

PACKAGE DEVELOPMENT (РОЗВИТОК УПАКОВКИ)

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Package design and development are often thought of as an integral part of the new product development process. Alternatively, development of a package (or component) can be a separate process, but must be linked closely with the product to be packaged. Package design starts with the identification of all the requirements: structural design, marketing, shelf life, quality assurance, logistics, legal, regulatory, graphic design, end-use, environmental, etc. The design criteria, performance, completion time targets, resources, and cost constraints need to be established and agreed upon. Package design processes often employ rapid prototyping, computer-aided design, computer-aided manufacturing and document automation.

An example of how package design is affected by other factors is its relationship to logistics. When the distribution system includes individual shipments by a small parcel carrier, the sorting, handling, and mixed stacking make severe demands on the strength and protective ability of the transport package. If the logistics system consists of uniform palletized unit loads, the structural design of the package can be designed to meet those specific needs, such as vertical stacking for a longer time frame. A package designed for one mode of shipment may not be suited to another.

With some types of products, the design process involves detailed regulatory requirements for the packaging. For example, any package components that may contact foods are designated food contact materials. Toxicologists and food scientists need to verify that such packaging materials are allowed by applicable regulations. Packaging engineers need to verify that the completed package will keep the product safe for its intended shelf life with normal usage. Packaging processes, labeling, distribution, and sale need to be validated to assure that they comply with regulations that have the well being of the consumer in mind.

Package design may take place within a company or with various degrees of external packaging engineering: independent contractors, consultants, vendor evaluations, independent laboratories, contract packagers, total outsourcing, etc. Some sort of formal project planning and project management methodology is required for all but the simplest package design and development programs.