Library of Congress Preservation Directorate
Specification Number 800-852 – 11
Specifications for Plastic Containers
For Long-Term Storage of Motion Picture Film & Magnetic Tape Media

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I. General Specifications

A. Composition

The composition of the plastic container stated in the following table is designed to provide containers that not only last long, but also have as little influence as possible on motion picture film in contact with the material.

Property	Requirements
Material	Inert homo- or co-polymer polypropylene, or high density polyethylene (HDPE)
Density	0.94 g/ml or higher at 25°C
Izod Impact ASTM D256A	At least 1.5 ft-lbs/inch of notch for a 1/8 inch specimen
Tensile Yield Strength ASTM D638	At least 4,000 psi
Tensile Stress at Break ASTM D790	At least 3,800 at 1,000 psi
Young's Modulus ASTM D790	No more than 230,000 psi
Flexural Modulus ASTM D790	No more than 250,000 psi
Flexural Strength 5% Deflection ASTM D790	At least 7,500 psi
Flame Retardant	Should preferably be free of halogens. However, halogenated flame retardants will also be accepted, but the total halogen content must not exceed 4% (w/w)
Antioxidant	Distearyl thiodipropionate (DSTDP), 1.0 %, or other antioxidants subject to prior approval.
UL Flammability Rating	V-2 or better
Heat Deflection Temperature ASTM D648	220°F at 66 psi, or higher
Coloring Agent and Other Additives	Carbon black or titanium dioxide *only.* Note: Carbon black is the preferred coloring agent since it adds to the stability of the plastic. *Black cans with carbon black should be used for all motion picture masters.* Titanium oxide, which will give a white can, may be used for service copies. No other coloring agents or additives are acceptable without specific approval from the Preservation Research & Testing Division.

B. Accelerated Aging Test

1. On subjecting to accelerated aging at 80°C and 65% RH for 30 days, the components of the can must retain their original integrity. That is, none of the additives must separate and migrate to the surface. Containers that fail this test will be rejected.

2. The percent loss in physical properties specified above will also be measured for test samples after the aging process.

C. Drop Test

An acceptable container must survive a real-life drop test conducted from a height of 6 feet while containing a full roll of film by dropping it on its edge. This drop test will be conducted with the container and the contents at room temperature and also after prior conditioning at a near-freezing temperature. Any container that cracks will be disqualified from further competition.

II. Product Requirements

A. Construction

1. The can must adhere to standard dimensions for housing film reel(s) specified for procurement.

2. It is essential that the lid and the can be so designed that the lid is tightly secured when the can is closed, yet it must be possible to open the lid easily without significant effort or inconvenience.

B. Desirable Features

1. A central hub to accommodate standard cores on which film is wound.

2. A design that facilitates interaction of film stored inside the container with the storage environment without rendering the film vulnerable to water discharged from a sprinkler.

III. Inspection

A. Submission of Samples

1. Bidders shall submit three sample cans of each size and also an adequate number of samples required for each of the specified standard tests.

2. Bidders may submit more than one type of can if they so desire. That is, if they would like the Library to select among competing products that they make, they should feel free to do so. For example, if a vendor can provide a halogen-free container and another containing halogens, both of them can be entered in this competitive bidding process.

B. Selection Criteria

A selection panel composed of at least 3 Library personnel will be assembled under the guidance of a procurement officer. Samples that survive the drop test specified in section I.C. will be evaluated according to following criteria:

1. Physical and chemical properties (60 percent)
2. Extent of lack of halogen (20 percent)
3. Cost (20 percent)

Product(s) with the highest score will be selected for procurement.

Configuration Management

Date	Revision History
14-Jan-2003	Initial release of document on website, html format.
14-Dec-2009	Reformatted for release as PDF document.
09-Sep-2011	Editorial change to section I.B. No technical changes.