



Revised: April 12, 2018

**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 # 13-Can-02

[http://www.dot.ca.gov/hq/esc/approved\\_products\\_list/pdf/aggregate\\_for\\_concrete.pdf](http://www.dot.ca.gov/hq/esc/approved_products_list/pdf/aggregate_for_concrete.pdf)

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 GRAVEL* (Typical Values)	SPECIFICATIONS	
		CALTRANS Per: 90-1.02C(2) (2010)	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")	88 X = 80	65 – 95 X ± 15	
12.5 mm (1/2")	39		25 – 60
9.5 mm (3/8")	23 X = 25	10 – 40 X ± 15	
4.75 mm (#4)	4	0 - 16	0 - 10
2.36 mm (#8)	2	0 - 6	0 - 5

\*Usual Blend Ratio: 60% of 1" x 1/2" (25.0 x 12.5 mm) with 40% of 1/2" x No. 4 (12.5 x 4.75 mm)

**TYPICAL PROPERTIES**

	TEST	ORCA	SPECIFICATIONS	
			CALTRANS	ASTM
Specific Gravity, bulk SSD	CT 206	2.90		
Absorption	CT 206	0.5		
Dry Rodded Unit Weight, pcf	CT 212	115		
Cleanness Value	CT 227	79	75 Min.	
Durability	CT 229	91		
Sodium Sulfate Soundness	CT-214	<1%	10% Max.	12% Max.
Magnesium Sulfate Soundness	C-88	<1%		18% Max.
Los Angeles Abrasion (500 Revs)	C-131	10%	45% Max.	50% Max.
Materials Finer Than No. 200	C-117	<0.5%		1.0% Max.
Lightweight Pieces (Coal or Lignite)	C-123	0.0%		0.5% Max.
Lightweight Pieces (Chert & Shale)	C-123	0.1%		5.0% Max.
Clay Lumps and Friable Particles	C-142	0.0%		5.0% Max.
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](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 'SDryden'.

Scott Dryden  
President & CEO  
Orca Sand & Gravel Ltd.