

SEALING OF EQUIPMENT

Types of Seals and Their Locations

Most weights and measures jurisdictions require that all equipment officially approved for commercial use (with certain exceptions to be pointed out later) be suitably marked or sealed to show approval. The seal of approval should be as conspicuous as circumstances permit and should be of such a character and so applied that it will be reasonably permanent. Uniformity of position of the seal on similar types of equipment is also desirable as a further aid to the public.

The official will need more than one form of seal to meet the requirements of different kinds of equipment. Good quality, weather-resistant, water-adhesive, or pressure-sensitive seals or decalcomania seals are recommended for fabric-measuring devices, liquid-measuring devices, taximeters, and most scales, because of their permanence and good appearance. Steel stamps are most suitable for liquid and dry measures, for some types of linear measures, and for weights. An etched seal, applied with suitable etching ink, is excellent for steel tapes, and greatly preferable to a seal applied with a steel stamp. The only practicable seal for a graduate is one marked with a diamond or carbide pencil, or one etched with glass-marking ink. For a vehicle tank, the official may wish to devise a relatively large seal, perhaps of metal, with provision for stamping data relative to compartment capacities, the whole to be welded or otherwise permanently attached to the shell of the tank. In general, the lead-and-wire seal is suitable for use as an approval seal.

Exceptions

Commercial equipment such as measure-containers, milk bottles, and lubricating-oil bottles are not tested individually because of the time element involved. Because manufacturing processes for these items are closely controlled, an essentially uniform product is produced by each manufacturer. The official normally tests samples of these items prior to their sale within his jurisdiction and subsequently makes spot checks by testing samples selected at random from new stocks.

Another exception to the general rule for sealing approved equipment is found in certain very small weights whose size precludes satisfactory stamping with a steel die.

SEALING FIELD STANDARDS

The sealing of a field standard means that the standard or the carrying case for the standard is marked to indicate that the standard complies with the specifications for that particular type of standard. The mark aids the metrologist, the weights and measures official, and the service technician to identify standards that have been certified. In the case of adjustable standards, the seal is applied in such a manner that the seal must be destroyed before any adjustment can be made. This discourages unauthorized adjustments

to the standard. Frequently, the sealing mark includes the year in which the standard was last adjusted or certified so that this information is available immediately to the user of the standard.

A seal may be the authorized mark applied by the metrologist to a standard or a lead and wire security seal applied to the adjusting mechanism of a standard in a manner that prevents further adjustment without breaking the seal. The lead and wire seal is clamped to the standard using a hand press that imprints the authorized mark into the lead portion of the lead and wire security seal.

A weight with an adjusting cavity and sealing cap should be sealed following adjustment by stamping the authorized mark on the sealing cap following adjustment. Weights without sealing caps generally should not be sealed by stamping the weights since this mars the surface of the standard. Rather, the carrying case should be marked to identify that the weights in the set have been certified. This latter method of sealing is recommended for single piece and knob weights that do not have sealing caps.

Whenever a weight is adjusted, the sealing cap should be marked. Weights with lead sealing caps can be stamped each year the weights are certified by over stamping the previous stamp if adjustment is not necessary. Over stamping should not be done on aluminum sealing caps since the underlying mark will remain. In the case of aluminum caps, the original seal on the cap will indicate that the weight has not been adjusted since the date of the seal. The latest test report from the laboratory that tested the weight will disclose the date of test and certifies the weight to the appropriate tolerance class.

Metal graduated neck type volumetric field standards usually have a means of adjusting the graduated scale. A lead and wire security seal is normally used to seal the standard. It may be necessary to use more than one lead and wire seal to seal the adjustments on the standard.

Glass volume standards and metal length standards must be marked with an appropriate marking instrument. The mark must be placed on an area that will not interfere with the integrity and readability of the standard. Although these standards do not have adjustments, they should be tested periodically. Steel measuring tapes may change length over time. Recent certification reports may carry greater significance in the event they are needed in court.