

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. Imran Ahmed Khan
Project Coordinator,
NESPAK, Lahore.

Subject: **Testing of Backfill Material**
Punjab Workers Welfare Board (PWVB), Lahore
Construction of Labour Colony at Quaid-e-Azam Apparel Park,
District Sheikhpura

Dear Sir,

It is with reference to your letter No. 3900/311/RH/01/23269 dated 28-11-2024.
Please find below the result for the test conducted on the aggregate sample provided to this
laboratory on 02-12-2024 through your representative.

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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Ref.:-----

Date:-----

Mr. Shahid Hussain
Incharge QC Civil,
Elite Engineering Private Ltd., Lahore.

Subject: **Testing of Coarse Aggregate (Sargodha)**

Project: Rehabilitation & Additional Works at (I) Govt. College of Technology, Allama Iqbal Town, Lahore (II) Vocational Training Institute, Lahore (III) Govt. College of Technology (Women) Lahore (IV) Govt. Technical Training Institute Sheikhpura

Dear Sir,

It is with reference to your letter No. EEPL/UET/10400/29-24 dated 02-12-2024.

Please find below the results for the tests conducted on the aggregate sample provided to this laboratory through your representative.

1. 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	989.9	1.25	0.94
Total = 0.94%				

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

Grading Used	Los Angeles Abrasion Value (%)
B	16.77

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

Best Regards,

Director
Transportation Engineering Laboratory

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

Ref:-----

Date:-----

Mr. Muhammad Ijaz Jaspal
Resident Engineer,
NESPAK.

Subject: **Testing of Base Course (WBM)**
Restoration/Improvement of Road from Rangpur to Noorpur Thal Road,
Length = 18.50 km in District Khushab

Dear Sir,

It is with reference to your letter No. RE/4834/MIJ/24/34 dated 18-11-2024.
Please find below the results for the tests conducted on the aggregate sample provided to this laboratory on 12-12-2024 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	77.24	15.75	0.52	0	0	0	0	0

2. 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	2.86
Water Absorption (%)	0.55

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"	5010.3	4993.8	0.33	0.25
	Total = 0.25%			

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

Grading Used	Los Angeles Abrasion Value (%)
1	17.20

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	4.77	1.09	0	0
2 ½	2	6.49	3.99	7.98	4.91
2	1 ½	3.43	0.52	8.72	1.33
1 ½	1	0	0	17.41	0.09
Flakiness Index = 5.60%			Elongation Index = 6.33%		

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

Best Regards,

Director
Transportation Engineering Laboratory

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

Ref.:-----

Date:-----

Mr. Arshad Hussain
Resident Engineer,
AsCE-RHC JV.

Subject: **Testing of Coarse and Fine Aggregates**

Solarization of Water Works and Disposal Stations in Bahawalpur City
Detailed Design of Infrastructure Sub-Projects, Sectoral Planning & Resident
Supervision in 16 Cities of Punjab (Package No. 4)

Dear Sir,

It is with reference to your letter No. AsCE-RHC JV/PMDFC/PKG-04/RE/69 dated 24-08-2024.
Please find below the results for the tests conducted on the aggregate samples provided to this
laboratory on 24-12-2024 through your representative.

Coarse Aggregate

1. Sieve Analysis (ASTM C-136)

Sieve Size	¾"	½"	3/8"	#4
%age Passing	100	37.14	6.25	0.30

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

Specific Gravity (oven dried condition)	2.85
Specific Gravity (saturated surface dry condition)	2.86
Apparent Specific Gravity	2.89
Water Absorption (%)	0.51

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"	1002.4	992.3	1.01	0.95
	Total = 0.95%			

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

Grading Used	Los Angeles Abrasion Value (%)
B	16.50

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.)				
3/4	1/2	6.73	4.24	7.48	4.71
1/2	3/8	7.81	2.42	9.51	2.95
3/8	1/4	10.04	0.60	14.16	0.85
Flakiness Index = 7.26%				Elongation Index = 8.51%	

Fine Aggregate

1. Sieve Analysis (ASTM C-136)

Sieve Size	3/8"	#4	#8	#16	#30	#50	#100	#200
%age Passing	100	99.85	99.48	98.67	97.62	81.16	11.76	1.78

2. Fineness Modulus (ASTM C-142)

Fineness Modulus (%)	1.12
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3. Specific Gravity & Water Absorption (ASTM C-128)

Specific Gravity (OD)	2.65
Specific Gravity (SSD)	2.67
Apparent Specific Gravity	2.71
Water Absorption (%)	0.86

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

Best Regards,

Director
Transportation Engineering Laboratory

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Date:-----

Mr. Arshad Hussain
Resident Engineer,
AsCE-RHC JV.

Subject: **Testing of Coarse and Fine Aggregates**

Solarization of Tube Well and Disposal Stations in Vehari City
Detailed Design of Infrastructure Sub-Projects, Sectoral Planning & Resident
Supervision in 16 Cities of Punjab (Package No. 4)

Dear Sir,

It is with reference to your letter No. AsCE-RHC JV/PMDFC/PKG-04/RE/82 dated 28-10-2024.
Please find below the results for the tests conducted on the aggregate samples provided to this
laboratory on 24-12-2024 through your representative.

Coarse Aggregate

1. Sieve Analysis (ASTM C-136)

Sieve Size	¾"	½"	3/8"	#4
%age Passing	100	35.76	4.76	0.12

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

Specific Gravity (oven dried condition)	2.85
Specific Gravity (saturated surface dry condition)	2.87
Apparent Specific Gravity	2.89
Water Absorption (%)	0.54

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"	1004.4	994.2	1.02	0.97
	Total = 0.97%			

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

Grading Used	Los Angeles Abrasion Value (%)
B	16.24

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.)				
3/4	1/2	8.07	5.19	8.74	5.62
1/2	3/8	7.95	2.47	8.95	2.78
3/8	1/4	5.32	0.25	11.63	0.54
Flakiness Index = 7.91%				Elongation Index = 8.94%	

Fine Aggregate

1. Sieve Analysis (ASTM C-136)

Sieve Size	3/8"	#4	#8	#16	#30	#50	#100	#200
%age Passing	100	99.89	99.44	98.53	97.37	80.91	11.33	1.92

2. Fineness Modulus (ASTM C-142)

Fineness Modulus (%)	1.13
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3. Specific Gravity & Water Absorption (ASTM C-128)

Specific Gravity (OD)	2.65
Specific Gravity (SSD)	2.67
Apparent Specific Gravity	2.70
Water Absorption (%)	0.75

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

Best Regards,

Director
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