

Major Tanveer Ahmad (R)
Resident Engineer-2, ACES, Sector-V DHA Multan (M/s UJC-SAACO JV)

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

Client Reference: ACES/DHAM/DEV/SEC-V/671

Dated: 21-10-2021

SOM Lab Ref: CED/SOM/5226(Page-1/1)

Dated: 29-10-2021

Test: Tension Test & Bend Test

Test Specification: ASTM-A 615

Sample Type: Deformed Bar (SJ Steel)

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 | 3.995 | 25 | 25.46 | 491 | 509 | 263.00 | 347.70 | 536 | 517 | 708 | 684 | 37.5 | 200 | 18.8 | |
| 2 | 3.935 | 25 | 25.26 | 491 | 501 | 264.50 | 344.00 | 539 | 528 | 701 | 687 | 32.5 | 200 | 16.3 | |
| 3 | 0.990 | 12 | 12.67 | 113 | 126 | 57.20 | 85.00 | 506 | 454 | 752 | 674 | 32.5 | 200 | 16.3 | |
| 4 | 0.992 | 12 | 12.68 | 113 | 126 | 58.00 | 86.00 | 513 | 460 | 760 | 681 | 30.0 | 200 | 15.0 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

BEND TEST:

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

Engr. Jaffar Rashid
Sr. Project Manager, Izhar Group of Companies, Lahore

Test Performed By: Dr. /Engr. Ali Ahmed

Client Reference: ICPL/NHO/LAB/05
SOM Lab Ref: CED/SOM/5228(Page-1/1)
Test: Tension Test & Bend Test
Sample Type: Deformed Bar (Mughal Steel)

Dated: 29-10-2021
Dated: 29-10-2021
Test Specification: ASTM-A 615
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 | 0.938 | 12 | 12.31 | 113 | 119 | 70.50 | 85.00 | 623 | 593 | 752 | 715 | 22.5 | 200 | 11.3 | |
| 2 | 0.926 | 12 | 12.26 | 113 | 118 | 66.70 | 81.50 | 590 | 566 | 721 | 691 | 22.5 | 200 | 11.3 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

BEND TEST:

| | | |
|------|--|---|
| 12mm | 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

Assistant Director-I

Test Performed By:

Dr. /Engr.

S. Asad Ali
Gillani

Building Research Station, Communication & Works Department, Govt. of Punjab

Client Reference: 154-R/3237

SOM Lab

Ref: 5225(Page-1/1)

Dated: 26-10-2021

Dated: 29-10-2021

Test: Tension Test & Bend Test

Test Specification:

ASTM-A-615

Gauge Length: 8 inch

Sample Type:

Deformed Bar (Model 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 | 2.633 | 8 | 0.993 | 0.79 | 0.774 | 25.30 | 35.60 | 70630 | 72090 | 99380 | 101430 | 1.30 | 8.0 | 16.3 | |
| 2 | 1.481 | 6 | 0.744 | 0.44 | 0.435 | 12.81 | 19.24 | 64230 | 64970 | 96420 | 97530 | 1.60 | 8.0 | 20.0 | |
| 3 | 0.657 | 4 | 0.496 | 0.20 | 0.193 | 7.08 | 9.48 | 78130 | 80960 | 104540 | 108330 | 1.30 | 8.0 | 16.3 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

BEND TEST:

| | | |
|-----|--|---|
| # 8 | 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 | |
| # 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

Assistant Engineer (Civil)
Engineering Cell, Government College University, Faisalabad

Test Performed By: Dr. /Engr. Ali Ahmed

Client Reference: GCUF/EC/3676
Dated: 27-10-2021
Test: Tension Test & Bend Test
Gauge Length: 8 inch

SOM Lab
Ref: 5227(Page-1/1)
Dated: 29-10-2021
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 ² | in ² | Tons | Tons | psi | psi | psi | psi | in | in | % | |
| 1 | 0.645 | 4 | 0.492 | 0.20 | 0.190 | 6.47 | 8.58 | 71380 | 75140 | 94650 | 99630 | 1.10 | 8.0 | 13.8 | |
| 2 | 0.647 | 4 | 0.492 | 0.20 | 0.190 | 6.29 | 8.56 | 69360 | 73010 | 94420 | 99390 | 1.10 | 8.0 | 13.8 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

BEND TEST:

| | | |
|-----|--|---|
| # 4 | Sample bend through 180 degrees Satisfactorily without any crack | Note:- Only Three Samples Received and Tested |
| | | |
| | | |
| | | |

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

Muhammad Affan
Project Manager, ICON VALLEY Phase-II, Lahore

Test Performed By: Dr. /Engr.

S. Asad Ali
Gillani

Client Reference: IV-13

Dated: 20-10-2021

Test: Tension Test & Bend Test

Gauge Length: 8 inch

Test Specification:

Sample Type:

SOM Lab

Ref: 5229(Page-1/1)

Dated: 29-10-2021

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 | 2.638 | 8 | 0.993 | 0.79 | 0.775 | 23.96 | 34.71 | 66880 | 68170 | 96900 | 98780 | 1.30 | 8.0 | 16.3 | |
| 2 | 2.663 | 8 | 0.998 | 0.79 | 0.783 | 23.50 | 34.07 | 65600 | 66180 | 95110 | 95960 | 1.30 | 8.0 | 16.3 | |
| 3 | 1.491 | 6 | 0.747 | 0.44 | 0.438 | 12.82 | 17.79 | 64280 | 64570 | 89160 | 89570 | 1.30 | 8.0 | 16.3 | |
| 4 | 1.491 | 6 | 0.747 | 0.44 | 0.438 | 12.69 | 17.74 | 63620 | 63910 | 88910 | 89310 | 1.40 | 8.0 | 17.5 | |
| 5 | 0.653 | 4 | 0.494 | 0.20 | 0.192 | 5.76 | 8.12 | 63510 | 66160 | 89590 | 93320 | 1.50 | 8.0 | 18.8 | |
| 6 | 0.655 | 4 | 0.494 | 0.20 | 0.192 | 5.83 | 8.31 | 64300 | 66980 | 91610 | 95430 | 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

Zain Ul Abadeen
Site Engineer, Orient Water Technologies Pvt. Ltd.

Test Performed By: Dr. /Engr.

S. Asad Ali
Gillani

Client Reference: 1

Dated: 28-10-2021

Test: Tension Test & Bend Test

Gauge Length: 8 inch

Test Specification:

Sample Type:

SOM Lab

Ref: 5230(Page-1/1)

Dated: 29-10-2021

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 | 1.539 | 6 | 0.759 | 0.44 | 0.452 | 19.80 | 23.45 | 99230 | 96590 | 117520 | 114400 | 1.10 | 8.0 | 13.8 | |
| 2 | 1.671 | 6 | 0.791 | 0.44 | 0.491 | 20.29 | 23.34 | 101680 | 91120 | 117010 | 104850 | 1.00 | 8.0 | 12.5 | |
| 3 | 0.670 | 4 | 0.501 | 0.20 | 0.197 | 6.95 | 8.79 | 76660 | 77830 | 96900 | 98370 | 0.90 | 8.0 | 11.3 | |
| 4 | 0.660 | 4 | 0.497 | 0.20 | 0.194 | 7.44 | 9.25 | 82060 | 84600 | 101960 | 105110 | 1.00 | 8.0 | 12.5 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

BEND TEST:

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

Amjad Pervaiz

Assistant Executive Engineer (Civil), KBCMA, CVAS, Narowal C.C

Test Performed By:

Dr. /Engr.

S. Asad Ali
GillaniClient Reference: A.E.E/NC/31

Dated: 15-10-2021

Test: Tension Test & Bend Test

Gauge Length: 8 inch

Test Specification:

Sample Type:

SOM Lab

Ref:

5231 (Page-1/1)

Dated:

29-10-2021

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 | 2.593 | 8 | 0.985 | 0.79 | 0.762 | 23.39 | 32.18 | 65310 | 67710 | 89840 | 93140 | 1.40 | 8.0 | 17.5 | |
| 2 | 2.591 | 8 | 0.984 | 0.79 | 0.761 | 23.65 | 32.44 | 66020 | 68540 | 90550 | 94010 | 1.50 | 8.0 | 18.8 | |
| 3 | 1.500 | 6 | 0.749 | 0.44 | 0.441 | 13.76 | 18.52 | 68980 | 68820 | 92840 | 92630 | 1.40 | 8.0 | 17.5 | |
| 4 | 1.500 | 6 | 0.749 | 0.44 | 0.441 | 13.78 | 18.60 | 69080 | 68930 | 93250 | 93040 | 1.40 | 8.0 | 17.5 | |
| 5 | 0.672 | 4 | 0.501 | 0.20 | 0.197 | 6.75 | 9.43 | 74420 | 75550 | 103980 | 105560 | 1.20 | 8.0 | 15.0 | |
| 6 | 0.668 | 4 | 0.500 | 0.20 | 0.196 | 6.63 | 9.35 | 73070 | 74560 | 103080 | 105180 | 1.20 | 8.0 | 15.0 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

BEND TEST:

8 Sample bend through 180 degrees Satisfactorily without any crack

6 Sample bend through 180 degrees Satisfactorily without any crack

4 Sample bend through 180 degrees Satisfactorily without any crack

Note:-Only Nine Samples
Received and TestedNote: 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, DHA Sector-A, Block Commercial Ph-VI, Lahore Cantt. (M/S Linker Developers Pvt. Ltd.)

SOM Lab

Client Reference: 408/241/Lab/150/128

Ref: 5232 (Page-1/1)

Dated: 29-10-2021

Dated: 29-10-2021

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 ² | in ² | Tons | Tons | psi | psi | psi | psi | in | in | % | |
| 1 | 2.667 | 8 | 0.999 | 0.79 | 0.784 | 28.03 | 36.60 | 78260 | 78860 | 102170 | 102950 | 1.20 | 8.0 | 15.0 | |
| 2 | 2.617 | 8 | 0.990 | 0.79 | 0.769 | 26.71 | 35.07 | 74560 | 76600 | 97900 | 100570 | 1.30 | 8.0 | 16.3 | |
| 3 | 1.530 | 6 | 0.757 | 0.44 | 0.450 | 16.02 | 21.22 | 80320 | 78540 | 106380 | 104020 | 1.20 | 8.0 | 15.0 | |
| 4 | 1.540 | 6 | 0.759 | 0.44 | 0.453 | 16.28 | 21.48 | 81600 | 79260 | 107660 | 104570 | 1.20 | 8.0 | 15.0 | |
| 5 | 0.659 | 4 | 0.497 | 0.20 | 0.194 | 6.12 | 9.53 | 67450 | 69530 | 105100 | 108350 | 1.30 | 8.0 | 16.3 | |
| 6 | 0.650 | 4 | 0.493 | 0.20 | 0.191 | 6.01 | 9.48 | 66320 | 69450 | 104540 | 109470 | 1.20 | 8.0 | 15.0 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

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

Tahir Mehmood
Chief Engineer, New Lahore City (Zaitoon)

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

Client Reference: NLC/CE/Const/02

SOM Lab

Ref: 5233(Page-1/1)

Dated: 25-10-2021

Dated: 29-10-2021

Test: Tension Test & Bend Test

Test Specification:

ASTM-A-615

Gauge Length: 8 inch

Sample Type:

Deformed Bar (Moiz 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 | 0.582 | 4 | 0.467 | 0.20 | 0.171 | 6.12 | 7.65 | 67450 | 78890 | 84310 | 98610 | 1.20 | 8.0 | 15.0 | |
| 2 | 0.584 | 4 | 0.468 | 0.20 | 0.172 | 6.09 | 8.12 | 67110 | 78030 | 89590 | 104180 | 1.10 | 8.0 | 13.8 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

BEND TEST:

| | | |
|-----|--|---|
| # 4 | 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