

Density of Materials

The weights represent, in many cases, the weights of materials as settled or packed in bins, while lower weights should

generally be figured for materials as slightly agitated or fluffed by handling in elevators, screw conveyors, etc.

Material	Avg. Wgt. of One Cu. ft. (lbs.)	Angle of Repose	Material	Avg. Wgt. of One Cu. ft. (lbs.)	Angle of Repose
Alcohol, proof spirit	58		Coke, Refiners	35-40	
Aluminum, cast, pure	160		Coke, loose, good quality	23-32	30-45
Anthracite, broken, loose	55	27	Concrete, conglomerate, with Portland cement	143-150	
Asbestos	175		Concrete, gravel, with Portland cement	150	
Ash, American White, dry (wood)	47		Concrete, loose, unrammed, weights 5 to 25% lighter, varying with consistency		
Ashes of soft coal, solidly packed	40	40	Copper, cast	542	
Asphaltum	87		Copper, rolled	555	
Barytes	180		Corn, shelled	45	
Batch, Glass	90		Corn, meal	40	
Beans	48		Cork, dry	15	
Benzine	50		Cotton seed	25	
Bauxite, Crushed	80		Cotton seed cake, cracked	41	
Brass (copper and zinc), cast	519		Cotton seed hulls	12	
Brick, best pressed	134		Cotton seed meal	35	
Brick, common and hard	112-125		Cullet	80-120	
Brick, fire	144		Cypress	38	
Brickwork, cement	112		Earth, common load, perfectly dry, loose	72-80	30-45
Bronze, copper 8, tin 1 (gun metal)	552		Earth, common load, perfectly dry, shaken	82-92	30-45
Cedar	24		Elm, perfectly dry	42	
Cement, Portland, per barrel, net, 376 pounds	100		Feldspar, powdered	75	
Cement, Portland, standard proportioning	100		Fir	35	
Chalk	156		Fir, Eastern	25	
Char	45		Flax seed	45	
Charcoal of pines and oaks	20-38		Flour, 196 pounds per barrel, net	35-40	
Cherry, perfectly dry	44		Fuller's earth	35-45	
Chestnut wood, dry	38		Glass	163	
Cinder, blast furnace	57		Granite, solid	166	
Cinders (coal, ashes and clinkers)	40	25-40	Granite, broken	96	
Clay, dry, in lump, loose	75	25-45	Gravel	100	30-40
Clinker, cement	80-95		Gypsum, under 1" crushed	80-100	
Coal, bituminous, solid	84		Gypsum, powdered	60-80	
Coal bituminous, broken, of any size, piled	44-52	35	Hay, baled	24	
Coal, Steam	50		Hemlock, perfectly dry	25	
Coke, Breeze	25-34				

Density of Materials (continued)

Material	Avg. Wgt. of One Cu. ft. (lbs.)	Angle of Repose	Material	Avg. Wgt. of One Cu. ft. (lbs.)	Angle of Repose
Hides, green, 85 pounds each	—		Pine, Yellow Northern, perfectly dry	34	
Hickory, perfectly dry	50		Poplar, dry	32	
Ice	56		Quartz	90-100	
Iron, cast	446		Salt, coarse	45	
Iron, wrought	480		Salt, dry, fines	80	
Lead, commercial	709.6		Sand, damp	117-130	
Lignumvitae (dry)	41-83		Sand, dry	90-110	
Limestone, loose	96		Sandstone, quarried and piled	86	
Limestone and Marble	105		Sawdust	13	
Lime, quick	95		Shales	92	
Lime, quick, ground, well shaken	64		Slag	160 -180	
Lime, hydrated	20-45		Slag, furnace, granulated	53	
Locust, dry	46		Slate	175	
Magnesium	109		Slurry, cement	90	
Mahogany	56		Soda	42	
Mahogany Honduras	35		Soda ash	32-67	
Manganese	500		Spruce, dry	25	
Maple, dry	44		Steel	486.5	
Marble, crushed	90		Straw, baled	24	
Marl	79		Sugar, refined	55	
Oak, live, perfectly dry, .88-1.02	72		Sulphur	125	
Oak, white, perfectly dry	50		Tar	62.4	
Oats	26		Tin, cast, 7.2	455	
Oil, linseed	59		Trap rock, crushed	97-107	
Oil, petroleum	51		Turpentine, 300 pounds per barrel	—	
Oil, olive and whale	58		Walnut, Black, perfectly dry	41	
Ore, zinc, crushed	160		Water, pure rain, distilled, at 32 degrees F., Bar. 30 inches	62.417	
Ore, soft iron	150	35	Water, sea	64.08	
Oxide, Iron Sponge	28-50		Wheat	48	
Phosphate acid	62		Zinc or Spelter, cast	428	
Phosphate Pebble	100				
Phosphate rock	85				
Pine, white, perfectly dry	32				
Pine, Yellow Southern, perfectly dry	41				