

# 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 Executive Engineer,  
Gujrat Canal Division,  
Gujrat.

Subject: **Testing of Stone Sample**

Construction of J-Head Spur in Front of Village Randheer Khokhran on Right Bank  
of River Chenab

Dear Sir,

It is with reference to your letter No. 1672/197-W/R-CHB dated 13-11-2024.

Please find below the results for the tests conducted on the stone sample provided to this laboratory  
on 10-12-2024 through your representative.

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

Specific Gravity (oven dried condition)	2.73
Specific Gravity (saturated surface dry condition)	2.75
Apparent Specific Gravity	2.78
Water Absorption (%)	0.68

## 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"	5009.3	4991.3	0.36	0.28
	Total = 0.28%			

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

Grading Used	Los Angeles Abrasion Value (%)
1	19.53

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:-----

Engr. Ghulam Rasool  
Resident Engineer, NESPAK,  
MCL Nishtar Zone, Lahore.

Subject: **Testing of Aggregate (PCC Crush)**  
Rehabilitation/Improvement of Streets (P.C.C), Sewerage/Drainage UC-243,  
Nishtar Zone, MCL

Dear Sir,

It is with reference to your letter No. 4084/103/LDP/NZ/04/40 dated 25-12-2024.  
Please find below the results for the tests conducted on the aggregate sample provided to this  
laboratory on 30-01-2025 through your representative.

## 1. Sieve Analysis (ASTM C-136)

Sieve Size	3/4"	1/2"	3/8"	#4
%age Passing	100	35.60	10.16	0

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

Grading Used	Los Angeles Abrasion Value (%)
B	17.02

## 3. 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	6.25	4.03	6.90	4.44
1/2	3/8	11.02	2.81	12.35	3.14
3/8	1/4	5.78	0.59	7.36	0.75
Flakiness Index = 7.43%			Elongation Index = 8.33%		

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Ref.:-----

Date:-----

Engr. Ghulam Rasool  
Resident Engineer, NESPAK,  
MCL Nishtar Zone, Lahore.

Subject: **Testing of Aggregate (Granular Sub-base)**  
Rehabilitation/Improvement of Streets (P.C.C), Sewerage/Drainage UC-243,  
Nishtar Zone, MCL

Dear Sir,

It is with reference to your letter No. 4084/103/LDP/NZ/04/44 dated 25-12-2024.  
Please find below the results for the tests conducted on the aggregate sample provided to this  
laboratory on 30-01-2025 through your representative.

## 1. Sieve Analysis (ASTM C-136)

Sieve Size	1 ½"	1"	¾"	½"	3/8"	#4
%age Passing	100	88.87	55.80	31.39	27.44	24.83

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

Grading Used	Los Angeles Abrasion Value (%)
A	24.51

## 3. 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.)				
1 ½	1	10.89	1.61	24.13	3.57
1	¾	10.36	4.56	16.12	7.09
¾	½	12.14	3.94	21.24	6.89
½	3/8	12.30	0.65	22.16	1.17
3/8	¼	10.92	0.38	16.66	0.58
Flakiness Index = 11.14%			Elongation Index = 19.30%		

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Date:-----

Engr. Ghulam Rasool  
Resident Engineer, NESPAK,  
MCL Nishtar Zone, Lahore.

Subject: **Testing of Sand**  
Rehabilitation/Improvement of Streets (P.C.C), Sewerage/Drainage UC-243,  
Nishtar Zone, MCL

Dear Sir,

It is with reference to your letter No. 4084/103/LDP/NZ/04/43 dated 25-12-2024.

Please find below the results for the tests conducted on the aggregate sample provided to this laboratory on 30-01-2025 through your representative

## 1. Sieve Analysis (ASTM C-136)

Sieve Size	3/8"	#4	#8	#16	#30	#50	#100	#200
%age Passing	100	100	99.86	99.66	99.38	86.69	9.76	1.42

## 2. Percentage of Fines (ASTM D-1140) Wet Sieving

Silt and Clay (%)	5.94
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## 3. Fineness Modulus (ASTM C-142)

Fineness Modulus (%)	1.05
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Date:-----

Maj. Muhammad Usman Asghar Kayani  
For ADH (Svcs) Askari-X,  
Lahore.

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

Dear Sir,

It is with reference to your letter No. 301/2/UET/Bitumen/ADH-IV dated 12-02-2025.  
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)	68 Units
2	Penetration of Residue (ASTM D-5)	51 Units
3	Ductility (ASTM D-113)	Above 100 cm
4	Ductility of Residue (ASTM D-113)	Above 100 cm
5	Flash Point (ASTM D-92)	298°C
6	Solubility (ASTM D-2042)	99.80%
7	Loss on Heating Value (ASTM D-6)	0.255%
8	Thin Film Oven Test Value (ASTM D-1754)	0.261%

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