

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 Sub Divisional Officer,
Highway Sub Division,
Shujabad.

Subject: **Testing of Harrow Sand**

Construction of Flyover at Railway Phatak Chak RS Shujabad Expressway,
Length = 1.03 km District Multan

Dear Sir,

It is with reference to your letter No. 106 dated 10-12-2024.

Please find below the results for the tests conducted on the aggregate sample provided to this laboratory on 21-01-2025 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	99.14	96.34	91.46	80.68	64.53	27.24	5.55	1.18

2. Fineness Modulus (ASTM C-142)

Fineness Modulus (%)	2.35
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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:-----

The Assistant Resident Engineer,
16 City of Project,
Package # 1 (Jhelum),
MMP (Pvt.) Ltd.

Subject: **Testing of Coarse Aggregate (Dina/Local)**
Project: Storm Water Drainage Facilities in Jhelum

Dear Sir,

It is with reference to your letter No. ARE/JHE-SWDF/MC-05 dated 13-01-2025.
Please find below the results for the test conducted on the aggregate sample provided to this laboratory through your representative.

Sieve Analysis (ASTM C-136)

Sieve Size	1"	3/4"	1/2"	3/8"	#4
%age Passing	100	100	59.02	15.35	0.25

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:-----

The Sub Divisional Officer,
Highway Sub Division, Pindi Bhattian.

Subject: **Testing of Cores of Asphalt Concrete (Asphalt Base Course)**

Rehabilitation of Road from Lahore-Sheikhupura-Sargodha Road, Length = 27.00 km
(Taken Length km 83.00 to 103.00 & 106.60 to 110.00, Length = 23.40 km) in District
Hafizabad

Dear Sir,

It is with reference to your letter No. 503/PB dated 27-12-2024.

Please find below the results of tests conducted on the cores of asphalt concrete provided to
this laboratory on 22-01-2025 through your representative.

Bitumen Extraction Test (Cores)

Sample # 1

Bitumen Extraction Value (ASTM D-2172)									4.43%
Gradation Analysis									
Sieve No.	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#50	#200
% Passing	100	88.47	80.01	73.77	64.49	53.78	32.33	9.10	2.74

Sample # 2

Bitumen Extraction Value (ASTM D-2172)									4.41%
Gradation Analysis									
Sieve No.	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#50	#200
% Passing	100	88.45	80.10	74.08	64.88	54.18	32.29	8.53	2.37

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Director
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Ref:-----

Date:-----

Mr. M. Yar Asif
Resident Engineer, NESPAK,
Muzaffargarh.

Subject: **Testing of Bitumen – AASHTO Standard (M-20)**
Project: Restoration of Metalled Road from Jatoi to Karam Dad Qureshi N-70 Road,
Length = 23.50 km
Source: PARCO Pakistan

Dear Sir,

It is with reference to your letter No. 4834/MYA/01/41 dated 14-01-2025.

Please find below the results of tests conducted on the bitumen sample provided to this laboratory on 24-01-2025 through your representative.

Sr.#	Laboratory Tests	Results
1	Penetration (ASTM D-5)	61 Units
2	Penetration of Residue (ASTM D-5)	54 Units
3	Ductility (ASTM D-113)	Above 100 cm
4	Ductility of Residue (ASTM D-113)	Above 100 cm
5	Softening Point (ASTM D-36)	49.1°C
6	Flash Point (ASTM D-92)	298°C
7	Solubility (ASTM D-2042)	99.80%
8	Specific Gravity Value (ASTM D-70)	1.021
9	Loss on Heating Value (ASTM D-6)	0.240%

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. Asim Chiragh
Resident Engineer, NESPAK,
Lahore.

Subject: **Testing of Bitumen – AASHTO Standard (M-20)**

Restoration/Improvement of road from Sheikhpura Bypass Road from Lahore
Faisalabad Road to Sheikhpura Sargodha Road and Sheikhpura Faisalabad Road
City Portion, Length = 10 km (Section City Portion 0.00 km to 4.00 km) in District
Sheikhpura

Dear Sir,

It is with reference to your letter No. 3811/103/RRP-24/AC/46 dated 28-01-2025.

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)	62 Units
2	Penetration of Residue (ASTM D-5)	54 Units
3	Ductility (ASTM D-113)	Above 100 cm
4	Ductility of Residue (ASTM D-113)	Above 100 cm
5	Softening Point (ASTM D-36)	49.1°C
6	Flash Point (ASTM D-92)	302°C
7	Solubility (ASTM D-2042)	99.80%
8	Thin Film Oven Test Value (ASTM D-1754)	0.248%
9	Loss on Heating Value (ASTM D-6)	0.255%

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

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Ref:-----

Date:-----

Mr. Jawad Qayyum Khan
Resident Engineer, NESPAK,
Sargodha.

Subject: **Testing of Bitumen – AASHTO Standard (M-20)**
Upgradation of Kalabagh / Shakardara Road, Length = 38.82 km in District
Mianwali

Dear Sir,

It is with reference to your letter No. RE/4376/JQK/25/7437 dated 29-01-2025.
Please find below the results of tests conducted on the bitumen sample provided to this
laboratory on 03-02-2025 through your representative.

Sr.#	Laboratory Tests	Results
1	Penetration (ASTM D-5)	60 Units
2	Penetration of Residue (ASTM D-5)	53 Units
3	Ductility (ASTM D-113)	Above 100 cm
4	Ductility of Residue (ASTM D-113)	Above 100 cm
5	Softening Point (ASTM D-36)	49.1°C
6	Flash Point (ASTM D-92)	298°C (Foaming did not occur)
7	Solubility (ASTM D-2042)	99.80%
8	Specific Gravity Value (ASTM D-70)	1.021
9	Thin Film Oven Test Value (ASTM D-1754)	0.248%
10	Loss on Heating Value (ASTM D-6)	0.253%

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

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Ref:-----

Date:-----

Mr. Jawad Qayyum Khan
Resident Engineer, NESPAK,
Jauharabad.

Subject: **Testing of Bitumen – AASHTO Standard (M-20)**
Dualization of Sargodha Khushab Mianwali Road
(Group-III from km 222.25 to 244.81 = 22.56 km)

Dear Sir,

It is with reference to your letter No. RE/4376-E/JQK/4c/548 dated 30-01-2025.
Please find below the results of tests conducted on the bitumen sample provided to this laboratory on 10-02-2025 through your representative.

Sr.#	Laboratory Tests	Results
1	Penetration (ASTM D-5)	62 Units
2	Penetration of Residue (ASTM D-5)	55 Units
3	Ductility (ASTM D-113)	Above 100 cm
4	Ductility of Residue (ASTM D-113)	Above 100 cm
5	Softening Point (ASTM D-36)	48.8°C
6	Flash Point (ASTM D-92)	301°C (Foaming did not occur)
7	Solubility (ASTM D-2042)	99.80%
8	Specific Gravity Value (ASTM D-70)	1.013
9	Thin Film Oven Test Value (ASTM D-1754)	0.247%
10	Loss on Heating Value (ASTM D-6)	0.243%

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

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Ref:-----

Date:-----

Mr. Muhammad Nadeem Akhtar
Resident Engineer, NESPAK,
Lahore.

Subject: **Testing of Bitumen – AASHTO Standard (M-20)** M/s PARCO
Reconstruction/Rehabilitation of G. T. Road from Quaid-e-Azam Interchange
(Lahore Ring Road) to Wagha Border in District Lahore (Part-A)

Dear Sir,

It is with reference to your letter No. Nespak/GT-W/MNA/016 dated 27-01-2025.
Please find below the results of tests conducted on the bitumen sample provided to this
laboratory on 10-02-2025 through your representative.

Sr.#	Laboratory Tests	Results
1	Penetration (ASTM D-5)	66 Units
2	Penetration of Residue (ASTM D-5)	57 Units
3	Ductility (ASTM D-113)	Above 100 cm
4	Ductility of Residue (ASTM D-113)	Above 100 cm
5	Softening Point (ASTM D-36)	49.8°C
6	Flash Point (ASTM D-92)	310°C (Foaming did not occur)
7	Solubility (ASTM D-2042)	99.80%
8	Specific Gravity Value (ASTM D-70)	1.021
9	Thin Film Oven Test Value (ASTM D-1754)	0.247%
10	Loss on Heating Value (ASTM D-6)	0.253%

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

Ref:-----

Date:-----

Mr. Amjad Saeed
Resident Engineer,
NESPAK.

Subject: **Testing of Bitumen – AASHTO Standard (M-20)**
Road Restoration Programme (2024-2025)
Restoration/Improvement of Sammundri Bypass, District Faisalabad,
Length = 12.98 km (GS-2005)

Dear Sir,

It is with reference to your letter No. 4834/F/103/AS/02/245 dated 29-01-2025.

Please find below the results of tests conducted on the bitumen sample provided to this laboratory on 13-02-2025 through your representative.

Sr.#	Laboratory Tests	Results
1	Penetration (ASTM D-5)	62 Units
2	Penetration of Residue (ASTM D-5)	55 Units
3	Softening Point (ASTM D-36)	48.8°C
4	Flash Point (ASTM D-92)	305°C
5	Solubility (ASTM D-2042)	99.75%
6	Specific Gravity Value (ASTM D-70)	1.020
7	Thin Film Oven Test Value (ASTM D-1754)	0.248%
8	Loss on Heating Value (ASTM D-6)	0.257%

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

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Ref:-----

Date:-----

Mr. Manohar Lal
Resident Engineer,
NESPAK,
Doaba Hafizabad.

Subject: **Testing of Bitumen – AASHTO Standard (M-20)**
Restoration/Improvement of Hafizabad Khangah Dogran Road

Dear Sir,

It is with reference to your letter No. 4834/103/RRP/HFZ/ML/Lab/01 dated 28-01-2025.
Please find below the results of tests conducted on the bitumen sample provided to this laboratory on 13-02-2025 through your representative.

Sr.#	Laboratory Tests	Results
1	Penetration (ASTM D-5)	66 Units
2	Ductility (ASTM D-113)	Above 100 cm
3	Softening Point (ASTM D-36)	53.3°C
4	Flash Point (ASTM D-92)	305°C
5	Solubility (ASTM D-2042)	99.80%
6	Specific Gravity Value (ASTM D-70)	1.021

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Ref:-----

Date:-----

Mr. M. Yar Asif
Resident Engineer, NESPAK,
Muzaffargarh.

Subject: **Testing of Bitumen – AASHTO Standard (M-20)**
Project: Restoration of Metalled Road from Sinawan Langer Sarai Road, Length = 34 km
(Reach from km 14.16 to 18.16 and 32 to 34) Taken Length = 6 km
Source: National Refinery Limited Pakistan

Dear Sir,

It is with reference to your letter No. 4834/MYA/01/56 dated 18-02-2025.

Please find below the results of tests conducted on the bitumen sample provided to this laboratory on 25-02-2025 through your representative.

Sr.#	Laboratory Tests	Results
1	Penetration (ASTM D-5)	66 Units
2	Penetration of Residue (ASTM D-5)	57 Units
3	Ductility (ASTM D-113)	Above 100 cm
4	Ductility of Residue (ASTM D-113)	Above 100 cm
5	Softening Point (ASTM D-36)	48.9°C
6	Flash Point (ASTM D-92)	298°C
7	Solubility (ASTM D-2042)	99.80%
8	Specific Gravity Value (ASTM D-70)	1.020
9	Loss on Heating Value (ASTM D-6)	0.238%

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Ref:-----

Date:-----

Mr. Muhammad Asif Bajwa
Resident Engineer, NESPAK,
Nankana Sahib.

Subject: **Testing of Bitumen – AASHTO Standard (M-20)**
Project: Restoration/Improvement of Road from Shahkot to Safdarabad Road,
Length = 17.00 km in District Nankana Sahib

Dear Sir,

It is with reference to your letter No. 3811/103/RRPNS/AB/365 dated 14-02-2025.
Please find below the results of tests conducted on the bitumen sample provided to this laboratory on 25-02-2025 through your representative.

Sr.#	Laboratory Tests	Results
1	Penetration (ASTM D-5)	62 Units
2	Ductility (ASTM D-113)	Above 100 cm
3	Softening Point (ASTM D-36)	49.1°C
4	Flash Point (ASTM D-92)	305°C
5	Solubility (ASTM D-2042)	99.80%
6	Specific Gravity Value (ASTM D-70)	1.030

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