GRADED FOAMED GLASS AGGREGATE · GFGA

ACE AGGREGATES

ALESTONE™

LIGHTWEIGHT SAND & AGGREGATE

ALESTONE™ stands for ACE Lightweight Engineered Stone. We fundamentally change the composition of the FGA feedstock, then apply a proprietary processing system that converts the FGA into Graded Foamed Glass Aggregate (GFGA) designed specifically to mitigate ASR (Alkali-Silica Reaction) in cementitious systems. ALESTONE™ is no one-trick pony: our five lightweight sand and aggregate gradations open up a wide range of uses well beyond cement-bound products.

Low Unit Weight

A fraction of the weight of natural sand and stone

Low Water Absorption

Closed-cell particles absorb water only at the surface

Cement Safe

Our engineered feedstock and proprietary particle processing mitigates ASR

100%

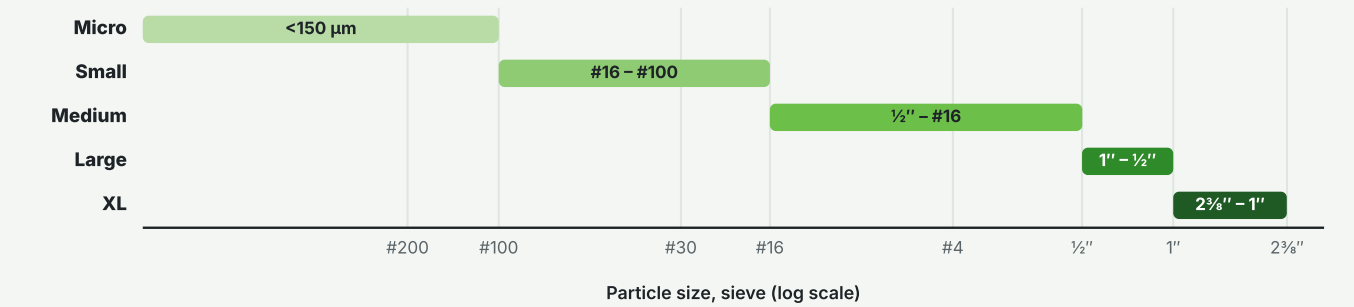
RECYCLED CONTENT

Made in the USA from post-consumer recycled glass

TECHNICAL PROPERTIES

Five gradations. One engineered material.

ALESTONE™ GRADATION RANGES





ALESTONE™-Micro

GFGA: Gradation <150 µm

Gradation	Passing #100 sieve (150 µm)
Bulk density ASTM C29	**57 lbs/ft³**
Specific gravity ASTM C128*	**1.55**
Water absorption ASTM C128	**39%**



ALESTONE™-Small

GFGA: Gradation #16 – #100

Gradation	Passing #16 · retained #100
Bulk density ASTM C29	**24 lbs/ft³**
Specific gravity ASTM C128*	**0.65**
Water absorption ASTM C128	**37%**



ALESTONE™-Medium

GFGA: Gradation ½″ – #16

Gradation	Passing ½″ · retained #16
Bulk density ASTM C29	**19 lbs/ft³**
Specific gravity ASTM C128*	**0.52**
Water absorption ASTM C128	**34%**



ALESTONE™-Large

GFGA: Gradation 1″ – ½″

Gradation	Passing 1″ · retained ½″
Bulk density ASTM C29	**17 lbs/ft³**
Specific gravity ASTM C128*	**0.46**
Water absorption ASTM C128	**32%**



ALESTONE™-XL

GFGA: Gradation 2⅜″ – 1″

Gradation	Passing 3″ (allowable overs) · retained 1″
Bulk density ASTM C29	**15 lbs/ft³**
Specific gravity ASTM C128*	**0.41**
Water absorption ASTM C128	**31%**

* Specific gravity estimated from ASTM C29 bulk density, assuming 41% inter-particle void space (SG = bulk density ÷ [62.4 × 0.59]). Confirm by ASTM C128 (fine) / C127 (coarse) testing.

WHERE TO USE ALESTONE™

Lightweight sand and aggregates for your projects and products

ALESTONE™ is a raw material. Our customers build it into their own mix designs, projects and processes, swapping heavy sands, minerals and aggregates for our lightweight, recycled-content materials that lower unit weights and deliver specialized performance. Choose the ALESTONE™ gradation that fits your bound or unbound application.

ALESTONE™ IN BOUND SYSTEMS Compatible binders

Hydraulic cements
OPC · blended cements incl. portland-limestone cement (PLC) · calcium aluminate (CAC)

Pozzolanic & alkali-activated
Fly ash · slag · silica fume · ground glass pozzolan · metakaolin / calcined clay · geopolymers

Air-setting minerals
Hydrated (air) lime · dolomitic lime · lime putty · gypsum / plaster of Paris · anhydrite · clay & earthen binders

Chemically bonded inorganic
Magnesium phosphate · magnesium oxychloride · potassium silicate

Organic thermosetting
Epoxy · polyurethane · polyester · phenolic

Organic thermoplastic
EVA · polyethylene · thermoplastic binders

Bituminous & hybrid
Asphalt · bitumen emulsion · polymer-modified bitumen

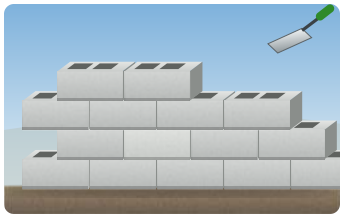
Another binder?
Ask ACE technical support about compatibility with your system.

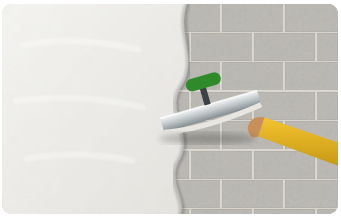
EXAMPLES OF BOUND PRODUCTS & SYSTEMS

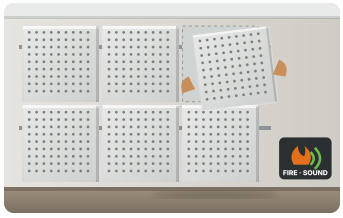
Wet-cast concrete · Dry-cast concrete · Dry mortars · Prepackaged concrete · Plasters · Renders · Stuccos · Panels · Boards · Substrates · Adhesives · Coatings · Mineral casting · Polymer concrete · Fiberglass · Composites · Thermosets · Thermoplastics · Screeds · Underlayments · GFRC · Permeable concrete · Putties



Ready-mix lightweight concrete


Lightweight CMU block


Plasters, renders & coatings



Non-cement acoustic & fire panels

ASR
MITIGATED BY DESIGN

Engineered for cementitious applications. Glass in concrete can trigger the Alkali-Silica Reaction. ACE fundamentally changes the composition of the FGA feedstock used to make ALESTONE™, and our proprietary particle processing mitigates ASR when ALESTONE™ is used in cementitious systems. Testing per ASTM C1260 and AASHTO T 380.

HOW TO USE ALESTONE™

01
Select the grade
Match the gradation to your product: sand replacement, coarse aggregate or fill.

02
Substitute by volume
Replace natural sand or stone by volume, not weight, to get the lightweight benefit.

03
Trial batch
Adjust water, admixtures and mixing time, and verify fresh and hardened properties.

04
ASCE Concrete Canoe
ACE supports university concrete canoe competitions with ALESTONE™ products.

ALESTONE™ is sold as a graded raw material that conforms to its published gradation and material properties at delivery. Suitability, dosage, mix design and finished-product performance remain the customer's responsibility unless ACE is separately engaged for technical support.

BEYOND THE BINDER

ALESTONE™ in unbound and active media applications

ALESTONE™ doesn't need a binder to perform. Used loose and unbound, its light weight, free drainage, insulating cells and inert mineral chemistry solve problems in fills, cavities and growing systems. As an active media, its high surface area and porous texture put it to work insulating, extinguishing, filtering, absorbing and hosting biology.

Unbound applications

Loose and unbound, no binder

01	Compacted FGA topping / leveling layer
02	Loose insulation fill
03	Floor-cavity acoustic fill
04	In-trench pipe bedding
05	Subgrade pipe insulation
06	Lightweight planter fill
07	Drainage aggregate
08	Rodent-resistant fill
09	CMU block cavity fill
10	Green-roof assemblies
11	Lightweight sand blends
12	Acoustic absorption fill

Active media applications

Filtration, absorption & growing media

01	Fire-suppression media
02	Water-filtration media
03	Odor-control media
04	Soil-amendment media
05	Hydroponic grow media
06	Sports-turf media
07	Biofiltration media
08	Wastewater biofilter media
09	Oil-absorbent media
10	Chemical-spill media
11	Bio-carrier media
12	Hydration-extender media

Ultra-lightweight
Cuts dead load in fills, roofs and cavities.

Acoustic & heat absorbing
Porous surfaces and sealed cells absorb sound and heat.

Insulating
R-1.3 to R-1.75 per inch, depending on particle size.

Inert mineral
Rot-proof, chemical-resistant and freeze-thaw resistant.



ALESTONE™ is non-combustible

TESTED PER ASTM E136

Applications shown are concepts for ALESTONE™ graded material. Suitability, grade selection and performance depend on the specific system and should be confirmed by the customer. Contact ACE technical support to discuss your application.

THE SUSTAINABILITY STORY

Recycled glass, re-engineered as lightweight stone

100%

Recycled content
Made from post-consumer glass that would otherwise go to landfill, recycled in-house by ACE.

Inert

Mineral & non-leaching
Essentially aerated silicon dioxide: closed-cell, inorganic, rot-proof and stable for the life of the product.

LEED®

Green-building support
Recycled content can help your customers pursue LEED® and Envision® credits. ACE supplies the documentation.



PACKAGING

Bagged or bulk, to fit your operation

PRODUCT	GRADATION	PACKAGING
ALESTONE™-Micro	<150 µm	2 ft³ bag · 1.5 yd³ supersack
ALESTONE™-Small	#16 – #100	2 ft³ bag · 1.5 yd³ supersack
ALESTONE™-Medium	½″ – #16	2 ft³ bag · 1.5 yd³ supersack
ALESTONE™-Large	1″ – ½″	2 ft³ bag · 1.5 yd³ supersack
ALESTONE™-XL	2⅜″ – 1″	2 ft³ bag · 1.5 yd³ supersack

TECHNICAL SUPPORT

Data sheets
A Technical Data Sheet (TDS) and Safety Data Sheet (SDS) for every grade.

Samples
Samples for all gradations are available upon request. Contact our technical team.

Mix support
ACE technical staff help with substitution and trial-batch planning.

Consistent supply
Lot control and in-house cullet sourcing for repeatable material.



HOW ALESTONE™ IS MADE

Vertically integrated, from recycled bottle to engineered stone

ACE recycles post-consumer glass in-house, cleans and grinds it to a fine glass flour, and modifies the feedstock composition for ASR mitigation. It's then foamed in a continuous belt kiln into millions of sealed cells, cooled, crushed and screened into five tightly controlled gradations.



Lightweight manufactured stone veneer



Fresh ALESTONE™ lightweight concrete mix

ACE AGGREGATES

www.acefga.net

ALESTONE™
ACEGEO™
ACEsulation™