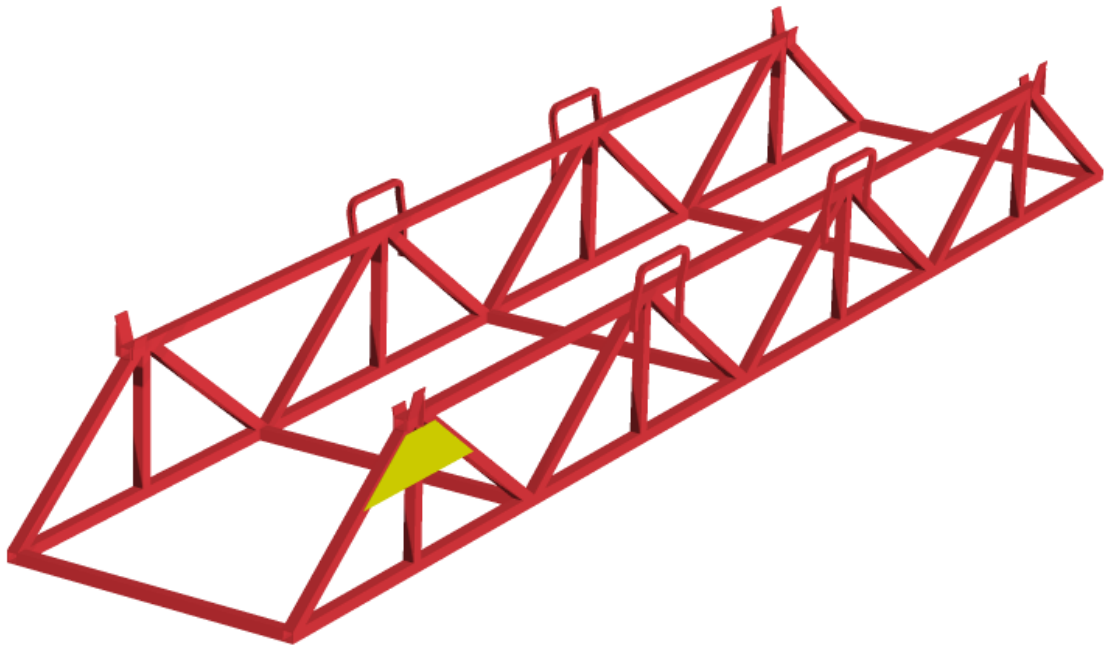


Sapa Transportation Cradle Manual

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Handling of Cradles



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INTRODUCTION

Health, environment and safety are important subjects to us at Sapa and our policy is very clear: our business shall be operated in a safe way, with respect for the environment and for people's health.

To minimize the risk of incorrect handling of Sapa transportation cradles we have developed this Sapa Transportation Cradle Manual. We ask you to observe the below mentioned directions carefully. In that way, together we can contribute to a safe and accident free handling.

1. RESTRICTIONS

The manual applies to the transportation cradle of the "Vetlanda" type.

It is prohibited to use Sapa transportation cradles for deliveries outside Sweden, Denmark, Norway and Finland.

It is also prohibited to use Sapa transportation cradles for deliveries to a third party, without obtaining prior written approval from Sapa.

The cradles may be used only for Sapa's aluminum profiles.

CRADLE TYPE	LENGTH	FRAME HEIGHT
Cradle	4 meters	40 cm
Cradle	6	40
Half Cradle	4	20
Long Cradle	10-12	40

2. SORTING OF DEFECTIVE CRADLES

Every time someone conducts work involving transportation cradles, the cradles shall be inspected, so that damaged or deformed cradles, that can cause personal injury or property damages, are immediately taken out of production.

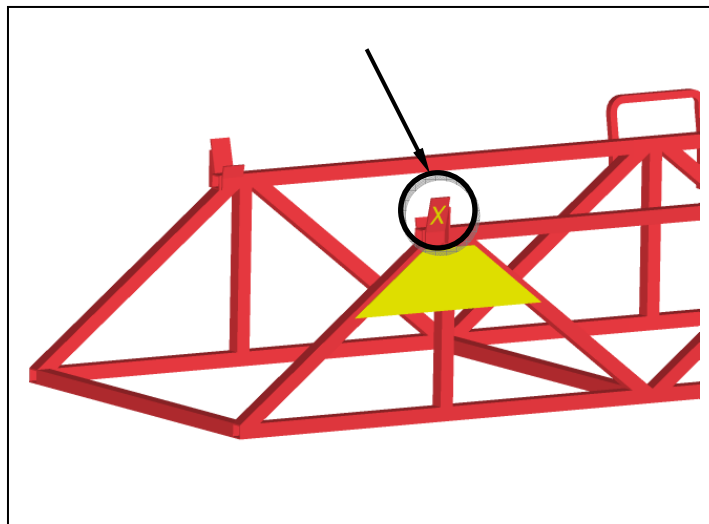
Each person who works with transportation cradles in some way, is responsible for checking the cradles for damages.

Each supervisor is responsible for making sure that the cradles are actually checked and sorted.

Anyone that discovers a defective/damaged cradle is responsible for taking the cradle out of production.

Defective/damaged Sapa transportation cradles shall be marked on both sides with yellow chalk on the guiding device and taken to the gathering place for defective cradles.

Alternatively, Sapa transportation cradles can be marked on both sides with a yellow tape on the guiding device or around the rod next to the guiding device.



Anyone who discovers a defective/damaged cradle which is loaded with profiles, is responsible for:

- if it is a **minor damage**, making sure that the cradle is marked so that the department that receives the cradle can take it out of production after emptying the cradle. The marking shall be made with yellow chalk on the guiding device. Note that the cradle **must be marked on both sides** (alternatively, Sapa transportation cradles can be marked on both sides with yellow tape on the guiding device or around the rod next to the guiding device).
- if it is a **major damage**, immediately contact the supervisor who decides when reloading is necessary before transportation.

Consider that...

... it is better to sort out one cradle too many than too few, in particular with regard to personal safety. A cradle can be repaired if it is taken out of production before the damages becomes too extensive.

Damaged cradles shall be stacked in to one another.

2.1 RETURN OF FOAM PROTECTION

In order to protect sensitive profile surfaces, U-profiles of foam are often used ("foam protection"). See picture below. The foam protection can be used several times and we therefore ask you to return it to Sapa Vetlanda. The foam protection shall be placed in pallets and pallet rims, alternatively in sacks, and returned in connection with return of Sapa transportation cradles.



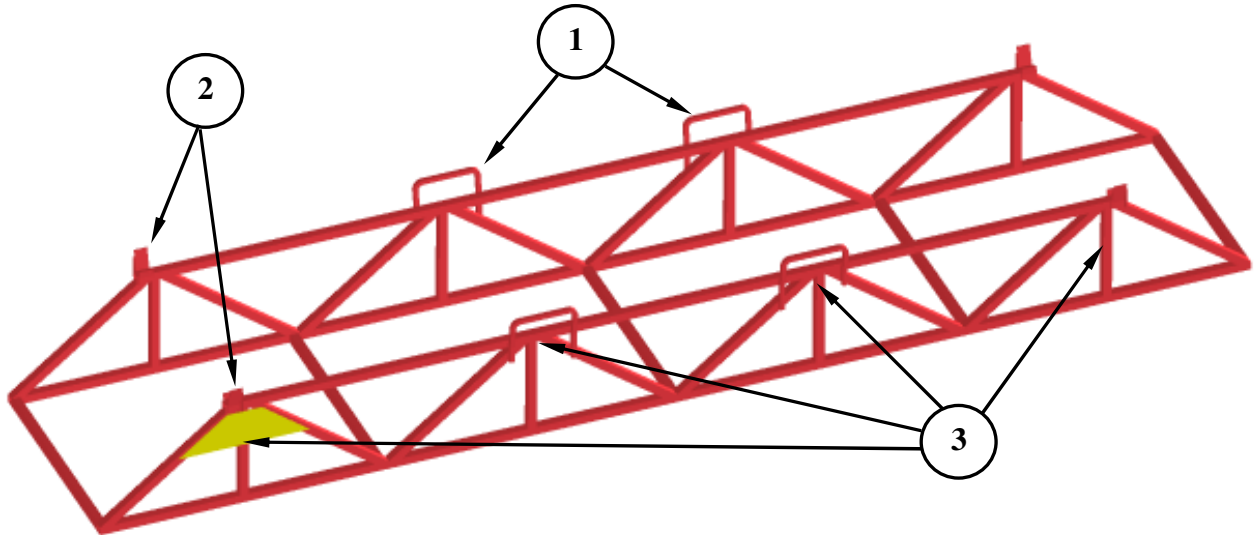
3. CRADLE INSPECTION

Lifting handles (1) must be in place, not be folded or in any other way be deformed.

All **guiding devices** (2), in both ends of the cradles, shall remain intact and shall not be bent so that their function deteriorates.

All **welds** shall be intact.

The **sides** of the cradle may not be folded inwards or outwards so that the stacking function is impaired or so that the handling of cradles in an overhead crane or a loader is obstructed or impossible.



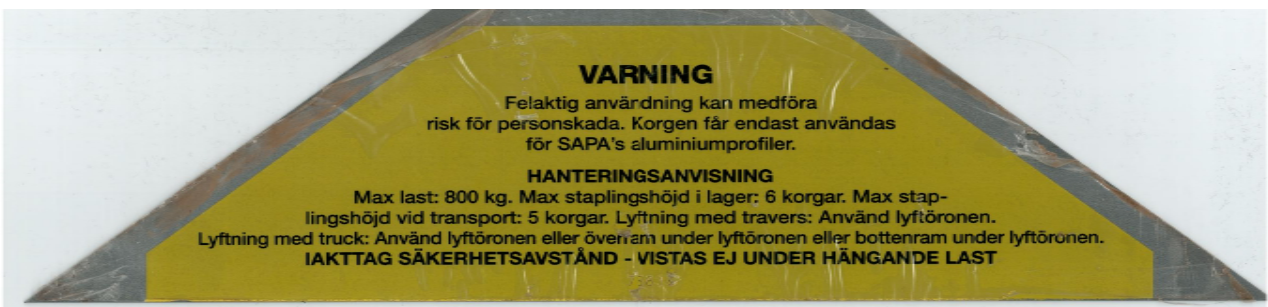
Vertical rods (3) shall be placed under every lifting handle / guiding device.

The cradle may not have **a defect** in shape that makes it unstable when handling and stacking it, or otherwise impairs its function. Defect in shape means that the cradle is curved lengthwise, is twisted or have bent tubes that makes the cradle uneven.

The cradles may not have significant rust or cracks that can reduce the strength of, for example, welds.

Warning sign

The text on the sign shall be readable. If not, the cradle is considered to be defective and must be marked according to the directions in paragraph 2. " SORTING OF DEFECTIVE CRADLES ".



4. GATHERING PLACE FOR DEFECTIVE CRADLES

A well-marked gathering place for defect cradles shall be installed at all factory sites.

The gathering place shall be separate from other storages for cradles to prevent the defective cradles to be confused with the undamaged cradles, and thus avoiding the risk of taking defective cradles in to production by mistake.

Staff shall be informed about where the gathering place is and its purpose.

The sorting of defective cradles to be repaired/destroyed shall be performed regularly.

5. STACKING OF CRADLES

5.1 PERMISSIBLE HEIGHT OF THE STACK OF LOADED CRADLES.

6 cradles in height.....on floor

5 cradles in height..... when transported by truck, tractor and inside factory halls.

4 cradles in height..... when transported by small hand-drawn carts.

Note 1: Two half-cradles counts as one cradle regarding the height of the stack.

Note 2: A stack of empty cradles should be limited to a maximum height of eight cradles.

5.2 PLACEMENT OF THE CRADLE IN STACK

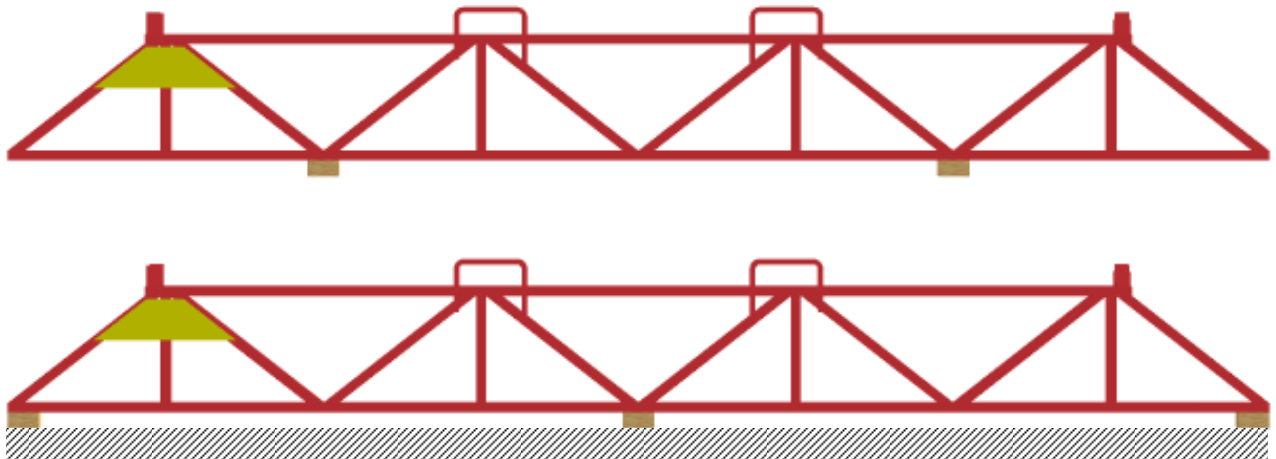
To obtain a stable stack of cradles, the cradles with high weight, long profiles and / or profiles with sharp deflection off the cradle, shall be placed in the bottom of the stack. Cradles with less weight shall be stacked on top of the stack. Observance of this stacking order is particularly important when loading and transporting, and of utmost importance during long distance transports.



5.3 STACKING SUPPORT

Wooden spacers may only be placed between the floor and the cradle. They may not be used as liners between cradles.

When a stack of cradles is placed on wooden blocks / planks litter / pallet to enable a truck lift of the whole stack, the spacers shall be placed as in one of the options below.



6. LOADING AND LIFTING OF LOADED CRADLES

Sapa transportation cradles may only be used for Sapa's aluminum profiles (and only within Scandinavia and Finland).

Maximum load: 800 kg per cradle (the cradle's weight is not included)

A loaded cradle may only be lifted by the handles, the upper barks or over ledgers in the frame, directly above the reinforcements.

Cradle or cradle stack shall never be pushed or dragged over the floor with a truck, unless a load runner is used.

Appropriate load pusher shall be used for lateral movement of loaded cradles on the loading platform. The pressure on the cradle shall be on the lower unit, in the middle, to ensure that the force is evenly distributed. The load pusher should be around 2 meters wide.

When using a forklift or a crane to handle the cradles, a safety distance shall be observed. Staff must never be located under suspended or uplifted load.

Incorrect use may result in risk of personal injury!

7. DRAWING

