

# Transportation Engineering Laboratory (TEL)

Department of Civil Engineering (CED)

UNIVERSITY OF ENGINEERING & TECHNOLOGY (UET)

LAHORE – 54890 (PAKISTAN)



Phone: 092-42-9929202 Cable: UNIVENGTECH Fax: 092-42-9922566

Ref:-----

Date:-----

Mr. Abid Ullah  
Resident Engineer,  
PRSWSS Project – North.

Subject: **Testing of Fine Aggregate**  
Procurement of Civil Works, North, Tehsil Kallar Kahar  
(Villages: Jhamra and Vasnal)  
Contract Package: KLK-04

Dear Sir,

It is with reference to your letter No. TCI/PRSWSSP-NORTH/PHASE-V/KLK-04/002 dated 25-05-2024. Please find below the results for the tests conducted on the fine aggregate sample provided to this laboratory on 03-07-2024 through your representative.

## 1. Sieve Analysis (ASTM C-136)

Sieve Size	½"	3/8"	#4	#8	#16	#30	#50	#100	#200
%age Passing	100	99.15	96.40	90.73	79.69	63.80	26.95	5.53	1.12

## 2. Fineness Modulus (ASTM C-142)

Fineness Modulus (%)	2.38
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## 3. Specific Gravity & Water Absorption (ASTM C-128)

Specific Gravity (OD)	2.67
Specific Gravity (SSD)	2.69
Apparent Specific Gravity	2.72
Water Absorption (%)	0.74

## 4. Sodium Sulphate Soundness (ASTM C-88)

Sieve Size	Weight of Fraction Before Test (gm)	Weight of Fraction After Test (gm)	Percentage Passing Designated Sieve After Test	Weighted Percentage Loss
#4 to #8	100	98.0	2.00	0.11
#8 to #16	100	97.9	2.10	0.23
#16 to #30	100	97.8	2.20	0.35
#30 to #50	100	98.0	2.00	0.74
<b>Total = 1.43%</b>				

If you have further query, please do not hesitate to contact the undersigned.

Best Regards,

Director  
Transportation Engineering Laboratory

**Note:**

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TEL-UET

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Ref.:-----

Date:-----

Mr. Abid Ullah  
Resident Engineer,  
PRSWSS Project – North.

Subject: **Testing of Coarse Aggregates**  
Procurement of Civil Works, North, Tehsil Kallar Kahar  
(Villages: Jhamra and Vasnal)  
Contract Package: KLK-04

Dear Sir,

It is with reference to your letter No. TCI/PRSWSSP-NORTH/PHASE-V/KLK-04/001 dated 25-05-2024. Please find below the results for the tests conducted on the coarse aggregate samples provided to this laboratory on 03-07-2024 through your representative.

## **Sample # 1**

### 1. Sieve Analysis (ASTM C-136)

Sieve Size	1"	3/4"	1/2"	3/8"	#4
%age Passing	100	93.19	1.02	0	0

### 2. Specific Gravity & Water Absorption (ASTM C-127)

Specific Gravity (oven dried condition)	2.83
Specific Gravity (saturated surface dry condition)	2.84
Apparent Specific Gravity	2.86
Water Absorption (%)	0.39

### 3. Sodium Sulphate Soundness (ASTM C-88)

Sieve Size	Weight of Fraction Before Test (gm)	Weight of Fraction After Test (gm)	Percentage Passing Designated Sieve After Test	Weighted Percentage Loss
1/2" + 3/8"	1000.9	989.8	1.11	1.03
	<b>Total = 1.03%</b>			

4. Los Angeles Abrasion Value Test (ASTM C-131/535)

Grading Used	Los Angeles Abrasion Value (%)
B	16.49

5. Unit Weight (*Loose & Rodded*); (ASTM C 29/C 29M)

Loose Unit Weight (g/cm <sup>3</sup> )	1.42
Rodded Unit Weight (g/cm <sup>3</sup> )	1.55

**Sample # 2**

1. Sieve Analysis (ASTM C-136)

Sieve Size	¾"	½"	3/8"	#4
%age Passing	100	53.13	14.61	1.77

2. Specific Gravity & Water Absorption (ASTM C-127)

Specific Gravity (oven dried condition)	2.83
Specific Gravity (saturated surface dry condition)	2.84
Apparent Specific Gravity	2.87
Water Absorption (%)	0.47

3. Sodium Sulphate Soundness (ASTM C-88)

Sieve Size	Weight of Fraction Before Test (gm)	Weight of Fraction After Test (gm)	Percentage Passing Designated Sieve After Test	Weighted Percentage Loss
1/2" + 3/8"	1006.3	994.3	1.19	1.02
<b>Total = 1.02%</b>				

4. Los Angeles Abrasion Value Test (ASTM C-131/535)

Grading Used	Los Angeles Abrasion Value (%)
B	16.89

5. Unit Weight (*Loose & Rodded*); (ASTM C 29/C 29M)

Loose Unit Weight (g/cm <sup>3</sup> )	1.48
Rodded Unit Weight (g/cm <sup>3</sup> )	1.63

## Sample # 3

### 1. Sieve Analysis (ASTM C-136)

Sieve Size	3/8"	#4
%age Passing	100	60.86

### 2. Specific Gravity & Water Absorption (ASTM C-127)

Specific Gravity (oven dried condition)	2.83
Specific Gravity (saturated surface dry condition)	2.85
Apparent Specific Gravity	2.88
Water Absorption (%)	0.61

### 3. Sodium Sulphate Soundness (ASTM C-88)

Sieve Size	Weight of Fraction Before Test (gm)	Weight of Fraction After Test (gm)	Percentage Passing Designated Sieve After Test	Weighted Percentage Loss
#4	300.9	288.8	4.02	1.57
<b>Total = 1.57%</b>				

### 4. Los Angeles Abrasion Value Test (ASTM C-131/535)

Grading Used	Los Angeles Abrasion Value (%)
C	17.74

### 5. Unit Weight (*Loose & Rodded*); (ASTM C 29/C 29M)

Loose Unit Weight (g/cm <sup>3</sup> )	1.55
Rodded Unit Weight (g/cm <sup>3</sup> )	1.69

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Best Regards,

Director  
Transportation Engineering Laboratory

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Ref.:-----

Date:-----

The Team Leader/Project Manager,  
Sunder Green Special Economic Zone,  
Lahore.

Subject: **Testing of Aggregate**

Testing for Improved Subgrade – Road Development Works  
Sunder Special Economic Zone, Sunder

Dear Sir,

It is with reference to your letter No. EXPT/SEZ-014 dated 10-07-2024.

Please find below the results of tests conducted on the aggregate sample provided to this laboratory on 19-07-2024 through your representative.

## 1. Sieve Analysis (ASTM C-136)

Sieve Size	2"	1 1/2"	1"	3/4"	1/2"	3/8"	#4
%age Passing	100	97.22	80.79	62.10	47.20	35.42	25.82

## 2. Specific Gravity & Water Absorption (ASTM C-127)

Specific Gravity (oven dried condition)	2.67
Specific Gravity (saturated surface dry condition)	2.70
Apparent Specific Gravity	2.74
Water Absorption (%)	0.95

## 3. Los Angeles Abrasion Value Test (ASTM C-131/535)

Grading Used	Los Angeles Abrasion Value (%)
A	29.20

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Best Regards,

Director  
Transportation Engineering Laboratory

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