CONCR3DE

high end stone 3D printing

PRINTERS, ADD-ONS & MATERIALS

Armadillo White with enlarged printbed, 450x450x250 mm

OVERVIEW

Armadillo White printing system, constructed from stainless steel

Column printed with CONCR3DE limestone

ARMADILLO WHITE

R&D & PROTOTYPING BINDER JETTING 3D PRINTER

The **Armadillo White** 3D printer is a fully accessible binder jetting machine designed for research and prototyping.

Through easy switching of powders, predeveloped inks, open software & robust, modular hardware researchers can design a limitless range of 3D printed materials. Possibilities include the development of different types of concrete and stone like materials, polymers, metals, ceramics and geopolymers.

Researchers can customize powder and binder compositions as well as software and hardware settings to control material properties of the 3D-printed end result. Control mechanical performance, porosity, density and many other specifications to design the perfect material for your application.

The machine offers a large work space, intuitive software and a high precision inkjet system. Upon request, the machine can be fitted with a range of options, including additional printheads, a UV lamp, a heater, inserts and more.

Technical specifications	Armadillo WHITE
printer dimension	1.700 x 1.200 x 1.600 mm
weight	650 kg
space requirements	2.400 x 2.000 x 2.200 mm
print box dimension	380 x 300 x 300 mm
custom print box adjustments	yes
printhead precision	400 DPI
layer height	40 - 500μ
maximum drop size	250 picoliter
ink types	aqueous, solvent, UV
powder	any
software	NOAH White
connectivity	ethernet cable (included)
power requirement	230V
system requirement	Windows 7, 8, 8.1, 10, 4 GB RAM, screen (included as option)

ARMADILLO BLACK

REAL STONE 3D PRINTING FOR PROTOTYPING & PRODUCTION

The **Armadillo Black** is a 3D inkjet printer created for production and prototyping in stone like materials. Print durable and strong objects in granite, marble and limestone, or choose foundry sand to 3D print heat resistant casting molds.
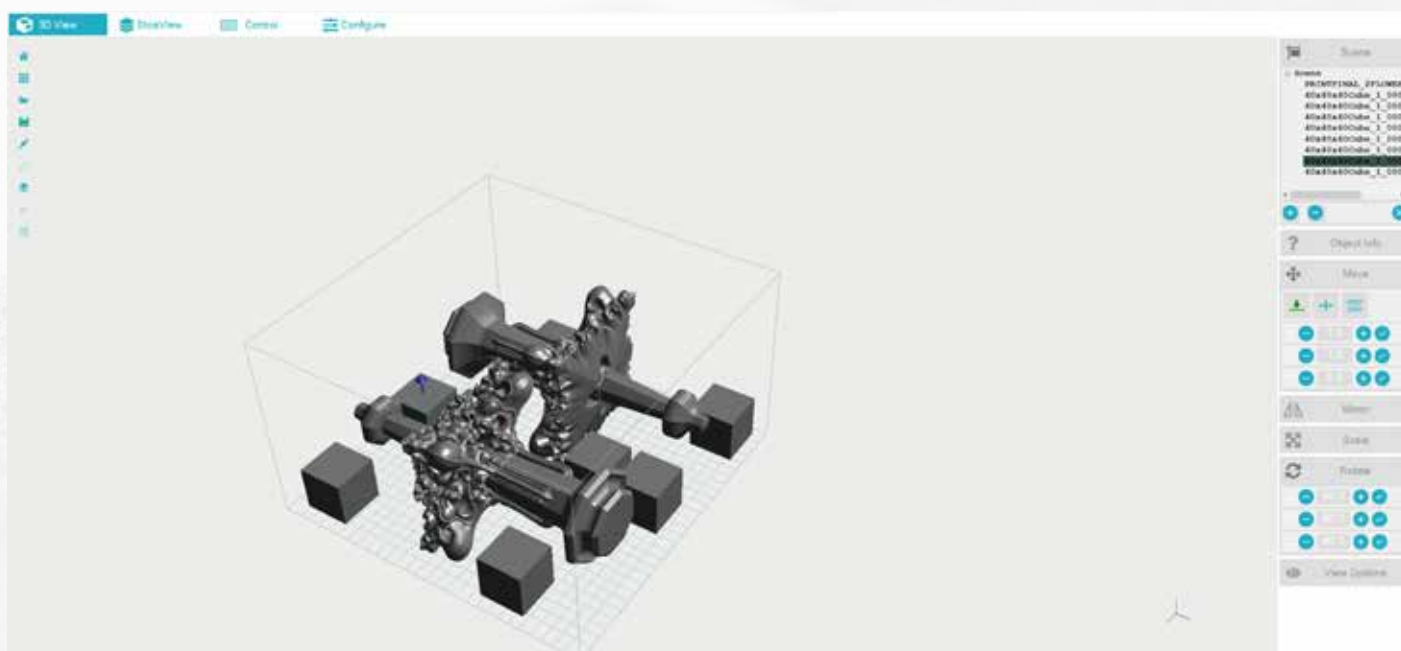
We use stone waste streams from Italian and Portuguese quarries to create our unique, low impact and highly sustainable powder. This also means we can offer the lowest running cost on the market of any binder jetting 3D printer.

The Armadillo's highly robust inkjet system allows the designer to fabricate any shape imaginable with incredible precision and speed. Armadillo Black may print 3 full batches (120 liters) per day, giving you the capacity of modern manufacturing combined with the flexibility of 3D printing.

Armadillo Black comes with NOAH, our easy to use custom piece of software. The printer is plug and play, meaning it will be ready to use when it arrives at your facility.

Contact us now for a custom quotation and start printing.

Technical specifications	Armadillo BLACK
printer dimension	1.700 x 1.200 x 1.600 mm
weight	650 kg
space requirements	2.400 x 2.000 x 2.200 mm
print box dimension	380 x 300 x 300 mm
custom print box adjustments	no
printhead precision	400 DPI
layer height	100-200 μm
maximum drop size	150 picoliter
ink types	G3CO CONCR3DE binder
powder	White carrara, grey granite, foundry sand, limestone
software	NOAH Black
connectivity	ethernet cable (included)
power requirement	230V
system requirement	Windows 7, 8, 8.1, 10, 4 GB RAM, screen (included as option)

NOAH SOFTWARE

NOAH, our custom and fully open software, gives you full access to all parameters of the 3D printing process. Control layer height, temperature, speed, ink saturation and every other part of the binder jetting process.

The software has integrated support for all add-ons of the Armadillo. It allows for custom curing temperatures, control of a UV lamp and the roller. NOAH also gives you access to the waveform inside the printheads, meaning the researcher is in control of droplet size and shape, and therefore the final 3D printed result.

Additionally, direct access to the slices of the print allow for adjustments to the geometry, or the importing of highly complex geometries that are too large or complex for regular 3D CAD software.

In short, NOAH is the only software tool that gives the researcher true control and is an essential partner in the development of new materials and applications.

Your Armadillo 3D printer comes with an PC for handling of large 3D files and a screen. NOAH software will already be installed in order for you to get started right away.

Software requirements	Armadillo 3D printer
Disk space	40 Mb
Operating system	Windows 7, 8, 8.1, 10
Connectivity with printer	Ethernet cable
Other system requirements	4 GB RAM
	USB slot
	Screen

DEPOWDERING STATION

Dimensions	1000x900x1700 mm (station)
	660x1180x1450 (vacuum)
Power requirements	2x 220 Volt
Capacity	100 liters

When handling large amounts of powders a depowdering station is essential to keep your workspace clean and handle prints fast. The depowdering station also helps the machine operator with switching powders and maintaining your Armadillo 3D printer.

The CONCR3DE depowdering station comes with an industrial vacuum that is able to handle the finest of powders, a silent compressor and large workspace with rotating depowdering platform.

DIPPING STATION

Dimensions	1000x900x1700 mm (station)
	660x1180x1450 (vacuum)
Power requirements	2x 220 Volt
Capacity	100 liters

In many cases 3D printing is just a step in the manufacturing process of your element. We have developed a dipping station that makes it easy to dip your parts in a liquid of your choosing in order to continue your curing process or adding sealers and strengtheners to your 3D printed elements.

DEPOWDERING TOOLS

A set of handy tools that aid the depowdering process.
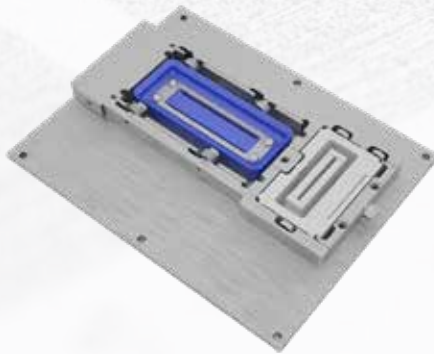
INCREASE XY DIMENSIONS

Printing dimension	450 x 450 x 250 mm
Printer dimension	1960 x 1255 x 1700 mm
Printing volume	72 liters

Functionality and applicability of your 3D printer greatly depends on the size of the printing bed. It is possible to order an XL version of your Armadillo, allowing you to print at 450x450x250 mm. This is double the volume of the regular Armadillo and perfect for users who are dealing with large volumes or who want to get the most out of the binder jetting technology.

CAPPING STATION

May be installed after delivery at extra cost
No additional power required
Perfect for fast-drying or volatile binders

When dealing with fast-drying or volatile inks it is imperative that they don't dry out or produce toxic gases inside the printing system. The capping station is a service station that can be installed in the 3D printer. It provides a mechanical way to close of the printheads after printing, ensuring they don't dry out and no gases escape the head.

VACUUM CONTROL UNIT

May be installed after delivery at extra cost
No additional power required
For vacuum and air control systems of your choosing
Vacuum system not included

When dealing with volatile binders or highly small abrasive airborne particles the printer can be equipped with a vacuum control unit. This is a tool that lets you attach a vacuum system of your choosing to the machine while printing, helping you keep a safe production environment.

DEPOWDERING BOX

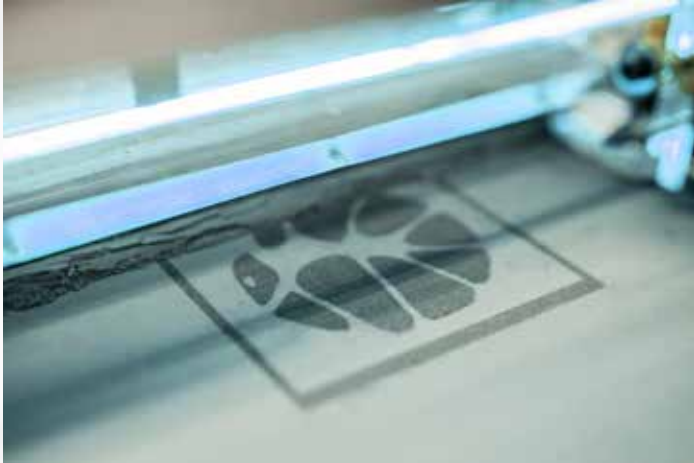| |
|---|
| No additional power required |
| May be installed after delivery |
| Delivered in stainless steel |
| Dimensions: same as print bed |

The depowdering box is a metal tool that is inserted upon the print box. With the depowdering box you can easily take out the full printed box in one go and transfer it to a post processing step without having to depowder the printed object in its green state. Excellent for oven curing of fragile parts- typically ceramics.

UV CURING LAMP STATION

Additional power supply required

May be installed after delivery

When creating polymer or composite material systems a UV curing system can be an essential tool. This is an add on that can also be implemented at a later stage if your research requires so.

INFRARED CURING LAMP

Additional power supply required

May be installed after delivery

Comes with temperature sensor

Certain materials and material systems require high temperature curing or simply bind faster with an increased temperature. With the infrared curing lamp addon it is easy to control the temperature of the bed up to 80 degrees celcius. The infrared lamp is easily controllable via NOAH software.

PRINT SIZE REDUCTION INSERT

May be installed after delivery

No additional power required

For printing of 1 liter batches

Print volume 100x100x100 mm

When you're exploring new materials you don't want to deal with large volumes of materials. You also don't want to deal with disposal of large amounts of wasted material. For that reason we developed the print size reduction insert. This tool allows you to mix up only small batches of powders and print tiny objects, for you to speed up your research and reduce your cost and waste.

CONCR3DE MATERIALS

Validated CONCR3DE materials that will always work with your Armadillo 3D printing system. Full MSDS of all materials are included in the packaging and are available on request.

As standard we offer 3 stone colours. We are also able to customize colours on request based on RGB or CMYK codes.

Product code	Product name	Colour	Functionality	Packaging
031	CONCR3DE marble	White	Prototyping & end-use components	In 30 liter bucket
032	CONCR3DE granite	Grey	Prototyping & end-use components	In 30 liter bucket
033	CONCR3DE limestone	Beige	Prototyping & end-use components	In 30 liter bucket
034	CONCR3DE foundry	White	Casting metals, glass, resins, concrete, gypsum, etc.	In 30 liter bucket
035	G3CO binder	Colourless	All-purpose binder	In 20 liter jerrycan
036	CONCR3DE sealer	Colourless	Sealer for CONCR3DE stone material	In 10 liter jerrycan

MAINTENANCE

Maintaining your Armadillo 3D printer is essential, especially so when working with fine and abrasive powders. CONCR3DE offers a standard training for your staff upon installation, as well as a range of tools to help you maintain your equipment.

Product code	Product name	Functionality	Packaging
041	Service station wipers	Rubber wipers. Replacement rate depends on type of powder usage, typically once every 2 months	Per 10
042	Printhead dust free wipes	For maintaining printhead, to be used with demiwater or printhead cleaning liquid	Per 600
043	Printhead replacement	Replacement rate depends on usage. Using CONCR3DE binders expected durability is 2 years	Single head
044	Printhead cleaning liquid	Low pH cleaning liquid for flushing and cleaning printheads	In 1 liter bottle

Besides fully validated stone-like materials CONCR3DE also offers access to prototypical materials who have been proven to work in most situations for certain functionalities, but which still have room for improvement or have not been validated fully. We do not offer warranties on these products but offer them to our clients anyway for it may give additional functionality for their research and development.

Product code	Product name	Product type	Functionality
051	Ceramic binder	Binder	Custom ceramic binder
052	Ceramic powder	Powder	Range of ceramic powders
053	Custom colour	Powder	Range of pastel colours
054	Nano binder	Binder	Binder with added nanoparticles
055	Polymer powder	Powder	Range of different polymer powders. Requires UV add-on to function
056	Alternative sealers	Sealer	Range of different sealants. Inquire for more information.

CONCR3DE

Discover more at **www.concr3de.com**

Reach us at
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