

Asif Khan (PILD)

Test Performed By:

Dr. /Engr.

S. Asad Ali Gillani

Assistant Procurement Manager, 1230 MW, CCPP Haveli Bahadar Shah, Jhang

Client Reference: PWC/JET LHR/001/16122019**Dated:** 16-12-2019**SOM Lab Ref:** CED/SOM/1911(Page-1/1)**Dated:** 17-12-2019**Test:** Tension Test & Bend Test**Test Specification:** ASTM-A 615**Sample Type:** Deformed Bar**Gauge Length:** 200 mm

| 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) | | | | |
| | kg/m | mm | mm | mm ² | mm ² | kN | kN | MPa | MPa | MPa | MPa | mm | mm | % | |
| 1 | 3.784 | 25 | 24.77 | 491 | 482 | 255.50 | 343.00 | 521 | 531 | 699 | 712 | 35.0 | 200 | 17.5 | |
| 2 | 3.802 | 25 | 24.83 | 491 | 484 | 257.50 | 341.00 | 525 | 532 | 695 | 705 | 40.0 | 200 | 20.0 | |
| 3 | 2.375 | 20 | 19.63 | 314 | 303 | 150.70 | 207.00 | 480 | 499 | 659 | 685 | 32.5 | 200 | 16.3 | |
| 4 | 2.362 | 20 | 19.57 | 314 | 301 | 156.00 | 208.50 | 497 | 519 | 664 | 693 | 32.5 | 200 | 16.3 | |
| 5 | 1.533 | 16 | 15.77 | 201 | 195 | 101.50 | 137.50 | 505 | 520 | 684 | 704 | 30.0 | 200 | 15.0 | |
| 6 | 1.535 | 16 | 15.78 | 201 | 195 | 99.50 | 135.50 | 495 | 509 | 674 | 694 | 30.0 | 200 | 15.0 | |
| 7 | 0.903 | 12 | 12.10 | 113 | 115 | 57.00 | 82.50 | 504 | 496 | 729 | 718 | 27.5 | 200 | 13.8 | |
| 8 | 0.899 | 12 | 12.08 | 113 | 115 | 57.50 | 82.20 | 508 | 503 | 727 | 718 | 30.0 | 200 | 15.0 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

Witnessed By: Engr. Umair Ashraf, NESPAK Lahore**BEND TEST:**

| | | |
|------|--|--|
| 25mm | Sample bend through 180 degrees Satisfactorily without any crack | Note:- Only Twelve Samples Received and Tested |
| 20mm | Sample bend through 180 degrees Satisfactorily without any crack | |
| 16mm | Sample bend through 180 degrees Satisfactorily without any crack | |
| 12mm | 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

Sub Divisional Officer (Buildings)
Sub Division, Sheikhpura

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

Client Reference: 6193/S

SOM Lab

Ref: 1907 (Page-1/1)

Dated: 02-12-2019

Dated: 17-12-2019

Test: Tension 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 ² | in ² | Tons | Tons | psi | psi | psi | psi | in | in | % | |
| 1 | 2.749 | 8 | 1.014 | 0.79 | 0.808 | 30.12 | 39.11 | 84090 | 82220 | 109190 | 106760 | 1.00 | 8.0 | 12.5 | |
| 2 | 2.742 | 8 | 1.013 | 0.79 | 0.806 | 30.45 | 39.27 | 85010 | 83320 | 109620 | 107440 | 1.00 | 8.0 | 12.5 | |
| 3 | 1.518 | 6 | 0.754 | 0.44 | 0.446 | 11.72 | 17.30 | 58760 | 57970 | 86710 | 85540 | 1.80 | 8.0 | 22.5 | |
| 4 | 1.444 | 6 | 0.735 | 0.44 | 0.424 | 11.11 | 16.46 | 55700 | 57800 | 82520 | 85630 | 1.80 | 8.0 | 22.5 | |
| 5 | 0.675 | 4 | 0.502 | 0.20 | 0.198 | 5.73 | 8.26 | 63180 | 63810 | 91050 | 91970 | 1.50 | 8.0 | 18.8 | |
| 6 | 0.672 | 4 | 0.501 | 0.20 | 0.197 | 5.68 | 8.26 | 62610 | 63570 | 91050 | 92440 | 1.40 | 8.0 | 17.5 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

BEND TEST:

| | | |
|----|------------------------|---|
| -- | No Bend test performed | Note:- Only Six Samples Received and Tested |
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Note: Please always confirm the results of above report on web www.uet-civil.edu.pk

Maj Adnan khalid@

Test Performed By: Dr. /Engr.

S. Asad Ali
Gillani

Dy Dir MTL, Proposed Commercial Plaza, DRGCC Ph-III, DHA Ph-VI, (M/S Construct)

Client Reference: 408/241/E/Lab/800/4293

SOM Lab

Ref: 1908(Page-1/1)

Dated: 17-12-2019

Dated: 17-12-2019

Test: Tension Test & Bend Test

Test Specification: ASTM-A-615

ASTM-A-615

Gauge Length: 8 inch

Sample Type:

Deformed Bar (Kamran 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 ² | in ² | Tons | Tons | psi | psi | psi | psi | in | in | % | |
| 1 | 1.472 | 6 | 0.743 | 0.44 | 0.433 | 13.30 | 19.29 | 66680 | 67760 | 96670 | 98240 | 1.30 | 8.0 | 16.3 | |
| 2 | 1.448 | 6 | 0.736 | 0.44 | 0.426 | 12.69 | 18.67 | 63620 | 65710 | 93610 | 96680 | 1.50 | 8.0 | 18.8 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

BEND TEST:

| | | |
|-----|--|---|
| # 6 | Sample bend through 180 degrees Satisfactorily without any crack | Note:- Only Three Samples Received and Tested |
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| | | |

Note: Please always confirm the results of above report on web www.uet-civil.edu.pk

Maj Adnan khalid@

Test Performed By: Dr. /Engr.

S. Asad Ali
Gillani

Dy Dir MTL, Proposed Commercial Plaza, DRGCC Ph-III, DHA Ph-VI, (M/S Construct)

Client Reference: 408/241/E/Lab/801/4305

SOM Lab

Ref: 1909(Page-1/1)

Dated: 17-12-2019

Dated: 17-12-2019

Test: Tension Test & Bend Test

Test Specification: ASTM-A-615

ASTM-A-615

Gauge Length: 8 inch

Sample Type: Deformed Bar (Kamran Steel)

Deformed Bar (Kamran 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 ² | in ² | Tons | Tons | psi | psi | psi | psi | in | in | % | |
| 1 | 1.493 | 6 | 0.748 | 0.44 | 0.439 | 13.22 | 19.42 | 66270 | 66420 | 97340 | 97560 | 1.50 | 8.0 | 18.8 | |
| 2 | 1.450 | 6 | 0.736 | 0.44 | 0.426 | 12.69 | 18.67 | 63620 | 65710 | 93610 | 96680 | 1.50 | 8.0 | 18.8 | |
| 3 | 1.499 | 6 | 0.749 | 0.44 | 0.441 | 12.66 | 19.06 | 63460 | 63320 | 95550 | 95330 | 1.50 | 8.0 | 18.8 | |
| 4 | 1.478 | 6 | 0.743 | 0.44 | 0.434 | 12.76 | 19.01 | 63970 | 64860 | 95290 | 96610 | 1.60 | 8.0 | 20.0 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

BEND TEST:

| | | |
|-----|--|---|
| # 6 | Sample bend through 180 degrees Satisfactorily without any crack | Note:- Only Six Samples Received and Tested |
| # 6 | 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

Maj Adnan khalid®

Test Performed By:

Dr. /Engr. S. Asad Ali Gillani

Dy Dir MTL, Const and Allied Facilites at Emps Living Accn, W-Block, DHA-VIII - (M/S Wareesha Enterprises)

Client Reference: 408/241/E/Lab/802/17

SOM Lab Ref: 1914(Page-1/1)

Dated: 17-12-2019

Dated: 17-12-2019

Test: Tension Test & Bend Test

Test Specification:

ASTM-A-615

Gauge Length: 8 inch

Sample Type:

Deformed Bar (Saeed Kasur)

| 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 ² | in ² | Tons | Tons | psi | psi | psi | psi | in | in | % | |
| 1 | 2.698 | 8 | 1.005 | 0.79 | 0.793 | 23.24 | 36.85 | 64890 | 64640 | 102880 | 102490 | 1.50 | 8.0 | 18.8 | |
| 2 | 2.712 | 8 | 1.007 | 0.79 | 0.797 | 23.31 | 36.95 | 65090 | 64510 | 103160 | 102260 | 1.50 | 8.0 | 18.8 | |
| 3 | 1.521 | 6 | 0.754 | 0.44 | 0.447 | 13.25 | 20.25 | 66430 | 65390 | 101530 | 99940 | 1.40 | 8.0 | 17.5 | |
| 4 | 1.546 | 6 | 0.760 | 0.44 | 0.454 | 13.51 | 20.61 | 67700 | 65620 | 103310 | 100130 | 1.40 | 8.0 | 17.5 | |
| 5 | 0.658 | 4 | 0.496 | 0.20 | 0.193 | 6.37 | 9.38 | 70260 | 72810 | 103420 | 107170 | 1.20 | 8.0 | 15.0 | |
| 6 | 0.663 | 4 | 0.498 | 0.20 | 0.195 | 6.39 | 9.35 | 70480 | 72290 | 103080 | 105720 | 1.40 | 8.0 | 17.5 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

BEND TEST:

| | | |
|-----|--|--|
| # 8 | Sample bend through 180 degrees Satisfactorily without any crack | Note:- 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

Moaz Steel
Lahore (Muhammad Sam Hydro Power Project)

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

Client Reference: MZ/CGGC-DES/MD/UET/002
Dated: 16-12-2019
Test: Tension Test
Gauge Length: 8 inch

SOM Lab
Ref: 1915(Page-1/1)
Dated: 17-12-2019
ASTM-A-615
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 ² | in ² | Tons | Tons | psi | psi | psi | psi | in | in | % | |
| 1 | 2.701 | 8 | 1.005 | 0.79 | 0.794 | 23.34 | 35.52 | 65170 | 64840 | 99180 | 98680 | 1.60 | 8.0 | 20.0 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

BEND TEST:

| | | |
|----|------------------------|--|
| -- | No Bend test performed | Note:- Only One Sample Received and Tested |
| | | |
| | | |
| | | |

Note: Please always confirm the results of above report on web www.uet-civil.edu.pk