

Aertec AAC Blocks: June 2021

Resources		Comments			
Raw materials	Quartzite	Cement	Lime	Gypsum	Poring Agent (aluminium)
Nature of raw materials	Processed Virgin	Processed Virgin	Processed Virgin	Processed Virgin	Processed Virgin
% of raw materials in the final product	50%	21%	9%	8%	1%
% of recycled content	0%	0%	0%	0%	0%
Location of resource extraction	Locally (<100km)	Locally (<100km)	Locally (<100km)	Regionally (<500km)	Internationally >3000km
Type of transport used to move the raw materials to the place of manufacturing?	TRUCK	TRUCK	TRUCK	TRUCK	SHIP
Additional environmental benefits/Innovation	<p>LESS MATERIAL USED IN THE MAKING OF THE PRODUCT - Autoclaved aerated concrete (AAC) is made with fine aggregates, cement, and an expansion agent that causes the fresh mixture to rise like bread dough. This type of concrete contains 80 percent air. In the factory the material is molded and cut into precisely dimensioned units. Autoclaved aerated concrete offers both material and performance aspects from a sustainability perspective. On the material side, it can contain recycled materials like fly ash and rebar. Further, it incorporates such a large quantity of air that it contains less raw material per volume than many other building products. From a performance perspective, the system leads to tight building envelopes. This creates an energy efficient envelope and protects against unwanted air losses. Physical testing demonstrates heating and cooling savings of roughly 10 to 20 percent compared to conventional frame construction.</p>				

Manufacturing		Comments
% use of energy from renewable resources	30-40%	
Energy use per ton of product	4,152,389 kWh/yr	
Water use per ton of product	135,000kL/yr	
Has any of the following been implemented:		

Environmental Policy/Management system	yes	Certified ISO14001:2015
Cleaner Production System	no	
Green Procurement Policy	no	
Environmental Awareness Policy	yes	
Waste Management Policy	no	
CSI Projects	no	
Is the project manufactured in South Africa?	no	
Additional environmental benefits/Innovation		

Product		Comments
Does the product use electricity?	no	
Does it increase energy efficiency or reduce energy consumption?	yes	Less energy required to heat or cool buildings that were built with AAC blocks.
% of reduction of water use	25-30%	In Application phase - approximately one third less mortar is used, which equates to less water required in construction.
Harmful emissions during use?	no	
Does the product contain Volatile Organic Compound (VOC)?	no	
Additional environmental benefits/Innovation		During construction, the blocks require less mortar (up to 30% less), thus requiring less sand, cement and water for the plaster in comparison with traditional building blocks. The R-values are better for AAC blocks, enhancing the thermal conditions of a building and reducing need for mechanical heating and cooling.

Packaging & Distribution					
Materials used for packaging	shrink	Pallet			

Packaging material	Low density Polyethylene	heat treated wood - ISPM15			
Nature of the source of packaging	Virgin	Reused			
% of recycled content of packaging	0%	0%			
Is the package reusable or recyclable?	Recyclable	Reusable			
Is there a takeback policy for your packaging?	no	no			
Is there a plan to reduce packaging?	not at the moment				
Distance from manufacturing plant to market of final product	Internationally >3000km	For South Africa. For manufacturing facility, the market is close but for this assessment, the blocks are exported to SA			
Type of transport used to move the product from the manufacturing plant to market	SHIP				
Additional environmental benefits/Innovation	For the domestic market, we have changed the size of the pallets, which allowed us to reduce the amount of packaging material required to cover the blocks.				

End-of-life/Recyclability		
Expected lifespan of product	>20yrs	
Can the product be easily separated into its single components for repair, re-use or recycling?	Recycling	Blocks can easily be repaired with repair plaster. Leftover blocks or blocks from demolition can be recycled as rubble.
% of the product that can be reused	0	
% of the product that can be recycled	90-100%	
Support or take back system for re-processing or responsible disposal of product	not yet	
Any emissions or harmful substances released into the environment during the disassembly or degradation of the finished product?	no	
Additional environmental benefits/Innovation	Due to the building method and the design of the block, material waste during construction is minimised - between 12-15% and up to 41% depending on the building envelop design.	