

SECTION 901 PORTLAND CEMENT CONCRETE

MATERIAL	REF.	PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING TIME	REMARKS
	TESTED BY		METHOD		CONTAINER				
THIS SECTION IS TO BE USED AS A GUIDE FOR OTHER ITEM NUMBERS WHEN REFERENCE IS MADE TO SECTION 901 OF THIS MANUAL. THERE ARE NO PAY ITEMS UNDER SECTION 901.									
ADMIXTURES	901.02 1011.02 1018.28 Mat. Lab	Accept.	Proj. Engr. S 601	1/type/ project	1 pt friction top can	CC 1	----	----	(QPL 58) Visual inspection. Sample only if questionable.
	901.02 1011.02 1018.28 Mat. Lab	Verif.	Proj. Engr. S 601	1/type/ project	1 pt friction top can	----	300 yd ³	9 days	(QPL 58)
AGGREGATES (Pavement)	Fine & Coarse	Quality Control	Contractor S 101	1/day/plant for moisture	1 full sample sack	----	----	----	(QPL 2) Gradation results are plotted on control charts which are required for documentation. See "Application of Quality Assurance Specifications for Portland Cement Concrete Pavement and structures" for details.
				2/day/plant for gradation	1 full sample sack	----	50 yd ³	3 days	(QPL 2) Check gradation and foreign matter. *For paving concrete produced from non-dedicated stockpiles.
				1/1,000 yd ³ / dedicated stockpile	1 full sample sack	----	----	3 days	(QPL 2) Sample as stockpile is being built.
	Blended Aggregate Type B & D	Quality Control	Contractor S 101	1/stockpile/ day	1 full sample sack	----	50 yd ³	3 days	(QPL 2) Gradations for each component used to calculate blended gradation based on mix proportions. Report combined gradation of adjacent sieves as required by specifications.
				1/aggregate size/lot (max of 1/agg. size/day)	1 full sample sack	----	50 yd ³	3 days	(QPL2) Verification testing performed by Dist Lab in accordance with 901.06(d)

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		TESTED BY		METHOD		CONTAINER	DISTR.			
AGGREGATES (Structural)	Fine & Coarse	901.02 1003.01 1003.02 Contractor	Quality Control	Contractor S 101	1/lot	1 full sample sack	----	----	----	(QPL 2) Gradation and moisture content to be run. Lot to be identifiable pour up to 200 yd ³ max of concrete. Gradation results shall be plotted on control charts which are required for documentation. See "Application of Quality Assurance Specifications for Portland Cement Concrete Pavement and Structures" for details.
		901.02 1003.01 1003.02 Dist. Lab	Accept.	Proj. Engr. S 101	1/every 5 day of production or 400 y ³ of aggregate*	1 full sample sack	---	50 yd ³	3 days	(QPL 2) Check gradation and foreign matter. *For structural concrete produced from non-dedicated stockpiles
		901.02 1003.01 1003.02 Dist. Lab	Accept.	Proj. Engr. S 101	1/1,000 yd ³ /dedicated stockpile	1 full sample sack	----	50 yd ³	3 days	(QPL 2) Sample as stockpile is being built.
		901.02 1003.01 1003.02 Dist. Lab	IA	Dist. Lab S 101	*	----	----	----	----	*See Independent Assurance Program S 701.
CEMENT (Hydraulic)	Types I, II, IP & IS (Pavement & Structural) Types I, II, IP, IS & III (Precast)	901.02 1001.01 1001.02 1001.04 Mat. Lab	Prelim Source Approval	Mfr. ASHTO T 127	1/month	Five - 1 gal friction top cans or acceptable moisture proof container	----	----	5 weeks	(QPL 7) Composited and blended from daily plant samples.

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MATERIAL		REF.	PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING TIME	REMARKS
		TESTED BY		METHOD		CONTAINER	DISTR.			
CEMENT (Hydraulic) (Cont'd)	Types I, II, IP & IS (Pavement & Structural)	901.02 1001.01 1001.02 1001.04 Proj. Engr.	Accept.	----	1/shipment	----	CC 1 & 7	50 yd ³	17 days	(QPL 7)
	Types I, II, IP, IS & III (Precast) (cont'd)	901.02 1001.01 1001.02 1001.04 Mat. Lab	Verif.	Proj. Engr. S 102	1/600 tons/source*	1 gal friction top can	CC** 1 & 7	300 yd ³	17 days	(QPL 7) *Maximum of one sample per day per source unless questionable. **Copy of CC shall be submitted with sample.
CONCRETE (Minor Structure)	Compressive Strength	Table 901-3 Dist. Lab	Accept.	Proj. Engr. S 301 TR 226	3cyl/50yd ³	1 ft ³ 6 in. x 12 in. cylinder mold	----	50 yd ³	30 days	----
	Mix Design	901.06(a) Contractor/ Dist. Lab	Design/ Accept.	*	1/mix class or type/material source/plant	----	----	----	3 days	(QPL 58 - Admixtures, QPL 2- Aggregates, QPL 7 - Cement, QPL 50 Fly Ash and QPL 80 Microsilica (Silica Fumes)) *The contractor shall submit to the Dist. Lab Engr. the standard Mix Design form indicating the intended source of all materials and the mix design. Acceptance by the Dist. Lab Engineer is required prior to starting work.
	Slump and Air	Table 901-3 Proj. Engr.	Accept.	Proj. Engr. S 301	1/50 yd ³	0.5 ft ³	----	50 yd ³	1 day	When required in Table 1 or individual section.
CONCRETE (Pavement)	Entrained Air	901.06(b) Contractor	Quality Control	Contractor S 301	2/half day	0.25 ft ³	----	----	----	Air test results shall be plotted on control charts which are required for documentation. Air tests will only be required when an air-entraining admixture is used.
		Table 901-3 Proj. Engr.	Accept.	Proj. Engr. S 301	1/half day	0.25 ft ³	----	----	1 day	----

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		TESTED BY		METHOD		CONTAINER	DISTR.			
CONCRETE (Pavement) (Cond't)	Mix Design	901.06(a) Contractor/ Dist. Lab	Design/ Accept.	*	1/mix type/material source/plant	----	----	----	3 days	*Contractor shall submit to the Dist. Lab Engr. the standard Mix Design form indicating material sources, proportions, and composite gradation calculations. Acceptance by the Dist. Lab Engr. is required prior to starting work.
	Mix Temperature	901.06(b) 901.11 Contractor	Quality Control	Contractor S 301	*	----	----	----	----	*When temperature control is needed, testing must be sufficient to prevent exceeding appropriate limits.
	Slump	901.06(b) Contractor	Quality Control	Contractor S 301	2/half day	0.5 ft ³	----	----	----	Slump test results shall be plotted on control charts which are required for documentation.
		Table 901-3 Proj. Engr.	Accept.	Proj. Engr. S 301	1/half day	0.5 ft ³	----	----	1 day	----
	Unit Weight	901.06(b) Contractor	Quality Control	Contractor S 301	*	1.5ft ³ 0.5 or 1 ft ³ yield bucket	----	----	----	*Unit weight will be run as necessary.
CONCRETE (Structural)	Entrained Air	901.06(b) Contractor	Quality Control	Contractor S 301	2/lot	0.25 ft ³	----	----	----	Air test results shall be plotted on control charts which are required for documentation.
		Table 901-3 Proj. Engr.	Accept.	Proj. Engr. S 301	1/lot	0.25 ft ³	----	----	1 day	When pump placement is used, see "Application of Quality Assurance Specifications for Portland Cement Concrete Pavement and Structures" for details.
		Table 901-3 Dist. Lab	IA	Dist. Lab S 301	SEE INDEPENDENT ASSURANCE PROGRAM S 701.					

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MATERIAL	REF.	PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING TIME	REMARKS	
			METHOD			DISTR.				
CONCRETE (Structural) (Cont'd)	Compressive Strength	Table 901-3 Dist. Lab	Accept.	Proj. Engr. S 301 TR 226	3 cyl/batch 2 batches/lot	1ft ³ 6 in. x 12 in. cylinder mold	-----	-----	30 days	A lot is an identifiable pour not to exceed 200 yd ³ . For specific details see Specification Subsection 805.17.
		Table 901-3 Dist. Lab	IA	Dist. Lab S 301	SEE INDEPENDENCE ASSURANCE PROGRAM S 701.					
	Mix Design	901.06(a) Contractor/ Dist. Lab	Design/ Accept.	*	1/mix class/material source/plant	-----	-----	-----	3 days	*Contractor shall submit to the Dist. Lab Engr. the standard Mix Design form indicating the intended source of all materials and the mix design. Acceptance by the Dist. Lab Engineer is required prior to starting work.
	Mix Temperature	901.06(b) 901.11 Contractor	Quality Control	Contractor S 301	*	-----	-----	-----	-----	*When temperature control is required, testing must be sufficient to prevent exceeding appropriate limits.
	Slump	901.06(b) Contractor	Quality Control	Contractor S 301	2/lot	0.5 ft ³	-----	-----	-----	Slump test results shall be plotted on control charts which are required for documentation.
		Table 901-3 Proj. Engr.	Accept.	Proj. Engr. S 301	1/lot	0.5 ft ³	-----	-----	1 day	When pump placements used, see "Application of Quality Assurance Specifications for Portland Cement Concrete Pavement and Structures" for details.
		Table 901-3 Dist. Lab	IA	Dist. Lab S 301	SEE INDEPENDENCE ASSURANCE PROGRAM S 701.					
	Unit Weight	901.06(b) Contractor	Quality Control	Contractor S 301	*	1.5 ft ³ 0.5 or 1 ft ³ yield bucket	-----	-----	-----	*Unit weight will be run as necessary.

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		TESTED BY		METHOD		CONTAINER	DISTR.			
FLY ASH	Cement Replacement	901.02 1018.15 Mat. Lab	Prelim. Source Approval	Mfr. S 102	1/month	Five - 1 gal friction top cans or acceptable moisture proof	-----	-----	10 weeks	(QPL 50)
		901.02 1018.15 Proj. Engr.	Accept.	-----	1/shipment	-----	CC 1 & 7	50 yd ³	-----	(QPL 50)
		901.02 1018.15 Mat. Lab	Verif.	Proj. Engr. S 102	1/200 tons/source	1 gal friction top can	CC* 1 & 7	50 yd ³	17 days	(QPL 50) *Copy of CC shall be submitted with sample
GROUND GRANULATED BLAST- FURNACE SLAG	Cement Replacement	901.02 1018.27 Mat. Lab	Prelim. Source Approval	Mfr. S 102	1/month	Five - 1 gal friction top cans	CC 1 & 7	-----	17 days	(QPL 70)
		901.08 1018.27 Proj. Engr.	Accept.	-----	1/shipment	-----	CC 1 & 7	50 yd ³	-----	(QPL 70)
		901.02 1018.27 Mat. Lab	Verif.	Proj. Engr. S 102	1/200 tons/source	1 gal friction top can	CC* 1 & 7	300 yd ³	17 days	(QPL 70) *Copy of CC shall be submitted with sample.
WATER		901.02 1018.01 Mat. Lab	Accept.	Proj. Engr. S 301	1/source	1 qt plastic bottle	-----	50 yd ³	11 days	Drinkable water need not be sampled.

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