



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

To,  
M/S Unze Trading (Pvt) Limited  
Lahore  
(Owned PCC Polce Plant Sahiwala FIEDMC Faisalabad)

Reference # CED/TFL **1766** (Dr. M Rizwan Riaz)  
Reference of the request letter # Unze/35/2021

Dated: 11-08-2022  
Dated: 04-08-2022

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

Date of Test 16-08-2021  
Gauge length 8 inches  
Description MS Wire Tensile Test

| Sr. No.                                       | Weight<br>(kg/m) | Diameter/<br>size |                | Area<br>(mm <sup>2</sup> ) |        | Yield load<br>(kg) | Breaking Load<br>(kg) | Yield Stress<br>(MPa)<br>Actual | Ultimate Stress<br>(MPa)<br>Actual | Elongation<br>(inch) | % Elongation | Remarks |
|---|------------------|-------------------|----------------|----------------------------|--------|--------------------|-----------------------|---------------------------------|------------------------------------|----------------------|--------------|---------|
|   |                  | Nominal<br>(mm)   | Actual<br>(mm) | Nominal                    | Actual |                    |                       |                                 |                                    |                      |              |         |
| 1   | 0.154            | 5                 | 5.00           | -----                      | 19.6   | -----              | 1630                  | -----                           | 815                                | 0.20                 | 2.5          |         |
| -   | -                | -                 | -              | -                          | -      | -                  | -                     | -                               | -                                  | -                    | -            |         |
| -   | -                | -                 | -              | -                          | -      | -                  | -                     | -                               | -                                  | -                    | -            |         |
| -   | -                | -                 | -              | -                          | -      | -                  | -                     | -                               | -                                  | -                    | -            |         |
| -   | -                | -                 | -              | -                          | -      | -                  | -                     | -                               | -                                  | -                    | -            |         |
| -   | -                | -                 | -              | -                          | -      | -                  | -                     | -                               | -                                  | -                    | -            |         |
| <b>Note: only one sample for tensile test</b> |                  |                   |                |                            |        |                    |                       |                                 |                                    |                      |              |         |
| Bend Test                                     |                  |                   |                |                            |        |                    |                       |                                 |                                    |                      |              |         |
|   |                  |                   |                |                            |        |                    |                       |                                 |                                    |                      |              |         |
|   |                  |                   |                |                            |        |                    |                       |                                 |                                    |                      |              |         |
|   |                  |                   |                |                            |        |                    |                       |                                 |                                    |                      |              |         |

**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

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To,  
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Lahore  
(Owned PCC Polce Plant Sahiwala FIEDMC Faisalabad)

Reference # CED/TFL **1766** (Dr. M Rizwan Riaz)  
Reference of the request letter # Unze/35/2021

Dated: 11-08-2022  
Dated: 04-08-2022

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

Date of Test 16-08-2021  
Gauge length 640 mm  
Description Steel Strand Tensile Test as per ASTM A-416-94a

| Sr. No. | Nominal Diameter | Nominal Weight | Measured weight | Yield strength clause (6.3) |        | Breaking strength clause (6.2) |        | % Elongation | Remarks/ Coil No. |
|---------|------------------|----------------|-----------------|-----------------------------|--------|--------------------------------|--------|--------------|-------------------|
|         | (mm)             | (kg/km)        | (kg/km)         | (kg)                        | (kN)   | (kg)                           | (kN)   |              |                   |
| 1       | 9.53<br>(3/8")   | 432.0          | 429.0           | 9000                        | 88.29  | 10500                          | 103.01 | >3.50        | xx                |
| 2       | 11.11<br>(7/16") | 582.0          | 587.0           | 12800                       | 125.57 | 14500                          | 142.25 | >3.50        | xx                |
| -       | -                | -              | -               | -                           | -      | -                              | -      | -            | -                 |
| -       | -                | -              | -               | -                           | -      | -                              | -      | -            | -                 |
| -       | -                | -              | -               | -                           | -      | -                              | -      | -            | -                 |
| -       | -                | -              | -               | -                           | -      | -                              | -      | -            | -                 |

**Only two samples for Test**

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**UET Lahore, Pakistan.**

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

To,  
M/S S.A Sheikh & Co  
Daroghawala Bundh Road, Lahore

Reference # CED/TFL **1768** (Dr. M Rizwan Riaz)  
Reference of the request letter # SASheikh/WB-SMS/INSP1

Dated: 11-08-2022

Dated: 11-08-2022

**Tension Test Report** (Page – 1/1)

Date of Test 16-08-2022  
Gauge length 2 inches  
Description Steel Strip Tensile and Bend Test

| Sr. No.  | Designation | Size of Strip | X Section Area     | Yield load | Breaking Load | Yield Stress | Ultimate Stress | Elongation | % Elongation | Remarks |
|--|-------------|---------------|--------------------|------------|---------------|--------------|-----------------|------------|--------------|---------|
|  | -----       | (mm)          | (mm <sup>2</sup> ) | (kg)       | (kg)          | (MPa)        | (MPa)           | (in)       |              |         |
| 1  | Steel Strip | 25.00x15.60   | 390.00             | 22000      | 24800         | 553          | 624             | 0.60       | 30.00        |         |
| 2  | Steel Strip | 25.60x15.80   | 404.48             | 23400      | 25400         | 568          | 616             | 0.60       | 30.00        |         |
| -  | -           | -             | -                  | -          | -             | -            | -               | -          | -            |         |
| -  | -           | -             | -                  | -          | -             | -            | -               | -          | -            |         |
| -  | -           | -             | -                  | -          | -             | -            | -               | -          | -            |         |
| -  | -           | -             | -                  | -          | -             | -            | -               | -          | -            |         |
| <b>Only Two Samples for Tensile and One Sample for Bend Test</b> |             |               |                    |            |               |              |                 |            |              |         |
| <b>Bend Test</b>   |             |               |                    |            |               |              |                 |            |              |         |
| Steel Strip Bend Test Through 180° is Satisfactory               |             |               |                    |            |               |              |                 |            |              |         |
|  |             |               |                    |            |               |              |                 |            |              |         |
|  |             |               |                    |            |               |              |                 |            |              |         |

Witness by Furqan Shabbir (Deputy Manager (EHV-I), Ahmed Hassan (Project Manager) and Bilal Jameel (Deputy Manager (P&I))

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**UET Lahore, Pakistan.**

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**University of Engineering and Technology Lahore, 54890**  
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To,  
Resident Engineer  
PAVRON Pkg-01  
Improvement/Up Gradation of Road Mahmand Ghat (Mahmond Boundary) – Khar Including  
Existing Nawagai By-Pass Pkg-01 (33km)

Reference # CED/TFL **1773** (Dr. M Rizwan Riaz)  
Reference of the request letter # RE/TDP/2022/787

Dated: 12-08-2022  
Dated: 11-08-2022

**Tension Test Report** (Page -1/8)

Date of Test 16-08-2022  
Gauge length 640 mm  
Description Steel Strand Tensile Test as per ASTM A-416-94a

| Sr. No.                            | Nominal Diameter | Nominal Weight | Measured weight | Yield strength clause (6.3) |        | Breaking strength clause (6.2) |        | Young's Modulus of Elasticity "E" | % Elongation | Remarks / Coil No. |
|------------------------------------|------------------|----------------|-----------------|-----------------------------|--------|--------------------------------|--------|-----------------------------------|--------------|--------------------|
|                                    | (mm)             | (kg/km)        | (kg/km)         | (kg)                        | (kN)   | (kg)                           | (kN)   | GPa                               |              |                    |
| 1                                  | 12.70 (1/2")     | 775.0          | 780.0           | 17700                       | 173.64 | 19500                          | 191.30 | 199                               | >3.50        | 94                 |
| 2                                  | 12.70 (1/2")     | 775.0          | 787.0           | 18500                       | 181.49 | 19800                          | 194.24 | 198                               | >3.50        | 96                 |
| 3                                  | 12.70 (1/2")     | 775.0          | 772.0           | 17900                       | 175.60 | 19500                          | 191.30 | 199                               | >3.50        | 98                 |
| -                                  | -                | -              | -               | -                           | -      | -                              | -      | -                                 | -            | -                  |
| -                                  | -                | -              | -               | -                           | -      | -                              | -      | -                                 | -            | -                  |
| -                                  | -                | -              | -               | -                           | -      | -                              | -      | -                                 | -            | -                  |
| <b>Only three samples for Test</b> |                  |                |                 |                             |        |                                |        |                                   |              |                    |

Note:

1. Modulus of Elasticity is based on nominal steel area of the steel strand vide clause 13.3 of ASTM – A416a
2. Load versus percentage strain graphs are attached

**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

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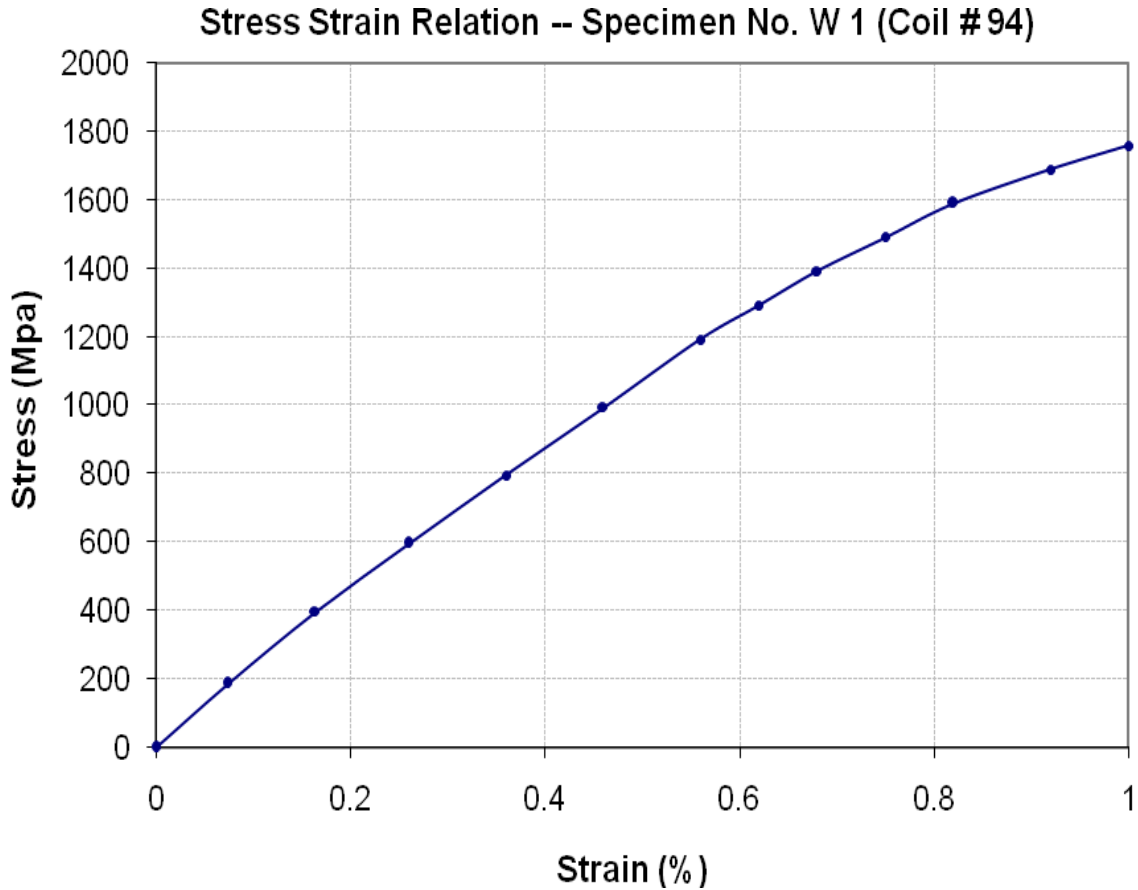
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**Test Floor Laboratory**  
**Department of Civil Engineering**  
**University of Engineering and Technology Lahore, 54890**  
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To,  
Resident Engineer  
PAVRON Pkg-01  
Improvement/Up Gradation of Road Mahmand Ghat (Mahmond Boundary) – Khar Including  
Existing Nawagai By-Pass Pkg-01 (33km)

Reference # CED/TFL 1773 (Dr. M Rizwan Riaz)  
Reference of the request letter # RE/TDP/2022/787

Dated: 12-08-2022  
Dated: 11-08-2022

**Graph** (Page – 2/8)



**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

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Reference of the request letter # RE/TDP/2022/787

Dated: 12-08-2022  
Dated: 11-08-2022

**Tension Test Report** (Page -5/8)

Date of Test 16-08-2022  
Gauge length 640 mm  
Description Steel Strand Tensile Test as per ASTM A-416-94a

| Sr. No.                            | Nominal Diameter | Nominal Weight | Measured weight | Yield strength clause (6.3) |        | Breaking strength clause (6.2) |        | Young's Modulus of Elasticity "E" | % Elongation | Remarks / Coil No. |
|------------------------------------|------------------|----------------|-----------------|-----------------------------|--------|--------------------------------|--------|-----------------------------------|--------------|--------------------|
|                                    | (mm)             | (kg/km)        | (kg/km)         | (kg)                        | (kN)   | (kg)                           | (kN)   | GPa                               |              |                    |
| 1                                  | 12.70 (1/2")     | 775.0          | 783.0           | 17000                       | 166.77 | 19800                          | 194.24 | 199                               | >3.50        | 3456               |
| 2                                  | 12.70 (1/2")     | 775.0          | 782.0           | 17500                       | 171.68 | 19500                          | 191.30 | 199                               | >3.50        | 3460               |
| 3                                  | 12.70 (1/2")     | 775.0          | 774.0           | 17600                       | 172.66 | 19800                          | 194.24 | 199                               | >3.50        | 3461               |
| -                                  | -                | -              | -               | -                           | -      | -                              | -      | -                                 | -            | -                  |
| -                                  | -                | -              | -               | -                           | -      | -                              | -      | -                                 | -            | -                  |
| -                                  | -                | -              | -               | -                           | -      | -                              | -      | -                                 | -            | -                  |
| <b>Only three samples for Test</b> |                  |                |                 |                             |        |                                |        |                                   |              |                    |

Note:

1. Modulus of Elasticity is based on nominal steel area of the steel strand vide clause 13.3 of ASTM – A416a
2. Load versus percentage strain graphs are attached

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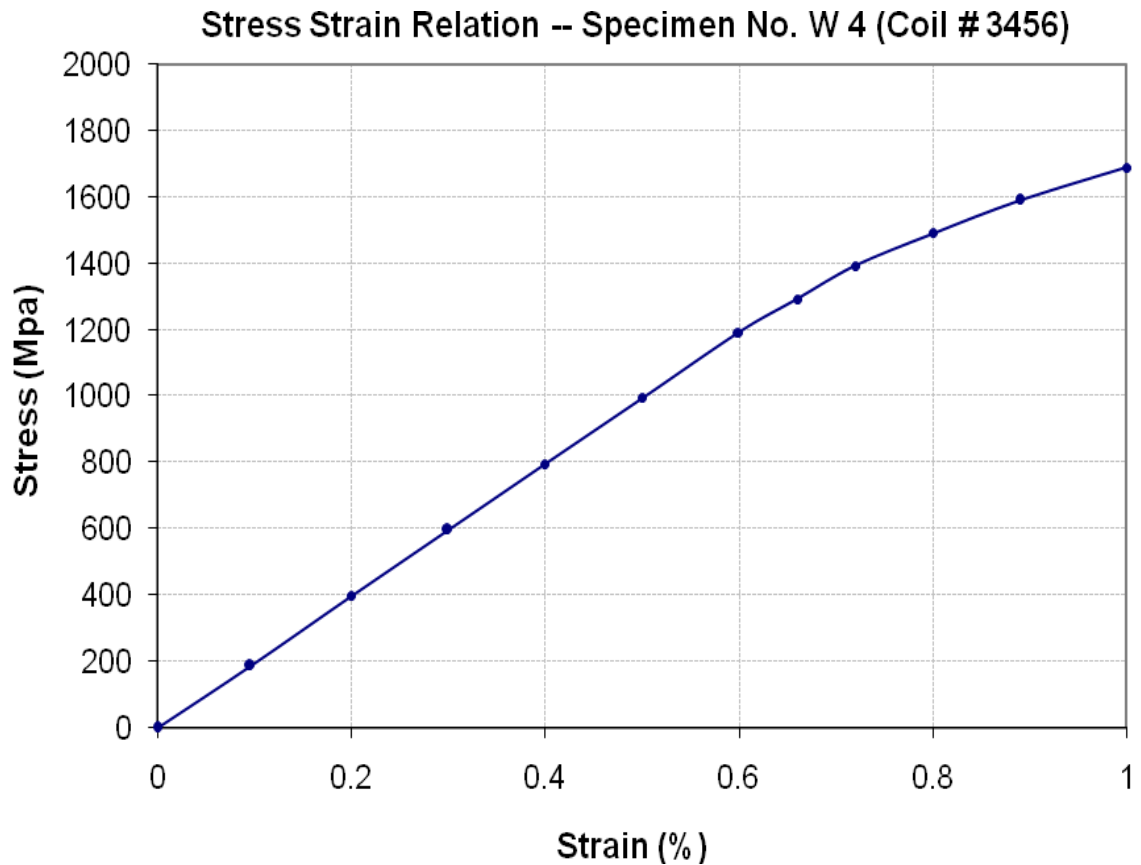
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To,  
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PAVRON Pkg-01  
Improvement/Up Gradation of Road Mahmand Ghat (Mahmond Boundary) – Khar Including  
Existing Nawagai By-Pass Pkg-01 (33km)

Reference # CED/TFL 1773 (Dr. M Rizwan Riaz)  
Reference of the request letter # RE/TDP/2022/787

Dated: 12-08-2022  
Dated: 11-08-2022

**Graph** (Page – 6/8)



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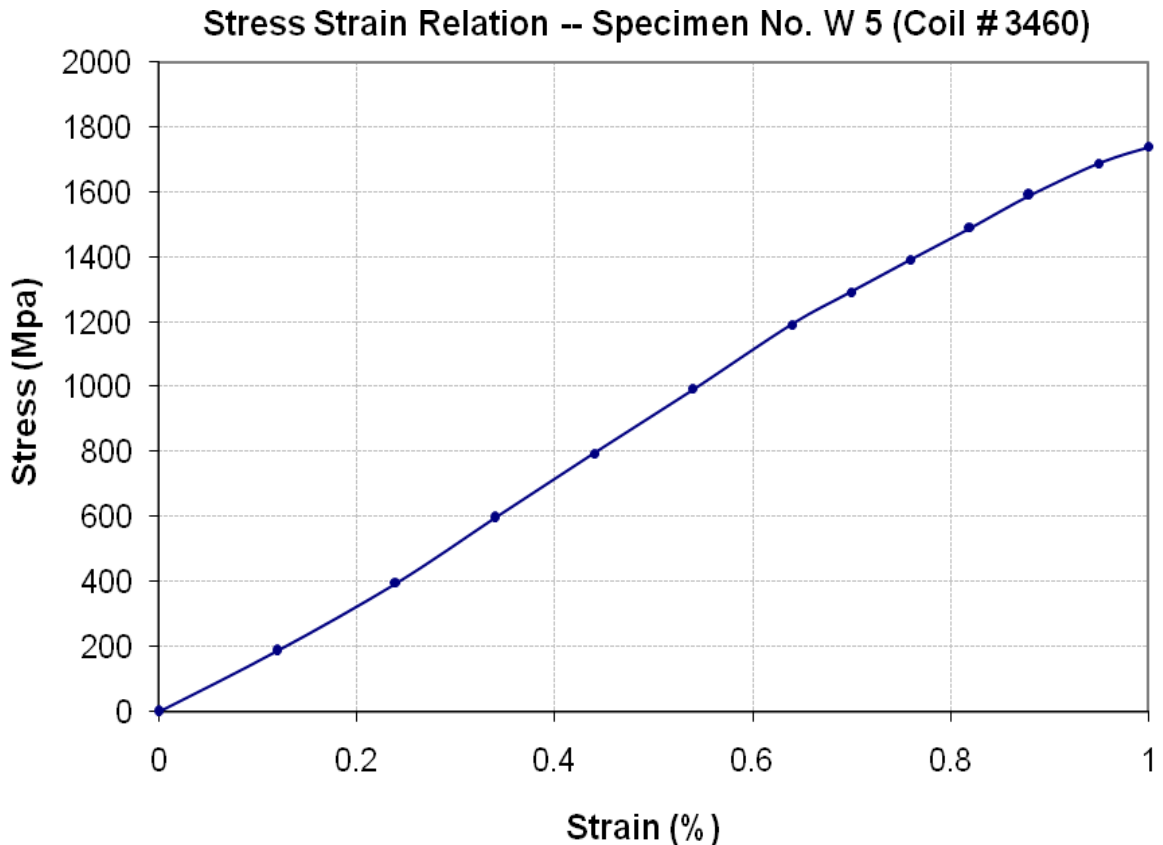
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Dated: 12-08-2022

Dated: 11-08-2022

**Graph** (Page – 7/8)



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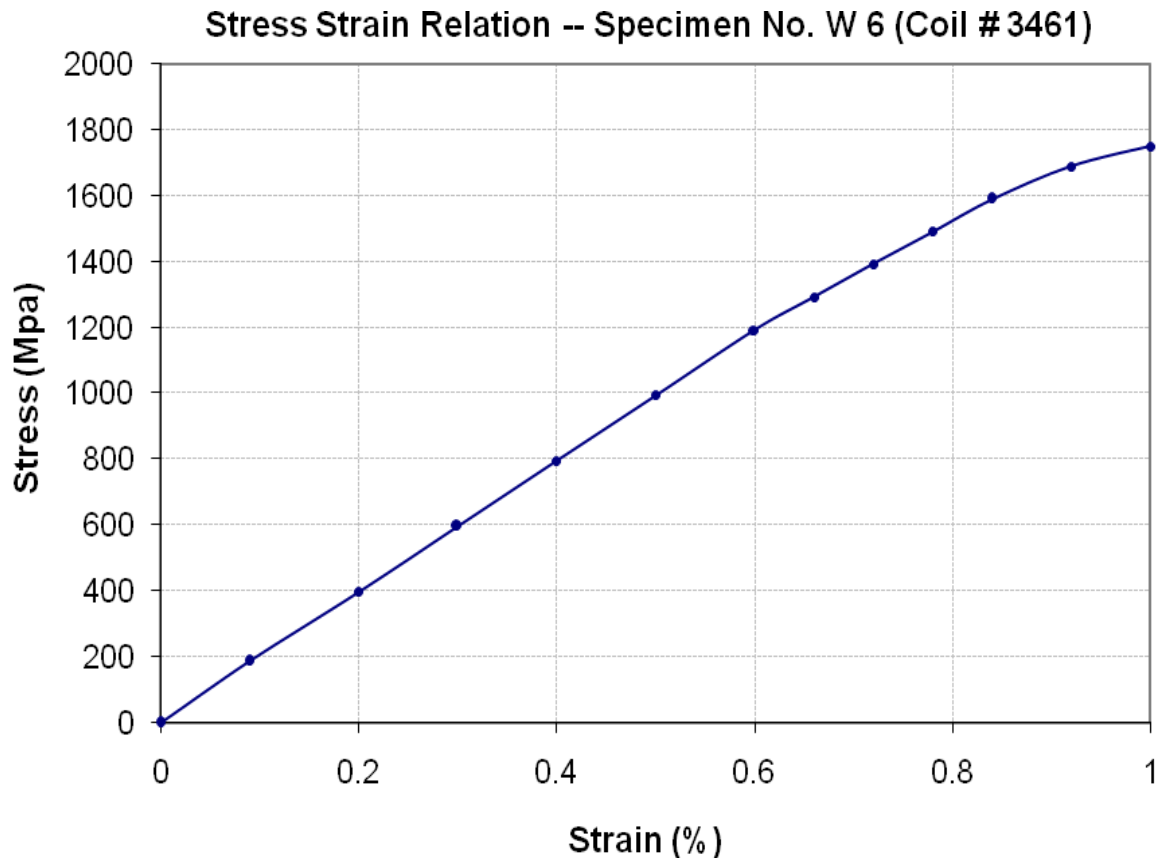
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Dated: 12-08-2022  
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**Graph** (Page – 8/8)



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To,  
Resident Engineer  
Zeeruk International (Pvt) Ltd  
Construction of 10<sup>th</sup> Avenue I/C Interchanges & Under Passes at 10<sup>th</sup> Avenue from I.J.P Road to  
Srinagar Highway, Islamabad

Reference # CED/TFL **1781** (Dr. M Rizwan Riaz)

Dated: 15-08-2022

Reference of the request letter # RE/Zeeruk/10<sup>th</sup> Avenue/2022/151 Dated: 15-08-2022

**Tension Test Report** (Page -1/3)

Date of Test 16-08-2022

Gauge length 640 mm

Description Steel Strand Tensile Test as per ASTM A-416-94a

| Sr. No.                          | Nominal Diameter | Nominal Weight | Measured weight | Yield strength clause (6.3) |        | Breaking strength clause (6.2) |        | Young's Modulus of Elasticity "E" | % Elongation | Remarks / Coil No. |
|----------------------------------|------------------|----------------|-----------------|-----------------------------|--------|--------------------------------|--------|-----------------------------------|--------------|--------------------|
|                                  | (mm)             | (kg/km)        | (kg/km)         | (kg)                        | (kN)   | (kg)                           | (kN)   | GPa                               |              |                    |
| 1                                | 12.70<br>(1/2")  | 775.0          | 777.0           | 17500                       | 171.68 | 19800                          | 194.24 | 199                               | >3.50        | xx                 |
| 2                                | 12.70<br>(1/2")  | 775.0          | 780.0           | 17100                       | 167.75 | 19800                          | 194.24 | 198                               | >3.50        | xx                 |
| -                                | -                | -              | -               | -                           | -      | -                              | -      | -                                 | -            |                    |
| -                                | -                | -              | -               | -                           | -      | -                              | -      | -                                 | -            |                    |
| -                                | -                | -              | -               | -                           | -      | -                              | -      | -                                 | -            |                    |
| -                                | -                | -              | -               | -                           | -      | -                              | -      | -                                 | -            |                    |
| <b>Only two samples for Test</b> |                  |                |                 |                             |        |                                |        |                                   |              |                    |

Note:

1. Modulus of Elasticity is based on nominal steel area of the steel strand vide clause 13.3 of ASTM – A416a
2. Load versus percentage strain graphs are attached

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To,  
Resident Engineer  
Zeeruk International (Pvt) Ltd  
Construction of 10<sup>th</sup> Avenue I/C Interchanges & Under Passes at 10<sup>th</sup> Avenue from I.J.P Road to  
Srinagar Highway, Islamabad

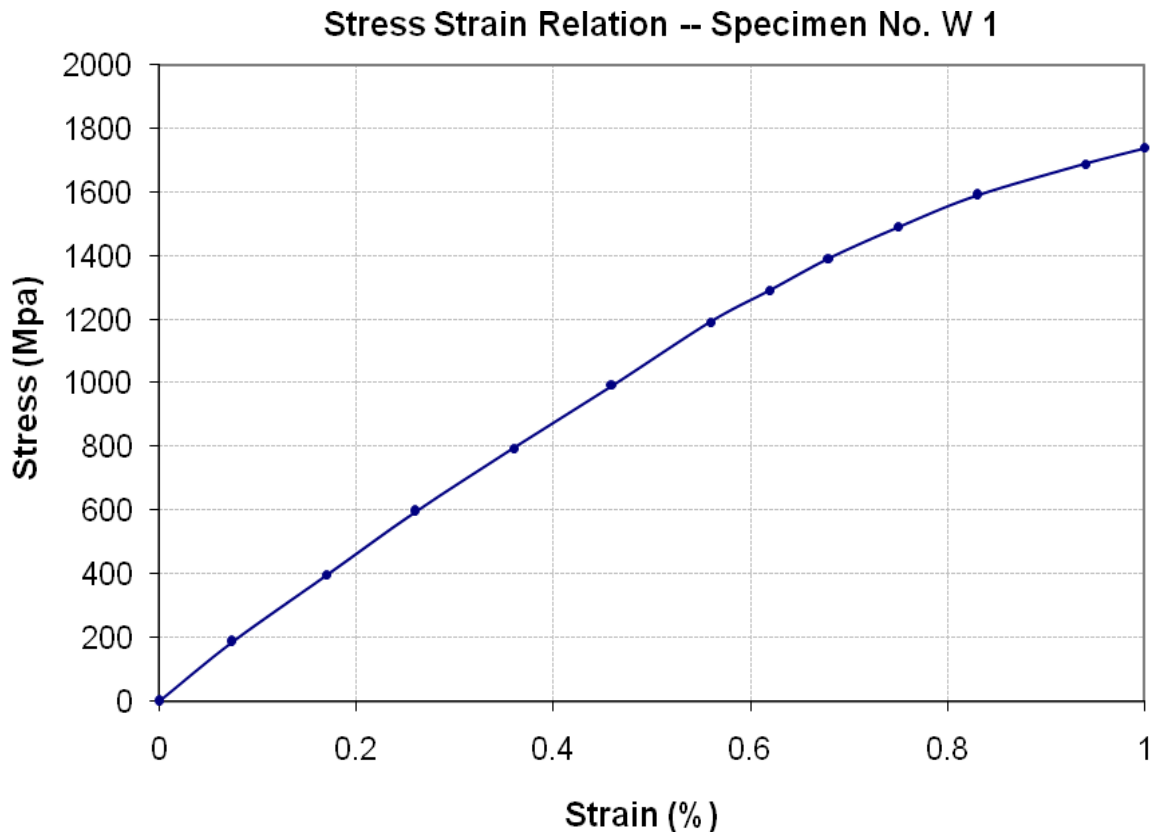
Reference # CED/TFL **1781** (Dr. M Rizwan Riaz)

Dated: 15-08-2022

Reference of the request letter # RE/Zeeruk/10<sup>th</sup> Avenue/2022/151

Dated: 15-08-2022

**Graph** (Page – 2/3)



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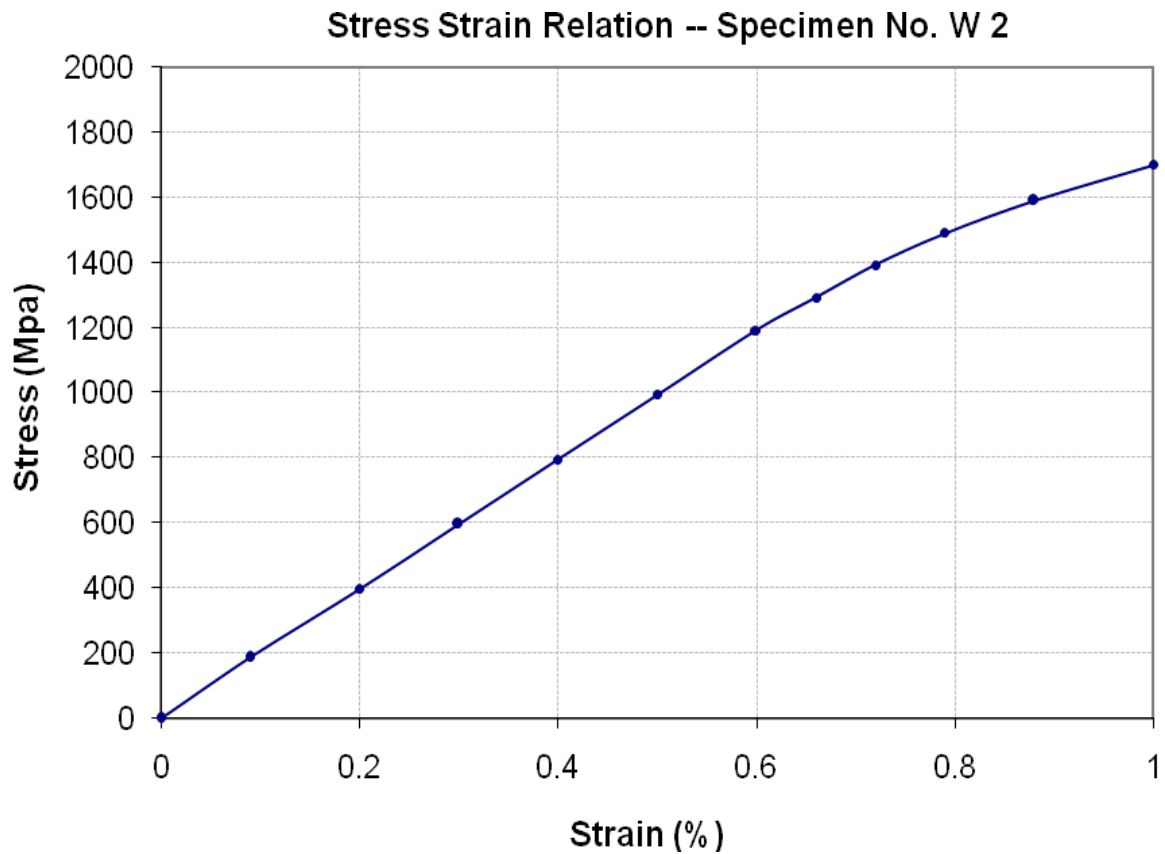
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**Graph** (Page – 3/3)



**I/C Testing Laboratoires**  
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**STRUCTURAL ENGINEERING DIVISION**  
**Test Floor Laboratory**  
**Department of Civil Engineering**  
**University of Engineering and Technology Lahore, 54890**  
**Pakistan. Ph: 92-42-99029202**

To,  
 Ameen Firdous  
 Civil Engineer & Technologies  
 Prime Builders  
 Construction IT Infrastructure (Steel Structure Related Works) at 45/B-1, Gulberg-III, M.M  
 Alam Road, Lahore  
 Reference # CED/TFL **1783** (Dr. Asad Ali)  
 Reference of the request letter # 0396/PB

Dated: 15-08-2022  
 Dated: 15-08-2022

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

Date of Test 16-08-2022  
 Gauge length 8 inches  
 Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No.  | Weight<br>(lbs/ft) | Diameter/<br>Size<br>(inch) |        | Area<br>(in <sup>2</sup> ) |        | Yield load<br>(kg) | Breaking<br>Load<br>(kg) | Yield Stress<br>(psi) |        | Ultimate Stress<br>(psi) |        | Elongation<br>(inch) | % Elongation | Remarks |
|--|--------------------|-----------------------------|--------|----------------------------|--------|--------------------|--------------------------|-----------------------|--------|--------------------------|--------|----------------------|--------------|---------|
|  |                    | Nominal                     | Actual | Nominal                    | Actual |                    |                          | Nominal               | Actual | Nominal                  | Actual |                      |              |         |
| 1  | 0.437              | 3/8                         | 0.404  | 0.11                       | 0.128  | 3840               | 5730                     | 77000                 | 65910  | 114900                   | 98400  | 1.10                 | 13.8         |         |
| 2  | 0.432              | 3/8                         | 0.402  | 0.11                       | 0.127  | 3820               | 5830                     | 76600                 | 66270  | 116900                   | 101200 | 1.20                 | 15.0         |         |
| -  | -                  | -                           | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                           | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                           | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                           | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| <b>Note: only two samples for tensile and one sample for bend test</b> |                    |                             |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| Bend Test  |                    |                             |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| 3/8" Dia Bar Bend Test Through 180° is Satisfactory                    |                    |                             |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
|  |                    |                             |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
|  |                    |                             |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |

**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

Note:

- 1- You can See your reports On Internet in the following web site  
[http://www.uet.edu.pk/faculties/facultiesinfo/civil/index.html?RID=testing\\_reports](http://www.uet.edu.pk/faculties/facultiesinfo/civil/index.html?RID=testing_reports)
- 2- The above results pertain to sample /samples supplied to this laboratory.
- 3- Sealed sample / Unsealed sample / Marked sample/Signed Samples



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