

CECW-EG  Engineer Pamphlet 1110-1-9	Department of the Army U.S. Army Corps of Engineers Washington, DC 20314-1000	EP 1110-1-9  26 February 1982
	Engineering and Design  LIQUID LIMIT GROOVING TOOLS	
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Pamphlet  
No. 1110-1-9

26 February 1982

Engineering and Design  
LIQUID LIMIT GROOVING TOOLS

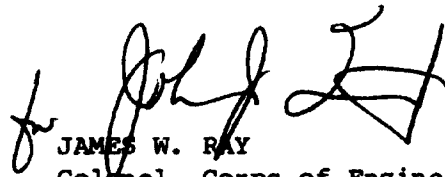
1. Purpose. The purpose of this pamphlet is to advise field offices of the availability and source of plastic liquid limit grooving tools, meeting Corps of Engineers specifications.
2. Applicability. This pamphlet is applicable to all field operating activities having soil testing responsibilities.
3. Background. Liquid limit grooving tools meeting the requirements of EM 1110-2-1906, "Laboratory Soils Testing," are not generally available commercially. In 1967, the Southwestern Division Laboratory Personnel began an investigation into suitable materials and sources for these tools. They determined that these tools could be economically produced (in large quantities) to close tolerances from polycarbonate resin. Because of the high tool costs, production in small quantities is not economical. The Southwestern Division Laboratory has made, and continues to make, these tools available to Corps of Engineers offices and other Federal Government agencies, at cost.
4. Specifications. The polycarbonate tools are manufactured to the following specifications. Harvard University specifications are shown for comparison. A microfilm reader adapted for use as an optical comparator is used to check each tool for compliance with the specifications prior to shipment.

Dimensions in inches:	<u>SWD</u>	<u>HARVARD</u>
Bottom width	0.079; +.000, -.002	0.079+.002
Top width	0.433+.008	0.433+.008
Depth	0.315; +.003, -.000	0.315+.003
Drop height gage	0.394+.002	0.394+.008
5. Procurement. Tools may be obtained from the Southwestern Division Laboratory, 4815 Cass Street, Dallas, Texas 75235. The cost is \$1.00 each in lots of 25 or more.
6. Contractor Laboratories. Contractor or commercial laboratories performing tests for the Corps of Engineers are also faced with the

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problem of obtaining acceptable grooving tools. Installations requiring the testing should consider providing the approved grooving tools as Government-furnished equipment.

FOR THE COMMANDER:

A handwritten signature in black ink, appearing to read 'J. W. Ray', is written over the typed name.

JAMES W. RAY  
Colonel, Corps of Engineers  
Chief of Staff