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# GraniteCrete Specification Guide

## For Parking Lots, Driveways, Firelane/Vehicular Traffic

Revision Date: May 15, 2023

### CRUSHED AGGREGATE BLENDED WITH GRANITECRETE ADMIXTURE SURFACING

**COORDINATE WITH DRAWINGS:** Show location and extent of stabilized aggregate surfacing. Show details required at adjoining materials and special conditions. The depth of base course and the thickness of stabilized aggregate surfacing can be either shown on the drawings or described in the specifications; edit this section carefully to avoid conflicting requirements.

**FOR MORE INFORMATION:** Contact GraniteCrete Incorporated, [www.granitecrete.com](http://www.granitecrete.com), email [info@granitecrete.com](mailto:info@granitecrete.com), or call (800) 670-0849.

### **PART 1: General**

#### **1.1 SUMMARY**

- A.** Section Includes: Crushed aggregate blended with GraniteCrete admixture surfacing
- B.** Related Work:
  - 1. Section – Earth Moving [fill in here]: Grading
  - 2. Section – Base Courses [type]: Base Course

#### **1.2 REFERENCES**

- A.** ASTM C136-Sieve Analysis of Fine and Coarse Aggregates
- B.** ASTM D2419- Sand Equivalent Value of Soils and Fine Aggregates
- C.** Caltrans Standard Specifications for Public Works Construction
- D.** RIS-Redwood Inspection Services Grades of California Redwood

#### **1.3 SEQUENCING**

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- A. Do not install work specified in this section prior to acceptance of earth moving. Coordinate work specified in this section with work specified in other sections to minimize cutting of - and operation of - heavy equipment over newly-installed surfacing.
  - B. Submit in accordance with Section [ ]--Submittal Procedures
    - a. Manufacturer's product data sheet and installation instructions indicating that product complies with specifications for:
      - i. Crushed aggregate blended with GraniteCrete admixture surfacing
      - ii. Edging [ ]
    - b. Submit a quart jar size [ ] sample[s] of crushed aggregate with admixture in color[s] specified [in manufacturer's standard colors for selection].
    - c. Redwood Edging: Submit evidence of chain-of-custody in accordance with Forest Stewardship Council
- 1.4 QUALITY ASSURANCE/FIELD QUALITY CONTROL**
- A. GraniteCrete installation differs from the installation of concrete or traditional decomposed granite binders. To achieve an excellent result, we highly recommend that the installer be trained by a GraniteCrete Representative.
    - 1. GraniteCrete Approved Installers can be found on our website here: [Professional Installation](#).
    - 2. GraniteCrete recommends that a GraniteCrete representative be on-site at the beginning of any installation to train the crew in the procedures for achieving an excellent GraniteCrete installation. GraniteCrete is not able to be present for the entire installation. However, GraniteCrete does offer paid consulting services if presence at the entire installation is desired, or required (minimum four hours, plus travel).
    - 3. GraniteCrete offers up to three hours of free consulting and training for all new installers.
    - 4. The installation instructions in this Specification Guide are meant as a guide for bidding purposes and will be superseded by the approved Submittal of installation instructions from GraniteCrete, Inc., and any field direction provided by the company representative.
    - 5. GraniteCrete, Inc. does not offer a warranty on any installation - even if completed by an Approved Installer - only on the product, bag-to-bag.

**B. Porous Base Rock Testing:**

1. Testing shall occur during installation at [ ] ton increments of shipping for sieve conformance. Results shall be submitted prior to completion of the stone base installation.
  - a. The stone field area shall have a permeable rate no less than 14" per hour. The testing shall be per Din 8035 Part 7, ASTM 2434 (constant head), or ASTM F2898 testing methods.
  - b. In addition to the lab testing, after installation of any aggregate base cross-section, designed to conduct rainfall to the sub-soils and/or under-drain system, the finished aggregate base shall be tested, *in situ* for infiltration rate, using method ASTM F2898. **The test shall be performed by a registered Geotechnical Engineer or certified agronomist.**
2. The Contractor is responsible to meet this performance specification, before proceeding with installation, and shall bear the cost of the on-site testing and the cost of any additional work necessary to achieve compliance with the specification.
3. All test results shall be logged and documented by the Owner's Technical Representative or Geotechnical Engineer. If at any time the processed stone base does not meet specifications, it shall be the Contractor's responsibility to restore, at his expense, the processed stone base to the required grade, cross-section and density.
4. After the contractor has independently confirmed compliance with all the above tolerances (planarity and elevation verified by a licensed surveyor and compaction, gradation, & permeability verified by Geotechnical Engineer, he shall notify the appropriate party and schedule a final inspection for approval. The contractor shall make available an orbital laser system to the Inspection Team for the inspection process.
5. The compaction rate for porous base rock should be 88%. The compaction rate for non-porous base rock should be 95%.

**C. Standard Specifications:** Shall mean the California Department of Transportation Standard Specifications, latest active edition.

**1.5 MOCK-UP**

- A.** Construct mockup of [ ] square feet minimum of crushed aggregate blended with GraniteCrete admixture surfacing, including [base course and] edging, at location approved by [Architect] [Engineer] [Owner's Representative]. Build mockup [ ] days prior to installation. Intent of the mockup is to demonstrate surface finish, texture, color and standard of workmanship
- B.** Notify [Architect] [Engineer] [Owner's Representative] [ ] days in advance of mockup construction.



1. DG shall have a 3/8” maximum gradation, produced from naturally friable rock/granite with enough fines to produce a smooth walking surface. Materials should be free from clay lumps, organic matter, and deleterious material. Blends of coarse sand and rock dust are not acceptable.
  2. Use a single supply source for the entire quantity required.
  3. Gradation, in accordance with ASTM C136:
  4. Color: Should have gold to yellow hues. To be selected by [Architect] [Engineer] from manufacturer’s standard colors.
  5. Supplier: Vineyard Rock Products, Hollister, CA. - (831) 637-6443[Or equal].
- C.** Aggregate binder: Provide GraniteCrete Admixture. Color: [Ash Gray] [Carmel Coast] [Desert Sand] [Natural Gold] [Sonora Adobe] [Custom Color]

**2.2 BASE COURSE MATERIAL**

- A.** Class II Permeable Base Rock.
- B.** Soft stone materials (i.e. sandstone, limestone and shale materials) are not suitable. Stone supplier shall certify that all supplied stone will be clean of this type of stone. All types of stone shall meet the following stability requirements.

TEST METHOD	CRITERIA
LA Abrasion (Calif. Test 211)	Not to exceed 40
Durability Index (Calif. Test 229)	Not less than 40

In addition, if stone stability to water and vehicles is in question, Owner has the right to perform additional testing to ensure material shall adhere to requirements of Caltrans Section 68, as well as additional applicable ASTM tests.

- C.** All testing fees shall be paid for by the Contractor.
- D.** Permeable Stone: Stone base materials shall be washed, 100% fractured, by mechanical means, with elongated characters on each individual particle larger than 1/4”. Materials shall be devoid of mineral fines. All particles smaller than 1/4” shall be produced by manufactured means only. Rounded sands or aggregates are prohibited.
- E.** Delivery Moisture Content: Processed stone shall contain 90% to 110% of the optimum moisture content to ensure that fines do not migrate in transit or during placement and to facilitate proper compaction. The contractor shall ensure that

aggregate leaving the source plant meets this requirement. The contractor is required to apply water to the processed stone on site to attain and maintain this minimum moisture content.

- F. Aggregate or aggregate blends of permeable stone shall conform to the following gradation (**please note this is for base rock, not for GraniteCrete**):

SIEVE	Sieve Sizes Metric (mm)	Percent Passing by Weight* <b>Intended Result</b>	Range
1"	25.0	100	100
3/4"	19.0	100	90-100
3/8"	9.52	78	40-100
No. 4	4.75	36	25-40
No. 8	2.36	26	18-33
No. 30	0.600	11	5-15
No. 50	0.300	6	2-10
No. 200	0.075	2	0-5
Durability Index (CTM# 229)		40 min	
Sand Equivalent (CTM# 217)		70	
LA Rattler (CTM# 211)		500 Revs, less than or =	40%

\* AASHTO Test Method T-27

- G. Specs for  $\frac{3}{8}$ " minus and  $\frac{3}{4}$ " minus Crushed Aggregate Following ASTM D 1140-17: Crushed aggregate must be from contaminants that would discolor or be deleterious to crushed aggregate blended with GraniteCrete admixture surfacing.

100% fractured on all sides with no rounded particles

Sieve 200 - Non-expansive Clay Fines - **not to exceed 18%**

The below test is for  $\frac{3}{8}$ " minus stone, at approximately 90% compaction when tested.

## GraniteCrete Sieve Analysis Cumulative Percent Passing

Sieve Size	% Passing Sieve Ranges	
1/2"	100	100
3/8"	95	98
#4	85	90
#8	75	85
#16	55	70
#30	38	57
#50	24	33
#100	15	24
#200	9	18
#400	0	9

### 2.3 ACCESSORIES

- A.** Water: Free from contaminants that would discolor or be deleterious to crushed aggregate blended with GraniteCrete admixture surfacing.

**Installation:** Do not use a vibratory plate to compact the GraniteCrete. Use a lawn roller filled with water to compact the GraniteCrete. Use a 36" drum roller or walk-behind roller in **static position** for driveways and larger installations. It is highly recommended to use a volumetric truck for driveways and larger installations; if possible, screeding and the use of a paver is highly recommended.

**B.** [Steel [Edging]]:

1. Dimensions: [3/16"] [1/4"] [ ] thick by [4-inch] [ ] deep, with overlapping joints.

2. Stakes: 3/16" x 1-3/4" wide at top tapering to point at bottom; located 36" o.c. maximum.
  3. Finish: [Basked-on [green] [brown] [black] paint.] [Hot dipped galvanized.]
- C. [Redwood [Edging]]:**
1. Material: RIS Merchantable Heart Grade [from sustainably managed forests as certified by the Forest Stewardship Council.]
  2. Dimensions: Nominal [2x6] [ ] inches
  3. Stakes: Steel, 3/16" x 16" long x 1-3/4" wide at top tapering to point at bottom; located 36" o.c. maximum.
  4. Finish: Provide in color to be selected by [Architect] [Engineer] from manufacturer's standards.

## **PART 3: EXECUTION**

### **3.1 EXAMINATION**

- A.** Examine grading and subsoil conditions. Do not proceed until conditions are acceptable per the architect's specifications.

### **3.2 PREPARATION**

- A.** Excavation: Excavate to depth required so edges of crushed aggregate blended with GraniteCrete admixture surfacing will match adjacent grades and have a maximum cross slope of 1 percent. [Remove excavated soil from site.]
- B.** Sub-grade Preparation: Comply with Caltrans Standard Specifications Section 301-1 – "Sub-grade Preparation."
- C.** Base Course Installation: Class II permeable base rock at 90% compaction.
- D.** [Edging]: Install flush with crushed aggregate blended with GraniteCrete admixture. Provide sufficient stakes to secure in place.]

- 3.3 INSTALLATION:** There are two installation methods for GraniteCrete: "Dry" and "Wet."

The **dry method** is for installations up to 6,000 square feet. The **wet method** is for installations over 6,000 square feet and may require the use of a volumetric truck. Discretion for the means and methods to use is ultimately the responsibility of the installer.

### **GRANITECRETE INSTALLATION – GENERAL**

- A.** Mixing method:



1. Installations less than 500 square feet may be mixed on-site.
2. Installations 500 square feet and over up to 6,000 square feet, must be delivered pre-mixed to the site from a GraniteCrete Inc. approved pre-mix facility. Approved retailers and pre-mix facilities can be found on the company website [www.granitecrete.com](http://www.granitecrete.com).
3. For installations over 6,000 square feet, it is highly recommended to use a volumetric truck.
4. The volumetric truck must be calibrated for the GraniteCrete mixture. Contact GraniteCrete, Inc. at [info@granitecrete.com](mailto:info@granitecrete.com) for a list of approved volumetric truck operators.

**The following installation instructions have been developed to help ensure a blemish-free, high-quality installation. While GraniteCrete looks similar to concrete, the installation of GraniteCrete follows a different procedure. For best results, follow the instructions below carefully. For assistance, contact GraniteCrete, Inc. at 800-670-0849.**

#### **Installation Depth (also known as “lift”)**

For **light vehicular applications and emergency vehicle access requirements (EVA)** – such as driveways, cart paths, commercial quad areas – GraniteCrete is installed as a 4-inch thick layer (lift) over a 6-inch subgrade of base rock. Compaction rates for all applications are 88%–92%.

**Please note:** GraniteCrete compacts approximately 25%, or ¼” per 1” of lift.

#### **Measurements**

An online calculator to assist you with estimating the amount of material needed to complete your project can be found on the GraniteCrete website here:  
<https://www.granitecrete.com/paving-materials-estimator/>

Please note this is **only** an estimator and GraniteCrete, Inc is not responsible for the quantity of materials at the job-site.

**GraniteCrete:**            Light Vehicular and EVA Application - (3 bag mixture) One cubic yard of aggregate/decomposed granite and three (85 lbs.) sacks of GraniteCrete admixture combined covers 82 square feet at a 4-inch thickness. **Note:** Aggregate/decomposed granite should

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be 3/8" minus material and follow our sieve percentages in this Specification Guide within a +/- 5% range.

**Class II Base Rock:** Light Vehicular and EVA Application - After final compaction, baserock should have a 6-inch depth.

### **Mixing Ratios**

**GraniteCrete:** Light Vehicular and EVA Application - (3 bag mixture) The ratio for commercial applications is 12.5:1 (12.5 units of decomposed granite to 1 unit of GraniteCrete, measured in volume). See the GraniteCrete Math Sheet for further details.

### **Installation Instructions - "Dry" Method**

- 1. Class II Base Rock:** Moisten and compact base rock on the entire installation area to an even depth of 4-inch or 6-inch, depending on residential or commercial application. A vibratory plate can be used to compact the base rock; it should **not** be used to compact the GraniteCrete for residential installations.
- 2. GraniteCrete:** Wheelbarrow the prepared GraniteCrete/DG mixture to the installation site and place a layer of the mixture to one-half of the desired final lift. Be sure to spread the mixture out before proceeding to step 3; this will ensure the mixture is moistened and mixed thoroughly.
- 3.** Moisten the material with a hose end trigger sprayer attachment, **avoiding puddling - oversaturation is detrimental and will negatively affect the integrity of the finished product.** Rake area lightly to evenly distribute water throughout the mix or "lift". Proper moisture content can be checked by clenching your fist around the GraniteCrete, when the mixture just stays together and the color just starts to transfer to your hand, GraniteCrete is ready to compact. Walking on the area is perfectly acceptable; initial compaction can be performed by walking on the edges and corners.
- 4.** Once the first lift has reached proper moisture content, level the GraniteCrete and compact it using a 36" drum roller in static position.
- 5.** Install a second lift as above, repeating steps 1 through 4. When doing this, make sure to pay particular attention to the edges to ensure even material height, and moisten to dampen mixture.
- 6. Compaction:** After proper moisture is achieved for compaction, hand tamp (with a 10" hand tamp) around benches, sign posts, corners, boulders, et cetera. Pay particular attention to corners and edges to ensure tight compaction.

7. Make several passes with a 36" walk-behind or drum roller in static position. Hand tamp out any imperfections with a 6" wooden masonry float. **Pay particular attention to ensure accuracy in grading.**
8. Make sure to keep your 10" hand tamp, walk-behind/drum roller, and wooden floats clean at all times. Fill in any divots with fresh, loose material (removing any larger stone) and hand tamp with the wooden floats to match the existing finish.
9. When laying GraniteCrete in batches, be sure to use the **cold joint** method below to ensure a blemish-free installation.
10. **Finishing:** If desired, lightly sweep the finished surface in a perpendicular pattern with a medium-bristled push broom. Then make several passes with a lawn roller until the desired surface texture is achieved. Remove spoils off the surface.
11. **DO NOT ALLOW GRANITECRETE TO DRY DURING INSTALLATION. MIST LIGHTLY WITH A HOSE END SPRAY HEAD OR GARDEN SPRAYER AS NECESSARY OR COVER WITH A PLASTIC TARP.**
12. The final step for a GraniteCrete installation is a dampening with water of all newly-installed and compacted GraniteCrete materials. Using a shower head/spray hose attachment, moisten the entire newly-installed GraniteCrete area - **avoid puddling**. For best results, moisten all newly-installed GraniteCrete paving a second time the following 1 to 5 days, as practical. **Slow curing of GraniteCrete is important to avoid cracking.**

**Make sure there is no direct application of uncontrolled water (e.g. irrigation or sprinkler water) prior to final curing.**

### **Installation Instructions - "Wet" Method - Using a Volumetric Truck**

**The use of an approved volumetric truck is required - see GraniteCrete website for approved volumetric truck companies.**

1. **Class II Base Rock:** Moisten and compact base rock on entire installation area to an even depth of 4-inch or 6-inch, depending on residential or commercial application. A vibratory plate can be used to compact the base rock; it should **not** be used to compact the GraniteCrete.
2. **Compaction:** Walking on the area is perfectly acceptable; initial compaction can be performed by walking on the edges and corners. Rake or grade area with the flat side of a landscape or asphalt rake (do not use tang side,) until the

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GraniteCrete is one inch above finish grade.

3. Once initial compaction has been completed, hand tamp (with a 10" hand tamp) around benches, sign posts, corners, boulders, et cetera. Pay particular attention to corners and edges to ensure tight compaction.
4. Make several passes with a 36" walk-behind or drum roller in static position. Hand tamp out any imperfections with a 6" wooden masonry float. **Pay particular attention to ensure accuracy in grading.**
5. Make sure to keep your 10" hand tamp, walk-behind/drum roller, and wooden floats clean at all times. Fill in any divots with fresh, loose material (removing any larger stone) and hand tamp with the wooden floats to match the existing finish.
6. When laying GraniteCrete in batches, be sure to use the **cold joint** method below to ensure a blemish-free installation.
7. **Finishing:** If desired, lightly sweep the finished surface in a perpendicular pattern with a medium-bristled push broom. Then make several passes with a lawn roller until the desired surface texture is achieved. Remove spoils off the surface.
8. **DO NOT ALLOW GRANITECRETE TO DRY DURING INSTALLATION. MIST LIGHTLY WITH A HOSE END SPRAY HEAD OR GARDEN SPRAYER AS NECESSARY OR COVER WITH A PLASTIC TARP.**
9. The final step for a GraniteCrete installation is a dampening with water of all newly-installed and compacted GraniteCrete materials. Using a shower head/spray hose attachment, moisten the entire newly-installed GraniteCrete area - **avoid puddling**. For best results, moisten all newly-installed GraniteCrete paving a second time the following 1 to 5 days, as practical. **Slow curing of GraniteCrete is important to avoid cracking.**

**Make sure there is no direct application of uncontrolled water (e.g. irrigation or sprinkler water) prior to final curing.**

**The following information is applicable to BOTH installation methods.**

You may walk on GraniteCrete immediately after installation. However, like concrete, GraniteCrete gets stronger with time. Ideally, stay off the newly-installed GraniteCrete areas for at least one day; after that, foot traffic is allowed. Vehicular traffic should avoid newly installed areas for 5 – 7 days.

Newly installed GraniteCrete paving surfaces are fully cured in 28 days. At that time, the entire surface should be blown or swept off to eliminate loose surface materials. Minor cracking may take place. However, over time, the aggregate fines will fill in the minor cracks and they should disappear. Occasional blowing off of the surface will help to minimize loose surface materials.

### **Cold Joint Methods**

Cold joints can be used at the end of the work day.

Method One:

1. "Between pours," stop at an area that makes the joint location look intentional. Take a chalk snap line just back from loose GraniteCrete into the compacted area and create a chalk line. Use either a masonry blade - or a square-nose shovel - and cut a straight line across the installation.
2. Continue with installation: Dampen the prior installation area. Place newly mixed GraniteCrete into the area, being careful not to overlap existing compacted material. Place a three foot length of 2"x4" carefully along the edge of the new pour and compact by hitting/tapping the board with a single jack. Then, take a medium-bristled push broom and very lightly "feather" the two pours together.

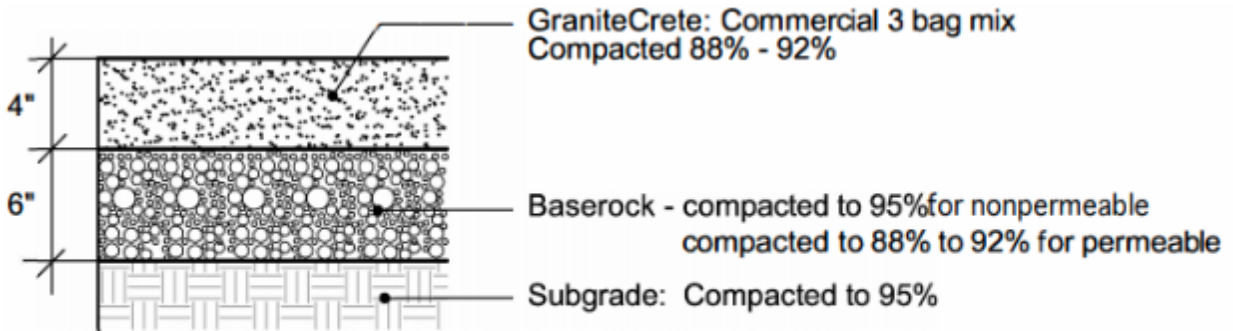
Method Two:

1. Place a 2"x4" or 2"x6" piece of wood across the installation, loosely stake it, and finish compacting the material. Leave the board in place overnight.
2. The next day, carefully lift the wood up and away from the installed GraniteCrete. Continue the installation process as per step 2 under Method One, making sure to dampen the prior installation area.

Method Three: (Suggested for large open edges at the end of the work day)

1. Install steel edging at a location that looks intentional and aesthetically makes sense. Permanently install using the stakes provided. Completely finish the first day's work.
2. The next day, simply continue with the installation. Make sure to dampen the prior installation area first. Leave the edging in place. Again, be careful not to leave any new material on the previously installed GraniteCrete.

**Cross-section Details**



**GraniteCrete Paving - Light Vehicular and EVA**

**Recommended Equipment**

Tools	Materials
(3) Rounded point or flat edge shovels for moving product	GraniteCrete Admixture bags (85 lbs.)
6 cubic foot cement mixer for mixing small installations	3/8" minus aggregate/ decomposed granite
Wheelbarrow for moving material	Class II Base Rock or Class II Permeable Base
8" or 10" hand-tamps for compacting edges and corners, step back fills, and small areas	Curbing or Header Board materials (if desired)
Hose with a shower spray nozzle for moistening dry product	Water source
Landscape and asphalt rake with flat edge for finish grading	
Heavy lawn roller filled with water to compact	
36" drum roller in static position	
Medium bristled push broom for finishing	
(2-3) 6"-9" wooden masonry float for	

finishing (1) 6"-9" steel float for cleaning hand tamp and roller	
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Please refer to our website for further information:

<https://www.granitecrete.com/installation/>

**3.4 Important Notes:**

- A. Do not allow GraniteCrete to dry during installation. Mist lightly with a hose end spray head as necessary - **avoid puddling** - or cover with plastic tarp.
- B. Non-compacted - or poorly-compacted - GraniteCrete top layer will result in loose and pebbled materials. Edge and corner compaction may require special attention with a hand tamp during installation.
- C. Non-compacted - or poorly-compacted - base rock may result in failure of the top layer of GraniteCrete.
- D. Squeeze the mixture in your fist and open your hand. When the color has just started to transfer onto your hand and the mixture just begins to stay together in a clump, it's ready for installation. Excessive moisture level may result in "sticky" materials complicating the quality of the finish surface or proper compaction - if you squeeze the mixture and water oozes out, it is too damp. If the material is too wet, it may be placed on the bottom of the installation, with material that has a better moisture content on top.
- E. Aggregate/decomposed granite materials should meet the sieve specifications in this Specification Guide and be free of contaminants.
- F. Surface shall follow the overall contours of the landscape. Flat areas shall be [sloped] [crowned] for drainage. Slope [2.0%] [ ] percent minimum to drain away from structures.
- G. Please Note: 3/8" minus aggregate comes in different colors. GraniteCrete™ samples reflect the use of a Golden Granite decomposed aggregates. Mock-ups using your local aggregate source is strongly suggested.
- H. Saw cut expansion joints every 5' in narrower paths, every 12' in wider paths, and at every engineered stress area. Wait 48 hours before cutting.
- I. Cover finished surface, when practical, to achieve maximum curing period. See Section 3.5.
- J. Minimum Compacted Thickness (See Section Details):
  - 1. [Light Vehicular and Emergency Vehicle Access] : [4] inches.
- K. Completed, finished surface shall be of consistent quality and free of deleterious

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materials such as organic materials, nails, stones, and loose material. Surface shall not have depressions or humps greater than [1/4] inch in ten feet. Cold joints, if any, should be inconspicuous.

**L. Pay particular attention to ensure accuracy in grading.**

**3.5 CURING PERIOD / PROTECTION**

- A.** Do not allow traffic on crushed aggregate blended with GraniteCrete admixture surfacing for 5 days after placement or until compacted crushed aggregate blended with GraniteCrete admixture surfacing has fully cured. [Cover for extended curing period].
- B.** Protect crushed aggregate blended with GraniteCrete admixture surfacing from damage until project completion. [Repair damaged areas to match specified requirements].

**3.6 MAINTENANCE & REPAIRS**

- A.** Follow manufacturer's recommendations.
- B.** Maintenance: Depending on the end user's desired finish surface, maintenance may require occasional blowing off or brooming of paved surface - DO NOT use a pressure washer to clean GraniteCrete. Depending on quality of compaction at time of installation, a thin veneer of loose aggregate material is typical after the full 28 days cure period. If cracking appears in a GraniteCrete surface, broom loose aggregate "fines" into cracks and compact with a rubber mallet.
- C.** Repair: When repairing GraniteCrete it is important to use the original aggregate/decomposed granite and the original GraniteCrete Admixture color to match previously installed materials. If the paved surface has large areas of raveled material (loose aggregate/decomposed granite) the initial installation may not have been properly compacted, or blended materials did not have optimum moisture content during installation. **GraniteCrete must not be allowed to dry prior to final compaction.** The following are suggestions for repair of raveled materials:
  - 1. For large loose/raveled areas, a minimum of 2 inches of GraniteCrete can be saw-cut at agreed length, removed, and re-installed. Repeat the installation steps.
  - 2. In areas that collapse/fail due to equipment weight, re-form and re-install with original materials as per specifications.
  - 3. Minor Crack Repair - With Sand Mixture:



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Use a fine mesh sand - typically sold as “playground sand” or “play sand.” Mix the sand and GraniteCrete together as though the sand is decomposed granite (use the same ratio as was used for the GraniteCrete installation). This will create a dry mix, similar to polymeric sand. Apply the sand mixture down into the crack using the appropriate tool (trowel, shovel, broom, et cetera). Fill the crack  $\frac{3}{4}$  of the way to the top grade. Usually at the point post-installation that cracks begin to be seen, you will also see loose material on top. Sweep that loose material into the remaining  $\frac{1}{4}$  top of the void. Try to not leave any sand mixture/patch material on the top of the installation - you want it as clean as possible; you can use a blower to help remove the sand mixture. Once the surface is clear of patch material, carefully wet the material. The cracks should virtually disappear.