doing some kind of retro placcarding as the requirement did not include force measurement. Fortunately, there are only a small number of systems/components certified under this rendition. Any component so certified would not be able to be used as there are no guidelines for compatibility.

Volume

An important criterion in determining compatibility is the volume of the canopy. The canopy has to fit into the container in such a manner as to not place undue stress on the system when packing and to be extracted by the pilot chute during deployment. The container manufacturer usually provides a volume chart of their systems stating what the volumes are for the various model sizes. Container volumes are somewhat nonsequitur; however, as container manufacturers derive their numbers in different ways. Some container manufacturers do not publish numbers per se; rather, they indicate a model designation that fits a size range of canopies.

The canopy manufacturer should provide the volumes of the canopy models. Measuring canopy volumes has proven to be an imprecise science as there are various methods that can be used. The most common method involves placing the canopy in a tubular chamber and compressing it with a standard amount of weight for a set time. The displaced volume is then measured. *Figure 4-54* shows one such volume chamber. Slight differences in volume can be seen from chamber to chamber and canopy to canopy. These variances occur due to humidity at the time the test is conducted and due to variation in the bulk of the fabric that the canopy was built with. For example, sometimes a 150 square foot reserve is 312 cubic inch and sometimes that very same model, built using a different dye lot of fabric is 363 cubic inch. Canopy volume charts can be found on the Parachute Industry Association (PIA) website at www.pia.com and the Parachute Labs website at www.jumpshack.com. While some canopy manufacturers disagree with the resultant numbers, most container manufacturers and riggers agree that these independent test methods are useful in determining volume compatibility.

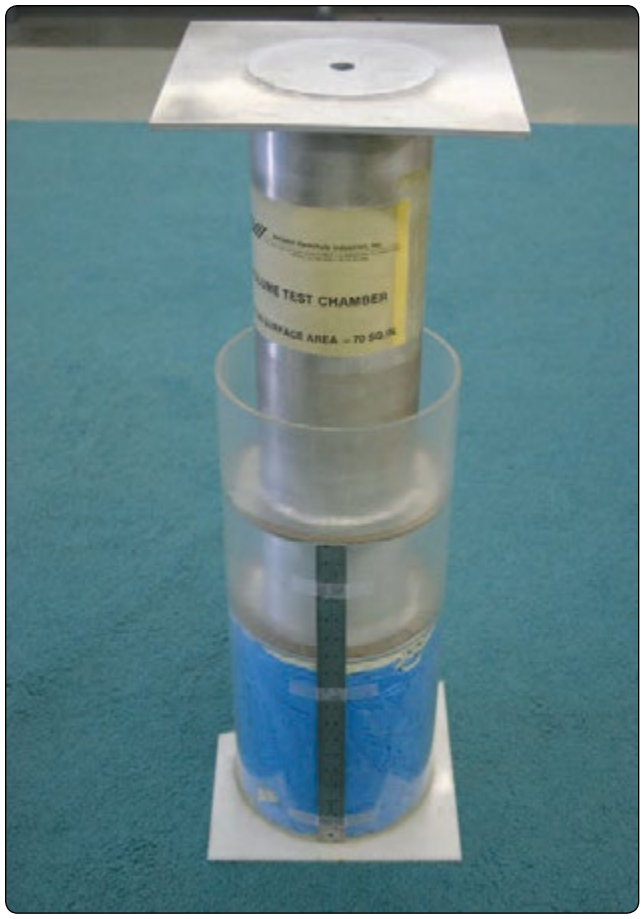

Figure 4-54. *Volume chamber.*

Deployment Type

In Chapter 2 of this handbook, Design and Construction, the different types of canopy deployment devices were described. In some instances, the container system needs to be of a specific configuration to accommodate a certain deployment device. An example of this would be where a round canopy utilizing a Type 1 configuration is packed into a pilot emergency parachute system. In this case, the pilot chute is compressed directly onto the floor of the container system. *[Figure 4-55]* This same canopy can be packed into a sport reserve container, but the sport rig has two internal or staging flaps that compress and hold the canopy in place and are locked together by the bridle. *[Figure 4-56]* The pilot chute is then packed on top of the internal flaps. The rigger needs to know and understand these differences to determine how the two components interface for compatibility.

Figure 4-55. *Type 1 deployment in a pilot emergency rig.*