3D Concrete Printing for Defense

X-Hab 3D introduces mobile 3D Concrete Printing (3DCP) systems designed to address the unique challenges of military construction in remote and hostile environments.
Our technology accelerates construction, reduces logistical strain, and enhances troop safety, ensuring your mission stays on track.

Why Choose X-Hab 3D for Defense Applications?

- **Speed:** Complete military-grade structures up to 70% faster than conventional methods, enabling rapid deployment in high-stakes situations.
- **Logistical Advantage:** Leverage local materials to reduce the need for heavy equipment and construction materials, freeing up transport capacity for critical mission supplies.
- **Safety:** Build durable, blast-resistant structures with minimal on-site personnel, keeping troops safe from enemy fire and environmental hazards.
- **Portability:** Systems fit into standard CONEX containers, enabling deployment by land, air, or sea to the most remote locations.
- **Efficiency:** Cut manpower requirements by 50–70% while constructing fireproof, weather-resistant, and blast-resistant infrastructure.

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Applications in Defense

Innovative Solutions for Contingency Environments

Rapid Construction: Ideal for remote locations, our systems allow for the quick creation of shelters, fortifications, and other critical infrastructure to support mission needs.

Mission-Ready Capabilities:

- **Military Applications:** Construct barracks, bunkers, T-walls, aircraft hangars, and more.
- **Multi-Functionality:** Adapt systems for gripping, welding, spraying, and scanning.
- **Advanced Features:** Integrate with geo-location and laser survey tools to achieve millimeter-level precision even in challenging terrains.

Personnel Risk Reduction: Replacing labor-intensive methods with automated 3D printing minimizes time troops spend in vulnerable positions like tented work zones.

Supporting Defense Goals

Training & Support:

- Hands-on operator training at our facilities.
- 24/7 virtual technical assistance for mission-critical operations.

Durable, Mission-Optimized Structures: Design and deploy construction solutions tailored for extreme environments, from arid deserts to humid tropics.

Warranty Protection: Full coverage against manufacturing defects ensures mission readiness and reliability.

Contingency Base Construction & Maintenance:

- Runway repairs
- Blast walls and T-walls
- Revetments and storage facilities
- Equipment protection structures

Infrastructure:

- Bridges, drains, and pipes
- Water towers and power stations
- Administrative and control buildings

Advancing the Future of Defense Construction

X-Hab 3D combines cutting-edge technology with an in-depth understanding of defense needs to revolutionize how construction is done in remote, hostile environments. From utilizing local materials to creating infrastructure that protects troops and resources, we are your partner in ensuring mission success.

Discover how X-Hab 3D can empower your next mission:

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X-Hab 3D: System Specs

Performance

Print speed	0 to 1.97 feet / s (304 mm / s)	**Position location accuracy**	1/4 inch (6.4 mm)
Material flow rate	1.8 cubic yards / hr.	**Path accuracy**	1/8 inch (3.2 mm)
Maximum aggregate size	3/16 inch with M-Tec 3DCP+; up to 3/8 inch with larger mixer / pump	**Layer height - range**	1/2 to 1.5 inches (12.7 to 38.1 mm)
Printable area	Unlimited width & length; 24 feet height and 14 feet below grade	**Layer width - range**	3/4 - 3.0 inches (19.0 to 76.2 mm)
Horizontal print reach	16 feet (4.9 meters)	**Compatible 3DCP mixes**	Designed to work with all types of 3DCP mixes within aggregate limits
Maximum reach height (robotic arm and lift mechanism)	24 feet (7.3 meters)	**Time to set up / take down**	Approximately 2 hours
Maximum reach below grade	14 feet (4.3 meters)	**People needed to set up and operate**	2
Material feeding	Standard is manual load bags to silo, compatible with pneumatic options		

Mobile System Dimensions / Operating Characteristics

Mobile platform	12 x 6 x 8 feet	**Maximum travel incline**	45% grade
Robot arm axes	6 baseline, optional 7	**Operating temperature range**	45-90 degrees F.
Mobile 3DCP weight	12,860 lbs.	**Maximum operating humidity**	90%
Driving speed	3 mph	**Transport temperature range**	14 - 122 degrees F.
Diesel generator size	38 kW	**Remote control**	Mobile/mixer/tool path
External power supply	3 phase, 480V, 60Hz	**Optional broadband**	Secure links
Leveling capability	Self-leveling outriggers		