

Bear-Resistant Products Testing Program



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Program Partners:

**Interagency Grizzly Bear Committee, U.S. Forest Service,
Montana Fish, Wildlife & Parks,
Living with Wildlife Foundation,
and the Grizzly & Wolf Discovery Center**

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Interagency Grizzly Bear Committee*

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*In cooperation with the U.S. Forest Service and the
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The Grizzly and Wolf Discovery Center is a not-for-profit bear and wolf preserve and a member of the American Zoo and Aquarium Association (AZA). For more information on the Center, please visit their web site at www.grizzlydiscoveryctr.com

We would also like to sincerely thank the Montana Fish, Wildlife & Parks Foundation for their financial support for this important program. Without their generous contribution, product testing during 2005 would not have been possible.

Participating Groups and Agencies

Living with Wildlife Foundation

Grizzly & Wolf Discovery Center

Montana Fish, Wildlife & Parks Foundation

Montana Fish, Wildlife & Parks

National Park Service

U.S. Forest Service

U.S. Fish and Wildlife Service

Introduction

Increasing numbers of humans are encountering black bears and grizzly bears while living in or visiting areas inhabited by bears. In some cases, these encounters lead to conflicts between humans and bears. Various wildlife and recreation agencies, in addition to nonprofit conservation groups, private business, and others, have begun focusing efforts on ways to reduce potential conflicts. It has become apparent that one way to significantly reduce the likelihood of unacceptable human/bear encounters is to ensure that bears do not become conditioned to human provided attractants, such as garbage, dog food, bird seed, and other unnatural foods.

Over the past decade, there has been a great deal of progress made related to products and methods for securing attractants. Manufacturers have taken the lead in developing new and better products for securing garbage and other attractants, and there are now a host of options available to those wishing to store food, garbage and other attractants so they are unavailable to bears. Consumers now have a wide variety of bear-

resistant options for items including: garbage containers, storage bins for animal feed, outfitters panniers, and camping equipment.

As new products were developed, and materials and manufacturing processes evolved, agencies needed a way to evaluate products in order to provide consistency and guidance to the public. To address this need, the Interagency Grizzly Bear Committee (IGBC) published minimum structural design standards and an inspection and testing protocol for bear-resistant products in 1989. The U.S. Forest Service (USFS), as a member of the IGBC, developed and implemented a testing program for products that were being used on national forests in the Northern Continental Divide and Yellowstone Grizzly Bear Ecosystems. The protocol includes a courtesy inspection of products and an impact test to test products' structural strength based upon specifications developed utilizing grizzly bear tests in 1988-89. The USFS utilized live grizzly bear "tests" to establish engineering standards that can be repeated in a laboratory situation. The laboratory penetrometer tests provide a means of evaluating products' abilities to withstand bears' biting, chewing and tearing strength.

The existing IGBC testing protocol did not cover products that do not have to meet USFS food storage regulations however (for a complete write-up, see the IGBC website at <http://www.fs.fed.us/r1/wildlife/igbc>). In 2002, FWP began revising the protocol to include the testing of products that do not have to meet USFS food storage regulations but that might be useful for reducing conflicts with grizzlies on private lands.

One goal of the new testing protocol is to provide a way to test products and to provide consumers with accurate information on bear-resistant products. Another goal is to prevent ineffective products from being placed into use. Testing under the revised IGBC testing protocol will also lead to the discovery and development of new and improved bear-resistant products and options for deterring bears.

The revised IGBC testing protocol consists of two separate testing protocols - Part I and Part II. Part I one is used for testing products that will be used by people recreating on public lands, and Part II is used for testing products that will be used primarily on private lands.

Part I vs Part II of the IGBC Testing Protocol

Part I of this protocol covers products that must meet USFS food storage regulations on National Forests in the Yellowstone Grizzly Bear Ecosystem (GBE) and the Northern Continental Divide GBE. The USFS will continue to test and certify these products.

Part II of the protocol covers products that do not have to meet USFS food storage regulations, including products that may be useful in deterring bears on private lands. Montana Fish, Wildlife & Parks is the lead agency for the testing of products under Part II of the protocol, and LWWF will coordinate product testing for FWP. Products tested under Part II of the revised IGBC protocol include, but are not limited to: dumpsters, garbage cans, livestock feed storage products.

Please note that electric fencing designs and aversive-conditioning products will not be tested using the captive bears at the GWDC. Predator-deterrent products including pyrotechnic devices, scare devices and other predator deterrents, electric fencing for private lands (i.e. for apiaries, fruit trees, livestock pens, sheds, decks and porches, etc.) will be tested by FWP and LWWF through field evaluation only.

Any product that will be used on National Forests in the Yellowstone GBE or the Northern Continental Divide GBE must be tested under Part I of this protocol.

Bear-Resistant Products

Testing Protocol

Part I

Testing of Products to Meet USFS Food Storage Regulations for Use on National Forests in Designated Areas

Part II

Testing of Products That Do Not Have to Meet USFS Food Storage Regulations (*Products that will not be used on National Forests in Designated Areas or Products that will be used only on Private Lands*)

Part I: Testing of Products to Meet USFS Food Storage Regulations

*** Commercially Available Products**

To receive IGBC certification, **commercially available products** will be evaluated at the USFS facility in Missoula, Montana, or Cody, Wyoming. The evaluation will include both a visual inspection of the container and an impact test. Products may then be taken to the GWDC, at the discretion of USFS product testers, for a third test utilizing captive grizzly bears. The need for the third test will be based on the type of material used to construct the product and whether or not the basic product design has been tested in the past.

Products that are certified by USFS as “bear-resistant” will receive an individually numbered IGBC decal and a receipt of certification. [Exceptions: Garcia products (2 backpacker models) and Greenlee Mobile Storage Chest – Model 2448 are approved but do not have the IGBC decal attached].

*** Containers Built for Personal Use**

Courtesy inspection of containers that are **built for personal use** can be completed in designated USFS offices in western Montana and Wyoming. Individuals can construct containers for their personal use based on designs provided by the USFS or other sources. “Personal use” containers that pass the visual inspection will receive an individually numbered IGBC decal and inspection receipt. Contact your local USFS office in Montana or Wyoming, or one of the contacts listed below, for additional information.

** See the IGBC website for definition of these terms and additional details.*

Visual Inspection

Visual inspections of products will be available at USFS Ranger Stations. Upon determining that a container is bear-resistant, agency personnel will provide the owner with a certificate describing the container and indicating that it has passed the visual inspection. A courtesy inspection decal will be issued and placed on the container.

Commercial use products must pass a visual inspection (meets IGBC minimum design and structure requirements and USFS specifications) prior to the required impact test at one of the designated USFS testing facilities. Visual inspections for commercial products are conducted at the USFS facility in Missoula, MT or Cody, WY.

Impact Test

Impact testing can be done at the USFS Missoula Technical Development Center in Missoula, Montana, or at the USFS testing facility in Dubois, Wyoming. The test involves the use of an approved impact-testing machine which drops a 100-pound weight from a height of two feet (this equals 200 foot-pounds of energy) above the weakest side of the container. The impact machine is designed to simulate the pressure that a bear can exert on a container. Containers will be considered to have passed this test if they do not sustain any damage that results in an opening or gap of ¼ inch or greater anywhere on the container or any other damage that allows the container to be opened. If the containers are less than 18 inches in length and less than 10 inches in diameter, the container shall only have to withstand a 150 foot-pound energy load. (a 100 pound weight dropped a height of 1 ½ ft). If the container is round or irregular shaped, it should be placed on a sandbag, shaped to give more uniform support to the bottom of the container.

Penetrometer Test

If the container is made of a non-metallic material it will be required to pass a penetrometer test. This test is a mechanical method to determine if the container can withstand punctures from claws or biting. A metal penetrator, with a radius of 0.06 inches will be placed on the container edges where the animal can bite on, and a static load of 125-135 pounds will be applied. The penetrator should not have pierced the material with that applied load. A number of points may be tested depending on the shape of the box.

Captive Grizzly Bear Test

The captive grizzly bear test will utilize live grizzly bears and will take place at the GWDC. Testing will occur in the outdoor grizzly bear habitat. The facility houses a number of grizzlies removed from the wild, including several that were removed when they became food-conditioned to human-provided attractants. These animals are well suited for use in the testing process because they have already learned techniques for accessing various types of containers. In addition, the captive grizzlies at the GWDC vary in the level and types of experiences. Therefore, the GWDC is a valuable facility for conducting rigorous product tests.

Personnel at the GWDC have intimate knowledge about the bears housed at the center, such as techniques used by various bears, and the bears' physiological and physical attributes including food habits, weight, age, and "personality" traits. The Center's staff will help select bears to use in product testing sessions based upon their knowledge of the bears' ages, problem-solving abilities, physical characteristics, and the techniques and skills employed by the various bears.

To complete this portion of the testing, consumers and /or manufacturers should contact Dick Karsky of the USFS Missoula technical Development Center to arrange for a testing date for their container(s).

Authorized USFS personnel will take the container(s) to the GWDC and oversee the testing of the product(s) following the protocol outlined below.

Product Testing Using Captive Grizzly Bears

1. Personnel from the USFS or GWDC will complete a product data form for each and may photograph or videotape the product prior to testing.
2. GWDC will prepare products by placing an appropriate food reward inside of the container. Products which do not rely on an odor-proof barrier or liner will also have an attractant (i.e. honey, peanut butter or fish oil) applied to the outside of the product in vulnerable areas, such as seams, latches, and handles.
3. Containers must be free of sharp edges, sharp corners and points that may be harmful to bears.
4. Products will be placed inside the bear habitat and bears will be rotated through. Products will undergo testing by a number of bears of various sizes and with varying levels of experience related to accessing containers.
5. Personnel from the GWDC or volunteers trained by GWDC staff will monitor and videotape product testing.
6. GWDC will rotate bears through the habitat until products have received an adequate test, as defined below.
7. An adequate test consists of the following:
 - Products receive a minimum of 90 total minutes of “bear contact time” by one or more bears. Bear time is defined as physical contact between bear and product.
 - Test bears attempt to compromise the container(s) by biting, clawing, swatting, and using their body weight to crack, crease, smash, dent or pop the container open.
8. Manufacturers and vendors agree to let the USFS or GWDC determine if, and when, the bears have performed the activities listed above.
9. USFS or GWDC will photograph and/or videotape products after testing is complete.
10. Detailed descriptions of areas where a product fails, if any, will be made on the product testing form and will be made available to the manufacturer/vendor for review.
11. Product suppliers will arrange to have product(s) returned to them or will arrange for GWDC or USFS to keep the tested product(s).

12. A container will be considered to “pass” if it remains functional, the hinges, seams and doors are intact, and the bear has not gained entry at any of these points. Also, the container must not have any gaps or openings of ¼ inch or greater that allows leverage to open the container.
13. Products that successfully pass testing under this IGBC-endorsed protocol will receive an IGBC testing certificate and will be added to a database of IGBC-approved products. This information will be available on the IGBC website at: www.fs.fed.us/r1/wildlife/igbc/.
14. Products that do not pass and are modified by the manufacturer can be resubmitted at a later date for retesting.
15. Vendors and manufacturers are invited to submit a picture of the tested product(s), pertinent product information, and a statement of permission to use the information to be included in the *Living with Predators Resource Guides*. The guides contain information on bear-resistant products and techniques. Interested vendors should contact Patricia Sowka of the LWWF at the address and phone number listed below for more information on including products in the guides.
16. Information related to all tested products will be included in future editions of the *Living with Predators Resource Guides* and will be maintained in a database so that follow-up is possible. The database will be available to the public via the LWWF web site and will link to other relevant sites that contain bear-resistant product information.

Please Note: *IGBC certified containers are one of the methods available to meet USDA Forest Service food storage regulations. The USFS is currently testing electric fences in both the NCDE and the YE in partnership with FWP, Wyoming Game & Fish and others. The USFS examines the engineering and electrical characteristics of the systems and performs field tests that are videoed before a system is approved. One system has already been approved for the NCDE as a means of meeting food storage requirements and is referenced in the NCDE food storage order (USFS Recreation Tech Tips 9923-2321-MTDC, March 1999).*

For additional information or testing of products under Part I of the protocol, contact:

Kim Barber, Shoshone National Forest, Cody, Wyoming, 307-578-1235.

Mark Hinschberger, Shoshone National Forest, Wind River District, Dubois, Wyoming 307-455-2466.

James Claar, Northern Region, Missoula, Montana, 406-329-3664.

Richard Karsky, Missoula Technology and Development Center (MTDC), 406-329-3921.

Part II: Testing of Products Used on Private Lands

This portion of the testing protocol involves the evaluation of a wide range of items that could potentially be useful in deterring bears on lands where the USFS food storage regulations do not apply, including on private lands. People living and/or recreating in grizzly-occupied areas should check with local wildlife officials to determine what laws or requirements exist in that area regarding securing and storing bear attractants.

To help cover administrative costs associated with Part II of the testing program, product vendors and manufacturers wishing to have products tested through the captive bear testing program will be charged a testing fee. The fee for product testing will be based on the amount of time and effort required to prepare products for testing. Fees collected will be used to help cover record-keeping expenses and other costs related to the testing program.

In general, the testing fee for products that do not require placement by tractor and products that do not require bolting to a concrete pad will be \$150.00. The fee for products that must be hauled into the habitat by forklift, tractor, or other equipment, and products that must be mounted or bolted to a concrete pad inside of the habitat will be \$250.00. Products that do not pass and are resubmitted will be assessed a fee ranging between \$100 and \$150. The LWWF will collect testing fees from the product manufacturer or representative prior to testing.

Agency personnel and private citizens wishing to test products for their own use will not be charged for testing. However, those testing products for their own use are welcome to contribute a tax-deductible donation to the LWWF to help with the testing program.

Arranging for product testing under the captive bear testing program

- Manufacturers and vendors who are interested in testing products under Part II of this protocol should contact Patricia Sowka of the LWWF by phone at 406-754-0010 or 406-544-5307 (cell), or by E-mail at psowka@blackfoot.net. The appropriate testing fee and a potential test date will be determined at this time. Ms. Sowka will then contact the GWDC to confirm the testing date requested by the product supplier. Ms. Sowka will notify product suppliers of their test date.

- Product suppliers should submit testing fees to Ms. Sowka at P.O. Box 1152, Swan Valley, MT 59826 prior to their scheduled test date. Checks should be made payable to: Living with Wildlife Foundation.
- Product suppliers are invited, but not required, to be present during testing of their product(s).
- Product suppliers are responsible for delivering the product(s) to the GWDC.
- Manufacturers wishing to test products that must be secured to a base or the concrete pad will provide LWWF and the GWDC with product specifications, directions for product installation, and a list of tools needed to properly install and operate the product, a minimum of two weeks prior to the scheduled testing date.

Product Testing

1. Testing personnel will prepare products by placing an appropriate food reward inside of the container. Products which do not rely on an odor-proof barrier or liner will also have an attractant (i.e. honey, peanut butter or fish oil) applied to the outside of the product in vulnerable areas, such as seams, latches, and handles.
2. Product suppliers are invited to watch the testing of their product(s) from the viewing area in front of the bear habitat. Product suppliers will only be allowed in the bear habitat or staging area if needed for installation of the product to be tested. Suppliers wishing to examine products after testing will be given an opportunity to view them outside of the facility or in the visitor viewing area *only*.
3. Containers must be free of sharp edges, sharp corners and points that may be harmful to bears.
4. Products will be placed inside the bear habitat and bears will be rotated through. Products will undergo testing by a number of bears of various sizes and with varying levels of experience related to accessing containers.
5. Testing personnel will monitor and videotape all product testing.
6. GWDC will rotate bears through the habitat until products have received an adequate test, as defined below.
7. An adequate test consists of the following:
 - Products receive a minimum of 60 total minutes of “bear contact time” by one or more bears. Bear contact time is defined as physical contact between bear and product and may include biting, clawing, pounding, rolling, compressions, licking, or scratching.
8. Manufacturers and vendors agree to let testing personnel determine which bears will be used for product testing and if and when, an adequate test has occurred.
9. Testing personnel will photograph and/or videotape products after testing is complete.

10. Detailed descriptions of areas where a product fails, if any, will be made on the product testing form and will be made available to the manufacturer/vendor for review upon request.
11. Product suppliers will arrange to have product(s) returned to them at their expense or will arrange for GWDC, LWWF or FWP to keep the tested product(s) for use in educational programs.
12. A container will be considered to “pass” if it remains functional, the hinges, seams and doors are intact, and the bear has not gained entry at any of these points. Also, the bears must not have been able to secure the food reward inside the container. Small gaps or puncture holes of ¼ inch or less may be acceptable based upon the container type and the intended use of the container.
13. Products that successfully pass testing under this portion of the protocol will receive a letter from LWWF and will be added to the bear-resistant product testing database. This information will be available on the LWWF website at: www.lwwf.org.
14. Products that do not pass and are modified by the manufacturer can be resubmitted at a later date for retesting.
15. Vendors and manufacturers are invited to submit a picture of the tested product(s), pertinent product information, and a statement of permission to use the information to be included in the *Living with Predators Resource Guides*. The guides contain information on bear-resistant products and techniques. Interested vendors should contact Patti Sowka at the address and phone number listed in the “contacts” section at the end of this document.
16. Information related to products that have passed testing will also be included in future editions of the *Living with Predators Resource Guides*.

DISCLAIMER:

- The IGBC, USFS, LWWF, FWP and the GWDC are not responsible for damage to products that are submitted for testing and are not responsible for negative testing outcomes.
- Manufacturers and vendors concerned about confidentiality of new product designs should alert testing personnel at the time of test scheduling. Testing personnel will make every effort to ensure confidentiality of product information. But manufacturers should be aware that the IGBC, USFS, LWWF, FWP and the GWDC are not responsible for breach of such information.
- Manufacturers and vendors should be aware that the IGBC, USFS and FWP are required to release information related to product testing and results of product tests to the public when requested under the Freedom of Information Act.
- This bear-resistant products testing protocol relates only to the extent to which products may be bear-resistant and does not consider other regulatory standards, such as the Occupational Safety and Health Act (OSHA) or the Americans with Disabilities Act (ADA).

- The IGBC, USFS, FWP and LWWF reserve the right to review and modify this protocol as needed or to refuse to test certain products.

Information and Additional Resources

For additional information on the testing of bear-resistant products, please visit the IGBC web site at <http://www.fs.fed.us/r1/wildlife/igbc>, the LWWF web site at <http://www.lwwf.org> or the Grizzly & Wolf Discovery Center web site at www.grizzlydiscoveryctr.com.

Additional References

- *Living with Predators Resource Guides* – Living with Wildlife Foundation. 2003. First Edition. 2005. Second Edition. (LWWF, P.O. Box 1152, Swan Valley, MT 59826. Phone: 406- 754-0010).
- USDA Forest Service, **Bear Resistant Containers – Minimum Design and Structural Standards: Inspection and Testing Methodology – 1989**, Interagency Grizzly Bear Committee.
- USDA Forest Service, **Living with Grizzly Bears – Structures that Work, 1991**, Northern Region, WWFRP, P.O. Box 7669, Missoula, MT 59807.
- USDA Forest Service, **Low Impact Food Hoists**, Publication No. 9523-2809, Nov. 1994, Missoula Technology Development Center, Building 1 Fort Missoula, Missoula, MT. 59804. 406-329-3935.
- USDA Forest Service, **Bear-Proof Food Lockers**, Second Edition, Publication No. 9723-1811, September 1997, San Dimas Technology Development Center, San Dimas, CA 91773 (Attn: Publication Distribution, 444 East Bonita Avenue, 1-909-599-1267 ext. 201).
- USDA Forest Service, Recreation Tech Tips, **Modifying Military Medical Boxes for Bear-Resistant Containers**, April 1996, Missoula Technology Development Center, Building 1 Fort Missoula, Missoula, MT 59801, 406-329-3935.
- USDA Forest Service, **Animal Resistant Garbage Containers**, Publication No. 9523-1205. San Dimas Technology and Development Center, San Dimas, CA 91773-3198 (Attn: Publication Distribution, 444 East Bonita Avenue, 1-909-599-1267 ext. 201).
- USDA Forest Service, Recreation Tech Tips, **Electric Fence Systems: Requirements for Meeting the NCDE Food Storage Special Order**, March 1999. Missoula Technology Development Center, Building 1 Fort Missoula, Missoula, MT 59804.

Contacts

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Bear-Resistant Product Testing Form for Captive Bear Test

Test File #: _____	Date Input: _____
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Product Name: _____ Model : _____

- First Test for Product Product Retest

Product Description: _____

Product Category:

- 1 = residential garbage
- 2 = temporary attractant storage
- 3 = dumpster
- 4 = other _____

Testing Fee: \$ _____

Multiple Product Test? Yes No

Payment Method: MC VISA check cash

Product Supplier: _____ Phone: _____

Address: _____ City: _____ State: _____ Zip: _____

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Test Date: _____ Test Administered by: _____

Photo Log:

Photos Taken Prior to Testing: YES NO Photos Taken After Testing: YES NO

Test Session Videotaped: YES NO

Weather Conditions: _____

Bears Used for Testing: _____

Bait Used: _____

Time Until Container Breach: _____

Testing Comments: _____

Gaps or Holes: _____

Lid Condition: _____

Hinges: _____

Disposition of Product: Supplier to Keep Supplier to Leave

Notes: _____