# STRUCTURAL ENGINEERING DIVISION

**Test Floor Laboratory**
**Department of Civil Engineering**
**University of Engineering and Technology Lahore, 54890**
**Pakistan. Ph: 92-42-99029202**

To,

Resident Engineer
NESPAK
Construction of 4-Lane Bridge Ravi River, Lahore.
(Aziz Steel)

Reference # CED/TFL **4615** (Dr. Usman Akmal) Dated: 12-02-2024
Reference of the request letter # 4537/03/MSA/09/195 Dated: 06-02-2024

## Tension Test Report (Page -1/2)

Date of Test 14-02-2024
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight | Diameter/ Size | | Area ($in^2$) | | Yield load | Breaking Load | Yield Stress (psi) | | Ultimate Stress (psi) | | Elongation | % Elongation | Heat No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (lbs/ft) | Nominal (#) | Actual (inch) | Nominal | Actual | (kg) | (kg) | Nominal | Actual | Nominal | Actual | (inch) | | |
| 1 | 4.083 | 10 | 1.236 | 1.27 | 1.200 | 38600 | 54400 | 67000 | 70900 | 94500 | 100000 | 1.60 | 20.0 | 22 |
| 2 | 4.297 | 10 | 1.268 | 1.27 | 1.263 | 34800 | 55400 | 60400 | 60720 | 96200 | 96700 | 1.60 | 20.0 | 23 |
| 3 | 4.188 | 10 | 1.252 | 1.27 | 1.231 | 38400 | 56400 | 66700 | 68760 | 97900 | 101000 | 1.50 | 18.8 | 50 |
| 4 | 4.108 | 10 | 1.240 | 1.27 | 1.207 | 38800 | 55200 | 67400 | 70830 | 95800 | 100800 | 1.60 | 20.0 | 51 |
| 5 | 4.112 | 10 | 1.241 | 1.27 | 1.209 | 38200 | 55400 | 66300 | 69660 | 96200 | 101100 | 1.60 | 20.0 | 522 |
| 6 | 4.141 | 10 | 1.245 | 1.27 | 1.217 | 38400 | 55600 | 66700 | 69540 | 96500 | 100700 | 1.60 | 20.0 | 523 |
| **Note: only six samples for tensile and six samples for bend test** | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
| #10 Bar Bend Test Through 180º is Satisfactory | | | | | | | | | | | | | | |
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**I/C Testing Laboratoires**
**UET Lahore, Pakistan.**

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To,

Resident Engineer
NESPAK
Construction of 4-Lane Bridge Ravi River, Lahore.
(Aziz Steel)

Reference # CED/TFL **4615** (Dr. Usman Akmal) Dated: 12-02-2024
Reference of the request letter # 4537/03/MSA/09/195 Dated: 06-02-2024

## Tension Test Report (Page -2/2)

Date of Test 14-02-2024
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight | Diameter/ Size | | Area ($in^2$) | | Yield load | Breaking Load | Yield Stress (psi) | | Ultimate Stress (psi) | | Elongation | % Elongation | Heat No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (lbs/ft) | Nominal (#) | Actual (inch) | Nominal | Actual | (kg) | (kg) | Nominal | Actual | Nominal | Actual | (inch) | | |
| 1 | 4.139 | 10 | 1.245 | 1.27 | 1.217 | 37400 | 55000 | 65000 | 67760 | 95500 | 99700 | 1.50 | 18.8 | 34 |
| 2 | 4.038 | 10 | 1.229 | 1.27 | 1.187 | 37600 | 53200 | 65300 | 69830 | 92400 | 98800 | 1.50 | 18.8 | 36 |
| 3 | 4.175 | 10 | 1.250 | 1.27 | 1.227 | 35800 | 57000 | 62200 | 64310 | 99000 | 102400 | 1.40 | 17.5 | 39 |
| 4 | 4.104 | 10 | 1.239 | 1.27 | 1.206 | 37200 | 54600 | 64600 | 67980 | 94800 | 99800 | 1.40 | 17.5 | 526 |
| 5 | 4.045 | 10 | 1.230 | 1.27 | 1.189 | 34600 | 55000 | 60100 | 64150 | 95500 | 102000 | 1.50 | 18.8 | 534 |
| 6 | 4.135 | 10 | 1.244 | 1.27 | 1.215 | 37400 | 54600 | 65000 | 67830 | 94800 | 99100 | 1.40 | 17.5 | 535 |
| 7 | 4.074 | 10 | 1.235 | 1.27 | 1.198 | 37400 | 55000 | 65000 | 68840 | 95500 | 101300 | 1.50 | 18.8 | 537 |
| 8 | 4.092 | 10 | 1.237 | 1.27 | 1.203 | 37400 | 55200 | 65000 | 68540 | 95800 | 101200 | 1.50 | 18.8 | 538 |

**Note: only eight samples for tensile and eight samples for bend test**

| Bend Test |
|---|
| #10 Bar Bend Test Through 180º is Satisfactory |
| #10 Bar Bend Test Through 180º is Satisfactory |
| #10 Bar Bend Test Through 180º is Satisfactory |
| #10 Bar Bend Test Through 180º is Satisfactory |
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**Department of Civil Engineering**
**University of Engineering and Technology Lahore, 54890**
**Pakistan. Ph: 92-42-99029202**

To,

Assistant Engineer (Civil)
University of Engineering and Technology, Lahore
Renovation and Rehabilitation of Washrooms of Mumtaz Hall and Zubair Hall Main Campus, UET Lahore.

Reference # CED/TFL **4621**(Dr. Asad Ali) Dated: 12-02-2024
Reference of the request letter # B&W/AEN-C/MZ/01 Dated: 12-02-2024

## Tension Test Report (Page -1/1)

Date of Test 13-02-2024
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight | Diameter/ Size | | Area ($in^2$) | | Yield load | Breaking Load | Yield Stress (psi) | | Ultimate Stress (psi) | | Elongation | % Elongation | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (lbs/ft) | Nominal (#) | Actual (inch) | Nominal | Actual | (kg) | (kg) | Nominal | Actual | Nominal | Actual | (inch) | | |
| 1 | 0.366 | 3 | 0.370 | 0.11 | 0.107 | 3230 | 4640 | 64800 | 66260 | 93000 | 95200 | 1.10 | 13.8 | |
| 2 | 0.384 | 3 | 0.379 | 0.11 | 0.113 | 3380 | 4810 | 67800 | 66030 | 96400 | 94000 | 1.30 | 16.3 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | ` |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| **Note: only two samples for tensile and one sample for bend test** | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
| #3 Bar Bend Test Through 180º is Satisfactory | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
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**Test Floor Laboratory**
**Department of Civil Engineering**
**University of Engineering and Technology Lahore, 54890**
**Pakistan. Ph: 92-42-99029202**

To,

M/S Park View Enclave (Private) Limited
Islamabad

Reference # CED/TFL **4622** (Dr. Asad Ali) Dated: 12-02-2024
Reference of the request letter # Nil Dated: 06-02-2024

## Tension Test Report (Page -1/1)

Date of Test 14-02-2024
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight | Diameter/ Size | | Area ($in^2$) | | Yield load | Breaking Load | Yield Stress (psi) | | Ultimate Stress (psi) | | Elongation | % Elongation | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (lbs/ft) | Nominal (#) | Actual (inch) | Nominal | Actual | (kg) | (kg) | Nominal | Actual | Nominal | Actual | (inch) | | |
| 1 | 0.371 | 3 | 0.373 | 0.11 | 0.109 | 3430 | 4960 | 68800 | 69350 | 99400 | 100300 | 1.20 | 15.0 | Aziz Industries |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | ` |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

**Note: only one sample for tensile and one sample for bend test**

Bend Test

#3 Bar Bend Test Through 180º is Satisfactory

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**Pakistan. Ph: 92-42-99029202**

To,

Resident Engineer
Shahzad Ayub Associates (SAA)
New Metro City Srai Alamgir

Reference # CED/TFL **4635** (Dr. Asad Ali) Dated: 13-02-2024
Reference of the request letter # SAA-St-Rep-014 Dated: 12-02-2024

## Tension Test Report (Page -1/1)

Date of Test 14-02-2024
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight | Diameter/ Size | | Area ($in^2$) | | Yield load | Breaking Load | Yield Stress (psi) | | Ultimate Stress (psi) | | Elongation | % Elongation | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (lbs/ft) | Nominal (#) | Actual (inch) | Nominal | Actual | (kg) | (kg) | Nominal | Actual | Nominal | Actual | (inch) | | |
| 1 | 0.376 | 3 | 0.375 | 0.11 | 0.111 | 4030 | 5370 | 80800 | 80340 | 107600 | 107100 | 1.20 | 15.0 | FF Steel |
| 2 | 0.372 | 3 | 0.373 | 0.11 | 0.109 | 3940 | 5150 | 79000 | 79320 | 103200 | 103700 | 1.20 | 15.0 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| **Note: only two samples for tensile and one sample for bend test** | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
| #3 Bar Bend Test Through 180º is Satisfactory | | | | | | | | | | | | | | |
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