



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

To,  
 Resident Engineer  
 NESPAK, LAhore  
 Widening of Canal Bank Road and Construction of Chubucha Underpass Package-2, Lahore

Reference # CED/TFL **33511** (Dr. Qasim Khan)  
 Reference of the request letter # 3772/IKAN/MSW/19/04

Dated: 08-07-2019  
 Dated: 05-07-2019

**Tension Test Report** (Page – 1/9)

Date of Test 16-07-2019  
 Gauge length 2 inches  
 Description Steel Structure Steel Strip Tensile Test as per ASTM A-36

| Sr. No.                                  | Designation           |               | Size of Strip | X Section Area | Yield load | Breaking Load | Yield Stress | Ultimate Stress | Elongation | % Elongation | Remarks |
|--|-----------------------|---------------|---------------|----------------|------------|---------------|--------------|-----------------|------------|--------------|---------|
|  | (mm)                  |               |               |                |            |               |              |                 |            |              |         |
| 1  | I-Beam                | 700x300x24x13 | 29.30x12.60   | 369.18         | 13400      | 18100         | 356.07       | 480.96          | 0.70       | 35.00        |         |
| 2  |                       | 700x300x24x13 | 29.40x12.50   | 367.50         | 12600      | 17700         | 336.34       | 472.48          | 0.70       | 35.00        |         |
| 3  | I-Beam                | 350x150x13x17 | 25.70x13.20   | 339.24         | 12200      | 19600         | 352.79       | 566.78          | 0.70       | 35.00        |         |
| 4  |                       | 350x150x13x17 | 25.70x13.20   | 339.24         | 12300      | 19900         | 355.69       | 575.46          | 0.70       | 35.00        |         |
| 5  | I-Beam                | 300x125x14    | 29.20x9.80    | 286.16         | 8700       | 14600         | 298.25       | 500.51          | 0.70       | 35.00        |         |
| 6  |                       | 300x125x14    | 29.20x9.80    | 286.16         | 9600       | 15600         | 329.10       | 534.79          | 0.70       | 35.00        |         |
| 7  | Flight Channel I-Beam | 250x88x8x10   | 29.10x9.40    | 273.54         | 10200      | 16700         | 365.80       | 598.91          | 0.65       | 32.50        |         |
| 8  |                       | 250x88x8x10   | 29.20x9.40    | 274.48         | 10200      | 16600         | 364.55       | 593.29          | 0.70       | 35.00        |         |
| 9  | M-S Plate             | 40            | 30.20x40.80   | 1232.16        | 75500      | 106000        | 601.10       | 843.93          | 0.80       | 40.00        |         |
| 10                                       |                       | 40            | 30.20x40.80   | 1232.16        | 75000      | 106000        | 597.12       | 843.93          | 0.80       | 40.00        |         |
| <b>Only Ten Samples for Tensile Test</b> |                       |               |               |                |            |               |              |                 |            |              |         |
| <b>Bend Test</b>                         |                       |               |               |                |            |               |              |                 |            |              |         |
|  |                       |               |               |                |            |               |              |                 |            |              |         |
|  |                       |               |               |                |            |               |              |                 |            |              |         |
|  |                       |               |               |                |            |               |              |                 |            |              |         |

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**UET Lahore, Pakistan.**

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Dated: 08-07-2019  
 Dated: 05-07-2019

**Tension Test Report** (Page – 2/9)

Date of Test 16-07-2019  
 Gauge length 2 inches  
 Description Steel Structure Steel Strip Tensile Test as per ASTM A-36

| Sr. No.                                  | Designation             |           | Size of Strip | X Section Area | Yield load | Breaking Load | Yield Stress | Ultimate Stress | Elongation | % Elongation | Remarks |
|--|-------------------------|-----------|---------------|----------------|------------|---------------|--------------|-----------------|------------|--------------|---------|
|  | (mm)                    | (mm)      |               |                |            |               |              |                 |            |              |         |
| 1  | M-S<br>Plate            | 35        | 27.50x35.40   | 973.50         | 30800      | 46800         | 310.37       | 471.61          | 1.00       | 50.00        |         |
| 2  |                         | 35        | 27.40x35.40   | 969.96         | 31200      | 46800         | 315.55       | 473.33          | 1.00       | 50.00        |         |
| 3  | M-S<br>Plate            | 12        | 27.60x12.30   | 339.48         | 11700      | 16500         | 338.10       | 476.80          | 0.80       | 40.00        |         |
| 4  |                         | 12        | 27.60x12.30   | 339.48         | 12000      | 16700         | 346.77       | 482.58          | 0.85       | 42.50        |         |
| 5  | M-S<br>Plate            | 10        | 27.60x10.00   | 276.00         | 7100       | 11800         | 252.36       | 419.41          | 0.75       | 37.50        |         |
| 6  |                         | 10        | 27.70x10.00   | 277.00         | 7000       | 11800         | 247.91       | 417.90          | 0.80       | 40.00        |         |
| 7  | Square<br>Shape<br>Pipe | 100x100x3 | 25.70x5.30    | 136.21         | 5100       | 6500          | 367.31       | 468.14          | 0.60       | 30.00        |         |
| 8  |                         | 100x100x3 | 25.60x5.10    | 130.56         | 5200       | 6600          | 390.72       | 495.91          | 0.60       | 30.00        |         |
| 9  | Square<br>Shape<br>Pipe | 75x75x5   | 25.60x5.20    | 133.12         | 5600       | 6800          | 412.68       | 501.11          | 0.50       | 25.00        |         |
| 10                                       |                         | 75x75x5   | 25.70x5.10    | 131.07         | 5400       | 6800          | 404.17       | 508.95          | 0.55       | 27.50        |         |
| <b>Only Ten Samples for Tensile Test</b> |                         |           |               |                |            |               |              |                 |            |              |         |
| <b>Bend Test</b>                         |                         |           |               |                |            |               |              |                 |            |              |         |
|  |                         |           |               |                |            |               |              |                 |            |              |         |
|  |                         |           |               |                |            |               |              |                 |            |              |         |
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Dated: 08-07-2019  
 Dated: 05-07-2019

**Tension Test Report** (Page – 3/9)

Date of Test 16-07-2019  
 Gauge length 2 inches  
 Description Steel Structure Steel Strip Tensile Test as per ASTM A-36

| 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  | Square Shape Pipe | 150x50x6      | 25.60x6.00         | 153.60     | 6100          | 8100         | 389.59          | 517.32     | 0.50         | 25.00   |
| 2  |                   | 150x50x6      | 25.60x6.00         | 153.60     | 6200          | 8200         | 395.98          | 523.71     | 0.50         | 25.00   |
| 3  | Square Shape Pipe | 40x40x3       | 12.40x3.80         | 47.12      | 1300          | 2400         | 270.65          | 499.66     | 0.30         | 15.00   |
| 4  |                   | 40x40x3       | 12.40x3.90         | 48.36      | 1300          | 2400         | 263.71          | 486.85     | 0.30         | 15.00   |
| 5  | Chequre Plate     | 5             | 27.70x5.10         | 141.27     | 4400          | 6600         | 305.54          | 458.31     | 0.70         | 35.00   |
| 6  |                   | 5             | 27.60x5.10         | 140.76     | 4300          | 6600         | 299.68          | 459.97     | 0.60         | 30.00   |
| 7  | Chequre Plate     | 6             | 27.60x6.10         | 168.36     | 4900          | 7300         | 285.51          | 425.36     | 0.60         | 30.00   |
| 8  |                   | 6             | 27.60x6.10         | 168.36     | 5100          | 7400         | 297.17          | 431.18     | 0.70         | 35.00   |
| 9  | S.S Pipe          | 50x3          | 27.90x1.50         | 41.85      | 1200          | 2200         | 281.29          | 515.70     | 0.60         | 30.00   |
| 10                                       |                   | 50x3          | 27.90x1.50         | 41.85      | 1100          | 2100         | 257.85          | 492.26     | 0.50         | 25.00   |
| <b>Only Ten Samples for Tensile Test</b> |                   |               |                    |            |               |              |                 |            |              |         |
| <b>Bend Test</b>                         |                   |               |                    |            |               |              |                 |            |              |         |
|  |                   |               |                    |            |               |              |                 |            |              |         |
|  |                   |               |                    |            |               |              |                 |            |              |         |
|  |                   |               |                    |            |               |              |                 |            |              |         |

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Dated: 08-07-2019  
 Dated: 05-07-2019

**Tension Test Report** (Page – 4/9)

Date of Test 16-07-2019  
 Gauge length 2 inches  
 Description Steel Structure Steel Strip Tensile Test as per ASTM A-36

| Sr. No. | Designation | Size of Strip | X Section Area | Yield load | Breaking Load | Yield Stress | Ultimate Stress | Elongation | % Elongation | Remarks |      |
|---------|-------------|---------------|----------------|------------|---------------|--------------|-----------------|------------|--------------|---------|------|
|         |             |               |                |            |               |              |                 |            |              |         | (mm) |
| 1       | S.S Pipe    | 25x1.5        | 27.80x1.50     | 41.70      | 1300          | 2300         | 305.83          | 541.08     | 0.60         | 30.00   |      |
| 2       |             | 25x1.5        | 27.80x1.50     | 41.70      | 1200          | 2250         | 282.30          | 529.32     | 0.60         | 30.00   |      |
| 3       | Angle       | 100x100x6     | 27.80x6.60     | 183.48     | 4400          | 7000         | 235.25          | 374.26     | 0.50         | 25.00   |      |
| 4       |             | 100x100x6     | 27.70x6.60     | 182.82     | 4300          | 6900         | 230.74          | 370.25     | 0.50         | 25.00   |      |
| 5       | Angle       | 150x150x10    | 29.30x9.70     | 284.21     | 10000         | 15100        | 345.17          | 521.20     | 0.80         | 40.00   |      |
| 6       |             | 150x150x10    | 29.20x9.60     | 280.32     | 9500          | 14500        | 332.46          | 507.44     | 0.80         | 40.00   |      |
| 7       | I-Beam      | 450x175x17x21 | 25.60x15.00    | 384.00     | 14200         | 20200        | 362.77          | 516.05     | 0.70         | 35.00   |      |
| 8       |             | 450x175x17x21 | 25.60x15.30    | 391.68     | 14300         | 20500        | 358.16          | 513.44     | 0.70         | 35.00   |      |

**Only Eight Samples for Tensile Test**

**Bend Test**

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Dated: 08-07-2019  
 Dated: 05-07-2019

**Weight & Size Test Report** (Page – 5/9)

Date of Test 16-07-2019  
 Gauge length -----  
 Description I-Beam Weight and Size Test

| Sr. No.                           | Designation           |               | Weight | Length | Weight per Unit Length | Depth (d) | Flange Width (b <sub>f</sub> ) | Flange Thickness (t <sub>f</sub> ) | Web Thickness (t <sub>w</sub> ) | Remark |
|-----------------------------------|-----------------------|---------------|--------|--------|------------------------|-----------|--------------------------------|------------------------------------|---------------------------------|--------|
|                                   | (mm)                  |               |        |        |                        |           |                                |                                    |                                 |        |
| 1                                 | I-Beam                | 700x300x24x13 | 105.75 | 58.30  | 181.39                 | 700.10    | 300.00                         | 24.00                              | 13.10                           |        |
| 2                                 | I-Beam                | 350x150x13x17 | 37.9   | 49.80  | 76.10                  | 351.00    | 150.20                         | 17.10                              | 14.50                           |        |
| 3                                 | I-Beam                | 300x125x14    | 29.9   | 63.20  | 47.31                  | 300.10    | 125.20                         | 14.00                              | 10.10                           |        |
| 4                                 | Flight Channel I-Beam | 250x88x8x10   | 27.050 | 79.50  | 34.03                  | 25.020    | 88.10                          | 10.10                              | 8.10                            |        |
| 5                                 | I-Beam                | 450x175x17x21 | 77.60  | 60.0   | 129.33                 | 470.00    | 175.80                         | 32.10                              | 17.10                           |        |
| -                                 | -                     | -             | -      | -      | -                      | -         | -                              | -                                  | -                               |        |
| -                                 | -                     | -             | -      | -      | -                      | -         | -                              | -                                  | -                               |        |
| -                                 | -                     | -             | -      | -      | -                      | -         | -                              | -                                  | -                               |        |
| <b>Only Five Samples for Test</b> |                       |               |        |        |                        |           |                                |                                    |                                 |        |
|                                   |                       |               |        |        |                        |           |                                |                                    |                                 |        |

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To,  
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NESPAK, LAhore  
Widening of Canal Bank Road and Construction of Chubucha Underpass Package-2, Lahore

Reference # CED/TFL **33511** (Dr. Qasim Khan)  
Reference of the request letter # 3772/IKAN/MSW/19/04

Dated: 08-07-2019  
Dated: 05-07-2019

**Weight & Size Test Report** (Page – 6/9)

Date of Test 16-07-2019  
Gauge length -----  
Description Plate Weight and Size Test

| Sr. No.                          | Designation   |      | Weight | Length | Width | Weight per Unit Length | Thickness | Remark |
|----------------------------------|---------------|------|--------|--------|-------|------------------------|-----------|--------|
|                                  | (mm)          | (mm) |        |        |       |                        |           |        |
| 1                                | M-S Plate     | 40   | 60.55  | 61.10  | 30.80 | 321.75                 | 41.00     |        |
| 2                                | M-S Plate     | 35   | 52.40  | 61.30  | 30.70 | 278.44                 | 35.40     |        |
| 3                                | M-S Plate     | 12   | 19.86  | 70.00  | 19.30 | 147.00                 | 12.40     |        |
| 4                                | M-S Plate     | 10   | 21.00  | 50.50  | 53.00 | 78.46                  | 10.30     |        |
| 5                                | Chequre Plate | 5    | 8.30   | 10.55  | 20.00 | 393.36                 | 5.10      |        |
| 6                                | Chequre Plate | 6    | 15.50  | 12.30  | 26.70 | 471.97                 | 6.10      |        |
| -                                | -             | -    | -      | -      | -     | -                      | -         |        |
| -                                | -             | -    | -      | -      | -     | -                      | -         |        |
| -                                | -             | -    | -      | -      | -     | -                      | -         |        |
| <b>Only Six Samples for Test</b> |               |      |        |        |       |                        |           |        |
|                                  |               |      |        |        |       |                        |           |        |

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Dated: 08-07-2019  
Dated: 05-07-2019

**Weight & Size Test Report** (Page – 7/9)

Date of Test 16-07-2019  
Gauge length -----  
Description Square Shape Pipe Weight and Size Test

| Sr. No.                           | Designation | Weight | Length | Weight per Unit Length | Outer Dimension |        | Thickness | Remark |
|-----------------------------------|-------------|--------|--------|------------------------|-----------------|--------|-----------|--------|
|                                   |             |        |        |                        | X               | Y      |           |        |
|                                   | (mm)        | (kg)   | (cm)   | (kg/m)                 | (mm)            | (mm)   | (mm)      |        |
| 1                                 | 100x100x3   | 9.85   | 64.50  | 15.27                  | 100.10          | 100.20 | 5.70      |        |
| 2                                 | 75x75x5     | 6.80   | 61.00  | 11.15                  | 75.10           | 75.20  | 5.10      |        |
| 3                                 | 150x50x6    | 11.45  | 61.60  | 18.59                  | 155.00          | 58.00  | 6.00      |        |
| 4                                 | 40x40x3     | 2.40   | 61.80  | 3.88                   | 40.10           | 40.30  | 4.00      |        |
| -                                 | -           | -      | -      | -                      | -               | -      | -         |        |
| -                                 | -           | -      | -      | -                      | -               | -      | -         |        |
| -                                 | -           | -      | -      | -                      | -               | -      | -         |        |
| -                                 | -           | -      | -      | -                      | -               | -      | -         |        |
| -                                 | -           | -      | -      | -                      | -               | -      | -         |        |
| <b>Only Four Samples for Test</b> |             |        |        |                        |                 |        |           |        |
|                                   |             |        |        |                        |                 |        |           |        |

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Dated: 08-07-2019  
Dated: 05-07-2019

**Weight & Size Test Report** (Page – 8/9)

Date of Test 16-07-2019  
Gauge length -----  
Description S.S. Pipe Weight and Size Test

| Sr. No.                          | Designation | Weight | Length | Weight per Unit Length | External Diameter | Internal Diameter | Thickness | Remark |
|----------------------------------|-------------|--------|--------|------------------------|-------------------|-------------------|-----------|--------|
|                                  | (mm)        | (kg)   | (cm)   | (kg/m)                 | (mm)              | (mm)              | (mm)      |        |
| 1                                | 50x3        | 1.15   | 63.50  | 1.81                   | 51.00             | 47.2              | 1.90      |        |
| 2                                | 25x1.5      | 0.50   | 60.50  | 0.83                   | 26.70             | 23.3              | 1.70      |        |
| -                                | -           | -      | -      | -                      | -                 | -                 | -         |        |
| -                                | -           | -      | -      | -                      | -                 | -                 | -         |        |
| -                                | -           | -      | -      | -                      | -                 | -                 | -         |        |
| -                                | -           | -      | -      | -                      | -                 | -                 | -         |        |
| -                                | -           | -      | -      | -                      | -                 | -                 | -         |        |
| -                                | -           | -      | -      | -                      | -                 | -                 | -         |        |
| <b>Only Two Samples for Test</b> |             |        |        |                        |                   |                   |           |        |
|                                  |             |        |        |                        |                   |                   |           |        |

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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  
NESPAK, LAhore  
Widening of Canal Bank Road and Construction of Chubucha Underpass Package-2, Lahore

Reference # CED/TFL **33511** (Dr. Qasim Khan)  
Reference of the request letter # 3772/IKAN/MSW/19/04

Dated: 08-07-2019  
Dated: 05-07-2019

**Weight & Size Test Report** (Page – 9/9)

Date of Test 16-07-2019  
Gauge length -----  
Description Angle Weight and Size Test

| Sr. No.                          | Designation | Weight | Length | Weight per Unit Length | L-1    | L-2    | Thickness | Remark |
|----------------------------------|-------------|--------|--------|------------------------|--------|--------|-----------|--------|
|                                  | (mm)        | (kg)   | (mm)   | (kg/m)                 | (mm)   | (mm)   | (mm)      |        |
| 1                                | 100x100x6   | 4.75   | 47.20  | 10.06                  | 100.20 | 100.30 | 7.20      |        |
| 2                                | 150x150x10  | 12.05  | 41.00  | 29.39                  | 150.10 | 150.20 | 10.10     |        |
| -                                | -           | -      | -      | -                      | -      | -      | -         |        |
| -                                | -           | -      | -      | -                      | -      | -      | -         |        |
| -                                | -           | -      | -      | -                      | -      | -      | -         |        |
| -                                | -           | -      | -      | -                      | -      | -      | -         |        |
| -                                | -           | -      | -      | -                      | -      | -      | -         |        |
| -                                | -           | -      | -      | -                      | -      | -      | -         |        |
| <b>Only Two Samples for Test</b> |             |        |        |                        |        |        |           |        |
|                                  |             |        |        |                        |        |        |           |        |

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

Note:

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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,  
 Manager Coordination  
 Izhar Construction (Pvt) Ltd  
 Construction of Hemodialysis Plant at Renacon Pharma Limited, Faisalabad

Reference # CED/TFL **33551** (Dr. Safer Abbas)  
 Reference of the request letter # ICPL/CONST-RPL/19/065

Dated: 15-07-2019  
 Dated: 12-07-2019

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

Date of Test 16-07-2019  
 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>(mm) |        | 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  | 0.407              | 10                        | 9.92   | 0.12                       | 0.120  | 3300               | 5400                     | 60627                 | 60770  | 99207                    | 99500  | 1.10                 | 13.8         |         |
| 2  | 0.400              | 10                        | 9.83   | 0.12                       | 0.118  | 3300               | 5300                     | 60627                 | 61800  | 97370                    | 99300  | 1.20                 | 15.0         |         |
| -  | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| <b>Note: only two samples for tensile and one sample for bend test</b> |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| Bend Test  |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| 10mm Dia Bar Bend Test Through 180° is Satisfactory                    |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
|  |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
|  |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |

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

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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,  
 Manager Coordination  
 Izhar Construction (Pvt) Ltd  
 Hyundai Nishat Motor Pvt. Limited, Faisalabad

Reference # CED/TFL **33551** (Dr. Safer Abbas)  
 Reference of the request letter # ICPL/CONST-HNMPL/19/064

Dated: 15-07-2019  
 Dated: 12-07-2019

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

Date of Test 16-07-2019  
 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>(mm) |        | 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  | 0.395              | 10                        | 9.76   | 0.12                       | 0.116  | 3200               | 4700                     | 58789                 | 60830  | 86347                    | 89400  | 1.50                 | 18.8         | A       |
| 2  | 0.392              | 10                        | 9.72   | 0.12                       | 0.115  | 3100               | 4700                     | 56952                 | 59350  | 86347                    | 90000  | 1.50                 | 18.8         |         |
| 3  | 0.361              | 10                        | 9.34   | 0.12                       | 0.106  | 3000               | 4200                     | 55115                 | 62320  | 77161                    | 87300  | 1.50                 | 18.8         | B       |
| 4  | 0.372              | 10                        | 9.48   | 0.12                       | 0.109  | 3000               | 4200                     | 55115                 | 60480  | 77161                    | 84700  | 1.40                 | 17.5         |         |
| -  | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| <b>Note: only two samples for tensile and one sample for bend test</b> |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| Bend Test  |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| 10mm Dia Bar Bend Test Through 180° is Satisfactory                    |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| 10mm Dia Bar Bend Test Through 180° is Satisfactory                    |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |

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

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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,  
 Deputy Project Manager  
 Barqaab Consulting Services (Pvt) Limited  
 Multan  
 (City Steel)

Reference # CED/TFL **33552** (Dr. Safer Abbas)  
 Reference of the request letter # BQB/RPM/MT 9243-45/T-16

Dated: 15-07-2019  
 Dated: 12-07-2019

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

Date of Test 16-07-2019  
 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>(mm) |        | 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   | 0.409              | 10                        | 9.94   | 0.12                       | 0.120  | 3200               | 4700                     | 58789                 | 58610  | 86347                    | 86100  | 1.50                 | 18.8         |         |
| -   | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -   | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -   | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -   | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -   | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| <b>Note: only one sample for tensile and one sample for bend test</b> |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| Bend Test   |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| 10mm Dia Bar Bend Test Through 180° is Satisfactory                   |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
|   |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |

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

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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,  
M/S Habib Contractors  
Lahore  
Crescent Educational Trust)  
Saeed Steel

Reference # CED/TFL **33555** (Dr. Safer Abbas)  
Reference of the request letter # Nil

Dated: 15-07-2019  
Dated: 15-07-2019

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

Date of Test 16-07-2019  
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 |                  | 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<br>(#)    | Actual<br>(inch) | Nominal                    | Actual |                    |                          | Nominal               | Actual | Nominal                  | Actual |                      |              |         |
| 1  | 0.372              | 3                 | 0.373            | 0.11                       | 0.109  | 3300               | 5100                     | 66200                 | 66500  | 102200                   | 102800 | 1.00                 | 12.5         |         |
| 2  | 0.366              | 3                 | 0.370            | 0.11                       | 0.108  | 3200               | 5100                     | 64200                 | 65510  | 102200                   | 104400 | 0.90                 | 11.3         |         |
| -  | -                  | -                 | -                | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                 | -                | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                 | -                | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                 | -                | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| <b>Note: only two samples for tensile and one sample for bend test</b> |                    |                   |                  |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| Bend Test  |                    |                   |                  |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| #3 Bar Bend Test Through 180° is Satisfactory                          |                    |                   |                  |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
|  |                    |                   |                  |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
|  |                    |                   |                  |                            |        |                    |                          |                       |        |                          |        |                      |              |         |

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

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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  
 A.S Enterprises  
 (Sapphire Textile Mills)(Afco)

Reference # CED/TFL **33556** (Dr. Safer Abbas)  
 Reference of the request letter # 3-4

Dated: 15-07-2019  
 Dated: 02-07-2019

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

Date of Test 16-07-2019  
 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>(mm) |        | 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  | 0.376              | 10                        | 9.53   | 0.12                       | 0.111  | 4200               | 5900                     | 77161                 | 83680  | 108393                   | 117600 | 1.00                 | 12.5         |         |
| 2  | 0.398              | 10                        | 9.80   | 0.12                       | 0.117  | 4400               | 6200                     | 80835                 | 82920  | 113904                   | 116900 | 1.10                 | 13.8         |         |
| -  | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| <b>Note: only two samples for tensile and one sample for bend test</b> |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| Bend Test  |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| 10mm Dia Bar Bend Test Through 180° is Satisfactory                    |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
|  |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
|  |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |

**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,  
 Project Manager  
 A.S Enterprises  
 (Style Textile Mills)(AA Associates)(Afco)

Reference # CED/TFL **33557** (Dr. Safer Abbas)  
 Reference of the request letter # USD/ASE/15

Dated: 15-07-2019  
 Dated: 15-07-2019

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

Date of Test 16-07-2019  
 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>(mm) |        | 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  | 0.366              | 10                        | 9.39   | 0.12                       | 0.107  | 3100               | 4200                     | 56952                 | 63600  | 77161                    | 86200  | 1.30                 | 16.3         |         |
| 2  | 0.410              | 10                        | 9.95   | 0.12                       | 0.120  | 3000               | 4500                     | 55115                 | 54880  | 82673                    | 82400  | 1.60                 | 20.0         |         |
| -  | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| <b>Note: only two samples for tensile and one sample for bend test</b> |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| Bend Test  |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| 10mm Dia Bar Bend Test Through 180° is Satisfactory                    |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
|  |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
|  |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |

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

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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  
 A.S Enterprises  
 (US Dynamo Mill Sundar Estate Lahore)(AA Associates)(Afco)

Reference # CED/TFL **33558** (Dr. Safer Abbas)  
 Reference of the request letter # USD/ASE/21

Dated: 15-07-2019  
 Dated: 15-07-2019

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

Date of Test 16-07-2019  
 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>(mm) |        | 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  | 0.416              | 10                        | 10.02  | 0.12                       | 0.122  | 3300               | 4900                     | 60627                 | 59520  | 90021                    | 88400  | 1.60                 | 20.0         |         |
| 2  | 0.410              | 10                        | 9.95   | 0.12                       | 0.120  | 3300               | 4700                     | 60627                 | 60370  | 86347                    | 86000  | 1.50                 | 18.8         |         |
| -  | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                         | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| <b>Note: only two samples for tensile and one sample for bend test</b> |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| Bend Test  |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| 10mm Dia Bar Bend Test Through 180° is Satisfactory                    |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
|  |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
|  |                    |                           |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |

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

Note:

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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,  
 Senior Engineer  
 Mansoor Mazhar & Associates  
 Model House 5A and 6A Gold Block Sector A  
 (Parkview villas Lahore)(ABN Construction Company)

Reference # CED/TFL **33560** (Dr. Safer Abbas)  
 Reference of the request letter # MMA/PVV/MH/04

Dated: 15-07-2019  
 Dated: 15-07-2019

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

Date of Test 16-07-2019  
 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 |                  | 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<br>(#)    | Actual<br>(inch) | Nominal                    | Actual |                    |                          | Nominal               | Actual | Nominal                  | Actual |                      |              |         |
| 1  | 0.375              | 3                 | 0.374            | 0.11                       | 0.110  | 3600               | 4800                     | 72200                 | 72050  | 96200                    | 96100  | 1.20                 | 15.0         |         |
| 2  | 0.376              | 3                 | 0.375            | 0.11                       | 0.111  | 3600               | 5000                     | 72200                 | 71740  | 100200                   | 99700  | 1.20                 | 15.0         |         |
| -  | -                  | -                 | -                | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                 | -                | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                 | -                | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                 | -                | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| <b>Note: only two samples for tensile and one sample for bend test</b> |                    |                   |                  |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| 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,  
 Resident Engineer  
 NESPAK Pkg-01  
 Dualization & Improvement of Indus Highway Road Project Package - 01 (Sarai Gambila – Karak)  
 (Mujahid Stee)  
 Reference # CED/TFL **33561** (Dr. Qasim Khan)  
 Reference of the request letter # 36267/103/TH/01/50

Dated: 15-07-2019  
 Dated: 08-07-2019

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

Date of Test 16-07-2019  
 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 |                  | 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<br>(#)    | Actual<br>(inch) | Nominal                    | Actual |                    |                          | Nominal               | Actual | Nominal                  | Actual |                      |              |         |
| 1  | 5.200              | 11                | 1.395            | 1.56                       | 1.528  | 39400              | 62800                    | 55700                 | 56820  | 88800                    | 90600  | 1.90                 | 23.8         |         |
| 2  | 5.146              | 11                | 1.388            | 1.56                       | 1.513  | 39400              | 65600                    | 55700                 | 57410  | 92700                    | 95600  | 1.70                 | 21.3         |         |
| -  | -                  | -                 | -                | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                 | -                | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                 | -                | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                 | -                | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| <b>Note: only two samples for tensile and one sample for bend test</b> |                    |                   |                  |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| Bend Test  |                    |                   |                  |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| #11 Bar Bend Test Through 180° is Satisfactory                         |                    |                   |                  |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
|  |                    |                   |                  |                            |        |                    |                          |                       |        |                          |        |                      |              |         |

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

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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,  
 Assistant Executive Engineer  
 Pakistan Railways  
 Faisalabad  
 (Up-Grading of Class-III Unmanned L-Xing into Class-II L-Xing No. 35, 65, 93, 99, 107, 101, 113 in The Section of Sub-Division FSLD)  
 Reference # CED/TFL **33562** (Dr. Safer Abbas) Dated: 15-07-2019  
 Reference of the request letter # W/3/Spl/2019 Dated: 15-07-2019

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

Date of Test 16-07-2019  
 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  | 0.363              | 3/8                         | 0.368  | 0.11                       | 0.107  | 4000               | 4800                     | 80200                 | 82710  | 96200                    | 99300  | 1.10                 | 13.8         |         |
| 2  | 0.363              | 3/8                         | 0.368  | 0.11                       | 0.107  | 3800               | 4700                     | 76200                 | 78550  | 94200                    | 97200  | 1.10                 | 13.8         |         |
| -  | -                  | -                           | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                           | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                           | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                           | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| <b>Note: only two samples for tensile and one sample for bend test</b> |                    |                             |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| <b>Bend Test</b>   |                    |                             |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| 3/8" Dia Bar Bend Test Through 180° is Satisfactory                    |                    |                             |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
|  |                    |                             |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |

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

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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,  
 Assistant Executive Engineer  
 Pakistan Railways  
 Faisalabad  
 (Up-Gradation of Class-III Unmanned L-Xing into Class-II L-Xing No. 55, 63, 68, 95 in The  
 Section of Sub-Division FSLD)  
 Reference # CED/TFL **33562** (Dr. Safer Abbas) Dated: 15-07-2019  
 Reference of the request letter # W/3/Spl/2019 Dated: 15-07-2019

**Tension Test Report** (Page -2/3)

Date of Test 16-07-2019  
 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  | 0.363              | 3/8                         | 0.368  | 0.11                       | 0.107  | 3900               | 4750                     | 78200                 | 80630  | 95200                    | 98200  | 1.10                 | 13.8         |         |
| 2  | 0.363              | 3/8                         | 0.368  | 0.11                       | 0.107  | 4000               | 4800                     | 80200                 | 82690  | 96200                    | 99300  | 1.20                 | 15.0         |         |
| -  | -                  | -                           | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                           | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                           | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                           | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| <b>Note: only two samples for tensile and one sample for bend test</b> |                    |                             |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| <b>Bend Test</b>   |                    |                             |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| 3/8" Dia 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,  
 Assistant Executive Engineer  
 Pakistan Railways  
 Faisalabad  
 (Up-Gradation of Class-III Unmanned L-Xing into Class-II L-Xing No. 28, 31 in The Section of Sub-Division FSLD)  
 Reference # CED/TFL **33562** (Dr. Safer Abbas)      Dated: 15-07-2019  
 Reference of the request letter # W/3/Spl/2019      Dated: 15-07-2019

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

Date of Test      16-07-2019  
 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  | 0.364              | 3/8                         | 0.369  | 0.11                       | 0.107  | 4000               | 4900                     | 80200                 | 82340  | 98200                    | 100900 | 1.00                 | 12.5         |         |
| 2  | 0.365              | 3/8                         | 0.370  | 0.11                       | 0.107  | 3800               | 4800                     | 76200                 | 78050  | 96200                    | 98600  | 1.00                 | 12.5         |         |
| -  | -                  | -                           | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                           | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                           | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                           | -      | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| <b>Note: only two samples for tensile and one sample for bend test</b> |                    |                             |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| <b>Bend Test</b>   |                    |                             |        |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| 3/8" Dia 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,  
 Manager Admin  
 Liberty Builders  
 Construction of Zee Avenue Project, 17-A, Cooper Road, Lahore

Reference # CED/TFL **33571** (Dr. Ali Ahmed)  
 Reference of the request letter # Nil

Dated: 16-07-2019  
 Dated: 16-07-2019

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

Date of Test 16-07-2019  
 Gauge length 8 inches  
 Description Deformed Steel Bar Tensile Test as per ASTM-A615

| Sr. No.  | Weight<br>(lbs/ft) | Diameter/<br>size |                  | 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<br>(#)    | Actual<br>(inch) | Nominal                    | Actual |                    |                          | Nominal               | Actual | Nominal                  | Actual |                      |              |         |
| 1  | 0.363              | 3                 | 0.369            | 0.11                       | 0.107  | 3690               | 4890                     | 74000                 | 76240  | 98000                    | 101100 | 0.80                 | 10.0         |         |
| 2  | 0.364              | 3                 | 0.369            | 0.11                       | 0.107  | 3570               | 4610                     | 71600                 | 73570  | 92400                    | 95000  | 0.90                 | 11.3         |         |
| 3  | 0.359              | 3                 | 0.367            | 0.11                       | 0.106  | 3330               | 4330                     | 66800                 | 69520  | 86800                    | 90400  | 1.00                 | 12.5         |         |
| -  | -                  | -                 | -                | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                 | -                | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| -  | -                  | -                 | -                | -                          | -      | -                  | -                        | -                     | -      | -                        | -      | -                    | -            |         |
| <b>Note: only three samples for tensile test</b> |                    |                   |                  |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
| Bend Test  |                    |                   |                  |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
|  |                    |                   |                  |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
|  |                    |                   |                  |                            |        |                    |                          |                       |        |                          |        |                      |              |         |
|  |                    |                   |                  |                            |        |                    |                          |                       |        |                          |        |                      |              |         |

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

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