CMA CGM group	Safety Security and Environment Management (SSE) Group SSE Cargo Division	
BEST PRACTICES	**Original Version : 03/10/2011**	**Update : 08/09/2013**

PACKING CONTAINER: WEIGHT LIMITS

PRIOR PACKING A CONTAINER, TWO FACTORS MUST BE TAKEN INTO CONSIDERATION: WEIGHT AND FLOOR LOAD LIMITS OF THE UNIT TO BE USED.

FREIGHT CONTAINERS ARE BUILT TO CARRY THE MAXIMUM PAYLOAD[1] EVENLY DISTRIBUTED ACROSS ALL OVER THE FLOOR (ISO 1496-1) AND CONCENTRATED LOADS MUST NOT EXCEED THE WEIGHT CAPABILITIES OF THE CONTAINER.

RISKS

- Human life endangering.
- Damage to transport means (containers, ships, trucks…)
- Damage to lifting gear
- Road, truck accidents, rollover incidents…





BEST PRACTICES

Weight limit:

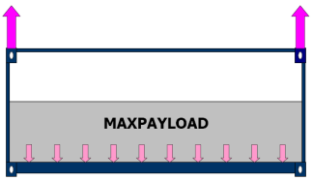
- The total weight of the container should never exceed the Maximum Gross Weight[3] indicated on the CSC[2] plate. The MAX Payload/Max Net Weight[1] is calculated by subtracting the Tare from the Max Gross Weight[3] shown on the CSC plate.

  Nota: The weight limit of a container depends also on local road and rail transportations regulations (See local agent).

Floor load limit:

- If the container is loaded to its maximum capacity, the weight of the cargo must be distributed as evenly as possible over the floor area**.**
- Concentrated weights must be avoided and as a general rule and as much as possible, the cargo weight per running meter shall not exceed the floor load limit corresponding to the Max Payload[1] divided by the container length.
- Another guideline is to consider that if/when cargo lays over about 50 % of the floor length its weight must not exceed 66 % of the container max payload (66% of length for 75% of weight, 75% for 80%) but these indications may vary according to container types.
- To check the floor load, the cargo weight (mt) is divided by the cargo length (m).
- For Flat Rack containers, if available, refer to the relevant loading charts (see examples here below) or calculate the permissible floor load (Max Payload/Container's length).

  Nota: Lifting with slings only from bottom corner castings with sling angle 45° for 20'FR and 30° for 40'FR (For 40'FR with Max Gross Weight[3] 50,000 kg, MGW should be limited to 34,000 kg)
- Timber, wooden beams to be used lengthwise (except for flat rack->transverse) to distribute individual heavy weights on containers floorboard.
- For Open Top containers used without roof bows, the Logistics-Container department recommends to reduce the Maximum Weight of cargo to about 60% of the container Max Payload.
- When packing a container with a forklift, axle load limit is 5460 kg (Ref ISO 1496).

MORE INFORMATION

CMA CGM intranet Mira links:

Container Fleet brochure
Container-Logistics Directions for OOG in OT containers
SSE Best Practices card: Weigh the container
SSE Best Practices card: Packing Container Basics
SSE Best Practices card: Open Top

Web Link: Container handbook: Permissible loading capacity of container

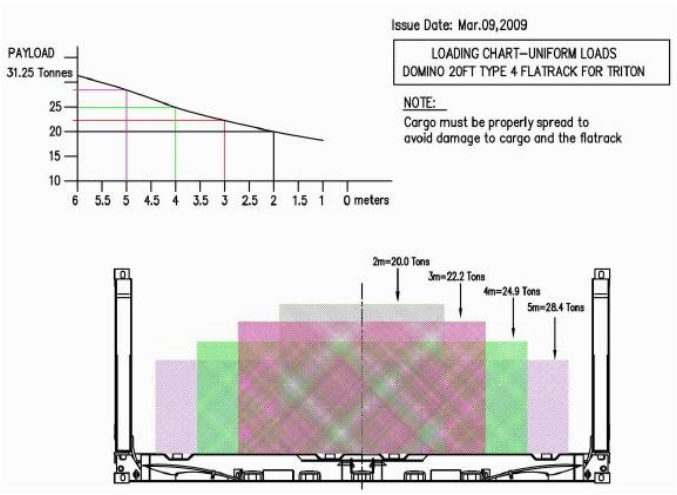
[1] The Max Payload or the Max Net weight of a container is the Max Gross Weight indicated on the CSC[1] safety approval plate minus the empty weight or tare of the container.

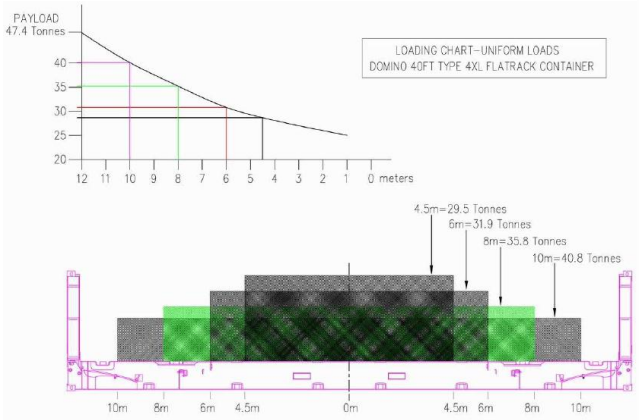
[2] Convention for Safe Container

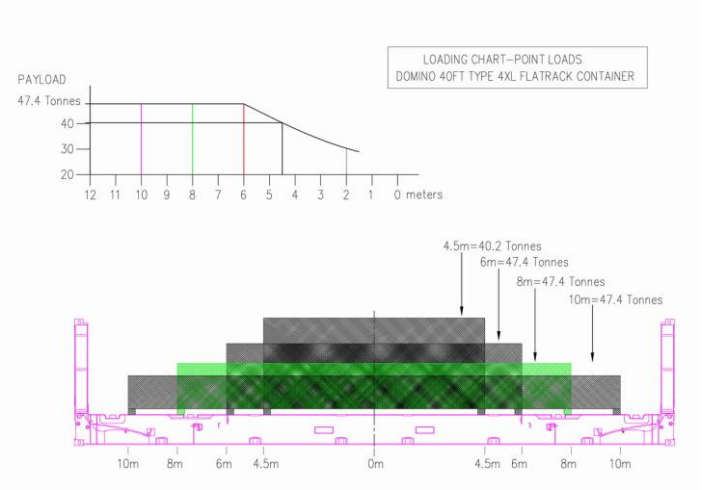
CMA CGM
ADVANCED SHIPPING

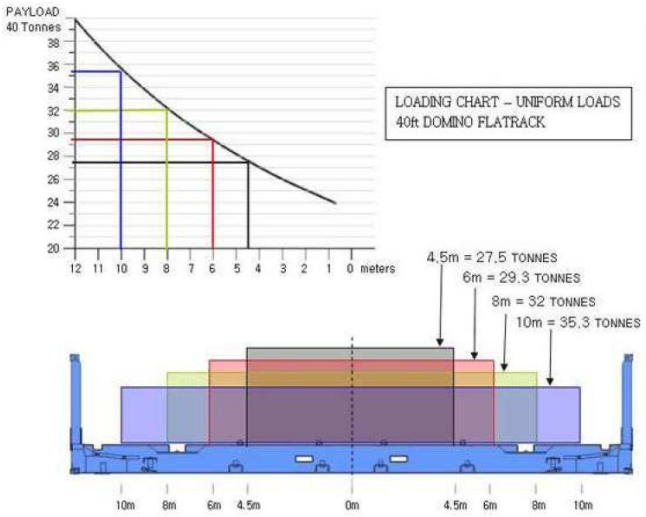
PACKING CONTAINER: WEIGHT LIMITS

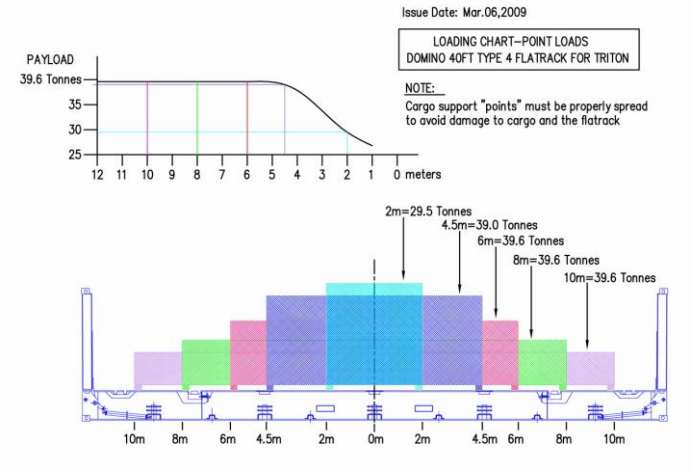
[3] *Max Gross Weight: Maximum permissible weight (Max Payload + Tare/Empty weight of the container).*











CMA CGM group	Safety Security and Environment Management (SSE) Group SSE Cargo Division	
BEST PRACTICES	**Original Version : 11/23/2009**	**Update : 07/15/2013**

PACKING CONTAINER: STONE BLOCKS

CMA CGM has experienced serious incidents pertaining from improper securing of natural stone blocks which sometimes were exceeding standard containers capability.

HAZARDS

The arrangement of blocks inside containers must not exceed the load limits of the container. A good weight distribution on container's floor is paramount for safety.

Container side and end walls are not strength enough to prevent cargo shifting and the packing of such goods into closed container do not exempt shippers from bracing and securing them in such a way they can withstand transportation stresses (Rolling, Pitching, handling, Lifting, road braking…) without moving.

RISKS

- Severe casualties even human death.
- Damages to transport means (containers, ships, trucks…), to lifting gears.
- Ship's detention for repairs.




BEST PRACTICES

Thank you to refer to Container-Logistics Dpt Guidelines: "Marble and Granite blocks guidelines"

SSE recommendation is not to accept single blocks of more than 20 tons but within the Group, some Lines do accept single stone blocks of more than 20 tons but less than 26 tons provided their weights are spread over 3 wooden planks at least 3 meters long (3m x 10cm x 10cm) and that they are wedged on all sides.

- Suitable containers:
  - Flat rack containers for heavy stone blocks.
  - Sound 30 metric tons tested 20' standard containers.
- Letter of Indemnity (LOI "damage to container").
- Container weight limits not to be exceeded.
- Blocks not in contact with container's floor
- No high stacking of stone blocks.
- Longitudinal wooden beams as strong as possible to supply friction and to distribute the weight.
- Wedging on all sides, longitudinal and transverse securing of blocks, braced to the side/end walls.
- Transverse shores to transfer their securing load through longitudinal cross-beams onto as many corrugations of the container walls as possible.
- Centre of gravity as close as possible to the centre of the container.
- Bottom of the laden container to be inspected while lifting for the 1st time at packer's premises.

Note: Lashing points inside closed containers are limited in strength (1.5 mt).

MORE INFORMATION

CMA CGM intranet Mira links:

- SSE Best Practices cards: **BP Packing Container Basics** **BP Packing Container Inspection** **BP Packing Container Weight Limits**
- Container-Logistics Dpt Guidelines and LOI blank form: **Marble and Granite blocks guidelines**

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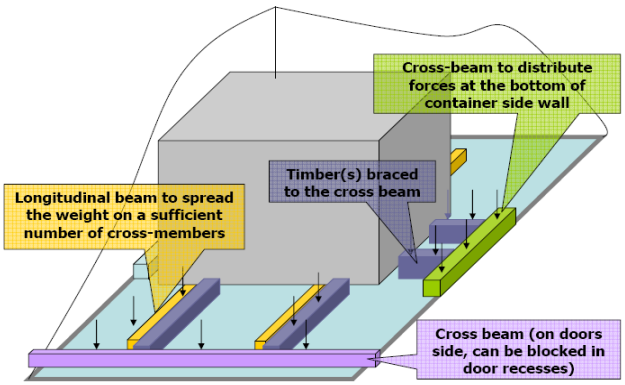
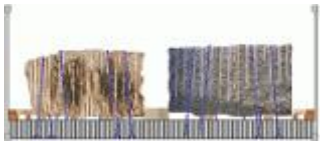
PACKING CONTAINER: STONE BLOCKS



STONE BLOCKS: WEIGHT DISTRIBUTION
LONGITUDINAL & TRANSVERSE SECURING

DO's and DON'Ts

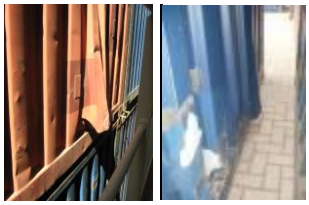
The block(s) is(are) too heavy for the container and this one is useless. Do not exceed the container Max Payload and/or the Permissible Line Load (20' GP: 5mt/lm)



Blocks laid on transverse planks with wooden bracing for lengthwise securing and loop lashing with chains.

The block rests directly on container's floor. The floor is damaged.

Block laying on 2 timber beams but these ones are too short and too thin and there is no lateral and longitudinal securing



There is no cross beam to distribute forces on the bottom of the side wall of the containers. The container is damaged and block may escape at rolling

Check the container Max Payload (or net weight) and don't exceed the floor load limit (see BP Packing Containers: Weight limits)

The small block is free and can move at rolling or pitching.
Do not stack one block over one another

Pressure distributed to side walls through cross beams

No comment

Big Marbles and Stone blocks Stuffing guidelines

By Mohd Saim

Date: 15/05/2008

High risk of major accidents

Marble not secured properly and/or not in the center of cntr may move and create some major accident for equipment and persons.

Un-acceptable

Ordinary damages

Stuffing without supporting timbers will damage the cntr floor.

Improper Stuffing

Imbalanced distribution of weight to one side panel.

No wedging/chokes to prevent movement.

Lashing points are not strong enough to take the stress from weight of cargo

Bottom supports not big enough to spread the weight over a large area and to prevent floor from being damaged

Un-acceptable

Improper Stuffing

Imbalanced distribution of weight to one side panel.

No wedging/chokes to prevent movement.

No/insufficient Bottom supports

Un-acceptable

Improper Stuffing

- No protection

For side walls

- No protection

Against movement

- No protection for the floor
- Danger for people handing the container

Un-acceptable

Improper Stuffing

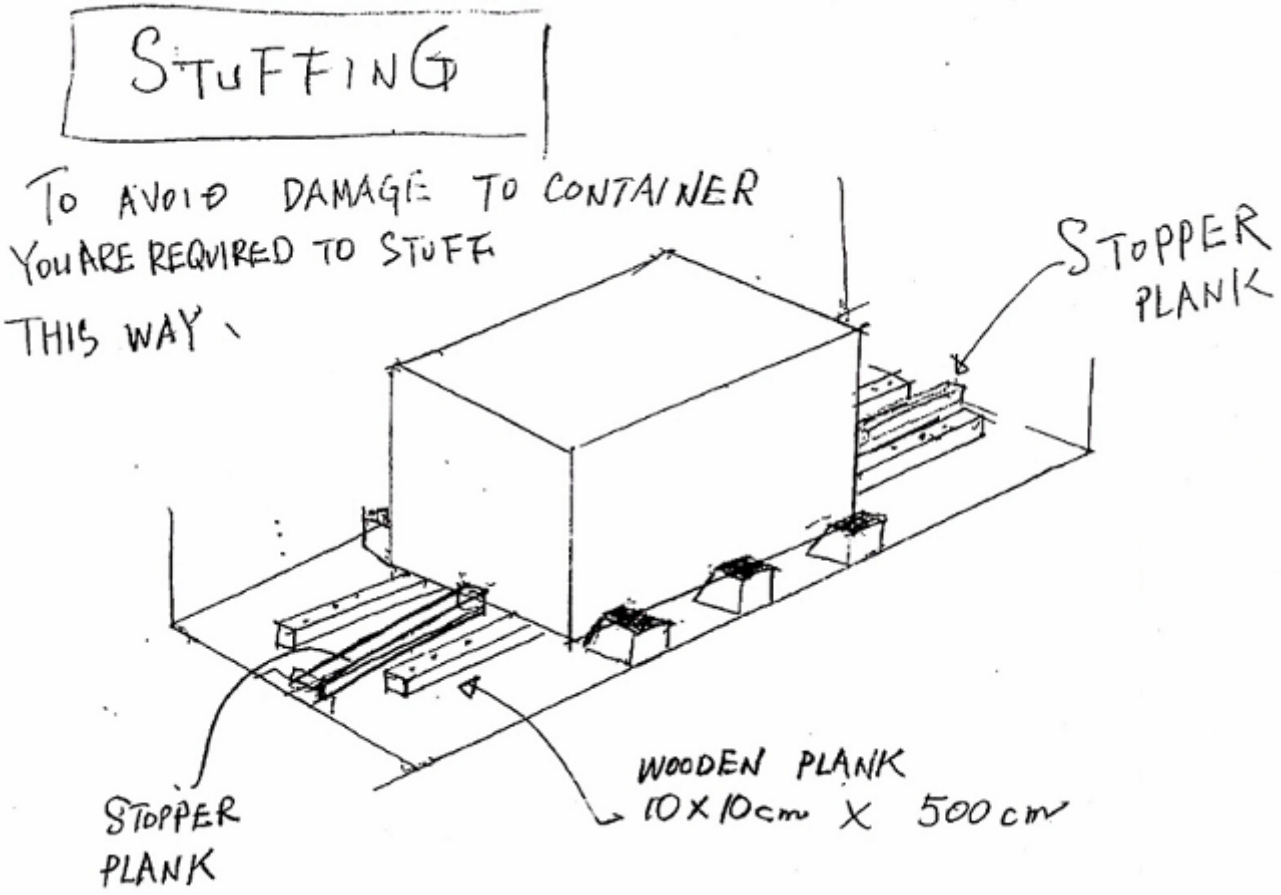
- No protection for side walls
- No protection against movement
- No protection for the floor
- Danger for people handing the container

Un-acceptable

Possible Stuffing Example

- **Stopper timbers (or chokes) must be used on front & back sides and big timbers underneath the block over enough length.**

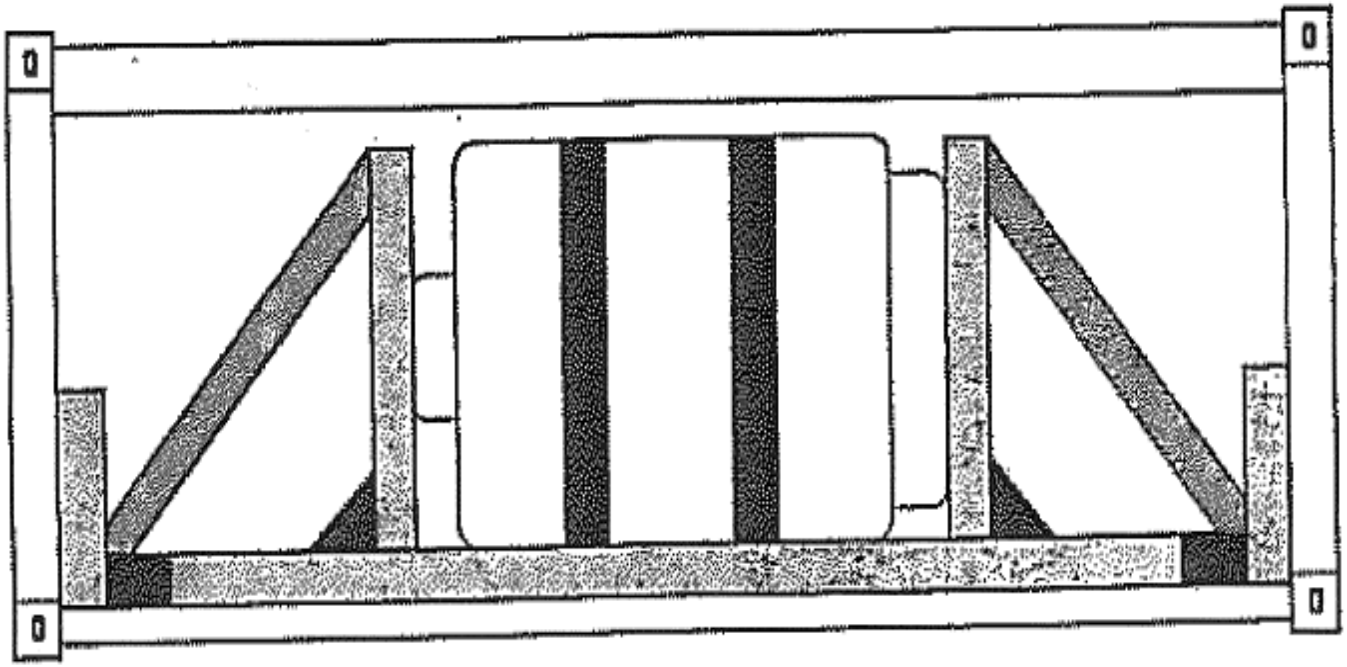
- **Chokes must be used to protect movement of cargo inside the cntr.**



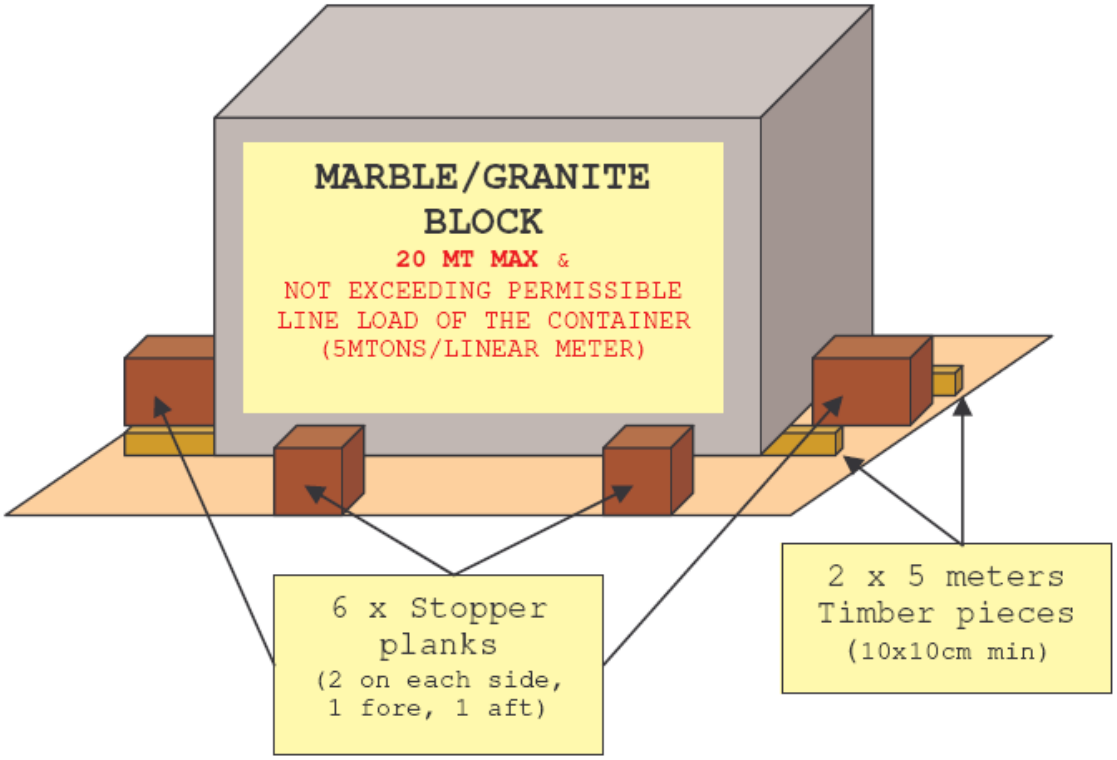
Another example of possible stuffing

The Stone
Is protected
From all sides
As well as the
Bottom.

The weight is
Equally distributed
All over the
container floor



Big block Stuffing example



- WEIGHT DISTRIBUTED ALL OVER CONTAINER'S FLOOR BY USE OF 2 LONGITUDINAL TIMBER PIECES.
- BLOCK(S) NOT IN DIRECT CONTACT WITH SIDE WALLS OF THE CONTAINER (STOPPER PLANKS, PLYWOOD SHEETS).
- HEAVIEST BLOCKS, EXCEEDING 20 MTONS TO BE ARRANGED ON FLAT RACKS CONTAINERS WITH LOOP LASHING, CHAINS AND TURNBUCKLES.
- BLOCK(S) BRACED AND SECURED WITH

Guidelines for stuffing

- 30 tonnes tested containers more than 6 years old to be used.
- Weight on floor max 5 tonnes per linear meter.
- The block MUST not touch the floor (should slid and lay on long timbers).
- Timbers spread underneath the block (see slide 5).

  Example; 1 block of 20T = 4 meter long Timber.
- Center of gravity of cargo should be as close as possible to the centre of the container.

Guidelines for stuffing

- Wedging on all sides on the container.

Recommended wedging: height = 10% minimum as high as the block.

Recommended wedgings = 1 per 0,5 meter.

Example: 1.5 x 2 meters block = 3 wedges (chokes) minimum on each side and 2 wedges minimum on front and back.

- Lashing must also be used in addition to the above.
- MnR office in charge (local or MnR HO) have to be contacted with specs of cargo and lashing+wedging method pictures.

Must and Most Nots

Must Do

> Stopper planks and chokes/wedges

> bottom timber pieces / Legs

Must Not Do

> One block must not be more than 20 tonnes

> The block must not touch the floor or any walls or door

> The Block must not move inside the container.

Letter of indemnity

Letter of Indemnity is a must with for this cargo.