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# Ladder Design Evaluation

Based on the [ladder design brainstorm](#), we might eventually arrive at the following [weighted decision matrix](#) to summarise the evaluation of different design concepts.

		CONCEPTS					
		A (reference ladder)		DF (swing lock)		E (multipose)	
Criteria	Weight	Rating	Score	Rating	Score	Rating	Score
Functionality	0.10	0	0	0	0	1	0.1
Durability	0.10	0	0	1	0.1	1	0.1
Quality	0.13	0	0	0	0	2	0.26
Affordability	0.15	0	0	0	0.0	-1	-0.15
Fabricability	0.05	0	0	2	0.1	1	0.05
Usability	0.15	0	0	0	0.0	-1	-0.15
Maintainability	0.01	0	0	0	0.0	0	0.0
Safety	0.18	0	0	1	0.18	0	0.0
Marketability	0.13	0	0	0	0.0	0	0.0
<b>TOTAL</b>			0.0		0.38		0.21
<b>RANK</b>			3		1		2
<b>CONTINUE?</b>			no		yes		no

The ladder concepts are labeled using both a generic name (e.g. “A”) and a descriptive phrase that uniquely identifies it with respect to other concepts. The concept labeled “DF” arose from a combination of two older concepts that had been labeled “D” and “F” (see Concept modification).

Also note that concept A is marked as the reference concept; this is a concept used to denote the existing product on the market that the new concept is supposed to improve upon. The reference concept might also be a product made by a competing firm, and that is to be outperformed by your new product. Note that the reference product in this case is marked with ratings of zero (i.e. average performance) on every criterion. While it is not unreasonable to think of the reference as being an average product, it may be that it also has some particularly good or bad aspects to it. This will vary from case to case, and it is the job of the designers to evaluate these factors, based on expertise, experience, and information (from, say, focus groups, consumer reports, user testimonials, etc).

## analysis

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