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Standard Practice for Live Staking¹

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^{ε1} NOTE—Editorially corrected units of measurement statement in June 2021.

1. Scope

1.1 This practice covers the material, preparation and installation work required for live stake construction.

1.2 *Units*—The values stated in SI units are to be regarded as standard. The values given in parentheses are provided for information only and are not considered standard.

1.3 *This practice offers a set of instructions for performing one or more specific operations. This document cannot replace education or experience and should be used in conjunction with professional judgment. Not all aspects of this practice may be applicable in all circumstances. This ASTM standard is not intended to represent or replace standard of care by which adequacy of a given professional service must be judged, nor should this document be applied without considerations of a project's many unique aspects. The word "standard" in the title of this document means only that the document has been approved through the ASTM consensus process.*

1.4 *This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Terminology

2.1 Definitions:

2.1.1 *live stake, n*—an individual live woody plant material cutting used in live staking.

¹ This practice is under the jurisdiction of ASTM Committee D18 on Soil and Rock and is the direct responsibility of Subcommittee D18.25 on Erosion and Sediment Control Technology.

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2.1.2 *live staking, v*—the act of tamping live woody plant material cuttings into the ground.

2.1.3 *live woody plant material, n*—stem and branch cuttings of vegetatively self-propagating woody plant species.

3. Summary of Practice

3.1 Live stakes are stem or branch cuttings of vegetatively self-propagating woody plant species that are tamped into the ground. If correctly prepared and installed, the live stake will root and grow. Once the live stakes become established, they create top growth and a living root system. The root system stabilizes the shallow subsoil by reinforcing and binding together soil particles, and by extracting excess soil moisture. The vegetative top growth from the living live stakes provides cover for the soil surface against erosive forces. See Fig. 1, Fig. 2, and Fig. 3.

4. Significance and Use

4.1 Live staking is a soil bioengineering technique used to provide erosion and sedimentation control after plants have become fully established by increasing infiltration, slowing or redirecting runoff, and trapping seed and sediments. A successful live staking application provides mechanical surface slope stabilization, aesthetics, water quality and habitat enhancement. The ability of live staking to function properly depends on the quality and correctness of the materials utilized, the means and methods of installation, and proper consideration of site characteristics. It is imperative that the live staking develops root and top growth.

5. Materials

5.1 Fresh or well-preserved viable cuttings are used. The stems or branches are straight. Side branches are cleanly removed. Bark remains intact. The basal ends are cut at an angle for easy insertion into the soil. The top is cut square. Typically, plants are harvested near the project site within the same climate zone. Typical lengths for live stakes are from 600 to 900 mm (2 to 3 ft). The caliper (diameter) of cuttings generally ranges from 15 to 40 mm (½ to 1½ in.). Cut and install the live stakes in the dormant season.

5.2 *Brush Cutting Implements*—Cut live vegetation with such tools as pruning shears, loppers, clearing saws, chainsaws,