

Sand for Golf Courses

by THE USGA GREEN SECTION STAFF

If all the materials necessary for the construction and maintenance of golf courses, sand—common sand—is among the most important. Great quantities are needed for bunkers and in topsoil mixtures both for the construction of greens and for later topdressing.

Sand is among the most abundant materials on earth, and it can be found in differing textures and colors, from the coarse white sand of coral atolls of the Pacific to the fine pink sand of Bermuda's beaches. Not every sand can be used for every purpose on golf courses, however. They must be defined and graded. Sands for topsoil mixtures have been precisely defined, while, surprisingly, sands for bunkers have not. More surprisingly, both are so close in particle size designation that they could be used interchangeably. Research at Texas A&M University and at Mississippi State University resulted in the USGA Green Section recommendation for sand particle sizes ranging predominantly between 0.25 millimeter and 1.0 millimeter. For topsoil mixtures round sands, although scarce, are preferred; however, sharp, angular sands are also acceptable for this purpose.

Sand in this particle size range also is suitable for bunkers. Particles larger than one millimeter tend to remain on the putting surface, while sand particles in the recommended range permeate the turf and, therefore, cause no problems in mowing operations. Secondly, players will not have to remove pebbles from their line, and therefore, putting should take less time.

Sand for bunkers preferably should be light in color. The color of sand for topsoil mixtures is not important. The specifications table below is universally accepted by commercial sand firms throughout the nation. At present, anyone can go to a sand dealer and order as much brick, mason or concrete sand as he wants. Isn't it reasonable to expect, therefore, that sand companies should also add a golf sand to their stockpile, one that meets the specifications described herein?

The recommended range of sand particle size for bunkers suits both requirements: that is, all sand should go through a 16 mesh screen and be retained in a 60 mesh screen. Sharp, angular sand is preferred for bunker use, round sands tend to shift underfoot. The terms round, sharp and angular refer to individual particle shapes.

SAND PARTICLE SIZE CLASSIFICATION TABLE

	*ASTM Mesh	Millimeter	Sieve Opening Inches		
	4	4.76	0.187		
	5	4.00	0.157		
	6	3.36	0.132		
	7	2.83	0.111		
	8	2.38	0.0937		
	9	2.00	0.0787		
	10	1.68	0.0661		
	12	1.41	0.0555		
	14	1.19	0.0469		
	16	1.00	0.0394		
	20	.84	0.0331		
RANGE FOR BUNKER USE	24	.71	0.0278	↑ COARSE ↓	↑ IDEALLY — MINIMUM OF 75% MEDIUM SAND
	28	.59	0.0234		
	32	.50	0.0197		
	35	.42	0.0165		
	42	.35	0.0139	↑ MEDIUM ↓	
	48	.30	0.0117		
	60	.25	0.0098		
	65	.21	0.0083		
	80	.18	0.0070		
	100	.15	0.0059	↑ FINE ↓	
	115	.13	0.0049		
	150	.11	0.0041		
	170	.09	0.0035		
	200	.07	0.0029		
	250	.06	0.0025		
	270	.05	0.0021		
	325	.04	0.0017		