



Revised: September 1, 2011

ORCA WASHED CONCRETE SAND

The Orca concrete aggregates are produced at the Orca Quarry, Port McNeill, B.C., in a modern and efficient washing and processing plant opened in March 2007 and are distributed via ocean-going ships or barges.

The California Department of Transportation has established that aggregates from this source are innocuous with respect to Alkali Silica Reactivity and has approved them for use in reduced mineral admixture concrete.

Caltrans # 10-Can-OR-1 (www.dot.ca.gov/hq/esc/approved_products_list/pdf/Aggregate_List_04_5_10.doc)

Independent laboratory concrete trial mixes using Orca 1" x #4 gravel and Orca washed concrete sand produced results designated "Low Shrinkage" in accordance with test method ASTM C157 (Modified).

GRADATION – PERCENTAGE PASSING

SIEVE SIZE	ORCA SAND (Typical Values)	SPECIFICATIONS	
		CALTRANS Per: 90-3.01 (2006)	ASTM C 33-03
9.50 mm (3/8")	100	100	100
4.75 mm (#4)	99	95 – 100	95 – 100
2.36 mm (#8)	81	65 – 95	80 – 100
1.18 mm (#16) "A"	68 X = 68	58 – 78 X ± 10	50 – 85
600 µm (#30) "B"	49 X = 46	37 – 55 X ± 9	25 – 60
300 µm (#50) "C"	25 X = 24	18 – 30 X ± 6	5 – 30
150 µm (#100)	6	2 – 12	0 – 10
75 µm (#200)	<2	0 – 8	0 – 3
A – B	19	10 – 40	
B – C	24	10 – 40	
Fineness Modulus	2.65 – 2.85		2.3 – 3.1

PROPERTIES

	TEST	ORCA	SPECIFICATIONS	
			CALTRANS	ASTM
Specific Gravity, bulk SSD	CT 207	2.78		
Absorption	CT 207	0.5		
Dry Rodded Unit Weight, pcf	CT 212	115		
Sand Equivalent	CT 217	85	75 Min.	
Durability	CT 229	80		
Sodium Sulfate Soundness	C-214	<2%	10% Max.	10% Max.
Magnesium Sulfate Soundness	C-88	<1%		15% Max.
Relative Mortar Strength	C-87	110%	95% Min.	
Materials Finer Than No. 200	C-117	<2%	8% Max.	3% Max.
Lightweight Pieces (Coal or Lignite)	C-123	0.3%		0.5% Max.
Clay Lumps and Friable Particles	C-142	<1%		3.0% Max.
Organic Impurities	C-40	Satisfactory		
Alkali Silica Reactivity	C-1260	Innocuous	0.15% Max.	
Alkali Silica Reactivity	C-1293	Innocuous	0.04% Max.	0.04% Max.

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