

Advantage of Ground Breaker Technology

- The production of high quality blocks, uniform in size and shape with defined edges and smooth surfaces, makes construction easier.
- It mobilizes and empowers communities to create local infrastructure and amenities.
- Ownership of a press provides long-term income generation for entrepreneurs.
- It is particularly suitable in areas where cement is costly and difficult to obtain.

Financial Savings

- On-site manufacture of SSBs dramatically reduces transportation costs and damage during transit.
- The Cost of building materials especially cement is significantly lower.
- The amount of mortar required is minimal.
- Unskilled people can be quickly trained to use the press and acquire a skill.
- Cost analysis reveals saving of around 50% can be achieved in the construction of water tanks, septic tanks and in the lining of wells and pit latrines.
- Saving of around 20% is possible in the construction of houses, classrooms, clinics etc.



Environmentally Friendly

- SSBs are 'cured' NOT fired. This dramatically reduces the environmental damage of construction when compared to clay-fired bricks.

Appropriate Technology

The Ground Breaker Soil Block Press provides an answer to affordable housing water storage and sanitation needs at community level in Africa.



It is an ideal tool for building contractors, entrepreneurs, developers, co-operatives and community based organizations.



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To place an order or arrange a demonstration please contact Makiga Office or visit our showroom at Kenya Industrial Estates, Shed. No. 27 off Likoni Road.



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Makiga manufactures the Ground Breaker Soil Block Press. The Press is heavy-duty, low maintenance and manually operated. It compacts a mixture of soil and cement into Stabilised Soil Blocks for the construction of affordable housing, water and sanitation systems. The Press is locally manufactured under patent and is a proven, appropriate technology suitable for both rural and urban areas.

There are three types of Ground Breaker Soil Block Press:

- **Straight Interlocking Soil Block Press**
- **Curved Interlocking Soil Block Press**
- **Standard Soil Block Press**



All three Ground Breaker Presses include the following unique features:

- Double action ejection stroke to ease operation.
- Adjustable volume mould box to suit different soil types.
- High compression which produces blocks as strong as concrete blocks.



Stabilised Soil Blocks (SSBs) are strong, economical blocks made from a mixture of sub-soil and a small quantity of cement. Almost any soil that contains clay and sand, for example murrum, can be used to make between 100 and 150 SSBs per 50kg bag of cement.

Cement to Soil Ratio

The cement to soil ratio varies according to soil type and can be determined by testing the soil for shrinkage. This can be done quickly and easily using a special shrinkage box supplied with the Soil Block Press.

Shrinkage	Cement to Soil	No. of Blocks
Up to 12mm	1:18	150
12–23mm	1:16	120
24–39mm	1:14	100

NB. Where shrinkage exceeds 40mm the soil

may require further stabilization with sand.

TECHNICAL SPECIFICATIONS

Ground Breaker Soil Block Press

- **Typical Compression force: 80-100 kN**
- **Weight: 140 Kg**
- **Typical daily production by 4 workers working on 8 hour day: 400-500 blocks**



Stabilised Soil Blocks

- **Size: 266mm x 140mm x 95mm**
- **Weight: 5Kg**
- **No. of blocks per 50kg bag of cement: 100-150**
- **Average curing period: 14 days**
- **Minimum dry compressive strength: 2.5N/mm²**
- **Maximum wet compressive strength: 1.5N/mm²**
- **Maximum water absorption (after 28 days): 15%**

Stabilised Soil Blocks are tested and approved by the Kenya Bureau of Standards (KS012070) as permanent walling materials. These blocks have been used to construct buildings, water tanks, pit latrines, wells and septic tanks in Kenya and other African countries.

Water Storage and Sanitation

Curved Interlocking SSBs make excellent Water tanks, wells, septic tanks and pit latrines.



- Tanks up to 12,000 litres can be built above ground and up to 50,000 litres below ground for water storage or sanitation systems.
- Curved Interlocking SSBs reinforce and line wells and pit latrines giving strengths and long life.
- The diameter of the water tank, well or pit latrine ranges from 1 to 4 metres by simply adjusting the angle of the Interlocking Blocks.

