

Principle

One of the principles of sustainable packaging is that it is 'fit-for-purpose' which means it should be designed to meet market and consumer needs, including accessibility. Easy-to-open and functional packaging is a major consumer concern as well as a health and safety issue. One of the sustainability design strategies employed by designers in their review of new or existing packaging needs to be 'design for consumer accessibility'.

Basic Design Strategy

For packaging to be truly accessible it must be easy to open, have legible labelling, and not be compromised in terms of safety or quality. Companies that don't address these factors are likely to suffer commercial consequences.

Steps involved in such design include the following:

1. Identifying staff members who are able to review packaging accessibility.
2. Staff members should be able to understand consumer tasks associated with purchasing, opening, using, and disposing the products. This could include a human factors or consumer specialist.
3. Document the process and that all accessibility issues have been reasonable considered.
4. Addressing issues in a cost-effective manner including potential increase in sales due to more accessible design.
5. Testing the results in the Sensory Kitchen

Key design questions in the review process

1. Have you considered the demographic of the consumer who will use the product including older adults, children and consumers with arthritis? Are there limiting factors?
2. What functional abilities (vision, physical dexterity, strength, and range of motion) are required for each of the tasks involved in using the packaging?
3. Can alternative designs be used that minimize or eliminate the need for opening tools such as a knife or scissors?
4. Does the labelling ensure that consumers are aware of how to open the package and the contents? Are directions and warnings legible for intended, unintended and potential users?
5. Can alternative designs eliminate the need for unusual strength, dexterity or range of motion in opening?
6. Have you performed accessibility testing to verify the results?
7. To what extent have complaints been received about packaging and are there systems in place to record the data?

Considerations that will help improve packaging

- (1) Minimise the rotational force requirement for breaking the initial seal on screw top containers. Rotational forces greater than 10lb-in/1.8 kilos-cm often exceed the functional capabilities of the frail, elderly and those living with arthritis.
- (2) Minimise the linear force requirement for opening packages. Try to avoid exceeding 5lb/2.3 kilos of linear force.
- (3) Avoid packaging that requires extensive use of a tool, such as scissors which often cause injury, to access the product.
- (4) Minimize safety seal removal force. Use either an easy to puncture seal that does not require the use of a tool. The force required pulling or puncturing the safety seal should not exceed 5.0 pounds/2.3 kilos.
- (5) When using a foil seal pull tab, increase the coefficient of friction by coating the tab so that extensive pinching is not required and increasing the size of the tab to accommodate a pinch.
- (6) Place directions for opening the packaging directly on the packaging in a clear, easy to comprehend format. A warning should contain a signal word to attract the attention of the user.
- (7) To increase effectiveness and salience, warnings should be presented as bullets in an outline format.
- (8) Screw top caps should fit in the hand. Their removal should require no more than ¼ turn for each angular movement, and no more than two angular movements should be required. Use steep rather than gradual threading to prevent over tightening of the cap.
- (9) Require a grip span of no more than 71 mm for products that are intended to be grasped with one hand.
- (10) Require no more than 3.3 pounds/1.5 kilos to push in a push tab.
- (11) Minimize the forces required to open and close flip-top caps. The forces required to flip the cap open and closed should not exceed 5.0 pounds/2.3 kilos.

Common accessibility issues	Simple strategies to avoid and address these issues
Cans with pull tabs that are impossibly hard to open	Can be improved by deepening the pre-cut around the edge to make it easier to pull the tab up
Packages using a tear notch which you can't find	Can be improved by indicating clearly and accurately where the notch actually is
Tear strips on cardboard packaging that are hard to tear or don't tear properly	Can be improved by ensuring that the tab is big enough to be held between the fingers, that the notches on the tear strip are aligned, and that the strip gives way easily
Zip tracks on re-sealable packaging that won't run smoothly or re-seal properly	Can be improved by using the right zip for the right package, and using a plastic nubbin that is big enough to grip
Heat sealed strips or press & seal strips that have to be pulled apart but have nowhere to grip	Can be improved by leaving enough room for fingers to grip the two edges, both for opening and closing
Jars with rounded plastic lids and no serration – Smooth surface makes it difficult for a jar opener to grip	Can be improved by flattening the lids and incorporating serration for grip
Foil seals which are very tightly sealed with no obvious opening point	Can be improved by having an opening tab - one that is big enough to grip
Screw-tops on jars that need super-human strength to open	Can be improved by balancing how much vacuum suction is needed against how easy the product is to open
Legibility : Instructions that are so miniscule that you need reading glasses and/or a magnifying glass	Reading instructions is imperative for safety reasons and for product efficacy. Legibility is not solely dependent on type size but it is a major factor. The recommended minimum type size is 10 point. Simple sans serif typefaces such as Arial or Helvetica are recommended for maximum readability. Good contrast contributes to legibility; the text should be printed with the highest possible contrast. Lower case text is easier to read, and using text consisting entirely of capital letters should be avoided.
Containers for toxic substances (including medications)	Child safety and anti-tampering is of paramount importance. Can be improved by using intelligent opening systems such as lining up dots or arrows instead of squeeze in, push down and twist.
Caps that require too much rotational force to break the seal	Can be improved by reducing the amount of force required to break the seal and/or providing design features that assist in gripping the container.

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