

THE SCOOP ON DIRT AND SOIL

Those working on landscaping projects can come across issues that require some sort of fill dirt.

Fill is used as a foundation for projects and usually required when leveling a surface, increasing the grade, adding a berm, or adding raised garden beds.

Are you building a house? Do you know that, unless you arrange otherwise, some contractors will sell your valuable topsoil and leave you with subsoil (overburden) that is not as good for growing landscapes and produce?

The type of product for these projects does matter and can save you frustration and effort in the long run.

Let's tackle some terms to understand soil needs for different projects.

Subsoil—Any material below the topsoil and can include:

Overburden (waste, spoil)—A term you may come across in Wyoming used in the mining industry and includes all the rock and soil above some product worthy of mining (ore, coal, silica, etc.). Overburden can be screened into usable by-products via a milling process and sold. Overburden does not generally contain topsoil.

Tailings—All the particulate matter separated from overburden with no economic value. It is usually produced as a by-product when purifying ore during the milling process as a slurry and potentially contains toxic compounds. Tailings are usually not acceptable as a construction or landscaping project.

Rubble (riprap, debris)—Broken stone or recycled crushed concrete of various sizes (fist or larger). Usually used in drain fields or around culverts and other areas to prevent water washing away soil.

Gravel—Crushed stone or recycled crushed concrete usually screened to particular size: ¾-inch, pea, fines. Gravel has a wide variety of uses.

Fill dirt (cleanfill, or just “fill”)—Is a component of subsoil and can be a by-product of overburden or any digging process below the topsoil. Fill is the product commonly used to tackle the landscape projects listed above. Fill has little to no organic matter and may contain rocks, stones, sand, clay, and earth material (these components broken down).

Lacking organic matter is a desirable quality when fill is used in areas that require stability. The organic matter will decay and could leave holes, depressions, or gaps in your finished project. Decayed

organic matter in fill can also lead to the demise of concrete patios and porches.

Topsoil—Is the layer of soil above the subsoil and contains mineral nutrients and organic matter.

Topsoil is typically used as the surface layer to grow trees and shrubs in landscaping and the plants and vegetables in gardens. Topsoil is generally darker in color than subsoil (because of the organic matter) and consists of various percentages of sand, silt, and clay.

Topsoil is used as fill for low spots, shaping landscapes, gardening; essentially, it's good for growing plants.

Enriched topsoil—Is a mixture of topsoil and compost or other organic matter. Enriched topsoil can be used to nourish gardens, landscapes, and turf.

Usually in the strip mining industry, topsoil is removed or pushed aside and conserved for reclamation of the site once the mine has been depleted of useful products. We have also seen this activity across Wyoming as oil and gas pipelines are put into place. Topsoil is pushed aside, the trench for a pipeline is dug (removal of fill), a pipeline is put into place, and the trench is backfilled with the fill dirt. The reclamation of

the disturbed area by replacing the topsoil and reseeding with a mixture of desirable plants is the last step.

Similar activities are often used in the home construction industry; however, sometimes the topsoil is sold and the fill mined out for the basements and left behind as the base for a yard and landscaping. It is important to talk with your builder to remove the topsoil and save for your future landscaping.

Conserving topsoil in Wyoming is very important as it usually is only a couple of inches deep, compared to topsoil layers in the Midwest that can be several feet deep.

I recently was asked by someone building raised garden beds how they should fill the space. The answer depends on

how deep the raised beds are since topsoil and enriched topsoil can be very expensive. Consider using pure topsoil or a topsoil/enriched topsoil mix if you have built raised beds up to 18 inches. This depth will allow you to easily grow nearly all root crops. For raised beds greater than 18 inches, start with clean fill and finish the raised bed with topsoil or an enriched topsoil mix to a depth of 18 inches. Adding compost to your raised beds annually is also recommended. You are actually creating your own enriched topsoil.

How do you know you are getting clean fill? Use a reliable source or supplier or test it. Soil tests can be completed by several labs in our area (see <https://soiltestinglab.agsci.colostate.edu> for Colorado State University and www.wardlab.com for Ward Laboratories, Inc., in Nebraska).

The final result of your landscaping project will be much more enjoyable if you create the proper base using the correct materials.

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We wonder if **Jeff Edwards** has ever said the best investment on earth is the good earth itself. He is the University of Wyoming Extension pesticide training coordinator and can be contacted at (307) 837-2000 or jedward4@uwyo.edu.



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