

# Bulk Material Characteristics

Material	Size Characteristics			Flow Characteristics			Other Characteristics					Angle of Repose	Average Weight kg/m <sup>3</sup>	Maximum Conveying Angle	
	FINE 3mm	GRANULAR 3mm-12.7mm	LUMPY >12.7mm	SLURRY FLUID QUALITY	FREE FLOWING easily shaped	SLUGGISH not easily shaped	ABRASIVE	CORROSIVE	INTER-LOCKS or MATS	DEGRADABLE affecting use/quality	CONTAINS EXPLOSIVE DUST				POWDERY may be windswept
Ashes, Coal, Dry, Minus 75mm			✓		✓		✓						40°-45°	560 - 640	22°
Ashes, Coal, Wet, Minus 75mm			✓			✓	✓	✓						720 - 800	25°
Barite			✓		✓		✓							2400 - 2880	18°
Bauxite, Crushed,			✓		✓		✓							1200 - 1360	20°
Bentonite, Minus 150 Microns	✓				✓						✓			800	20°
Borax, Powdered	✓				✓									800	22°
Cast Iron Borings		✓				✓	✓							2080 - 3200	20°
Cement, Portland	✓				✓		✓				✓		40°	1440 - 1600	20°
Cement, Clinker			✓		✓		✓						35°	1200 - 1280	18°
Charcoal			✓		✓									288 - 400	20°
Cinders, Coal			✓		✓		✓			✓				640 - 720	22°
Coal, Anthracite, Sized 10 to 150mm			✓		✓					✓			27°	880	16°
Coal, Bituminous, Slack			✓		✓								37°	800	20°
Coal, Bituminous, Run of Mine			✓		✓			✓		✓			35°	800	18°
Coffee, Bean		✓			✓									400	15°
Coke, Loose			✓		✓		✓		✓	✓			30°	400 - 480	20°
Coke, Petroleum			✓		✓		✓							400 - 640	20°
Coke, Breeze, Minus 6mm		✓			✓		✓							400 - 560	22°
Concrete, Wet 150mm Slump			✓	✓						✓				2400	12°
100mm Slump			✓		✓					✓				2400	20°
50mm Slump			✓		✓	✓				✓				2400	24°
Copper Ore			✓		✓		✓							1920 - 2400	20°
Coral Crushed			✓		✓		✓							640 - 720	20°
Corn, Shelled		✓			✓						✓			720	16°
Cottonseed, Dry, Delinted		✓			✓									400	16°
Cullet, Crushed			✓		✓		✓			✓				1280 - 1920	20°
Culm, Minus 1.2mm, Damp	✓			✓				✓	✓	✓		✓	45°	800	20°
Dolomite, Crushed			✓		✓		✓						-45°	1440 - 1600	22°
Earth, Common, Loam, Dry			✓		✓								45°	1120 - 1280	20°
Earth, Clay, Dry			✓		✓								45°	1600 - 1920	20°
Earth, Moist			✓		✓					✓			35°	1280 - 1600	22°
Feldspar, Ground, Minus 3mm	✓				✓		✓							1040 - 1120	18°
Fluorspar			✓		✓		✓							1440 - 1600	20°
Fuller's Earth, Burnt	✓				✓		✓							640	20°
Fuller's Earth, Raw			✓		✓		✓							560 - 640	20°
Glass, Batch			✓		✓		✓							1440 - 1600	20°
Granite, Crushed			✓		✓		✓							1520 - 1600	20°
Gravel, Average Blend			✓		✓		✓						30°-40°	1440 - 1600	18°
Gravel, Sharp			✓		✓		✓						40°	1440 - 1600	20°
Gravel, Round		✓			✓		✓						30°	1440 - 1600	15°
Gypsum, Calcined			✓		✓		✓							880 - 960	20°
Gypsum, Crushed	✓				✓	✓	✓							1440 - 1600	20°
Gypsum, Powdered	✓				✓		✓							960 - 800	23°
Iron Ore			✓		✓		✓							2160 - 2400	22°
Kaolin Clay, Minus 75mm			✓		✓		✓						35°	2560	20°
Lignite, Air Dried	✓				✓					✓				720 - 880	20°
Lime, Ground, Minus 3mm					✓								45°	960	20°
Lime, Pebble			✓		✓								30°	880	18°
Lime, Over 12mm			✓		✓									880	18°
Limestone, agricultural	✓				✓		✓			✓				1120	20°
Limestone, Crushed			✓		✓		✓						40°-50°	1360 - 1440	20°
Manganese Ore			✓		✓		✓							1920	22°
Marble, Crushed, Over 12mm			✓		✓		✓							1440 - 1520	20°
Mica, Ground 3mm	✓				✓		✓							640	20°
Phosphate Rock			✓		✓		✓							1200 - 1360	20°
Salt, Coarse, Dry		✓			✓					✓			25°	640 - 720	20°
Salt, Fine, Dry	✓				✓					✓			30°	1120 - 1280	22°
Sand, Bank, Damp	✓				✓	✓	✓						35°-45°	1760 - 1920	22°
Sand, Bank, Dry	✓				✓		✓						25°-35°	1440 - 1600	15°
Sand, Foundry Prepared	✓				✓	✓	✓							1440	24°
Sand, Foundry Shake Out			✓		✓		✓							1440	20°
Sand, Silica, Dry	✓				✓		✓				✓		25°-35°	1440 - 1600	15°
Sand, Saturated	✓			✓			✓						15°-30°	1760 - 2080	15°
Shale, Crushed		✓			✓		✓						40°	1360 - 1440	20°
Slag, Furnace, Crushed			✓		✓	✓	✓							1280 - 1440	18°
Slag, Furnace, Granulated		✓			✓		✓						25°	960 - 1040	22°
Slate, Crushed, Minus 12mm		✓			✓		✓						30°	1280 - 1440	20°
Slate, Ground, Minus 3mm	✓				✓		✓						45°	1280	20°
Soda Ash, Light	✓				✓		✓				✓		32°	400 - 560	20°
Soda Ash, Heavy		✓			✓		✓						37°	880 - 1040	20°
Stone, Crushed			✓		✓		✓			✓				1360 - 1440	20°
Stone, Screening		✓			✓		✓							1360 - 1440	18°
Stone, Dust	✓				✓		✓				✓			1200 - 1360	20°
Sulphur, Crushed, Minus 12mm		✓			✓	✓	✓				✓		35°	800 - 1040	20°
Sulphur, Lumpy, Minus 75mm			✓		✓		✓						40°	1280 - 1360	20°
Sulphur, Powdered	✓				✓		✓			✓	✓		45°	800 - 960	22°
Traprock, Crushed			✓		✓		✓			✓				1680 - 1760	20°
Vermiculite Ore			✓		✓		✓							1280	20°
Wheat		✓			✓						✓		23°	720 - 768	16°
Wood Chips			✓		✓					✓			22°	240 - 400	25°