



April 1, 2022

ORCA WASHED GRAVEL 1" x No.4 (25.0 x 4.75mm)

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 # 19-Can-01

<https://mets.dot.ca.gov/aml/InnocuousAggList.php>

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).

The 1" x No.4 (ASTM Type 57) gravel is produced through a precise computer-controlled blending system from two separate size fractions, 1" x 1/2" (25.0 x 12.5 mm) and 1/2" x No.4 (12.5 x 4.75 mm).

GRADATION – PERCENTAGE PASSING

Sieve Size	Orca Blended Gravel (Typical Values)	Specifications		
		CALTRANS Per: 90-1.02C (4)(b) 2015		ASTM C33-03 Type 57
37.5 mm (1-1/2")	100	100		100
25.0 mm (1")	100	88 - 100		95 - 100
19.0 mm (3/4")	89	X = 80	65 - 95	X = ± 15
12.5 mm (1/2")	48			25 - 60
9.5 mm (3/8")	32	X = 25	10 - 40	X = ± 15
4.75 mm (#4)	7	0 - 16		0 - 10
2.36 mm (#8)	3	0 - 6		0 - 5

TYPICAL PROPERTIES

Testing		Specifications			
Test Name	Orca Value	CTM	ASTM	Caltrans	ASTM
Specific Gravity, bulk SSD	2.927		C127		
Absorption	0.5	206	C127		
Dry Rodded Unit Weight, pcf	112.7	212			
Cleanness Value	91	227		75 Min.	
Durability	90	229			
Soundness	0.4%		C88		12% Max
Soundness	0.3%	214			10% Max
Los Angeles Abrasion (500 Revs)	10%	211	C131	45% Max	50% Max
Materials Finer Than No. 200	0.8%		C117		1% Max
Lightweight Pieces (Coal or Lignite)	0.0%		C123		0.5% Max
Lightweight Pieces (Chert & Shale)	0.1%		C123		5% Max
Clay Lumps and Friable Particles	0.0%		C142		5% Max
Alkali Silica Reactivity	Innocuous		C1567		0.10% Max
Alkali Silica Reactivity	Innocuous		C1293		0.04% Max
Alkali Silica Reactivity	Innocuous		C1260		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.



3) All testing has been performed at accredited 3rd party laboratories in accordance with applicable ASTM and CalTrans methods.

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

Scott Dryden

President & CEO
Orca Sand & Gravel LP.