

Document Summary

Detail Type	Detail
Event ID	0000008914
Commodity	Plastic Trash Bags
Attachment	2
Group-Class	81-05
Bid Specification	8105-4340
Revision Level	A
Revision Date	March 23, 2018
Agency Name	Statewide

Revision History

Bid Spec	Rev Level	Revision Date	Author	Summary of Changes
8105-4340	A	Mar. 23, 2018		Bid development

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1.0 SCOPE

This specification sets forth the minimum requirements for statewide contract of plastic trash bags intended for general use, as can liner inserts in waste receptacles for office/building/hospital trash, cafeteria waste, roadside and highway rest-stop trash, park debris and waste.

2.0 APPLICABLE LAWS and INDUSTRY STANDARDS

Specifications, standards and regulations referenced in this document in effect on the opening of the invitation for bid, form a part of this specification.

2.1 LAWS and REGULATIONS

- 2.1.1 Federal Standard L-P-378D, Plastic Sheet and Strip, Thin Gauge, Polyolefin
- 2.1.2 NIST Handbook 130 Uniform Laws and Regulations, 2013
- 2.1.3 Public Resources Code (PRC) Sections 42290 through 42297 and Title 14, Section 17975 through 17985 of the California Code of Regulations (CCR) (collectively referred to as the "Recycled Content Plastic Trash Bag Law")

2.2 INDUSTRY STANDARDS

- 2.2.1 ASTM D1709 Impact Resistance of Polyethylene Film By The Free-Falling Dart Method
- 2.2.2 GSA AA1668C, Static Load Capacity Test, US General Services Administration
- 2.2.3 ASTM D792 Standard Test Methods for Density and Specific Gravity of Plastics by Displacement
- 2.2.4 ANSI/ASQC Z1.4, Sampling Procedures & Tables for Inspection by Attributes

3.0 CLASSIFICATION

3.1 TYPE I

Bag shall be made from low or linear low density Polyethylene (LDPE or LLDPE) characterized with density 0.92 gram/cc per Test Method ASTM D792

3.2 TYPE II

Bag shall be made from high density Polyethylene (HDPE) with density at least 0.94 gram/cc

3.3 TYPE III

Bag for Department of Transportation (DOT) shall be made from polyethylene or ethylene copolymer.

4.0 REQUIREMENTS

4.1 POSTCONSUMER RECYCLED CONTENT

All manufacturers shall comply with "Recycled Content Plastic Trash Bag Law." All bags shall contain a minimum 10% recycled plastic postconsumer material (RPPCM) or 30% RPPCM by weight of the material used in all of the manufacturer's plastic products.

4.2 WORKMANSHIP

- 4.2.1 Bags or liners shall be constructed uniformly in color, texture and finish, free from sharp creases, wrinkles, pinholes, tears, cuts and other defects that will impair their serviceability.
- 4.2.2 The seam shall be uniform, straight, continuous and free from gaps and creases.
- 4.2.3 Perforation at open end shall be clean so that liner can be readily opened by hand without crimping or sticking.

Type I and Type II bags shall be one of the three kinds: two-sided gusset type, star sealed or flat sealed. The configurations are specified by capacity, size, thickness, color, line item descriptions and maximum weight rating in the tables of Attachment 2A.

Type III (DOT) bags shall meet the following criteria:

- 4.2.4 The bags shall be opaque in three color types, white, orange or safety yellow, as specified by the line item description in Table III of Attachment 2A. The color shall be stable after two weeks exposure to ambient outdoor conditions.
- 4.2.5 "Don't Trash California" bags shall be in OSHA orange or safety yellow
 - 4.2.5.1 "OSHA" or "Omaha Orange" matching in Pantone Matching System (PMS) 021, or 165, RGB color codes (246, 132, 40),
 - 4.2.5.2 "Safety Yellow" matching in Pantone 13-0630 TN or RGB color codes (237, 255, 0).
- 4.2.6 Width shall be 33 inches with tolerance of -0.5 to 1.0 inch.
- 4.2.7 Bag without handles shall have length 40 inches with tolerance of -0.25 to 2.0 inches, flat bottomed.
- 4.2.8 Bag with handles shall have length 48 inches with tolerance -0.25 to 2.0 inches, star bottomed.
- 4.2.9 Handles shall be 3 inches wide, 10 inches long with tolerance of ± 0.25 inches.
- 4.2.10 Material thickness shall be ≥ 3.0 mils and ≤ 4.0 mils with tolerance of ± 0.1 mil
- 4.2.11 Side gusset shall be ≤ 16.5 inches, tolerance ± 0.25 inches.
- 4.2.12 Sealing shall be achieved of no more than eight thickness for one-piece star bottomed bags.
- 4.2.13 All sealed seams shall be as strong as the bag material passing the Load Performance tests in next section.

4.3 PERFORMANCE

Bags or liners shall be constructed in a manner that will not allow odors or contents to escape when properly closed. All bags shall perform as required throughout the temperature range of 0°F to 115°F (-17.8°C to 46.1°C) minimum.

All Type III DOT bags shall be able to pass the Load Performance tests and Dart Impact Test.

4.3.1 Load Performance Tests

One bag shall be used for one test only; it should not be used for both tests. Any loss of contents during the two-minute suspension shall be considered a failure.

Procedures:

4.3.1.1 The bag shall be filled with the contents as indicated below.

4.3.1.2 The opening end shall be closed and secured with a suitable holding device.

4.3.1.3 The bag shall be lifted upwards a minimum of six feet and suspended for a minimum of two minutes.

4.3.1.3.1 Dry Weight Test

The dry contents for the dry weight test shall be wooden blocks or similar for bulk and lead weights for mass. Test weights shall be within $\pm 5\%$. The wooden blocks shall be randomly cut lengths (ranging from 4 to 12 inches) of light framing 2 by 4 inches utility grade or better grade lumber surfaced four sides. The blocks shall not be sanded smooth on any surface or edge.

4.3.1.3.2 Wet Weight Test

The contents for the wet weight test shall be tap water at a temperature of $68^{\circ}\text{F} \pm 5^{\circ}\text{F}$ ($20^{\circ}\text{C} \pm 2.8^{\circ}\text{C}$). Test weights shall be within $\pm 5\%$ of the measured values.

4.3.1.4 Dart Impact Test

There shall be zero penetrations when performing dart impact testing at minimum gram dart weights with 20 drops. Four bags shall be tested with five drops on each bag. Test apparatus setup only shall be as described in ASTM D1709 Method A, Impact Resistance of Polyethylene Film by the Free Falling Dart Method.

4.4 MARKINGS: TYPE III DOT BAGS ONLY

4.4.1 Individual bag shall bear the logo on one side only.

4.4.2 Logos shall be placed centered at locations as shown in the exhibits, with tolerance of ± 0.25 inches.

4.4.3 "Don't Trash California" logos shall be printed in black on orange or safety yellow bags as shown in Exhibit A and B.

4.4.4 "Adopt-A-Highway" and Caltrans with registered trademark ® shall be printed in black ink on white bags as shown in Exhibit C and D.

- 4.5 DRAWINGS OF TYPE III DOT BAGS (NOT TO SCALE)
 - 4.5.1 Exhibit A: "Don't Trash California" logo position on 33 by 40 inch bag without handles
 - 4.5.2 Exhibit B: "Don't Trash California" logo position on 33 by 48 inch bag with handles
 - 4.5.3 Exhibit C: "Adopt-A-Highway" logo position on 33 by 40 inch white bag without handles
 - 4.5.4 Exhibit D: "Adopt-A-Highway" logo position on 33 by 48 inch white bag with handles

Exhibit A: 33 by 40 inch "Don't Trash CA" bag without handles



Exhibit B: 33 by 48 inch "Don't Trash CA" bag with handles



Exhibit C: 33 by 40 inch "Adopt-A-Highway" (AAH) bag without handles

