

# Transportation Engineering Laboratory (TEL)

Department of Civil Engineering (CED)

UNIVERSITY OF ENGINEERING & TECHNOLOGY (UET)

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Ref.:-----

Date:-----

Mr. Muhammad Saleem  
Material Engineer NESPAK,  
ADP WASA,  
Lahore.

Subject: **Testing of Materials (Coarse and Fine Aggregates)**  
Annual Development Program-WASA (ADP 2024-25)  
Rainwater Management – Drainage Arrangement for Sore Point at Tika Chowk,  
Johar Town, Lahore

Dear Sir,

It is with reference to your letter No. NESPAK/WASA/ADP/UGWT/TC/ME/14 dated 15-05-2025. Please find below the results for the tests conducted on the aggregate samples provided to this laboratory on 29-05-2025 through your representative.

## Coarse Aggregates

### Sample No. 1

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

Sieve Size	1"	3/4"	1/2"	3/8"	#4
%age Passing	100	95.67	5.86	0.19	0

### Sample No. 2

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

Sieve Size	3/4"	1/2"	3/8"	#4
%age Passing	100	85.38	28.47	0.23

## Mixed Sample

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

Specific Gravity (oven dried condition)	2.82
Specific Gravity (saturated surface dry condition)	2.83
Apparent Specific Gravity	2.84
Water Absorption (%)	0.28

## 2. 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"	1002.4	992.3	1.01	0.84
	<b>Total = 0.84%</b>			

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

Grading Used	Los Angeles Abrasion Value (%)
B	15.85

## 4. Flakiness & Elongation Index (BS 812: Part 105)

Sieve Size		Individual Flakiness Index (%)	Weighted Flakiness Index (%)	Individual Elongation Index (%)	Weighted Elongation Index (%)
Passing (in.)	Retained (in.)				
1	3/4	0	0	0	0
3/4	1/2	3.49	1.81	7.76	4.03
1/2	3/8	9.63	3.03	11.59	3.65
3/8	1/4	11.39	1.63	14.30	2.05
<b>Flakiness Index = 6.47%</b>			<b>Elongation Index = 9.73%</b>		

## Fine Aggregate

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

Sieve Size	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
<b>%age Passing</b>	100	98.22	95.23	90.48	79.85	63.67	26.09	5.22	1.06

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

Fineness Modulus (%)	2.41
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### 3. Specific Gravity & Water Absorption (ASTM C-128)

Specific Gravity (OD)	2.66
Specific Gravity (SSD)	2.69
Apparent Specific Gravity	2.72
Water Absorption (%)	0.85

### 4. Organic Impurities (ASTM C-40)

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

Best Regards,

Director  
Transportation Engineering Laboratory

**Note:**

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