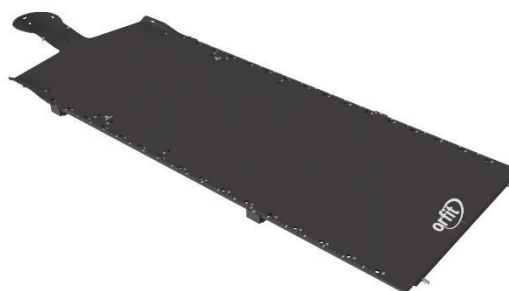


## HP PRO® SOLUTION EXTENSION BASE PLATE WITH PIN INTERFACE – ADULT – LONG VERSION



Article No. : 25000/25

### A. GENERAL PRODUCT INFORMATION

The product referred to in these instructions is a medical device, used for patient positioning and immobilisation in radiation therapy. This low density plate can be used during both the simulation and treatment stage.

This product may only be used in combination with immobilisation masks produced by Orfit. Orfit prohibits the use of unauthorized third-party products in conjunction with its own products.

### B. PRODUCT DESCRIPTION

This carbon fibre BASE PLATE is the basic element of the ORFIT HP PRO® SOLUTION. It is used in combination with special 3 and 5 point HP PRO masks, a cranial stop and a personalized head rest to form a reproducible patient positioning and immobilisation device. Information on these other parts and instructions on how to make the masks can be found in the respective 'instructions for use' and on [www.orfit.com](http://www.orfit.com).

The LONG VERISON OF THE HP PRO EXTENSION BASE PLATE has the required length to treat CNS patients.

### C. PRECAUTIONS BEFORE USE

- This is a fragile product, please handle with care. Always place the base plate on a flat surface. Clear the treatment table of any debris before positioning the base plate.
- Always fix the base plate securely to the treatment couch before positioning a patient. More information on how to fix this base plate to the couch top can be found on our website: [www.orfit.com/en/fixation-devices](http://www.orfit.com/en/fixation-devices).
- When a robotic arm is used to transfer the table onto a stretcher with the base plate attached to it, the base plate should be fully supported at all times. For safety reasons the base plate cannot hang over the table past the

'maximum overhang line' marked on the base plate. Always verify that the base plate is attached safely to the table before performing the transfer.

- The carbon fibre base plate is constructed to be light in weight. When handled roughly, it may get damaged and fibres may come off. When this happens, stop using the base plate to prevent fibres from getting in contact with the patient's or user's skin. Contact your distributor.
- The article number and lot number can be found on the back of the base plate. They are mentioned on the bottom side of the plate in between 2 indexing holes at the edge.
- The maximum patient weight is 180 kg/397 lbs.
- Make sure the patient is never mounting on the base plate by sitting on his or her knees. This might damage the base plate.

### D. STORAGE

Always store the product in a safe place to prevent it from getting damaged. Take care not to damage the edges of the plate when storing it in an upright position. Also pay attention to the couch indexing pins of the base plate when storing it in an upright position. Prevent hard objects from falling onto the plate.

Store the base plate between +10°C (50°F) and 30°C (86°F).

### E. PROPERTIES

#### E.1. Physical Properties

Dimensions (± 0,2 mm):

L 1517 mm x W 540 mm x H 49,4 mm  
L 59.72" x W 21.26" x H 1.94"

Weight (± 0,05 kg): 3.34 kg / 7.36 lbs

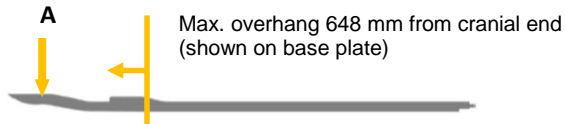
The thin head shell is made from carbon fibre with epoxy. Starting from the neck, the thickness

gradually increases to 28 mm using a foam core covered with carbon fibre and epoxy. Edges are epoxy resin. Other inserts are made from hardwood/epoxy.

Metal is used at the caudal end for couch indexing.

### E.2. Mechanical Properties

Max. allowed load at point A (lowest point of head shell): 28 kg / 62 lbs



Always take into account the maximum weight loads!

Sag with 10 kg (point A) is 2,3 mm (± 0,2 mm)

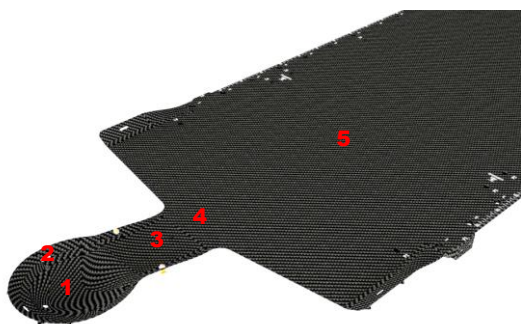
Sag with 28 kg (point A) is 6,55 mm (± 0,2 mm)

(tested under laboratory conditions of 21°C)

### E.3. Dosimetric Properties

The attenuation and skin build-up depend on the location on the base plate. The values given below are for photon therapy.

Location	Attenuation at 6 MV (± 0.15 %)	mm H2O equivalence (± 0.1 mm)
1	0.98 %	2.2 mm
2 (with profile)	1.52 %	3.3 mm
3	0.81 %	2.9 mm
4	0.45 %	2.9 mm
5	1.07 %	3.5 mm

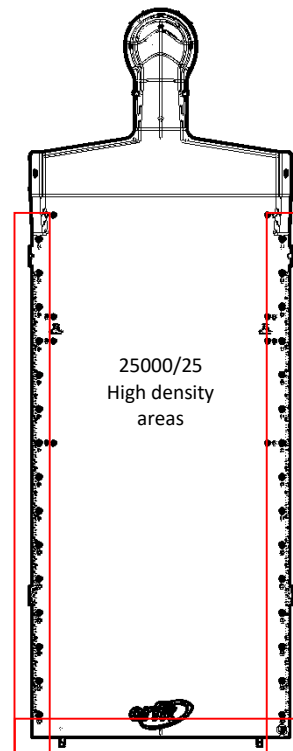


The water equivalence measured with protons is the following:

Location	mm H2O equivalence (± 0.1 mm)
1	2.64 mm
3	4.10 mm
5	3.01 mm

The attenuation factor for high energy proton beams will be negligible. It is so small that it cannot be measured.

The Base Plate has areas where higher density (± 1.4 g/mm<sup>3</sup>) materials have been used. The following image shows these areas inside the red lines. Attenuation factors at 6 MV of the non-metal inserts range from 8 to 10 %.



Note: Use these numbers as a guidance only. Perform the measurements again in your department to verify these results.

### F. ACCESSORIES FOR THE BASE PLATE

Various accessories can be used in combination with the HP PRO base plate, such as:

- 25000/6: Cranial Back Stop
- 25000/7: Head Support Indexing Plate
- 25000/17/A and 25000/17/B: Hand Holds

Information on these accessories can be found in the respective 'instructions for use' and on [www.orfit.com](http://www.orfit.com).

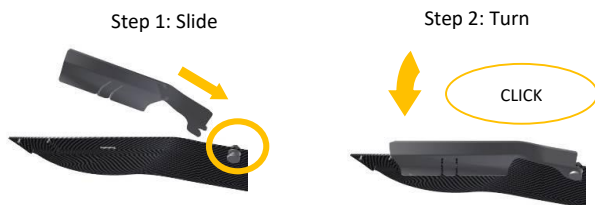
### G. HP PRO THERMOPLASTIC MASKS

Various thermoplastic masks are available in a 3-points and 5-points version to immobilise head and neck patients.

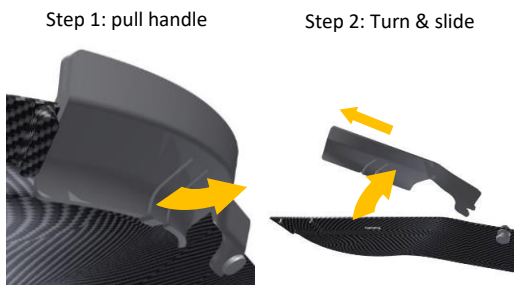
To attach the lateral head profiles to the base plate you have to work in a few steps. First slide the caudal side of the profile over the indexing pin and

secondly swivel the profile inwards until it clicks over the base plate.

Attaching a lateral profile to the base plate:



Removing a lateral profile from the base plate:



The cranial head profile and the shoulder profiles simply click onto the base plate.

If the patient has medium to long hair it is helpful to add a hair cover. This will automatically clear the areas where the mask profiles must be attached. It provides more time to mould the mask and prevents hair getting stuck in between the mask profile connection.

Different shapes and sizes are available both in Efficast and Nanor. The profiles are made from Polycarbonate (PC).

## H. MAINTENANCE AND WASTE MANAGEMENT

This product can be cleaned and disinfected by means of soapy water or an isopropanol based disinfectant, applied with a soft cloth. If unsure about the cleaning fluid, do not use. **Never use aerosol sprays, corrosive cleaning agents, solvents or abrasive detergents.**

Periodic checks of the product should be done to insure the parts are not worn and require repair or replacement. **Do not attempt to make repairs yourself.** Contact your distributor if there are any questions or concerns.

The product can be disposed of with household waste.

Periodic checks of the following parts is extremely important in order to safeguard a good fixation of the mask to the base plate:

- The holes where the mask profiles click into.
- The guidance ribs to position the mask profiles.
- The pin to attach the inferior part of the profile to the base plate.
- The profile of the mask.

## I. ADDITIONAL INFORMATION

For additional information such as distributor contact information, product brochures, Safety Data Sheets and regulatory information, please visit our website [www.orfit.com](http://www.orfit.com).

### Note:

The instructions were written in accordance with the European Directive 93/42/EEC for Medical Devices. It is prohibited to make alterations to this text without prior approval from Orfit Industries. EFFICAST® and HP PRO® are registered trademarks of ORFIT Industries.



**ORFIT INDUSTRIES**  
Vosveld 9A | B-2110 Wijnegem | Belgium  
T (+32) (0)3 326 20 26  
welcome@orfit.com

[www.orfit.com](http://www.orfit.com)



Ref. No. 50168  
VERSION 4  
LAST UPDATE: 31/01/2019  
REVISION DATE: 31/01/2021