

## What Size Can Liner Do I Need for My Trash Can?

Look at the guide below and find your waste receptacle to find the recommended liner size.

Commercial can liner sizes are expressed in two numbers e.g. 33" x 40". The first number is the size of the opening of the liner and the second number is the height of the liner. To find the correct size liner, first measure the can's circumference then measure its height.

Each container should have a gallon capacity, or size printed on it. Just match the picture to your receptacle and it will tell you which size trash bag you need.

### Bag Width:

To calculate the proper width of the trash can liner for your container, simply divide the circumference of your container by 2.

### Square Container Circumference:

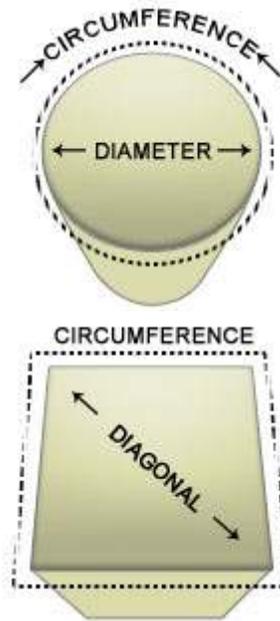
Circumference = sum of all four sides added together.

### Round Container Circumference:

Circumference = diameter multiplied by 3.14.

### Bag length:

(round & square containers) add the height of the container, plus 4-5 inches for overhang.



## Choose the right trash can liner for the right application

	<b>Puncture Resistance</b>	<b>Tear Resistance</b>	<b>Load Capacity</b>
<b>Linear Low Density Can Liner</b>  Recommended for sharper objects under tougher transport conditions. Linear low density trash can liners have excellent resistance to punctures and tearing.	Good Resistance	Greater Resistance	Good Load capacity
<b>High Density Trash Can Liner</b>  Great for paper and non-sharp objects under moderate transportation conditions. Uses less plastic than linear low density can liners. High density plastic trash can liners have excellent resistance to puncture and high resistance to tearing.	Greater Resistance	Good Resistance	Greater load capacity



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## Understanding Gauge Thickness:

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Gauge is a term used to describe thickness. Film thickness is no longer the standard for judging plastic can liner strength. Advanced resins and additives have allowed manufacturers to produce thinner, lighter can liners that are stronger than thicker trash can liners made from lesser quality materials. Linear Low-Density Can Liners (LLD) are measured by mil thickness; High-Density Can Liners (HD) are measured by Micron thickness.

**Mil** (one thousandth of an inch) one mil equals .001". Can liners range between .35 to 4.0 mils

**Micron:** 25.4 microns equals .001". 1,000 microns (M) is 1mm. Can liners range between 5 to 24 microns

<b>Micron</b>	5	6	7	8	9	10	11	12	13	14	15	16
<b>Mil</b>	.19	.23	.27	.31	.35	.39	.43	.47	.51	.55	.59	.62
<b>Micron</b>	17	18	19	20	21	22	23	24	25	26	27	28
<b>Mil</b>	.66	.70	.74	.78	.82	.86	.90	.94	.98	1.02	1.06	1.10

## Weight Formulas

### Linear Low Density Case Weight Formula

Length x Width x Gauge (in mils) ÷ 15 ÷ 1000 x bags per case = net lbs. per case (approximate)

### High Density Case Weight Formula

Length x Width x Gauge (in microns) ÷ 14.5 ÷ 25.4 ÷ 1000 x bags per case = net lbs. per case (approximate)

### Microns to Mils Formula

Divide the microns by 25.4 to arrive at mic thickness.

Example:

$$10 \text{ Microns} \div 25.4 = .39 \text{ Mil}$$

$$24 \text{ Microns} \div 25.4 = .94 \text{ Mil}$$

### Mils to Microns Formula

Multiply the mils by 25.4 to arrive at mil thickness.

(1 Mil = 25.4 Microns)

Example:

$$.30 \text{ Mil} \times 25.4 = 7.6 \text{ Microns}$$

$$.65 \text{ Mil} \times 25.4 = 16.5 \text{ Microns}$$



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## Case Labels & Weight

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All cases are clearly labeled with: Code, Size, Gauge, Color, Capacity, Case Pack, Case Weight and Bar Code.

### Case Weights

NIST (National Institute of Standards & Technologies) is an agency of the United States Department of Commerce that has specific requirements for labels on products, including can liners. Nearly all states adhere to NIST weights and measurements.

The bureau of weights and measurements require ALL manufactures of can liner state the weight for the entire case.

There are five basic standards required by NIST.

- 1 - Actual size
- 2 - Actual gauge
- 3 - Actual capacity
- 4 - Actual count
- 5 - Actual weight (net weight, excluding the carton)



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## **Types of Plastic Used in Can Liners**

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### **Linear Low Density Bags (Low D)**

Used for rough or sharp objects under tough transport conditions. These bags are very strong and are more resistant to tearing, but handle lower load capacities than Hi-D bags.

Suggested LLD applications:

- Sticks, rough yard trimmings, glass
- Metal with sharp edges
- Plastic eating utensils, food with rough edges

### **Hi Density Bags (Hi-D)**

Used for paper and non-rough objects under moderate transport conditions.

These bags are very strong and handle higher load capacities than LLD bags, but tear easier once punctured.

Suggested Hi-D applications:

- Paper-plates, cups, towels, office
- Grass, rags, smooth heavy objects
- Cans without sharp edges, food without sharp edges



## Type of Seals Used on Can Liners

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Almost all can liners are manufactured with Star Seals because they provide the strongest seal. Because a Star Seal is not possible with the thickest-gauge material, a Flat Seal is used to create the strongest possible seal for these heavy-weight bags.

<p><b>High Performance Star Seal</b></p> <ul style="list-style-type: none"><li>• Most common type of seal</li><li>• Designed without gussets</li><li>• Eliminates gaps where leaks can occur</li><li>• Conforms to the shape of the container</li><li>• Distributes weight evenly</li><li>• Maximizes carrying capacity</li><li>• Sized in two dimensions, EX: 40 x 46</li></ul>	
<p><b>Flat Seal</b></p> <ul style="list-style-type: none"><li>• Two-dimensional bag (much like a pillow case)</li><li>• Strong, but has the potential to leak wet trash from the corners</li><li>• Do not conform as well to the shape of can</li><li>• Sized in two dimensions, EX: 40 x 46</li></ul>	
<p><b>Gusset Seal</b></p> <ul style="list-style-type: none"><li>• Rarely used in the industry</li><li>• Flat-style bag design</li><li>• Both sides tucked in to form gussets</li><li>• Sealed through four layers of film (the middle of the bag has only two sealed layers)</li><li>• A potentially weak bottom seal</li><li>• Sized in three dimensions, EX: 23 x 17 x 46</li></ul>	



## What Are Cheater Bags

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Over the past years we've seen volatility in the resin market and depending on a number of factors, the price of resin can fluctuate widely. Resin prices are set at the international level; the price we pay in the USA is the same price in China or Korea; factoring the monetary exchange rate.

Cheater can liners are products that are not the proper thickness, weight or size that they claim to be. However, distributor and manufacturers pass them off like they are but sell them to end users at much lower prices.

In 2013 we've experienced two price increases in the resin market with a fourth scheduled to hit November 2013. Because there are only four major resin producers in the USA the price from each supplier is almost identical. Almost looks like price fixing to me. As a matter of fact when one resin producers announces a price increase you can better your 401K the others will follow suit, like Penguins on the beach.

Cheater can liners are products that are not the proper thickness, weight or size that they claim to be. However, distributors pass them off like they are but sell them to end users at much lower prices.

The customer can often be tipped off by the verbiage - or lack thereof - used on the packaging of can liners. Words that are commonly used are "**nominal gauges**" and "**market quality.**"

Mind you, I have no issues if an end user decides to choose the lower cost liner. My issue is when you are lead to believe your buying a premium product and get cut rate merchandise without informing the customer the product has changed.



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The Market Value (MV) liners were created to meet market demand for lower priced Can Liners that get the job done - or not.

As you are well aware, some manufacturer's are selling nominal size and gauge bags without making this claim or providing correct label information. The label descriptor on the label will indicate the performance of the bag.

For example, MV386022N-CR will indicate the bag will perform to the specs of a standard 38"x 60", 22 micron bag.

Size and gauge information is provided on the label in metric measurements. The letter "N" indicates natural color and the "CR" indicates coreless roll.



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