

Evaluation of Topsoil and Topdressing Soils.

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The soil on which turf is established is essentially permanent. An exception occurs when topdressing (applying a thin layer of soil) on a putting green. The obvious situation is to have the "ideal" soil prepared before the turf is established. This "ideal" soil will vary with the objectives for the use of the turf. As a general rule, the more traffic a turf will receive the more sandy the soil should be to provide for better drainage and aeration and less compaction.

For most turfs a sandy loam to loam soil would be most acceptable. Unfortunately, the soils on which many turfs are established are poor to terrible for growing grass or anything else. Many home lawns exist on subsoil (parent material) that has low organic matter, poor structure and is highly compacted.

For good results the soils should be 4-6 inches deep of uniform good quality soil. The amount of topsoil needed, however, is often prohibitive cost-wise. Modifying the soil with some desirable topsoil and good quality peat and mixing to a 4-6 inch depth is an alternative. On heavily trafficked turfs which are intensively maintained, 12-14 inches of uniform topsoil are suggested. The ideal depth will depend on the particular soil mix and the underlying soil conditions.

An ideal topsoil should have the desired texture (normally sandy loam to loam), acceptable pH and soil nutrient levels (soil testing is the only way to know), moderate organic matter content (relatively dark color when wet), good structure (crumbles rather easily, not in large compacted chunks), freedom from quackgrass and other perennial weedy grasses, and freedom from harmful chemicals (such as atrazine or other grass killers). Don't just consider price when buying topsoil, but evaluate all these factors. Beware of topsoil that is really not (actually subsoil) and black dirt which may be only muck. Also be very wary of spent mushroom soil which can be quite high in soluble salts.

When ordering sand for use in modifying soil or as a topdressing material for a green, be careful to evaluate the different sizes of sands present. The range of desirable sands is quite narrow for such use. When evaluating sands ask the sand company for an analysis utilizing the USDA sand classification system (see below). If your analysis is with a different set of sieves than those mentioned the results may be quite difficult to evaluate. Ideally, the sand should be predominantly medium and coarse sands with a little in the adjacent classes. Try to avoid sands which contain considerable amounts of silt and clay or gravel.

<u>USDA Classification</u>	<u>Sand Size, mm</u>	<u>Sieve no.</u>
gravel	2.0	10
very coarse sand	1.0-2.0	18
coarse sand	0.5-1.0	35
medium sand	0.25-0.5	60
fine sand	0.1-0.25	140
very fine sand	0.05-0.1	270
silt and clay	0.05	

Note the examples of the sands provided.

When topdressing a green or other closely mowed turf the depth of topdressing material applied is very important. This should be determined by the reason for topdressing, whether it be to smooth the surface, aid in thatch decomposition, changing the texture of the surface layer, cover seeds or stolons, or provide winter protection for the turf. Topdressing soil should be selected carefully depending on the objective for topdressing.

The volume of topdressing soil required for a given depth of material is given below.

Depth of Topdressing Desired	Approximate Volume of Material Needed per 100 sq. ft.	
	inch	cu. ft.
1/16	5.2	0.2
1/8	10.4	0.4
1/4	20.8	0.8
3/8	31.2	1.2
1/2	41.7	1.5
5/8	52.1	1.9
3/4	62.5	2.3