



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

To,
 Manager Construction Projects
 Allied Bank
 Construction of ABL Building, 3-Babar Block, New Garden Town, Lahore

Reference # CED/TFL **35362** (Dr. Waseem Abbass) Dated: 14-09-2020
 Reference of the request letter # HOL/ENGG.C.P./SM/2020/17 Dated: 14-09-2020

Tension Test Report (Page -1/1)

Date of Test 16-09-2020
 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 | 0.416 | 3 | 0.394 | 0.11 | 0.122 | 3800 | 5000 | 76200 | 68530 | 100200 | 90200 | 1.30 | 16.3 | Amreli Steel |
| 2 | 0.414 | 3 | 0.394 | 0.11 | 0.122 | 3900 | 5000 | 78200 | 70590 | 100200 | 90500 | 1.30 | 16.3 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 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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I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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Test Floor Laboratory
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University of Engineering and Technology Lahore, 54890
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To,
M/S Haris & Company
Lahore
(Engro Enfrashare Pvt. Ltd. B2S Project)

Reference # CED/TFL **35365** (Dr. Waseem Abbass)
Reference of the request letter # 002

Dated: 14-09-2020
Dated: 14-09-2020

Tension Test Report (Page -1/2)

Date of Test 16-09-2020
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight (lbs/ft) | Diameter/ Size (mm) | | 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 | 0.371 | 10 | 9.46 | 0.12 | 0.109 | 3200 | 4500 | 58789 | 64710 | 82673 | 91000 | 1.40 | 17.5 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Note: only one sample for tensile and one sample for bend test | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
| 10mm Dia Bar Bend Test Through 180° is Satisfactory | | | | | | | | | | | | | | |
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I/C Testing Laboratoires
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Test Floor Laboratory
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University of Engineering and Technology Lahore, 54890
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To,
M/S Haris & Company
Lahore
(Engro Enfrashare Pvt. Ltd. B2S Project)

Reference # CED/TFL **35365** (Dr. Waseem Abbass)
Reference of the request letter # 001

Dated: 14-09-2020
Dated: 14-09-2020

Tension Test Report (Page -2/2)

Date of Test 16-09-2020
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight (lbs/ft) | Diameter/ Size (mm) | | 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 | 0.370 | 10 | 9.45 | 0.12 | 0.109 | 3200 | 4400 | 58789 | 64870 | 80835 | 89200 | 1.20 | 15.0 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Note: only one sample for tensile and one sample for bend test | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
| 10mm Dia Bar Bend Test Through 180° is Satisfactory | | | | | | | | | | | | | | |
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Test Floor Laboratory
Department of Civil Engineering
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To,
 Chief Resident Engineer
 Osmani & Company (Pvt) Ltd
 Electrification and Street Lighting Works of Sahianwala Road and Phase-II-B of M-3 Industrial
 City, M-3 Motorway, Faisalabad
 Reference # CED/TFL **35366** (Dr. Waseem Abbass) Dated: 15-09-2020
 Reference of the request letter # CRE/M11C/FIC-44/Lab/635 Dated: 09-09-2020

Tension Test Report (Page -1/1)

Date of Test 16-09-2020
 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 | 0.379 | 3 | 0.377 | 0.11 | 0.111 | 2800 | 4300 | 56200 | 55440 | 86200 | 85200 | 1.70 | 21.3 | Afco Steel |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Note: only one sample for tensile and one sample for bend test | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
| #3 Bar Bend Test Through 180° is Satisfactory | | | | | | | | | | | | | | |
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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,
 Project Director
 PEC Regional Office Building
 Lahore

Reference # CED/TFL **35368** (Dr. Waseem Abbass) Dated: 15-09-2020
 Reference of the request letter # PEC/LHR/NLCTD/Steel.Test/2020/88 Dated: 14-09-2020

Tension Test Report (Page -1/1)

Date of Test 16-09-2020
 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 | 0.355 | 3 | 0.365 | 0.11 | 0.104 | 3800 | 4700 | 76200 | 80230 | 94200 | 99300 | 0.90 | 11.3 | |
| 2 | 0.366 | 3 | 0.370 | 0.11 | 0.108 | 3700 | 4600 | 74200 | 75760 | 92200 | 94200 | 0.75 | 9.4 | |
| 3 | 0.360 | 3 | 0.367 | 0.11 | 0.106 | 3900 | 4800 | 78200 | 81210 | 96200 | 100000 | 0.80 | 10.0 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Note: only three samples for tensile and two samples for bend test | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
| #3 Bar Bend Test Through 180° is Satisfactory | | | | | | | | | | | | | | |
| #3 Bar Bend Test Through 180° is Satisfactory | | | | | | | | | | | | | | |

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University of Engineering and Technology Lahore, 54890
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To,
 Resident Engineer
 AAA Jv ACC
 TurakPak
 Improvement/ Widening of Thokar Niaz Baig – Hudiyara Drain Section of N-5

Reference # CED/TFL **35369** (Dr. Waseem Abbass)
 Reference of the request letter # THDP/RE/01/550

Dated: 15-09-2020
 Dated: 01-09-2020

Tension Test Report (Page -1/1)

Date of Test 16-09-2020
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight (lbs/ft) | Diameter/ Size (mm) | | 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 | 0.440 | 10 | 10.31 | 0.12 | 0.129 | 4300 | 5800 | 78998 | 73230 | 106556 | 98800 | 1.10 | 13.8 | FF Steel |
| 2 | 0.439 | 10 | 10.30 | 0.12 | 0.129 | 4400 | 5800 | 80835 | 75110 | 106556 | 99100 | 1.10 | 13.8 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Note: only two samples for tensile and one sample for bend test | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
| 10mm Dia Bar Bend Test Through 180° is Satisfactory | | | | | | | | | | | | | | |
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To,
Resident Engineer
ACE, Kohat
Dualization of Sherkot – Hangu Section of Provincial Highway S-7 24 (kms)

Reference # CED/TFL **35370** (Dr. Waseem Abbass)
Reference of the request letter # ACE/KHT/SHRP/685

Dated: 15-09-2020
Dated: 14-09-2020

Tension Test Report (Page – 1/2)

Date of Test 16-09-2020
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 | 775.0 | 17900 | 175.60 | 19600 | 192.28 | 199 | >3.50 | xx |
| - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | |
| Only three samples 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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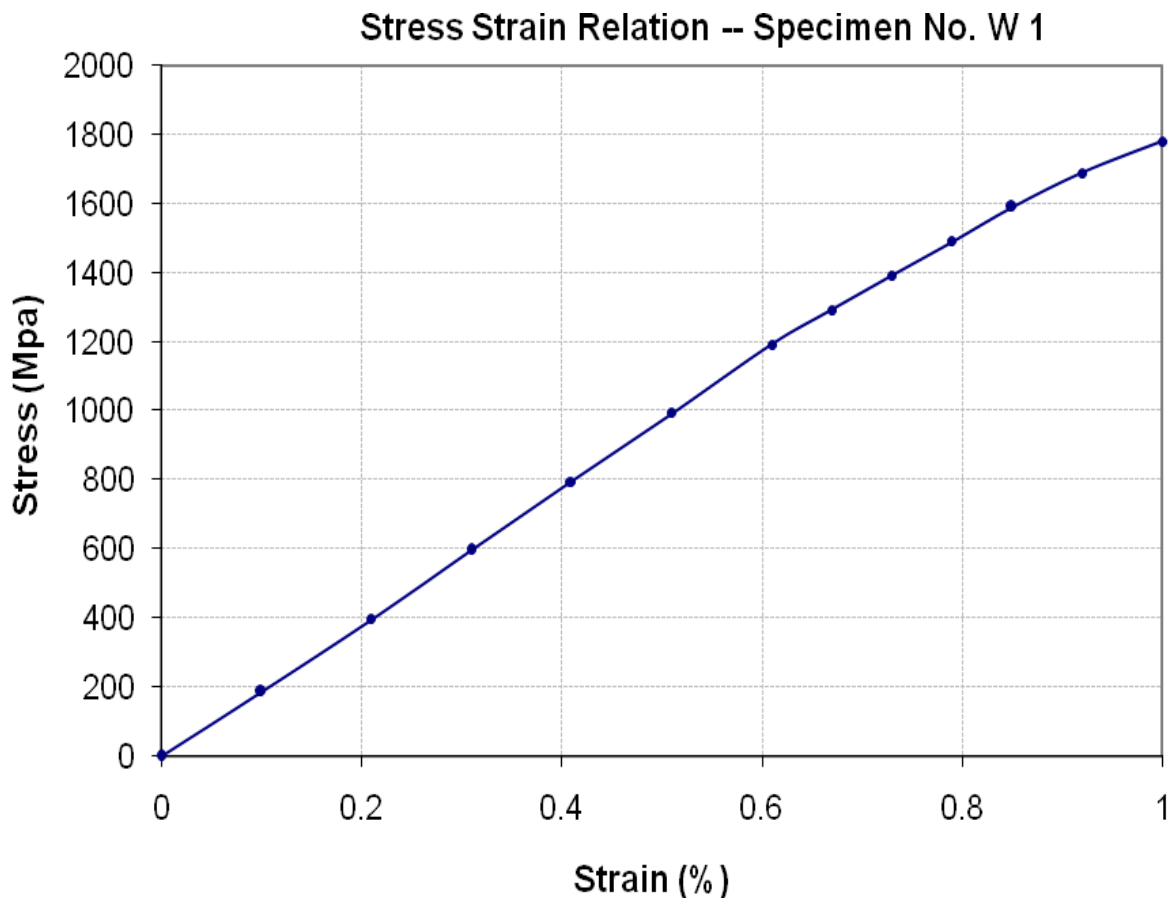
STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Resident Engineer
ACE, Kohat
Dualization of Sherkot – Hangu Section of Provincial Highway S-7 24 (kms)

Reference # CED/TFL **35370** (Dr. Waseem Abbass)
Reference of the request letter # ACE/KHT/SHRP/685

Dated: 15-09-2020
Dated: 14-09-2020

Graph (Page – 2/2)



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