



MiniPrinter PRO

Reliability, performance, simplicity

Master the process

MiniPrinter PRO, the new reference for 3D printing of mortars



Discover the MiniPrinter PRO through our video



SUMMARY

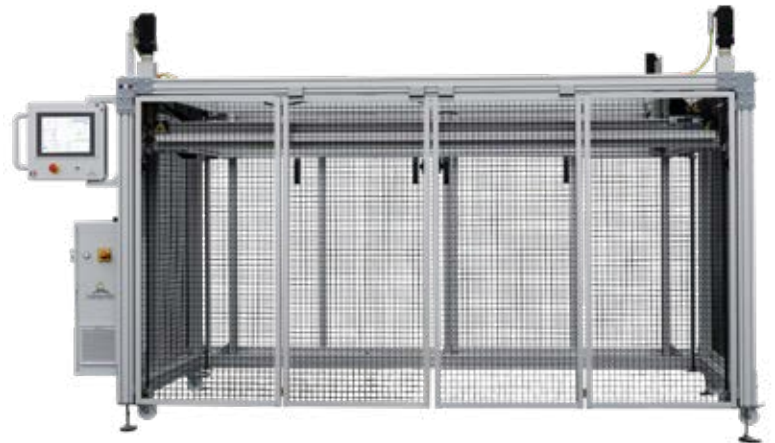
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MiniPrinter PRO system overview

Complete solution pack

MiniPrinter PRO or MiniPrinter PRO XL

Choose your size of machine



MiniPrinter PRO 3D printer

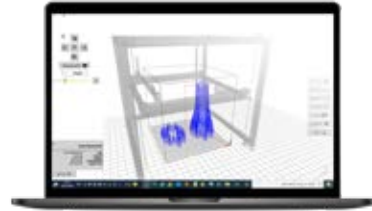


pumping system to choose





automated 1.2m³ silo kit



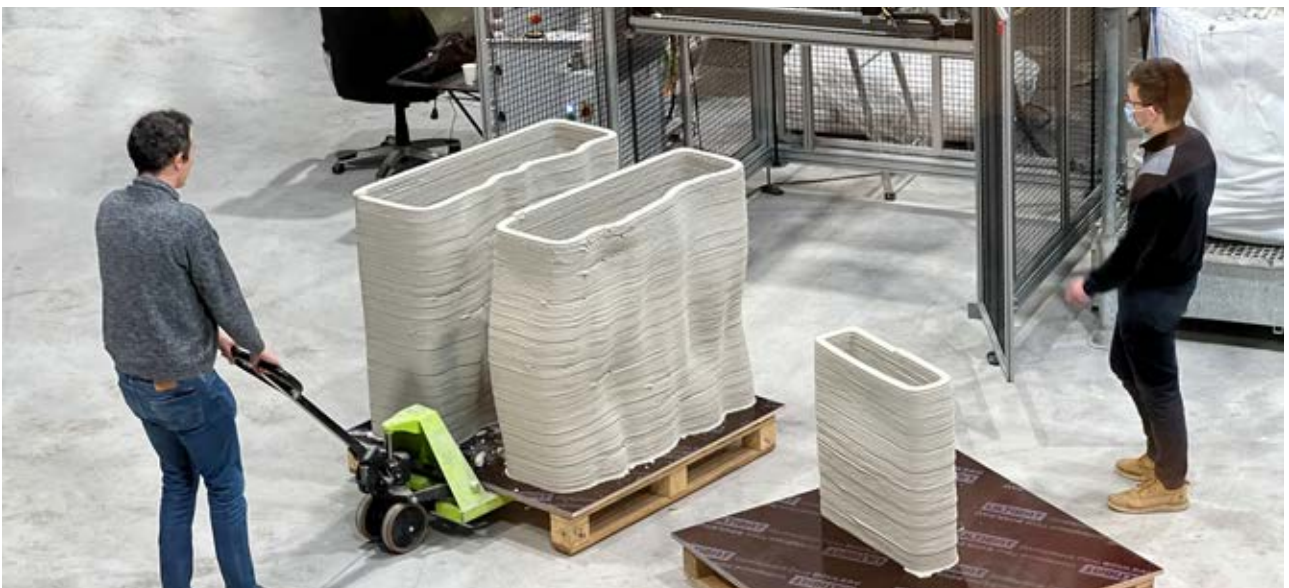
software C3D slicer
developed by Constructions-3D



6,65 m DN35
Pumping pipe



Pumping rotors and stators set



General system overview

Featuring a large print area 1,2 x 1,2 x 1,2 m ou **2,5** x 1,2 x 1,2 m), the Mini Printer Pro is a new benchmark in the world of 3D printing of mortar. This robust, versatile 3D printer is designed to meet the high expectations of professionals seeking precision, efficiency and ease of use.

The MiniPrinter PRO comes with different pumping options (see p.18-21) In terms of materials, Constructions-3D can also provide different solutions tailored to your needs.



Type

Additive manufacturing technology based on material extrusion in successive layers, consisting of a 3D mortar printer coupled to a pumping solution.

Pumping system

Autonomous mixing and pumping (see options p.18-21)

Print file compatibility

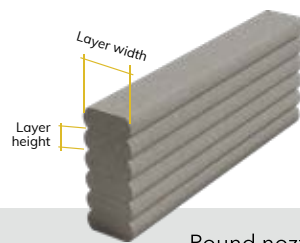
2D (DXF) and 3D (STL) (refer to C3D slicer p.12)

Multi-part 3D printing

(see p.5)



Print capacity



Layer height	5 mm - 20 mm
Layer width	20 mm - 100 mm**
Material	Open to any type of 3D printing mortar that is compatible with the tolerances of the pumping system (see « Pumping System » p.18-21)

**Note : Depending on the printed material

User interface

The interface controls the MiniPrinter PRO 3D printer and the pumping system.

Type	Touch screen attached to the machine frame
Nozzle speed	Up to 400 mm/s
Material flow	(refer to « pumping system » p.18-21)
Water and material dosing on pump	Ajusted from the user interface
Available languages	English, French, German (other languages available on request)
Accessible data when printing	Material pressure and temperature Mixing water flow rate and temperature Mixer cycles Notes added manually when printing Print settings modifications
Exporting print-related data	CSV format via the USB port Prints break and resume
Other features	Customized settings for materials mixing water pressure and temperature thresholds



3D printing materials



The «Complete MiniPrinter PRO + Pumping System» is open to any type of 3D material subject to pumpability within the tolerance of the pump.

Steps for printing : From file to on-site printing

3D
drawings



Files format :
STL / DXF



3D or 2D file
conversion



C3D Slicer

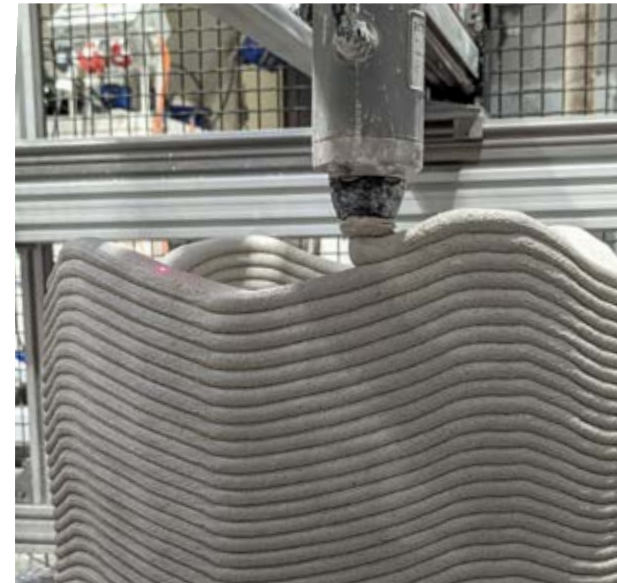


3D printing



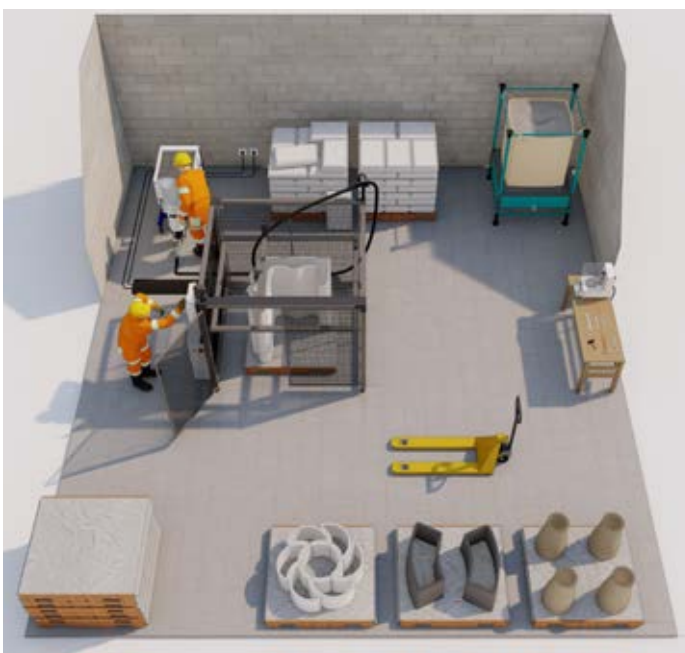
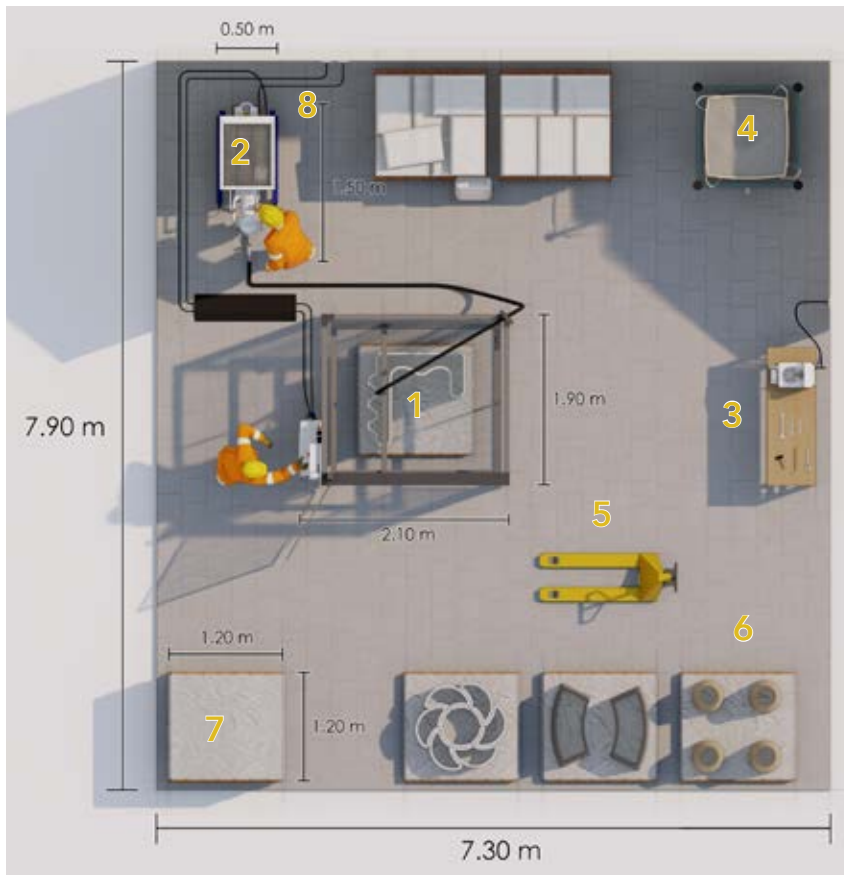
MiniPrinter PRO





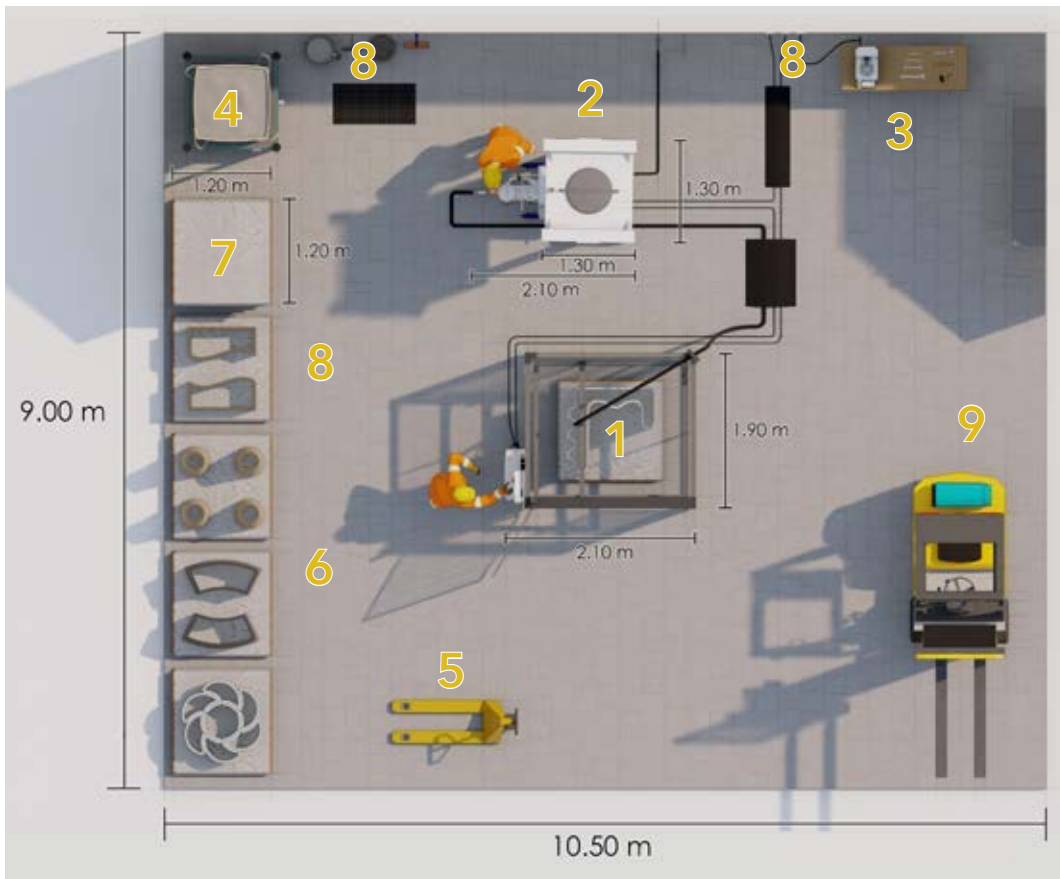
Examples of work areas

MiniPrinter PRO + pump



- 1) 3D Printer MiniPrinter PRO
- 2) Pumping system
- 3) Table with Constructimètre and tools (not supplied)
- 4) Filtering Bigbag holder (not supplied)
- 5) Manual pallet truck (not supplied)
- 6) Print beds with freshly printed parts (two print beds supplied with the MiniPrinter PRO)
- 7) Possible location for a stock of ready-to-use stacked print beds
- 8) Recommended location for power and water connectors

MiniPrinter PRO + pump + silo



- 1) 3D Printer MiniPrinter PRO
- 2) Pumping system
- 3) Table with Constructimètre and tools (not supplied)
- 4) Filtering Bigbag holder (not supplied) and cleaning area.
- 5) Manual pallet truck (not supplied)
- 6) Print beds with freshly printed parts (two print beds supplied with the MiniPrinter PRO)
- 7) Possible location for a stock of ready-to-use stacked print beds
- 8) Recommended location for water and electricity connections
- 9) Forklift for loading the silo (not supplied)

Software: C3D Slicer

The C3D Slicer is specially developed by Constructions-3D to meet the ergonomic, reliability and compliance requirements of construction 3D printing.

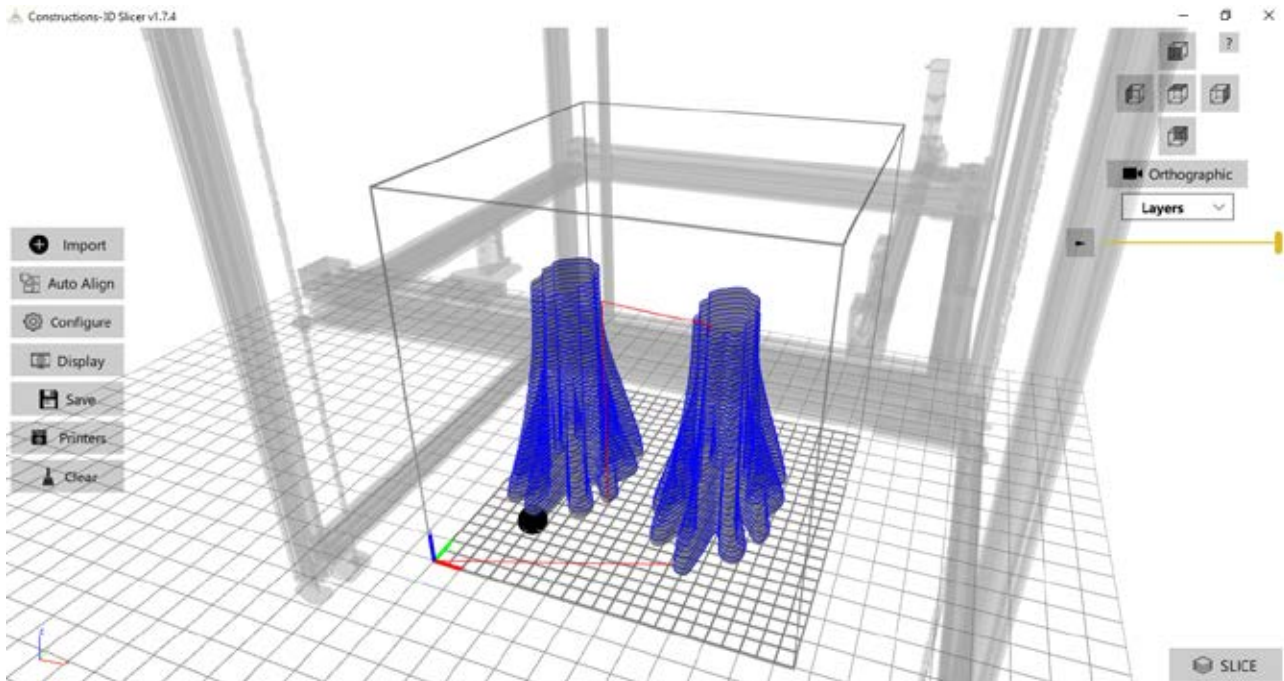
The C3D Slicer offers the following features :

- Part orientation
- Part scaling
- Multi-part treatment
- 3D visualization and STL file processing
- 3D visualization and processing of DXF files
- 3D visualization of G-CODE files
- Visualisation of part positioning errors in the print area
- Curving accuracy selection
- Layer height selection
- Nozzle speed selection
- G-code generation type selection :
 - Spiral, semi spiral or layer per layer
- Choice of the starting point of the print
- Estimated printed material quantity
- Estimated printing time
- Data of the achieved vertical printing speed
- Common platform to the various C3D 3D printers

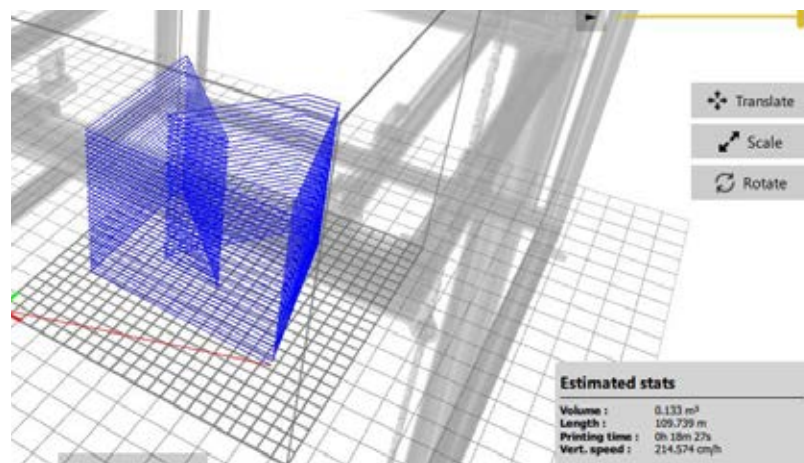
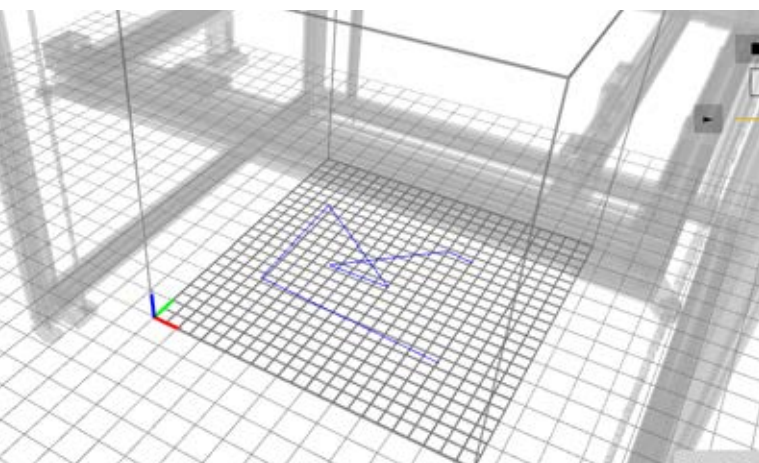


C3D Slicer interface

Single and multi-part printing



Instant drawing mode



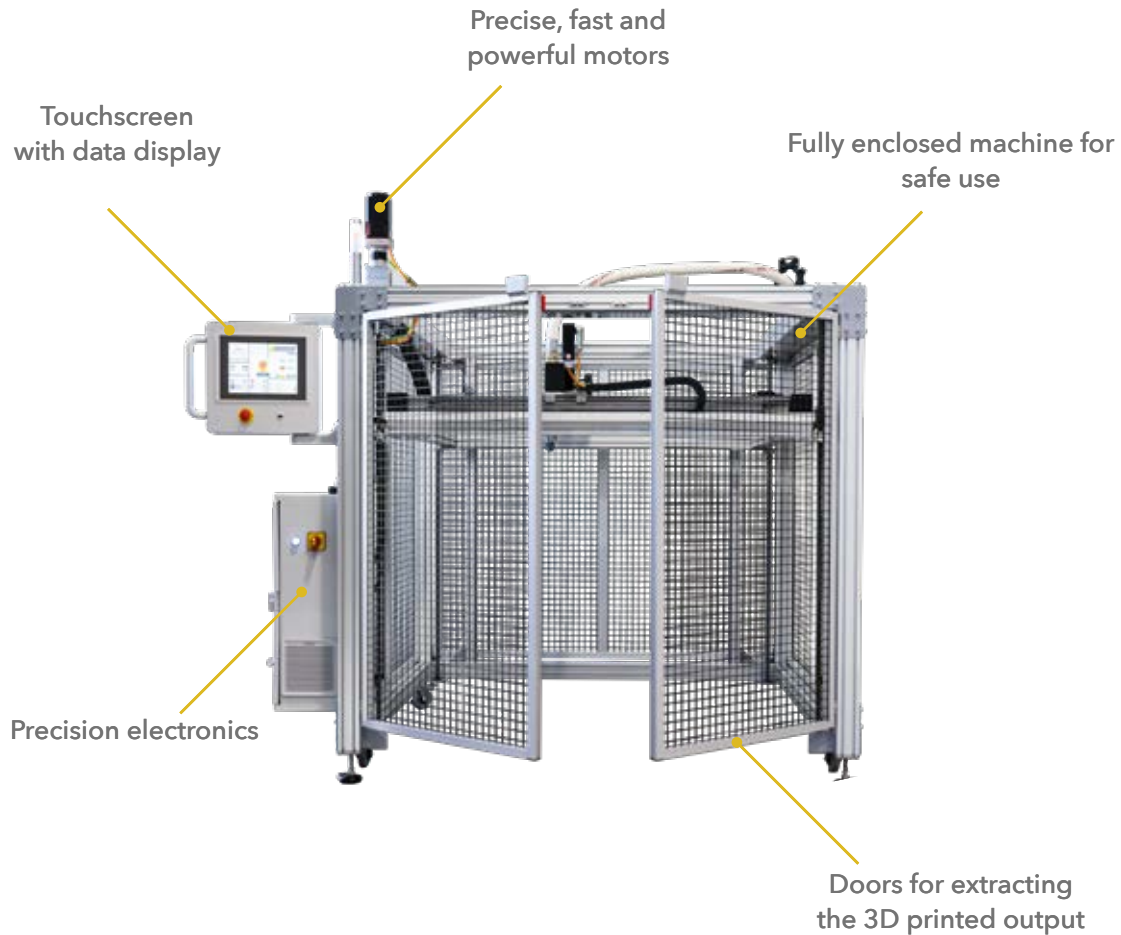
With the drawing mode, generate your G-code directly in the C3D Slicer and save time

Preview print time, amount of material required and vertical print speed

MAXIPRINTER
MINIPRINTER PRO
MINIPRINTER EDU
CONSTRUCTIMETER
TRAINING AND SUPPORT

Sub-systems technical details

3D Printer MiniPrinter PRO



General



MiniPrinter PRO



MiniPrinter PRO XL

Print volume (excluding nozzle)	1200 x 1200 x 1200 mm (X x Y x Z)	2500 x 1200 x 1200 mm (X x Y x Z)
Volume of the 3D printer frame	2250 x 1850 x 2180 mm (L x P x H)	3450x 1850 x 2180 mm (L x P x H)
Poids	430 kg - 948 Lbs	515 kg
Type	3-axis gantry	" " "
Contrôle	Via a touch screen attached to the 3D printer frame (p.7)	" " "



Print capacity

Continuous mortar layers extrusion resulting for to the pumping system
(« pumping system » p.18-21)

Printing head speed	Up to 400 mm/s
Relative accuracy of X, Y and Z axes	0,1 mm
Printing nozzle	Extrusion nozzle with interchangeable tips and pneumatic valve* to prevent residual material flow during interruptions in the extrusion process

Print data report exportable to CSV format from the control screen

*Note: The pneumatic valve requires compressed air which can be supplied by an existing network, or a small compressor not supplied. The standard connection required to supply the MiniPrinter PRO's pneumatic valve is a standard 8 mm push-in fitting.

Electrical requirements

Voltage	380V 3 phases 50 Hz
Power supply socket	3P + N + PE 16A
Maximum power consumption	5 KVA

Accessories

Concrete pumping pipe	DN35 or DN50, length 6,65 m
Extrusion end fittings in diameters from 10 mm to 35 mm	(1x Ø 15mm, 1x Ø 20mm, 1 x Ø 25mm, 1 x Ø 30mm, 1 x Ø 35mm)





Pumping system: Kit C3D MAI Multimix 3D

Consistency, precision, finesse



Consistency, precision and finesse are the hallmarks of the C3D MAI Multimix 3D. In combination with the MiniPrinter Pro, this pumping solution is ideally suited to the printing of masterpieces with fine details.

General

Control mode	Manual from the pump control panel or automated from the MiniPrinter PRO user interface
Cleaning time	20 min
Weight	390 kg - 860 Lbs
Dimensions	201 x 75 x 103 cm (l x L x h)

Capacity

Mortar pumping flow rates	from 2 L/Min to 17 L/Min
Maximum pumping pressure	40 bars
Maximum particle size	4 mm*
Compatible with pumping hoses	DN25 and DN35 diameter
Water flow adjustment range for material dosing	From 250 L/H to 2300L/H
Tolerance for soft fibres	20 mm long, dosage up to 2% by mass

* Depending on the nature of the material and the dimensions of the used piping

Electrical requirements

Voltage	380V 3 phases 50 Hz
Three-phase socket	3P + N + PE 32A
Nominal power	10 KVA

Accessories

Cover connecting the pump to the feeding silo	
Material	Connected pressure Sensor and connected thermometer
Water	Connected flowmeter and connected thermometer

Pumping system : Kit C3D M-TEC Duomix connect

Flexibility, Handling ease, Robustness



Its handling ease and flexibility make it the perfect versatile combination.
This pumping system is compatible with a wide range of materials and applications :
construction, production, R&D and education.

General

Control mode	Manual control from the pump control panel or automated control from the MiniPrinter PRO user interface
Sensor	Sensor kit developed by C3D to display and record direct pumping data on the MiniPrinter Pro user interface
Cleaning time	15 min
Weight	260 kg (573 Lbs)
Dimensions	1350 x 640 x 1390 mm

Capacity

Mortar pumping flow rates	from 4 L/Min to 20 L/Min
Maximum pumping pressure	40 bars
Maximum particle size	6 mm*
Compatible with pumping hoses	with standard diameters DN35 and DN50
Water flow adjustment range for material dosing	From 250 L/H to 800 L/H
Tolerance for soft fibres	20 mm long, dosage up to 2% by mass

**Depending on the nature of the material used*

Electrical requirements

Voltage	380V 3 phases 50 Hz
Three-phase socket	3P + N + PE 32A
Nominal power	10 KVA

Accessories

<i>Cover connecting the pump to the feeding silo</i>	
Material	Connected pressure sensor and connected thermometer
Water	Connected flowmeter and connected thermometer

Kit C3D M-TEC P50

General

Use	Pumping of mortars and micro concretes
Maximum particle size	8-10mm*
Compatible with pumping hoses	standard diameter DN35 and DN50
Tolerance for soft fibers	20 mm in length, dosage up to 2% by mass
Sensors	Material pressure and temperature

**Depending on the material type, rotor and stator*



Feed silo

Compatible with the C3D M-TEC Duomix CONNECT and C3D MAI Multimix 3D pumping kits, the silo is a significant asset for a more reliable and automated printing process.

General

Use	Supply and storage for dry mortar premix
Storage capacity	1,2 m3
Height	2,955 m
Height in transport configuration	2,085 m
Floor area	1,2 x 1,2 m
Tare weight	500 kg - 1,102 Lbs





On-site training

Training on the MiniPrinter PRO and its pumping system

Two half days of theoretical and practical usersite training.

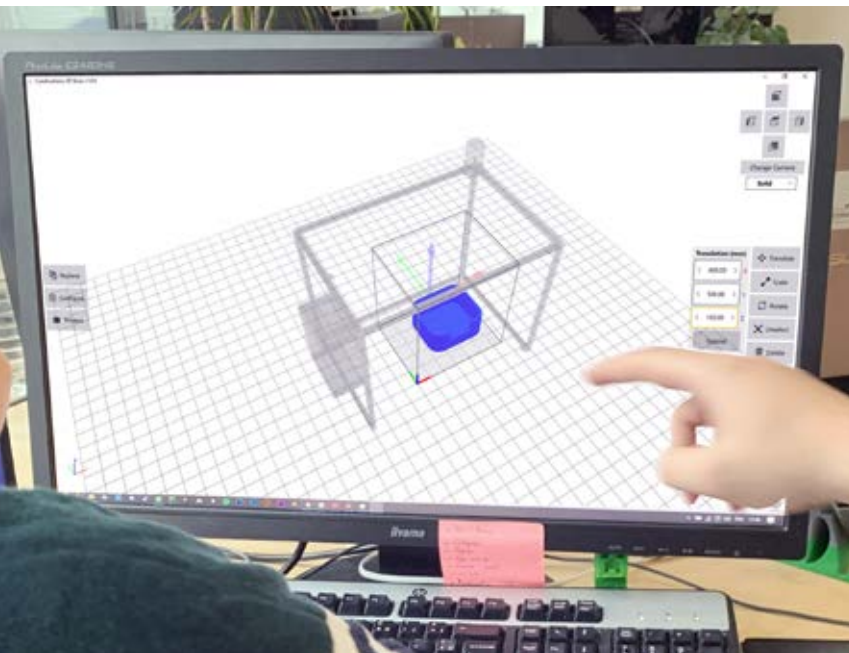
Theoretical training - Morning

- Printer and pump system operation principle
- Overview of the software suite
- 3D part file generation principle for printing
- G-code print path generation support
- Support and Troubleshooting
- Support for the organisation and optimisation of the printing area

Hands-on, afternoon

- Equipment installation and assembly
- Print area setup
- Launch of «dry printing».
- Launching prints with mortar
- User safety
- Support and Troubleshooting
- Cleaning & Maintenance





Discover our other products



Constructimeter

Automated testing press for fresh 3D printing material



MaxiPrinter

On site 3D printer. The complete solution for automated construction



MiniPrinter EDU

Compact 3D printer developed for education



Training and support

Master the knowledge, take a big step forward, and launch your own 3D construction printing business.

They trust us



Our project

LA CITADELLE
des **SAVOIR-FAIRE** 

The first 3D concrete printed building in France
The most ambitious project of open-air laboratory for 3D construction
Work in progress

30/03/2020

Obtaining
the building permit

11 200 m²

or 13 395 sqyd

Building land
area

2 800 m²

or 3 349 sqyd

3D printed
buildings

1500 m²

or 1 794 sqyd

Warehouse for
the manufacture
of 3D printers

L'Accueil

La Tour

Le Pavillon





Complete solutions for automated construction

CONTACT

📞 03.74.01.03.75
✉ info@constructions-3d.com
🔍 www.constructions-3d.com

📍 Constructions-3D
La Citadelle des Savoir-Faire
83 rue des Mines Innovantes
59860 Bruay-sur-l'Escaut France