

# GUIDELINES FOR HANDLING AND STORAGE

voestalpine heavy plates

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# SCOPE OF DOCUMENT

This guideline defines requirements for handling and storage of heavy plates and applies to all shippers and carriers which handle or ship plate material on voestalpine's behalf. Deviate requirements can only be fulfilled within a defined range and only in prior agreement with voestalpine.

This guideline does not supersede relevant codes, best practices, standards, contractual documents, or project specific instructions relating to the work to be performed, except where the requirements herein are more stringent and approved by voestalpine.

## HANDLING AND STORAGE GUIDELINES FOR HEAVY PLATES

### HANDLING AT MILL

- » Within the mill, material is always stored in covered areas and on an even hard surface. The stock-keeping-area is equipped with an integrated warehouse-management-system.
- » Plates are stacked without timbers between plates/bundles as only cranes equipped with loading magnets are used for material movement. In general, the weight of each lift has to comply with the maximum rated load of the lifting gear.
- » In case the customer requires a defined number of plates or tonnage within one bundle, this information has to be provided with the official purchase order.
- » For heavy plates, no bundling with steel strapping and no packing is performed generally.
- » During loading of the first means of transport, bundles are separated with appropriate supporting timbers. Furthermore, supporting timbers have to be used as a separator on the ground floor of the means of transportation.
- » In case of shipment from the mill's port, the plates are moved to the quay (covered storage and loading area) with internal wagons. When loading the wagons, the bundles are separated with appropriate supporting timbers.
- » At the mill's port, plates are moved only by cranes with hooks/clamps. Movement of plates with forklifts is prohibited at the mill's facilities.

## LOADING, UNLOADING AND STORAGE OF HEAVY PLATES

- » For handling of heavy plates at the terminal, cranes equipped with load magnets, clamps/hooks or lifting belts are recommended. The use of crowbars or pincer bars is strictly prohibited as well as the use of chains or cables in direct contact with the plate surface/plate edge. The maximum rated load for the lifting gear must be known.

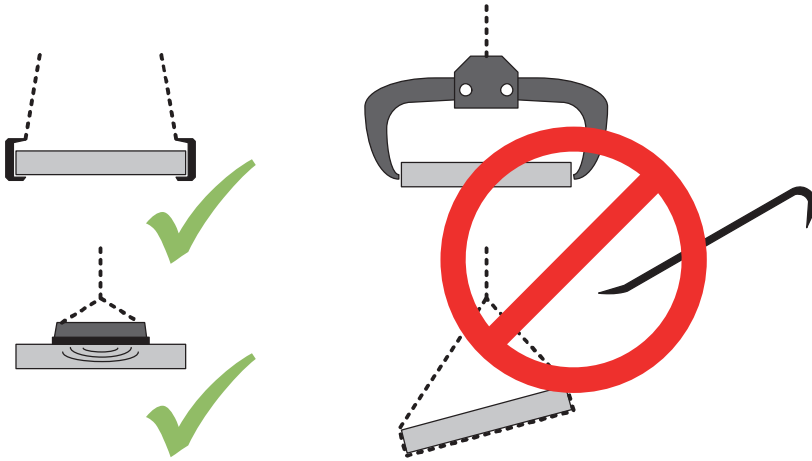


Figure 1: Suitable equipment for handling of heavy plates

- » The use of forklift trucks for handling should be avoided but is possible as long as the whole heavy plate bundle can be picked up. It is prohibited to separate single units with forks.

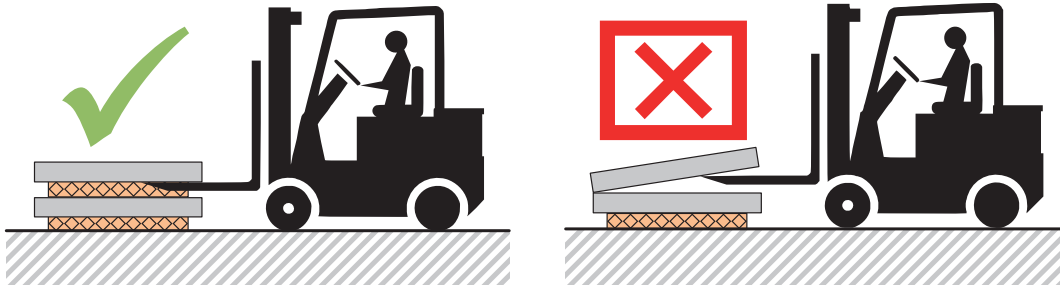


Figure 2: No separation of flat-lying plate bundles within a stack with forklift

- » When storing and loading plate bundles, flat unit-on-unit storage is not recommended. Especially when bundles are handled with forklifts or cranes using clamps/hooks, sufficient clearance between each plate bundle has to be ensured by placing appropriate supporting timbers. Supporting timbers should be placed between each bundle and on the ground floor.

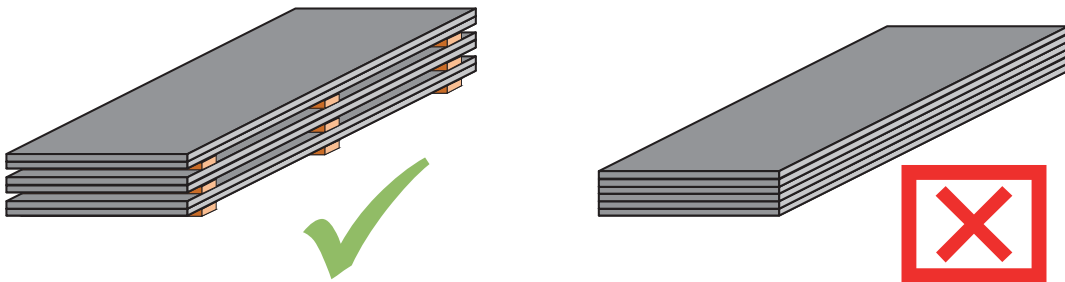


Figure 3: Use of supporting timbers to ensure clearance for loading

- » When supporting timbers are placed between plate bundles, these have to be arranged in exact vertical alignment all the way from the bottom up in order to ensure evenness of the plates.

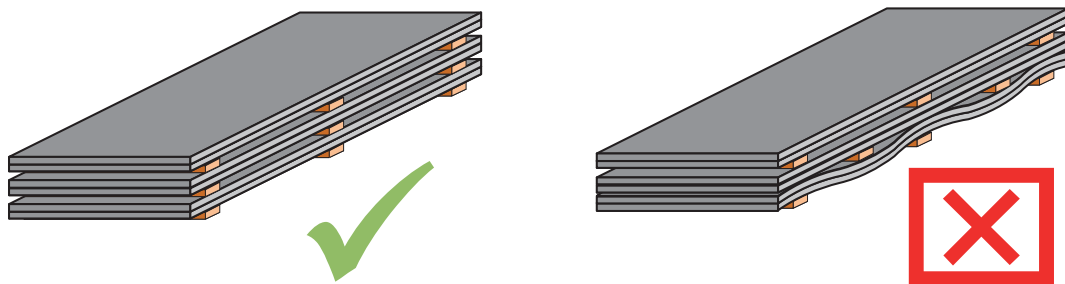


Figure 4: Correct alignment of supporting timbers between plate bundles

- » When supporting timbers are placed between plate bundles, these must be fitted with the wider side against the plate

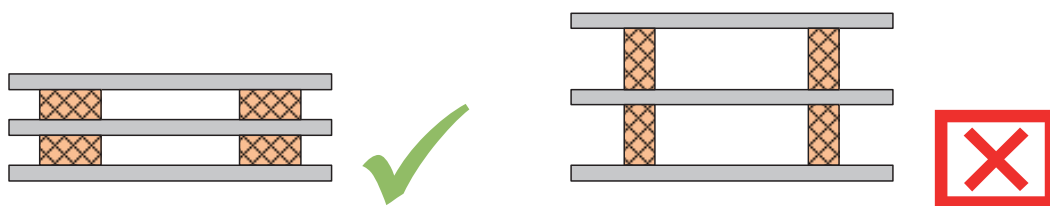


Figure 5: Correct fitting of supporting timbers between plate bundles

- » Supporting timbers must be placed transversally to the plates.  
Recommended distance between timbers is max. 2.000 mm.

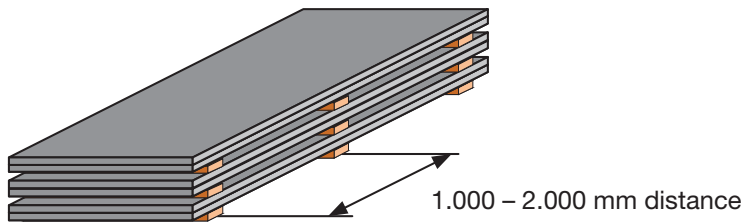


Figure 6: Distance between transversally placed supporting timbers

- » Standardized dimensions of wooden supporting timbers used for the separation of plate bundles:
  - » in case of delivery by barge: 50 x 50 x 500 mm
  - » in case of delivery by truck: 50 x 50 x 500 mm
  - » in case of delivery by railway: 50 x 80 x 500 mm

Deviate requirements can only be fulfilled within a defined range and only in agreement with voestalpine prior to confirmation of the purchase order.

- » Number and dimension of supporting timbers used, result from customer's requirement or voestalpine's standard. If bundles cannot be handled at the terminal with the timbers provided by voestalpine, the terminal shall contact the FOB-agent in order to announce its requirements (e.g. due to the size of forks).

## NON-CONFORMANCE HANDLING

For the unlikely case that non-conformances are determined for arriving material, please consider following guidelines:

- » In case that plate bundles arriving at the terminal are not conform to the dispatch note (e.g. different number of plate bundles, different sizes of units, different data on unit marking), the cargo-forwarding company has to inform LogServ/voestalpine immediately.
- » In case plate bundles arriving at the terminal show any visual damage, following procedure has to be followed by the cargo-forwarding agent:
  1. Contact the LogServ/voestalpine-representative to clarify the extent and nature of the damage.
  2. Before unloading affected materials, ensure damages are properly documented and have been acknowledged by the carrier (truck driver, bargemen or railway representative).

In case of ambiguities regarding the above stated requirements, please contact LogServ/voestalpine for further clarification!

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