

Engr. Mazhar Latif

Test Performed By:

Dr. /Engr.

S. Asad Ali Gillani

Dy. Genral Manager (Projects) Habib Rafiq Engineering (Pvt) Ltd. (Development of Lahore samrt City)

Client Reference: L-LSC-21-26

Dated: 02-06-2021

SOM Lab Ref: CED/SOM/4378 (Page-1/1)

Dated: 02-06-2021

Test: ONLY BEND TEST

Test Specification: ASTM-A-615

Sample Type: Deformed Bar(Agha 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 | 2.372 | 20 | 19.61 | 314 | 302 | 161.70 | 209.70 | 515 | 536 | 667 | 695 | 32.5 | 200 | 16.3 | |
| 2 | 2.374 | 20 | 19.62 | 314 | 302 | 159.00 | 208.00 | 506 | 526 | 662 | 688 | 27.5 | 200 | 13.8 | |
| 3 | 0.884 | 12 | 11.97 | 113 | 113 | 59.70 | 79.70 | 528 | 531 | 705 | 709 | 25.0 | 200 | 12.5 | |
| 4 | 0.898 | 12 | 12.07 | 113 | 114 | 59.50 | 80.00 | 526 | 521 | 707 | 700 | 25.0 | 200 | 12.5 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

BEND TEST:

| | | |
|------|--|---|
| 20mm | 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

Muhammad Shahbaz
Imperium Hospitality (Pvt) Ltd. Lahore

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

Client Reference: IHPL/Steel/077

SOM Lab

Ref: 4379(Page-1/1)

Dated: 31-05-2021

Dated: 02-06-2021

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 | 0.660 | 4 | 0.497 | 0.20 | 0.194 | 5.83 | 8.48 | 64300 | 66290 | 93530 | 96420 | 1.10 | 8.0 | 13.8 | |
| 2 | 0.655 | 4 | 0.494 | 0.20 | 0.192 | 5.91 | 8.61 | 65200 | 67920 | 94990 | 98940 | 1.00 | 8.0 | 12.5 | |
| 3 | 0.656 | 4 | 0.496 | 0.20 | 0.193 | 6.07 | 8.28 | 66890 | 69310 | 91280 | 94590 | 1.00 | 8.0 | 12.5 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

BEND TEST:

| | | |
|-----|--|--|
| # 4 | Sample bend through 180 degrees Satisfactorily without any crack | Note:- Only Five 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

Asif Pervaiz Butt
Project Manager, AYQ Developers Pvt. Ltd. Lahore

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

Client Reference: Nil

SOM Lab

Ref: 4380(Page-1/2)

Dated: 02-06-2021

Dated: 02-06-2021

Test: Tension Test & Bend Test

Test Specification:

ASTM-A-615

Gauge 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 ² | in ² | Tons | Tons | psi | psi | psi | psi | in | in | % | |
| 1 | 2.662 | 8 | 0.998 | 0.79 | 0.782 | 25.35 | 34.73 | 70780 | 71500 | 96960 | 97950 | 1.10 | 8.0 | 13.8 | |
| 2 | 2.661 | 8 | 0.998 | 0.79 | 0.782 | 26.88 | 35.52 | 75050 | 75810 | 99180 | 100190 | 1.20 | 8.0 | 15.0 | |
| 3 | 2.657 | 8 | 0.997 | 0.79 | 0.781 | 26.40 | 34.63 | 73710 | 74560 | 96670 | 97790 | 1.10 | 8.0 | 13.8 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

BEND TEST:

| | | |
|-----|--|--|
| # 8 | Sample bend through 180 degrees Satisfactorily without any crack | Note:- Only Four Samples Received and Tested |
| | | |
| | | |
| | | |

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

Asif Pervaiz Butt
Project Manager, AYQ Developers Pvt. Ltd. Lahore

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

Client Reference: Nil

SOM Lab

Ref: 4380(Page-2/2)

Dated: 02-06-2021

Dated: 02-06-2021

Test: Tension Test & Bend Test

Test Specification:

ASTM-A-615

Gauge Length: 8 inch

Sample Type:

Deformed Bar (AF 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 | 2.588 | 8 | 0.984 | 0.79 | 0.761 | 21.10 | 31.47 | 58910 | 61160 | 87850 | 91200 | 1.40 | 8.0 | 17.5 | |
| 2 | 2.572 | 8 | 0.981 | 0.79 | 0.756 | 23.45 | 33.03 | 65460 | 68400 | 92210 | 96350 | 1.20 | 8.0 | 15.0 | |
| 3 | 2.607 | 8 | 0.988 | 0.79 | 0.766 | 23.34 | 32.44 | 65170 | 67210 | 90550 | 93390 | 1.20 | 8.0 | 15.0 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

BEND TEST:

| | | |
|-----|--|--|
| # 8 | Sample bend through 180 degrees Satisfactorily without any crack | Note:- Only Four Samples Received and Tested |
| | | |
| | | |
| | | |

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

Test Performed by: Dr. S. Asad Ali Gillani

Engr. Nooran Shah
Resident Engineer,
ACE – JV Pavron, CB & CT Road
Project: F/S Design and Reconstruction of RCC Bridges, SH: Packages-II Kanawar
Bridge on Charsadda-Tangi Road alongwith Additional of 1.25 KM Charsadda
Tangi Road (From Tangi Bazar to Abazai)

Reference No.: ACE/RE/KB&CTR/083

Dated: 01-06-2021

SOM Lab Ref: CED/SOM/4376(Page-1/1)

Dated: 02-06-2021

Test: tensile Test, Elongation at Break, Tear Test, Hardness Test & Comp Set Test

Sample Type: Elastomeric Bearing Pad (402mm x 502mm x 75mm)

TENSILE STRENGTH AND ELONGATION TEST. (AS PER ASTM-D-412)

| S. No | Sample Size (mm) | Ultimate Load (kN) | Tensile Strength (Mpa) | Tensile Strength (kg/cm ²) | Elongation at Break(%) |
|-------|---------------------|-----------------------|---------------------------|---|------------------------|
| 1 | 6.0 x 2.5 | 0.30 | 20.0 | 203.943 | 640.0 |

TEAR STRENGTH (AS PER ASTM-D-624)

| S. No | Sample Size (mm) | Ultimate Load (kN) | Tear Strength (N/mm) |
|-------|---------------------|-----------------------|-------------------------|
| 1 | 12.5 x 3.2 | 0.22 | 68.75 |

- COMPRESSION SET TEST (AS PER ASTM-D-395)

| S. No. | Thickness of Sample (mm) | Final Thickness (mm) | Compression set (%) |
|--------|-----------------------------|-------------------------|------------------------|
| 1 | 3.20 | 3.15 | 1.562 |

- HARDNESS TEST (AS PER ASTM-D-2240)

| S. No | Sample Type | Hardness (Shore A) |
|-------|-------------------------|--------------------|
| 1 | Elastomeric Bearing Pad | 60.67 |

