CALTRANS TEST METHOD - ASTM TEST METHOD CONVERSION CHART
Testing Procedures - for local agency use only

Use this CTM - ASTM conversion chart to assist you in determining acceptance test requirements and frequencies, as detailed in Caltrans *Construction Manual* Chapter 6, "Sampling and Testing." Refer to the Agency, special provisions, contract plans, and applicable standard specifications, for correct sampling and test methods (ASTM-CTM).

CTM	ASTM	Book of Standar	TEST PROCEDURE	NOTES
105			Calculations Pertaining to Gradings and Specific Gravities	*2*
125			Sampling Highway Materials (when approved)	
	D75	4.02	Standard Practice for Sampling Aggregates	*3*
	D979	4.03	Practice for Sampling Bituminous Paving Mixtures	*3*
201			Soil & Aggregate Sample Preparation	
	C702	4.02	Reducing Field Samples of Aggregate to Testing Size	*13*
202			Sieve Analysis of Fine and Coarse Aggregate	
	C136	4.02	Sieve Analysis of Fine and Coarse Aggregate	
	C117	4.03	Material Finer Than 75-um (#200) Sieve in Mineral Aggregates by Washing	
205			Percentage of Crushed Particles	*1*
206			Specific Gravity and Absorption of Coarse Aggregate	
	C127	4.02	Specific Gravity and Absorption of Coarse Aggregate	
207			Specific Gravity and Absorption, Fine Aggregate	
	C128	4.02	Specific Gravity and Absorption, Fine Aggregate	
208			Apparent Specific Gravity of Fine Aggregate	*1*
211			Abrasion of Coarse Aggregate by Use of the Los Angeles Rattler Machine	
	C131	4.02	Resistance to Degradation , Small-Size Coarse Agg. by Abrasion & Impact, L.A. Machine	
213			Organic Impurities in Concrete Sand	
	C40	4.02	Organic Impurities in Fine Aggregate for Concrete	
214			Soundness of Aggregates by Use of Sodium Sulfate	*1*
	C88	4.02	Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	
216			Relative Compaction of Untreated and Treated, Soils & Aggregates	
	D1556	4.08	Density of Soil In-place by the Sand Cone Method	
	D1557	4.08	Moisture-Density Relations of Soils & Soil-Agg. Mixtures, 10-lb. Rammer, 18-in	*11*
217			Sand Equivalent (only authorized method per Caltrans 07, District Materials	*1,9*
223			Surface Moisture in Concrete Aggregate	*1*
226			Moisture Content in Soils by Oven Drying	
	C566	4.02	Total Moisture Content of Aggregate by Drying	
227			Evaluating Cleanness of Coarse Aggregate	*1*
229			Durability Index	*1*
	D3744	4.03	Aggregate Durability Index	
231			Relative Compaction of Soils by the Area Concept Utilizing Nuclear Gages	*4*
	D2922	4.08	Density of Soil & Soil-Aggregate In-place by the Nuclear Method	*4*

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CTM	ASTM	Book of Standards	TEST PROCEDURE	NOTES
301	D2844	4.08	R-Value of Treated & Untreated, Bases, Subbases & Basement Soils R-Value and Expansion Pressure of Compacted Soils	*1*
302	D1664	4.03	Film Stripping Coating and Stripping of Bitumen-Aggregate Mixtures	
303			Centrifuge Kerosene Equivalent	*1*
304	D1561	4.03	Preparation of Bituminous Mixtures for Testing Prep. of Bituminous Mixture Test Specimens by Means of Calif. Kneading Compactor	*1*
305			Swell of Bituminous Mixtures	*1*
307			Moisture Vapor Susceptibility of Bituminous Mixtures	*1*
308	D1188	4.03	Bulk Specific Gravity and Weight Per Cubic Foot of Bituminous Mixtures Bulk Sp.G. and Density of Compacted Bituminous Mixtures, Paraffin-Coated Specimens	
310	D2172	4.03	Asphalt and Moisture Contents of Bituminous Mixtures by Hot Solvent Extraction of Bitumen from Bituminous Paving Mixtures (Method A, B, or C)	*5* *6,10*
312			Design and Testing of Class "A" and "B" Cement Treated Base	*1*
338			Cement or Lime Content in Treated Aggregate by the Titration Method	*1*
339	D2995	4.03	Determination of Distributor Spread Rate Determining Application Rate of Bituminous Distributors	
362	D2172	4.03	Asphalt Content of Bituminous Mixtures by Vacuum Extraction Quantitative Extraction of Bitumen from Bituminous Paving Mixtures	*5* *6*
366			Stabilometer Value	*1*
367			Recommending Optimum Bitumen Content (OBC.)	*1*
370	D4643	4.08	Determining Moisture Content of Asphalt Mixtures or Mineral Agg., Microwave Ovens Determination of Water (Moisture) Content of Soil by the Microwave Oven	
375	D2950	4.03	In-place Density & Relative Compaction of AC Pavement (nuclear) Density of Bituminous Concrete In-place by the Nuclear Method	*5,7,12* *6,7*
379	D4125	4.03	Asphalt Content of Bituminous Mixtures by use of the Troxler Nuclear Gage Asphalt Content of Bituminous Mixtures by the Nuclear Method	*5,8* *6,8*
405			Chemical Analysis of Water	*1*
415			Chloride Content in Organic Additives for Portland Cement Concrete	*1*

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CTM	ASTM	Book of Standards	TEST PROCEDURE	NOTES
504	C231	4.02	Air Content of Freshly Mixed Concrete by the Pressure Method Air Content of Freshly Mixed Concrete by the Pressure Method	
515			Relative Mortar Strength of Portland Cement Concrete Sand	*1*
518	C138	4.02	Unit Weight of Fresh Concrete Unit Weight, Yield, and Air Content (Gravimetric) of Concrete	
521	C39	4.02	Compressive Strength of Molded Concrete Cylinders Compressive Strength of Cylindrical Concrete Specimens	
523	C293 C78	4.02 4.02	Flexural Strength of Concrete (using simple beam with center-point loading) Flexural Strength of Concrete (using simple beam with center-point loading) Flexural Strength of Concrete (using simple beam with third-point loading)	*1*
528			Freeze Thaw Resistance of Aggregates in Air-Entrained Concrete	*1*
529			Proportions of Coarse Aggregate in Fresh Concrete	*1*
530			Determining the Effect of H_2O-Reducing and Set-Retard. Admix. Drying Shrinkage PCC	*1*
533	C360 C143	4.03 4.02	Ball Penetration in Fresh Portland Cement Concrete Ball Penetration in Fresh Portland Cement Concrete Slump of Freshly Mixed PCC	
539	C172	4.02	Sampling Fresh Concrete Sampling Freshly Mixed Concrete	
540	C31	4.02	Making, Handling, & Storing Concrete Compressive. Test Specimens in the Field Making & Curing Concrete Test Specimens in the Field	
541			Flow of Grout Mixtures (flow cone method)	*1*
543	C173	4.02	Air Content of Freshly Mixed Concrete by the Volumetric Method Air Content of Freshly Mixed Concrete by the Volumetric Method	
548			Evaluation of Aggregate for Lean Concrete Base (LCB.)	*1*

Notes

1. **Use the CALTRANS Method.**
2. **Use the methods of calculation within the applicable test method first. Refer to CTM 105 as necessary.**
3. **Use the Caltrans Construction Manual procedures as necessary when ASTM D75 or D979 do not adequately cover the item to be sampled.**
4. **Use the direct transmission method only, the air gap method shall not be used. All nuclear gages must have local Caltrans District calibration within the last year. The data sheets provided by the local Caltrans District shall be used when determining the in-place density.**
5. **Sample from the job site, across the mat, immediately behind the paving machine (Caltrans Construction Manual).**
6. **Sample per ASTM D 979 paragraph 4.2.3., sample from the job site, across the mat, immediately behind the paving machine.**
7. **All nuclear gages used for this test must be calibrated on the six (6) DNTM&R AC Standard Blocks. The Data sheets provided by the local Caltrans District shall be used when determining the in-place density.**
8. **Recommended Percent (%) AC method for Rubberized Bituminous Paving mixtures.**
9. **The hand method of shaking is not authorized and shall not be used. An electro-mechanical or hand- operated mechanical. Sand Equivalent shaker must be utilized for this test.**
10. **This Method covers hot solvent, centrifuge, and vacuum extraction.**
11. **Compaction Apparatus shall be calibrated in accordance with ASTM D 2168, Method B (ASTM Book 4.08).**
12. **Test Maximum Density (TMD) shall be performed by Caltrans Test Method 375, Section F. Test Max. Density.**
13. **Splitters must be of the fixed riffle type (no adjustable splitters).**