



### **ORCA WASHED CONCRETE SAND**

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 # 22-CAN-3

## Caltrans Innocuous List Caltrans Aggregate Pregualification

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 (Tested Values)	Specifications					
					ASTM				
				Per: 90-	C33-03				
9.5 mm	(3/8")		100		100				
4.75 mm	(#4)		98		95 - 100				
2.36 mm	(#8)		84		80 - 100				
1.18 mm	(#16)	"A"	70	X = 68	58 - 78	X = ± 10	50 - 85		
600 μm	(#30)	"B"	52	X = 46	37 - 55	$X = \pm 9$	25 - 60		
300 μm	(#50)	"C"	24	X = 24	18 - 30	X = ± 6	5 - 30		
150 μm	(#100)		7		2 - 12		0 - 10		
75 μm	(#200)		2		0 - 8		0 - 3		
		A - B	18		10 - 40				
		B - C	28		10 - 40				
Fineness Modulus			2.65 - 2.85		•	•	2.30 - 3.10		

#### **TYPICAL PROPERTIES**

Testing	Specifications				
Test Name	Orca Value	CTM	ASTM	Caltrans	ASTM
Specific Gravity, SSD	2.85		C128		
Absorption	0.6		C128		
Dry Rodded Unit Weight, pcf	119	212	C29		
Sand Equivalent	86	217	D2419	75 Min.	
Durability	78	229	D3744	60 Min.	
Soundness	1.0%		C88		10% Max
Soundness	2.0%	214		10% Max	
Materials Finer Than No. 200	1.9%		C117		3% Max
Lightweight Pieces - Coal & Lignite	0.0%		C123		0.5% Max
Clay Lumps	0.0%		C142		3.0% Max
Organic Impurities	Satisfactory		C40		Standard 3
Alkali Silica Reactivity	Innocuous		C1567		0.10% Max
Alkali Silica Reactivity	Innocuous		C1293		0.04% Max
Alkali Silica Reactivity	Innocuous		C1260		0.10% 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.

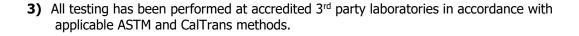
Index List (<a href="https://www.astm.org/CERTIFICATION/EpdAndPCRs.html">https://www.astm.org/CERTIFICATION/EpdAndPCRs.html</a>)

Specific EPD

(https://www.astm.org/CERTIFICATION/DOCS/344.EPD Polaris Materials final.pdf)



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







Scott Dryden

President & CEO Orca Sand & Gravel LP.