

A sustainable construction solution in every bag.

3X lighter than mineral gravel

10X better insulation

No water absorption

Dust-free, no deterioration

Safe for vegetation

Non-soluble (no BPA leaching)

Quick Share

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For every bag of
**Arqlite Smart
Gravel**, there is one
bag less of plastic in
the environment

100%
recycled

Micromini
Size

Mini
Size

Regular
Size



Data sheet

Specific Gravity: 0.92-0.95

	Micromini	Mini	Regular
Size	1/16 to 1/8 inch	1/8 to 3/8 inch	1/2 to 1 inch
Applications	Concrete	Concrete	Drainage
Weight	920 lb/yd ³ 536 kg/m ³	837 lb/yd ³ 497 kg/m ³	675 lb/yd ³ 401 kg/m ³
Absorption	5.1%	4.6%	1.5%
Modulus of Elasticity	64.8 Mpa		
Yield Stress 0.2	2.4 Mpa		
Thermal conductivity	~0.25W/m.K - (vs. Mineral rock: 2 to 7 W/m.K)		

Leachate: Using the SW846-1311 method to test for the presence of 64 semi-volatile compounds that could accumulate in rainwater runoff, the sample was below the detection limit for all compounds.

Polymer analysis: No significant amount of volatile compounds
 *TGA measures the mass loss as a function of temperature and pyrolysis GC-MS (PyGCMS) was used to analyze the pellets at high temperatures. Additionally, a toxicity characteristic leaching procedure (TCLP) was performed. The headspace GC-MS was used to analyze volatile organic compounds while PyGCMS was used to determine the polymer components present in the Arqlite samples.

Elemental Analysis:

X-ray fluorescence (XRF)

Compound	Mass range %
TiO ₂	5.04-13.8
CaO	0.37-0.42
Al ₂ O ₃	0.31-0.33
SiO ₂	0.19-0.24

Polymer Composition

Differential scanning calorimetry (DSC)

% PE	% PP	% PET	% Ash (TGA)
14.3-17.9	1.7-6.4	2.7-8.2	1-2.2



A smart solution for your projects:

- Landscaping & French Drainage
- Substrate Base & Sub Base
- Additive For Light Concrete
- Aggregate for Precast Concrete

Complementary Docs

www.smart.arqlite.com/docs-tech-files/

Leachate and composition

Use on wetlands

Toxicology report

EPD

Concrete mix 3,000 PSI - 30% Arqlite

Water / Cement ratio	0,69 Kg/m3	1,2 Lbs/Y3
Cement content	269 Kg/m3	453,4 Lbs/Y3
Water content	186 Kg/m3	313,5 Lbs/Y3
Fine aggregate	874 Kg/m3	1473,2 Lbs/Y3
Coarse aggregate	701 Kg/m3	1181,6 Lbs/Y3
Arqlite Smart Gravel	96 Kg/m3	161,8 Lbs/Y3
Plasticizer	0 Kg/m3	
Air content	2,3 %	0,0 in
Settlement	15 cm	5,9 Lbs/Y3
Unit Weight Volume theoretic	2126 Kg/m3	3583,5 Lbs/Y3
Unit Weight Volume measured	2094 Kg/m3	3529,6 F°
Mix Temp	16,5 C°	61,7 F°
Air Temp	14,1 C°	57,4 Psi
Compressive Strength 28 days	19,9 Mpa	2886,3 Psi
Compressive Strength 90 days	21 Mpa	3045,8 Psi
Modulus 90 days	27,2 Gpa	
Resistance after Modulus 90 days	21 Gpa	

Control unit

0,69 Kg/m3	1,2 Lbs/Y3
270 Kg/m3	455,1 Lbs/Y3
186 Kg/m3	313,5 Lbs/Y3
877 Kg/m3	1478,2 Lbs/Y3
1004 Kg/m3	1692,3 Lbs/Y3
0 Kg/m3	0,0 Lbs/Y3
0 Kg/m3	0,0 Lbs/Y3
2,3 %	
8 cm	3,1 in
2337 Kg/m3	3939,1 Lbs/Y3
2350 Kg/m3	3961,1 Lbs/Y3
18 C°	64,4 F°
18,7 C°	65,7 F°
26,3 Mpa	3814,5 Psi
28,1 Mpa	4075,6 Psi
38,1 Gpa	
28 Gpa	



Use cases

Chateau Portal

<https://www.eoarg.com/single-post/2019/10/30/avances-construccion-10-2019>

Architects: Eduardo Orsini Architects - <https://www.eoarg.com/>

36m3

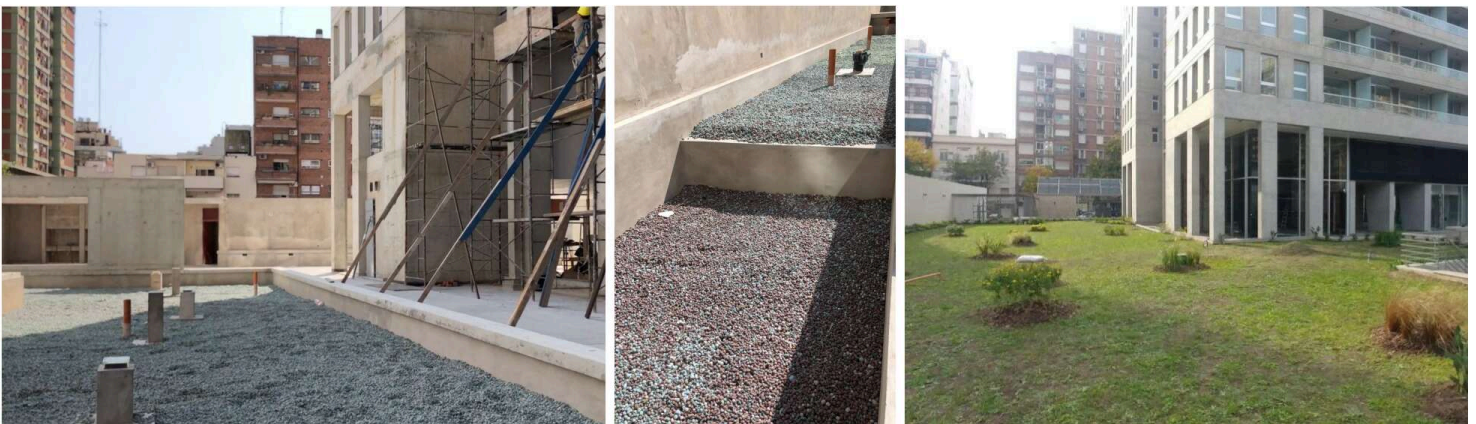


ICON ACOYTE Building

<http://www.davconstrucciones.com.ar/>

Architects: Studio Pavlotzky - <http://pavlotzky.com.ar/>

101m3



Remodeling Azioli S.A.

Architects: Pier Paolo - "Azioli S.A." <azioli.sa@gmail.com>

Av. de Mayo 651 - CABA - 35m3

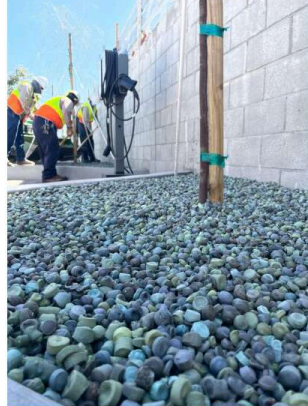


Use cases

Los Angeles Department of Water and Power (LADWP)

<https://www.ladwp.com/>

Sun Valley 50m3



Instant Jungle

<https://www.instantjungle.com/>

Santa Ana 20m3



The World is Shifting Toward Sustainable Construction

Around the world, public and private stakeholders are adopting green construction processes to improve energy performance and drive resource efficiency. Sustainable construction is evolving every day with more and more opportunities are opening up for builders and landscapers to embrace green practices.

Moreover, builders and landscapers are facing increasingly demanding requirements for certification, largely based on minimizing their GHG emissions, reducing waste, using recyclable and reusable materials, and adopting sustainable practices.

Let's take a look at two certification requirements that Arqlite satisfies.



Sustainable landscape design and maintenance is how landscape architects and engineers can combat climate change. Originally modeled after LEED, SITES was developed to fill the gap in addressing site sustainability. In line with the criteria for SITES certification, our smart gravel in landscaping minimizes water demand and waste, reduces energy consumption, and filters and reduces stormwater runoff.



For **LEED certification**, builders earn points for choosing materials that reduce WASTE sent to landfills and reducing the environmental impact of a building's materials. This is where Arqlite Smart Gravel is a real point earner. See below for more on our checklist!

Arqlite LEED/SITES Checklist:

Our smart gravel **is a great addition to any inventive, sustainable and green building strategy**. It checks off a surprising number of sustainability certification criteria:

- ✓ Minimizes water demand and waste
- ✓ Reduces HVAC costs by providing better insulation
- ✓ Made from 100% recycled plastic waste that would have gone to a landfill
- ✓ Lightweight so less material is need for support
- ✓ Low transport costs, meaning fewer GHG emissions
- ✓ Safe for vegetation with no BPA leaching

Contact us for more information about how we can help your projects with credit achievement.

The Environmental Impacts of Aggregate Extraction

While a bag of stones or gravel may look like a “natural” product, the process of getting it to a worksite entails significant environmental costs. Mined from the earth, either dug out of pits or blasted out of quarries, this process can disrupt existing movement of surface water and groundwater, **affecting the quantity and quality of drinking water** for nearby residents and wildlife.

Creating the pits or quarries requires the removal of virtually all natural vegetation, topsoil and subsoil to reach the aggregate underneath. This can lead to a huge loss of biodiversity as plants and aquatic habitats are destroyed. Moreover, adjacent ecosystems are affected by noise, dust, pollution and contaminated water.

TRANSPORT EFFICIENCY

Did you know?

Because our smart gravel is so lightweight, you can transport three times the volume of standard gravel per truckload.

**REDUCE YOUR COMPANY'S
TRANSPORT-RELATED
GHG EMISSIONS**



**Lower your carbon footprint.
Save money on transport.
Increase efficiency.**

Quad axel truck

Gravel 3,000 lbs/Y³ (avg)

Soil 2,200 lbs/Y³ (avg)

Arqlite 800 lbs/Y³ (avg)

a

Max weight
**60.000
lbs**
Max volume
40Y³

b

Max weight
**60.000
lbs**
Max volume
40Y³

A+B= Max 80.000 lbs

Gravel

20Y³

6Y³



Soil

27Y³

9Y³



40Y³

40Y³



**100%
recycled**



Smart #in a bag

Eco-friendly green construction?
We've got it in the bag!

Arqlite SPC | info@arqlite.com | www.arqlite.com
(657) 232 0058 | 2111 S Anne St, Santa Ana, CA 92704