

AUTOMATIC HOME STANDBY GENERATORS



# Product Information Guide



AIR-COOLED • LIQUID-COOLED • TRANSFER SWITCHES

*For more than a century, Bryant has gained a nationwide following of homeowners who appreciate products of high quality, value and reliability. It's a reputation that we are proud of, the driving force behind our continuous effort to develop products that not only deliver comfort, but peace of mind. And, that's why we're excited to offer the Automatic Home Standby Generator.*

*The Automatic Home Standby Generator is the convenient and totally automatic way to provide electricity to your home when the utility power is interrupted.*



**Heating & Cooling Systems**  
*Since 1904*

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# Why Buy an Automatic Home Standby Generator?

Bryant's Automatic Home Standby Generator can help maintain your comfort and a relatively normal life during power outages by supplying a totally automatic backup power source to your home.

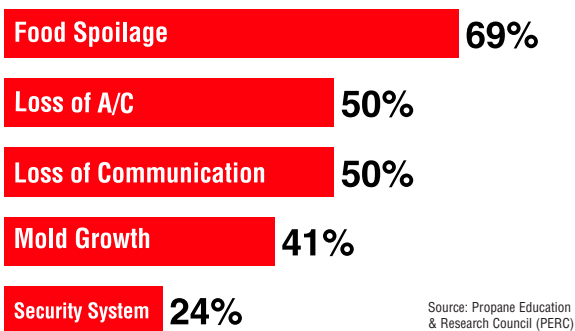
## **COST JUSTIFICATION & ADVANTAGES**

With Bryant's Automatic Home Standby Generator, you can live a relatively normal life even during extended power outages.

- Automatic Home Standby Generators can keep your heating and cooling system up and running while also supplying power to lights, furnaces, air conditioners, refrigerators, sump pumps, well pumps, computers and more.
- You don't have to do a thing. This system automatically senses loss of electricity and restores power to the selected circuits in about 30 seconds.
- The Automatic Home Standby Generator is more convenient and more powerful than portable generators that typically supply power to just a few extension cords. It is totally automatic - No manual starting, messy refueling or running extension cords needed.
- For about the same amount of money as a plasma TV, an Automatic Home Standby Generator can protect a family or small business from the consequences of an unexpected power outage.

The security, safety, and assurance that you will never be without power is priceless. Imagine how much your peace of mind is worth, knowing that your home and family are protected from power outages if you are not there to help them.

## Top 5 Concerns In A Power Outage



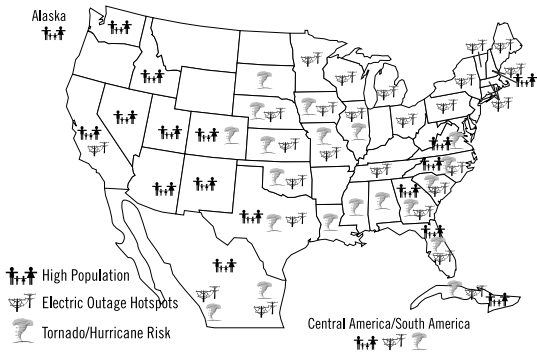
Source: Propane Education & Research Council (PERC)

### FACTS ABOUT YOUR POWER SUPPLY

- Severe weather patterns have increased dramatically over the past few years.
  - hurricanes • ice storms • thunderstorms
  - heatwaves • floods

The power outages caused by these weather events are occurring more frequently and lasting longer.

- Increased demand for air conditioning during frequently occurring heat waves create more blackouts and brownouts than all other weather patterns combined.



- The nation's power grid is making the public increasingly uneasy about the reliability of their power supply. The '03 Northeast Blackout left over 50 million people without power. In this electronic age we are becoming more and more reliant on electricity to function in our daily lives.

## What is an Automatic Home Standby Generator?

The Bryant Automatic Home Standby Generator is permanently installed outside your home and is powered by natural or liquid propane gas (LP). The system is designed to supply backup power to preselected emergency circuits that supply a home's lighting, heat, air conditioning, water and appliances. It's totally automatic, so it responds to power outages any time, day or night whether you're home or not.

# Air-cooled vs. Liquid-cooled

**Bryant®** air-cooled standby generators are designed to supply electricity to preselected circuits that supply a home's essential items in the event of a utility power outage. The pre-wired, prepackaged system makes installation easy and affordable.

Air-cooled systems can protect up to 8, 10, 12 or 16 circuits of your home, depending on model. *See page 10 for details.*



## Prepackaged systems includes:

- 100 Amp automatic transfer switch with built-in load center
- Pre-wired conduit
- Outdoor connection box
- Flexible fuel line
- Composite mounting pad



## Liquid-cooled models include:

- 200 Amp (NEMA 3R) transfer switch with service disconnect

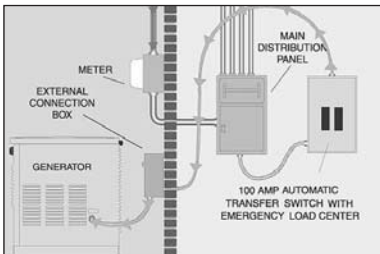
**Liquid-cooled** models are built for larger homes and small businesses. Featuring an automotive style, liquid-cooled engines and the exclusive **“ultra quiet mode”** feature, provides greater power output and quiet design for more complete and peaceful coverage during an electrical outage.



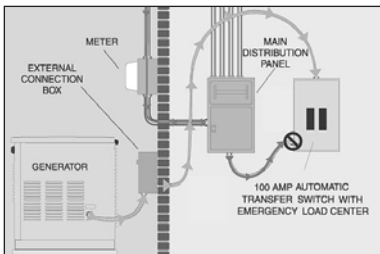
*All models are UL Listed for U.S. and Canadian safety standards.*

# How the Home Standby Generator Works

1. The Bryant automatic transfer switch (ATS) monitors incoming voltage from the utility line around the clock.



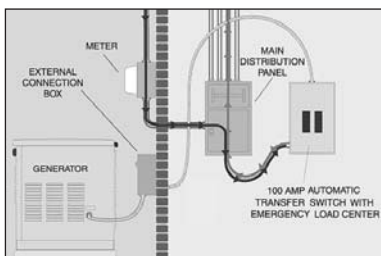
2. When utility power is interrupted, the transfer switch immediately senses the problem and signals the generator set to start.



3. The transfer switch then safely closes off the utility line and simultaneously opens a new power line from the generator. This automatic switch action will stop any “back feed” of power to the

utility line or neighboring houses. “Back feed” of electricity to the utility is extremely dangerous and could short circuit wiring in your home and neighboring homes. “Back feed” of electricity could even be fatal to a worker repairing downed power lines. Safely closing off the utility line becomes the most important feature of the transfer switch.

4. Within seconds your Bryant system begins supplying electricity to the circuits you have chosen to be powered in a utility failure. The lights and appliances on these circuits are again functioning normally. The transfer switch continues to monitor the utility line conditions in order to re-transfer back to the utility source when it returns.



5. When the transfer switch senses that utility line voltage has returned at a steady state it re-transfers the electrical load back to the utility line automatically and resumes monitoring for subsequent loss. The generator will continue to run for an engine cool down period of several minutes while the entire system stands ready for the next power outage.

# How to Size a Generator

When choosing the right generator, you must first decide how many circuits or rooms in your home or small business you should protect. The more circuits that require protection, the larger the generator you need.

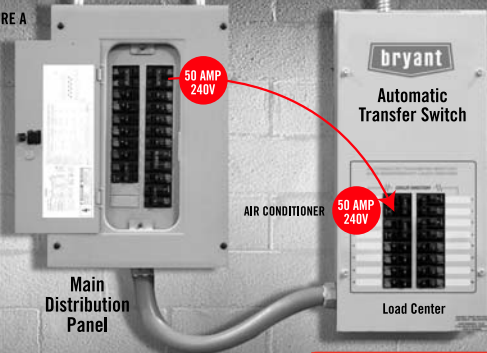
The automatic transfer switch in prepackaged, air-cooled systems allows you to match the system's load center circuits to the circuits in your home's main distribution panel. (*Fig. A*). Simply determine which circuits to protect during an outage and choose a generator. There is no need to add up wattages, since you'll never use all appliances on every circuit at the same time.

For whole house protection, Bryant's liquid-cooled models range from 25-45 kW in single phase and the commercial models range from 20-150 kW in single and three phase voltages.

To get accurate sizing requirements of a liquid-cooled generator, a licensed electrician will need to apply an amp meter to the circuits and appliances that are intended to operate on backup power to determine load.

**NOTE:** Rooms and appliances are shown as example only. You may choose other items that better fit your needs. Due to the cycling nature of some appliances all items may not be able to run simultaneously. \* A 240V 2-pole circuit breaker is equal to two circuits. Consult an electrician for starting requirements.

FIGURE A



Typical Loads	Circuits	MODELS (kW)			
		7	10	13	16
Stove	(50 Amp/240V)*				•
A/C (4-Ton)	(40 Amp/240V)*				•
A/C (3-Ton or smaller)	(30 Amp/240V)*			•	•
Well Pump or Water Heater	(20 Amp/240V)*	•	•	•	•
Family Room	(20 Amp/120V)	•	•	•	•
Master Bedroom	(20 Amp/120V)		•	•	•
Home Office	(20 Amp/120V)			•	•
Garage	(20 Amp/120V)		•	•	•
Kitchen (#1)	(20 Amp/120V)		•		•
Kitchen (#2)	(15 Amp/120V)	•		•	•
Bathroom	(15 Amp/120V)	•	•	•	•
Furnace	(15 Amp/120V)	•	•	•	•
Sump Pump	(15 Amp/120V)	•	•	•	•
Bedrooms	(15 Amp/120V)	•	•	•	•
<b>Number of circuits covered</b>		<b>8</b>	<b>10</b>	<b>12</b>	<b>16</b>

# Air-cooled Generators

Model #	ASPBS1BBA007	ASPBS1BBA016
Rated Power (LPG/NG) kW	7/6	10/9
Voltage (single phase)	120/240V	120/240V
Amps @ 120/240V LPG	58.3/29.2	83.3/41.6
Amps @ 120/240V NG	50.0/25.0	75/37.5
Engine/Alternator RPM	3600/3600	3600/3600
Displacement	410cc	530cc
Fuel Consumption @ full load		
LPG cu. ft/hr (gal/hr)	54 (1.47)	70 (1.93)
NG cu. ft/hr	119	156
Dimensions (L"x W"x H")	48 x 24 x 28.25	48 x 24 x 28
Generator Weight (lbs.)	336	375
Automatic Transfer Switch	100 Amp (NEMA 1)	100 Amp (NEMA 1)
Circuits (in load center)	8	10
Enclosure	Steel	Steel

*\*Model ASPBX1BBA016 (steel) and ASPBY1BBA016 (aluminum) available without transfer switch*

## Prepackaged system includes:

- 100 Amp automatic transfer switch with built-in load center
- Pre-wired conduits
- Outdoor connection box
- Flexible fuel line
- Composite mounting pad
- Installation guide



*All air-cooled generators and transfer switches are listed to applicable U.S. and Canadian safety standards by Underwriters Laboratories Inc.*



**PLEASE NOTE:** This product requires installation involving permanent outdoor placement, electrical wiring and fuel source connections. Natural gas pressure of 5" - 7" of water column (0.18 to 0.25 psi) LP gas pressure of 10" - 12" of water column (0.36 to 0.43) is required.

10	ASPBS1BBA013	ASPBS1BBA016	ASPBA1BBA016
	13/13	16/15	16/15
	120/240V	120/240V	120/240V
	108.3/54.2	133.3/66.6	133.3/66.6
	108.3/54.2	125/62.5	125/62.5
	3600/3600	3600/3600	3600/3600
	992cc	992cc	992cc
	80 (2.18)	92 (2.51)	92 (2.51)
	220	245	245
25	48 x 24 x 28.25	48 x 24 x 28.25	48 x 24 x 28.25
	425	445	430
A 1)	100 Amp (NEMA 1)	100 Amp (NEMA 1)*	100 Amp (NEMA 1)*
	12	16	16
	Steel	Steel	<b>Aluminum</b>

fer switch.

### Controls:

Start/Stop Control Cyclic Cranking:	7 sec. on, 7 rest.
Automatic Low Oil Shutdown	90 sec. total cycle time
High Temperature Shutdown	Standard
Overspeed Shutdown	Standard (72 Hz)
Overspeed Protection	Standard
Automatic Voltage Regulator	Standard
Engine Warm-up ( <i>Before transfer to generator</i> )	10 seconds
Engine Cool Down ( <i>After transfer back to utility</i> )	1 minute
Safety Fuse	Standard
Starter Lockout ( <i>Starter cannot reengage until 5 sec. after engine has stopped.</i> )	
2.5 Amp Timed Trickle Battery Charger	Standard

### Mode Switch:

AUTO: Automatic start on utility failure / 7 days exerciser  
OFF: Stops unit. Power is removed. Control and charger still operate.  
MANUAL/TEST: Unit remains running. If utility fails, transfer to load takes place.

# Liquid-cooled Generators & Transfer Switches

Model #	ASPDS1BBL025	ASPSA1BBL025
Rated Power (LPG/NG) kW	25/25	25/25
Voltage (single phase)	120/240V	120/240V
Amps @ 120/240V LPG	208.3/104.2	208.3/104.2
Amps @ 120/240V NG	208.3/104.2	208.3/104.2
Engine/Alternator RPM	3600/3600	3600/3600
Engine	In-line 4-cyl.	In-line 4-cyl.
Fuel Consumption @ full load		
LPG cu. ft/hr (gal/hr)	175 (4.61)	175 (4.61)
NG cu. ft/hr	437	437
Transfer Switch	<i>(All models include)</i>	
Dimensions (L"x W"x H")	71 x 29.5 x 36	71 x 29.5 x 36
Generator Weight (lbs.)	794	704
Ultra Quiet Mode Feature	Yes	Yes
Enclosure	Steel	<b>Aluminum</b>

## Controls:

Start/Stop Control Cyclic Cranking: 7 sec. on, 7 rest.

High Temperature Shutdown Standard

Overcrank Protection Standard

Engine Warm-up (*Before transfer to generator*) 10 seconds

Safety Fuse Standard

2.5 Amp Timed Trickle Battery Charger Standard

**Mode Switch:** AUTO: Automatic start on utility failure/ 7 days exerciser

OFF: Stops unit. Power is removed. Control and charger still operate.

MANUAL/TEST: Unit remains running. If utility fails, transfer to load tank

## Transfer Switches

		Standard
Model	KGATX0101100	KGATX0101100
Manufacturer Model	100A-STD	200A-STD
Rated Current	100 AMP	200 AMP
Voltage	120/240V	120/240V
Service Disconnect Breaker	NA	NA
Terminal Wire Ranges - Switch Terminal	1/0 - 14	250MCM - 14
Neutral Lug	2/0 - 14	350MCM - 14
Ground Lug	350MCM - 6	350 MCM - 6
Dimension (H"xW"xD") Height - H1/H2	16.5 / 20.0	16.5 / 20.0
Width - W1/W2	11.57 / 15.15	11.57 / 15.15
Depth	7.07	7.07
Unit Weight (lbs.)	35	35

# Transfer Switches

ASPDS1BBL035	ASPDA1BBL035	ASPDS1BBL045	ASPDA1BBL045
35/35	35/35	45/45	45/45
120/240V	120/240V	120/240V	120/240V
291.6/145.8	291.6/145.8	333.3/166.6	333.3/166.6
291.6/145.8	291.6/145.8	308.3/154.2	308.3/154.2
3600/3600	3600/3600	3600/3600	3600/3600
In-line 4-cyl.	In-line 4-cyl.	In-line 4-cyl.	In-line 4-cyl.
223.3 (6.1) 560	223.3 (6.1) 560	286 (7.86) 560	286 (7.86) 720
<i>200 Amp NEMA 3R transfer switch with service disconnect</i>			
71 x 29.5 x 36	71 x 29.5 x 36	77 x 33.5 x 45	77 x 33.5 x 45
1393	1276	1414	1297
Yes	Yes	Yes	Yes
Steel	<b>Aluminum</b>	Steel	<b>Aluminum</b>

Automatic Low Oil Shutdown 90 sec. total cycle time  
 Overspeed Shutdown Standard (72 Hz)  
 Automatic Voltage Regulator Standard  
 Engine Cool Down (After transfer back to utility) 1 minute  
 Starter Lockout (Starter cannot re-engage until 5 sec. after engine has stopped.)



places place.

Service Disconnect			
200	KGATX0101400	KGATD0301100	KGATD0301200
D	400A-STD	100A-SRV	200A-SRV
P	400 AMP	100 AMP	200AMP
V	120/240V	120/240V	120/240V
	NA	(2) x 100 AMP HACR TYPE	(2) x 100 AMP HACR TYPE
- 6	(1) 600 MCM - 1/0	1/0 - 14	250MCM -6
- 6	or (2) 250MCM-1/0	2/0 - 14	350MCM - 6
- 6	350MCM - 6	#4 - #14 AWG	#4 - #14 AWG
.0	31.25 / 36.0	20.75 / 23.5	20.75 / 23.5
.15	19.17 / 24.38	10.67 / 13.05	13.71 / 15.83
	10.22	7.36	7.36
	88	50	55

# Installation Preparation

*Air-cooled models only.*

## ITEMS YOU NEED:

- Battery should be 12 volt, negative ground with top posts.  
**7 kW:** Minimum 350 CCA at 0° F (Group 26)  
**10, 13 & 16 kW:** Minimum 525 CCA at 0° F (Group 26)
- 40 Amp (7 kW) or 70 Amp (10, 13 and 16 kW) double pole circuit breaker (Must be compatible with your main distribution panel.)
- Grounding rod with grounding strap
- Crushed stone or pea gravel (approximately 10-12 cubic feet)
- Black poly-film or other vegetation blocking fabric (5-1/2' x 5')
- Silicone caulk
- Pipe sealant (suitable for gaseous fuel connections)
- Fasteners (to mount external connection box and automatic transfer switch with built-in load center)

## TOOLS REQUIRED:

Drill, drill bits, hole saw (type and length will be determined by the materials you will be drilling and cutting), open-end wrenches or adjustable wrenches, socket wrenches or nut drivers, standard and Philips screwdrivers, level, sledge hammer, channel-lock pliers, spade shovel, pencil and safety goggles.

# Step-by-step Installation

## OBTAIN PERMITS

1. Visit your local municipal office to obtain necessary permits for installation.



## FUEL CONNECTION

2. Arrange to have a natural gas or LP gas fuel connection, complete with shut-off valve, located within 14" of generator fuel inlet.



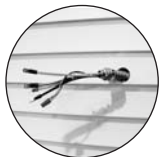
## PREPARE LOCATION

3. Clear an area 5-1/2 feet by 5 feet minimum of grass and vegetation to a depth of 5 inches. This includes the distance the generator should be set away from any structure (3 feet) and 6 inches beyond the width and length of the generator mounting pad (48" L x 24" W).

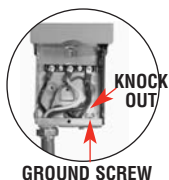


**NOTE: Local codes may supercede these requirements.**

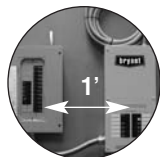
4. Connect flex fuel line to gas piping and generator fuel inlet. Check for leaks with soapy water.
5. Drill a 1-3/4" diameter hole through exterior wall to inside using hole saw.
6. From the interior of the house, feed end of 30' conduit from automatic transfer switch through wall to outside.



7. Remove internal cover plate. Remove knockout in lower right corner of the external connection box. From the rear of the connection box, feed wires and 4-pin plug into box. Slip the lock nut over the wires and plug and tighten securely onto conduit coupling. Match and connect wires by color to lugs with existing wires. Snap together the 4-pin connector. Loosen the nut from the grounding lug and attach ground wire (green) from the conduit. Reinstall the nut and tighten. Mount external connection box over pre-drilled hole. Seal around the conduit with insulation and silicone caulk. Also, caulk around sides and top of box to seal the edges to wall. Reinstall cover plate. Close cover and install lock.



8. Install the automatic transfer switch in close proximity to your main electrical distribution panel. Secure excess conduit to walls and/or ceiling.



**SWITCH OFF SERVICE ON  
MAIN CIRCUIT BREAKER!**

9. In this step you will be relocating circuits to be powered by the generator from your main panel to the emergency load center. After removing the proper size knockout, remove the threaded lock nut from the connector and feed all wires from 2' conduit into your main electrical distribution panel. Slip the lock nut over wires from the inside of the main panel and tighten onto connector securely.

10. All wires are color coded and labeled with amperage and voltage to make connection easy. Remove the black wire from the circuit breaker in the main panel

and reconnect it to the appropriate wire from the emergency load center with a wire nut. Trace the black (hot) wire you have just connected back to the same Romex® cable (circuit) to find its mating white (neutral) wire. Wire nut this wire to the matching circuit number on the white (neutral) wire coming from the emergency load center. Repeat this step for the rest of the circuits to be run by the generator.



11. Install the 40 Amp or 70 Amp double pole circuit breaker into the main electrical distribution panel. This circuit breaker must be compatible with your panel. Switch off the circuit breaker. Connect the white wire to the main distribution panel neutral bar. Connect the green wire to the main electrical panel ground bar. Connect the black and red wires to the 40 Amp or 70 Amp double pole circuit breaker. All indoor wiring is now complete.



### **DON'T FORGET...**

- Remove fuses in control panel before installation
- Install and connect starting battery
- Open fuel valve
- Reinstall fuses in control panel when done
- Set generator mode switch to "Auto"
- Set exercise timer – Switch on service main circuit breaker, the circuit breakers in your main panel and circuit breakers in the load center



**EXERCISER SWITCH**

# Frequently Asked Questions

## **Q How long does it take to install a standby generator?**

A The air-cooled 7 kW, 10 kW, 13 kW and 16 kW come equipped with a comprehensive installation kit and can take as little as four hours. The liquid-cooled 25 to 45 kW normally take up to 14 hours over two days. The reason is that while the Air-cooled units include a composite mounting pad, the liquid-cooled units require added weight and must be placed on a stronger mounting surface. Concrete slabs are poured and need one day to set properly, which accounts for some of the additional installation time. If the installer can source a prefabricated mounting pad that will meet the weight requirements, the installation time will be reduced accordingly. The length of time is based on a “typical application.” It does not apply to extended runs of conduit or gas piping or placement of a unit away from the incoming gas or electrical service.

## **Q What’s the difference between air-cooled and liquid-cooled?**

A Air-cooled generators allow you to make it through power outages economically and with minimum discomfort. Liquid-cooled models are for larger requirements such as whole house power coverage and light commercial applications.

## **Q Why should I buy a home standby instead of a portable generator?**

A While portable generators are effective in terms of backup power, a home standby generator produces higher quality electricity, operates automatically and exercises weekly to ensure proper response to your

needs. There are no extension cords to plug in, no gasoline to retrieve and fill and will protect your home or business while you're away.

**Q What should I do if a customer has 200 Amp service in their home?**

A It is always recommended that emergency circuits be isolated into a sub panel with its own breakers if the generator is not sized large enough to carry the entire home's electrical load. That way there isn't any possibility that the generator will be overloaded and the system is able to operate as intended, truly automatic.

**Q Will 200 Amp transfer switches be available for pre-wired 7 kW, 10 kW, 13 kW and 16 kW units?**

A No. It is not electrically necessary. The output of these units are safely carried with the 100 Amp switch.

**Q How much fuel do the units use?**

A See pages 12-15 or reference charts.

**Q Why aluminum enclosures?**

A In coastal communities, salt air can destroy steel in a short period of time. Aluminum is corrosion resistant, so it prolongs the life and look of the generator.

**Q What is the maintenance schedule?**

A The maintenance schedule is in the owner's manual. The schedule varies between the air-cooled and the liquid-cooled models.

**Q What is the expected life of the engine?**

A A properly maintained engine should provide over 20 years of operation under standby conditions.

**Q How much oil does the engine crankcase hold?**

- A Air-cooled: 7 kW = 1.5 qts  
10 kW, 13 kW & 16 kW = 1.7 qts
- Liquid-cooled: 25 kW = 4.0 qts.  
35 kW = 4.0 qts.  
45 kW = 4.0 qts.

**Q What type of oil is recommended?**

- A For the 7 to 16 kW air-cooled models: At the first oil change, an all season synthetic oil 5W-30 can be used. API Service Class SG, SH or SJ 5W-30 should be used in all cases.

The recommended oil for the liquid-cooled models is 15W-40. Oil should be rated high detergent and meet or exceed API Service Class SG, SH or SJ requirements for gasoline engines.

**Q Propane tanks are usually rated by pounds. Is there a conversion that can be applied to the fuel consumption numbers?**

- A Yes. For general conversion, propane weighs 4.24 lbs. per gallon.
- 1 lb. = 8.58 cu ft.                      1 gallon = 36.39 cu ft.



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