

# Manual for transport cradle

## “Sapa-cradle”

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## 1. Introduction

Hydro's profiles can be delivered and handled in special purpose-built transport cradles, called Sapa-cradles.

Sapa-cradle are Hydro's property and the cradles can be rented to other companies after a special agreement is made.

This manual regulates the use and safety regulations for handling these Sapa cradles.

## 2. Cradle types and limitations

This manual applies to "Vetlanda type" transport cradles, see drawing page 11 of the manual.

It is not allowed to use Hydro's transport cradles for deliveries outside Sweden, Norway, Denmark Finland and Lithuania. It is also not allowed to use the transport cradles for further delivery to third parties without Hydro's written approval.

Type	Length	Heigth
Cradle	4 meters	40 cm
Cradle 6m	6 meters	40 cm
Half cradle	4 meters	20 cm
Long cradle	10-12 meters	40 cm

## 3. Disposal of defective cradles

Cradles must be controlled in each operational step. Damaged or deformed cradle that could cause personal injury or material damage should be taken out of production.

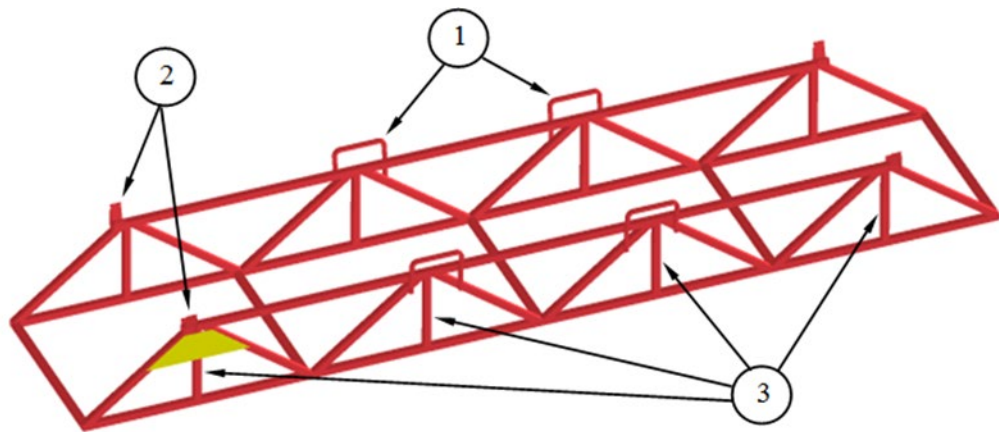
Cradle inspection should be carried out by everyone who comes into contact with cradles. Supervisors are responsible for ensuring that control and sorting are actually carried out.

Anyone who detects a defective / damaged cradle is responsible for removing the cradle from production.

In case of minor damage to the cradle, make sure that the cradle is marked so that the department that receives the cradle can take it out of production when it is emptied. The cradle should be marked with a yellow safety tag on the handlebar or around the bar next to the handlebar, on both long sides. Alternatively, marking can be done with yellow chalk on the guide pin on both long sides.

In case of major damage to the cradle, authorized personnel may decide whether to reload before moving. It is easier to repair a cradle if it is taken out of production before the damage becomes too extensive. Damaged cradles should be stacked together.

#### 4. Cradle inspection/control



Lifting ears (1) should not be missing, folded or otherwise deformed.

All guide pins (2) at both ends of the cradle must be in place. They should not be curved so that their function deteriorates.

All welds must be intact. The cradle sides should not be folded in or out so that the stacking function is impaired or the handling of the cradle on the overhead crane or with cradle loaders is made more difficult or impossible.

Vertical bars (3) must be located under each lifting ear / guide pin.

The cradle should not have defects / damage that make it unstable during handling and stacking or otherwise impair its function. Form errors mean that the cradle is longitudinally curved, twisted or has curved tubes so that the cradle becomes uneven. The cradle should not have strong rust attacks or cracking which affect the strength of, for example, weld joints.

#### Warning sign

The text on the sign must be legible, otherwise the cradle is considered defective and should be marked in accordance with the instructions in Chapter 2.



## 5. Handling of defective cradles

Broken cradles should be removed and not used. A well-marked assembly point for broken cradles should be found at all factory facilities.

The assembly point for broken cradles should be separated from other stored cradles to prevent damaged cradles from being mixed with correctly functioning cradles, and thus risk being taken into production by mistake.

The personnel concerned must be informed of the location and purpose of the gathering place.

Disposal of broken cradles for repair / scrap should be done regularly.

Broken cradles should not be returned to Hydro. There is no cradle deposit / credit for defective cradles.

## 6. Stacking of cradles

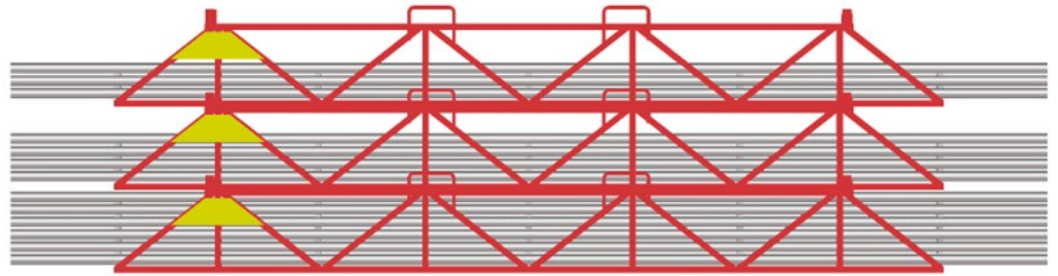
### 6.1 Allowed stacking heights for loaded cradles.

Number of cradles in height	Comments
6	Floor stacking
5	When transported by trailer or by forklift truck in factory halls
4	Transport on manual trolleys

### 6.2 Allowed stacking heights for empty cradles.

Number of cradles in height	Comments
11 (folded together, see chapter 7)	Return freight by trailer
8	Outside
6	On the floor inside. Return freight by trailer. Transport by forklift truck inside or outside.
4	Transport on manual trolleys

### 6.3 Stacking of loaded cradles

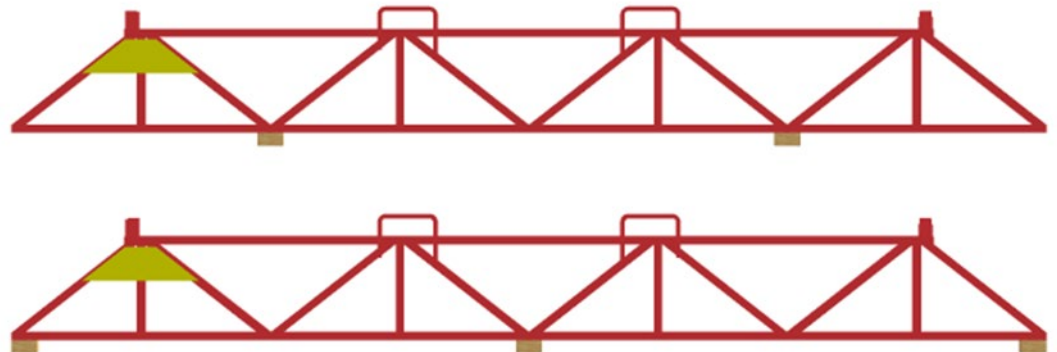


To obtain a stable stack, cradles with high weight, long profiles and / or profiles with heavy deflection outside the cradle should be placed in the bottom of the stack. Cradles with lower weight are stacked on top. This is especially important when loading for transport and extremely important for long distance transport.

Cradles stacked on distance blocks.

Wooden blocks may only be laid between the floor and the cradle. They should not be used as shims inside a stack.

If you place a cradle stack on wooden blocks / pallets to enable truck lift of whole stack, the bases should be placed according to one of the alternatives below.



### 6.4 Lifting and loading of loaded cradle.

Sapa cradles may only be used for Hydro's aluminum profiles and within Sweden, Norway, Denmark Finland and Lithuania.

Max load: 800 kg per cradle.

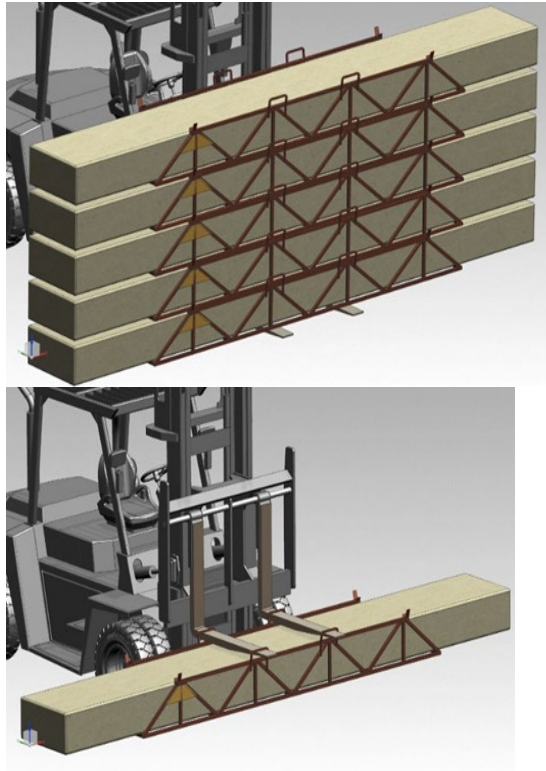
Loaded cradle may only be lifted in the ears, overlays or in the subframe and then directly under the reinforcements.

Cradle or cradle stack may only be moved or towed over the floor with a forklift truck or similar if a slide rail is used.

It is important to use suitable load pushers when laterally moving the load on a flat surface. Pressure on the cradle should be applied to the middle of the lower part so that the force is evenly distributed. The load handler should be about 2 meters wide.

Take into account the safety distances when handling cradles. Personnel must never be under a hanging load. Incorrect use can result in the risk of injury.

## 6.5 Suitable lifting points



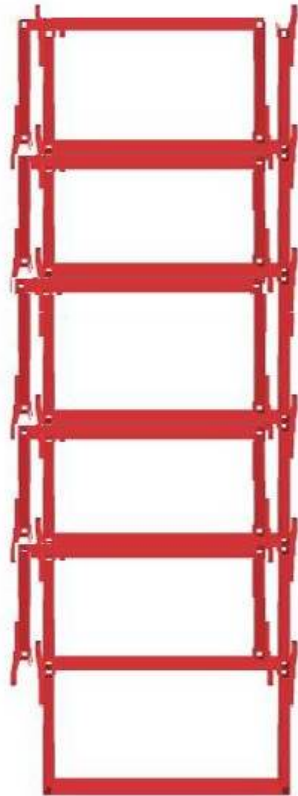
## 7. Handling empty cradles

Empty cradles should be stacked on return to Hydro according to option 1, max. 11 cradles per stack, or option 2.

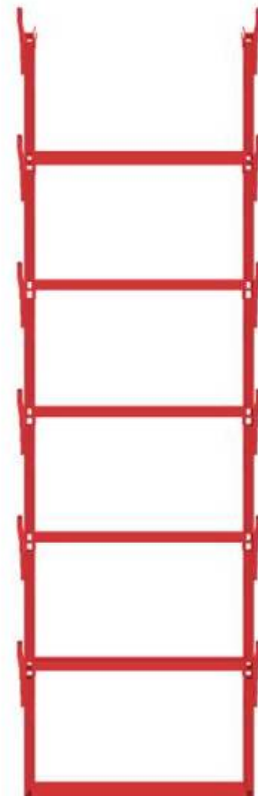
The cradles are to be strapped stack by stack. Tape, cargo sheets, etc. must be removed from the cradle before returning to Hydro.

Note that the yellow warning sign should not be covered.

Option 1.



Option 2.



## 8. Foam profiles

To protect sensitive profile surfaces, U-profiles of Foam, "foam protection", are often used, see image



Foam profiles can be used several times and therefore we ask you to return them to Hydro Vetlanda. They are placed in pallets and collars or alternatively in sacks and returned in conjunction with cradle return.



## 9. **Returning empty cradles and foam profiles**

Return of packaging must be made to Hydro Extrusion Sweden AB to one of the addresses below.

The address is also shown on your delivery note under the header Weight (gross / net) volume marking.

Return site is chosen depending on your geographical distance to either Vetlanda or Finspång.

Address option 1:

Hydro Extrusion Sweden AB  
Central Godsmottagning Produktion  
Aluminiumvägen  
SE-574 38 Vetlanda.

Address option 2:

Hydro Extrusion Sweden AB  
Godsmottagning Produktion  
Myrkärsvägen 1  
SE-612 81 Finspång

### **Return of empty cradles**

Return of empty cradles is taken care of and paid for by the customer.

## 10. **Internal distribution of cradles.**

Cradles for production are ordered by all factories from Vetlanda's goods reception. A permanently changed need for cradles within a production section must be communicated to the supervisor at the goods reception in Vetlanda.

Hydro aims to direct larger return flows of empty cradles directly to the producing factory. This takes into account the current level of production and short transport, in order to reduce costs and environmental impact. Coordinating this activity is the supervisor at the goods reception in Vetlanda.

The supervisor at the goods reception in Vetlanda is responsible for carrying out an inventory of Hydro's cradle holdings.

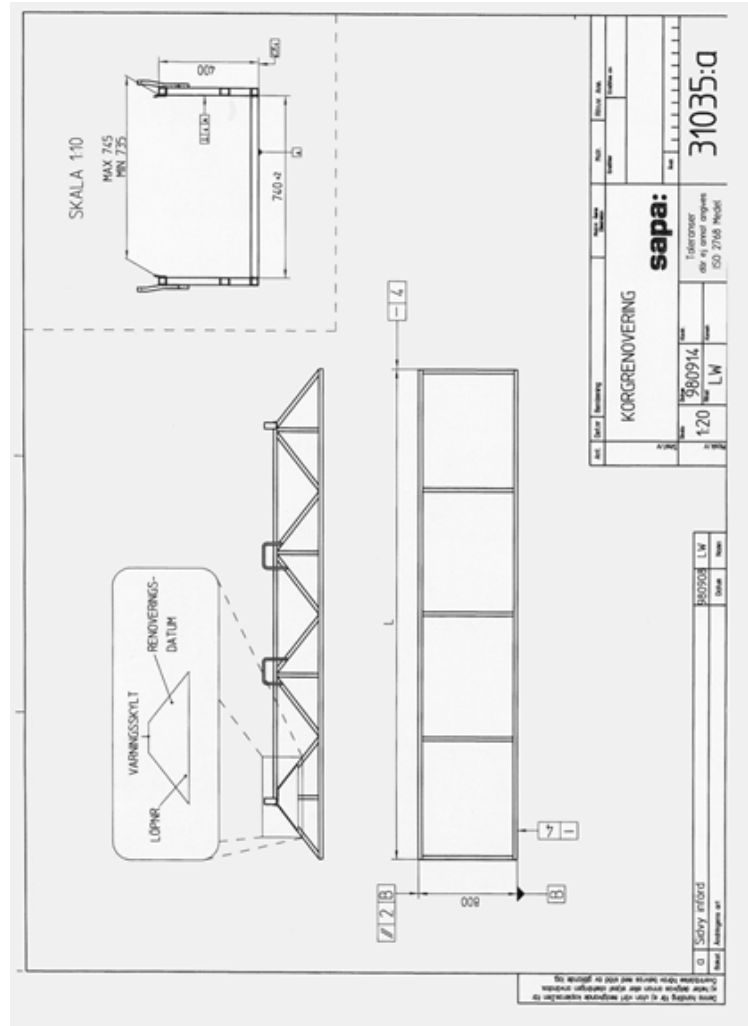
The supervisor at the goods reception in Vetlanda is also responsible for ordering new cradles from Hydro's supplier after approval from the Cradle Manager (technician in the Engineering Department).

## 11. **Distribution of Hydro manual for transport cradles**

The manual can be found in Hydro's Quality Management System and on Hydro's website [www.hydro.com](http://www.hydro.com).

The person responsible for the cradle manual decides which external partners who need to be contacted in case of changes.

Sapa-cradle:



Revision:	Description of change:	Date: