



# ADVANCED SOIL ENGINEERING

GEOTECHNICAL CONSULTING ENGINEERS  
CONCRETE AND MATERIAL TESTING LABORATORIES

P.O. BOX 1286  
ISABELA, P.R. 00662

TEL: (787) 830-0366  
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December 10, 2020

Carmelo  
P.O. Box 1052  
Sabana Seca, PR 00952-1052

## **SUBJECT : CLASSIFICATION AND MODIFIED PROCTOR TEST RESULTS**

Project : Productora de Agregados de Isabela  
Isabela, Puerto Rico

Sample secured and transported by : Client

Receive date of test sample : December 7, 2020

Date tests were performed : December 8 & 9, 2020

Standard test method used : ASTM D 2487, ASTM D 3282,  
AASHTO M 145, ASTM D 1557

## **TEST RESULTS**

Sample description : Yellowish brown gravelly silty sand

Sample Location : Productora de Agregados de Isabela  
Llanadas Ward,  
Isabela, Puerto Rico

USCS Classification : SM

AASHTO Classification : A-2-4

Optimum Moisture : 8.4 %

Maximum Dry Density : 123.4 pcf

Respectfully submitted,

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NELSON MUÑOZ, P.E.

Enclosure





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## GRAIN SIZE DISTRIBUTION TEST DATA

Date : December 10, 2020  
Client : Carmelo  
Project : Productora de Agregados de Isabela, Isabela Puerto Rico

## SAMPLE DATA

Location of sample : Productora de Agregados de Isabela  
Sample description : Yellowish brown gravelly silty sand  
USCS Class : SM                      Liquid Limit : 20.0  
AASHTO Class : A-2-4                Plasticity Index : 1.0

## NOTES

Remaks : Tested by : Eduardo Rodríguez  
Checked by : Nelson Muñoz, P.E.  
Fig. No. : 1

## MECHANICAL ANALYSIS DATA

		<u>Initial</u>	<u>After wash</u>
Dry sample and tare	=	3,000.00	2,015.83
Tare	=	0.00	0.00
Dry sample weight	=	3,000.00	2,015.83
Minus # 200 from wash	=		32.81 %

Sieve tare method :

	<u>Weight</u>	<u>Percent</u>	<u>Combined</u>	
<u>Sieve No.</u>	<u>Soil retained</u>	<u>Retained</u>	<u>% Retained</u>	<u>Percent finer</u>
2 1/2"	0.00	0.00	0.00	100.00
2"	0.00	0.00	0.00	100.00
1 1/2"	0.00	0.00	0.00	100.00
1"	25.04	0.83	0.83	99.17
3/4"	74.35	2.48	3.31	96.69
1/2"	168.63	5.62	8.93	91.07
3/8"	144.66	4.82	13.76	86.24
No. 4	356.47	11.88	25.64	74.36
No. 10	364.82	12.16	37.80	62.20
No. 40	496.74	16.56	54.36	45.64
No. 200	385.12	12.84	67.19	32.81

## FRACTIONAL COMPONENTS

% + 75 mm    0.00    % Gravel =    25.64    % Sand =    41.56    % Finer =    32.81



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## GRAIN SIZE DISTRIBUTION TEST REPORT



% + 75 mm		% GRAVEL		% SAND		% SILT		% CLAY	
0.00		25.64		41.56		32.81			
LL	PI	D85	D60	D50	D30	D15	D10	Cc	Cu
20.0	1.0	8.84	1.63	0.64					
MATERIAL DESCRIPTION								USCS	AASHTO
Yellowish brown gravelly silty sand								SM	A-2-4

Client : Carmelo

Project : Productora de Agregados de Isabela, Isabela Puerto Rico

Location : Productora de Agregados de Isabela

Remarks : Tested by : Eduardo Rodriguez

Checked by : Nelson Muñoz, P.E.

Figure No. : 1

Date : December 10, 2020



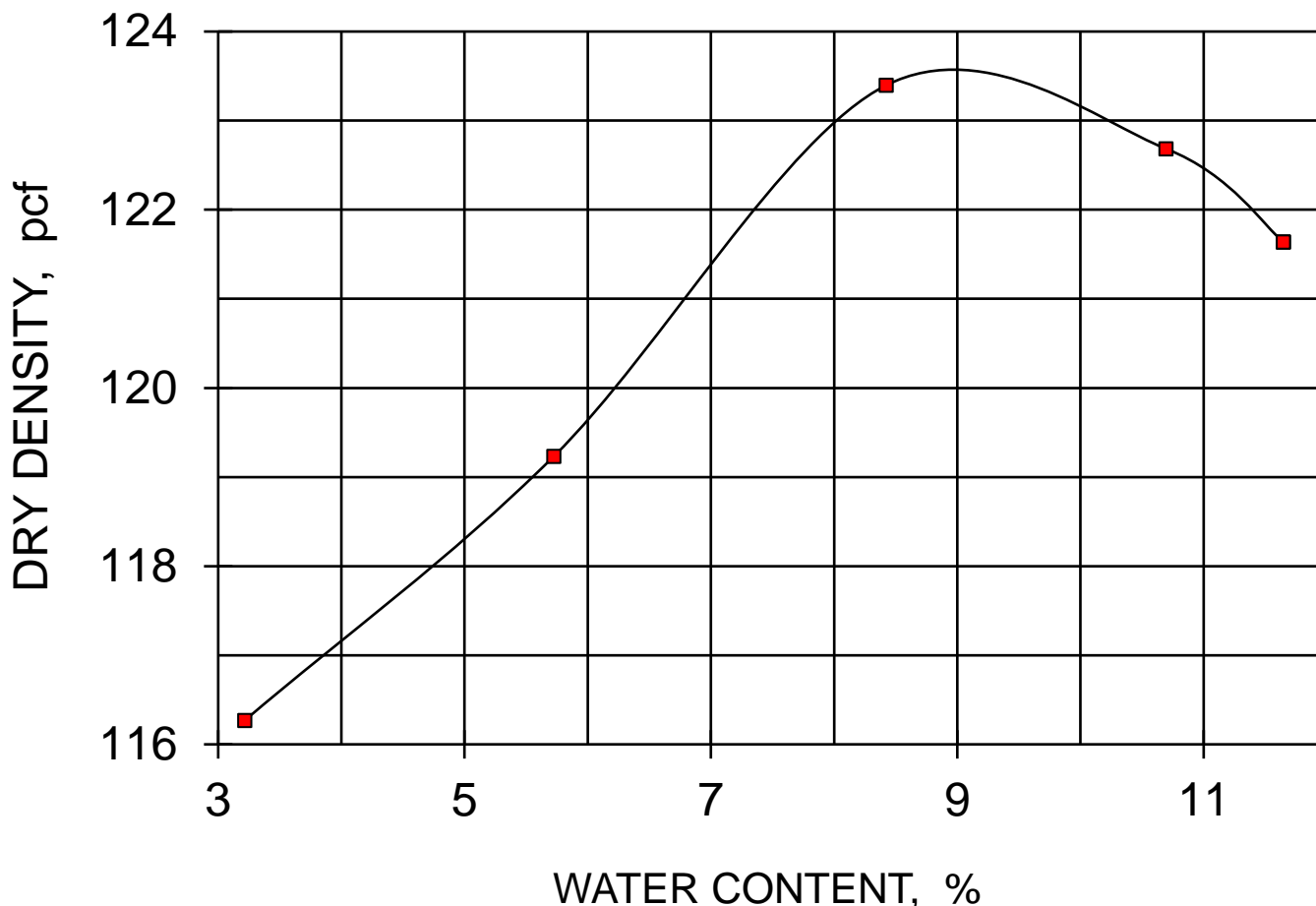
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## PROCTOR TEST REPORT



"Modified" Proctor, ASTM D 1557, Method B

Elev / Depth	Classification		Nat. Moist.	Sp. G.	LL	PI	% < No. 4	% < No. 200
	USCS	AASHTO						
	SM	A-2-4			20.0	1.0	74.4	32.8

TEST RESULTS			MATERIAL DESCRIPTION	
Optimum moisture	=	8.4 %	Yellowish brow gravelly silty sand	
Maximum dry density	=	123.4 pcf		

Client	:	Carmelo
Project	:	Productora de Agregados de Isabela, Isabela, Puerto Rico
Sample location	:	Productora de Agregados de Isabela, Isabela, Puerto Rico

Remarks:	Tested by :	Eduardo Rodríguez	Figure No.:	1
	Checked by:	Nelson Muñoz, P. E.	Date	: December 10, 2020