# Child Resistant Packaging & Ease of Opening for Elderly People

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Budapest February 19th 2025

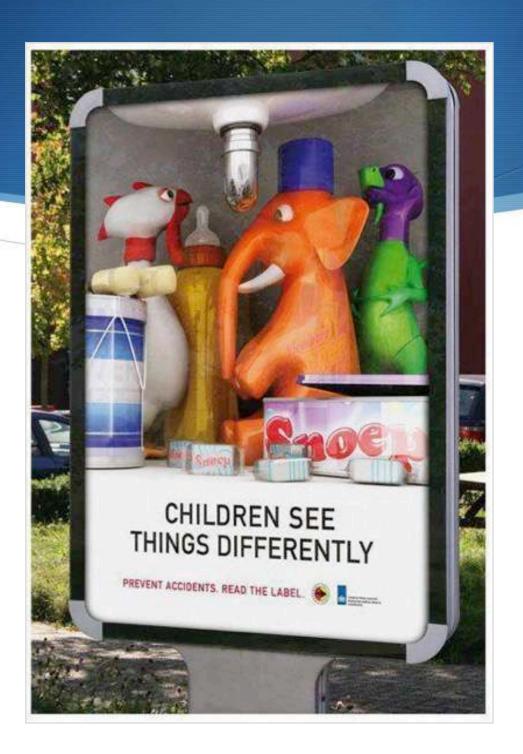














#### The Child & Adult Test

ISO 8317:2015, EN ISO 14375:2023 & 16CFR 1700.20



#### What is a standard?

A standard is not a set of rules but a set of concepts from which we create suitable rules.

When a standard is cited in regulation then that standard will take on the force of the regulation.



# BS EN ISO 13127:2012 Mechanical test methods for reclosable child resistant packaging systems

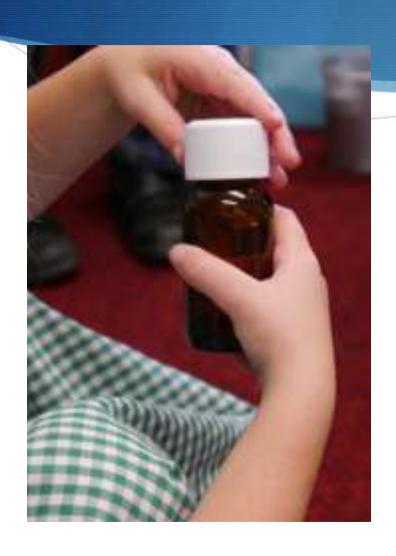
A mechanical testing standard for testing continued child resistance and adult openability in the case of a pack that has previously conformed to a behavioral research standard, BS EN ISO 8317:2015, and has been subjected to minor changes.

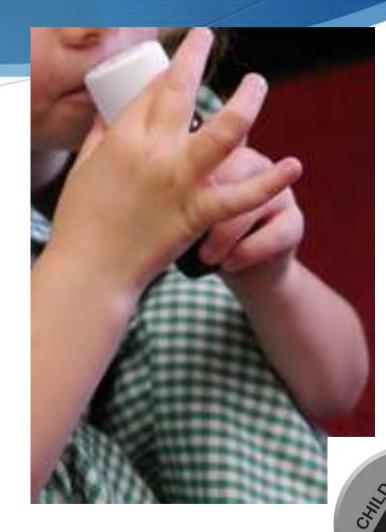
#### **Normative Annexes**

- Annex A Torque Release Test
- ♦ Annex B Squeeze Test
- ◆ Annex C Non-Squeeze Torque Test
- Annex D Press Down & Turn Engagement Test
- Annex E Push and Turn Test
- Annex F Reverse Ratchet Torque Test
- ♦ Annex G Disassembly Test
- ♦ Annex H Rotational Torque Test
- ♦ Annex I Push-Off Force
- ♦ Annex J Application Force



# The Child test ISO 8317:2015





#### The Child Test. EN ISO 14375:2023 & 16CFR1700.20.





# The Effects of Ageing



You become wary and unsure of your environment and your medicines (source: AGE UK)





Between 65 & 75 you lose 50% of your manual dexterity

(source: Yoxall et all, Uni Sheffield)



#### The Adult Test Panel spread 50 – 70yrs Acceptance level 90%



**Normal Vision** 



Myopia



**Macular Degeneration** 



**Cataracts** 



Diabetic Retinopathy



# Standards for design criteria and testing

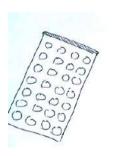


- BS ISO 17480:2012 Ease of Opening
- BS ISO 22015:2019 Handling & Manipulation
- ISO 19809 Information & Marking
- BS ISO 21067:2016 Vocabulary



### What is 17480 used for?









Things to be considered...

- Context of use
- Opening strength
- Dexterity
- Cognition



# Examples of opening types



### How we test

#### Annex D - Consumer Panel Test for ease of Opening





#### Consumer Panel Test

Effectiveness – Efficiency - Satisfaction



Extremely dissatisfied



Dissatisfied



Neither satisfied or dissatisfied



Satisfied



Extremely satisfied

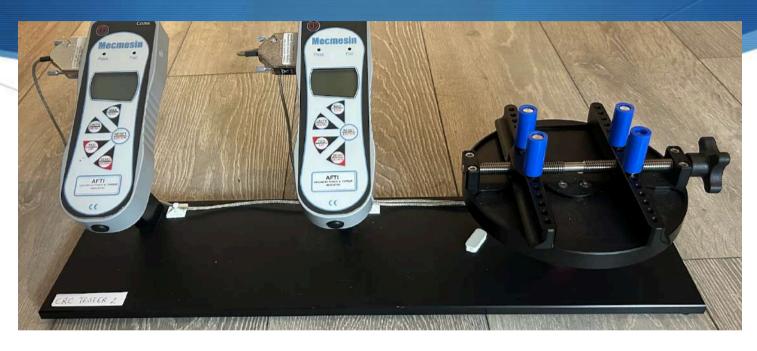


### Sequential Test Method Panel age spread 65 – 80yrs

Number of panellists	Number of successes recorded	Number of failures recorded	Confidence Intervals (%)
20	20	0	85 to 100
40	38	2	82 to 99
60	56	4	83 to 97
80	75	5	85 to 97
100	94	6	87 to 97



## Mechanical Evaluation







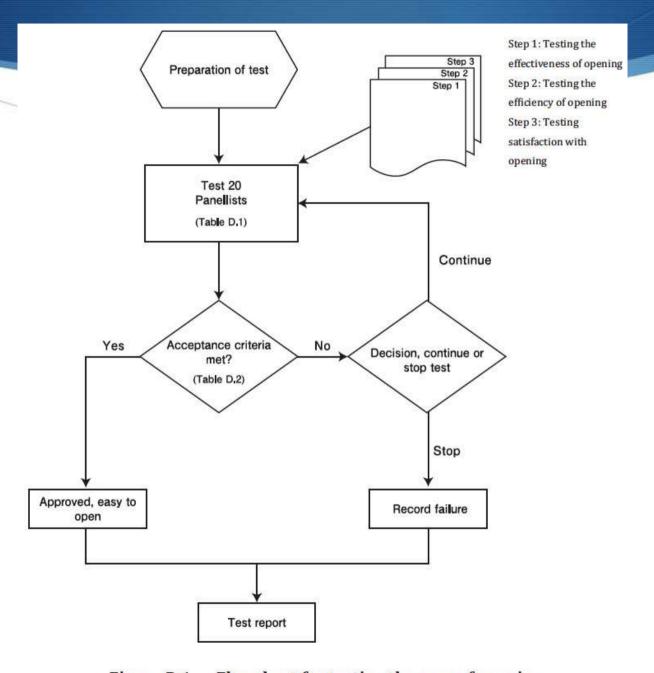


Figure D.1 — Flowchart for testing the ease of opening



#### Designers checklist

# Have the requirements of this standard been met?

- Context
- Information Design
- Handling of packages:
  - 1.Gripping
  - 2. Opening
  - 3. Emptying and Dosing



#### What is 22015:2019 used for?





# Things to consider... ISO 22015 Annex A

#### Consumer variables strength anthropometric strength manipulative manipulative manipulate characteristics characteristics. characteristics data characteristics data data data anthropometric available available avnilable endurance. storage place closing devices neans of available transport disposal devices available manipulative opening data data disposing/ obtaining storing gripping transporting opening emptying reclosing destroying/ information recycling size of text colour sime shape material shape contrast weight built - in opening slace type of product size device lighting type of weight. built - in opening "shrink - ability" typeof product weight position device product shape stability. type of product return package storage time damage information closing opening position inclination storage climate shape combustible content instruction instructions Packaging variables

Figure A.1 — Packages variables and consumer variables in the life cycle of packaging



#### What is 19809 used for?









#### Things to consider...

### Types of disabilities for Human Functions

- Vision
- Hearing
- Touch
- Physical & Cognitive functions

#### <u>Dimensions of Tactile Markings</u>

- Symbols & Letters
  - Diameter
  - Height
  - Width

#### **Designers Checklist**

Does the packaging fulfill the requirements of the standard^



# What is 21067:2016 used for?



#### Packaging — Vocabulary

Part 1: General terms

Example: Packaging noun? Packaging verb?



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