

# MAINTEX™



FACILITY SOLUTIONS



2019 CAN LINER GUIDE



# WHAT IS THERE TO LEARN ABOUT CAN LINERS?

One might think that can liners, also known as trash bags, are a simple product to buy for a restaurant, hotel or an office building. They can be if you don't care about the bag's size, its thickness, the type of resin the bag is made out of, or the style of the bag for any given application. A wrong can liner choice can be expensive not only to buy but also to fix when they fail. Can liners are one of the most used disposables in almost any business just only second behind toilet paper and paper towels. Understanding can liners is worth the time investment because in the end you will be able to choose the right size liner, in the right gauge, in the right resin format for the right trash can that meets the use application of your business. The right choice results in a cost savings and improves your bottom line.

## CHOOSING THE RIGHT CAN LINER

This tutorial covers the following key points of consideration when choosing the right can liner:

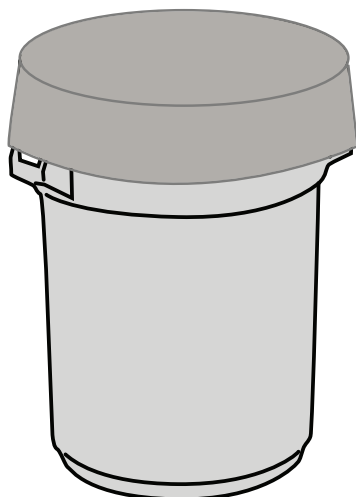
- The right size liner for the trash can, box or bin
- The right type of resin – high or low density
- The right bag seal
- The right thickness or gauge
- The right color
- What is a “Green” or compostable liner?
- The right pack size and style of a can liner

## CHOOSING THE RIGHT BAG SIZE

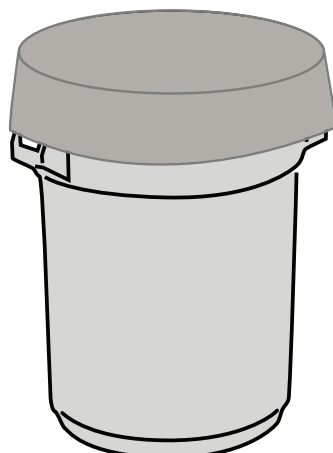
- Bags should fit snug around upper rim of can and the bottom of the bag should nest flat at the bottom of the trash can
- Excess overhang or too much bag at the bottom of a trash can costs money
- To find the right size bag for the trash can or receptacle that is being used, see the chart below.

## WHICH CAN LINER RESIN – HIGH DENSITY OR LOW DENSITY?

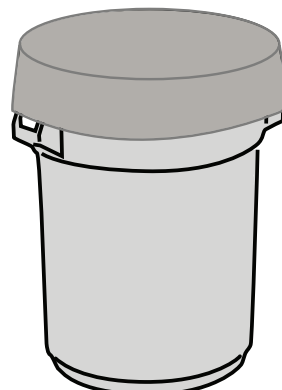
- High Density – can liners are used in soft trash applications. Example – office desk trash or bathroom paper towels and tissue. High density is gauged (thickness) in metric measurements or “Microns”. High density is less expensive than low density but it's dense molecular structure causes it to zipper when torn so it's ideal to use in applications that have lightweight trash.
- Low Density – can liners are used in heavy trash applications. Example – heavy duty construction or kitchen waste trash. Low density is gauged in standard weights and measurements or in “Mils”. A Mil measurement is thousandths of an inch. For example, a .55 mil bag would be .0055 of an inch thick. Low density is more expensive than high density can liners but they stretch and don't zipper when torn so they can take a heavy amount of pressure without compromising performance.



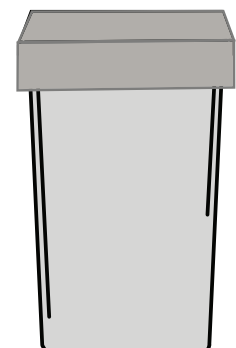
55 Gallon Container



44 Gallon Container



32 Gallon Container



23 Gallon Slim Jim

## CAN THE BOTTOM SEAL OF A CAN LINER MAKE A DIFFERENCE IN A BAG'S PERFORMANCE?

Yes a bottom seal can make a big difference in a bag's performance as noted below.

### Gusseted Seal

- The bag has a third dimension with a flat bottom. The bag is sealed at the bottom and at the corners. Although this seal allows for a pleated bottom, which might be beneficial in some circumstances, it is the weakest of the three can liner seals.



- Application – a gusseted bottom is typically used as a box liner or for retail shipping applications.

### Flat Seal

- A two dimensional bag that is simply sealed at the bottom of the bag as flat.
- Application – a flat seal is one of two common bottom seals used on traditional can liners. A bottom seal is very strong, displaces the weight evenly at the bottom of the bag without any weak spots.



### Star Seal

- The bottom of the bag is pulled together and pinched sealed so that when it opens back up the bottom seal of the bag looks like a star.
- Application – the star seal is the strongest of the three seals. The bottom area of the star displaces the weight evenly, allowing the bag to be pulled up, out of a can, without any risk of weak spots reducing leakage.



## CHOOSING THE RIGHT BAG GAUGE

- Most people choose too thick of a bag for their trash. Most don't know that a slightly thinner bag will still perform the same and meet their trash application requirements. Today's resins are strong and withstand more weight and pressure than bags from years ago.
- Example – 40x46 1.5 mil Black...could most likely be down gauged to a 40x46 1.2 Black and still perform without much compromise to performance.
- The cost savings can be significant which could help improve your overall cost.

## HELPFUL FORMULAS

### Mils vs. Microns

- Mil – A unit of measurement in thousandths of an inch. (i.e., .001 = one thousandth of an inch or 1.0 mil). Generally used to designate the thickness of LLDPE products. Mic – Short for micron, one thousandth of a millimeter. Generally used to designate the thickness of HDPE products.

### For the EXACT conversion:

- Mils to Microns: (Number of Mils) x 25.4 (i.e., .75 mil = 19 microns).
- Microns to Mils: (Number of Microns) / 25.4 (i.e., 14 microns = .55 mil).

### For the APPROXIMATE strength equivalents:

LLDPE & Blends	HDPE
.4 - .45 mil	6 micron
.6 - .75 mil	8 - 10 micron
.75 - .95 mil	10 - 13 micron
.95 - 1.1 mil	13 - 16 micron
1.1 - 1.5 mil	16 - 18 micron
1.5 - 1.8 mil	16 - 25 micron
Premium Super-Hexene	no comparable equivalent

### Formulas for determining mil thickness, case weights, and sizing:

- LLDPE Net Case Weight (W x L x Mil) / 15 = Lbs per 1000 (i.e., 24 x 23 x .4 / 15 = 14.7 Lbs/M)
- HDPE Net Case Weight (W x L x Mic) / 25.4 / 14.7 = Lbs per 1000 (i.e., 24 x 24 x 6 / 25.4 / 14.7 = 9.2 Lbs/M)
- Pounds to Grams: Number of Lbs x 454
- Ounces to Grams: Number of Ounces / 16 x 454
- Computing average gauge from an individual bag: Gauge = Bag Weight x 30.5 / Width / Length / Density (in grams) (.92 for LL) (.95 for HD)
- Computing average gauge from a case of bags: Gauge = Net Case Weight x 13,840 / Width / Length / Density (in lbs) (.92 for LL) (.95 for HD)
- Computing case weight from weight of one bag: Case Weight = Bag Weight x Case Count / 454 (in lbs) (grams)
- Measuring instructions to determine the proper size bag for any receptacle:

For a round receptacle: Width of bag required = Diameter of receptacle x 3.14 / 2 (Diameter = the distance across the top of the receptacle) Length of bag required = 1/2 of the diameter + height of receptacle + 4" to 6" for overhang

For a square or rectangle receptacle: Width of bag required = Length of two sides Length of bag required = 1/2 the smallest side + height of receptacle + 4" to 6" for overhang

### CHOOSING THE RIGHT COLOR

Most people may not care what color their trash bags are but it actually is one of the key points of consideration when choosing a can liner. Can liner manufacturers make a variety of can liner colors: clear, black, brown, red, white, blue, green, yellow and orange are usually the primary choices. However, the color of a can liner typically means something to your local waste company. For example:

- **GREEN** can liners usually indicate that the contents on the inside are “Green” or compostable so the waste company will direct this bag to their compost yard. If the bag is a certified compostable bag then it will typically have “Compostable” printed on the outside of the bag. Only biodegradable should be inserted into a compostable bag.
- **RED** can liners are typically used only for “Hazardous Waste”. Hospitals or chemical manufacturers will use these types of bags because they are picked up by a special “Hazardous Waste” agency and delivered to a waste disposal and storage yard.
- **BLUE /YELLOW** can liners are typically used in hospitals to collect soiled linens from patient rooms. This is again a special type of collection that is delivered to a cleaning company who washes the linens for healthcare applications.
- **ORANGE** can liners are typically used by government transportation agencies for roadside collection and or construction.

The other colors listed above are white, black and clear. These are the most used colors for can liners because they don't have a dedicated application. White is often used in retail trash bags sold in supermarkets. Black is a general use color and is the most highly used color of all can liners. Although black bags have a minimum of 35% recycled content, it's not enough to compromise the performance of the bag. Too much recycled content can make a can liner weak and will compromise performance.

Clear can liners come in three grades: Standard clear (which may have some recycled clear resin blended inside) – used for basic everyday trash. Some restaurants like to use clear trash bags, rather than black, because they will monitor what is placed inside of the bags. The second grade is 100% virgin clear can liners. This means that the resin has no recycled content inside which allows the bag to be used in food applications.

### WHAT IS A “GREEN” OR COMPOSTABLE LINER?

Due to recent regulation changes in many states some cities and counties now require a minimum amount of waste from business to now be either recyclable or compostable. In the foodservice industry restaurants are trying to reduce their trash waste by using compostable liners to deposit their food waste. Republic Bag uses certified compostable resin BPI certified (Biodegradable Product

Institute) that meets the ASTM-D6400 composting requirements at most commercial compost facilities. Republic manufacturers a brand called “Code Green” that is green in color and has the certification printed on the outside of each bag. This helps restaurants identify the right bag to use for their green waste. Once a local “Green” waste route carrier picks up the “Code Green” bags as they are sent to a commercial compost facility.

### CHOOSING THE RIGHT CASE PACK AND STYLE OF BAG

The last of the choices is the case pack size and the style of the bag. If you have limited storage in your business then a large case of can liners might not make sense for your operation. Can liner manufacturers can package can liners in small cases, where all of the bags might be on one roll, or packed in larger numbers in bulkier cases.

They also make different styles of bags in how they are dispensed. Some can liners are packed flat in a case and dispense out one at a time and other styles of liners come on convenient coreless rolls. Here are some helpful hints when considering the right pack size and style of liner:

- How much storage is available?
- What is the budget for can liners?
- How many liners are used in a month?
- Flat pack – dispensed one at a time from the master case
- Coreless Rolls – a roll can be handed out for an independent project




The following is a table of some of the more popular waste receptacles available on the market along with common size and liner used with each. Find the container that matches yours and note the liner size. Then choose the correct size liner in the strength you need.

**ICE BUCKET**



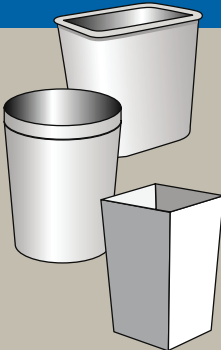
Size	Liner
3 quart	8 x 4 x 12

**ROUND TOP**



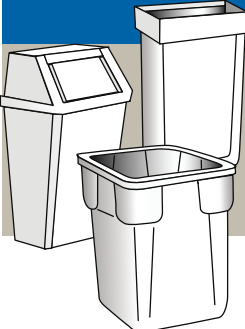
Size	Liner
33	33 x 39

**WASTE BASKETS**



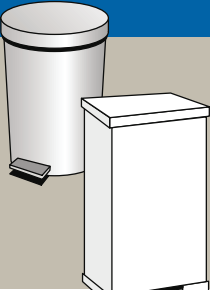
Size	Liner
4	17 x 17
7	20 x 21
7 - 10	24 x 24
10 - 15	24 x 32
12 - 16	30 x 36
33	33 x 39
40 - 45	40 x 46

**SQUARE**




Size	Liner
23	29 x 45
40 - 45	40 x 46
56	43 x 47

**STEP-ON**




Size	Liner
4	17 x 17
7	20 x 21
7 - 10	24 x 24
12 - 16	24 x 32
20 - 30	30 x 36

**OUTDOOR**



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

**ROUND BRUTE / HUSKY**



Size	Liner
12 - 16	24 x 32
20 - 30	30 x 36
33	33 x 39
40 - 45	40 x 46
60	36 x 58

- Premium Super-Hex Resins for premium performance.
- Premium performance equals source reduction and cost savings.
- Super strength new technology helps prevent leakage.
- The best choice for heavy duty jobs.
- Comes in convenient coreless rolls.
- Competes and out-performs most competitors heavier-gauged black liners.
- Save energy and buy domestic, and buy local.
- Made in Southern California.



**Environmental Benefits:**

- Local production means clean production versus Asia, and local production means lower carbon footprint for shipping.
- Premium resins means less plastic required to perform, aka source reduction.
- Excellent Fit for Slim Jim, 32 gallon & 44 gallon

MAINTEX#	BAG SIZE	MIL	GALLON	COLOR	Q/ROLL	CASE COUNT	PACKED
Note - 44" length provides for 32 gallon perfect fit! Works great in Slim Jim also!							
248930SXB	28 x 45	.86	Slim Jim	Super Blue	25/rl	250	coreless rolls
248940SXB	33 x 44	.90	32	Super Blue	25/rl	250	coreless rolls
248950SXB	40 x 46	1.00	40-45	Super Blue	25/rl	150	coreless rolls
248960SXB	38 x 58	1.15	55	Super Blue	10/rl	100	coreless rolls
248970SXB	43 x 48	1.15	56	Super Blue	10/rl	100	coreless rolls



MAINTEX#	BAG SIZE	GAUGE	GALLON	COLOR	BOTTOM SEAL	CASE COUNT	PACKED
Linear Low Density Can Liners: Industrial Grade, Full selection of both Bulk Packed & Coreless Roll							
248118	17 x 17	0.4	4	Black	Flat Seal	1000	bulk packed
248133	24 x 23	0.4	7-10	Clear	Star Seal	1000	coreless rolls
249177	22 x 23	1.5	7-10	Clear	Star Seal	500	bulk packed
248124	22.5 x 24.5	0.4	7-10	Black	Star Seal	1000	bulk packed
	24 x 23	0.6	7-10	Black	Flat Seal	500	bulk packed
248356	24 x 31	0.4	12-16	Black	Flat Seal	500	bulk packed
248129	23 x 33	0.7	12-16	Black	Star Seal	500	coreless rolls
2481504	23 x 33	1.0	12-16	Black	Star Seal	500	coreless rolls
2481504-S	23 x 33	0.9	12-16	Black	Star Seal	500	coreless rolls
248137	30 x 36	0.5	20-30	Black	Star Seal	250	coreless rolls
248385	30 x 36	0.9	20-30	Black	Star Seal	250	coreless rolls
248134	33 x 39	0.9	33	Clear	Flat Seal	250	bulk packed
248136	33 x 39	1.2	33	Clear	Flat Seal	150	coreless rolls
248487	33 x 39	1.5	33	Clear	Star Seal	250	coreless rolls
248140	33 x 40	0.7	33	Black	Star Seal	250	coreless rolls
248141	33 x 39	0.9	33	Black	Star Seal	200	coreless rolls
248144	33 x 40	1.25	33	Clear	Star Seal	250	bulk packed
248142	33 x 40	1.5	33	Black	Star Seal	150	coreless rolls
248145	33 x 40	2	33	Black	Star Seal	200	coreless rolls
248121	33 x 45	1.5	33+	Black	Star Seal	200	coreless rolls
248160	36 x 58	1.0	55	Black	Star Seal	100	coreless rolls
248161	36 x 58	1.5	55	Black	Star Seal	100	coreless rolls
248138	36 x 58	3.0	55	Black	Flat Seal	50	bulk packed
	38 x 58	1.65	55	Clear	Star Seal	100	coreless rolls
248368	38 x 58	1.7	55	Black	Star Seal	100	coreless rolls
248370	38 x 58	2.0	55	Black	Star Seal	100	coreless rolls
248369	38 x 58	2.0	55	Clear	Star Seal	100	coreless rolls
248148	40 x 46	0.7	40-45	Black	Star Seal	250	coreless rolls
2481501	40 x 46	0.9	40-45	Black	Star Seal	100	coreless rolls
248373	40 x 46	1.5	40-45	Black	Star Seal	100	coreless rolls
248178	40 x 46	1.5	40-45	Clear	Star Seal	100	coreless rolls
248151	40 x 46	1.3	40-45	Clear	Star Seal	100	coreless rolls
248157	40 x 46	1.8	40-45	Black	Star Seal	100	coreless rolls
248176	40 x 46	2.0	40-45	Black	Star Seal	100	coreless rolls
2481502	43 x 47	2.0	56	Clear	Star Seal	100	coreless rolls
248152	43 x 47	1.6	56	Clear	Star Seal	100	coreless rolls
248175	43 x 48	1.5	56	Black	Star Seal	100	coreless rolls
248184	51 x 46	1.5	KingCan	Black	gussetted	100	bulk packed



MAINTEX#	BAG SIZE	GAUGE	GALLON	COLOR	BOTTOM SEAL	CASE COUNT	PACKED
<b>"Eagle Talon" Premium Series Liners</b>							
	39 x 56	1.7	55	Gray	Flat Seal	50	bulk packed
<b>Healthcare Liners</b>							
248472	24 x 23	1.25	7-10	Red Ptd	Star Seal	500	coreless rolls
248473	24 x 33	1.20	12-16	Red Ptd	Star Seal	250	coreless rolls
248476	30 x 43	1.25	Hamper	Blue Prt	Star Seal	200	coreless rolls
248478	30 x 43	1.25	Hamper	Yellow Prt	Star Seal	200	coreless rolls
248495	30 x 43	1.25	Hamper	Red Ptd	Star Seal	200	coreless rolls
248480	33 x 39	1.25	33	Red Ptd	Flat Seal	200	bulk packed
248474	40 x 46	1.25	40-45	Red Ptd	Star Seal	100	coreless rolls
404815100RP	40 x 48	1.50	40-45	Red Ptd	Star Seal	100	bulk packed
<b>HDPE Healthcare Liners</b>							
2491116	24 x 24	11	7-10	Red Ptd	Star Seal	1000	coreless rolls
2491117	24 x 33	11	12-16	Red Ptd	Star Seal	1000	coreless rolls
	30 x 43	14	Hamper	Blue Plain	Star Seal	250	coreless rolls
248180	38 x 46	14	Hamper	Blue Plain	Star Seal	250	coreless rolls
<b>High Density Can Liners: Economical Solution, Great choice for source reduction, Convenient Coreless Rolls</b>							
249104	17 x 18	6	4	Natural	Star Seal	2000	coreless rolls
249106	20 x 22	6	7	Natural	Star Seal	2000	coreless rolls
249108	24 x 24	6	7-10	Natural	Star Seal	1000	coreless rolls
249108-S	24 x 24	.22 mil	7-10	Natural	Star Seal	1000	coreless rolls
2491080	24 x 24	6	7-10	Black	Star Seal	1000	coreless rolls
2492424	24 x 24	8	7-10	Black	Star Seal	1000	coreless rolls
249109	24 x 24	8	7-10	Natural	Star Seal	1000	coreless rolls
249110	24 x 33	6	12-16	Natural	Star Seal	1000	coreless rolls
2492433	24 x 33	8	12-16	Black	Star Seal	1000	coreless rolls
249111	24 x 33	8	12-16	Natural	Star Seal	1000	coreless rolls
249111-S	24 x 33	.28 mil	12-16	Natural	Star Seal	1000	coreless rolls
249112	30 x 37	8	20-30	Natural	Star Seal	500	coreless rolls
249112-S	30 x 37	.28 mil	20-30	Natural	Star Seal	500	coreless rolls
248471	30 x 37	10	20-30	Natural	Star Seal	500	coreless rolls
2495049	30 x 37	13	20-30	Natural	Star Seal	500	coreless rolls
249114	33 x 40	9	33	Natural	Star Seal	500	coreless rolls
249115	33 x 40	11	33	Natural	Star Seal	500	coreless rolls
249116	33 x 40	13	33	Natural	Star Seal	500	coreless rolls
2491162	33 x 40	16	33	Natural	Star Seal	250	coreless rolls
2491162-S	33 x 40	.57 mil	33	Natural	Star Seal	250	coreless rolls
2491163	33 x 40	16	33	Black	Star Seal	250	coreless rolls

MAINTEX#	BAG SIZE	GAUGE	GALLON	COLOR	BOTTOM SEAL	CASE COUNT	PACKED
High Density Can Liners: Economical Solution, Great choice for source reduction, Convenient Coreless Rolls (Continued)							
249127	33 x 40	19	33	Black	Star Seal	250	coreless rolls
249117	33 x 40	22	33	Black	Star Seal	250	coreless rolls
249170	36 x 60	14	55	Natural	Star Seal	200	coreless rolls
249128	36 x 60	17	55	Natural	Star Seal	200	coreless rolls
249171	36 x 60	22	55	Natural	Star Seal	150	coreless rolls
249118	37 x 46	12	44	Natural	Star Seal	250	coreless rolls
249118-S	37 x 46	.43 mil	44	Natural	Star Seal	250	coreless rolls
	38 x 60	14	55	Natural	Star Seal	200	coreless rolls
249129	38 x 60	22	55	Black	Star Seal	150	coreless rolls
249122	40 x 48	12	40-45	Natural	Star Seal	250	coreless rolls
	40 x 48	.43 mil	40-45	Natural	Star Seal	250	coreless rolls
2491230	40 x 48	14	40-45	Natural	Star Seal	250	coreless rolls
2491230-S	40 x 48	.50 mil	40-45	Natural	Star Seal	250	coreless rolls
249131	40 x 48	16	40-45	Black	Star Seal	250	coreless rolls
249124	40 x 48	16	40-45	Natural	Star Seal	250	coreless rolls
249124-S	40 x 48	.57 mil	40-45	Natural	Star Seal	250	coreless rolls
2494048 INNOUT - NET	40 x 48	19	40-45	Black	Star Seal	200	coreless rolls
249125	40 x 48	22	40-45	Black	Star Seal	150	coreless rolls
249125-S	40 x 48	.78 mil	40-45	Black	Star Seal	150	coreless rolls
249126	40 x 48	22	40-45	Natural	Star Seal	150	coreless rolls
249126-S	40 x 48	.77 mil	40-45	Natural	Star Seal	150	coreless rolls
249138	43 x 48	14	56	Natural	Star Seal	200	coreless rolls
2491320	43 x 48	16	56	Natural	Star Seal	200	coreless rolls
2491320-S	43 x 48	.57 mil	56	Natural	Star Seal	200	coreless rolls
2494822	43 x 48	22	56	Black	Star Seal	150	coreless rolls
2494823	43 x 48	22	56	Natural	Star Seal	150	coreless rolls
2494825	43 x 48	22	56	Gray	Star Seal	150	coreless rolls

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## FACILITY SOLUTIONS



### LOCATIONS

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