

Allatoona Machinery Co.

4929 N. Main St. Suite 206, Acworth, GA 30101 – (770)974-4401

Material Characteristics

Material	Avg. Wt. Lbs. Per Cubic Foot	Angle of Repose (Loose)	Recommended Max. Angle of Conveying
Alum, Lumpy	50-60	30°- 44°	18°
Alum, Pulverized	45-60	30°- 44°	20°
Ashes, Dry	35-45	45°	22°
Ashes, Wet	45-50	45°	25°
Barley	36-48	25°	16°
Bauxite, Crushed, Dry	75-85	35°	20°
Bentonite, Pulverized	50-60	42°	20°
Boax, Powered	45-55	30°- 44°	22°
Cement,Bulk, In Binns	100		
Cement, Bulk, Conveying	65		20°
Cement, Clinker	75-95	35°	18°
Charcoal	18-28	35°	20°
Cinder, Coal	40-45	35°	22°
Coal, Anthracite	52-60	35°	16°
Coal, Bituminous	50	38°- 45°	22°
Coke, Breeze	25-34		22°
Coke, Loose	23-32	30°- 44°	20°
Coke, Refiners	35-42		20°
Concrete, Wet			
6" Slump	110-150		12°
2" Slump	110-150		30°
Copper Ore	120-150	30°- 44°	20°
Coral, Crushed	40-45		20°
Corn, Shelled	45	21°	16°
Cullet	80-120	30°- 44°	20°
Dolomite, Crushed	80-100	35°	22°
Earth, Common Loam, Dry	76		20°
Earth, Common Loam, Wet	102-112	45°	20°
Feldspar, Ground	65-70	35°- 40°	18°
Flue Dust, Blast Furnace	110-125		18°
Fluospar	110	45°	20°
Fullers Earth, Burnt	40		20°
Fullers Earth, Raw	35-40	23°	20°
Glass, Broken or Cullet	80-120	10°	20°
Granite, Crushed	95-100		20°
Gravel, Bank Run	90-100	38°	20°
Gravel, Crusher Run	100		20°
Gravel, Sharp	90-100	30°- 44°	20°
Gravel, Rounded	90-100	30°	15°
Gypsum, Calcined	55-60		20°
Gypsum, Crushed	90-100		20°
Gypsum, Powered	60-80		23°
Iron Ore	100-200	35°	22°
Kaolin Clay	63	35°	20°
Lead Ore, Galena	465	30°- 35°	22°
Lignite, Air Dried	45-55	35°	20°
Lime, Ground	60	43°	20°
Lime, Pebble	53-56	30°	18°
Lime, Quick, Lumps	53		18°

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Limestone, Agricultural	70	30°- 44°	20°
Limestone, Crushed	85-90	38°	20°
Limestone, Pulverized	75-85	45°	20°
Limestone, Screenings	85-90		20°
Magnesite, Screened	120		20°
Magnesium Sulfate	70	30°- 44°	18°
Magnesium Oxide	120	30°- 44°	20°
Magnesium Ore	125-140	39°	22°
Marble, Crushed	80-95	35°	20°
Mica, Flake	17-22	19°	20°
Mica, Powder	13-15	35°	20°
Milk, Dried, Flake	36	30°- 44°	20°
Phosphate Rock	75-85	25°- 29°	20°
Phosphate Sand	90-100		18°
Pumice, Ground	42-45	45°	18°
Salt, Coarse	40-45	35°	20°
Salt, Fine	70-80	25°	22°
Sand, Bank, Damp	110-120	45°	22°
Sand, Bank, Dry	90-110	35°	15°
Sand, Foundry, Prepared	65-75	30°- 44°	24°
Sand, Foundry, Shakeout	90-100	39°	20°
Sand, Silica, Dry	90-100	20°- 29°	15°
Sand, Saturated	110-130	45°	15°
Sandstone, Quarried	82	35°	15°
Shale, Crushed	85-90	39°	20°
Sinter	110-135		18°
Slag, Furnace, Crushed	80-90	25°	18°
Slag, Furnace, Granulated, Dry	60-65	25°	22°
Slate, Crushed	80-90	28°	20°
Slate, Ground	80	45°	20°
Soapstone	40-50		20°
Soda Ash, Light	20-35	37°	20°
Soda Ash, Heavy	55-65	32°	20°
Sodium Nitrate	70-80	24°	20°
Stone, Crushed	85-90		20°
Stone, Screenings	85-90		18°
Stone, Dust	75-85		20°
Sugar Beet Pulp, Dry	12-15	20°- 29°	20°
Sugar Beet Pulp, Wet	24-54	20°- 29°	22°
Sugar Cane, Knifed	15-18	45°	15°
Sugar Cane, Unknifed	22-25		15°
Sugar, Raw	55-65		20°
Sugar, Refined	50-55	30°- 44°	15°
Sulphur, Crushed	50-60		20°
Sulphur, Lumpy	80-85	35°	20°
Sulphur, Powered	50-60	35°	22°
Talc	50-60	20°	20°
Trap Rock, Crushed	105-110	30°- 44°	20°
Vermiculite Ore	80		20°
Wheat	45-48	28°	16°
Wood Chips	15-32	45°	25°
Zinc Ore, Crushed	160	38°	20°
Zinc Oxide, Light	10-15	45°	20°
Zinc Oxide, Heavy	30-35	45°	20°

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Belt Capacity Chart

The Following conveyor belt capacity charts show tons per hour (TPH) based on material weighing 100 lbs. per cubic foot, 20° material surcharge angle with three equal length rolls on troughing idlers.

CAPACITY (TPH) = .03 x Belt Speed (FPM) x material weight (lb. per cu. ft.) x load cross section (sq. ft.)

TPH with 20° Troughing Idlers

BELT WIDTH IN INCHES	BELT SPEED IN FEET PER MINUTE (FPM)											
	100	150	200	250	300	350	400	450	500	550	600	650
16	42	63	84	105	125	147	168	-	-	-	-	-
18	54	80	110	135	160	190	218	243	270	-	-	-
24	100	150	200	250	300	350	400	450	500	550	600	-
30	160	240	320	400	480	560	640	720	800	880	960	1040
36	235	350	470	585	700	820	935	1050	1170	1290	1400	1520
42	330	495	660	825	980	1155	1320	1485	1650	1815	1980	2140
48	440	660	880	1100	1320	1540	1760	1980	2200	2420	2640	2860
54	570	855	1140	1420	1710	2000	2280	2560	2850	3130	3420	3700
60	720	1080	1440	1800	2160	2520	2880	3240	3600	3960	4320	4680

TPH with 35° Troughing Idlers

BELT WIDTH IN INCHES	BELT SPEED IN FEET PER MINUTE (FPM)											
	100	150	200	250	300	350	400	450	500	550	600	650
18	66	100	135	170	200	235	270	305	338	-	-	-
24	125	187	250	310	380	435	500	560	625	685	750	-
30	200	300	400	500	600	700	800	900	1000	1100	1200	1300
36	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950
42	420	635	845	1060	1270	1480	1690	1900	2120	2320	2540	2750
48	560	845	1125	1400	1690	1970	2250	2530	2810	3090	3370	3660
54	740	1110	1480	1850	2220	2600	2960	3340	3700	4080	4450	4820
60	935	1400	1870	2340	2800	3280	3740	4200	4680	5150	5610	6100

TPH with 45° Troughing Idlers

BELT WIDTH IN INCHES	BELT SPEED IN FEET PER MINUTE (FPM)											
	100	150	200	250	300	350	400	450	500	550	600	650
24	145	217	290	360	435	508	580	650	725	795	870	-
30	232	348	465	580	695	810	930	1040	1160	1270	1390	1500
36	335	510	680	850	1020	1190	1360	1530	1700	1860	2040	2200
42	478	720	960	1200	1440	1680	1910	2150	2390	2630	2870	3110
48	640	955	1275	1600	1910	2230	2550	2870	3190	3500	3820	4150
54	830	1240	1655	2070	2480	2900	3310	3720	4140	4550	4960	5380
60	1040	1570	2090	2610	3130	3660	4180	4700	5220	5740	6260	6800

BELT WIDTH IN INCHES	MAXIMUM SIZE OF LUMPS * (INCHES)		MAXIMUM BELT SPEEDS IN FEET PER MINUTE (FPM)		
	EQUAL SIZE LUMPS	MIXED WITH 90% FINES	LIGHT FREE FLOWING MATERIAL AS GRAIN, PULVERIZED COAL 50 LB./CU. FT.	AVERAGE MATERIAL AS SAND, GRAVEL, STONE, COAL, FINE ORE 100 LB./CU. FT.	ABRASIVE MATERIAL AS COAL, SCREENED LUMP COKE 30 TO 50 LB./CU. FT.
16	2	4	500	400	350
18	3	5	500	500	400
24	5	8	600	600	450
30	6	11	700	650	500
36	8	15	800	650	500
42	10	18	800	650	500
48	12	21	800	650	500
54	14	24	800	650	500
60	16	28	800	650	500

* Based on 20° Troughing Idlers and 100 Lb. Per Cu. Ft. Material.

Conversion: Cu. Ft. = BPH x 1.25

Note: Capacities of flat belts are taken at one-half of those listed above.