



#### **PRESSURE PLATE CELL**

- The global standard used for soil water retention measurements and extractions
- The widest selection of 0.5 bar to 15 bar
- Reusable for years of cost effective service
- Each plate tested for air entry and flow
- Fits all Soilmoisture pressure extractors and most competitive extractors

#### **Features**

These pressure plate cells have been the de-facto standard for the measurement of soil moisture retention studies worldwide. The development of these ceramic cells by Soilmoisture in the 1950s led to the now universally accepted method for measurement of multiple soil samples extracted on a single reusable ceramic plate. Researchers' dedication to our Soilmoisture cells is understandable. Each cell is carefully hand fabricated from our fine porous ceramic plate materials and wrapped in a tough Butyl rubber backing with a non-metallic screen support. The unit is tied around the edges with stainless steel wire. Each cell is tested at the rated air entry value to assure that there is no bleeding through the porous ceramic and there are no leaks in the rubber backing.

#### **Select Options:**

##### **Description**

1/2 BAR HIGH FLOW  
PRESSURE PLATE  
CELL

1 BAR PRESSURE  
PLATE CELL

1 BAR HIGH FLOW  
PRESSURE PLATE  
CELL

3 BAR PRESSURE  
PLATE CELL

5 BAR PRESSURE  
PLATE CELL

15 BAR PRESSURE

## PLATE CELL

These cells are generally used in pressure extraction equipment for the studies of liquid retention at various pressures/tensions. They can also be used in special applications requiring large surface area filtering or drainage.

Pressure Plate Cells 0675 Series							
Air Entry Value	Dimensions						Part Number
	Diameter)		Thickness		Weight		
	inches	cm	inches	cm	kgs	lbs	
.5 Bar HF	10.75	27.31	0.375	0.953	1.03	2.28	0675B0.5M2
1 Bar	10.75	27.31	0.375	0.953	1.02	2.26	0675B01M1
1 Bar, HF	10.50	26.67	0.375	0.953	0.78	1.73	0675B01M3
3 Bar	10.75	27.31	0.375	0.953	1.00	2.20	0675B03M1
5 Bar	10.75	27.31	0.375	0.953	1.05	2.31	0675B05M1
15 Bar	10.19	25.88	0.375	0.953	0.81	1.80	0675B15M1

### Pressure Plate Cell Tolerances

All the above plates, except for the 15 Bar Cell, have standard diameter tolerance of  $+0.000/-0.250$  inches; standard thickness tolerance  $\pm 0.0005$  inches. The 15 Bar Cell has a standard diameter tolerance of  $\pm 0.010$  inches; standard thickness tolerance of  $\pm 0.005$  inches.

### Formula or mixes

#### Ceramic-B0.5M2

This ceramic part is developed from a high fired, Alumina body. The resulting ceramic is an excellent material which is extremely porous, inert to most all solutions, possesses hard exterior and interior surfaces, and is pure white in color. This material is recommended for low air pressure differentials not exceeding 0.5 Bar (7.25 psi). Typical bubbling pressure is 7.5 to 9 psi, with an effective pore size 6.0 micron, hydraulic conductivity  $.0000311$  cm/sec, approximate porosity 50% by vol. and typical flow through 1/4 inch plate is 180 ml/hr/sqcm, @14.7 psi. The material is ideal for liquid or gas sampling as the Alumina material has almost no ionic exchange sites or leachable mineralogy. This is a truly superior ceramic for both industrial and scientific work where high volume transfer or testing at low pressure differentials is necessary.

#### Ceramic-B01M1

This ceramic part is developed from a moderately fired largely Talc body. The resulting ceramic material, made from a time proven formula, is a utilitarian ceramic having good porosity, tough exterior and interior surfaces, and is ivory white in color. This material is recommended for general purpose uses that involve pressure differentials under 1 Bar (14.5 psi). Typical bubbling pressure is 20 to 30 psi, the effective pore size 1.7 micron, hydraulic conductivity  $.000000756$  cm/sec, approximate porosity 34% by vol. and flow through 1/4 inch plate is 5.0 ml/hr/sqcm, @14.7 psi. This ceramic is an excellent choice where cost and precise content of fluids or extracts are not at issue. This material has been applied successfully to tensiometers, pressure plate assemblies, suction tables and the like for nearly 50 years. This ceramic is not recommended for precision fluid sampling work as it has some ionic exchange sites and a mineralogy that is leachable with strong acids over the years. This is the perfect choice for those needing a low cost industrial ceramic product or where the science requires no sampling or chemistry of fluids transferred through ceramic pores.

#### Ceramic-B01M3

This ceramic part is developed from a high fired Alumina body. The resulting ceramic is an excellent material. It is extremely porous, inert to most all solutions, possesses hard exterior and interior surfaces, and is pure white in color. This material is recommended for standard pressure differentials under 1 Bar (14.5 psi). Typical bubbling pressure is

19 to 28 psi, the effective pore size 2.5 micron, hydraulic conductivity .0000086 cm/sec, approximate porosity 45% by vol. and flow through 1/4 inch plate is 50 ml/hr/sqcm, @14.7 psi. The tremendous porosity and ability to conduct large amounts of fluids or gases makes it ideal for quick extractions, and creating, monitoring or extracting pulse hydrological events. The material is ideal for liquid or gas sampling as the Alumina material has almost no ionic exchange sites or leachable mineralogy. A great material for most any application involving sampling, testing, monitoring or infusion where precision and actual liquid contents are of importance.

#### **Ceramic-B03M1**

This ceramic part is developed from a complex mixture of ball clays into a moderately fired ceramic body. The resulting ceramic has good porosity and good hydrologic flow capability. This ceramic is recommended for specialized applications where the pressure differentials under 3 Bar (43.5 psi). Typical bubbling pressure is 46 to 70 psi, the effective pore size .7 micron, hydraulic conductivity .00000025 cm/sec, approximate porosity 34% vol. and flow through 1/4 inch plate is 1.6 ml/hr/sqcm, @14.7 psi. This ceramic is generally used within pressure vessel equipment for the determination of soil water retention or in oil and gas industries for reclamation studies. The material is moderately hard and tannish-white in color, not recommended for fluid sampling.

#### **Ceramic-B05M1**

This ceramic part is developed from a complex mixture of ball clays into a fired ceramic body. The resulting ceramic has good porosity and good hydrologic flow capability. This ceramic is recommended for specialized applications where the pressure differentials under 5 Bar (72.5 psi). Typical bubbling pressure is 80 psi, the effective pore size .5 micron, hydraulic conductivity .000000121 cm/sec, approximate porosity 31% by vol. and flow through 1/4 inch plate is .7 ml/hr/sqcm, @14.7 psi. It is generally used within pressure vessel equipment for the determination of soil water retention or in oil and gas industries for reclamation studies. The material is very hard and brownish-white in color, is not recommended for fluid sampling.

#### **Ceramic-B015M1**

This ceramic part is developed from a proprietary mixture of ball clays fired to a ceramic body. The resulting ceramic material is pinkish-tan in color, moderately hard and will withstand pressure differentials of 15 Bar (217.5 psi). Typical bubbling pressure is 220 psi, the effective pore size .16 micron, hydraulic conductivity .0000000259 cm/sec, approximate porosity 32% by vol. and flow through 1/4 inch plate is .015 ml/hr/sqcm, @14.7 psi. This unique ceramic, has been used in Agronomy for many years in water retention studies to a theoretical wilting point of 15 bars. It has also found use in the oil and gas industries in studies of reclamation and production techniques. It remains the worldwide choice of experts when they need to know the behavior of liquids in 3d porous material at high pressures as occurs at depth in stone and rock. Not recommended for fluid sampling.