



**Engtec Consulting Inc.**

12-100 Hanlan Road  
 Vaughan, Ontario, L4L 4V8  
 Telephone: (905) 856-2988  
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# Grain Size Analysis

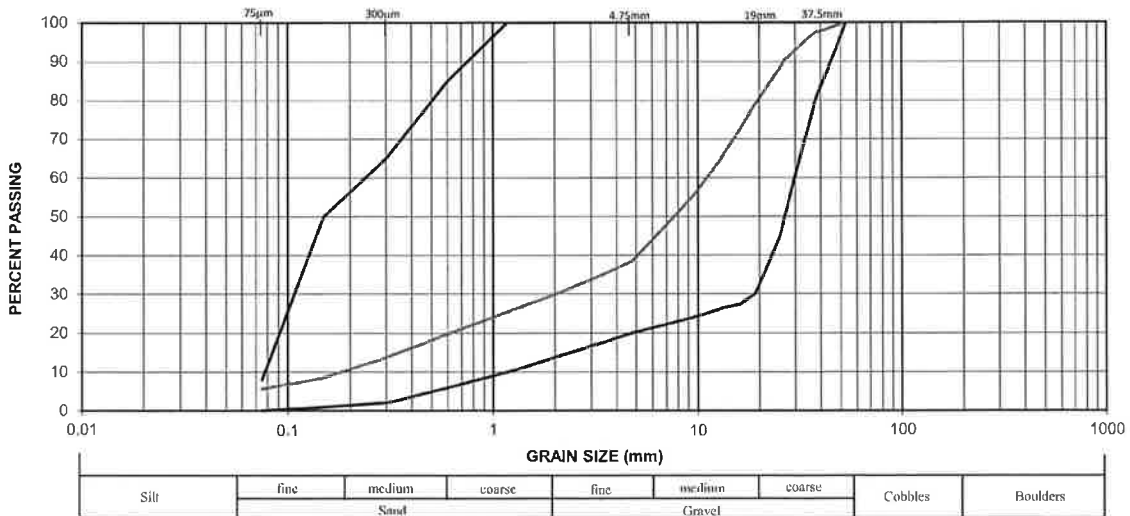
Project No.	ET17-1096A	Material	50mm. Cerca Stone(Recycled OPSS Granular B)
Client:	Strada Aggregates	Sampled By:	Client
Project Description:	Strada Aggregates-Material Testing	Date Sampled:	June 2, 2017
Source	Strada Aggregates - Caledon	Date Tested:	June 8, 2017
Sampled Location:	Pad	Specification:	Granular B - Type I - OPSS 1010
Lab No.	G4153		

Sieve Size (mm)	Percent Passing	Specification		Note
		Minimum	Maximum	
150	100.0	100	100	
106	100.0			
75	100.0			
53	100.0			
37.5	97.3			
26.5	90.3	50	100	
25	88.1			
19	79.0			
16	72.1			
13.2	65.4			
12.5	63.5			
9.5	55.4			
4.75	38.3	20	100	
2.36	31.4			
1.18	25.4	10	100	
0.6	19.9			
0.3	13.8	2	65	
0.15	8.5			
0.075	5.7	0	8	

Physical Properties	
Asphalt Coated Particles (%):	5.6
Crushed Particles (%):	98
Percent Deleterious (%):	0.80

Additional Comments

Note: \* - Out of Specification



Modified M.I.T. Classification

Grain Size Analysis - ASTM D422

Project PM: Salman Bhutta

Reported By: Leo Pilapil



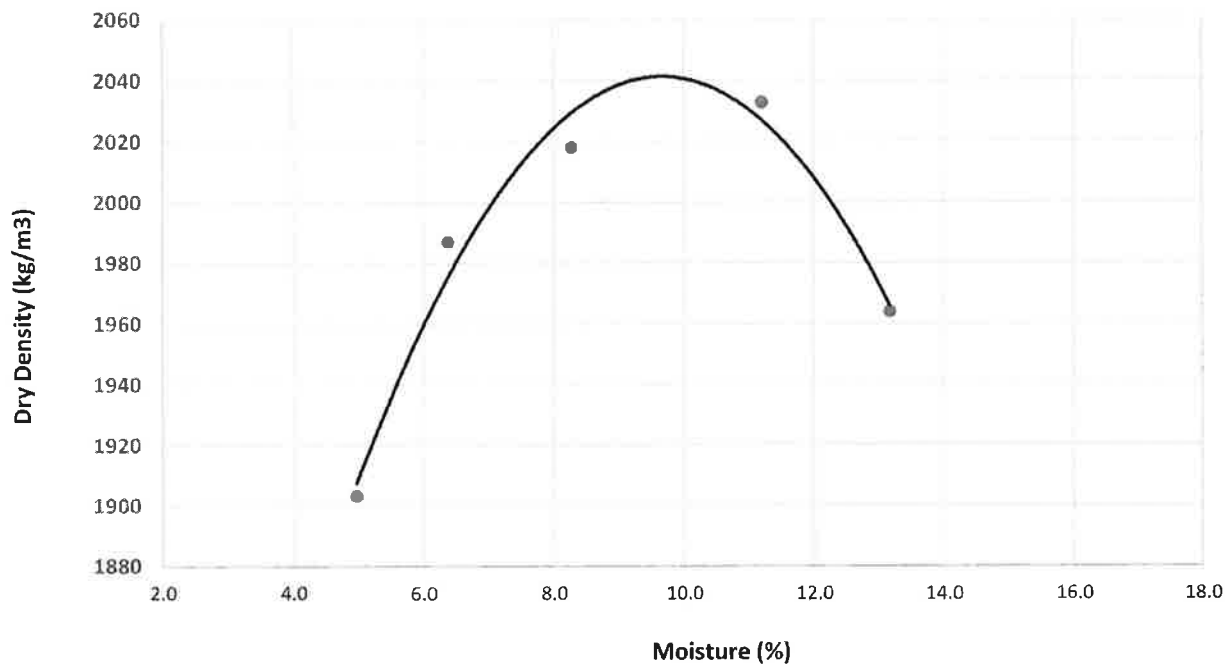
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## Standard Proctor

<b>Project No:</b>	ET17-1096A	<b>Material:</b>	50mm.CERCA Stone- (Recycled OPSS Gran B)
<b>Client:</b>	Strada Aggregates	<b>Sampled By:</b>	Client
<b>Project Description:</b>	Strada Aggregates-Material Testing	<b>Date Sampled:</b>	June 02,2017
<b>Source:</b>	Strada Aggregates-Caledon	<b>Date Tested:</b>	June 8, 2017
<b>Sampled Location:</b>	Strada Aggregates-Caledon	<b>Specification:</b>	LS-706
<b>Lab No:</b>	G4153		

Point No.	1	2	3	4	5
Dry Density (kg/m <sup>3</sup> )	1903	1987	2018	2033	1964
Moisture Content (%)	5.0	6.4	8.3	11.2	13.2



Maximum Dry Density	2040 Kg/m <sup>3</sup>
Optimum Moisture Content	9.8 %

Name of the Operator: Leonardo Pilapil, C.E.T

Project Manager: Salman Bhutta, P.Eng.

## AGGREGATE TEST DATA – GRANULARS

### Physical Properties

Contract No.:		Contractor:		Contract Location:	
Testing Laboratory: <b>Engtec Consulting Inc.</b>			Telephone No.: <b>905-856-2988</b>		Fax No.: <b>905-856-2989</b>
Sampled by (Print Name): <b>Strada Aggregates</b>			Date Sampled: (YY/MM/DD) <b>17 / 06 / 02</b>		<b>Engtec Lab # G4153</b>
Granular Type: <b>50mm. Cerca Stone (Recycled OPSS Granular B)</b>		Lot No.:	Quantity (tonnes):		
Source Name/ Location: <b>Strada Aggregates - Caledon</b>			Aggregate Inventory Number (AIN):		

Laboratory Test and Number	Requirement						Test Result		
	Granular A	Granular B Type I, III	Granular B Type II	Granular M	Granular O	SSM	Reference Material	Sample	Meets Requirement (Y / N)
Freeze-Thaw Loss, % maximum, LS-614	—	—	—	—	15	—	13.5.	N/T	N/A
Micro-Deval Abrasion Loss, Coarse Aggregate, % maximum, LS-618	25	30 (Note 1)	30	25	21	30 (Note 1)	12.7	<b>19.7</b>	<b>Y</b>
Micro-Deval Abrasion Loss, Fine Aggregate, % maximum, LS-619	30	35	35	30	25	—	17.6	<b>8.6</b>	<b>Y</b>
Amount of Contamination, LS-630	Note 2							(Attach Report)	<b>Y</b>
Plastic Fines, LS-631	NP (Non-Plastic)							N/P	<b>Y</b>
Determination of Permeability, <i>k</i> , LS-709	(Note 3)							N/T	N/A

Note 1: The coarse aggregate micro-Deval abrasion loss test requirement shall be waived if the material has more than 80% passing the 4.75 sieve.

Note 2: Granular A, B Type I, B Type III, or M may contain up to 15 percent by mass crushed glass and/or ceramic material. Granular A, O, B Type I, B Type III, and M shall not contain more than 1.0 percent by mass of wood, clay brick and/or gypsum and/or gypsum wall board or plaster. Granular B Type II and SSM shall not contain more than 0.1 percent by mass of wood.

Note 3: For materials north of the French/Mattawa Rivers only, the coefficient of permeability, *k*, shall be greater than  $1.0 \times 10^{-4}$  cm/s or field experience has demonstrated satisfactory performance. Prior data demonstrating compliance with this requirement for *k*, shall be acceptable provided that such testing has been done within five years of the material being used and field performance has continually been shown to be satisfactory.

<b>Issued by (Testing Laboratory Representative):</b>		
Salman Bhutta, Ph.D., P.Eng.		June 13, 2017
<small>PRINT NAME</small>	<small>SIGNATURE</small>	<small>DATE</small>
<b>Received by (Contract Administrator Representative):</b>		
_____	_____	_____
<small>PRINT NAME</small>	<small>SIGNATURE</small>	<small>DATE</small>

Copies to:  Contract Administrator;  Contractor;  Regional Quality Assurance;  Regional Geotechnical;  MERO (Soils and Aggregates)