

**Table 6.2. Properties of sea ice, suggested design values  
for general engineering purposes.\***

Specific gravity	.86 to .92 (average values)
Compressive strength	400 to 600 psi (up to 3000 psi for pure freshwater ice)
Tensile strength	100 to 200 psi
Shear strength	Few test results
Modulus of elasticity	$1.4 \times 10^6$ psi
Modulus of rupture	200 psi
Poisson's ratio	.35
Coefficient of thermal expansion	.000028 (average between -20° and 32°F)
Coefficient of friction	.15 metal to sea ice .10 metal to freshwater ice .01 "wet" ice
Adhesion	30 to 100 psi
Volumetric expansion	9% (on freezing) maximum pressure exerted: 30,000 psi

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\*Above values to be used in lieu of observations or experimental data. Note well that the properties of sea ice are highly variable with respect to temperature, salinity, and the rate of freezing. Ice is an *anisotropic* material!