

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:-----

The Resident Engineer,
ESS-I-AAR Consultants,
Sargodha.

Subject: **Testing of Water Bound Macadam Material**
Rehabilitation/Improvement of Road from Bhera Malikwal Shahpur Sahiwal Road
Section Jhawarian to Shahpur, Length = 18.50 km in District Sargodha

Dear Sir,

It is with reference to your letter No. 593 dated 14-04-2025.

Please find below the results for the tests conducted on the aggregate sample provided to this laboratory on 01-07-2025 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	89.41	18.01	0.12	0	0	0	0	0

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
2" + 1 1/2"	5004.3	4981.3	0.46	0.41
Total = 0.41%				

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

Grading Used	Los Angeles Abrasion Value (%)
1	20.84

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	2 ½	0	0	8.99	0.95
2 ½	2	6.77	4.83	7.21	5.15
2	1 ½	3.74	0.67	7.95	1.42
1 ½	1	0	0	98.59	0.12
Flakiness Index = 5.50%			Elongation Index = 7.64%		

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

Best Regards,

Director
Transportation Engineering Laboratory

Note:

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2. Sampling has not been performed by Transportation Engineering Laboratory (TEL), UET and TEL-UET does not accept the responsibility that the sample(s) supplied is/are truly representative sample(s) of any batch or stock or entire project.
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4. The party shall assume full responsibility for the ethical use of the results in the test reports and the TEL-UET shall be held free from any and all claims which may result from the use of such data by client or others.
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Date:-----

Mr. Muhammad Tahir Saleem
Resident Engineer Lot-4 Tranche-II,
Indus Highway N-55, Rajanpur.

Subject: **Testing of Bitumen – AASHTO Standard (M-20)**
Project: Loan # 4099 – PAK: CAREC Tranche – II (Shikarpur to Rajanpur) Lot-3 & Lot-4:
Kashmore to Rajanpur Section (km 164+000 to km 213+500 to km 265+350)

Dear Sir,

It is with reference to your letter No. CAREC/T-2B/Lot-4/R.E/324 dated 02-07-2025.
Please find below the results of tests conducted on the bitumen sample provided to this
laboratory through your representative.

Sr.#	Laboratory Tests	Results
1	Penetration (ASTM D-5)	76 Units
2	Penetration of Residue (ASTM D-5)	66 Units
3	Ductility (ASTM D-113)	Above 100 cm
4	Ductility of Residue (ASTM D-113)	Above 100 cm
5	Solubility (ASTM D-2042)	99.80%
6	Specific Gravity Value (ASTM D-70)	1.021
7	Thin Film Oven Test Value (ASTM D-1754)	0.248%
8	Loss on Heating Value (ASTM D-6)	0.238%

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Ref.:-----

Date:-----

Mr. Tanvir Naqvi
Resident Engineer,
NESPAK.

Subject: **Testing of Sub-base Material**
Scheme # 18, Rehabilitation/Improvement/Patch Work on Link Road UC-128, 129,
130, 161, 163, Shalamar Zone Phase-II

Dear Sir,

It is with reference to your letter No. 4084/103/LDP/SMZ(S-18)/04/43 dated 19-06-2025.
Please find below the results for the test conducted on the aggregate sample provided to this
laboratory on 06-08-2025 through your representative.

Sieve Analysis (ASTM C-136)

Sieve Size	1 1/2"	1"	3/4"	1/2"	3/8"	#4
%age Passing	100	76.64	51.72	30.66	20.91	13.44

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Ref.:-----

Date:-----

The Resident Engineer,
Metroplan-Asian JV,
NSICTR, Phase-1, Pkg (B&C).

Subject: **Testing of Base Course Material (Sargodha Source)**
Project: Establishment of Nawaz Sharif Institute of Cancer Treatment & Research, Lahore
Phase-1 (Package-C)

Dear Sir,

It is with reference to your letter No. Metroplan-Asian(JV)/NSICTR/RE-B&C/C/431 dated 18-08-2025. Please find below the result for the test conducted on the aggregate sample provided to this laboratory through your representative.

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

Grading Used	Los Angeles Abrasion Value (%)
1	20.22

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

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