FOAMED GLASS AGGREGATE

Note: This three-part specification is provided as a sample only and is not intended for use. Please email info@glavel.com to request the current DOCX version.

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

A. The Contractor shall furnish all labor, materials, equipment, and appurtenances required to place and compact foamed glass aggregate as shown on the Drawings and specified herein, including the following:

   a. Preparation of subgrade.

   b. Installation of underslab drainage pipelines and non-woven geotextile.

   c. Placement of free draining structural fill, and heavy-duty vapor barrier.

   d. Storage and handling of foamed glass aggregate.

   e. Protection and preservation of all existing and proposed underslab utilities and structures.

   f. Placement and compaction of foamed glass aggregate at locations indicated on the Drawings.

   g. Placement of a vapor barrier over the foamed glass aggregate.

1.2 SUBMITTALS

A. QUALIFICATIONS

   a. The Contractor shall provide the Engineer and Construction Manager with a manufacturer's Technical Data Sheet which displays that the products meet or exceed the specified values.

   b. The Manufacturer shall demonstrate production experience of at least 125,000 cubic yards of foamed glass aggregate meeting the requirements of Section 2.1.

   c. The Contractor shall provide the Engineer and Construction Manager evidence that the Manufacturer's foamed glass aggregate has been used successfully in installations with similar project conditions and product application.

   d. The Contractor shall provide the Engineer and Construction Manager with a written report which supports the installation methods in Section 3.2 for product meeting the requirements of Section 2.1. The report shall confirm volume reduction during compaction.

B. SAMPLE

   a. The Contractor shall provide a sample of the products described herein at the request of the Engineer and Construction Manager.

C. CERTIFICATION

   a. The Contractor shall provide the Engineer and Construction Manager with a written certification or manufacturer's quality control data which displays that the products meet or exceed the values specified herein.

PART 2 - PRODUCTS

2.1 FOAMED GLASS AGGREGATE

A. Foamed glass aggregate shall be made from a minimum of 98% recycled glass and shall be produced by the wet foaming process.

B. Foamed glass aggregate shall meet the gradation specifications in Table A per ASTM C136.

TABLE A

Sieve Size	Total % Passing
4”	100
2”	85-100
⅜”	0-15

C. The as-manufactured foamed glass aggregate shall have a maximum dry bulk density of 15 pounds per cubic foot (pcf) per ASTM C29. The as-delivered foamed glass aggregate shall have a maximum moist bulk density of 18 pcf per ASTM C29.

D. The foamed glass aggregate shall have a closed cell structure and shall be non-leaching.

E. The foamed glass aggregate manufacturer must demonstrate experience of manufacturing a minimum of 125,000 cubic yards of foamed glass aggregate meeting the requirements of this Section.

2.2 GEOTEXTILE

A. The geotextile construction shall be a nonwoven, staple fiber, needle-punched, polypropylene geotextile. The geotextile shall function as a separation layer between subgrade and foamed glass aggregate.

B. The geotextile shall either have a minimum mass per unit area of 6 oz./yd2 per ASTM D5261 or meet the requirements of a Class 2 separation geotextile per AASHTO M 288.

C. The minimum grab tensile strength (MARV) of the geotextile shall be 120 lbs. per ASTM D4632.

D. Equivalent products meeting or exceeding these requirements may be submitted for approval.

PART 3 - EXECUTION

3.1 DELIVERY, STORAGE, HANDLING

A. Deliver, store, and handle materials in accordance with manufacturer’s recommendations.

B. During all stages of manufacture, shipment, storage, and construction, minimize the amount of material moves to prevent physical damage. Minimize the amount of trafficking on foamed glass aggregate until an adequate thickness of cover material is placed over the material.

3.2 CONSTRUCTION

A. Prepare the subgrade to the required elevations and grades shown on the Drawings. Remove standing water, ice, and soft or unstable materials before placing geotextile or foamed glass aggregate. Compact subgrade to the Engineer's specified density prior to placement.

B. Install all underslab utilities, drains, and cleanouts before placing foamed glass aggregate. Backfill around utilities with foamed glass aggregate or clean sand to provide uniform support. Where plumbing or conduit is adjacent to or passing through foamed glass aggregate, maintain a minimum clearance of 6 vertical inches between the utility and any compaction equipment. Protect all pipes and structures from displacement or damage during compaction of foamed glass aggregate.

C. Place nonwoven geotextile directly over the prepared subgrade as a separation layer. Overlap adjacent panels a minimum of 12 inches or sew per manufacturer's recommendation. Extend geotextile up vertical faces of foundations, grade beams, or utility trenches as shown on the Drawings.

D. For compaction using tracked equipment, foamed glass aggregate shall be placed in uncompacted lift thickness of 15 inches and compaction shall be performed with a tracked excavator or dozer with ground pressures of 4 to 7 psi. Compaction using tracked equipment shall be completed by placing the initial lift thickness, and then raising the blade or bucket and tracking over the layer for a total of four (4) full passes. Compaction shall consist of four (4) full passes with track coverage of the entire surface area of each lift.

    a. For areas not accessible by tracked equipment (e.g. around structures and utilities) or to compact thinner lifts, foamed glass aggregate shall be placed in maximum uncompacted lifts of 12 inches and compacted with a plate compactor 110-220 lbs. Compaction shall be complete after a minimum of four (4) full passes with the plate compactor. One (1) full pass is defined as a minimum of 100% coverage of the plate passing atop the lift.

E. If differing lift thickness, compaction equipment, or methods are proposed, obtain written approval from the Engineer prior to use. Provide supporting data or prior test results to confirm comparable density and volume reduction.

F. After compaction, place nonwoven geotextile directly over the compacted foamed glass aggregate as a separation layer. Place heavy-duty vapor barrier (e.g., 15-MIL Stego Wrap or approved equal) atop geotextile. Lap joints per manufacturer's recommendation and tape seams airtight. Protect vapor barrier from puncture during placement of reinforcing and concrete.

G. Prevent heavy equipment operation directly on compacted or uncovered foamed glass aggregate. Repair any disturbed areas prior to slab placement using the same methods specified above.

END OF SECTION