

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:-----

Major Ghulam Abbas
ADH (QA) Centre,
GHQ, AG' Br (Housing Dte),
Askari-XI, Lahore.

Subject: **Bitumen Testing**

Dear Sir,

It is with reference to your letter No. 24501/HD/Lab dated 03-07-2024.
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)	05 Units
2	Softening Point (ASTM D-36)	92.0°C
3	Fire Point (ASTM D-92)	204°C

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

Best Regards,

Director
Transportation Engineering Laboratory

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Ref.:-----

Date:-----

Mr. Ali Raza
Director (M & I) C-Z,
National Highway Authority.

Subject: **Testing of Asphalt Samples**
Project: Rehabilitation and Improvement of Mianwali – Muzafargarh Road N-135,
Package – IV, Package – V and Package – VI, km 0+000 to km 120+000 (Each
40 km)

Dear Sir,

It is with reference to your letter No. Dir/(M&I)/NHA/CZ/24/329 dated 13-05-2024.
Please find below the results of the tests conducted on the asphalt concrete samples (chunks)
provided to this laboratory on 17-05-2024 through your representative.

BITUMEN EXTRACTION TESTS:

Package – IV

AWC

Bitumen Extraction Value (ASTM D-2172)								3.89%	
Gradation Analysis									
Sieve No.	1"	¾"	½"	3/8"	#4	#8	#50	#200	
% Passing	100	98.23	94.89	60.98	40.88	29.17	9.38	5.15	

ABC

Bitumen Extraction Value (ASTM D-2172)										3.27%	
Gradation Analysis											
Sieve No.	2"	1 ½"	1"	¾"	½"	3/8"	#4	#8	#50	#200	
% Passing	100	98.21	95.50	83.26	75.02	68.00	32.90	24.40	6.49	4.49	

Package – V

AWC

Bitumen Extraction Value (ASTM D-2172)								3.95%	
Gradation Analysis									
Sieve No.	1"	¾"	½"	3/8"	#4	#8	#50	#200	
% Passing	100	98.02	94.51	61.01	41.04	29.32	9.66	5.27	

ABC

Bitumen Extraction Value (ASTM D-2172)										3.21%	
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Gradation Analysis										
Sieve No.	2"	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#50	#200
% Passing	100	97.82	94.76	82.63	74.31	67.15	33.23	24.66	7.13	4.75

Package – VI

AWC

Bitumen Extraction Value (ASTM D-2172)									3.93%	
Gradation Analysis										
Sieve No.	1"	3/4"	1/2"	3/8"	#4	#8	#50	#200		
% Passing	100	96.79	92.92	60.83	41.04	29.76	10.40	5.70		

ABC

Bitumen Extraction Value (ASTM D-2172)									3.21%	
Gradation Analysis										
Sieve No.	2"	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#50	#200
% Passing	100	97.67	94.48	82.39	74.03	66.82	33.36	24.76	7.38	4.85

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Best Regards,

Director
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Ref.:-----

Date:-----

The Sub Divisional Officer,
Flood Bund Sub Division No. 1,
Shakargarh.

Subject: **Restoration of Damaged Apron Spur No. 4 Bheco Chak Flood Bund**

Dear Sir,

It is with reference to your letter No. 123/SKG dated 24-05-2024.

Please find below the results for the tests conducted on the sample provided to this laboratory on 07-06-2024 through your representative.

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

Specific Gravity (oven dried condition)	2.81
Specific Gravity (saturated surface dry condition)	2.82
Apparent Specific Gravity	2.85
Water Absorption (%)	0.54

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

Grading Used	Los Angeles Abrasion Value (%)
1	18.22

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

Best Regards,

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

Ref.:-----

Date:-----

The Sub Divisional Officer,
Sialkot Drainage Sub Division,
Narowal.

Subject: **Restoration of Spur ATRD: 19+500/L of Deg Nullah**

Dear Sir,

It is with reference to your letter No. 100/3-WN dated 25-05-2024.

Please find below the results for the tests conducted on the sample provided to this laboratory on 07-06-2024 through your representative.

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

Specific Gravity (oven dried condition)	2.81
Specific Gravity (saturated surface dry condition)	2.82
Apparent Specific Gravity	2.85
Water Absorption (%)	0.42

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

Grading Used	Los Angeles Abrasion Value (%)
1	16.92

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Best Regards,

Director
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Ref.-----

Date:-----

The Sub Divisional Officer,
Sialkot Drainage Sub Division,
Narowal.

- Subject: **1. Checking Erosive Action Between RD 4+000 to 5+900 of Chandian Mole Head Spur**
 2. Restoration of Apron J-E Head Spur No.1 Daud Khas Flood Protection Bund
 3. Restoration of Solid Stone at RD 3+800 of Chandian Dowel Bund

Dear Sir,

It is with reference to your letter No. 99/3-WN dated 25-05-2024.

Please find below the results for the tests conducted on the sample provided to this laboratory on 07-06-2024 through your representative.

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 (%)	0.17

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

Grading Used	Los Angeles Abrasion Value (%)
1	16.53

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Ref.-----

Date:-----

Mr. Behzad Usman
Engineer's Representative
NESPAK.

Subject: **Material Testing**
Ravi Riverfront Urban Development Project (RRUDP)
River Training Works (RTW) & Barrages Package-1 (R/S Embankment Lower
Promenade from RD 0+100 to 11+100

Dear Sir,

It is with reference to your letter No. 4417/13/BU/09/15 dated 04-06-2024.
Please find below the results for the tests conducted on the samples provided to this laboratory
on 07-06-2024 through your representative.

Stone Sample

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

Specific Gravity (oven dried condition)	2.77
Specific Gravity (saturated surface dry condition)	2.78
Apparent Specific Gravity	2.79
Water Absorption (%)	0.24

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

Grading Used	Los Angeles Abrasion Value (%)
1	7.99 @ 500 Revolutions
	18.99 @ 1000 Revolutions

Base

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	78.34	28.56	9.31	1.80	0	0	0	0

2. 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	2.85
Water Absorption (%)	0.71

Sub-base

1. Sieve Analysis (ASTM C-136)

Sieve Size	2"	1 1/2"	1"	3/4"	1/2"	3/8"	#4
%age Passing	100	90.86	73.42	55.56	40.58	31.43	25.10

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

Specific Gravity (oven dried condition)	2.69
Specific Gravity (saturated surface dry condition)	2.71
Apparent Specific Gravity	2.75
Water Absorption (%)	0.83

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Ref.-----

Date:-----

Mr. M. Usman Rauf
Resident Engineer,
NESPAK.

Subject: **Testing of Base Course/WBM Material**

Construction of Carpet & PCC at Iqbal High School Road 3-D-II, Link Street of Iqbal High School Road H # 193 DD-II Awan Street H # 149, 3-D-II & Lakkar Stop Road, 5-D-II, Green Town UC-237 NA-133 Nishtar Zone Lahore

Dear Sir,

It is with reference to your letter No. 4084/103/MUR/104/1864 dated 12-06-2014.

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

1. Sieve Analysis (ASTM C-136)

Sieve Size	3"	2 ½"	2"	1 ½"
%age Passing	100	63.67	8.98	0

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

Specific Gravity (oven dried condition)	2.73
Specific Gravity (saturated surface dry condition)	2.74
Apparent Specific Gravity	2.77
Water Absorption (%)	0.54

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

Grading Used	Los Angeles Abrasion Value (%)
1	18.99

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