

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

To, Resident Engineer NESPAK

Punjab Intermediate Cities Improvement Investment Program (PICIIP), Consultancy Services for Enginbeering, Procurement and Construction Management Watsan Sialkot (NCB-Works/PICIIP-02)(Lot-01, Lot-02 & Lot-04)

Reference # CED/TFL <u>36011 (Dr. Usman Akmal)</u>

Reference of the request letter # Nespak/SAH/ZKB-Reliable/UET/003

Dated: 29-01-2021

Dated: 26-01-2021

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

Date of Test 04-02-2021 Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test

| Sr. No. | Weight   | Si      | neter/<br>ize<br>um) |          | rea<br>n²) | Yield load | Breaking<br>Load |          | Stress<br>si) |          | e Stress<br>si) | Elongation | % Elongation | Remarks  |
|---------|----------|---------|----------------------|----------|------------|------------|------------------|----------|---------------|----------|-----------------|------------|--------------|----------|
|         | (lbs/ft) | Nominal | Actual               | Nominal  | Actual     | (kg)       | (kg)             | Nominal  | Actual        | Nominal  | Actual          | (inch)     | % E          | R        |
| 1       | 0.114    | 4       | 5.25                 |          | 0.034      | 1160       | 1440             |          | 76120         |          | 94500           | 1.20       | 15.0         |          |
| 2       | 0.117    | 4       | 5.30                 |          | 0.034      | 1200       | 1480             |          | 77200         |          | 95300           | 1.50       | 18.8         | teel     |
| 3       | 0.191    | 6       | 6.79                 |          | 0.056      | 1400       | 1880             |          | 55010         |          | 73900           | 1.40       | 17.5         | SJ Steel |
| 4       | 0.188    | 6       | 6.74                 |          | 0.055      | 1320       | 1840             |          | 52630         |          | 73400           | 1.50       | 18.8         |          |
| 5       | 4.192    | 32      | 31.81                | 1.25     | 1.232      | 36000      | 53200            | 63492    | 64400         | 93828    | 95200           | 1.50       | 18.8         |          |
| 6       | 4.167    | 32      | 31.72                | 1.25     | 1.225      | 37600      | 54400            | 66314    | 67660         | 95944    | 97900           | 1.60       | 20.0         |          |
|         |          |         | No                   | te: only | y six sar  | nples for  | tensile a        | nd three | samples       | for bend | test            | ı          |              |          |
|         |          |         |                      |          |            |            |                  |          |               |          |                 |            |              |          |
|         |          |         |                      |          |            |            | Bend T           | 'est     |               |          |                 |            |              |          |

4mm Dia Bar Bend Test Through 180° is Satisfactory

6mm Dia Bar Bend Test Through 180° is Satisfactory

32mm 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,
Sub Divisional Officer
Highway Sub Division, Taunsa
(Rehabilitation of Metalled Road from Zain to Barthi Including Pile Foundation Bridge over Nallah Sanghar Length = 16.00 km (Group-III Pile Foundation Bridge)

Reference # CED/TFL <u>36016 (Dr. Usman Akmal)</u>

Reference of the request letter # 276/T

Dated: 29-01-2021

Dated: 01-01-2021

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

Date of Test 04-02-2021 Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight   |             | neter/<br>ze   |         | rea<br>1 <sup>2</sup> ) | Yield load | Breaking<br>Load |         | Stress<br>si) |         | te Stress<br>si) | Elongation | % Elongation | Remarks |
|---------|----------|-------------|--|---------|-------------------------|------------|------------------|---------|---------------|---------|------------------|------------|--------------|---------|
| S       | (lbs/ft) | Nominal (#) | Actual (inch)  | Nominal | Actual                  | (kg)       | (kg)             | Nominal | Actual        | Nominal | Actual           | (inch)     | <b>3</b> %   | Re      |
| 1       | 0.368    | 3           | 0.371  | 0.11    | 0.108                   | 3200       | 4900             | 64200   | 65280         | 98200   | 100000           | 1.20       | 15.0         |         |
| 2       | 0.370    | 3           | 0.372  | 0.11    | 0.109                   | 3200       | 4900             | 64200   | 64880         | 98200   | 99400            | 1.10       | 13.8         |         |
| -       | -        | -           | -  | -       | -                       | -          | -                | -       | -             | -       | -                | -          | -            |         |
| -       | -        | -           | -  | -       | -                       | -          | -                | -       | -             | -       | -                | -          | -            |         |
| -       | -        | -           | -  | -       | -                       | -          | -                | -       | -             | -       | -                | -          | -            |         |
| -       | -        | -           | -  | -       | -                       | -          | -                | -       | -             | -       | -                | -          | -            |         |
|         |          |             | N  | ote: on | ly two s                | amples f   | or tensile       | and one | sample f      | or bend | test             |            |              |         |
|         |          |             | Note: only two samples for tensile and one sample for bend test  Bend Test |         |                         |            |                  |         |               |         |                  |            |              |         |
| #3      | Bar Ben  | d Test      | Γhrough  |         |                         |            |                  |         |               |         |                  |            |              |         |

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

To,
Sub Divisional Officer
Highway Sub Division, Taunsa
(Rehabilitation of Metalled Road from Zain to Barthi Including Pile Foundation Bridge over
Nallah Sanghar Length = 16.00 km (Group-III Pile Foundation Bridge)

Reference # CED/TFL 36016 (Dr. Usman Akmal)

Reference of the request letter # 206/T

Dated: 29-01-2021

Dated: 02-12-2020

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

Date of Test 04-02-2021 Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight   |             | neter/<br>ze                                |         | rea<br>n²) | Yield load | Breaking<br>Load |         | Stress<br>si) |         | e Stress<br>si) | Elongation | % Elongation | Remarks |
|---------|----------|-------------|---|---------|------------|------------|------------------|---------|---------------|---------|-----------------|------------|--------------|---------|
| S       | (lbs/ft) | Nominal (#) | Actual (inch)                               | Nominal | Actual     | (kg)       | (kg)             | Nominal | Actual        | Nominal | Actual          | (inch)     | <b>3</b> %   | Re      |
| 1       | 5.337    | 11          | 1.413                                       | 1.56    | 1.569      | 44600      | 64400            | 63100   | 62670         | 91000   | 90500           | 1.70       | 21.3         |         |
| 2       | 5.423    | 11          | 1.425                                       | 1.56    | 1.594      | 47400      | 70400            | 67000   | 65540         | 99500   | 97400           | 1.70       | 21.3         |         |
| -       | •        | -           | -   | •       | -          | •          | -                | •       | -             | -       | -               | -          | •            |         |
| -       | •        | -           | -   | •       | -          | •          | -                | •       | -             | -       | -               | -          | 1            |         |
| -       | -        | -           | -   | -       | -          | -          | -                | -       | -             | -       | -               | -          | -            |         |
| -       | -        | -           | -   | -       | -          | -          | -                | -       | -             | -       | -               | -          | -            |         |
|         |          |             | No  | ote: on | ly two s   | amples f   | or tensile       | and one | sample f      | or bend | test            | 1          |              |         |
|         |          |             |   |         |            |            |                  |         |               |         |                 |            |              |         |
|         |          |             |   |         |            |            | Bend T           | est     |               |         |                 |            |              |         |
| #11     | l Bar Be | end Test    | Bend Test 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,
Resident Engineer
EA Consulting Pvt Ltd
Life Style Residency Apartment - Bedian Road

Reference # CED/TFL <u>36019 (Dr. Usman Akmal)</u>
Reference of the request letter # EA/FGEHA/LHE/092
Dated: 01-02-2021

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

Date of Test 04-02-2021 Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight   |             | neter/<br>ze      |          | neter/<br>ze | Yield load | Breaking<br>Load |           | Stress<br>si) |          | e Stress<br>si) | Elongation | % Elongation | Remarks |
|---------|----------|-------------|-------------------|----------|--------------|------------|------------------|-----------|---------------|----------|-----------------|------------|--------------|---------|
| S       | (lbs/ft) | Nominal (#) | Nominal<br>(inch) | Nominal  | 1.27 1.218   |            | (kg)             | Nominal   | Actual        | Nominal  | Actual          | (inch)     | 3 %          | Re      |
| 1       | 4.142    | 10          | 1.245             | 1.27     | 1.218        | 44200      | 56400            | 76800     | 80020         | 97900    | 102100          | 1.60       | 20.0         |         |
| 2       | 4.215    | 10          | 1.256             | 1.27     | 1.239        | 45000      | 58600            | 78100     | 80050         | 101700   | 104300          | 1.30       | 16.3         |         |
| 3       | 4.222    | 10          | 1.257             | 1.27     | 1.241        | 42000      | 53000            | 72900     | 74590         | 92000    | 94200           | 1.60       | 20.0         |         |
| -       | -        | -           | -                 | -        | -            | -          | -                | -         | -             | -        | -               | -          | -            |         |
| -       | -        | -           | -                 | -        | -            | -          | -                | -         | -             | -        | -               | -          | -            |         |
| -       | -        | -           | -                 | -        | -            | -          | -                | -         | -             | -        | -               | -          | -            |         |
|         |          |             | No                | te: only | y three      | samples    | for tensil       | e and one | e sample      | for bend | test            |            |              | 1       |
|         |          | 1.5         |                   | 1 1000   |              | 0          | Bend T           | est est   |               |          |                 |            |              |         |
| #10     | ) Bar Be | end Test    | Throug            | gh 180°  | is Satist    | factory    |                  |           |               |          |                 |            |              |         |

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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 Manager
Kohistan Builders & Developers
Construction of Bridge no. 01 at RD 0+80.69 Kohistan Enclave Wah Cantt.

Reference # CED/TFL <u>36028 (Dr. Usman Akmal)</u>

Reference of the request letter # Nil

Dated: 02-02-2021

Dated: 02-02-2021

**Tension Test Report** (Page – 1/3)

Date of Test 04-02-2021 Gauge length 640 mm

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

| Sr. No. | Nominal<br>Diameter | Nominal<br>Weight | Measured<br>weight | Yield st<br>clause | _      |       | iking<br>ngth<br>e (6.2) | Young's<br>Modulus of<br>Elasticity<br>"E" | % Elongation | Remarks / Coil No. |
|---------|---------------------|-------------------|--------------------|--------------------|--------|-------|--------------------------|--|--------------|--------------------|
|         | (mm)                | (kg/km)           | (kg/km)            | (kg)               | (kN)   | (kg)  | (kN)                     | GPa  | %            | Rema               |
| 1       | 12.70<br>(1/2")     | 775.0             | 798.0              | 18100              | 177.56 | 19200 | 188.35                   | 198  | >3.50        | 20                 |
| 2       | 12.70<br>(1/2")     | 775.0             | 788.0              | 17000              | 166.77 | 19800 | 194.24                   | 199  | >3.50        | 26                 |
| -       | -                   | -                 | -                  | -                  | -      | -     | -                        | -  | -            | -                  |
| -       | -                   | -                 | -                  | •                  | -      | -     | -                        | -  | 1            | ı                  |
| -       | -                   | -                 | -                  | •                  | -      | -     | -                        | -  | 1            | •                  |
| -       | -                   | -                 | -                  | -                  | -      | -     | -                        | -  | -            | -                  |

Only two 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

I/C Testing Laboratoires UET Lahore, Pakistan.

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

To,
Project Manager
Kohistan Builders & Developers
Construction of Bridge no. 01 at RD 0+80.69 Kohistan Enclave Wah Cantt.

Reference # CED/TFL <u>36028</u> (<u>Dr. Usman Akmal</u>) Reference of the request letter # Nil

**Graph** (Page – 2/3)

## Stress Strain Relation -- Specimen No. W 1 (Coil #20) 2000 1800 1600 1400 Stress (Mpa) 1200 1000 800 600 400 200 0 0 0.2 0.4 8.0 0.6 1 Strain (%)

I/C Testing Laboratoires UET Lahore, Pakistan.

Dated: 02-02-2021

Dated: 02-02-2021

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

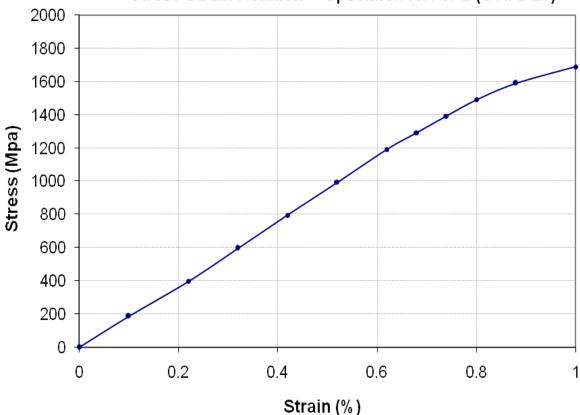
To,
Project Manager
Kohistan Builders & Developers
Construction of Bridge no. 01 at RD 0+80.69 Kohistan Enclave Wah Cantt.

Reference # CED/TFL <u>36028 (Dr. Usman Akmal)</u>

Reference of the request letter # Nil

**Graph** (Page – 3/3)

## Stress Strain Relation -- Specimen No. W 2 (Coil #26)



I/C Testing Laboratoires UET Lahore, Pakistan.

Dated: 02-02-2021

Dated: 02-02-2021

- 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
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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 Incharge Royal Developers & Builders (Pvt) Ltd. Structure Dev Works Royal Orchard Sahiwal

Reference # CED/TFL <u>36029 (Dr. Usman Akmal)</u>

Reference of the request letter # HRL/ROS/2021/062

Dated: 03-02-2021

Dated: 03-02-2021

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

Date of Test 04-02-2021 Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight   |             | neter/<br>ze  |              | rea<br>1 <sup>2</sup> ) | Yield load | Breaking<br>Load |         | Stress<br>si) | Ultimat<br>(p | e Stress<br>si) | Elongation | % Elongation | Remarks |
|---------|----------|-------------|---------------|--------------|-------------------------|------------|------------------|---------|---------------|---------------|-----------------|------------|--------------|---------|
| S       | (lbs/ft) | Nominal (#) | Actual (inch) | 95 0.11 0.12 |                         | (kg)       | (kg)             | Nominal | Actual        | Nominal       | Actual          | (inch)     | % E          | Re      |
| 1       | 0.418    | 3           | 0.395         | 0.11         | 0.123                   | 3600       | 5300             | 72200   | 64600         | 106200        | 95100           | 1.30       | 16.3         |         |
| 2       | 0.421    | 3           | 0.397         | 0.11         | 0.124                   | 3600       | 5300             | 72200   | 64070         | 106200        | 94400           | 1.50       | 18.8         |         |
| -       | -        | -           | -             | -            | -                       | -          | -                | -       | -             | -             | -               | -          | -            |         |
| -       | -        | -           | -             | -            | -                       | -          | -                | -       | -             | -             | -               | -          | -            |         |
| -       | -        | -           | -             | -            | -                       | -          | -                | -       | -             | -             | -               | -          | -            |         |
| -       | -        | -           | -             | -            | -                       | -          | -                | -       | -             | -             | -               | -          | -            |         |
|         |          |             | N             | ote: on      | ly two s                | amples f   | or tensile       | and one | sample f      | or bend t     | test            |            |              |         |
|         |          |             |               |              |                         |            | Bend T           | l'agt   |               |               |                 |            |              |         |
| щ2      | D D      | 1 Tr 7      | Pl 1          | 1000         | - C - 4: - C            | -4         | Dend I           | est     |               |               |                 |            |              |         |
| #3      | Bar Ben  | u rest      | nrougn        | 1 180° 18    | s Sausta                | ctory      |                  |         |               |               |                 |            |              |         |

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

To, Resident Engineer NESPAK PICIIP Sahiwal

Punjab Intermediate Cities Improvement Investment Program (PICIIP), Consultancy Services for Enginbeering, Procurement and Construction Management

Trunk Main Sewer Lines and Allied Work (NCB-Works/PICIIP-03)(Lot-02)

Reference # CED/TFL <u>36032 (Dr. Usman Akmal)</u>
Reference of the request letter # 3976/11/MT/Lot-2/39

Dated: 03-02-2021 Dated: 02-02-2021

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

Date of Test 04-02-2021 Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test

| Sr. No. | Weight   | Si      | neter/<br>ize<br>ch) |         | rea<br>n²) | Yield load | Breaking<br>Load |         | Stress<br>si) |          | e Stress<br>si) | Elongation | % Elongation | Remarks          |
|---------|----------|---------|----------------------|---------|------------|------------|------------------|---------|---------------|----------|-----------------|------------|--------------|------------------|
|         | (lbs/ft) | Nominal | Actual               | Nominal | Actual     | (kg)       | (kg)             | Nominal | Actual        | Nominal  | Actual          | (inch)     | <b>3</b> %   | Ŗ                |
| 1       | 0.074    | 3/16    | 0.167                |         | 0.022      |            | 1000             |         |               |          | 100800          | 0.90       | 11.3         | Æ                |
| 2       | 0.082    | 3/16    | 0.175                |         | 0.024      |            | 1080             |         |               |          | 99200           | 1.00       | 12.5         | Madni Steel Mill |
| 3       | 0.138    | 1/4     | 0.227                |         | 0.041      | 1320       | 1680             |         | 71730         |          | 91300           | 1.20       | 15.0         | Ini St           |
| 4       | 0.144    | 1/4     | 0.232                |         | 0.042      | 1520       | 1760             |         | 79140         |          | 91700           | 0.90       | 11.3         | Mad              |
| -       | -        | •       | -                    | •       | -          | -          | -                | -       | -             | -        | -               | -          | •            |                  |
| -       | -        | 1       | -                    | •       | -          | -          | -                | -       | -             | -        | -               | -          | 1            |                  |
|         | -        |         | Note: only fo        |         |            | amples fo  | or tensile       | and two | samples       | for bend | test            | 1          |              |                  |
|         |          |         |                      |         |            |            | Bend T           | est .   |               |          |                 |            |              |                  |

3/16" Dia Bar Bend Test Through 180° is Satisfactory

1/4" Dia Bar Bend Test Through 180° is Satisfactory

I/C Testing Laboratoires UET Lahore, Pakistan.

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

To,
Project Coordinator
Sinaco Engineers (Pvt) Limited
Construction Works at CCL Pharma, Quaid-e-Azam Industrial Estate, Lahore

Reference # CED/TFL 36034 (Dr. Usman Akmal)

Reference of the request letter # SEL/LHR/C-441/11760

Dated: 03-02-2021

Dated: 02-02-2021

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

Date of Test 04-02-2021 Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight   |             | neter/<br>ze  |                           | rea<br>n²) | Yield load | Breaking<br>Load |         | Stress<br>si) |         | te Stress<br>si) | Elongation | % Elongation | Remarks       |
|---------|----------|-------------|---------------|---------------------------|------------|------------|------------------|---------|---------------|---------|------------------|------------|--------------|---------------|
| S       | (1J/sqI) | Nominal (#) | Actual (inch) | Nominal                   | Actual     | (kg)       | (kg)             | Nominal | Actual        | Nominal | Actual           | (inch)     | ∃%           | R             |
| 1       | 0.367    | 3           | 0.371         | 0.11                      | 0.108      | 3600       | 4600             | 72200   | 73490         | 92200   | 94000            | 0.80       | 10.0         | 30<br>el      |
| 2       | 0.369    | 3           | 0.372         | 0.11                      | 0.108      | 3500       | 4500             | 70200   | 71130         | 90200   | 91500            | 1.10       | 13.8         | Afco<br>Steel |
| -       | •        | •           | 1             | •                         | -          | -          | -                | •       | -             | -       | -                | -          | ı            |               |
| -       | •        | •           | 1             | •                         | -          | -          | -                | •       | -             | -       | -                | -          | ı            |               |
| -       | -        | -           | -             | -                         | -          | -          | -                | -       | -             | -       | -                | -          | -            |               |
| -       | -        | -           | -             | -                         | -          | -          | -                | -       | -             | -       | -                | -          | -            |               |
|         |          |             | N             | ote: on                   | ly two s   | amples f   | or tensile       | and one | sample f      | or bend | test             |            |              |               |
|         |          |             |               |                           |            |            |                  |         |               |         |                  |            |              |               |
|         |          |             |               | Bend Test                 |            |            |                  |         |               |         |                  |            |              |               |
| #3      | Bar Ben  | d Test      | Γhrough       | 180° is                   | s Satisfa  | ctory      |                  |         |               |         |                  |            |              |               |
|         |          |             |               | ough 180° is Satisfactory |            |            |                  |         |               |         |                  |            |              |               |

I/C Testing Laboratoires UET Lahore, Pakistan.

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

To.

Resident Engineer

Metroplan - Asian Jv

Resident Construction Supervision for Establishment of 200 Bedded Mother & Child Hospital

and Nursing College, District Mianwali

Reference # CED/TFL **36035**, **36** (Dr. Usman Akmal) Dated: 03-01-2021

Reference of the request letter # Metroplan Asian Jv-Nexus-MMCH-RE-614Dated: 09-12-2020

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

Date of Test 04-041-2021 Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Elongation<br>Remarks                       |      | Elongation   |  | (ps   | si)  | Yield (   | Breaking<br>Load   | Yield load  | rea<br>n <sup>2</sup> )  |  | ieter/<br>ze   |                                     | Weight  | Sr. No.                              |
|---|------|--|--|---|--|---|--|---|--|--|--|-------------------------------------|---|--------------------------------------|
| 0%  | % E  | (inch)   | Actual   | Nominal   | Actual   | Nominal   | (kg)   | (kg)  | Actual   | Nominal  | Actual (inch)  | Nominal<br>(#)                      | (lbs/ft)  | S                                    |
| 15.0  | 15.0 | 1.20   | 101500   | 100200  | 71050  | 70200   | 5000   | 3500  | 0.109  | 0.11   | 0.372  | 3                                   | 0.369   | 1                                    |
| 13.8  | 13.8 | 1.10   | 100900   | 100200  | 68610  | 68200   | 5000   | 3400  | 0.109  | 0.11   | 0.373  | 3                                   | 0.372   | 2                                    |
| 15.0  | 15.0 | 1.20   | 100400   | 100200  | 70220  | 70200   | 5000   | 3500  | 0.110  | 0.11   | 0.374  | 3                                   | 0.374   | 3                                    |
| 13.8  | 13.8 | 1.10   | 101900   | 100200  | 69300  | 68200   | 5000   | 3400  | 0.108  | 0.11   | 0.371  | 3                                   | 0.368   | 4                                    |
| 20.0 See See See See See See See See See Se | 20.0 | 1.60   | 95900  | 95800   | 72230  | 72200   | 55200  | 41600   | 1.270  | 1.27   | 1.271  | 10                                  | 4.319   | 5                                    |
| 15.0  | 15.0 | 1.20   | 95300  | 94800   | 71510  | 71200   | 54600  | 41000   | 1.264  | 1.27   | 1.268  | 10                                  | 4.299   | 6                                    |
| 16.3  | 16.3 | 1.30   | 94500  | 94500   | 70180  | 70200   | 54400  | 40400   | 1.269  | 1.27   | 1.271  | 10                                  | 4.316   | 7                                    |
| 18.8  | 18.8 | 1.50   | 94100  | 93800   | 70390  | 70200   | 54000  | 40400   | 1.265  | 1.27   | 1.269  | 10                                  | 4.304   | 8                                    |
| 18.8  | 18.8 | 1.50   | 93800  | 93800   | 69470  | 69500   | 54000  | 40000   | 1.269  | 1.27   | 1.271  | 10                                  | 4.318   | 9                                    |
| 20.0  | 20.0 | 1.60   | 94200  | 93400   | 70370  | 69800   | 53800  | 40200   | 1.259  | 1.27   | 1.266  | 10                                  | 4.284   | 10                                   |
|   |      |  | test   | for bend  | samples  | and five s  | tensile :  | mples for   | ten sai  | te: only   | No   |                                     |   |                                      |
|   |      |  |  |   |  |   |  |   |  |  |  |                                     |   |                                      |
|   |      |  |  |   |  | est   | Bend T   |   |  |  |  |                                     |   |                                      |
| )   | )    | 1.20<br>1.10<br>1.20<br>1.10<br>1.60<br>1.20<br>1.30<br>1.50 | 101500<br>100900<br>100400<br>101900<br>95900<br>95300<br>94500<br>94100<br>93800<br>94200 | 100200<br>100200<br>100200<br>100200<br>95800<br>94800<br>94500<br>93800<br>93400 | 71050<br>68610<br>70220<br>69300<br>72230<br>71510<br>70180<br>70390<br>69470<br>70370 | 70200<br>68200<br>70200<br>68200<br>72200<br>71200<br>70200<br>69500<br>69800<br>and five s | 5000<br>5000<br>5000<br>5000<br>55200<br>54600<br>54400<br>54000<br>53800<br>tensile | 3500<br>3400<br>3500<br>3400<br>41600<br>41000<br>40400<br>40400<br>40200 | 0.109<br>0.109<br>0.110<br>0.108<br>1.270<br>1.264<br>1.269<br>1.265<br>1.269<br>1.259 | 0.11<br>0.11<br>0.11<br>1.27<br>1.27<br>1.27<br>1.27<br>1.27 | 0.372<br>0.373<br>0.374<br>0.371<br>1.271<br>1.268<br>1.271<br>1.269<br>1.271<br>1.266 | 3<br>3<br>3<br>10<br>10<br>10<br>10 | 0.369<br>0.372<br>0.374<br>0.368<br>4.319<br>4.299<br>4.316<br>4.304<br>4.318 | 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8 |

#3 Bar Bend Test Through 180° is Satisfactory

#3 Bar Bend Test Through 180° is Satisfactory

#10 Bar Bend Test Through 180° is Satisfactory

#10 Bar Bend Test Through 180° is Satisfactory

#10 Bar Bend Test Through 180° is Satisfactory

I/C Testing Laboratoires UET Lahore, Pakistan.

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

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

Reference # CED/TFL <u>36039 (Dr. Usman Akmal)</u>

Reference of the request letter # HOL/ENGG.C.P./SM/2021/19

Dated: 04-02-2021

Dated: 04-02-2021

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

Date of Test 04-02-2021 Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight   |             | neter/<br>ze  |         | rea<br>1 <sup>2</sup> ) | Yield load | Breaking<br>Load |         | Stress<br>si) |         | te Stress<br>si) | Elongation | % Elongation | Remarks          |
|---------|----------|-------------|---------------|---------|-------------------------|------------|------------------|---------|---------------|---------|------------------|------------|--------------|------------------|
| S       | (lbs/ft) | Nominal (#) | Actual (inch) | Nominal | Actual                  | (kg)       | (kg)             | Nominal | Actual        | Nominal | Actual           | (inch)     | <b>3</b> %   | R                |
| 1       | 0.374    | 3           | 0.374         | 0.11    | 0.110                   | 4200       | 4900             | 84200   | 84180         | 98200   | 98300            | 1.00       | 12.5         | a                |
| 2       | 0.385    | 3           | 0.380         | 0.11    | 0.113                   | 3900       | 4900             | 78200   | 75950         | 98200   | 95500            | 1.10       | 13.8         | Naveena<br>Steel |
| -       | -        | -           | -             | -       | -                       | -          | -                | -       | -             | -       | -                | -          | -            | Za               |
| -       | -        | -           | -             | -       | -                       | -          | -                | -       | -             | -       | -                | -          | -            |                  |
| -       | -        | -           | -             | -       | -                       | -          | -                | -       | -             | -       | -                | -          | -            |                  |
| -       | -        | -           | -             | -       | -                       | -          | -                | -       | -             | -       | -                | -          | -            |                  |
|         |          |             | N             | ote: on | ly two s                | amples f   | or tensile       | and one | sample f      | or bend | test             |            |              |                  |
|         |          |             |               |         |                         |            |                  |         |               |         |                  |            |              |                  |
|         |          |             |               |         |                         |            | Bend T           | est     |               |         |                  |            |              |                  |
| #3      | Bar Ben  | d Test      | Γhrough       | 180° is | s Satisfa               | ctory      |                  |         |               |         |                  |            |              |                  |

Witness by Zaeem Ahmed (QA/QC Inch. Amcorp Engg. & Const.)

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

To,
Director
HBK Blanket Industries
Construction of HBK Blanket Industries at FIEDMC Faisalabad

Reference # CED/TFL <u>36040 (Dr. Safeer Abbass)</u>

Reference of the request letter # Nil

Dated: 04-02-2021

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

Date of Test 04-02-2021 Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight   |             | neter/<br>ze  |           | rea<br>n²) | Yield load | Breaking<br>Load |         | Stress<br>si) |           | e Stress<br>si) | Elongation | % Elongation | Remarks |
|---------|----------|-------------|---------------|-----------|------------|------------|------------------|---------|---------------|-----------|-----------------|------------|--------------|---------|
| S       | (1J/sqI) | Nominal (#) | Actual (inch) | Nominal   | Actual     | (kg)       | (kg)             | Nominal | Actual        | Nominal   | Actual          | (inch)     | ∃%           | Re      |
| 1       | 0.374    | 3           | 0.374         | 0.11      | 0.110      | 3500       | 4700             | 70200   | 70160         | 94200     | 94300           | 1.40       | 17.5         |         |
| 2       | 0.377    | 3           | 0.376         | 0.11      | 0.111      | 3400       | 4700             | 68200   | 67660         | 94200     | 93600           | 1.10       | 13.8         |         |
| -       | -        | -           | -             | -         | -          | -          | -                | -       | -             | -         | -               | -          | -            |         |
| -       | -        | -           | -             | -         | -          | -          | -                | -       | -             | -         | -               | -          | -            |         |
| -       | -        | -           | -             | -         | -          | -          | -                | -       | -             | -         | -               | -          | -            |         |
| -       | -        | -           | -             | -         | -          | -          | -                | -       | -             | -         | -               | -          | -            |         |
|         |          |             | No            | ote: on   | ly two s   | amples f   | or tensile       | and one | sample f      | or bend t | test            |            |              |         |
|         |          |             |               |           |            |            |                  |         |               |           |                 |            |              |         |
|         |          |             |               | Bend Test |            |            |                  |         |               |           |                 |            |              |         |
| #3      | Bar Ben  | d Test      | Through       | 180° is   | s Satisfa  | ctory      |                  |         |               |           |                 |            |              |         |
|         |          |             |               |           |            |            |                  |         |               |           |                 |            |              |         |

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

To, CEO Ittefaq Building Solutions PVt Ltd Construction of Emporio Head Office, Phase 7, DHA, Lahore

Reference # CED/TFL <u>36041 (Dr. Safeer Abbass)</u>

Reference of the request letter # IBS/EHO/ST01

Dated: 04-02-2021

Dated: 02-02-2021

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

Date of Test 04-02-2021 Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight   |             | neter/<br>ze  |         | rea<br>n²) | Yield load | Breaking<br>Load |         | Stress<br>si) |           | e Stress<br>si) | Elongation | % Elongation | Remarks |
|---------|----------|-------------|---------------|---------|------------|------------|------------------|---------|---------------|-----------|-----------------|------------|--------------|---------|
| S       | (lbs/ft) | Nominal (#) | Actual (inch) | Nominal | Actual     | (kg)       | (kg)             | Nominal | Actual        | Nominal   | Actual          | (inch)     | <b>3</b> %   | R       |
| 1       | 0.380    | 3           | 0.377         | 0.11    | 0.112      | 3300       | 5000             | 66200   | 65180         | 100200    | 98800           | 1.50       | 18.8         |         |
| 2       | 0.364    | 3           | 0.369         | 0.11    | 0.107      | 3200       | 4900             | 64200   | 65850         | 98200     | 100900          | 1.40       | 17.5         |         |
|         | -        | -           | -             | -       | -          | -          | -                | -       | -             | -         | -               | -          | -            |         |
|         | -        | •           | 1             | •       | -          | -          | •                | -       | -             | -         | •               | -          | 1            |         |
|         | -        | •           |               | •       | -          | -          | -                | -       | -             | -         | -               | -          | •            |         |
| -       | -        | -           | -             | -       | -          | -          | -                | -       | -             | -         | -               | -          | -            |         |
|         |          |             | N             | ote: on | ly two s   | amples f   | or tensile       | and one | sample f      | or bend t | test            | ı          |              | ı       |
|         |          |             |               |         |            |            | Bend T           | est est |               |           |                 |            |              |         |
| #3      | Bar Ben  | d Test      | Γhrough       | 180° is | s Satisfa  | ctory      |                  |         |               |           |                 |            |              |         |

I/C Testing Laboratoires UET Lahore, Pakistan.

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