



# GS-16

## GREEN SEAL™ STANDARD FOR REUSABLE BAGS

**EDITION 2.1  
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THE MARK OF ENVIRONMENTAL RESPONSIBILITY

## GREEN SEAL

Green Seal is a non-profit organization whose mission is to use science-based programs to empower consumers, purchasers, and companies to create a more sustainable world. Green Seal sets leadership standards that aim to reduce, to the extent technologically and economically feasible, the environmental, health, and social impacts throughout the life-cycle of products, services, and companies. The standards may be used for conformity assessment, purchaser specifications, and public education.

Green Seal offers certification of products, services, and companies in conformance with its standards. For additional information on Green Seal or any of its programs, contact:

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## FOREWORD

**Edition.** This version is Edition 2.1 from July 13, 2013 and replaces the Second Edition from September 30, 2011. This revision includes substantive changes.

**General.** The final issued standard was developed in an open and transparent process with stakeholder input that included producers, users, and general interests.

The requirements in the standard are based on an assessment of the environmental, health, or social impacts associated with the products, services, or organizations covered in the scope of the standard. These requirements are subject to revision, and generally cover aspects above and beyond regulatory compliance. This standard neither modifies nor supersedes laws and regulations. Any conformity assessment to this standard requires compliance with all applicable laws and regulations for the manufacturing and marketing of the products.

Provisions for safety have not been included in this standard, since they are supervised by regulatory agencies. Adequate safeguards for personnel and property should be employed for all stages of production, and for all tests that involve safety considerations.

Products, services, or organizations that are substantially similar to those covered by this standard in terms of function and life cycle considerations may be evaluated against the intent of the requirements of this standard, accounting for relevant differences between the intended scope of the Standard and the actual product, service, or organization to be evaluated.

This standard may not anticipate a feature of the product that may significantly, and undesirably, increase its impact on the environment, health, or society. In such a situation, Green Seal will ordinarily amend a standard to account for the unanticipated environmental, health, or societal impacts.

Normative references (e.g., other standards) in this standard intend to refer to the most recent edition of the normative reference. Test methods may be required for product evaluation. Unless explicitly stated that a specified method is the only acceptable one, the intent of the standard is that an equivalent test method may be accepted at Green Seal's sole discretion.

Certification to this standard shall be awarded only by Green Seal, or, with Green Seal's explicit written permission, by a third-party certification program conducting on-site audits.

**Disclaimer of Liability.** Green Seal, as the developer of this standard, shall not incur any obligations or liability for any loss or damages, including, without limitation, indirect, consequential, special, or incidental damages, arising out of or in connection with the interpretation or adoption of, reliance upon, or any other use of this Standard by any party. Green Seal makes no express or implied warranty of merchantability or fitness for a particular purpose, nor any other express or implied warranty with respect to this Standard.

## ACRONYMS AND ABBREVIATIONS

**AATCC.** American Association of Textile Chemists and Colorists.

**ASTM.** ASTM International, a standard setting organization formerly known as the American Society for Testing and Materials

**BTU.** British Thermal Unit.

**CFR.** Code of Federal Regulations.

**CAN/CGSB.** Government of Canada, Canadian General Standards Board.

**EPA.** United States Environmental Protection Agency.

**GOTS.** Global Organic Textile Standard.

**ISO.** International Organization for Standardization.

**ppm.** Parts Per Million.

**USDA.** United States Department of Agriculture.

## GREEN SEAL STANDARD FOR REUSABLE BAGS, GS-16

### 1.0 SCOPE

This standard establishes environmental, health, and social requirements for reusable carrier or carryout bags that are intended and designed for hang-carrying (e.g., hand- or shoulder-carrying) a variety of goods or commodities. The standard includes replacement of single-use bags such as, but not limited to, grocery, retail or shopping bags, tote bags, produce and lunch bags, and reusable dry-cleaning bags. The standard also includes common reusable bags such as, but not limited to, backpacks, duffel bags, handbags or purses, bank and security bags, diaper bags, postal bags, as well as garment and laundry bags. The standard does not include any bags specifically designed for food-contact such as sandwich or snack bags or any bag intended or anticipated to be disposed after single-use such as trash can liners or bags intended for collecting compostable materials. The standard excludes bags made primarily (70% or more) of leather or other material derived from animal skin. The standard excludes rigid cases or bags with structural items like wheels. See Appendix 1 for an example list of *products* included in this standard.

Words and phrases described in the standard that appear in *italics* have a corresponding definition located in the definition section of the standard, Annex A.

### 2.0 PRODUCT-SPECIFIC PERFORMANCE REQUIREMENTS

**2.1 Reinforcement of Hand and Shoulder Straps.** The hand and shoulder straps or intended handle shall be *reinforced*. For *products* that are closed by a closure such as a zipper, the zipper area shall be *reinforced* or designed such that the zipper and/or zipper slider can be replaced.

**2.2 Minimum Number of Uses.** The *product* shall demonstrate that it can be used<sup>1</sup> at least 125 times without *failure* carrying a *load* over a distance of 53 meters (175 feet), as determined with appropriate vertical lift and static hold tests using an objective, scientifically-validated method conducted under controlled and reproducible conditions. Test methodology and results shall be documented in sufficient detail and provided to the certification program. Annex B provides an example method for vertical lift and static hold testing.

**2.3 Colorfastness to Wet/Dry Crocking.** The *product* shall have *colorfastness* as demonstrated with at least a level 2 or 3 for wet rubbing and at least level 4 for dry crocking using an appropriate *crocking method*.

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<sup>1</sup> “Use” here refers to how the bag is commonly treated through the duration of a trip from the starting point to the final ending point (including any intermediary pauses). This usually requires multiple lifting and lowering cycles along with a distance covered over time. For example, a shopping bag use commonly includes four lifting and lowering cycles covered over a distance over time.

**2.4 Washability.** The *product* shall be either *hand washable* or *machine washable*, to effectively clean the *product*, at least 5 times without *failure*.

### 3.0 PRODUCT-SPECIFIC SUSTAINABILITY REQUIREMENTS

**3.1 Materials.** The *product* material, except for closure devices (e.g., zippers, snaps) and accessories (e.g., clips), shall be one of the following, or a combination thereof:

- *Certified-organic material*
- State of the art levels of *recovered material* and *post-consumer material*
- *Source-reduced*

**3.1.1 Polyvinyl Chloride.** The *product* shall not include polyvinyl chloride material.

### 3.2 Heavy Metal Restrictions.

**3.2.1 Product Heavy Metal Limits.** The *product* shall be tested for lead, mercury, cadmium, and hexavalent chromium, in the elemental form or compounds. The sum of these metals shall not exceed 100 parts per million (ppm) by weight (0.01%); an exception is allowed for *products* that would not exceed this maximum level but for the addition of *recovered materials*.

**3.2.1.1 Product Lead Limits.** Each part of the *product* shall be tested for lead and any part of the *product* shall not exceed 100 ppm of lead by weight. *Inaccessible product parts* may be exempt from meeting this requirement.

**3.2.2 Paint and Surface Coating Lead Limits.** The manufacturer shall provide documentation that each of the *paint and surface coatings* used on the *product* meet the lead limits as outlined in the Consumer Products Safety Commission regulations section 1303 (also known as 16 Code of Federal Regulations (CFR) 1303).

**3.2.3 Products with Play Value.** If the *product* is designed or intended for children 12 years of age or younger and has *play value* the *product* shall also meet the “Maximum Soluble Migrated Element in ppm (mg/kg) Toy Material” levels in ASTM International (ASTM) F963.

**3.3 End-of-Life Management.** The *product* shall be *recyclable* or accepted in a *take-back program*. Acceptable *take-back programs* shall be sponsored by the original product manufacturer or other third-party, beyond municipal programs, and shall be free of cost to the users. *Take-back programs* may include limited or other warranty programs for *products*.

**3.4 Production and Processing.** The *product* shall be certified under Global Organic Textile Standard (GOTS) or the Oeko-Tex 100 standard, or equivalent, or the manufacturer shall provide attestation that the following have not been intentionally added to the *product*, but for the addition of *recovered material*:

- Bisphenol A
- Colors or dyes that are *carcinogens*
- Chlorinated or brominated flame retardants
- Formaldehyde
- Heavy metals, including lead, mercury, cadmium, hexavalent chromium and antimony in the elemental form or compounds
- Phthalates
- Polyvinyl chloride or chlorinated material
- Perfluorinated compounds

#### 4.0 MANUFACTURING SUSTAINABILITY REQUIREMENTS

**4.1 Good Manufacturing Practices.** *Good manufacturing practices* shall be followed and implemented including, but not limited to, practices for the building and facility, equipment, personnel, raw materials, production, laboratory, labeling, records, and complaints.

**4.2 Energy, Water, Air, and Waste.** The following information shall be reported for the manufacturing processes included in the converting of the raw materials into the finished *product* (excluding the production of raw materials and *package* – it is a gate-to-gate report) on an annual basis or when any changes are made to the processes, with alternate reporting units acceptable upon approval by the certifying body:

Report	Units
Energy	millions of British thermal unit (BTU)/ton of product
Water	gallons/ton of product
Air Emissions	regulated air pollutant tons/ton of product
Solid Waste	dry ton/ton of product

**4.3 Distribution.** To the extent feasible, the distance and mode of transportation of raw materials (including *packaging*) and finished *products* shall be documented<sup>2</sup>.

**4.4 Social Responsibility.** Documentation shall be provided that *product* production meets the following social responsibility requirements:

<sup>2</sup> It is expected that this includes at least the mode of transportation of the product from the manufacturing facility.



**4.4.1 Freedom of Association and Collective Bargaining.** Workers shall have the right to join or form trade unions of their own choosing and their right to bargain collectively shall be recognized and respected. An exception shall be made for inmate workers.

**4.4.2 Freedom of Labor.** There shall not be forced or bonded labor or use of *child labor*.

**4.4.3 Freedom from Discrimination.** There shall not be discrimination in terms of race, color, sex, religion, age, disability, gender, marital status, sexual orientation, union membership, political opinion, national extraction or social origin such that it affects the opportunity or treatment in employment and there shall be no support or tolerance of corporal punishment, physical or verbal coercion, sexual or other harassment, intimidation or exploitation.

**4.4.4 Occupational Health and Safety.** A safe and hygienic workplace environment shall be provided with access to potable water. Adequate steps shall be taken to minimize the hazards of the workplace and workers shall receive health and safety training to prevent accidents and injury.

**4.4.5 Conditions of Employment.** Workers shall work under fair conditions of employment. Wages, working hours and overtime shall meet at a minimum the national legal or industry benchmark standard and regular employment shall be provided.

## 5.0 PACKAGING SUSTAINABILITY REQUIREMENTS

**5.1 Reduction in Packaging.** The *product* shall not be individually *packaged* or have any disposable *packaging*, excluding shipping *packaging* and temporary point-of sale devices.

**5.1.1 Temporary Point-Of-Sale Devices.** Temporary point-of-sale devices such as price tags, labels, and stickers applied by the manufacturer shall have a surface area of no more than 2% of the total surface area of the *product*.

## 6.0 CERTIFICATION AND LABELING REQUIREMENTS

**6.1 Labeling of Product.** The *product* shall include the following labeling requirements printed directly on the *product* or on a label or tag *permanently affixed* to the *product*, or combination thereof:

- The name and contact information of the manufacturer or distributor
- The location (country) of where the *product* was manufactured

- The name of the *product* material(s)<sup>3</sup>, generally following 16 CFR 303 (regardless of whether or not the *product* is legally required to under the regulation). This shall include the amount of *post-consumer* or *certified-organic material* used, if applicable
- Statement that the *product* is intended for reuse, such as, but not limited to, “Please reuse this bag”
- Instructions on how to clean the *product*
- Instructions for *recycling* or the *take-back program* of the *product*, including separate instructions for the insert, liner, closure devices, or accessories if applicable.

**6.2 Natural and Biobased Claims.** Only the following *natural* and *biobased*, or related, claims are allowed when the *product* meets the following criteria:

- “100 percent Natural”, “All Natural”, “100 percent Biobased”, or “All Biobased” shall only contain *natural* or *biobased* materials, respectively, excluding water, and with no petroleum, silicone, or *synthetic materials*.
- “Natural” or “Biobased” *products* shall contain 95% *natural, naturally-derived, or biobased* materials, respectively, excluding water, and with no petroleum, silicone, or *synthetic materials*.
- Claims on specific *product* materials being “natural” or “biobased” may be permitted if it is a *natural* or *biobased* material.

**6.3 Antimicrobial Claims.** The *product* shall not make any claims for *antimicrobial* protection.

**6.4 Certification Mark.** The Green Seal® Certification Mark may appear on the product, packaging, secondary documents, and promotional materials, only in conjunction with the certified product. Use of the Mark must be in accordance with *Rules Governing the Use of the Green Seal Certification Mark*<sup>4</sup>.

The Green Seal Certification Mark shall not be used in conjunction with any modifying terms, phrases, or graphic images that might mislead consumers as to the extent or nature of the certification.

Green Seal must review all uses of the Certification Mark prior to printing or publishing.

**6.5 Use With Other Claims.** The Green Seal Certification Mark shall not appear in conjunction with any human health or environmental claims, unless verified and approved in writing by Green Seal.

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<sup>3</sup> For many textile products this is already a legal requirement such as outlined in the Rules and Regulations under the Textile Fiber Products Identification Act 16 CFR Part 303.

<sup>4</sup> [www.greenseal.org/TrademarkGuidelines](http://www.greenseal.org/TrademarkGuidelines)

**6.6 Statement of Basis for Certification.** Wherever the Green Seal Certification Mark appears, it shall be accompanied by a description of the basis for certification. The description shall be in a location, style, and typeface that are easily readable.

The description shall read as follows, unless an alternate version is approved in writing by Green Seal:

This product meets Green Seal™ Standard GS-16 based on durability, washability, use of [organic OR recycled OR minimized]<sup>5</sup> material, and protective limits on PVC and heavy metals content. Greenseal.org.

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<sup>5</sup> The specific type of material shall be listed.

## ANNEX A - DEFINITIONS (Normative)

Note: the defined terms are italicized throughout the standard.

**Antimicrobial.** Disinfect, sanitize, reduce, or mitigate growth or development of *microorganisms* and protect inanimate objects, industrial processes or systems, surfaces, water, or other chemical substances from contamination, fouling, or deterioration caused by bacteria, viruses, fungi, protozoa, algae, or slime.

**Biobased.** The content of a *product* that is from biological products or renewable materials, forestry, or agricultural materials (including plant, animal, and marine materials).

**Capacity.** The maximum amount the *product* can carry in liters. This is typically determined by measuring sawdust or other granular or powdered material (density 0.3 g/cm<sup>3</sup>) in a graduated container and transfer to the *product*, reporting the volume as the *product's* capacity. Alternatively, fill the *product* with sawdust or other granular or powdered material to full capacity and transfer to graduated container to report the full capacity of the *product*.

**Carcinogen.** A substance listed as a known, probable, reasonably anticipated, or possible human carcinogen by the International Agency for Research on Cancer Groups 1, 2A, and 2B), National Toxicology Agency (Groups 1 and 2), U.S. Environmental Protection Agency (EPA) Integrated Risk Information System (weight-of-evidence classifications A, B1, B2, C, carcinogenic, known/likely human carcinogen, likely to be carcinogenic to humans, and suggestive evidence of carcinogenicity or carcinogen potential), by the Occupational Safety and Health Administration (as carcinogens under 29 CFR 1910.1003(a)(1)), or under the Globally Harmonized System for Classification and Labeling of Chemicals (hazard categories 1 (H350, may cause cancer) and 2 (H351, suspected of causing cancer)).

**Child Labor.** The minimum age for admission to employment as outlined in the Convention Concerning Minimum Age for Admission to Employment such as, but limited to, a minimum age not less than 15 or the age of completion of compulsory schooling in the country of production, whichever is older, and for work that is likely to jeopardize health, safety, and morals of young persons the minimum age not less than 18.

**Certified-Organic Material.** Material certified as organic (by meeting the U.S. Department of Agriculture (USDA) organic standards) by a USDA-accredited certifying agent or programs determined to be equivalent by or have recognition agreements with the USDA National Organic Program. For the purpose of this standard, certification by any International Federation of Organic Agricultural Movements-accredited or internationally recognized certifier, including certification under GOTS would be considered certified-organic materials.

**Colorfastness.** Color from the dyes or the raw material does not bleed when exposed to water or moisture or rubbing (crocking).

**Crocking Method.** An appropriate means of testing crocking such as one of the following methods:

- International Organization for Standardization (ISO) 105 X12-2001 Textiles – Tests for Color Fastness – Part X12: Color Fastness to Rubbing
- American Association of Textile Chemists and Colorists (AATCC) Method 8-2007 Colorfastness to Crocking: AATCC Crockmeter Method
- AATCC Method 116-2005 Colorfastness to Crocking: Rotary Vertical Crockmeter Method
- Government of Canada, Canadian General Standards Board (CAN/CGSB) 4.2 Textile Test Methods No 22-2004 Colourfastness to Rubbing (Croocking).

**Failure.** In the performance test, any breaking or tearing of the handles or seals, tearing of the seams, or catastrophic results such as holes where the test materials can spill out from the *product*.

**Good Manufacturing Practices.** Incorporation of quality practices and procedures, such as those included in the U.S. Food and Drug Administration's Inspection Operations Manual, to minimize the risk of adulterated or misbranded products.

**Hand Washable.** The ability to clean the *product* without a machine, usually involving a washing cloth.

**Inaccessible Product Part.** A part of a *product* is not physically exposed by reason of a sealed covering or casing and does not become physically exposed through reasonably foreseeable use and abuse of the product including swallowing, mouthing, breaking, or other activities, and the aging of the product. Paint, coatings, or electroplating may not be considered to be a barrier that would render lead in the substrate to be inaccessible.

**Load.** The weight of the material contained inside the *product* when it is filled to *capacity* for use or performance testing. For a shopping bag (typically a 15-18 liter *capacity* bag) the load would be at least 10 kg (22 lbs). For smaller *capacity* bags the load would be less, for example the load for a 3 liter *capacity* bag would be at least 2 kg (4.4 lbs). A load of 0.67 kg for every 1 liter of *capacity* of the *product* will be assumed, unless documentation effectively demonstrates otherwise.

**Machine Washable.** The ability to clean the *product* with a washing machine, typically a household machine using the gentle wash cycle.

**Natural Material.** Material found in nature that include mineral, forestry, agricultural, or biological materials such as, but not limited to, animal products produced by the animal but not part of the animal; do not contain petroleum or petroleum-derived compounds; do not contain transgenic hybrid organisms (inserted deoxyribonucleic acid that originated in a different species); have been processed without irradiation; and are not chemically altered.

**Naturally-Derived Material.** Material that is partially chemically altered without use of petroleum compounds and have been minimally processed such that they not be altered to such an extent that they are substantially less biodegradable or more toxic (examples of potentially acceptable processes are included in Appendix 2).

**Permanently Affixed.** To be fastened or attached directly to the bag itself in such a way that is not intended to be removed or easily removed by the end-user. Temporary point-of-sale devices such as price tags, labels, and stickers that are intended to be removed are not considered to be permanently affixed.

**Packaging.** The material physically containing and typically coming into contact with the *product*. Temporary point-of-sale devices such as price tags, labels, and stickers that are intended to be removed are not considered to be packaging for the purposes of this standard.

**Paint and Surface Coating.** A fluid, semi-fluid, or other material, with or without a suspension of finely divided coloring matter, which changes to a solid film when a thin layer is applied to a metal, wood, stone, paper, leather, cloth, plastic, or other surface. This term does not include printing inks or those materials which actually become a part of the substrate, such as the pigment in a plastic article (for the purposes of this standard such inks are considered to be part of the *product*).

**Play Value.** Features of a *product* that promote interactive exploration and imagination for fanciful purposes (whimsical activities lacking utility for accomplishing mundane tasks; actions performed for entertainment and amusement).

**Post-Consumer Material.** Material that would otherwise be destined for solid waste disposal, having completed its intended end-use and product life cycle. Post-consumer material does not include materials and by-products generated from, and commonly reused within, an original manufacturing and fabrication process.

**Pre-Consumer Material.** Material diverted from a waste stream during the manufacturing process, excluding material such as rework, regrind, or scrap generated in a process and capable of being reused within the same process that generated it.

**Product.** The finished bag itself as well as any *paint or surface coatings* and accompanying insert or liner, but excluding any *packaging* used for shipping purposes. Temporary point-of-sale devices (e.g., price tags, labels, and stickers) that are intended to be removed are not considered to be part of the product for the purposes of this standard.

**Production and Processing.** All levels of the production and fiber processing in creation of the *product*, including fiber breakdown, processing of the raw material, weaving, auxillary processing, treatments and dyeing of the *product*. It does not include the growing or development of the raw material.

**Recovered Material.** Material diverted from a waste stream during the manufacturing process, excluding material such as rework, regrind, or scrap generated in a process and capable of being reused within the same process that generated it (pre-consumer) or material that would otherwise be disposed of as solid waste, having completed its intended end-use by the consumer (post-consumer). For the purposes of this standard, recovered material includes both *pre-consumer* and *post-consumer material*.

**Recyclable.** Material collected in a substantial majority of communities, separated or recovered from the solid waste stream and used again, or reused in the manufacture or assembly of another *package* or *product* through an established recycling program.

**Reinforced.** Additional support that can include extra stitching such as, but not limited to, double-stitching (secondary stitches that cover the same fabric as original stitches), a series of close set stitches in a zigzag pattern, or backstitching (stitches that are in the opposite direction of the original stitches), or other types of reinforcement such as additional material, rivets or other strengthening parts.

**Source-Reduced.** At least 20% less material (by weight per single product) compared to typical reusable products used for a similar purpose and *capacity* or *load*.

**Synthetic Material.** A material created artificially rather than naturally or from *natural materials*. For the purposes of this standard, *naturally-derived materials* are not considered synthetic materials.

**Take-Back Program.** A program that collects used *product* to encourage and facilitate the recycling or reuse of the *product*.

## ANNEX B - PERFORMANCE TESTING (Normative)

### Example of Performance Testing for Minimum Number of Uses

The following is an example test method for measuring the minimum number of uses of the *product*. Note that there are two tests: 1) vertical lift and 2) static hold. Alternatively, other test methods may be used, provided the method is objective and scientifically-validated and conducted under controlled and reproducible conditions and the test methodology and results are documented in sufficient detail. *Products* that have an accompanying insert or liner for structural support shall be tested with the insert or liner.

### Equipment and Materials

**Apparatus:** Motorized apparatus capable of lifting and lowering the *product* with the *load* (e.g., at least 10 kg for shopping bags with a 15-25 liter *capacity*) a distance of 20cm+/-2cm (7.8 in). The cycling apparatus includes any mechanism designed to or with the ability to lift the *product* with the *load* at a rate of 17cm/s+/-2cm/s, with a hook or other connection device that suspends the *product* from the hand or shoulder straps.

**Hook:** A smooth soft faced hook of half-elliptical cross-section with a base dimension of 9cm, a half-height dimension of 2.3cm, and a width of 4cm. A soft face shall be a single layer of 3mm to 4mm foam tape applied to the handle surface.

**Test Load:** A *load* comprised of a combination of weighted material: sawdust or other powdered or granular materials (density of 1.2 g/cm<sup>3</sup>), steel balls, wood blocks, cans or other materials with a calibrated weight. For a shopping bag with a 15-25 liter *capacity* the *load* shall be at least 10 kg. A *load* of 0.67 kg for every 1 liter of *capacity* of the *product* will be assumed, unless documentation effectively demonstrates otherwise<sup>6</sup>.

**Lining** (as required). For *products* such as the "net" or "mesh" types, a lining in the shape of a bag will be required to contain the material. This lining should be sufficiently large and flexible to assume the shape of the *product*, when filled.

### Test Samples

A different *product* shall be used for each test procedure. It is recommended that each test procedure is done in triplicate (with a different *product* for each run).

### Procedures

#### Vertical Lift

1. Fill *product* with the test *load*. If required for "net" or "mesh" type *products*, use required lining.

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<sup>6</sup> To determine capacity, measure sawdust or other granular or powdered material (density 0.3 g/cm<sup>3</sup>) in a graduated container and transfer to the product, reporting the volume as the product's carrying capacity. Alternatively, fill the *product* with sawdust or other granular or powdered material to full capacity and transfer to graduated container to report the full capacity of the product.



2. Attach the *product* to the hook with its hand straps, ensuring the *product* is hanging with its open side up.
3. Using the apparatus, lift and lower the *product* at a rate of 15 cycles/min raising the *product* 20cm+/-2cm at an average speed of 17cm/s+/-2cm/s and lowering it at an average speed of 40cm/s+/-4cm/s until *failure* or for a minimum of 500 cycles (one cycle is up and down).
4. At the completion of 500 cycles assess the *product* for *failure* including any breaking or tearing of the handles or seals, tearing of the seams, or catastrophic results such as holes where the test materials can spill out from the *product*. Continue the test until *failure* to determine the lifetime of the *product*, if desired.
5. The *product* shall complete 500 cycles without *failure* to pass.

### **Static Hold**

1. Fill *product* with the test *load*. If required for “net” or “mesh” type *products*, use required lining.
2. Attach the *product* to the hook with its hand straps, ensuring the *product* is hanging with its open side up
3. Time the duration of the *product* being held by the hook until *failure* or for a minimum of 200 minutes.
4. At the completion of 200 minutes assess the *product* for *failure* including any breaking or tearing of the handles or seals, tearing of the seams, or catastrophic results such as holes where the test materials can spill out from the *product*. Continue the test until *failure* to determine the lifetime of the *product*, if desired.
5. The *product* shall complete 200 minutes without *failure* to pass.

### **References:**

Environmental Choice Program Acceptance Test Procedure (ATP001)  
Korea Eco-label Standard E312-2002/2/2005-68. Bags.

**APPENDIX 1 - SCOPE (Informative)**

Examples of *products* included in or excluded from the scope of GS-16

***Products Included in GS-16***

- Backpacks
- Bank, security, and deposit bags
- Camera bags
- Computer bags
- Diaper bags
- Duffel bags
- Garment bags
- Grocery bags
- Handbags or purses
- Insulated or cooler bags
- Laundry bags
- Lunch bags
- Postal bags
- Produce bags
- Retail bags
- Reusable dry-cleaning bags
- Shopping bags
- Sports bags
- Tote bags

***Products Excluded from GS-16***

- Bags intended or anticipated to be disposed after single use
- Bags intended for collecting compostable materials
- Bags intended for transporting biohazard or sterilized medical materials or devices
- Bags intended specifically for food contact
- Bags made primarily (70% or more) of leather or other material derived from animal skin
- Bags with structural aspects such as bags with wheels
- Large suitcases or luggage
- Plastic film wrappers
- Rigid or otherwise structurally-enforced carrying cases
- Sandwich bags
- Snack bags
- Trash can liners/trash bags
- Yard or pet waste bags

## **APPENDIX 2 - PROCESSING METHODS OF NATURALLY-DERIVED MATERIAL (Informative)**

Examples of Potentially Acceptable Processing Methods of *Naturally-Derived* Material (which must also meet all the requirements in the standard)

- Esterification, Etherification, and Transesterification (to produce esters and ethers like polyglycerols)
- Glucosidation (to produce glucosides)
- Hydrogenation (of fats and oils)
- Hydrolysis and Hydrogenolysis (to produce hydrolyzed proteins, glycerin and fatty acids, and fatty alcohols)
- Other Condensation Reactions like Acylation of proteins and Sulfation of fatty alcohols
- Saponafication (to produce soap)