

# Dartistech

## SPECIFIC GRAVITY TEST RESULTS ( ASTM D-854 , ASTM C-157 )



Project: Sample Project  
Client: Sample Client

Project No: 45453334  
Location: Sample Location

BH: BH1	<b>Gs,avg @ 20 °C: 2.77</b>	Sample description: Sandy clay
Sample name: BH01/2	Tested by: Dartistech	
Sample depth(m): 2.00	Test date: 12/15/2022	
USCS: CL	AASHTO: A-7-6	

Test No.	Mass of pycnometer + water + soil solids @T, (g), Mpws,t	Mass of the pycnometer + water @T, (g), Mpw,t	Mass of dry soil, (g), Ms	Average calibrated mass of dry pycnometer, (g), Mp	Density of water @T, (g/mL), pwt	Density of soil, (g/cm3), ps	K	+4.75.m m sieve, (%),R	-4.75.mm sieve, (%) , P	Mass of dry sample in air, (g),A	Apparent mass of saturated sample in water, (g) ,C	Apparent specific gravity, +4.75-mm sieve, G2@20°C	Apparent specific gravity, - 4.75-mm sieve ,G2@20°C	Test temperature,(°C),T	Specific gravity @T, Gt	Average specific gravity @20°C, Gavg@20 °C
5	507.2	485.00	35.00	-133.23	1.00	2.72	0.9983	0.00	100.00	0.00	0.00	NaN	2.73	27.00	2.73	2.73
6	507.5	485.00	35.00	-133.23	1.00	2.79	0.9983	0.00	100.00	0.00	0.00	0.00	2.80	27.00	2.80	2.80
7	507.4	485.00	35.00	-133.23	1.00	2.77	0.9983	0.00	100.00	0.00	0.00	0.00	2.77	27.00	2.78	2.77

$p_{w,t} = 1.00034038 - (7.77/1000000) \cdot T - (4.95/1000000) \cdot T^2$   
 $K = p_w / 0.9982063$   
 $M_{pw,t} = M_p + (V_p \cdot p_{w,t})$   
 $G_t = (p_s / p_{wt})$

$G_{avg}@20^\circ C = 1 / ((R / (100 \cdot G_1@20^\circ C) + (P / (100 \cdot G_2@20^\circ C))))$   
 $G_2@20^\circ C = K \cdot G_t$   
 $G_1@20^\circ C = A / (A - C)$

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## SPECIFIC GRAVITY TEST RESULTS ( ASTM D-854 , ASTM C-157 )



Project: Sample Project  
Client: Sample Client

Project No: 45453334  
Location: Sample Location

BH: BH1	<b>Gs,avg @ 20 °C: 2.71</b>	Sample description: Sandy clay
Sample name: BH01/3	Tested by: Dartistech	
Sample depth(m): 3.00	Test date: 12/16/2022	
USCS: CL	AASHTO: A-6	

Test No.	Mass of pycnometer + water + soil solids @T, (g), Mpws,t	Mass of the pycnometer + water @T, (g), Mpw,t	Mass of dry soil, (g), Ms	Average calibrated mass of dry pycnometer, (g), Mp	Density of water @T, (g/mL), pwt	Density of soil, (g/cm3), ps	K	+4.75.m m sieve, (%),R	-4.75.mm sieve, (%) , P	Mass of dry sample in air, (g),A	Apparent mass of saturated sample in water, (g) ,C	Apparent specific gravity, +4.75-mm sieve, G2@20°C	Apparent specific gravity, -4.75-mm sieve ,G2@20°C	Test temperature,(°C),T	Specific gravity @T, Gt	Average specific gravity @20°C, Gavg@20°C
1	508.3	486.00	35.00	-134.23	1.00	2.75	0.9983	0.00	100.00	0.00	0.00	0.00	2.75	27.00	2.76	2.75
2	507.5	486.00	35.00	-134.23	1.00	2.58	0.9983	0.00	100.00	0.00	0.00	0.00	2.59	27.00	2.59	2.59
3	508.5	486.00	35.00	-134.23	1.00	2.79	0.9983	0.00	100.00	0.00	0.00	0.00	2.80	27.00	2.80	2.80

$p_{w,t} = 1.00034038 - (7.77/1000000) \cdot T - (4.95/1000000) \cdot T^2$   
 $K = p_w / 0.9982063$   
 $M_{pw,t} = M_p + (V_p \cdot p_{w,t})$   
 $G_t = (p_s / p_{wt})$

$G_{avg@20^\circ C} = 1 / ((R / (100 \cdot G_1@20^\circ C)) + (P / (100 \cdot G_2@20^\circ C)))$   
 $G_2@20^\circ C = K \cdot G_t$   
 $G_1@20^\circ C = A / (A - C)$