



Revised: April 12, 2018

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 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 # 13-Can-02

http://www.dot.ca.gov/hq/esc/approved_products_list/pdf/aggregate_for_concrete.pdf

Independent laboratory concrete trial mixes using Orca washed concrete sand and Orca 1" x #4 gravel 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: 90-1.02C(3) (2010)	ASTM C33-03
9.5 mm (3/8")	100		100	100
4.75 mm (#4)	97		95 – 100	95 – 100
2.36 mm (#8)	80		65 – 95	80 – 100
1.18 mm (#16) "A"	65	X = 68	38 – 78 X ± 10	50 - 85
600 mm (#30) "B"	48	X = 46	37 – 55 X ± 9	25 - 60
300 mm (#50) "C"	22	X = 24	18 – 30 X ± 6	5 - 30
150 mm (#100)	6		2 - 12	0 - 10
75 mm (#200)	1.6		0 - 8	0 - 3
A - B	19		10 - 40	
B - C	24		10 - 40	
Fineness Modulus	2.65 - 2.85			2.30 – 3.10

TYPICAL PROPERTIES

	TEST	ORCA	SPECIFICATIONS	
			CALTRANS	ASTM
Specific Gravity, bulk SSD	CT 206	2.82		
Absorption	CT 206	0.9		
Dry Rodded Unit Weight, pcf	CT 212	120		
Sand Equivalent	CT 217	88	75 Min.	
Durability	CT 229	80		
Sodium Sulfate Soundness	C-214	<1%	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	0.0%		0.5% Max.
Clay Lumps and Friable Particles	C-142	0.0%		3.0% Max.
Organic Impurities	C-40	Satisfactory		
Alkali Silica Reactivity	C-1567	Innocuous	0.15% Max.	0.10% Max.
Alkali Silica Reactivity	C-1293	Innocuous	0.04% Max.	0.04% Max.

Special Notes*

1) **This material carries an Environmental Product Declaration**

This declaration has been prepared in accordance with ISO 14025, ISO 21930, and ASTM International's EPD program operator rules.



Index List (<https://www.astm.org/CERTIFICATION/EpdAndPCRs.html>)

Specific EPD (https://www.astm.org/CERTIFICATION/DOCS/344.EPD_Polaris_Materials_final.pdf)

2) **This product is recognized by NSF International**

This product complies with NSF/ANSI 61, 372 and all other applicable requirements



A handwritten signature in black ink, appearing to read 'S Dryden'.

Scott Dryden

President & CEO

Orca Sand & Gravel Ltd.