

# Enhancing the use of anthropometric data

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Johan Molenbroek<sup>1</sup> & Renate de Bruin<sup>1,2</sup>

<sup>1</sup>Faculty Industrial Design Engineering  
Delft University of Technology

<sup>2</sup>Erin, Ergonomics Consultancy, Nijmegen  
The Netherlands

## Abstract

Anthropometric knowledge is most frequently used by designers and product evaluators in the form of one-dimensional data to verify whether the product dimension fits the human dimension. There are several ways in which anthropometric data are used:

- Ego design: your own body dimensions are used as a guideline;
- Average design: the body dimensions of the average person are the guideline;
- Design for P5: the body dimensions of the smallest person are the guideline;
- Design for P95: the body dimensions of the largest person are the guideline;
- Design for P5-P95: the body dimensions of the smallest and largest person are the guideline. This type is used most commonly and means that excluding 10% of the population is acceptable.
- Design for All: This implies a continuous effort throughout the design process to exclude as few persons as possible.

In this paper, two tools are discussed to make this anthropometric world easier to understand. The tool 'Ellipse' demonstrates how easy it is to analyse a fit problem with multiple 2D views. The tool 'Persona' visualises the geometrical problems in the human-product-interaction with living persons or with digital models.

## Introduction

Many ergonomists are not aware of the fact that the anthropometry they use is mostly 1D. This does not mean it is of less value, but this paper explains why it is important to realise this fact and shows how information can be extended to 2D and 3D or maybe even 4D information, which may be more appropriate and valuable for daily use in a design or evaluator's environment.

There are eight design types, most of which were described earlier in Dutch literature by Molenbroek (1994) and Dirken (1997-2004).

### *1. Design like Procrustus*

The name is taken from Greek Mythology; here the user is fitted to the product.

In D. de Waard, K.A. Brookhuis, R. van Egmond, and Th. Boersema (Eds.) (2005), *Human Factors in Design, Safety, and Management* (pp. 289 - 297). Maastricht, the Netherlands: Shaker Publishing.