

Use the following approximate weights of materials to estimate payloads. Subtract 150 pounds per person from the payload and remember to reduce payload calculation by the weight of such add-ons as a snow plow, rear tailgate lift, and any tools or items carried in the cab.

Approximate Weights of Materials

Most materials and commodities vary in weight, and containers vary in shape and size. Therefore, it is impossible to list anything but average weights per cubic foot or per unit of measurement, and the following weights should be used only for approximation purposes. When it is necessary to figure weights accurately for recommendation of truck or tractor-trailer equipment, exact weights and dimensions should be obtained from local sources. This is particularly true of fruits and vegetables, containers for which vary widely in type, size and shape.

A. BUILDING SUPPLIES

(other than lumber and stone)

Pounds per Cubic Foot/Cubic Yard

Asbestos	153/4130
Asphalt brick	125/3375
lumps	85/2300
paving	100/2700
Cinders	50/1350
Clay dry lumps	85/2300
wet lumps	110/2970
wet packed	135/3650
fire	125/3375
Concrete cinder or slag	120/3250
gravel or stone	150/4050
average wet mix	138/3730
Crushed stone, average	100/2700
Earth (loam) loose	76/2050
shaken	87/2350
packed	95/2565
moist	100/2700
wet	125/3375
Gravel dry	95/2565
wet	125/3375
Mortar lime	110/2970
rubble-dry	138/3730
rubble-wet	154/4160

Mulch	19-30/500-800
Pitch	70/1900
Plaster of Paris (gypsum)	150/4050
Quicklime solid	95/2550
ground-loose	55/1485
shaken	75/2030
Rock crushed, average	100/2700
Sand fine-dry	110/2970
fine-wet	125/3375
coarse-dry	95/2565
coarse-wet	120/3240
Tar	65/1755
Terra Cotta	110/2970
Tile solid	115/3100
construction	40/1080

Pounds per Thousand

Brick	
Soft, 2-1/4 x 4 x 8-1/4	4320
Common, 2-1/4 x 4 x 8-1/4	5400
Hard, 2-1/4 x 4-1/4 x 8-1/2	6480
Pressed, 2-3/8 x 4 x 8-3/8	7500
Paving, 2-1/2 x 4 x 8-1/2	6750
Paving block, 3-1/2 x 4 x 8-1/2	8750
Fire, 2-1/2 x 4-1/2 x 9	7000

Pounds per

Cement, Portland	94 sack
(4 sacks per barrel)	
Cement block 8 x 8 x 16	42 each
8 x 12 x 16	58 each
Cinder block 8 x 8 x 16	35 each
8 x 12 x 16	45 each
Glass common window	162 cubic feet
plate, 1/4 thick	3.3 square feet
Lime small barrel	210 barrel
large barrel	320 barrel

B. FARM AND DAIRY PRODUCTS

(except fruits and vegetables)

Pounds per

Alfalfa seed	60 bushel
Barley	48 bushel
Bran	20 bushel
Buckwheat	49 bushel
Butter 15 diameter x 5-1/4	25 tub
15 diameter x 15	70 tub
10-1/4 x 8-3/4 x 10-1/2	
(30-pound bricks)	32 case
9 pound pail	10 each
Calf, live (average)	150 head

Cheese 15 diameter x 5-1/4	25 box
15 diameter x 7-1/2	35 box
15 diameter x 15	70 box
Chickens Live-broilers (20 average)	58 crate
Live-fowl (12 average)	78 crate
Standard crate, empty 24 x 35 x 13	
	18 each
Clover seed	60 bushel
Corn ear	35 bushel
shelled	56 bushel
sweet corn (green)	43 bushel
Corn meal	44 bushel
Cotton Gin bale 30 x 48 x 54	515 each
Standard bale 24 x 28 x 56	515 each
Compressed bale 20 x 24 x 56	515 each
Cotton seed	32 bushel
Cow live-feeder (average)	600 head
live-butcher (average)	800 head
live-heavy steer (average)	1100 head
Eggs 30 dozen 12 x 12 x 26	55 crate
Flax Seed	56 bushel
Flour	19-1/8 head
30 stave	215 barrel
Hay, baled 17 x 22 x 40	60 bale
Hay, baled 14 x 16 x 43	85 bale

Hemp seed	44 bushel
Hog, live (average)	235 head
Horse, live (average)	1350 head
Ice cream 2-1/2 gallon 9 diameter x 11	18 can
5 gallon 9 diameter x 21	35 can
Lamb, live (average)	80 head
Malt barley	28 bushel
Malt rye	32 bushel
Malt brewer's grain	40 bushel
Millet	50 bushel
Oats	32 bushel
Popcorn ear	35 bushel
shelled	56 bushel
Rice, unhulled	43 bushel
Rye	56 bushel
Sheep, live (average)	138 each
Shorts	20 bushel
Soy beans	60 bushel
Straw, baled 17 x 22 x 40	45 bale
Tallow	60 cubic feet
Timothy seed	45 bushel
Vetch seed	60 bushel
Wheat, bulk	60 bushel
bag	90 1-1/2 bushel
Wool, pressed	82 cubic feet

Cargo and load capacity limited by weight and distribution.

C. FRUITS, VEGETABLES AND NUTS

(in bulk unless container is specified)

Pounds per Bushel Container or Container (dimensions in inches)

Apples, fresh bushel	48
Western, box 11-1/2 x 12 x 20	50
New England, box 11-1/4 x 14-1/4 x 17-1/2	56
Standard barrel 17 hd. 28-1/2 stone	160
Apricots, fresh bushel	48
Western, box 5-1/2 x 12 x 20	23
Artichokes, box 10 x 11-1/12 x 22	44
Asparagus, crate, 11-1/2 high, 19-3/8 long, 9-3/4 wide top, 11 bottom	
loose	38
bunches	31
Avocados	
box 5-3/4 x 11-1/4 x 17-1/2	16
Bananas, carton 4-1/4 x 14-1/4 x 30	38
Bananas, single stem bunch	55
Beans, dry castor bushel	46
Beans, dry white bushel	60
Beans, dry lima bushel	56
Beans, fresh lima bushel	39
Beans, fresh string bushel (hamper) string 5-peck	45
Beets (average) bushel	55
Beets small crate 9-3/4 x 13-1/4 x 24	50
Western crate 14 x 19 x 24-1/2	95
Berries crate 24 pint. 9-3/4 x 9-3/4 x 20	25
Berries	
crate, 24-quart 11-3/4 x 11-3/4 x 24	48
Berries	
crate, 32-quart 15-1/2 x 11-3/4 x 24	63
Broccoli	
bushel crate 12-3/4 x 12-3/4 x 17	30
Brussels sprouts	
crate 7-3/4 x 10-1/2 x 21-3/8	26
Cabbage hamper 1-1/2 bushel	58
Cabbage	
crate 12-3/4 x 18-1/2 x 19	60
Cabbage Western	
crate 14 x 19 x 24-1/2	85

Cabbage	
barrel crate 12-3/4 x 18-3/4 x 37-3/8	110
Cantaloupe,	
crate pony 11-3/4 x 11-3/4 x 23-1/2	58
standard 12-3/4 x 12-3/4 x 23-1/2	68
jumbo 13-3/4 x 13-3/4 x 23-1/2	78
pony flat 4-3/4 x 12-3/4 x 23-1/2	26
standard flat 5-1/4 x 14-1/4 x 23-1/2	28
jumbo flat 5-1/4 x 15-1/4 x 23-1/2	32
Carrots topped bushel	55
Carrots with tops bushel	40
Carrots with tops	
crate 11-3/4 x 14-1/8 x 24	60
Cauliflower bushel	30
Cauliflower crate 9-3/8 x 19 x 24	50
Celery	
standard crate 11-5/8 x 22 x 22-5/8	70
Celery	
1/2 crate 10-3/4 x 13 x 20-3/8	35
Celery Northern	
crate 16-1/2 x 21-1/4 x 22	85
Cherries unstemmed bushel	56
Cherries stemmed bushel	64
Cherries lug box 5-3/8 x 11-7/8 x 19-3/4	17
Chestnuts bushel	50
Cranberries 1/4 barrel box	
9-1/2 x 11 x 14	28
1/2 barrel box 12-1/4 x 14-3/4 x 22	60
Cucumbers bushel	55
crate 9-3/4 x 13-3/4 x 24	75
case 5 x 13-1/4 x 19	26
Eggplant hamper bushel	40
Eggplant crate 14 x 11-3/4 x 24	54
Endive basket bushel	25
Endive hamper 1-1/2 bushel	36
Grapefruit Western	
box 11-1/2 x 11-1/2 x 24	68
Grapefruit Southern	
box 12-3/4 x 12-3/4 x 27	90
Grapes basket bushel	48
Grapes lug	
box 5-3/8 x 16-3/8 x 17-1/2	30
Grapes Western	
keg 15-1/2 diameter x 14	45
Grapes basket 12 quarts	18
Greens bushel	25

Hickory nuts bushel	45
Horseradish roots bushel	35
Kale bushel	25
Lemons, Limes Western	
box 10 x 13 x 25	80
Lemons, Limes Southern	
box 12-3/4 x 12-3/4 x 27	90
Lentils bushel	60
Lettuce hamper bushel	25
Lettuce hamper 1-1/2 bushel	38
Lettuce	
basket 8-1/2 x 11-3/4 x 21-3/8	17
Lettuce	
crate 13-1/4 x 17-1/2 x 24-1/2	75
Lettuce	
1/2 crate 9-1/2 x 13-1/2 x 24-1/2	40
Okra hamper 1/2 bushel	18
Okra hamper bushel	34
Onions Dry basket bushel	55
Dry bag 17 x 32	50
Dry crate 20-1/2 x 11-1/2 x 24	58
Green, with tops bushel	32
Oranges Western	
box 11-1/2 x 11-1/2 x 24	80
Oranges Southern	
box 12-3/4 x 12-3/4 x 27	90
Oranges bushel	
box 10-3/4 x 10-3/4 x 23-1/2	65
Parsley bushel	
crate 12-3/4 x 12-3/4 x 17	30
Parsnips bushel	50
Peaches basket bushel	48
Peaches basket 1/2 bushel	25
Peaches crate 10-1/2 x 11-1/4 x 24	50
Peaches Western	
box 5-1/2 x 12-1/4 x 19-3/4	22
Peanuts, unshelled bushel Bag 100	22
Pears	
basket bushel	50
Pears Western	
box 9-5/8 x 12-1/8, 19-3/4	51
Peas dry bushel	60
Peas fresh hamper bushel	35
Peas fresh hamper 40 quarts	45
Peas large bag	100
Pecans small bag	50
Peppers basket bushel	25
Peppers crate 14-1/8 x 11-3/4 x 24	45

Pecans crate 11 x 12-1/2 x 36	85
Plums basket bushel	56
Plums Western	
box 5-5/8 x 16-3/8 x 17-1/2	25
Potatoes sweet bushel	55
White or Irish bushel	60
bag 1-2/3 bushel	102
barrel	185
Prunes box 5-5/8 x 16-3/8 x 17-1/2	25
Quinces bushel	50
Radishes basket bushel	34
Radishes crate 9-3/8 x 13-3/4 x 24	40
Rhubarb box 5-1/4 x 11-1/2 x 22	24
Romaine crate 13-7/8 x 18-7/8 x 24-1/2	64
Romaine crate 12-1/4 x 13 x 15-1/4	27
Rutabagas bushel	56
Spinach bushel	27
Squash bushel	46
Sweet corn basket bushel	45
Sweet corn crate 13 x 13 x 24	60
Tomatoes basket bushel	55
Tomatoes lug box 7-1/4 x 14 x 17-1/2	35
Tomatoes crate 10-1/2 x 11-1/4 x 24	48
Tomatoes basket 8-1/2 x 8-3/4 x 20	18
Turnips bushel	54
Walnuts bulk bushel	50
Walnuts bag	100

Honey	90/12.0
Kerosene	50/6.6
Linseed oil	59/7.9
Lubricating oil	52/7.0
Maple syrup	82/11.0
Milk, bulk	64/8.6
Molasses	90/12.0
Muriatic acid, 40%	40/10.0
Naphtha, petroleum	42/5.6
Nitric acid, 91%	94/12.5
Olive oil	58/7.7
Peanut oil	57/7.6
Petroleum	56/7.5
Sorghum syrup	86/11.5
Soybean oil	58/7.7
Sugar cane syrup	85/11.3
Sulfuric acid, 87%	112/15.0
Turpentine	54/7.3
Vinegar	64/8.5
Water, fresh	63/8.4

Size Pound per Container

Beer wood barrel 1/4 barrel	105
Beer steel barrel 1/4 barrel	95
Beer wood barrel 1/2 barrel	205
Beer steel barrel 1/2 barrel	190
Carton 24 12-oz. regular bottles 17-1/4 x 11-1/2 x 9-7/8	45
steinie bottles 18-3/8 x 12-1/8 x 7-3/8	40
tin cans 16-1/4 x 11 x 5-1/8	28
Wood case 24 12-oz. regular bottles 21 x 13-1/2 x 10	53
steinie bottles 22 x 13-3/4 x 7-1/2	46

Note: Beer cases are of many types with variable sizes and weights. Cases shown are average for popular full depth type with partitions.

Milk 5-gallon can 10-1/4 diameter x 19	62
10-gallon can 13 diameter x 23	115
crate 20 1/2-pint bottles	33
crate 20-pint bottles	54
crate 12-quart bottles	64

Note: Milk bottle crates vary widely in dimensions and weights. Those shown are average weights.

Molasses 50-gallon barrel 20 1/4 hd., 34 stave	675
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D. LIQUIDS

Pounds per Cubic Foot/Gallon

Acetone	50/6.6
Alcohol, commercial	51/6.8
Asphalt, hot oil	71/9.5
Carbolic acid	60/8.0
Castor oil	61/8.1
Chloroform	95/12.7
Coconut oil	58/7.8
Corn oil	58/7.8
Corn syrup	86/11.5
Cotton seed oil	58/7.8
Cream	64/8.5
Creosote	69/9.2
Crude oil	56/7.5
Ether	46/6.2
Fuel oil Diesel	52/7.0
Fuel oil Furnace	56/7.5
Gasoline	45/6.0
Glycerin	79/10.5

Cargo and load capacity limited by weight and distribution.

Soft drinks	
Half depth bottle box 24 6- to 8-ounce bottles 12-1/4 x 18-3/4 x 8-1/2	39
Full depth bottle box 12 24- to 32-ounce bottles 13-3/8 x 18-1/2 x 12-1/4	60

E. LUMBER Air Dried

Kiln-dried lumber averages 10% to 15% lighter, and green lumber 40% to 50% heavier, than air-dried.

Pounds per Cubic Foot/1000 Board Feet

Ash black or red	40/3330
Ash white	46/3830
Bamboo	22/1830
Basswood	30/2500
Beech	30/2500
Birch	48/4000
Butternut	30/2500
Cedar	30/2500
Cherry	44/3670
Chestnut	37/3080
Cottonwood	37/3080
Cypress	30/2500
Elm soft	38/3170
Elm rock	45/3750
Fir Douglas	32/2670
Fir Eastern	25/2080
Gum	40/3330
Hemlock	29/2420
Hickory	54/4500
Locust	42/3500
Mahogany	42/3500
Maple hard	44/3670
Maple soft	34/2830
Oak black	42/3500
Oak red	42/3500
Oak white	48/4080
Pine long leaf	44/3670
North Carolina	36/3000
Oregon	32/2670
Red	30/2500
White	26/2170
Yellow Northern	34/2830

Southern	45/3750
short leaf	38/3170
long leaf	44/3670
Poplar	27/2250
Redwood	30/2500
Spruce	28/2330
Sycamore	37/3080
Walnut	43/3580
Willow	31/2580

Lath Standard length 29 inches. Put up in bundles of 50. Average bundle: diameter 9 inches; weight 25 pounds. Shingles Bundle contains the equivalent of 250 shingles; measures 24 x 20 x 10; average weight 50 pounds.

F. METALS, MINERALS, ORES, ROCK, STONE, COAL

Pounds per Cubic Foot/Cubic Yard

Alabaster, gypseous	160/4320
Aluminum, pure	165/4450
Andesite stone	180/4850
Antimony	420/11350
Asbestos	153/4130
Babbitt	440/11900
Barytes, mineral	280/7560
Basalt rock	185/5000
Bauxite	160/4320
Bluestone	120/3240
Borax	110/2970
Brass cast	525/14175
Brass rolled	534/14420
Brass drawn	542/14635
Bronze	550/14850
Chalk	137/3700
Charcoal oak	33/890
Charcoal pine	23/620
Coal, broken Anthracite	60/1600
Bituminous	45/1200
Pocahontas	50/1350
Cannel	50/1350
Coke	27/730
Copper cast	550/14850
Copper rolled	560/15120

Diabase	185/5000
Dolomite	181/4890
Emery	250/6750
Feldspar	160/4320
Flint	185/5000
Gneiss – solid	160/4320
Gneiss – crushed	95/2565
Granite – solid	175/4725
Granite – crushed	96/2590
Graphite	170/4590
Greenstone – solid	187/5050
Greenstone – crushed	107/2900
Gypsum	150/4050
Iron – cast	450/12150
Iron – wrought	485/13100
Hornblende	187/5050
Lead – cast	710/19170
Limestone – solid	166/4480
Limestone – crushed	95/2565
Magnesite	187/5050
Manganese	475/12825
Marble – solid	165/4455
Marble – crushed	95/2565
Marl	140/3800
Mercury	850/22950
Mica	185/5000
Nickel	537/14500

Note: Most ores are 15% to 20% heavier than the rock that forms the bulk of the ore.

Peat	50/1350
Phosphate rock	200/5400
Porcelain	150/4050
Porphyry	172/4645
Pumice	40/1080
Pyrites	315/8500
Quartz	165/4455
Rip rap stone	65/1750
Salt rock, solid	136/3670
very coarse	35/950
coarse	45/1215
fine	50/1350
barrel, average	280
Saltpeter	69/1860
Sandstone solid	147/3970
Sandstone crushed	86/2325
Shale solid	172/4645

Shale crushed	92/2485
Silica	135/3650
Slag solid	175/4750
Slag crushed	75/2025
Slag screenings	100/2700
Slate	175/4725
Soapstone	169/4565
Steel Cast	490/13250
Steel rolled	495/13365
Stone crushed, average	100/2700
Sulphur	125/3375
Talc	170/4600
Tin	460/12400
Trap rock	187/5050
Zinc	440/11880

G. MISCELLANEOUS

Pounds per Cubic Foot/Cubic Yard

Ashes, cool (packed)	45/1215
Bone	115/3110
Cork	15/405
Furniture (household goods)	6/160
Garbage dry, paper wrapped	15-30/400-800
wet	50/1240
Groceries miscellaneous assort.	30/810
Ice	57/1540
Paper solid, average	58/1565
Rubber goods	94/2540
Snow, moist packed	50/1350

Cargo and load capacity limited by weight and distribution.