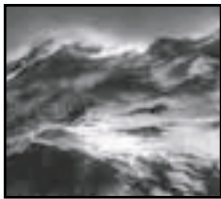


TIME TO TRUST THE ORIGINAL.



Crucible AQUAMET® Boat Shafting

A Complete Family of Stainless Shafting

Crucible AQUAMET 17

AQUAMET 17 is a precipitation-hardening, martensitic stainless steel. Because it is hardened by heat treatment, it provides high strength, regardless of the diameter, combined with good toughness and corrosion resistance. A popular choice, AQUAMET 17 is currently in wide use in pleasure boats, workboats, crew boats, fishing trawlers, pilot and patrol boats.

Crucible AQUAMET 18

AQUAMET 18 is an austenitic stainless steel with corrosion resistance comparable to that of Type 304. Its good strength and toughness make it an ideal shafting material for workboats. It provides a stainless steel alternative to ABS Grade 2 carbon steel shafting, but requires no sleeves or fiberglass. In certain large diameters, it offers a strength advantage over AQUAMET 19. It is currently used on pusher tugs, tow boats, supply boats and fishing trawlers.

Crucible AQUAMET 19

AQUAMET 19 is a modified Type 304 stainless steel that is fully austenitic, non-magnetic and strengthened by nitrogen addition, with corrosion resistance better than Type 304 stainless steel. AQUAMET 19 has proven itself in demanding service on shrimpers, crabbers, scallopers, and other fishing boats as well as pleasure boats.

Crucible AQUAMET 22

AQUAMET 22 is a high-alloy stainless steel that provides superior corrosion resistance along with excellent toughness and high strength. It has higher strength than AQUAMET 17 in diameters of 3/4" through 1-1/4", and equivalent strength in diameters up to 2". Due to its high alloy content, AQUAMET 22 resists pitting and crevice corrosion and is ideal for pleasure boats which are operated infrequently, spending much of their time tied up at docks. (AQUAMET 22 H.S., a higher strength version, is available in 2-1/2" to 6" diameters.)

Mechanical Properties

	Tensile Strength psi	0.2% Yield Strength		Elongation in 2 in. %	Reduction of Area %
		Tension psi	Torsion psi		
AQUAMET 17					
Up to 8"	135,000	105,000	70,000	16	50
8" to 12"	135,000	105,000	70,000	12	35
AQUAMET 18					
Up to 1-3/4"	120,000	90,000	60,000	20	50
Over 1-3/4" to 2-1/2"	110,000	70,000	47,000	35	55
Over 2-1/2" to 5"	105,000	65,000	43,000	40	55
Over 5" to 8"	100,000	60,000	40,000	40	55
Over 8" to 12"	90,000	50,000	33,000	35	45
AQUAMET 19					
Up to 1-1/2"	130,000	105,000	70,000	20	55
Over 1-1/2" to 2"	115,000	85,000	57,000	25	55
Over 2 to 2-1/2"	105,000	60,000	40,000	30	55
Over 2-1/2" to 3"	100,000	55,000	36,600	35	55
Over 3" to 12"	95,000	50,000	33,000	35	55
AQUAMET 22					
3/4" to 1-1/4"	145,000	130,000	86,600	18	45
Over 1-1/4" to 2"	135,000	105,000	70,000	20	50
Over 2 to 2-1/2"	120,000	95,000	63,000	20	50
Over 2-1/2" to 3"	115,000	75,000	50,000	25	50
Over 3" to 12"	100,000	55,000	36,600	30	50
AQUAMET 22 H.S.					
2-1/2" to 6"	130,000	105,000	70,000	15	45

Minimum values. Actual test results may be higher.

Chemical Analysis (%)

COMPOSITION	17	18	19	22
Carbon	0.07 max	0.15 max	0.08 max	0.06 max
Manganese	1.00 max	11.00-14.00	2.00 max	4.00-6.00
Silicon	1.00 max	1.00 max	1.00 max	1.00 max
Chromium	14.50-16.50	16.50-19.00	18.00-20.00	20.50-23.50
Nickel	3.00-5.00	0.50-2.50	8.00-10.50	11.50-13.50
Phosphorus	0.04 max	0.06 max	0.04 max	0.04 max
Sulfur	0.03 max	0.03 max	0.03 max	0.03 max
Copper	3.00-5.00			
Columbium + Tantalum	0.15-0.45			0.10-0.30
Nitrogen		0.20-0.45	0.20-0.30	0.20-0.40
Molybdenum				1.50-3.00
Vanadium				0.10-0.30
Iron	Balance	Balance	Balance	Balance

Available Sizes

AQUAMET shafting is stocked in popular diameters up to 7 inches, and lengths up to 32 feet, ready for machining and installation. Other diameters and lengths are also available. Please inquire with your AQUAMET distributor.

AQUAMET shafting is precisely manufactured in compliance with the requirements of the American Boat and Yacht Council (ABYC) Standard P-6 and carefully packaged to protect the precision finish and straightness.

Shaft Diameters

The following equations can be used to compute shaft diameters and safety factors:

$$D = \sqrt[3]{\frac{321,000 \times P \times S.F.}{S_t \times N}} \quad S.F. = \frac{D^3 \times S_t \times N}{321,000 \times P}$$

D = Shaft diameter, inches

P = Shaft horsepower

S.F. = Safety Factor

S_t = Yield Strength, torsional shear, lbs/in²

N = Shaft speed, RPM

For more detailed information, ask your AQUAMET distributor for our complete 40-page brochure.