

Materials List for:

A Bending Test for Determining the Atterberg Plastic Limit in Soils

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Materials

Name	Company	Catalog Number	Comments
Shovel	Any	NA	It is preferable a round point metal shovel so that it can penetrate easily in the soil.
Trowel	Any	NA	It should be easy to handle both in field and laboratory, so approximately 500 g of soil should be the maximum of soil that could pick up.
Polyethylene bags	Any	NA	The size of the bags depends on the collected soil volume. If we were interested in preserving the natural moisture, use sealing tape to close the bag.
Soil splitter	PROETISA	S0012	It is not mandatory, because the quartering can be performed with the shovel, but in case of using it: it must be big enough to split several kg of sample in the cases of soils with large amounts of gravel or pebbles.
Oven	SELECTA	2001254	The oven must be able to maintain constant temperature and should have some sort of slot or outlet opening to facilitate the release of water vapor.
Lab trays	Any	NA	Metal trays are preferred over plastic because the first ones tolerate the oven temperatures better than the second ones.
Mortar and pestle	MECACISA	V112-02	A ceramic mortar is valid. It is recommended to use a rubber covered pestle because if the pestle was of other different materials (like metal or a ceramic), it could break the sand particles.
0.40 mm sieve (or 0.425 mm sieve)	FILTRA	0,400 (or 0,425)	Make sure that the sieve mesh is in perfect conditions of use (it should not be neither broken or worn).
Brush	Any	NA	It is useful for passing the soil during the sieving.
Wash-bottle	Any	NA	It should have an approximate capacity of one litre and it should be easy to control the amount of water that it releases.
Distilled water	Any	NA	Distilled water can be purchased or obtained by filtering from tap water (in this last case, a filtering system is necessary).

Nonabsorbent smooth glass plate	Any	NA	The plate should have a minimum area of approximately 30 × 30 cm.
Metal spatula	Any	NA	The metal blade of the spatula must be flexible. Dry it with a paper after water-cleaning to prevent rusting.
Latex gloves	Any	NA	Latex, vinyl, nitrile or other impermeable materials are valid. They should be thin enough to sense the soil with the hands.
Cling film	Any	NA	Normal cling film is valid.
Airtight bags	Any	NA	Remove the air before closing them.
Thread molder	Any	NA	It is a tool designed in this experiment (drawings with dimensions are included in this paper).
Steel pushers	Any	NA	It is a tool designed in this experiment (drawings with dimensions are included in this paper).
Damp cloth	Any	NA	A normal damp cloth is valid.
Roll of paper	Any	NA	Normal rolls of paper used to dry hands are valid.
Caliper	Any	NA	It must have an accuracy of at least 0.1 mm.
Paper and pen	Any	NA	Paper and pen are used to write the results.
Containers with covers	Any	NA	Small cylindrical glass containers are valid. If they do not have covers, watch glasses can be used as covers. Covers are useful to avoid the loss of water during the test and also to prevent the dry soil absorbs moisture from the air after oven drying.
Precision or analytical balance	BOECO	BPS 52 PLUS	It must have an accuracy of at least 0.01 g.
Protective gloves	Any	NA	Protective gloves are used to catch the metal trays from the oven.
Tongs	Any	NA	Tongs are used to catch the hot containers from the oven.
Desiccator	MECACISA	A036-01	A normal glass desiccator with silica gel is valid to prevent the dry soil absorbs moisture from the air after oven drying.