Suggested Grasscrete® Specification

The Grasscrete contractor is licensed and trained by BOMANITE® Corporation, P.O. Box 599, Madera, CA 93639-0599. The work is usually called out in a section of the specifications separate from concrete and landscaping (Section 2 under Erosion Control 02370 and Porous Pavement 02795).

SECTION _____: GRASSCRETE

1. Scope. All work in this section shall be designated as Grasscrete in the plans. The work shall include all labor, materials, equipment and transportation required to install Grasscrete.

2. Contractor. The Contractor for this work shall be licensed by BOMANITE Corporation, P.O. Box 599, Madera, CA 93639-0599, (559) 673-2411.

3. Subgrade. The subgrade for Grasscrete shall be prepared for expected loading and drainage requirements. Subgrade for vehicle traffic shall be in accordance with local concrete street specifications. (NOTE: Because of the wide variety of soil types, weather and anticipated loading, it is not possible to recommend one specific subgrade design. The specifier should keep in mind that Grasscrete is porous, and much of the water that falls on the surface will pass through to the subgrade. For most applications, except for very heavy loads, native soil having a minimum "R" Value of 30 and a compaction of 95% will provide a suitable subgrade. In areas having poor soil and/or very heavy anticipated loads, 4" or more of soil should be excavated and replaced with compacted base rock.)

4. Concrete Mix. The concrete shall have a minimum compressive strength of 3,000 psi in 28 days (except in severe freeze-thaw areas or for vehicles weighing 10 tons or more, in which case it should be 4,000 psi). Portland Cement shall conform to ASTM C 150, Type I, II, or V. Aggregates shall conform to ASTM C 33 and be 3/8" minus. Mixing water shall be fresh, clean and potable. In freeze-thaw areas, air entrainment of 6.5% to 8.5% shall be provided. Water reducing admixtures and/or super-plasticizers are permitted and shall conform to ASTM C 494.

5. Slab Design. The Grasscrete slab shall have a minimum thickness of 5 1/2". Grasscrete should be recessed 1"-1 1/2" below adjoining surfaces to allow for grass and topsoil. All perimeters of Grasscrete should be restrained by an existing hard surface or a monolithic concrete border. Red painted borders should be used on all edges of emergency access paving. Where used for emergency vehicle access roads or any driving surface, all edges shall be a monolithic concrete border having a minimum width of 12".

6. Reinforcement. The Grasscrete shall be continuously reinforced with _____welded wire fabric chaired between 2–3" above the subgrade. (Refer to the following table for guidelines on the selection of reinforcement.)

Intended Use	Welded Wire Mesh
a) Erosion control, parking lots, driveways, access roads for vehicles weighing 10 tons or less.	6" x 6"-10 ga. x 10 ga. (6 x 6-W1.4 x W1.4)
b) Regular use by vehicles weighing more than 10 tons and access roads for fire apparatus with outriggers.	6" x 6"-6 ga. x 6 ga. (6 x 6-W2.9 x W2.9)

For alternate reinforcement, #3 rebar placed at 18" on center may be used in lieu of welded steel fabric. This may increase cost due to additional labor.

7. Construction Process.

a) Subgrade shall be leveled to a uniform plane 5 1/2" below the final grade of the Grasscrete slab and 6 1/2"-7" below adjoining surfaces.
b) Welded wire fabric shall be chaired.
c) Grasscrete formers shall be placed on the subgrade.
d) Concrete shall be placed and leveled to the top of the Grasscrete formers. The concrete surface shall have a heavy, rough broom finish.
e) Grasscrete formers shall be withdrawn after the concrete has hardened sufficiently.
f) Slab shall be cured with suitable curing membrane.

8. Soil and Seed. Holes are to be filled and 1"-1 1/2" of topsoil is to cover the Grasscrete surface for seeding or sod suitable for your local conditions.
(NOTE: Typically done by landscape contractor rather than Grasscrete contractor.)

9. Traffic. No traffic of any kind shall be permitted on the Grasscrete slab until fourteen days after placing of concrete and only after soil is placed in holes. Thereafter, vehicles shall be permitted, providing they do not exceed the weight capacity for the slab.

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ADDITIONAL DATA:

1. Grass Coverage. Surface area is 47% concrete and 53% hole. Grass usually covers much of the concrete in areas not subject to regular vehicle traffic.

2. Concrete Coverage. The volume of concrete used in Grasscrete is equal to a normal 4" concrete slab.

3. Maintenance. Grasscrete requires watering and mowing as would be normal for any lawn. Irrigation must be provided in dry climates to keep the grass healthy. Mowing needs are less in areas of frequent traffic. The grass roots are protected by concrete and are not damaged by vehicle use.

4. Alternate to Planting Grass. Holes may be filled and covered with crushed stone, seashells, etc. to provide drainage.

5. Drainage. Grasscrete drains at about the same rate as would an ordinary lawn in the same location. The presence of concrete has little effect on the drainage; the soil and the slope are the controlling factors. A test report by an independent laboratory on infiltration rates is available upon request.

6. Load Test Report. A test report by an independent laboratory on a fire truck load test is available upon request. A 33 ton Grumman fire apparatus with outriggers was tested with a horizontal extension of 100 feet of its man-lift with 800 pounds of weight in the man-lift. (Note that Grasscrete is a continuously reinforced monolithic slab, and therefore has flexural strength, unlike unit pavers.)

7. Fire-Lane Access. It is recommended that a 12" border be used at perimeters of Grasscrete monolithic to Grasscrete driving surface.

8. Concrete Volume. Grasscrete is 60% concrete by volume and 40% void area, not including widened edges and solid borders (see item 2 above).

9. Slope Paving. Grasscrete can be readily installed on slopes as steep as 3:1. Steeper slopes are more difficult and costly and 2:1 is the steepest that could be possible.

10. Curved Areas. Grasscrete formers are square and are used most effectively in rectangular areas free of obstruction. Grasscrete may be used in curved areas and areas having obstructions. Areas where complete former will not fit are filled with 3" pipe holes.

NOTE: Grasscrete is not designed to be a finished surface.

IMPORTANT NOTE: This specification supersedes all Grasscrete specifications published prior to March 1, 2002.

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For more information, including a list of members of the BOMANITE International Society, contact:

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Printed in U.S.A. 5M302