

May 1, 2025

## 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 Prequalification](#)

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 Washed Sand (Tested Values)	Specifications			
		CALTRANS			ASTM
		Per Sec 90-1.02C (4)(a)(c)			C33
9.5 mm (3/8")	100	100			100
4.75 mm (#4)	97	95 - 100			95 - 100
2.36 mm (#8)	83	65 - 95			80 - 100
1.18 mm (#16)	68	X = 70	55 - 85	X = +/- 15	50 - 85
600 µm (#30) "A"	48	X = 45	30 - 60	X = +/- 15	25 - 60
300 µm (#50) "B"	25	X = 25	10 - 40	X = +/- 15	5 - 30
150 µm (#100) "C"	7	2 - 12			0 - 10
75 µm (#200)	2	0 - 8			0 - 3
A - B	23	10 - 40			
B - C	18	10 - 40			
Fineness Modulus	2.55 - 2.85				2.30 - 3.10

## TYPICAL PROPERTIES

Testing		Specifications			
Test Name	Orca Value	CTM	ASTM	Caltrans	ASTM
Specific Gravity, SSD	2.83		C128		
Absorption	0.8	207	C128		
Dry Rodded Unit Weight, pcf	120	212	C29		
Sand Equivalent	91	217	D2419	75 Min.	
Durability	86	229	D3744	60 Min.	
Soundness	0.0%		C88		10% Max
Soundness	1.0%	214		10% Max	
Materials Finer Than No. 200	1.6%		C117		3.0% 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 (1-year)	Pass		C1293		0.04% Max
Alkali Silica Reactivity (16-days)	Pass		C1260		0.10% Max
Alkali Silica Reactivity (28-days)	Pass		C1260		0.08% 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 ([ASTM Environmental Product Declarations](#))

Specific EPD ([https://pcr-epd.s3.us-east-2.amazonaws.com/344.EPD\\_Polaris\\_Materials\\_final.pdf](https://pcr-epd.s3.us-east-2.amazonaws.com/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.

**3) The **Washington State Department of Transportation (WSDOT)** has approved this material for use in concrete and HMA applications as indicated in section 9-03 of the 2025 WSDOT Standard Specifications for Road, Bridge and Municipal Construction. ([WSDOT Aggregate Approval](#))**



**4) All testing has been performed at accredited 3<sup>rd</sup> party laboratories in accordance with applicable ASTM and Caltrans test methods.**

A handwritten signature in black ink, appearing to read "Ken Sears".

Kenneth Sears, FACI

Manager, Sales & Technical Innovation  
Orca Aggregates  
A Vulcan Materials Company