



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

To,
 Chief Canton, mant Engineer
 Walton Cantt Lahore
 Construction of Cantt House Near Cimla Building Walton Cantt

Reference # CED/TFL **34057** (Dr. Usman Akmal)
 Reference of the request letter # WC/CCE/2571

Dated: 23-10-2019
 Dated: 18-10-2019

Tension Test Report (Page -1/1)

Date of Test 24-10-2019
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile Test as per ASTM-A615

| Sr. No. | Weight (lbs/ft) | Diameter/ Size (inch) | | Area (in ²) | | Yield load (kg) | Breaking Load (kg) | Yield Stress (psi) | | Ultimate Stress (psi) | | Elongation (inch) | % Elongation | Remarks |
|--|--------------------|-----------------------------|--------|----------------------------|--------|--------------------|--------------------------|-----------------------|--------|--------------------------|--------|----------------------|--------------|---------|
| | | Nominal | Actual | Nominal | Actual | | | Nominal | Actual | Nominal | Actual | | | |
| 1 | 0.381 | 3/8 | 0.378 | 0.11 | 0.112 | 3500 | 5500 | 70200 | 68920 | 110200 | 108300 | 1.20 | 15.0 | |
| 2 | 0.380 | 3/8 | 0.377 | 0.11 | 0.112 | 3400 | 5450 | 68200 | 67040 | 109200 | 107500 | 1.10 | 13.8 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Note: only two samples for tensile test | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
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I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 1- You can See your reports On Internet in the following web site
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- 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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Test Floor Laboratory
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To,
 Deputy Manager (S & A)
 BPS (private) Ltd
 Sadiqabad Project

Reference # CED/TFL **34059** (Dr. Usman Akmal)
 Reference of the request letter # Nil

Dated: 23-10-2019
 Dated: 21-10-2019

Tension Test Report (Page -1/1)

Date of Test 24-10-2019
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight (lbs/ft) | Diameter/ Size (inch) | | Area (in ²) | | Yield load (kg) | Breaking Load (kg) | Yield Stress (psi) | | Ultimate Stress (psi) | | Elongation (inch) | % Elongation | Remarks |
|--|--------------------|-----------------------------|--------|----------------------------|--------|--------------------|--------------------------|-----------------------|--------|--------------------------|--------|----------------------|--------------|---------|
| | | Nominal | Actual | Nominal | Actual | | | Nominal | Actual | Nominal | Actual | | | |
| 1 | 0.378 | 3/8 | 0.376 | 0.11 | 0.111 | 3600 | 4900 | 72200 | 71510 | 98200 | 97400 | 1.00 | 12.5 | |
| 2 | 0.378 | 3/8 | 0.376 | 0.11 | 0.111 | 3600 | 4650 | 72200 | 71460 | 93200 | 92300 | 1.10 | 13.8 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Note: only two samples for tensile and one sample for bend test | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
| 3/8" Dia Bar Bend Test Through 180° 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,
Assistant Resident Engineer
Associated Consulting Engineers - ACE Limited
Construction of Peshawar Bara Bridge Project

Reference # CED/TFL **34060** (Dr. Usman Akmal)

Dated: 23-10-2019

Reference of the request letter # Bara Bridge/ACE/ARE-2/19/-026 Dated: 23-10-2019

Tension Test Report (Page – 1/2)

Date of Test 16-10-2019

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 | 782.0 | 17500 | 171.68 | 19600 | 192.28 | 199 | >3.50 | xx |
| - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | |
| Only one sample for Test | | | | | | | | | | |

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,
Assistant Resident Engineer
Associated Consulting Engineers - ACE Limited
Construction of Peshawar Bara Bridge Project

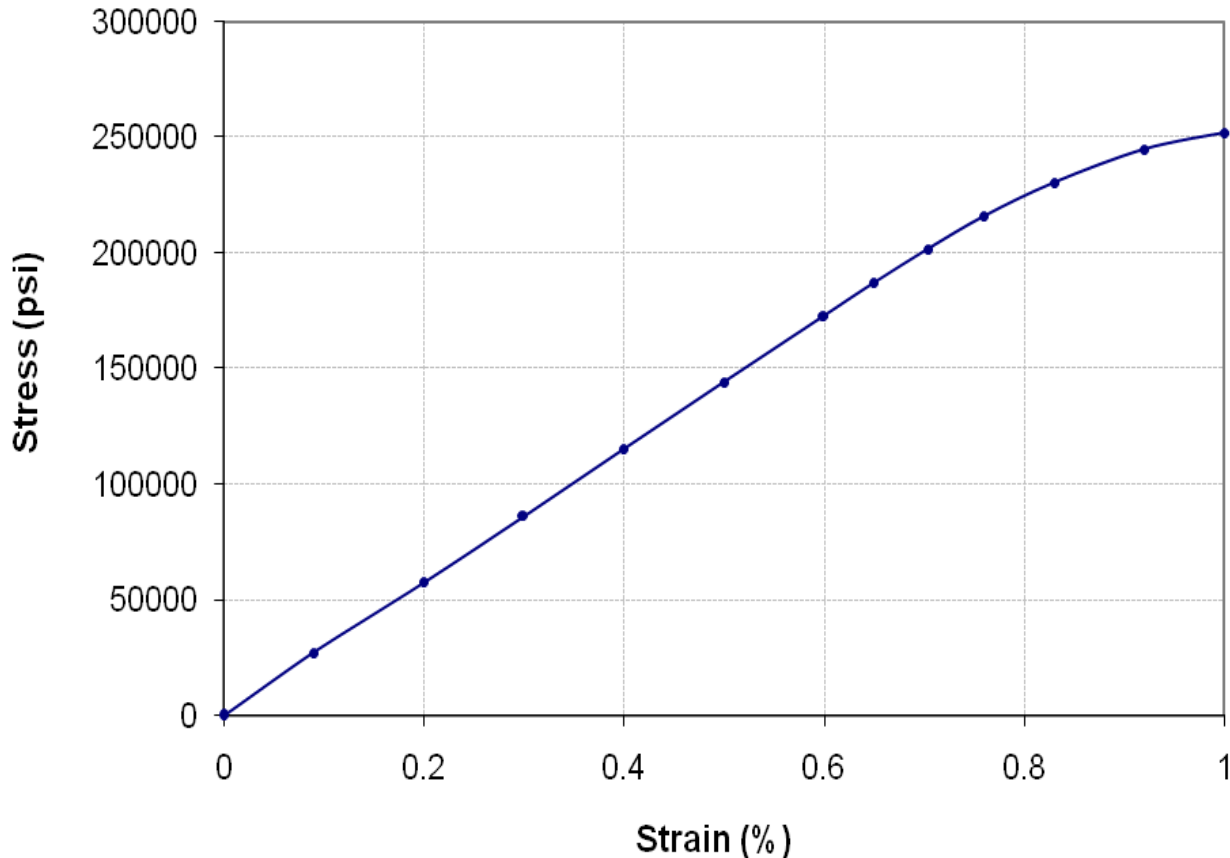
Reference # CED/TFL **34060** (Dr. Usman Akmal)

Dated: 23-10-2019

Reference of the request letter # Bara Bridge/ACE/ARE-2/19/-026 Dated: 23-10-2019

Graph (Page – 2/2)

Stress Strain Relation -- Specimen No. W 1



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Ref: CED/TFL/10/34061

Dated: 23-10-19

Dated of Test: 24-10-19

To,
Sub Divisional Officer
Buildings Sub Division No. 15
Lahore
(Construction of New Administration Block in The Premises of Lahore High Court Lahore)

Subject: - CALIBRATION OF PRESSURE GAUGE (MARK: TFL/10/34061) (Page -1/1)

Reference to your Letter No. 2766, Dated: 23/10/2019 on the subject cited above. One Pressure Gauge as received by us has been calibrated. The results are tabulated as under:

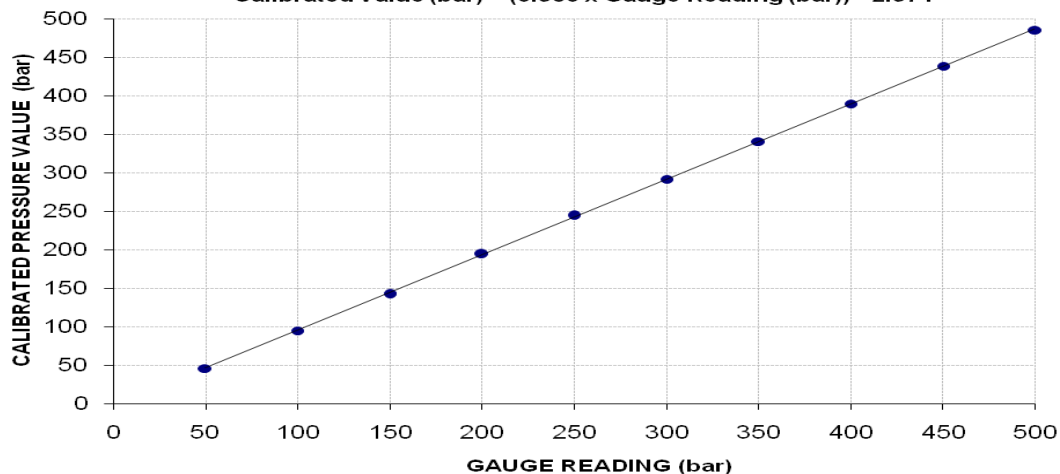
Total Range : Zero - 700 (bar)
Calibrated Range : Zero - 500 (bar)

| Pressure Gauge Reading (bar) | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|------------------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| Calibrated Load (kg) | 9200 | 19100 | 28700 | 39200 | 49300 | 58900 | 68800 | 78600 | 88500 | 98000 |
| Calibrated Pressure (bar) | 45.57 | 94.60 | 142.15 | 194.16 | 244.18 | 291.73 | 340.77 | 389.31 | 438.34 | 485.40 |

The Ram Area used for Calibration = 198 cm^2

Calibration Curve for Pressure Gauge

Calibrated Value (bar) = $(0.980 \times \text{Gauge Reading (bar)}) - 2.971$



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To,
M/S Defence Housing Authority.
Lahore Cantt
(Proposed Commercial Plaza, DRGCC Ph-III, DHA Ph-VI)(M/s Construct)

Reference # CED/TFL **34065** (Dr. Usman Akmal)
Reference of the request letter # 408/241/E/Lab/745/3865

Dated: 24-10-2019
Dated: 24-10-2019

Tension Test Report (Page -1/1)

Date of Test 24-10-2019
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight (lbs/ft) | Diameter/ size | | Area (in ²) | | Yield load (kg) | Breaking Load (kg) | Yield Stress (psi) | | Ultimate Stress (psi) | | Elongation (inch) | % Elongation | Remarks |
|--|--------------------|-------------------|------------------|----------------------------|--------|--------------------|--------------------------|-----------------------|--------|--------------------------|--------|----------------------|--------------|-----------------|
| | | Nominal (#) | Actual (inch) | Nominal | Actual | | | Nominal | Actual | Nominal | Actual | | | |
| 1 | 0.365 | 3 | 0.370 | 0.11 | 0.107 | 3500 | 4700 | 70200 | 71830 | 94200 | 96500 | 1.20 | 15.0 | Kamran Steel |
| 2 | 0.366 | 3 | 0.370 | 0.11 | 0.108 | 3600 | 4800 | 72200 | 73740 | 96200 | 98400 | 1.10 | 13.8 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Note: only two samples for tensile and one sample for bend test | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
| #3 Bar Bend Test Through 180° is Satisfactory | | | | | | | | | | | | | | |
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