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Design and Development of Large Collapsible PET Water Cooler Bottles

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Abstract:

The vast majority of 15-litre water cooler bottles produced in the world today are made of blow moulded polycarbonate (PC) plastic and are returnable / refillable. This paper presents the design and development of a collapsible, recyclable 15-litre blow moulded water cooler bottle made of PET plastic to replace the traditional refillable type polycarbonate bottle. The innovative bottle design geometry allows it to be easily crushed after use, and also offers several advantages in terms of light weight, stability and environmental amiability. The paper presents the detailed process of design, analysis and optimisation using the finite element analysis software considering structural stability and crushing behaviour under various orientations and loading conditions

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