



## CONVERSION FACTORS

### STRESS AND PRESSURE

To convert from	To	Multiply by
pounds/square foot (lbs/ft <sup>2</sup> )	pounds/square inch (lbs/in <sup>2</sup> )	0.0069445
	kips/square foot (ksf)	1 X 10 <sup>-3</sup>
	kilograms/square centimeter (kg/cm <sup>2</sup> )	0.000488243
	tons (metric)/square meter (t/m <sup>2</sup> )	0.004882
	atmospheres	4.72541 X 10 <sup>-4</sup>
Pounds/square inch (lbs/in <sup>2</sup> )	kilonewtons/square meter (kPa)	0.04788
	pounds/square foot (lbs/ft <sup>2</sup> )	144
Tons (short)/square foot (T/ft <sup>2</sup> )	atmospheres	0.945082
	kilograms/square meter (kg/m <sup>2</sup> )	9764.86
	pounds/square inch (lbs/in <sup>2</sup> )	13.8888
	pounds/square foot (lbs/ft <sup>2</sup> )	2000
	kips/square foot (ksf)	2.0
	tons (short)/square foot (T/ft <sup>2</sup> )	0.5000
	kilograms/square centimeter (kg/cm <sup>2</sup> )	0.488244
Kips/square foot (ksf)	tons (metric)/square meter (t/m <sup>2</sup> )	4.88244
	kilonewtons/square meter (kPa)	47.88
	pounds/square inch (lbs/in <sup>2</sup> )	14.223
	Feet of water (4°C)	32.8093
	atmospheres	0.96784
Kilonewtons/square meter (kPa)	kilonewtons/square meter (kPa)	98.067
	kilograms/square centimeter (kg/cm <sup>2</sup> )	0.10
	pounds/square foot (lbs/ft <sup>2</sup> )	204.81614
	kilonewtons/square meter (kPa)	9.806650
	bars	1.0133
Atmospheres	kilograms/square centimeter (kg/cm <sup>2</sup> )	1.03323
	grams/square centimeter (g/cm <sup>2</sup> )	1033.23
	kilograms/square meter (kg/m <sup>2</sup> )	10332.3
	tons (metric)/square meter (t/m <sup>2</sup> )	10.3323
	pounds/square foot (lbs/ft <sup>2</sup> )	2116.22
	pounds/square inch (lbs/in <sup>2</sup> )	14.696
	tons (short)/square foot (T/ft <sup>2</sup> )	1.0581
	kilonewtons/square meter (kPa)	101.325
	kilonewtons/square meter (kPa)	20.886
	pounds/square inch (lbs/in <sup>2</sup> )	0.145
Kilonewtons/square meter (kPa)	tons (short)/square foot (T/ft <sup>2</sup> )	0.01044
	meters of water	0.1020
	kips/square foot (ksf)	0.02089
	kilograms/square centimeter (kg/cm <sup>2</sup> )	0.01020
	tons (metric)/square meter (t/m <sup>2</sup> )	0.1020
	atmospheres	0.00987

### UNIT WEIGHT

To convert from	To	Multiply by	
Grams/cubic centimeter (g/cm <sup>3</sup> )	tons (metric)/cubic meter (t/m <sup>3</sup> )	1.00	
	kilograms/cubic meter (kg/m <sup>3</sup> )	1000.00	
	pounds/cubic inch (lbs/in <sup>3</sup> )	0.036127292	
	pounds/cubic foot (lbs/ft <sup>3</sup> )	62.427961	
	kilonewtons/cubic meter (kN/m <sup>3</sup> )	9.8039	
Kilograms/cubic meter (kg/m <sup>3</sup> )	tons (metric)/cubic meter (t/m <sup>3</sup> )	0.001	
	pounds/cubic inch (lbs/in <sup>3</sup> )	3.6127292 X 10 <sup>-5</sup>	
	pounds/cubic foot (lbs/ft <sup>3</sup> )	0.062427961	
	kilonewtons/cubic meter (kN/m <sup>3</sup> )	9.80584 X 10 <sup>-3</sup>	
	tons (metric)/cubic meter (t/m <sup>3</sup> )	27.679905	
Pounds/cubic inch (lbs/in <sup>3</sup> )	pounds/cubic foot (lbs/ft <sup>3</sup> )	1728	
	kilonewtons/cubic meter (kN/m <sup>3</sup> )	271.37	
	Pounds/cubic foot (lbs/ft <sup>3</sup> )	Pounds/cubic inch (lbs/in <sup>3</sup> )	5.78703704 X 10 <sup>-4</sup>
	kilograms/cubic meter (kg/m <sup>3</sup> )	16.018463	
	kilograms/cubic meter (kg/m <sup>3</sup> )	101.98	
Kilonewtons/cubic meter (kN/m <sup>3</sup> )	pounds/cubic inch (lbs/in <sup>3</sup> )	0.003685	
	pounds/cubic foot (lbs/ft <sup>3</sup> )	6.3654	

### VELOCITY

To convert from	To	Multiply by
Centimeters/second (cm/s)	microns/second (µm/s)	10,000
	meters/minute (m/min)	0.6000
	feet/minute (ft/min)	1.9685
	miles/hour (mi/hr)	0.022369
	feet/year (ft/yr)	1034643.6
Microns/second (µm/s)	kilometer/hour (km/hr)	0.036
	centimeters/second (cm/s)	0.0001
	feet/year (ft/yr)	103.46436
	feet/minute (ft/min)	0.3048
	meters/minute (m/min)	0.01136363
Feet/minute (ft/min)	centimeters/second (cm/s)	0.508001
	microns/second (µm/s)	5080.01
	Feet/year (ft/yr)	525600
	microns/second (µm/s)	0.009665164
	centimeters/second (cm/s)	9.665164 X 10 <sup>-7</sup>
Feet/year (ft/yr)	meters/minute (m/min)	5.79882 X 10 <sup>-4</sup>
	feet/minute (ft/min)	1.9025 X 10 <sup>-6</sup>
	miles/hour (mi/hr)	2.16203 X 10 <sup>-8</sup>



## CONVERSION FACTORS

### COEFFICIENT OF CONSOLIDATION

To convert from	To	Multiply by
Square centimeters/second (cm <sup>2</sup> /s)	square centimeters/month (cm <sup>2</sup> /mo)	2.6280 X 10 <sup>6</sup>
	square centimeters/year (cm <sup>2</sup> /yr)	3.1536 X 10 <sup>7</sup>
	square meters/month (m <sup>2</sup> /mo)	2.6280 X 10 <sup>2</sup>
	square meters/year (m <sup>2</sup> /yr)	3.1536 X 10 <sup>3</sup>
	square inches/second (in <sup>2</sup> /s)	0.155
	square inches/month (in <sup>2</sup> /mo)	4.1516 X 10 <sup>5</sup>
	square inches/year (in <sup>2</sup> /yr)	4.8881 X 10 <sup>6</sup>
	square feet/month (ft <sup>2</sup> /mo)	2.882998 X 10 <sup>3</sup>
	square feet/year (ft <sup>2</sup> /mo)	3.39447 X 10 <sup>4</sup>
Square inches/second (in <sup>2</sup> /s)	square inches/month (in <sup>2</sup> /mo)	2.6280 X 10 <sup>6</sup>
	square inches/year (in <sup>2</sup> /yr)	3.1536 X 10 <sup>7</sup>
	square feet/month (ft <sup>2</sup> /mo)	1.8250 X 10 <sup>4</sup>
	square feet/year (ft <sup>2</sup> /mo)	2.1900 X 10 <sup>5</sup>
	square centimeters/second (cm <sup>2</sup> /s)	6.4516

### FORCE

To convert from	To	Multiply by
Pounds (lb)	grams	453.59243
	tons (long)	4.464286 X 10 <sup>-4</sup>
	tons (short)	5 X 10 <sup>-4</sup>
	kips	1 X 10 <sup>-3</sup>
	tons (metric)	4.44822
Kips	pounds	1000
	tons (short)	0.500
	kilograms	453.59243
Tons (short) (T)	kilograms	907.18474
	pounds	2000
	kips	2
Kilograms (kg)	grams	1000
	pounds	2.2046223
	tons (long)	9.8420653 X 10 <sup>-4</sup>
	tons (short)	11.023113 X 10 <sup>-4</sup>
	tons (metric)	0.001
	newtons	9.806650
Tons (metric)	kilograms (kg)	1000
	pounds	2204.6223
	kilonewtons	9.806650
Kilonewtons (kN)	pounds	224.81
	tons (short)	0.1124
	kips	0.22481
	tons (metric)	0.102
	kilograms	101.97

### LENGTH

To convert from	To	Multiply by
Inches (in)	feet (ft)	0.083333
	microns (µm)	25400
	millimeters (mm)	25.4
	centimeters (cm)	2.54
	meters (m)	0.0254
Feet (ft)	inches (in)	12
	centimeters (cm)	30.48
	meters (m)	0.3048
Meters (m)	inches (in)	39.370079
	feet (ft)	3.2808399
	microns (µm)	1 X 10 <sup>6</sup>
	millimeters (mm)	1 X 10 <sup>3</sup>
	centimeters (cm)	1 X 10 <sup>2</sup>

### AREA

To convert from	To	Multiply by
Square meters (m <sup>2</sup> )	square feet (ft <sup>2</sup> )	10.76387
	square centimeters (cm <sup>2</sup> )	1 X 10 <sup>4</sup>
	square inches (in <sup>2</sup> )	1550.0031
Square feet (ft <sup>2</sup> )	square meters (m <sup>2</sup> )	9.290304 X 10 <sup>-2</sup>
	square inches (in <sup>2</sup> )	144
Square centimeters (cm <sup>2</sup> )	square inches (in <sup>2</sup> )	0.1550031
	square feet (ft <sup>2</sup> )	1.076387 X 10 <sup>-3</sup>
Square inches (in <sup>2</sup> )	square meters (m <sup>2</sup> )	6.4516 X 10 <sup>-4</sup>
	square centimeters (cm <sup>2</sup> )	6.4516

### VOLUME

To convert from	To	Multiply by
Cubic centimeters (cm <sup>3</sup> )	cubic meters (m <sup>3</sup> )	1 X 10 <sup>-6</sup>
	cubic feet (ft <sup>3</sup> )	3.5314667 X 10 <sup>-5</sup>
	cubic inches (in <sup>3</sup> )	0.061023744
Cubic meters (m <sup>3</sup> )	cubic feet (ft <sup>3</sup> )	35.314667
	cubic inches (in <sup>3</sup> )	61023.74
	cubic centimeters (cm <sup>3</sup> )	1 X 10 <sup>6</sup>
Cubic feet (ft <sup>3</sup> )	cubic meters (m <sup>3</sup> )	0.028316847
	cubic inches (in <sup>3</sup> )	1728
Cubic inches (in <sup>3</sup> )	cubic meters (m <sup>3</sup> )	1.6387064 X 10 <sup>-5</sup>
	cubic feet (ft <sup>3</sup> )	5.7870370 X 10 <sup>-4</sup>