



CONCR3DE WASHOUT SAND

Material Data Sheet

CONCR3DE WASHOUT SAND



General properties

This H₂O soluble material is a sustainable material used for composite layups. The material finds applications in the aerospace and automotive industry. The material can be easily washed away after molding, allowing for the layup of complex geometries such as exhaust manifolds for aircraft. Using this technology you can do carbon or glass fibers parts. The parts can also be placed in an autoclave with temperatures up to 180°C. The technology requires a seal to separate the sand mold from the epoxies so that the sand does not stick to the epoxy. There are several options including a tape and a spray coating. Typical products realized with this technology are mandrels, ducts, molds, manifolds, tanks and composite layups.

Material benefits

This material has advantages over other washout materials. The key advantage is in the sustainability compared to other binding systems, as the binder is sustainable and water soluble.

Collapsibility	●	●	●	●	●
Sustainability	●	●	●	●	○
Safety	●	●	●	○	○
Reclaimability	●	●	●	●	○
Temperature resistance	●	●	●	○	○
Accuracy	●	●	●	●	○
Strength	●	●	○	○	○

Printer compatibility

This material can be printed using our Armadillo Gray, Elephant Gray and Armadillo White 3D printers. Are you looking for even larger hardware options? Contact our team to learn more.

Material properties

The material properties and especially strength and Coefficient of Thermal Expansion (CTE) can be tweaked in the process by adjusting layer height. The material is water-soluble using regular tap water. The process requires an oven curing step in a conventional oven at 70°C. For more detailed or other information, please contact our material team.

Mechanical properties	Standard	Armadillo Gray/Elephant Gray
Bending strength	ASTM C1161	1,5 MPa

Other properties	Standard	Armadillo Gray/Elephant Gray
Density	ASTM C373	1.300 kg/m ³
Coefficient of Thermal Expansion (CTE)	ASTM E831	5 ppm/°C
Heat resistance*	ASTM E831	180°C
Accuracy	N/A	200 µm* meter
Solvent for removal	N/A	Regular tap water

*Maximum temperature depends on the autoclave process cycle and the type of material used for the layup.

Notes

- Composition and mechanical properties may vary depending on the equipment used for sintering and debinding.
- Final material performances of 3D-printed objects are impacted by certain factors, including but not limited to part geometry and design, application, environment and more.
- Final 3D-printed objects are produced using certified CONCR3DE consumables. Use of alternate powders and binders compromise the mechanical properties.

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