling and charging stations must be located outside warehouse. Trucks must be equipped with fire extinguishers. Parking of trucks is not allowed inside warehouse or directly next to outside walls due to fire risk.

The space of the warehouse should be separated by firewalls if the total area exceeds **10,000 square metres** or less if locally required. An automatic fire and smoke detection system must be installed. Smoke venting arrangements in the roof must be installed. Extinguishers, fire water post, alarming bells, buttons, markings etc. must be placed according to the national building regulations.

Fixed fire water system around the building is required. Check national regulations for specific details. UPM recommendation is not to install sprinkler system due to high risk for unexpected system failures/water damages. Never block access to fire posts etc. for example with cargo!

Hot work operations (e.g. welding and steel cutting) in the warehouse always require a special permit with special safety measures. They can only be carried out by authorized and licensed personnel. The owner of the warehouse is responsible for fire safety and for compliance with regulations. Monitoring of the area should continue for two to three hours after the work is completed

3.2.3 MAIN FIRE SAFETY MATTERS:

- Remove unnecessary fire load from the warehouse and surroundings (e.g. garbage, flammable liquids, wooden pallets)
- Do not park vehicles (forklifts) inside warehouse
- Protect surrounding materials that could easily catch fire
- Fire extinguishers must be kept available
- Monitor the nearby area for possible fire

3.2.4 SECURITY AEO

Security matters such as gates, fencing, monitoring, locking of the doors, alarming etc. must be managed so that the cargo stored in the warehouse will remain intact from intruders during the whole warehousing period.

3.3. WAREHOUSING OF PRODUCTS

3.3.1 GENERAL REQUIREMENTS

As standing safety rule unnecessary stay inside warehouse/around the product stacks must be always avoided especially during the handling operations. There is always a risk that product stacks might collapse due to technical or human error.

UPM products must only be warehoused only with compatible products. Products listed in the IMDG-code should not be warehoused inside same facilities. There should be no risk that other goods will cause any stains, odour or similar harm to paper products.

1. The warehouse floor must be dry and clean, free of sand, stones and other debris to avoid end damages.

2. Special attention should be paid to keep birds out of warehouses. “Bird in distress” -signals and other means of prevention should be used.

3. Smoking is strictly prohibited inside the warehouses.

4. Warehouse must be equipped with sufficient lighting to ensure safe working. Lights without protective covers (only plastic) should not be used.

5. No rubbish should be left in and around the warehouse.

6. No vehicle parking allowed inside the warehouses.

7. A computerised warehouse stock management system with the capability of linking in to UPM systems is required.

3.3.2 WAREHOUSING OF PLYWOOD

Plywood and veneer pallets are stored as high as it is safely possible (according to regional UPM requirements) so that bearers are in the same position in every unit on top of each other.

Adequate safe margin has to be left between stocks to avoid corner and edge damages during handling.

Pallets must only be stored in defined, marked areas for stock control purposes.

Picture 4. example of in/correct stacking

4. TRANSPORT

4.1 Road transport

Corner protection profiles should be used on the top corners of the load to avoid edge damages. At least two lashing belts per row of pallets are recommended for securing the cargo. Anyway the cargo securing must be done always based on national laws and regulations.

4.2 Railway transport

To be updated later.

4.3 Sea transports

Especially with Sto-ro method loading and unloading the risk for handling damages is high. Unnecessary chafing against plywood packages must be avoided. All remaining empty space between the units must be secured with timber dunnage and/or airbags.

Picture 5. Plywood stowage in vessel hold. All the remaining caps between the pallets must be secured with airbags or timber dunnage

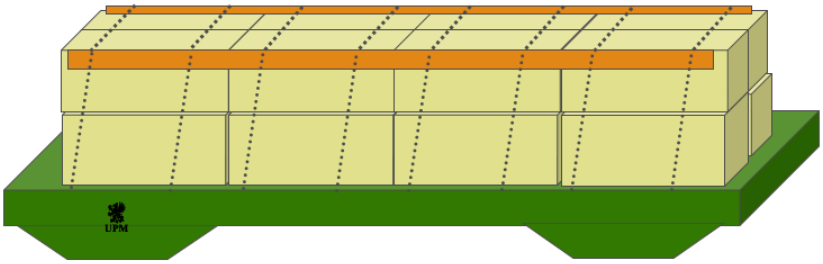
Picture 6. Multipack handling in vessel hold

Examples of Roro unit cargo securing

Cargo securing can be made with proper belts or chains, anyhow corner protectors must be always used. Please note, the sea carrier's cargo securing rules always applies, below are only some examples.

CASE 1 A, "standard" plywood two high

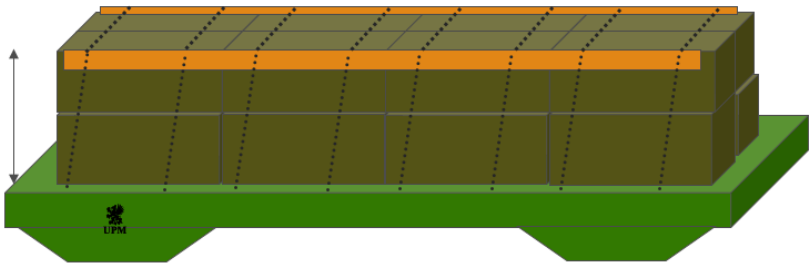
- **2 chains** per package when loading 2 packages side by side, two high and no empty space "
- Corner protectors



CASE 1 b, Film surfaced plywood

- 2 chain per package when loading two pcs side by side and two high. No empty space remaining on cass.
- NOTE: max stowage height 2,1 m

MAX 2,1 m



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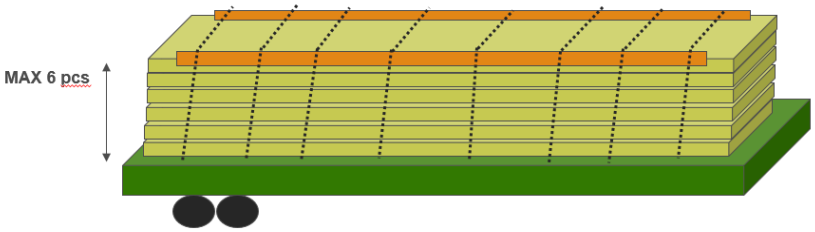
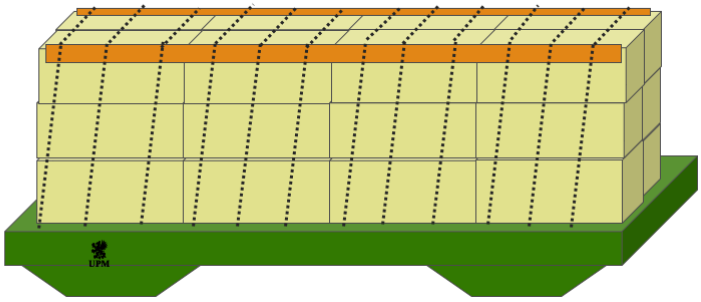
CASE 1 c, MAXIPLYWOOD packages

- MAX stowage height is 6 packages on top
- Lashing with corner protectors and min 8 chains per length



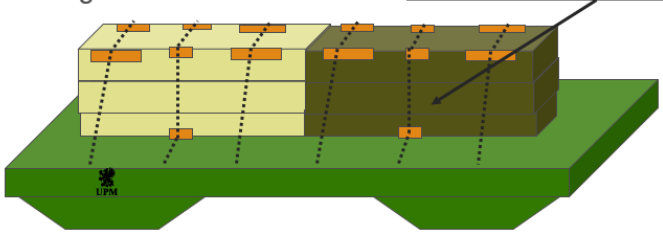
CASE 2, Standard plywood 3 pcs high

- 3 chains per package length when loading 3 high and full width
- Max stowage height 2,7 m.
- Corner profiles



CASE 3, Standard or film plywood ”incomplete” stowage (when remaining empty space around packages)

- When packages have to be loaded in middle of unit leaving empty space around
- 3 chains per package length and middle chain by using ”loop lashing” with corner protectors to each edge!



5. DAMAGE TYPES

EDGE DAMAGE (CODE 01)

SIDE DAMAGE (CODE 02)

Figure 1 - Not considered damage

BROKEN OR MISSING BEARERS (CODE 04)

FLAT BAND, STRAP DAMAGED OR MISSING

DEFORMATION (CODE 06)

MOIST OR WATER DAMAGE (CODE 07)

DIRT OR CONTAMINATION (CODE 08)

5.1 Damage inspection and reporting

As general rule “zero tolerance” principle applies with UPM plywood meaning that each single panel damage should be reported with package information and photos.

Damage units are not allowed to send to customer without permission from UPM plywood representative