

Solutions

2.1 B Choose data for the target population and task. Clearance often needs a larger-user percentile; reach may need a smaller-user percentile. A single mean dimension cannot satisfy every design constraint.

2.2 target load=use force×selected factor= $30\times3=90\text{N}$.

2.3 False. A specification is not a list of vague wishes such as nice or strong. User testing should evaluate measurable requirements and reveal conflicting needs.

2.4 ergonomics. ergonomics means Designing the fit between people, tasks and products.

3.1 Even 17 N exceeds 15 N, so this evidence fails the criterion. Revise and repeat force measurements with representative users and conditions. Passing one criterion does not certify every need.