

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. Ishtiaq Ahmad
Chief Resident Engineer,
NESPAK,
ADP (2024-25), SEW, Faisalabad.

Subject: **Testing of Coarse Aggregate (Source: Sargodha)**
Water & Sanitation Agency (F.D.A), Faisalabad
Design & Resident Supervision of the Project Development Schemes (ADP 2024-2025) to
Cater Sewerage Issues of Faisalabad City (Job # P-43219)

Dear Sir,

It is with reference to your letter No. 43219/SEW (2024-2025)/CRE/FSD/13 dated 02-06-2025.
Please find below the results for the tests conducted on the aggregate samples provided to this
laboratory through your representative.

Sample No. 1

Sieve Analysis (ASTM C-136)

Sieve Size	¾"	½"	3/8"	#4
%age Passing	100	60.93	26.05	0.68

Sample No. 2

Sieve Analysis (ASTM C-136)

Sieve Size	3/8"	#4
%age Passing	100	48.05

Mixed Sample

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

Specific Gravity (oven dried condition)	2.79
Specific Gravity (saturated surface dry condition)	2.81
Apparent Specific Gravity	2.84
Water Absorption (%)	0.64

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"	1001.4	988.1	1.33	0.68
	Total = 0.68%			

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

Grading Used	Los Angeles Abrasion Value (%)
B	20.49

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.)				
3/4	1/2	114.9	5.21	21.3	6.86
1/2	3/8	98.3	4.46	17.38	5.00
3/8	1/4	72.4	3.28	18.62	3.90
Flakiness Index = 12.95%			Elongation Index = 15.76%		

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

Loose Unit Weight (g/cm ³)	1.41
Rodded Unit Weight (g/cm ³)	1.52

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

Best Regards,

Director
Transportation Engineering Laboratory

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NESPAK,
ADP (2024-25), SEW, Faisalabad.

Subject: **Testing of Coarse Aggregate (Source: Sargodha)**
Water & Sanitation Agency (F.D.A), Faisalabad
Design & Resident Supervision of the Project Development Schemes (ADP 2024-2025) to
Cater Sewerage Issues of Faisalabad City (Job # P-43219)

Dear Sir,

It is with reference to your letter No. 43219/SEW (2024-2025)/CRE/FSD/14 dated 02-06-2025.
Please find below the results for the tests conducted on the aggregate samples provided to this
laboratory through your representative.

Sample No. 1

Sieve Analysis (ASTM C-136)

Sieve Size	3/4"	1/2"	3/8"	#4
%age Passing	100	60.97	22.45	0.49

Sample No. 2

Sieve Analysis (ASTM C-136)

Sieve Size	3/8"	#4
%age Passing	100	50.32

Mixed Sample

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

Specific Gravity (oven dried condition)	2.78
Specific Gravity (saturated surface dry condition)	2.80
Apparent Specific Gravity	2.83
Water Absorption (%)	0.67

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"	1002.2	988.4	1.38	0.75
	Total = 0.75%			

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

Grading Used	Los Angeles Abrasion Value (%)
B	22.72

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.)				
3/4	1/2	14.68	5.76	19.51	7.65
1/2	3/8	14.16	5.48	16.13	6.24
3/8	1/4	16.20	3.57	19.71	4.35
Flakiness Index = 14.81%			Elongation Index = 18.24%		

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

Loose Unit Weight (g/cm ³)	1.50
Rodded Unit Weight (g/cm ³)	1.62

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

Best Regards,

Director
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Ref.:-----

Date:-----

Engr. Riaz Ahmad
Resident Engineer (A&D),
NSICTR Project,
Metroplan-Asian Consulting Engineers,
Lahore.

Subject: **Testing of Sub-base Material (Sargodha)**
Establishment of Nawaz Sharif Institute of Cancer Treatment and Research, Lahore
(Phase-1, Package A & D)

Dear Sir,

It is with reference to your letter No. Metroplan-Asian (JV), NSICTR-RE(A&D)/199 dated 16-06-2025. Please find below the results for the tests conducted on the coarse aggregate sample (sub-base) provided to this laboratory 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	96.79	78.56	62.52	51.30	44.08	38.60

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

Grading Used	Los Angeles Abrasion Value (%)
A	24.84

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

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Ref.:-----

Date:-----

Mr. Awais Akram
Resident Engineer,
NESPAK,
Lahore.

Subject: **Testing of Sub-base Material (Sargodha)**
Sustainable Development of Gulberg Scheme, Hali Road, Lahore

Dear Sir,

It is with reference to your letter No. 3772/103/LDA-HR/AA/04/06 dated 30-05-2025.
Please find below the results for the tests conducted on the coarse aggregate sample (sub-base) provided to this laboratory on 18-06-2025 through your representative.

1. Sieve Analysis (ASTM C-136)

Sieve Size	1 1/2"	1"	3/4"	1/2"	3/8"	#4
%age Passing	100	79.28	60.08	44.43	34.64	27.41

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

Grading Used	Los Angeles Abrasion Value (%)
A	26.50

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Ref.:-----

Date:-----

Mr. M. Armughan Khan
Deputy Director (Q.C.D),
WASA,
Lahore.

Subject: **Testing of Sub-base**
Improvement of Water Supply and Sewerage System, UC-92 Samanabad Zone,
Lahore (M/s Malik Siraj Construction Company)
Tender No. XEN (O&M-III) IT/2024-2025/47

Dear Sir,

It is with reference to your letter No. QCD/2731 dated 17-06-2025.

Please find below the results for the tests conducted on the coarse aggregate sample (sub-base) provided to this laboratory through your representative.

1. Sieve Analysis (ASTM C-136)

Sieve Size	1 1/2"	1"	3/4"	1/2"	3/8"	#4
%age Passing	100	81.76	60.94	45.16	30.56	20.82

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

Grading Used	Los Angeles Abrasion Value (%)
A	27.78

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

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Director
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Ref.:-----

Date:-----

Mr. Muhammad Zain-Ul-Abadeen
Resident Engineer,
NESPAK,
Lahore.

Subject: **Testing of Fine Aggregate**
Tender No. XEN(O&M-I) NT/2024-25/79 – Sewerage System in UC-228,
Nishter Zone, Lahore

Dear Sir,

It is with reference to your letter No. 43101/MZA/01/1023 dated 03-01-2025.
Please find below the results for the tests conducted on the fine aggregate sample provided to this laboratory on 26-06-2025 through your representative.

1. Sieve Analysis (ASTM C-136)

Sieve Size	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
%age Passing	100	99.44	96.89	92.75	81.33	65.33	27.56	5.62	1.23

2. Fineness Modulus (ASTM C-142)

Fineness Modulus (%)	2.31
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If you have further query, please do not hesitate to contact the undersigned.

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Ref.-----

Date:-----

Mr. Sohaib Awais
Resident Engineer,
NESPAK.

Subject: **Testing of Water Bound Macadam Material**
Infrastructure Development at Chahar Bagh Phase-II

Dear Sir,

It is with reference to your letter No. 4841/13/SA/05/44 dated 20-06-2025.
Please find below the results for the tests conducted on the WBM sample provided to this laboratory on 30-06-2025 through your representative.

1. Sieve Analysis (ASTM C-136)

Sieve Size	3"	2 1/2"	2"	1 1/2"	1"	3/4"	1/2"	3/8"	#4
%age Passing	100	81.61	14.58	0.05	0	0	0	0	0

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

Specific Gravity (oven dried condition)	2.76
Specific Gravity (saturated surface dry condition)	2.77
Apparent Specific Gravity	2.79
Water Absorption (%)	0.40

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
2" + 1 1/2"	5009.3	4990.3	0.38	0.31
	Total = 0.31%			

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

Grading Used	Los Angeles Abrasion Value (%)
1	18.63

5. 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.)				
3	2 ½	0	0	0	0
2 ½	2	6.03	4.04	6.96	4.67
2	1 ½	6.50	0.94	8.39	1.22
1 ½	1	0	0	0	0
Flakiness Index = 4.98%			Elongation Index = 5.89%		

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

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Ref.:-----

Date:-----

Mr. Muhammad Sarfaraz Khan
General Manager (Plant),
JK Sugar Mills (Pvt.) Limited.

Subject: **Testing of Bitumen (Penetration Test)**
(National Oil Refinery)

Dear Sir,

It is with reference to your letter No. JKSM/Admin/423 dated 19-08-2025.
Please find below the result of test conducted on the bitumen sample provided to this laboratory through your representative.

Laboratory Test	Result
Penetration (ASTM D-5)	88 Units

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

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