



Ergonomics approved quality label

Matador Tub Holder (65-90 litres)



vhp human performance b.v.
Huijgensstraat 13a
2515 BD The Hague / The Netherlands
T +31 (0)70 - 38 92 010
F +31 (0)70 - 38 92 413
info@vhphp.nl
www.vhphp.nl

IBAN NL27ABNA0486072894
BIC ABNANL2A
KVK Haaglanden nr. 27259365
BTW NL8121.45.471.B01



Date
08-06-2021

Authors
drs. Kees Peereboom
drs. Pim van Dorst

Client
Matador bv

vhp project number
000901

1 Introduction

This report contains the assessment for a vhp occupational health and safety and ergonomics quality mark for the Matador Tub holder (M-Tub Holder-XL, article number 12211).

During the assessment of the vhp occupational health and safety and ergonomics quality mark, the functional and usage aspects of the product are assessed in terms of compliance with the guidelines for physical load from the Dutch Physical load handbook¹. It was also checked whether, when applied, the product complies with Dutch standards and regulations on physical load, including lifting, carrying and pushing and pulling.

2 Product: Matador Tub Holder

The Matador Tub holder is a mobile tool on which a Tub (65 to 90 litres) can be placed. The Tub holder is mainly used in the construction industry, e.g. for (plaster) block builders. The Tub Holder enables craftsmen to work with mortar/glue/cement at an comfortable working height. In addition, the Tub Holder reduces the physical strain when the Tub is moved; instead of carrying a (full) Tub, the Tub Holder can be used to move the Tub by moving the Tub Holder with Tub to the place where work has to be done. The Tub Holder consists of a collapsible frame under which swivel wheels have been placed. Tubs of 10 to 30 litres can be placed on the Tub Holder, depending on the version. The platform on which the Tub rests is positioned at a height of 52 cm. The Tub Holder is easy to fold and can therefore be transported without using much space.

3 Features Matador Tub Holder

The Matador Tub holder has the following ergonomic features:

- The Tub Holder ensures reduced physical strain during construction work as the Tub being used does not need to be lifted to move it. With the Tub Holder, it is possible to move the Tub at the same time.
- When using the Tub Holder, there is less need to bend down low. This ensures that the back strain is lower (35%) than when working in the traditional manner (i.e. Tub on the ground). See also Appendix 1.
- Because the wheels of the Tub holder have been placed so that there is a large support surface, the Tub will not tip over.
- The swivel wheels have a diameter of 90 mm; as a result, the Tub Holder can also be moved over uneven surfaces and small obstacles.
- Because of the adjustability of the frame, both round and oval Tubs can be placed in the same Tub holder.
- Because of the foldability of the frame, it can be carried easily and it takes little space in the loading area of the bus.

¹ Dutch Handbook of Physical Workload, editors K.J. Peereboom Eur.Erg. and N.C.H. de Langen, seventh revised edition, 2016. The standards of Mital et al (1997) are used for pushing and pulling.

4 Ergonomics approved quality label



The Matador Tub Holder (65-90 litre) is approved and carries the vhp occupational health and safety and ergonomics label.

The Matador Tub holder ensures that the physical load of plasterers, gluers and bricklayers is reduced. When using the Tub holder, there is less need to bend down and it is possible to move the Tub on wheels instead of lifting or carrying it.

It is important to avoid lifting weights of more than 25 kg at all times when using the Matador Tub holder.

vhp recommends that Matador equips a new version of the Tub holder with a locking brake system for one of the wheels.

5 Appendixes

5.1 Back strain when using a Tub holder

The biomechanical 3DSSPP Michigan Model (see figure 1) was used to determine the load on the lower back (between L4 and L5) when bending over to, for example, remove glue from a Tub. This was based on an average Dutch man (age group 20-60 years; height 182 cm; weight 83 kg) (DINED 2004). It is also assumed that the Tub is filled with 10 cm of glue from the bottom. This analysis (see figures 1 and 2) shows that the back load is reduced by 899 N, which results in an improvement of more than 31%.



Figure 1 Analysing the traditional way of working with 3DSSPP. Back load is 2894 N, this is without lifting.



Figure 2. 3DSSPP-model analysing working with the Tub holder. Back load is 1871 N, this is without lifting.