W160-C

Turfgrass Establishment Sodding and Plugging

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Sodding provides an immediate turf and excellent soil erosion control. Turfgrass sod is harvested and transported as flat or rolled blocks (slabs), or as large rolls. One pallet of slab sod usually holds about 50 square yards of sod and weighs 2,000 pounds or more. Individual slabs are often 16 inches wide by 24 or more inches long. Less soil is shipped with turfgrasses having a strong network of stolons or rhizomes compared to those with a bunch-type growth habit. For example, slabs of tall fescue or tall fescue + Kentucky bluegrass may contain more than 5/8 inch of soil, while the average depth of soil shipped with centipedegrass, hybrid bermudagrass and *Zoysia* may be ½ inch or less. As the name implies, big-roll sod is harvested in rolls 24, 30 or 48 inches wide and up to 100 feet long. Several equipment manufacturers sell sod harvesters that simultaneously cut two large rolls, each 21 or 24 inches in width. Big-roll sod is often installed in large landscapes with very few obstructions. Motorized, all-terrain sod installers with rubber tracks and a load capacity of 2,500 pounds are often used to install big rolls. Slabs are most often installed in smaller landscapes and in irregularly shaped planting beds. To improve sod installation efficiency, a forklift with 'flotation' tires is often used to place pallets of sod throughout the landscape.

The planting bed should be fertile and moist, not saturated, before sodding. Sod slabs or rolls should fit together tightly but should not be stretched or overlapped. Whenever possible, begin placing slabs or rolls along a line or straight edge. As the installation progresses, slabs and rolls should be staggered, much like bricks in a wall. Filling seams or cracks at the edges of each slab or roll with soil immediately after installation will help protect plants with exposed roots from dehydration. Rolling or tamping the newly installed sod removes air pockets and ensures contact with soil. Weeds, including crabgrasses and goosegrass, may quickly emerge in seams between sod slabs or rolls.

To reduce plant injury due to extreme high temperatures and dehydration, actively growing sod should be installed within 24 to 48 hours of harvest. When slabs of sod that have been on the pallet too long are installed, plants receiving light during transport often grow well, while plants in shaded slabs exposed to extremely high temperatures often die. Temperatures near the center of a pallet of slab or rolled sod or a big roll can rise very quickly to more than 120 degrees Fahrenheit.

Zoysia is probably the turfgrass species most often established by plugging. Plugs are small pieces of sod, usually 2 or more inches in diameter or width, that are marketed in trays or cut from harvested sod. More than 320 plugs, each 2 inches by 2 inches, can be cut from one square yard of sod. Plugs are usually spaced on 6- to 12-inch centers (6 to 12 inches between plugs in a row and 6 to 12 inches between rows). Hand-held plug cutters are often used to plug small lawns. Pull-type plugging machines designed to cut and plant plugs from slabs of sod work well when plugging large sites. Soil around each plug should be tamped or rolled after planting. The surface of the planting bed should be level with the soil surface of newly planted plugs. Depending on plug size and spacing, plugging may require from three to10 times more planting material than sprigging.

Care After Planting

Newly transplanted turfs often require special care. Plants have limited root systems and may have experienced drought and high-temperature stresses during transport.

Water. Ideally, the soil should be moist, not saturated, before sodding or plugging. The newly sodded or plugged planting bed should be irrigated within a few hours after planting. New plantings may require light (e.g., 1/8 to 1/4 inch or from about 75 to 150 gallons per 1,000 square feet), daily irrigation for several weeks to maintain a moist root zone. Early morning (e.g., 5:00 to 10:00 a.m.) irrigation is preferred. Eventually, as roots grow into the soil below, more water can be applied less often (e.g., ½ inch or about 300 gallons per 1,000 square feet every two to three days).

Mowing. Do not let plants grow too tall before the first mowing. Mow often, removing no more than one-third of the leaf area. For example, to reduce mowing shock and the potential for scalping, begin mowing tall fescue at a 2-inch cutting height when plants reach an average height of 3 inches. Bermudagrass and *Zoysia* maintained at a 1½-inch cutting height should be mowed when plants reach an average height of 2¼ inches.

Fertilizing. The application of ½ pound of nitrogen (N) per 1,000 square feet three to four weeks after sodding or plugging will support continued plant growth. Nitrogen should not be applied after planting if turfgrasses are stressed by high or low temperatures. Routinely fertilizing plugs every three to four weeks at a rate of ½ to ¾ pound of N per 1,000 square feet per application throughout the growing season promotes rapid shoot growth and ground coverage. After fertilizing, reduce the potential for foliage "burn" by irrigating immediately with at least ½ inch of water.

Weed Control. Herbicides including 2,4-D, dicamba, mecoprop (MCPP) and triclopyr are labeled for the control of emerged broadleaf weeds in several species of established turfgrasses. Others, including fenoxaprop (e.g., Acclaim® Extra), monosodium acid methanearsonate (MSMA) and quinclorac (e.g., Drive®), are used to control emerged summer annual weed grasses, including crabgrass. Postemergence (after weeds emerge from the soil) herbicides are usually most effective when applied to young, actively growing weeds. Several days or weeks may be required before sodded or plugged turfgrasses are fully recovered from transplanting and capable of withstanding a herbicide treatment.

Diseases and Insects. Diseases including Pythium blight and large brown patch can severely injure newly planted turfgrasses and may require fungicide treatment. Larvae of armyworm, fall armyworm and sod webworm feed at the soil surface, eating leaves and stems. Green June beetle larvae tunnel through thatch and soil, lifting plants and severing roots. White grubs, the larvae

of scarab beetles, injure turfgrasses by feeding on roots and other belowground plant parts. Turf injury often occurs at or near the soil surface. If populations of white grubs are excessive, root loss can be very severe and the turf can be rolled back like a carpet. If necessary, an appropriate fungicide (e.g., azoxystrobin (Heritage®), chloroneb (Terraneb®), fenarimol (Rubigon®), flutolanil (ProStar®), fosetyl-AL (Aliette®), iprodione (Chipco®20019), mancozeb (Dithane®), metalaxyl (Subdue®), propiconazole (Banner®), thiophanate-methyl (Fungo®), triadimefon (Bayleton®) and others] and insecticides [e.g., acephate (Orthene®), carbaryl (Sevin®), imidacloprid (Merit®), isofenphos (Oftanol®), trichlorfon (Dylox®, Proxol®) and others] can be applied to protect turfgrass plants.

Removing Fallen Leaves. Tree leaves lying on a newly sodded or plugged turf can block sunlight and may increase the air temperature and relative humidity of the micro-environment underneath. Warm, moist conditions favor the development of several patch and leaf spot diseases. *Pythium* can be especially destructive when turfgrass plants growing in wet soils are exposed to high temperatures.

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