

DEPARTMENT OF PUBLIC WORKS AND INFRASTRUCTURE

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Gazette Notice Publication Request Form



DEPARTMENT OF PUBLIC WORKS

AGRÉMENT SOUTH AFRICA

(Approval of innovative construction products and systems)

Notice is hereby given that Agrément South Africa has, with effect from 25 June 2026, issued an Agrément Certificate, details of which appear in the schedule hereto.

SCHEDULE

Agrément Certificate 2026/672: Black Lion 3D Printed Building System

Subject: Black Lion 3D Printed Building System

Certificate holder: Black Lion Capital (Pty) Ltd

Description:

Black Lion 3D Printed Building System is constructed from a three-dimensional (3D) printer that is computer controlled. The walls are printed in sequential layering of materials to create three-dimensional shapes as designed on the Automated Computer Aided Drawings (AutoCAD). The printing nozzle adds the materials in sequential layers (each layer is between 6 mm and 30 mm thick) until the desired wall dimensions on plan are met. The 3D Printer prints the walls using a nozzle that lays down an inner and outer sausage of cementitious plaster with connecting ribs. The wall consists of two skins of cementitious plaster, with an air gap between the skins. The two skins are connected to one another via a triangulation of printed webs, and these are kept apart by steel rods.

External walls (Type 1) and Internal walls are 250 mm thick and are made of a 170 mm layer and two 40 mm layers. The 40 mm layers are constructed from sequential layering of Special Reinforced Concrete (SRC) with a hardened density of 2 150 – 2300 kg/m³. The 40 mm layers are joined by a 170 mm thick layer which is made of cementitious zig-zag webs braced with steel rods.

External walls (Type 2) are 250 mm thick including the additional outer layer of insulation (insulation optional). The walls comprise of 80 mm thick layer which is made of cementitious zig-zag webs braced with steel rods and sandwiched by a 40 mm thick sequential layers of SRC and additional insulation layer made of 50 mm layer filled with lightweight beaded concrete and a 40 mm thick sequential layer

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of SRC with a strength of 48 MPa. The compressive strength of concrete elements is 25 Mpa or higher with SRC tensile strength of 8 Mpa and bending strength of 23 Mpa.

External and Internal walls can be exposed or finished with a 12 mm conventional plaster and good quality paint.

Foundations and floor slabs are conventional and are the responsibility of a Professional Engineer or Professional Engineering Technologist.

The roof is conventional; however, the concrete roof slab can be printed simultaneously with the walls in accordance with the design parameters. **NB.** The roof construction is always the responsibility of a Professional Engineer or Professional Engineering Technologist.

Window and door frames are conventional. All services are conventional and are surface mounted or chased into the walls.

The Agrément certificate contains detailed information on the product and can be accessed at <http://www.agrement.co.za>.

Copies are obtainable from: Chief Executive Officer (CEO)

Agrément South Africa, P O Box 1022, Garsfontein, 0042