

Foreword

This compilation is sponsored by ASTM Committee D10 on Packaging and its Subcommittee D10.21 on Shipping Containers and Systems – Application of Performance Test Methods. This publication contains test methods, specifications, practices, and guides for the evaluation and selection of packaging materials and complete packages, based on their physical properties and performance, and in their proper application. Twelve new standards have been added; they apply to single parcel testing, hazardous packaging testing, wood packaging, crates, plastic packaging and disposal of boxes.

The major source for the standards in this compilation is Volume 15.10 of the *Annual Book of ASTM Standards*. This volume contains standards on Paper, Packaging and Flexible Barrier Materials.

The standards contained within this compilation are not limited to those developed by Committee D10. Included are standards from ASTM Committees C16 on Thermal Insulation, D06 on Paper and Paper Products, D20 on Plastics and F02 on Flexible Barrier Packaging.

This compilation is intended to be a technical resource for students in universities that offer a packaging curriculum; for packaging engineers and designers of packaging for industry and government; and for manufacturers of packaging materials and processes. This publication also provides the applicable standards, documents, and references for ASTM D4169, Standard Practice for Performance Testing of Shipping Containers and Systems.

Practice D4169 provides a uniform basis for evaluating in a laboratory the ability of shipping units to withstand the distribution environment, using established test methods and test levels representative of those occurring in an actual distribution. This is accomplished by subjecting the shipping units to a sequence of hazard elements encountered in the various relevant distribution cycles, and evaluating their performance.

Performance standards are more likely to permit and encourage innovative and efficient design, and are less likely to restrain competitive product development than standards that specify materials or design methods. The concept of package performance testing is being rapidly adopted by industry with reports of large savings in packaging and shipping costs.

Committee D10

ASTM Committee D10 on Packaging is one of the many technical, standards-writing committees within ASTM International. The scope of the committee is the promotion of knowledge in and the development of standards for packaging, including terminology, practices, test methods, specifications, guides and classifications (including dimensions). This work specifically includes: 1) defining materials and processes that consider both item and consumer impact; the result being a package and packaged product that are acceptable for delivery, 2) generating closely related shipping systems design criteria, 3) developing materials handling standards related to distribution, including measurement of the packaging environment, 4) assessing the suitability of packaging related standards through round-robin laboratory evaluations, quantitative testing and instrumentation applications, and, 5) establishing standards on reuse, recycling and disposal of materials related to packaging. Efforts involving tests on materials where basic research is addressed within other committees shall be closely coordinated with those relevant ASTM committees. In the process of standards development, recognition shall be made of related national and international standards with the encouragement of full participation in those activities.

The committee was established in 1914 and has developed 144 standards.

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