

Test Performed by: Dr. Nauman Khurram

Kiran Saeed Butt
Operations Manager
AFKO Global Engineering (Pvt) Ltd.
Floor 1 & 2, Rehman Plaza,257-G4,Johar Town, Lahore.

Client Reference No.: AGE/Lhr/0231/24

Dated: 31-07-2024

SOM Lab Ref: CED/SOM/4549 (Page 1/1)

Dated: 02-08-2024

Test Type: Tensile Test

Sample Type: Anchor Rod M16 x 190 Model: NF 16x260 Brand: Nut Fix (Pakistan)

Test Specification: ASTM – F-606

Tensile Test Results

| Sample No. | Sample Type | Tested Diameter of Rod/Bolt (mm) | Ultimate Load (kN) | Ultimate Tensile Stress (MPa) | % Elongation |
|------------|----------------------|----------------------------------|--------------------|-------------------------------|--------------|
| 1 | Anchor Rod M16 x 190 | 12.0 | 76.0 | 671.98 | 3.75 |

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

Test Performed by: Dr. Nauman Khurram

Engr. Zaheer Ud Din Babar,
Dy.General Manager (Works)
Habib Rafiq Engineering (Pvt.) Ltd,Lahore
(Construction of Sky Gardens Tower, Lahore.)

Client Reference No.: HRLE/SKG/2024/158

Dated: 02-08-2024

SOM

Lab Ref: CED/SOM/4554(Page-1/1)

Dated:02-08-2024

Test: Tensile Test

Sample Type: M.S Deformed Steel bar with Coupler (Bismillah Engineering)

Tension Test Results

| Sr. No. | Bar Size | Area | Ultimate Load | Ultimate stress | Remarks |
|---------|----------|--------------------|---------------|-----------------|-------------------------------|
| | (mm) | (mm ²) | kN | (Mpa) | |
| 1 | 22 | 380 | 249.2 | 656 | Threaded Failure |
| 2 | 22 | 380 | 240.0 | 631 | Threaded Failure |
| 3 | 22 | 380 | 239.7 | 631 | Rebar Broken at Threaded part |

Witnessed By: M Irfan (HRL, QC Engr), Najam Shabbir Khan (101 Group)

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

Test Performed by: .S. Asad Ali Gillani

Riaz Ahmad
Nation Technocommercial Services Pvt.Ltd.
Lahore.

Client Reference No.: NTS/H/01/24

Dated: 02-08-2024

SOM Lab Ref: CED/SOM/4555 (Page 1/1)

Dated: 02-08-2024

Sample Type: Carbon Steel, Alumium

Test Type: Hardness Test

Hardness Test Details:

Machine used: Avery Rockwell Hardness Testing Machine
(Minor Load: 10 Kgf Major Load: 90.0 kgf Scale: C)

Hardness Test Results

| Sample No. | Sample Type | Hardness avg |
|------------|----------------------------------|---------------|
| 1 | Rod Dia 20mm, Carbon Steel 4140 | HR – 36.83– C |
| 2 | Rod Dia 120mm,Carbon Steel 4140 | HR – 36.83– C |
| 3 | Pipe OD 127mm, Carbon Steel 4140 | HR – 33.83– C |

Machine used: Avery Rockwell Hardness Testing Machine
(Minor Load: 10 Kgf Major Load: 140.0 kgf Scale: B)

Hardness Test Results

| Sample No. | Sample Type | Hardness avg |
|------------|-----------------------------|---------------|
| 1 | Rod Dia 10mm, Aluminum 6061 | HR – 58.33– B |
| 2 | Rod Dia 25mm, Aluminum 6061 | HR – 61.5– B |
| 3 | Rod Dia 75mm, Aluminum 6061 | HR – 55.83– B |

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

Meezan Developers
Lahore.(Const Of Jamia Tur Rasheed Lahore Campus)

Test Performed By: Dr. /Engr. Nauman Khurram

Client Reference: Nil

SOM Lab

Ref: 4550 (Page-1/1)

Dated: 02-08-2024

Dated: 02-08-2024

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 ² | in ² | Tons | Tons | psi | psi | psi | psi | in | in | % | |
| 1 | 2.641 | 8 | 0.994 | 0.79 | 0.776 | 25.48 | 34.83 | 71150 | 72430 | 97240 | 99000 | 1.60 | 8.0 | 20.0 | |
| 2 | 2.646 | 8 | 0.995 | 0.79 | 0.778 | 26.01 | 35.04 | 72630 | 73750 | 97810 | 99320 | 1.60 | 8.0 | 20.0 | |
| 3 | 1.638 | 6 | 0.783 | 0.44 | 0.481 | 16.79 | 23.60 | 84160 | 76980 | 118290 | 108200 | 1.30 | 8.0 | 16.3 | |
| 4 | 1.636 | 6 | 0.783 | 0.44 | 0.481 | 15.97 | 21.43 | 80070 | 73240 | 107400 | 98250 | 1.30 | 8.0 | 16.3 | |
| 5 | 0.587 | 4 | 0.469 | 0.20 | 0.173 | 5.83 | 7.56 | 64300 | 74330 | 83410 | 96430 | 1.20 | 8.0 | 15.0 | |
| 6 | 0.578 | 4 | 0.465 | 0.20 | 0.170 | 5.96 | 7.41 | 65760 | 77370 | 81720 | 96140 | 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

Chief Resident Engineer (OCL)

Test Performed By: Dr. /Engr. Nauman Khurram

Osmani & Compny.Fsd.(B/Wall at Different Locations FIEDMC Emergent Works Faisalabad)

Client Reference: CRE/FIEDMC-EW/FIC-057/NLC/1506/20

SOM Lab

Ref: 4551 (Page-1/1)

Dated: 15-06-2024

Dated: 02-08-2024

Test: Tension Test & Bend Test

Test Specification:

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 | 1.069 | 5 | 0.632 | 0.31 | 0.314 | 10.37 | 14.04 | 73760 | 72820 | 99860 | 98590 | 1.40 | 8.0 | 17.5 | |
| 2 | 1.047 | 5 | 0.626 | 0.31 | 0.308 | 9.70 | 13.32 | 69040 | 69490 | 94790 | 95400 | 1.30 | 8.0 | 16.3 | |
| 3 | 0.664 | 4 | 0.498 | 0.20 | 0.195 | 6.34 | 8.84 | 69920 | 71710 | 97460 | 99960 | 1.10 | 8.0 | 13.8 | |
| 4 | 0.662 | 4 | 0.498 | 0.20 | 0.195 | 6.24 | 8.79 | 68800 | 70560 | 96900 | 99380 | 1.00 | 8.0 | 12.5 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

BEND TEST:

| | | |
|-----|--|---|
| # 5 | 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

Metroplan-Asian JV

Test Performed By: Dr. /Engr. Nauman Khurram

Site Office JIC-JHL,Lahore.(Estb Of Jinnah Institute of Cardiology at Jinnah Hospital Lahore)

Client Reference: Metroplan-Asian JV ET-JHL-RE-227-2024

SOM Lab

Ref: 4552 (Page-1/1)

Dated: 02-08-2024

Dated: 02-08-2024

Test: Tension Test & Bend Test

Test Specification: ASTM-A-615

Gauge Length: 8 inch

Sample Type: Deformed Bar (Sheikhoo 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 | 0.656 | 4 | 0.496 | 0.20 | 0.193 | 6.49 | 8.72 | 71610 | 74200 | 96110 | 99600 | 1.00 | 8.0 | 12.5 | |
| 2 | 0.656 | 4 | 0.496 | 0.20 | 0.193 | 6.90 | 8.89 | 76100 | 78860 | 98020 | 101580 | 1.00 | 8.0 | 12.5 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

BEND TEST:

| | | |
|----|------------------------|---|
| -- | No Bend test performed | Note:- Only Two Samples Received and Tested |
| | | |
| | | |
| | | |

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

Muhammad Asif
Canal44 Luxury Apartments Lahore.

Test Performed By: Dr. /Engr. Nauman Khurram

Client Reference: Nil

SOM Lab

Ref: 4553 (Page-1/1)

Dated: 02-08-2024

Dated: 02-08-2024

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 ² | in ² | Tons | Tons | psi | psi | psi | psi | in | in | % | |
| 1 | 2.646 | 8 | 0.995 | 0.79 | 0.778 | 24.59 | 33.69 | 68640 | 69700 | 94050 | 95510 | 1.60 | 8.0 | 20.0 | |
| 2 | 2.639 | 8 | 0.994 | 0.79 | 0.776 | 24.46 | 33.74 | 68300 | 69530 | 94200 | 95900 | 1.50 | 8.0 | 18.8 | |
| 3 | 1.477 | 6 | 0.743 | 0.44 | 0.434 | 13.83 | 18.35 | 69340 | 70300 | 91970 | 93240 | 1.50 | 8.0 | 18.8 | |
| 4 | 1.479 | 6 | 0.744 | 0.44 | 0.435 | 13.86 | 18.32 | 69490 | 70290 | 91820 | 92870 | 1.40 | 8.0 | 17.5 | |
| 5 | 0.661 | 4 | 0.497 | 0.20 | 0.194 | 6.95 | 8.72 | 76660 | 79040 | 96110 | 99080 | 1.20 | 8.0 | 15.0 | |
| 6 | 0.661 | 4 | 0.497 | 0.20 | 0.194 | 7.24 | 8.92 | 79810 | 82280 | 98360 | 101400 | 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

Muhammad Rana Manazar Ali
PM AR Enterprise Gulberg Lahore.(ALFATAH EMALL PROJECT)

Test Performed By: Dr. /Engr. Nauman Khurram

Client Reference: AEM/ST/UET/14/09

SOM Lab

Ref: 4556 (Page-1/1)

Dated: 01-08-2024

Dated: 02-08-2024

Test: Tension Test & Bend Test

Test Specification: 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 | 2.626 | 8 | 0.991 | 0.79 | 0.772 | 26.25 | 36.11 | 73280 | 74990 | 100800 | 103150 | 1.20 | 8.0 | 15.0 | |
| 2 | 2.626 | 8 | 0.991 | 0.79 | 0.772 | 26.42 | 36.90 | 73770 | 75480 | 103020 | 105420 | 1.10 | 8.0 | 13.8 | |
| 3 | 1.505 | 6 | 0.750 | 0.44 | 0.442 | 15.39 | 20.41 | 77160 | 76810 | 102290 | 101830 | 1.10 | 8.0 | 13.8 | |
| 4 | 1.498 | 6 | 0.748 | 0.44 | 0.440 | 15.06 | 19.93 | 75470 | 75470 | 99890 | 99890 | 1.00 | 8.0 | 12.5 | |
| 5 | 0.664 | 4 | 0.498 | 0.20 | 0.195 | 6.37 | 8.84 | 70260 | 72060 | 97460 | 99960 | 1.30 | 8.0 | 16.3 | |
| 6 | 0.634 | 4 | 0.487 | 0.20 | 0.186 | 6.24 | 8.48 | 68800 | 73970 | 93530 | 100560 | 1.10 | 8.0 | 13.8 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

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

M. Omer
Director Design Spot.(KFC Mughal Pura Lahore)

Test Performed By: Dr. /Engr. Nauman Khurram

Client Reference: Nil

SOM Lab

Ref: 4557 (Page-1/1)

Dated: 02-08-2024

Dated: 02-08-2024

Test: Tension Test & Bend Test

Test Specification:

ASTM-A-615

Gauge Length: 8 inch

Sample Type:

Deformed Bar (Mughal 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 | 2.637 | 8 | 0.993 | 0.79 | 0.775 | 24.74 | 31.42 | 69070 | 70410 | 87710 | 89410 | 1.60 | 8.0 | 20.0 | |
| 2 | 2.637 | 8 | 0.993 | 0.79 | 0.775 | 24.49 | 31.35 | 68360 | 69680 | 87510 | 89200 | 1.20 | 8.0 | 15.0 | |
| 3 | 1.476 | 6 | 0.743 | 0.44 | 0.434 | 13.35 | 17.43 | 66940 | 67860 | 87370 | 88580 | 1.10 | 8.0 | 13.8 | |
| 4 | 1.477 | 6 | 0.743 | 0.44 | 0.434 | 13.40 | 17.38 | 67190 | 68120 | 87120 | 88320 | 1.40 | 8.0 | 17.5 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

BEND TEST:

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

