

Colorado Department of Transportation
Moisture-Density Relation - Method T99 or T180
Additional Methods: M145 T85 T89 T90

Region:	Date completed:
Contract ID:	
Project NO:	

Material Description	M 145 Soil Classification	Project Location:	
Material Source	Curve No:	Tested By:	Sampled By:
Material Split Over: <input type="checkbox"/> #4 <input type="checkbox"/> 3/4"	% Retained on #4	% Retained on 3/4"	% Soil
Mold Volume: (V)	"Mass of Mold" (B) pounds <input type="checkbox"/> grams <input type="checkbox"/>	Max. Dry Density	Optimum Moisture
		CP23 Corr. Max. Dry Density & Optimum Moisture @ _____ % Rock	

A-1, A-2-4, A-2-5 & A-3 soils, use T180 All other types - use T99	Standard AASHTO T99 <input type="checkbox"/> Modified AASHTO T180 <input type="checkbox"/>	Method
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	Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7
Mass of mold and compacted soil: (A)							
(WD) Wet Density of soil (lbs./ft³): (A-B) ÷ V							

MOISTURE DETERMINATION (Grams)							
Pan ID:							
Mass of Pan: (A)							
Mass of wet soil & pan: (B)							
Mass of dry soil and pan: (C)							
Mass of wet soil: (D) = B - A							
Mass of dry soil: (E) = C - A							
Loss: (D - E)							
Moisture content of soil (%)							
Dry density of soil (lbs./ft³): [WD ÷ (% moisture + 100) x 100]							

Include point on curve?

T89 & T90 record mass to 0.01 gram	Liquid Limit T89 2nd determination	Plastic Limit T90 2nd determination	Number of Blows (n)	Multiplier	T 85 Aggregate Specific Gravity Record Absorption to 0.1%
Tin ID:			22	0.9850	Mass of pan:
Mass of Tin: (A)			23	0.9900	Mass of dry aggregate: (A)
Mass of Tin + Wet Soil: (B)			24	0.9950	Mass of aggregate SSD: (B)
Mass of Tin + Dry Soil: (C)			25	1.0000	Mass of aggregate in H ₂ O: (C)
Moisture Content %: [(B-A)-(C-A)] ÷ (C-A)			26	1.0050	Bulk SpG (Gsb): A ÷ (B-C)
Number of Blows: (n)			27	1.0090	Bulk SpG SSD (Gsb ssd): B ÷ (B-C)
Liquid Limit, Plastic Limit & PI record to 1%	Plasticity Index	Specifications	28	1.0140	Percent Absorption: [(B-A) ÷ A] x 100

Liquid Limit %:		CP 21 (-#4) % Passing results	Remarks:
Plastic Limit %:		#10	
Plasticity Index:		#40	
LL % = Moisture Content @ number of blows X multiplier		#200	