

Perm Cup - 25 & 10 cm²

Water Vapor Permeability

Top & Bottom View of Assembled Perm Cups



Standard Perm Cup 25cm²



Small Perm Cup 10cm²

Perm cups are used to determine the permeability of films to the vapor of water and other liquids. Materials that are tested include paint, varnish, thin plastic films and other types of sheets thin enough to be tightly sealed in place across the face of the cup. Permeability is expressed as the weight of a vaporous material that passes through a specified area and thickness of free film within a specified time interval under controlled conditions.

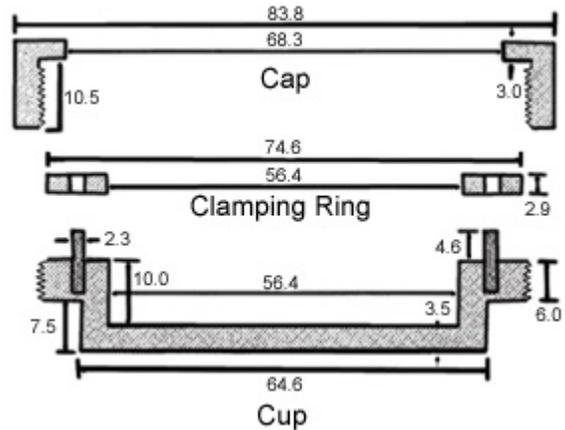
ASTM Method D 1653 ISO 7783

The Perm Cup is designed to be in complete compliance with ASTM Method D 1653 and has the following characteristics and advantages:

- The face opening of the cup is 25 square centimeters.
- The volume of the cup is 25 milliliters.
- Normal test weight of the cup assembly is less than 140 grams.
- All cup surfaces are protected by an alodine coating.
- Thick gaskets and test samples are now accommodated by eliminating interference between the cap and cup ring restraining pins.

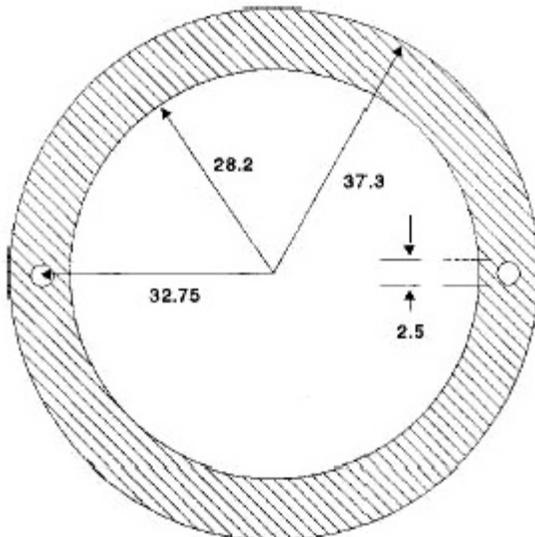
The Perm Cup is made up of three basic parts, each machined from the highest grade aluminum. The following sketches show a cross section of these parts and a top view of the clamp ring.

The cup top surface, as well as both surfaces of the clamp ring are smoothly finished to provide a tight seal against the product under test. Two gaskets with the same dimensions as the clamp ring, except for thickness, are furnished for use with rough or uneven materials to insure complete sealing. Extending upward from the face of the cup are two stainless steel pins which closely engage the clamp ring, and any gaskets used, to prevent movement with respect to the test material as the cap is tightened against the cup. The cap design permits use of longer pins than possible with earlier models to accommodate thicker sample and gasket combinations.



Note: Dimensions on sketches are in millimeters

Method of Use



Either a test liquid or a desiccant is placed in the cup, depending on the specified conditions of the test. A sample of the test material, precut to the outside dimensions of the clamp ring, is placed on the top surface of the cup, using gaskets if required, and sealed against the cup surface by tightening the cap (for specimen preparation see ASTM D-823 & D- 4708).

The assembly is then accurately weighed and placed in a specified controlled atmosphere. Periodic weighing determines weight loss or gain from which rate of vapor transmission is calculated. Small 10 cm² cup allows the use of a smaller specimen and less desiccant.

Clamp ring detail pictured left.