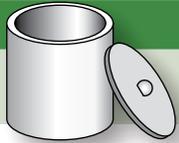


Determine a Size

How high and wide is your trash can? What is the intended use of the liner? What is the gallon capacity for your receptacle? Remember to include a 3-to-4 inch overhang when determining the length for best results.

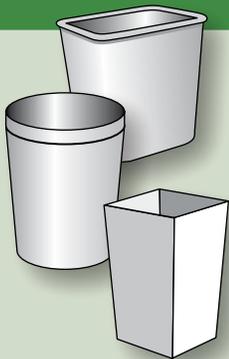


Ice Buckets



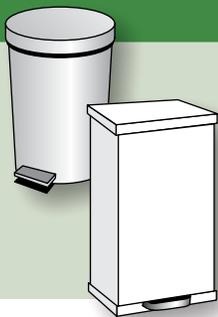
Size	Liner
3 quart	12 x 12

Waste Baskets



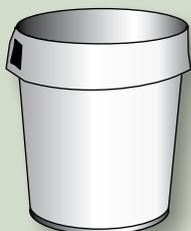
Size (gallons)	Liner
4	17 x 17
7	20 x 21
7	24 x 24
10 - 15	24 x 32
20 - 30	30 x 36
33	33 x 39
40 - 45	40 x 46

Step-On



Size (gallons)	Liner
4	17 x 17
7	20 x 21
7	24 x 24
10 - 15	24 x 32
20 - 30	30 x 36

Round Brute®/ Husky®



Size (gallons)	Liner
10 - 15	24 x 32
20 - 30	30 x 36
33	33 x 39
40 - 45	40 x 46
60	38 x 58

Round Top



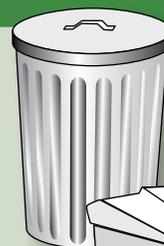
Size (gallons)	Liner
33	33 x 39

Square

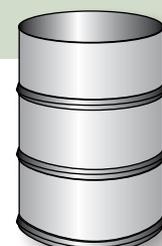
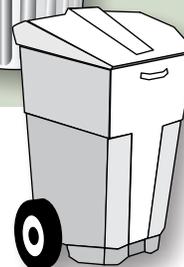


Size (gallons)	Liner
23	28 x 42
40 - 45	40 x 46
56	43 x 47

Outdoor



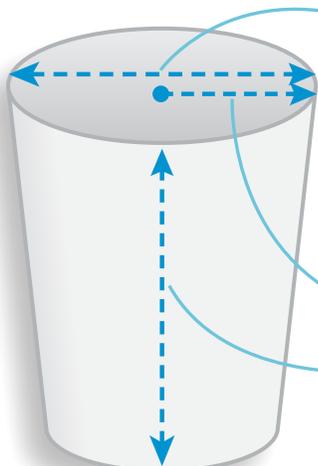
Size (gallons)	Liner
33	33 x 39
40 - 45	40 x 46
55	36 x 58
60	38 x 58



Calculating the Correct Bag Size

The most effective way to save costs is to size your liner correctly!

Round Containers

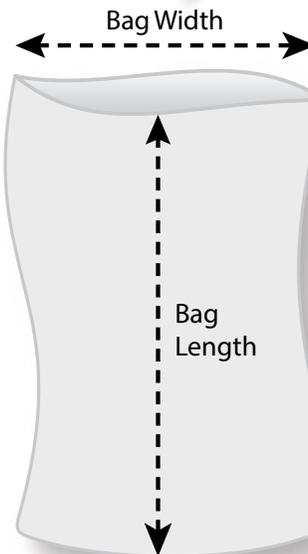


To find the **Bag Width** needed:

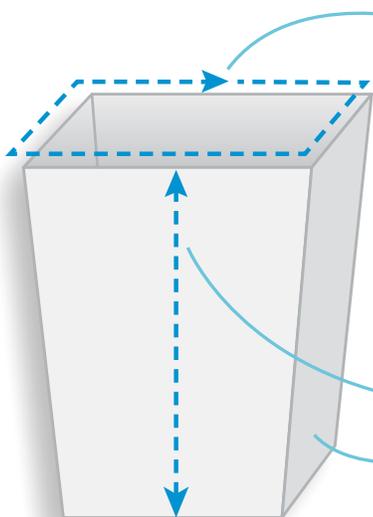
$$\begin{aligned} & \text{[] container's diameter} \\ & \times 3.14 \pi \\ & \div 2 \\ & = \text{[] Bag Width} \end{aligned}$$

To find the **Bag Length** needed:

$$\begin{aligned} & \text{[] container's radius (or } \frac{1}{2} \text{ diameter)} \\ & + \text{[] container's height} \\ & + 4'' \text{ for overhang} \\ & = \text{[] Bag Length} \end{aligned}$$



Square or Rectangular Containers



To find the **Bag Width** needed:

$$\begin{aligned} & \text{[] side 1 width} \\ & + \text{[] side 2 width} \\ & + \text{[] side 3 width} \\ & + \text{[] side 4 width} \\ & \div 2 \\ & = \text{[] Bag Width} \end{aligned}$$

To find the **Bag Length** needed:

$$\begin{aligned} & \text{[] container's height} \\ & + \text{[] } \frac{1}{2} \text{ shortest side width} \\ & + 4'' \text{ for overhang} \\ & = \text{[] Bag Length} \end{aligned}$$

Convert MIC to MIL Equivalents

MIC	MIL
6	.23
7	.27
8	.31
9	.35
10	.39
11	.43
12	.47
13	.51
14	.55
15	.59
16	.63
17	.67
18	.71
19	.75
20	.79
21	.83
22	.87

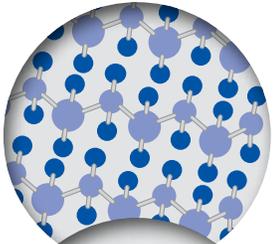
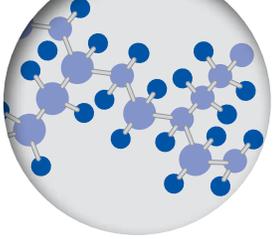
Case Weight Calculation:

$$\left(\text{[] width} \times \text{[] length} \times \text{[] mil} \right) \div 15 = \text{[] Lbs. per 1000 bags}$$

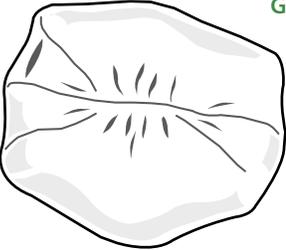
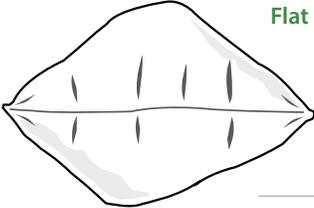
Lesson 1 | Can Liner Basics

The Fundamentals

1: Plastic Type

Plastic	Key Characteristics
 <p data-bbox="375 506 532 779">High-Density (HD)</p>	<ul data-bbox="537 506 1448 779" style="list-style-type: none"> • Makes “crinkly” noise when you move it – Think of a supermarket bag • Harder to start or puncture a hole in than Low Density (LLD) • Once a hole is started, will spread quickly or “zipper” • Thinner than LLD, but can hold same or greater weight as LLD liners • Gauge (thickness) measured in Micron (MIC) • Some suggested applications: cans without edges, paper, food, smooth heavy objects • Substantial cost savings on a per-liner basis
 <p data-bbox="375 785 532 1024">Linear Low-Density (LLD)</p>	<ul data-bbox="537 785 1448 1024" style="list-style-type: none"> • Quiet when moved – No “crinkly” sound • Easier to start or puncture a hole in than HD • A hole will spread less quickly than HD • Gauge (thickness) measured in MIL • Most common type in the industry • Recommended for sharper objects and tough transport conditions

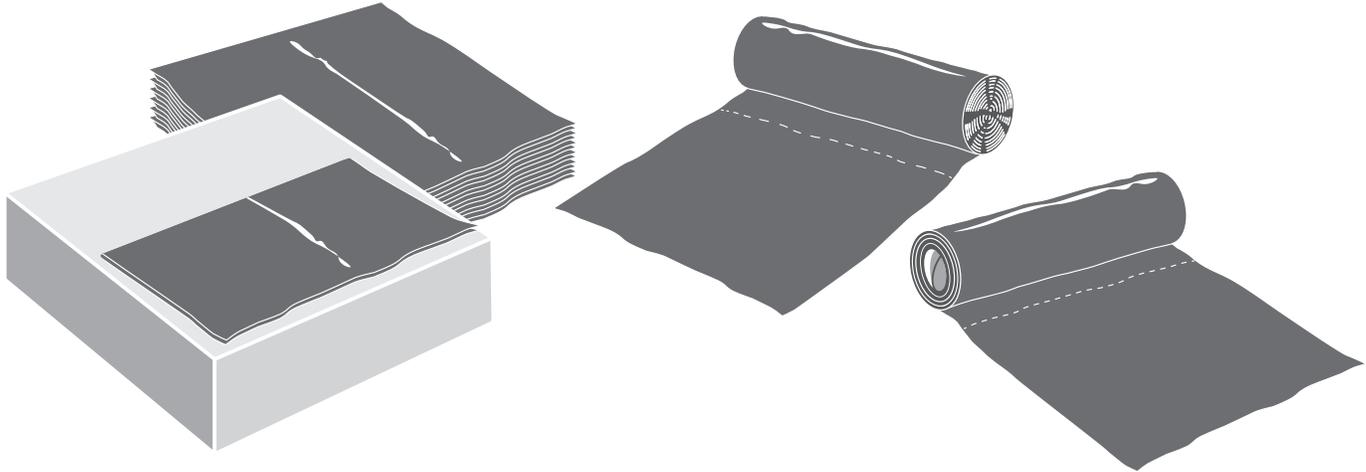
2: Bottom Seals

Bottom	Key Characteristics
 <p data-bbox="375 1220 532 1465">Star Seal</p>	<ul data-bbox="537 1220 1459 1465" style="list-style-type: none"> • Most common type in the market • Bottom of the bag looks like a star or appears “bunched up” • Conforms well to large round trash cans • Minimum leak potential • Most expensive and highest quality • Star seal liners are designated by two dimensions (i.e. 40 x 46)
 <p data-bbox="375 1472 532 1745">Gusset Seal</p>	<ul data-bbox="537 1472 1459 1745" style="list-style-type: none"> • A flat style bag • Both sides tuck in to form a gusset • If bag is lying flat it will have a third dimension like an expandable envelope • Conforms reasonably well to the shape of the trash can • May leak – potential for weak bottom • Least expensive • Gusset seal liners are designated by three dimensions (i.e. 23 x 17 x 46)
 <p data-bbox="375 1751 532 1965">Flat Seal</p>	<ul data-bbox="537 1751 1459 1965" style="list-style-type: none"> • Bag will lay out perfectly flat like a tube with a seal on one end or resemble a pillow case • Does not conform to the shape of the trash can • Holds 20-30% more than a star sealed • Medium leak potential • Flat seal liners are designated by two dimensions (e.g. 40 x 46)

Lesson 1 | Can Liner Basics

The Fundamentals

3: Package Dispensing



Flat (Bulk Pack)	Coreless Rolls	Cored Rolls
Individually folded and boxed for one at-a-time dispensing	Does not have a cardboard cylinder center. Features perforated edges, or interleaved for non-perforated dispensing .	Liners rolled together on top of a cardboard cylinder with perforated edges

4: Static Load

Static load (lifting strength) is the best way to choose bag strength. Approximate gauge equivalents for static load are listed below:

Weight	Linear Low Density	High Density	Strength Grade
Light Weight	0.36 - 0.49 Mil	7-9	For crumpled papers, cups, light waste, etc.
Medium Weight	0.50 - 0.60 Mil	10-12 Mic	For packaging waste, wet paper, etc.
Heavy Weight	0.61 - 0.74 Mil	13-14 Mic	For light wood, metal scraps, wet cardboard, etc.
Extra Heavy Weight	0.75 - 0.80 Mil	15-17 Mic	For heavy, sharp or wet trash
Super Tuff	0.81 - 1.0 Mil		For heaviest cleanup jobs in warehouse, cafeteria, or facility grounds
Super Heavy	1.1 - 1.2 Mil		
XXH	1.3 - 1.9 Mil	18-24 Mic	
XXXH	2.0 - 3.0 Mil		

Lesson 2 | Can Liner Considerations

The Helpful Tips

When Choosing a Bag...

1 Choose bag size and bottom seal of the liner based on type of trash can being used

- Some manufacturers will state liner sizes in “gallons” in an attempt to offer smaller liners that use less plastic
- Most manufacturers use the item number to indicate the liner size even though it is not the actual size of the liner
- Star sealed can liners are the most expensive and highest quality since they conform better to larger, round trash cans
- Gusset sealed bags are the least expensive and will tend to leak, unlike star seal or flat seal

2 Choose plastic type (HD or LLD)

- High density liners are lower in cost than low density liners
- Recycled plastic or repro liners yield a bag with a lower capacity for weight at a lower cost.
- A thicker repro liner is needed to lift the same amount of static weight as a virgin resin bag

3 Verify the gauge or thickness of the liner

- Some manufacturers avoid stating the actual thickness of the liners, an attempt to sell less plastic for a higher price
- There is no governing agency to ensure that thicknesses listed on the carton is what is actually in the box. Weighing the case and comparing against other brands will help identify any differences. Less weight equals less plastic.
- Many manufacturers will test liner samples in their lab to give you the actual mil/mic thickness of a competitive product for comparison purposes

4 Check how many liners are in the case and calculate the cost per can liner pricing

- Fewer liners in a case gives the appearance of a better value because of the lower price
- Calculating the cost per can liner will give you the true cost per use

5 When in doubt, weigh the case! This will help determine what's really in the box!Two rolls of black plastic liner material are shown on either side of a central text box. The rolls are partially unrolled, showing the texture of the plastic.

The Ultimate Tip:

The most effective way to save costs is to size your liner correctly with the proper strength characteristic for your load application!

Can Liner

Term used for garbage, trash or waste bags. Used in industrial, institutional and medical applications.

Colors

Can liners come in standard colors: clear, black, white, gray, red, blue and yellow. (Other colors available.)

Food and Utility Bags

Small clear bags designed to hold a variety of small objects (e.g., bread, poultry, vegetables, etc.)

Film Strength

Refers to the physical strength of the can liner. Some resins have a higher film strength than others. Our can liners are made from highest quality resins, giving them the highest quality film in the market place.

Dart Drop Test

ASTM test used to determine the resistance of a bag to local failure or puncturing of the film.

Elmendorf Tear Test

ASTM test used to measure the resistance to tearing.

Wet Load Capacity

Measurement of how much wet weight a can liner will hold.

Dry Load Capacity

Measurement of how much dry weight a can liner will hold.

Gauge

Term used to describe thickness. LDPE and LLDPE can liners are measured by mil thickness and HMW-HDPE can liners are measured by micron thickness.

Mil

(One thousandths of an inch) Term used in the measurement of LDPE and LLDPE can liners. One mil is .001". Can liners range between .35 to 4.0 mil.

Micron

Term used in the measurement of HMW-HD can liners. 25.4 microns equals .001". 1,000 microns (M) = 1mm. HMW-HDPE can liners are 6 to 24 microns.

Resin

Short term for Polyethylene resin. The three types of PE resin are LDPE, LLDPE and HMW-HDPE (see below). Other plastic resins include vinyl, polypropylene, styrene and nylon.

LDPE

(Low Density Polyethylene) This resin was used with older can liner technology. Resin has good clarity but weak film strength. Today it is used primarily for Food and Utility Bags that don't require heavy loads.

LLDPE

(Linear Low Density Polyethylene) This is the primary type of resin used in modern can liner manufacturing technology. Bags made from LLDPE film provide excellent combination of film strength, puncture resistance and tear resistance.

HMW-HDPE

(High Molecular Weight-High Density Polyethylene) Bags made from HMW-HDPE resin provide excellent film strength and puncture resistance, but less tear resistance than LLDPE.

Butene

One of three types of LLDPE resin. Butene has weaker film-strength properties than hexene or octene.

Hexene

One of three types of LLDPE resin. We use Higher Alpha Olefin (High Grade Hexene) in the manufacturing of can liners. Properties include high film strength and increased tear resistance.

Octene

One of three types of LLDPE resin. We use Higher Alpha Olefin (High Grade Octene) in the manufacturing of can liners. Used in other applications because of its excellent physical properties.

Prime Resin

Refers to the usage of high-quality, "fresh from the reactor," resin. We use only prime resins in all of the products we produce, unless specified otherwise.

Blended Resin

Refers to the combination of two or more types of resin.

Regrind Resin:

Repro) Refers to resin that has been used at least once before. Can be post-industrial (scrap) or post-consumer (recycling). Strength properties of resin is decreased each time it is reused.

Seal

Term used to describe bottom of a can liner. The three types of seals are flat, gusseted and star. (See Bottom Seal section.)

Flat Seal

Straight seal along bottom of a can liner (looks like a pillow case). Though Flat Seals are strong, they may have a tendency to leak wet trash from the corners.

Gusset Seals

A flat-style bag manufactured with both sides tucked in to form gussets. Has a tendency to leak wet trash from the center at gusset points where four layers of film meet two.

Star Seal

Designed without gussets, the Star Seal eliminates gaps along the seal where leaks can occur. The bottom of the bag is folded over several times and sealed. Trash rests on the material instead of the seals. This leak-resistant seal holds wet trash better than the other two types of seals.

Individually Folded

Can liners are separately folded, then stacked on top of one another. This allows the end-user to pull liners out of the box with much more ease vs. bulk-folded bags.

Cored Rolls

Can liners are rolled together on cardboard cylinders (looks similar to a roll of paper towels). Can liners come inside a special box that dispenses with ease.

Coreless Rolls

Can liners are rolled in groups of 25 or 50 per roll. There are 4 to 10 rolls per case. Rolls are perforated or interleaved.