



ALTRA 3D MINING

THE MOST RESILIENT SOLUTION

Since 1895, NIEDNER has been redefining the firefighting industry by creating lighter, more versatile lay-flat hoses to overcome the challenges firefighters face. What makes firefighters around the globe trust NIEDNER's solutions is first and foremost the high quality of the products. The hoses have been engineered to stand up under the most demanding applications, including intense heat and abrasion.

FLEXIBILITY

Due to the flexibility of ALTRA 3D, our woven lay flat hose can easily cope with extreme environmental and climatic challenges and changes. The ALTRA 3D solution is engineered to resist abrasion by solids as well as corrosion by fluids transported in various applications. This means that the ALTRA 3D solution lasts much longer than the alternatives. In fact, when operating within the hose specifications, no extra maintenance is required during the hose's lifetime, resulting in less down time and considerable time and investment savings.

HIGHEST LEVEL OF QUALITY

NIEDNER maintains the highest levels of quality in the design, manufacturing, and testing of all our products. As a result, our solutions exceed recognized international standards.

UNIQUE SERVICES

Our solutions have many advantages, including our unique services and our engineering support, which is second to none.



Highly safe hose



Corrosion and maintenance free



Short lead-times and quick to install



Reusable



Available in various lengths



Increased resiliency



Commitment to the environment



FEATURES

- Lightweight and flexible, even below freezing point
- Abrasion and puncture resistant
- High operational/burst pressure
- Low expansion (linear and radial)
- Pump weight: max 5,000 lb
- Replaceable cable attachment system
- Increased resiliency
- So resistant that pumping remains possible, with minimal pressure loss, even if perforation occurs

DESIGN

- 3D technology for a single-layer 2-in-1 hose
- Also available in long length (>1,000 ft)
- Highly safe hose. Will not split in two upon bursting

ADVANTAGES

- Meets NFPA:1961 and API-15LF specifications
- Temperature range: -65°F to 150°F (-53°C to 65°C)
- Potable water contact: Certified NSF 61
- The cable attachment system resists a pull strength 15x higher than the competition
- ALTRA 3D (any diameter) offers a burst pressure 200 psi higher than any other flexible hose
- Corrosion resistant and maintenance free

OUR PRODUCT LINE CERTIFICATIONS

NIEDNER's solutions are certified by accredited independent institutes



ALTRA 3D SERVES THE FOLLOWING INDUSTRIES

- Mining
- Water Utilities
- Industrial
- Municipal
- Environmental
- Agricultural

TECHNICAL DATA VERTICAL SOLUTION

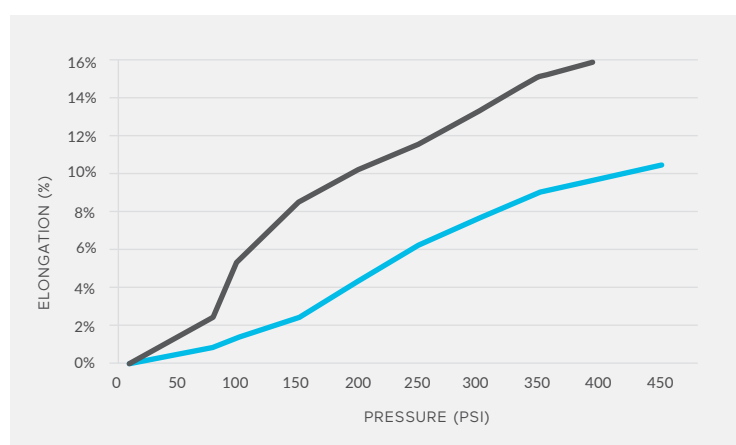
Diameter	Weight		Flat Width		Thickness		Inside		Avg. Flow		Pressure		Burst Pressure				Max Depth		Elongation	Expansion	Theor. Tensile Strength
	Inches (mm)	Lb/ft	Kg/m	All lengths	Wall	Diameter			Operating*	Minimum	Average								Maximum @200psi	(Radial) Maximum @200psi	Maximum lbf
4" (100mm)	0.91	1.35		6.35 16.15	0.22 5.7	4.00 102			750-1250 170-284	480 33	>1200 >83	>1200 >83	>1000 305	3%	4%	>125,000	62				
6" (150mm)	1.75	2.60		9.76 24.79	0.28 7.1	5.98 152			1000-3000 227 681	425 29	>1060 >73	1130 78	950 290	3%	4%	>200,000	99				
8" (200mm)	2.35	3.50		12.83 32.59	0.36 8.1	7.95 202			2000-4000 454-909	320 22	>800 >55	870 60	600 183	4%	5%	>300,000	149				

*for a safety factor of 2.5

AVAILABLE COLORS: Grey

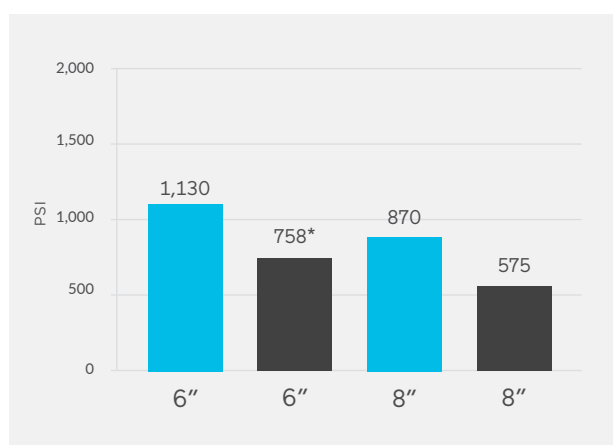


EXPANSION ALTRA 3D VS COMPETITION



ALTRA 3D 8" Competition

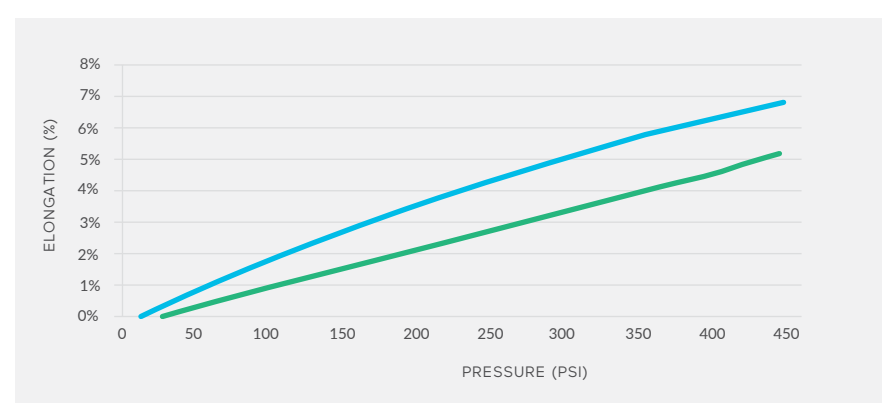
AVERAGE BURST PRESSURES COMPARISON



ALTRA 3D Competition

*Not safe failure mode

ELONGATION ALTRA 3D



ALTRA 3D 6" ALTRA 3D 8"