

Muhammad Qasim Bhatti

Test Performed By:

Dr. /Engr.

S Asad Ali Gillani

Director, Construction of Hussain Bibi Memorial Cardiac & General Hospital, Faisalabad

Client Reference: AIC/2020/GW/

SOM Lab

Ref:

3188(Page-1/1)

Dated: 28-10-2020

Dated:

29-10-2020

Test: Tension Test & Bend Test

Test Specification:

ASTM-A-615

Gauge Length: 8 inch

Sample Type:

Deformed Bar

| S.No. | Weight | Dia.    |            | Area            |                 | Yield Load | Ultimate Load | Yield Stress                |                              | Ult. Stress                 |                              | Elongation | Gauge Length | %age Elongation | Remarks |
|-------|--------|---------|------------|-----------------|-----------------|------------|---------------|-----------------------------|------------------------------|-----------------------------|------------------------------|------------|--------------|-----------------|---------|
|       |        | Nominal | Calculated | Nominal         | Calculated      |            |               | (according to nominal area) | (according to measured area) | (according to nominal area) | (according to measured area) |            |              |                 |         |
|       | lb/ft  | #       | in         | in <sup>2</sup> | in <sup>2</sup> | Tons       | Tons          | psi                         | psi                          | psi                         | psi                          | in         | in           | %               |         |
| 1     | 2.610  | 8       | 0.988      | 0.79            | 0.767           | 27.29      | 35.17         | 76180                       | 78470                        | 98180                       | 101130                       | 1.10       | 8.0          | 13.8            |         |
| 2     | 2.575  | 8       | 0.982      | 0.79            | 0.757           | 27.03      | 34.68         | 75470                       | 78760                        | 96820                       | 101040                       | 1.50       | 8.0          | 18.8            |         |
| 3     | 1.571  | 6       | 0.767      | 0.44            | 0.462           | 12.76      | 18.32         | 63970                       | 60930                        | 91820                       | 87450                        | 1.40       | 8.0          | 17.5            |         |
| 4     | 1.440  | 6       | 0.734      | 0.44            | 0.423           | 11.77      | 17.13         | 59020                       | 61390                        | 85840                       | 89290                        | 1.20       | 8.0          | 15.0            |         |
| 5     | 0.656  | 4       | 0.496      | 0.20            | 0.193           | 7.85       | 9.55          | 86560                       | 89700                        | 105330                      | 109150                       | 1.10       | 8.0          | 13.8            |         |
| 6     | 0.660  | 4       | 0.497      | 0.20            | 0.194           | 6.54       | 8.41          | 72170                       | 74400                        | 92740                       | 95610                        | 1.10       | 8.0          | 13.8            |         |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               |         |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               |         |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               |         |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               |         |

**BEND TEST:**

|     |  |  |
|-----|--|--|
| # 8 | Sample bend through 180 degrees Satisfactorily without any crack | <b>Note:-</b><br><br>Only Nine Samples Received and Tested |
| # 6 | Sample bend through 180 degrees Satisfactorily without any crack |  |
| # 4 | Sample bend through 180 degrees Satisfactorily without any crack |  |
|     |  |  |

Note: Please always confirm the results of above report on web [www.uet-civil.edu.pk](http://www.uet-civil.edu.pk)

Muhammad Shafique  
XEN/AGE (Air) Multan ( M/S Raja Engg)

Test Performed By: Dr. /Engr. S. Asad Ali Gillani

Client Reference: 6489/25/E  
Dated: 26-10-2020  
Test: Tension Test  
Guage Length: 8 inch

SOM Lab 3189(Page-1/1)  
Ref: 1/1  
Dated: 29-10-2020  
ASTM-A-615  
Deformed Bar

Test Specification: ASTM-A-615  
Sample Type: Deformed Bar

| S.No. | Weight | Dia.    |            | Area            |                 | Yield Load | Ultimate Load | Yield Stress                |                              | Ult. Stress                 |                              | Elongation | Gauge Length | %age Elongation | Remarks |
|-------|--------|---------|------------|-----------------|-----------------|------------|---------------|-----------------------------|------------------------------|-----------------------------|------------------------------|------------|--------------|-----------------|---------|
|       |        | Nominal | Calculated | Nominal         | Calculated      |            |               | (according to nominal area) | (according to measured area) | (according to nominal area) | (according to measured area) |            |              |                 |         |
|       | lb/ft  | #       | in         | in <sup>2</sup> | in <sup>2</sup> | Tons       | Tons          | psi                         | psi                          | psi                         | psi                          | in         | in           | %               |         |
| 1     | 2.580  | 8       | 0.982      | 0.79            | 0.758           | 26.20      | 33.54         | 73140                       | 76230                        | 93630                       | 97580                        | 1.50       | 8.0          | 18.8            |         |
| 2     | 2.548  | 8       | 0.977      | 0.79            | 0.749           | 25.74      | 33.86         | 71860                       | 75790                        | 94540                       | 99710                        | 1.50       | 8.0          | 18.8            |         |
| 3     | 1.475  | 6       | 0.743      | 0.44            | 0.433           | 14.37      | 18.37         | 72050                       | 73210                        | 92070                       | 93560                        | 1.30       | 8.0          | 16.3            |         |
| 4     | 1.453  | 6       | 0.737      | 0.44            | 0.427           | 14.17      | 18.22         | 71020                       | 73190                        | 91310                       | 94090                        | 1.50       | 8.0          | 18.8            |         |
| 5     | 1.000  | 5       | 0.612      | 0.31            | 0.294           | 10.98      | 13.43         | 78110                       | 82360                        | 95510                       | 100710                       | 1.40       | 8.0          | 17.5            |         |
| 6     | 1.005  | 5       | 0.613      | 0.31            | 0.295           | 10.86      | 13.30         | 77240                       | 81160                        | 94640                       | 99450                        | 1.30       | 8.0          | 16.3            |         |
| 7     | 0.661  | 4       | 0.497      | 0.20            | 0.194           | 6.54       | 8.92          | 72170                       | 74400                        | 98360                       | 101400                       | 1.20       | 8.0          | 15.0            |         |
| 8     | 0.663  | 4       | 0.498      | 0.20            | 0.195           | 6.49       | 9.07          | 71610                       | 73440                        | 100050                      | 102610                       | 1.20       | 8.0          | 15.0            |         |
| 9     | 0.627  | 4       | 0.484      | 0.20            | 0.184           | 4.84       | 7.19          | 53400                       | 58040                        | 79250                       | 86140                        | 1.60       | 8.0          | 20.0            |         |
| 10    | 0.641  | 4       | 0.489      | 0.20            | 0.188           | 4.94       | 7.19          | 54520                       | 58000                        | 79250                       | 84310                        | 1.40       | 8.0          | 17.5            |         |

**BEND TEST:**

|    |                        |   |
|----|------------------------|---|
| -- | No Bend test performed | <b>Note:-</b><br><br>Only Ten Samples Received and Tested |
|    |                        |   |
|    |                        |   |
|    |                        |   |

Note: Please always confirm the results of above report on web [www.uet-civil.edu.pk](http://www.uet-civil.edu.pk)

Zahid Ali  
 General Manager, GEO Drillers Engineering, Lahore

Test Performed By: Dr. /Engr. S Asad Ali Gillani

Client Reference: nil

SOM Lab

Ref: 3191(Page-1/1)

Dated: 29-10-2020

Dated: 29-10-2020

Test: Tension Test & Bend Test

Test Specification: ASTM-A-615

Gauge Length: 8 inch

Sample Type: Deformed Bar

| S.No. | Weight | Dia.    |            | Area            |                 | Yield Load | Ultimate Load | Yield Stress                |                              | Ult. Stress                 |                              | Elongation | Gauge Length | %age Elongation | Remarks |
|-------|--------|---------|------------|-----------------|-----------------|------------|---------------|-----------------------------|------------------------------|-----------------------------|------------------------------|------------|--------------|-----------------|---------|
|       |        | Nominal | Calculated | Nominal         | Calculated      |            |               | (according to nominal area) | (according to measured area) | (according to nominal area) | (according to measured area) |            |              |                 |         |
|       | lb/ft  | #       | in         | in <sup>2</sup> | in <sup>2</sup> | Tons       | Tons          | psi                         | psi                          | psi                         | psi                          | in         | in           | %               |         |
| 1     | 0.635  | 4       | 0.488      | 0.20            | 0.187           | 4.84       | 6.88          | 53400                       | 57110                        | 75880                       | 81150                        | 1.20       | 8.0          | 15.0            |         |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               | -       |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               | -       |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               | -       |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               | -       |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               | -       |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               | -       |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               | -       |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               | -       |

**BEND TEST:**

|     |  |   |
|-----|--|---|
| # 4 | Sample bend through 180 degrees Satisfactorily without any crack | <b>Note:-</b><br><br>Only Two Samples Received and Tested |
|     |  |   |
|     |  |   |
|     |  |   |

Note: Please always confirm the results of above report on web [www.uet-civil.edu.pk](http://www.uet-civil.edu.pk)

M. Sohail Anjum

Test Performed By:

Dr. /Engr.

S. Asad Ali  
Gillani

Project Manager, MEK Multistory Offices, P-156, Gulberg-II, Lahore

Client Reference: P-156-159

SOM Lab

Ref: 3194(Page-1/1)

Dated: 29-10-2020

Dated: 29-10-2020

Test: Tension Test & Bend Test

Test Specification:

ASTM-A-615

Gauge Length: 8 inch

Sample Type:

Deformed Bar(AFCO Steel)

| S.No. | Weight | Dia.    |            | Area            |                 | Yield Load | Ultimate Load | Yield Stress                |                              | Ult. Stress                 |                              | Elongation | Gauge Length | %age Elongation | Remarks |
|-------|--------|---------|------------|-----------------|-----------------|------------|---------------|-----------------------------|------------------------------|-----------------------------|------------------------------|------------|--------------|-----------------|---------|
|       |        | Nominal | Calculated | Nominal         | Calculated      |            |               | (according to nominal area) | (according to measured area) | (according to nominal area) | (according to measured area) |            |              |                 |         |
|       | lb/ft  | #       | in         | in <sup>2</sup> | in <sup>2</sup> | Tons       | Tons          | psi                         | psi                          | psi                         | psi                          | in         | in           | %               |         |
| 1     | 2.645  | 8       | 0.995      | 0.79            | 0.777           | 32.18      | 39.93         | 89840                       | 91350                        | 111470                      | 113340                       | 1.00       | 8.0          | 12.5            |         |
| 2     | 2.630  | 8       | 0.992      | 0.79            | 0.773           | 29.79      | 37.64         | 83160                       | 84980                        | 105070                      | 107380                       | 1.10       | 8.0          | 13.8            |         |
| 3     | 1.420  | 6       | 0.729      | 0.44            | 0.417           | 16.23      | 20.36         | 81340                       | 85830                        | 102040                      | 107670                       | 1.20       | 8.0          | 15.0            |         |
| 4     | 1.426  | 6       | 0.730      | 0.44            | 0.419           | 16.51      | 20.69         | 82780                       | 86920                        | 103720                      | 108920                       | 1.00       | 8.0          | 12.5            |         |
| 5     | 0.646  | 4       | 0.492      | 0.20            | 0.190           | 6.78       | 8.72          | 74750                       | 78690                        | 96110                       | 101170                       | 1.10       | 8.0          | 13.8            |         |
| 6     | 0.648  | 4       | 0.492      | 0.20            | 0.190           | 6.60       | 8.79          | 72730                       | 76560                        | 96900                       | 102000                       | 0.90       | 8.0          | 11.3            |         |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               |         |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               |         |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               |         |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               |         |

**BEND TEST:**

|     |  |  |
|-----|--|--|
| # 8 | Sample bend through 180 degrees Satisfactorily without any crack | <b>Note:-</b><br><br>Only Nine Samples Received and Tested |
| # 6 | Sample bend through 180 degrees Satisfactorily without any crack |  |
| # 4 | Sample bend through 180 degrees Satisfactorily without any crack |  |
|     |  |  |

Note: Please always confirm the results of above report on web [www.uet-civil.edu.pk](http://www.uet-civil.edu.pk)

Kamran Tahir Sandhu

**Test Performed By:**

**Dr. /Engr.**

M Irfan UI Hassan

Material Engineer, DHA Multan(Construction of DHA Shopping Mall (M/S CM Developers))

**Client Reference:** 701/70/P&D/DHA

**SOM Lab**

3196(Page-

**Ref:**

1/1)

**Dated:** 28-10-2020

**Dated:**

29-10-2020

**Test:** Tension Test & Bend Test

**Test Specification:**

ASTM-A-615

**Guage Length:** 8 inch

**Sample Type:**

Deformed Bar(Ittefaq Steel)

| S.No. | Weight | Dia.    |            | Area            |                 | Yield Load | Ultimate Load | Yield Stress                |                              | Ult. Stress                 |                              | Elongation | Gauge Length | %age Elongation | Remarks |
|-------|--------|---------|------------|-----------------|-----------------|------------|---------------|-----------------------------|------------------------------|-----------------------------|------------------------------|------------|--------------|-----------------|---------|
|       |        | Nominal | Calculated | Nominal         | Calculated      |            |               | (according to nominal area) | (according to measured area) | (according to nominal area) | (according to measured area) |            |              |                 |         |
|       | lb/ft  | #       | in         | in <sup>2</sup> | in <sup>2</sup> | Tons       | Tons          | psi                         | psi                          | psi                         | psi                          | in         | in           | %               |         |
| 1     | 2.652  | 8       | 0.996      | 0.79            | 0.779           | 23.24      | 34.12         | 64890                       | 65800                        | 95250                       | 96590                        | 1.50       | 8.0          | 18.8            |         |
| 2     | 2.661  | 8       | 0.998      | 0.79            | 0.782           | 31.40      | 36.56         | 87650                       | 88550                        | 102080                      | 103120                       | 1.00       | 8.0          | 12.5            |         |
| 3     | 1.501  | 6       | 0.749      | 0.44            | 0.441           | 12.33      | 18.09         | 61830                       | 61690                        | 90690                       | 90490                        | 1.60       | 8.0          | 20.0            |         |
| 4     | 1.504  | 6       | 0.750      | 0.44            | 0.442           | 12.33      | 18.01         | 61830                       | 61550                        | 90290                       | 89880                        | 2.00       | 8.0          | 25.0            |         |
| 5     | 0.677  | 4       | 0.503      | 0.20            | 0.199           | 6.09       | 9.38          | 67110                       | 67450                        | 103420                      | 103940                       | 1.40       | 8.0          | 17.5            |         |
| 6     | 0.693  | 4       | 0.510      | 0.20            | 0.204           | 5.96       | 9.17          | 65760                       | 64470                        | 101170                      | 99190                        | 1.20       | 8.0          | 15.0            |         |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               |         |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               |         |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               |         |
| -     | -      | -       | -          | -               | -               | -          | -             | -                           | -                            | -                           | -                            | -          | -            | -               |         |

**Witnessed By:**

M. Zahid, Ittefaq Iron

**BEND TEST:**

--

No Bend test performed

**Note:-**

Only Six Samples  
Received and Tested

Note: Please always confirm the results of above report on web [www.uet-civil.edu.pk](http://www.uet-civil.edu.pk)

**Test Performed by:** Dr. Syed Asad Ali Gillani

Sarmad Usman Khan  
E & Z Enterprises  
Saudain Park Momin Prua Road, Lahore

**Client Reference No.:** Nil

Dated: 26-10-2020

**SOM Lab Ref:** CED/SOM/3186(P-1/1)

Dated: 29-10-2020

**Test Type:** Compressive Strength & Hardness Test

**Sample Type:** Plastic Sewerage Covers

**Load Test Results:**

| S No | Sample Type                    | Sample Dia (mm) | Sample Thickness (mm) | Compressive Strength (kN) | Remarks                               |
|------|--------------------------------|-----------------|-----------------------|---------------------------|---------------------------------------|
| 1    | Plastic Sewerage Covers (1+ 4) | 215.0           | 43.0                  | 30.0                      | Sample Remains Satisfied at This Load |
| 2    | Plastic Sewerage Covers (1+ 3) | 215.0           | 43.0                  | 30.0                      | Sample Remains Satisfied at This Load |

**Hardness Test Results:**

| S. No | Sample Type                    | Hardness (Shore A) |
|-------|--------------------------------|--------------------|
| 1     | Plastic Sewerage Covers (1+ 4) | 95.33              |
| 2     | Plastic Sewerage Covers (1+ 3) | 95.17              |

Test Performed By: Dr. /Engr. S. Asad Ali Gillani

Dy Dir MTL.

Testing of Anchor Bolt -Infra Dew Works Pkg -1, Sector- A & R, DHA Phase-IX, -

(M/S DHA Const Coy)

Client Reference: 408/241/E/1017/0077

Dated: 26-10-2020

SOM Lab Ref: CED/SOM/3192(Page-1/1)

Dated: 29-10-2020

Test: Tension Test

Test Specification: ASTM-F -1554

Sample Type: J Bolt

Gauge Length: 200 mm

| S.No. | Dia.              |                 | Area            | Yield Load | Ultimate Load | Yield Stress | Ultimate. Stress | Elongation | Gauge Length | %age Elongation | Reduction of Area (%) |
|-------|-------------------|-----------------|-----------------|------------|---------------|--------------|------------------|------------|--------------|-----------------|-----------------------|
|       | Original Diameter | Tested Diameter |                 |            |               |              |                  |            |              |                 |                       |
|       | mm                | mm              | mm <sup>2</sup> | kN         | kN            | MPa          | MPa              | mm         | mm           | %               |                       |
| 1     | 12                | 8.0             | 50.26           | -          | 28.0          | -            | 557              | 12.5       | 50.0         | 25.0            | 64.0                  |
| 2     | 12                | 8.0             | 50.26           | -          | 27.2          | -            | 541              | 12.5       | 50.0         | 25.0            | 54.4.7                |
| 3     | 12                | 8.4             | 55.41           | -          | 35.2          | -            | 635              | 12.5       | 50.0         | 25.0            | 57.1                  |

**Note:-**

Only Three Samples  
Received and Tested

Note: Please always confirm the results of above report on web [www.uet-civil.edu.pk](http://www.uet-civil.edu.pk)

Test Performed By: Dr. /Engr. S. Asad Ali Gillani

Maj Adnan Khalid ®

Dy Dir MTL. Resting of Anchor Bolt -Infra Dew Works Pkg -1, Sector- A & R, DHA Phase-IX, -

(M/S DHA Const Coy)

Client Reference: 408/241/E/1017/0077

Dated: 26-10-2020

SOM Lab Ref: CED/SOM/3192(Page-1/1)

Dated: 29-10-2020

Test: Tension Test

Test Specification: ASTM-F -1554

Sample Type: J Bolt

Gauge Length: 200 mm

|  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

|  |  |   |
|--|--|---|
|  |  | <b>Note:-</b>                           |
|  |  | Only Six Samples<br>Received and Tested |

Note: Please always confirm the results of above report on web [www.uet-civil.edu.pk](http://www.uet-civil.edu.pk)



Test Performed By: Dr. /Engr. S. Asad Ali Gillani

Maj Adnan Khalid ®

Dy Dir MTL.

Infra Dew Works Sector-Q, Phase-IX, (Prism) - (M/S DHA Const Coy)

Client Reference: 408/241/E/972-B/0020

Dated: 03-09-2020

SOM Lab Ref: CED/SOM/2913(Page-2/2)

Dated: 03-09-2020

Test: Tension Test

Test Specification: ASTM-F -1554

Sample Type: Y Bolt

Gauge Length: 25 mm

| S.No. | Dia.              |                 | Area            | Yield Load | Ultimate Load | Yield Stress | Ultimate. Stress | Elongation | Gauge Length | %age Elongation | Reduction of Area (%) |
|-------|-------------------|-----------------|-----------------|------------|---------------|--------------|------------------|------------|--------------|-----------------|-----------------------|
|       | Original Diameter | Tested Diameter |                 |            |               |              |                  |            |              |                 |                       |
|       | mm                | mm              | mm <sup>2</sup> | kN         | kN            | MPa          | MPa              | mm         | mm           | %               |                       |
| 1     | 12                | 9.0             | 63.61           | 31.0       | 44.7          | 487.29       | 702.64           | 5.0        | 25           | 20.0            | 39.5                  |
| 2     | 12                | 9.0             | 63.61           | 36.0       | 58.0          | 565.88       | 911.70           | 5.0        | 25           | 20.0            | 58.5                  |
| 3     | 12                | 9.0             | 63.61           | 31.6       | 45.0          | 496.72       | 707.36           | 7.5        | 25           | 30.0            | 64.0                  |

**Note:-**

Only Three Samples  
Received and Tested

Note: Please always confirm the results of above report on web [www.uet-civil.edu.pk](http://www.uet-civil.edu.pk)

Test Performed By: Dr. /Engr. S. Asad Ali Gillani

Maj Adnan Khalid ©

Dy Dir MTL.

Testing of J-Bolts – Infra Dev works, Pkg-1, Sector-A & R DHA Phase-IX - (M/S DHA Const Coy)

Client Reference: 408/241/E/1017/207

Dated: 26-10-2020

SOM Lab Ref: CED/SOM/3193(Page-1/1)

Dated: 29-10-2020

Test: Tension Test

Test Specification: ASTM-F -1554

Sample Type: J Bolt

Gauge Length: 200 mm

| S.No. | Dia.              |                 | Area            | Yield Load | Ultimate Load | Yield Stress | Ultimate. Stress | Elongation | Gauge Length | %age Elongation | Reduction of Area (%) |
|-------|-------------------|-----------------|-----------------|------------|---------------|--------------|------------------|------------|--------------|-----------------|-----------------------|
|       | Original Diameter | Tested Diameter |                 |            |               |              |                  |            |              |                 |                       |
|       | mm                | mm              | mm <sup>2</sup> | kN         | kN            | MPa          | MPa              | mm         | M m          | %               |                       |
| 1     | 25                | 25.61           | 515             | 196.00     | 298.00        | 382          | 579              | 42.5       | 200          | 21.3            | 50.6                  |
| 2     | 25                | 25.14           | 497             | 190.00     | 293.70        | 385          | 592              | 42.5       | 200          | 21.3            | 49.9                  |
| 3     | 25                | 25.45           | 508             | 191.00     | 325.00        | 376          | 640              | 40.0       | 200          | 20.0            | 44.3                  |
| 4     | 25                | 25.64           | 516             | 178.00     | 262.50        | 345          | 509              | 45.0       | 200          | 22.5            | 56.0                  |
| 5     | 25                | 25.50           | 511             | 178.00     | 262.20        | 350          | 514              | 50.0       | 200          | 25.0            | 55.5                  |
| 6     | 25                | 25.18           | 498             | 172.00     | 254.00        | 346          | 510              | 47.5       | 200          | 23.8            | 53.5                  |

Note: Sr. No 1,2 & 3, J –Bolt Size 25x1000mm, Sr. No. 4,5 & 6 J-Bolt Size 25x 800 mm

**Note:-**

Only Six Samples

Received and Tested

Note: Please always confirm the results of above report on web [www.uet-civil.edu.pk](http://www.uet-civil.edu.pk)

Test Performed By: Dr. S. Asad Ali Gillani

Maj Adnan Khalid ©

Dy Dir MTL.

Testing of J-Bolt, Const of (U/G) External Elec Works Alongwith Street Light System

Pkg -E-3, Sector -L, DHA Phase-IX, Prism-9 - (M/S FWO)

Client Reference: 408/241/E/1026/513

Dated: 29-10-2020

SOM Lab Ref: CED/SOM/3195(Page-1/1)

Dated: 29-10-2020

Test: Tension Test

Test Specification: ASTM-F -1554

Sample Type: J Bolt

Gauge Length: 200 mm

| S.No. | Dia.              |                 | Area            | Yield Load | Ultimate Load | Yield Stress | Ultimate. Stress | Elongation | Gauge Length | %age Elongation | Reduction of Area (%) |
|-------|-------------------|-----------------|-----------------|------------|---------------|--------------|------------------|------------|--------------|-----------------|-----------------------|
|       | Original Diameter | Tested Diameter |                 |            |               |              |                  |            |              |                 |                       |
|       | mm                | mm              | mm <sup>2</sup> | kN         | kN            | MPa          | MPa              | mm         | M m          | %               |                       |
| 1     | 25                | 25.36           | 505             | 223.20     | 350.00        | 442          | 694              | 40.0       | 200          | 20.0            | 46.6                  |
| 2     | 25                | 25.60           | 511             | 215.00     | 344.50        | 422          | 675              | 37.5       | 200          | 18.8            | 44.5                  |
| -     | -                 | -               | -               | -          | -             | --           | -                | -          | -            | -               | -                     |

**Note:-**

Only Two Samples  
Received and Tested

Note: Please always confirm the results of above report on web [www.uet-civil.edu.pk](http://www.uet-civil.edu.pk)

**Test Performed By:** Dr. Syed Asad Ali Gillani

M. Ubaid Ullah Khalid  
Manager Marketing  
Fibre Craft Industries, Lahore

**Client Reference:** FIC/20/CR/18106

Dated: 22-10-2020

**SOM Laboratory Reference:** CED/SOM/3198(Page-1/1)

Dated: 29-10-2020

**Test:** Stiffness Test & Tensile Test & Compressive Test

**Sample Type:** GRP Pipe 200 mm Diameter ( Fiber Craft, Industry)

**Stiffness Test (Parallel Plate Loading Test as per ASTM-D-2412)**

(GRP Pipe 200mm)

Total Length = 316 mm, External Diameter = 213 mm, Wall Thickness = 4.8 mm

| Percentage Reduction in Diameter of Sample | Compression Load, P (kN) | Stiffness (Corrected)               |                        |   | Remarks           |
|--|--------------------------|-------------------------------------|------------------------|---|-------------------|
|  |                          | Pipe Stiffness (kN/m <sup>2</sup> ) | Stiffness Factor (N-m) | Specific Tangential initial Stiffness (N/m <sup>2</sup> ) |                   |
| 5%   | 2.9                      | 931                                 | 157                    | 18600   | No Crack Observed |
| 10%  | 5.3                      | 918                                 | 154                    | 18331   | No Crack Observed |
| 15%  | 7.45                     | 926                                 | 156                    | 18492   | No Crack Observed |
| 20%  | 9.70                     | 971                                 | 163                    | 19405   | Crack Observed    |

**Tensile Test**

| Sample Type      | Size of Sample (mm) | Ultimate Load (kN) | Ultimate Stress (MPa) |
|------------------|---------------------|--------------------|-----------------------|
| GRP Pipe (200mm) | 13.0 x 5.0          | 2.2                | 33.846                |

**Compression Strength Test (ASTM-D-695)**

| Sample Type      | Size of Sample (mm) | Compression Load (kN) | Compressive Stress (MPa) |
|------------------|---------------------|-----------------------|--------------------------|
| GRP Pipe (200mm) | 13.5 x 13.0         | 52.0                  | 296.296                  |

**Note:** Please always confirm the results of above report on web: [www.uet-civil.edu.pk](http://www.uet-civil.edu.pk)



