



STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
 Deputy Director (Maint)
 NHA, Wazirabad
 (Upgradation & Rehabilitation of Toll Plaza at Jhelum Bridge km 1430 – 1431 SBC on N-5)

Reference # CED/TFL **33356** (Dr. M Rizwan Riaz) Dated: 12-06-2019
 Reference of the request letter # TP-PN-15/50-07/Lab/DD(Maint)/WZD/NHA/19/786 Dated: 11-04-2019

Tension Test Report (Page – 1/1)

Date of Test 25-06-2019
 Gauge length 2 inches
 Description Steel Structure Steel Strip Tensile Test

| Sr. No. | Designation | | Size of Strip | X Section Area | Yield load | Breaking Load | Yield Stress | Ultimate Stress | Elongation | % Elongation | Remarks |
|--|--------------------------|-----------|---------------|--------------------|------------|---------------|--------------|-----------------|------------|--------------|---------|
| | (inch) | | (mm) | (mm ²) | (kg) | (kg) | (MPa) | (MPa) | (in) | | |
| 1 | Steel column box section | 15x15x0.5 | 28.10x1.90 | 53.39 | 1600 | 2400 | 293.99 | 440.98 | 0.70 | 35.00 | |
| 2 | | 15x15x0.5 | 28.20x1.90 | 53.58 | 1700 | 2400 | 311.25 | 439.42 | 0.70 | 35.00 | |
| 3 | Edge Beam | 1 | 28.20x12.60 | 355.32 | 15000 | 19700 | 414.13 | 543.90 | 0.80 | 40.00 | |
| 4 | | 1 | 28.40x12.30 | 349.32 | 13000 | 19100 | 365.08 | 536.39 | 0.80 | 40.00 | |
| 5 | MS Base Plate | 1 | 28.10x8.00 | 224.80 | 7100 | 11000 | 309.84 | 480.03 | 0.75 | 37.50 | |
| 6 | | 1 | 28.00x8.00 | 224.00 | 7400 | 11300 | 324.08 | 494.88 | 0.75 | 37.50 | |
| 7 | Top Plate | 3/4 | 28.30x19.30 | 546.19 | 19500 | 30900 | 350.24 | 554.99 | 0.80 | 40.00 | |
| 8 | | 3/4 | 28.30x19.30 | 546.19 | 20000 | 31400 | 359.22 | 563.97 | 0.80 | 40.00 | |
| Only Eight Samples for Tensile Test | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | |
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I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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To,
Deputy Director (Maint)
NHA, Wazirabad
(Upgradation & Rehabilitation of Toll Plaza at Jhelum Bridge km 1430 – 1431 SBC on N-5)

Reference # CED/TFL **33356** (Dr. M Rizwan Riaz)

Dated: 12-06-2019

Reference of the request letter # TP-PN-15/50-07/Lab/DD(Maint)/WZD/NHA/19/786 Dated: 11-04-2019

Weight & Size Test Report (Page – 3/8)

Date of Test 25-06-2019

Gauge length -----

Description M.S.I-Beam Weight and Size Test

| Sr. No. | Designation | | Weight | Length | Weight per Unit Length | Depth (d) | Flange Width (b _f) | Flange Thickness (t _f) | Web Thickness (t _w) | Remark |
|----------------------------------|--------------------------|-----------|--------|--------|------------------------|-----------|--------------------------------|------------------------------------|---------------------------------|--------|
| | (inch) | (g) | | | | | | | | |
| 1 | Steel column box section | 15x15x0.5 | 2460 | 77.20 | 31.87 | 108.80 | 52.30 | 2.0 | 2.0 | |
| 2 | Edge Beam | 1 | 6464 | 82.20 | 78.64 | 357.00 | 154.90 | 19.10 | 13.00 | |
| - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | |
| Only Two Samples for Test | | | | | | | | | | |
| | | | | | | | | | | |

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To,
Deputy Director (Maint)
NHA, Wazirabad
(Upgradation & Rehabilitation of Toll Plaza at Jhelum Bridge km 1430 – 1431 SBC on N-5)

Reference # CED/TFL **33356** (Dr. M Rizwan Riaz)

Dated: 12-06-2019

Reference of the request letter # TP-PN-15/50-07/Lab/DD(Maint)/WZD/NHA/19/786 Dated: 11-04-2019

Weight & Size Test Report (Page – 4/8)

Date of Test 25-06-2019

Gauge length -----

Description Plate Weight and Size Test

| Sr. No. | Designation | | Weight | Length | Width (b) | Weight per Unit Area | Thickness | Remark |
|----------------------------------|---------------|-----|--------|--------|-----------|----------------------|-----------|--------|
| | (mm) | | | | | | | |
| 1 | MS Base Plate | 1 | 1860 | 298.00 | 100.10 | 62.35 | 8.00 | |
| 2 | Top Plate | 3/4 | 4502 | 299.80 | 103.20 | 145.51 | 19.30 | |
| - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | |
| Only Two Samples for Test | | | | | | | | |
| | | | | | | | | |

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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
 DD (Const)
 Project Management Office
 National University of Sciences and Technology
 Islamabad

Reference # CED/TFL **33360** (Dr. Safer Abbas)
 Reference of the request letter # PD-PMO/02/2019

Dated: 12-06-2019
 Dated: 07-05-2019

Tension Test Report (Page – 1/1)

Date of Test 25-06-2019
 Gauge length 2 inches
 Description Steel Structure Steel Strip Tensile and Bend Test

| Sr. No. | Designation | | Size of Strip | X Section Area | Yield load | Breaking Load | Yield Stress | Ultimate Stress | Elongation | % Elongation | Remarks |
|---|-------------|-----------|---------------|--------------------|------------|---------------|--------------|-----------------|------------|--------------|---------|
| | (inch) | | (mm) | (mm ²) | (kg) | (kg) | (MPa) | (MPa) | (in) | | |
| 1 | Colum | 18 | 28.30x6.10 | 172.63 | 5400 | 8000 | 306.86 | 454.61 | 0.70 | 35.00 | |
| 2 | | 18 | 28.30x6.10 | 172.63 | 5200 | 8400 | 295.50 | 477.34 | 0.70 | 35.00 | |
| 3 | Pipe | 8x8x1/4 | 28.30x6.40 | 181.12 | 6200 | 8700 | 335.81 | 471.22 | 0.50 | 25.00 | |
| 4 | | 8x8x1/4 | 28.30x6.30 | 178.29 | 5500 | 8100 | 302.62 | 445.68 | 0.70 | 35.00 | |
| 5 | Pipe | 4x6x16 G | 28.40x1.60 | 45.44 | 1100 | 1450 | 237.48 | 313.04 | 0.80 | 40.00 | |
| 6 | | 4x6x16 G | 28.40x1.60 | 45.44 | 1000 | 1400 | 215.89 | 302.24 | 0.80 | 40.00 | |
| 7 | Colum | 18x18x1/4 | 28.30x6.20 | 175.46 | 5600 | 8000 | 313.10 | 447.28 | 0.80 | 40.00 | |
| 8 | | 18x18x1/4 | 28.30x6.20 | 175.46 | 5900 | 9000 | 329.87 | 503.19 | 0.80 | 40.00 | |
| 9 | Plate | 24x24x1/2 | 28.40x12.60 | 357.84 | 12700 | 18200 | 348.16 | 498.94 | 0.90 | 45.00 | |
| 10 | | 24x24x1/2 | 28.40x12.60 | 357.84 | 12600 | 18200 | 345.42 | 498.94 | 0.90 | 45.00 | |
| Only Ten Samples for Tensile and Five Samples Bend Test | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | |
| Strip Taken from Steel Colum (18" Dia) Bend Test Through 180° is Satisfactory | | | | | | | | | | | |
| Strip Taken from Steel Pipe (8"x8"x1/4") Bend Test Through 180° is Satisfactory | | | | | | | | | | | |
| Strip Taken from Steel Pipe (4"x6"x16 Gauge) Bend Test Through 180° is Satisfactory | | | | | | | | | | | |
| Strip Taken from Steel Colum (18"x18"x1/4") Bend Test Through 180° is Satisfactory | | | | | | | | | | | |
| Strip Taken from Steel Plate (24"x24"x1/2") Bend Test Through 180° is Satisfactory | | | | | | | | | | | |

I/C Testing Laboratoires
UET Lahore, Pakistan.

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Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
 Jr. Construction Engg
 WASA, LDA, Lahore
 (Manufacturing of R.C.C Manhole Covers in Different Sizes (Package-I) (M/s Eagle Pipe Industry))
 Reference # CED/TFL **33367** (Dr. Safer Abbas) Dated: 13-06-2019
 Reference of the request letter # CD-I/258 Dated: 29-05-2019

Tension Test Report (Page – 1/2)

Date of Test 25-06-2019
 Gauge length 2 inches
 Description Angle Iron Strip Tensile and Bend Test

| Sr. No. | Designation | | Size of Strip | X Section Area | Yield load | Breaking Load | Yield Stress | Ultimate Stress | Elongation | % Elongation | Remarks |
|---|-------------|---------|---------------|----------------|------------|---------------|--------------|-----------------|------------|--------------|---------|
| | (inch) | (mm) | | | | | | | | | |
| 1 | Angle Iron | 2x2x1/4 | 19.90x6.80 | 135.32 | 5300 | 9000 | 384.22 | 652.45 | 0.50 | 25.00 | |
| 2 | Angle Iron | 2x2x1/4 | 19.00x6.80 | 129.20 | 5800 | 9400 | 440.39 | 713.73 | 0.40 | 20.00 | |
| - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | |
| Only Two Samples for Tensile and One Sample for Bend Test | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | |
| Strip Taken from Angle Iron (2"x2"x1/4") Bend Test Through 180° is Satisfactory | | | | | | | | | | | |

I/C Testing Laboratoires
UET Lahore, Pakistan.

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STRUCTURAL ENGINEERING DIVISION
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Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
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To,
Jr. Construction Engg
WASA, LDA, Lahore
(Manufacturing of R.C.C Manhole Covers in Different Sizes (Package-I) (M/s Eagle Pipe Industry))

Reference # CED/TFL **33367** (Dr. Safer Abbas
Reference of the request letter # CD-I/258

Dated: 13-06-2019
Dated: 29-05-2019

Weight & Size Test Report (Page – 2/2)

Date of Test 25-06-2019
Gauge length -----
Description Angle Iron Weight and Size Test

| Sr. No. | Designation | Weight | Length | Weight per Unit Length | L-1 | L-2 | Thickness | Remark |
|---------------------------------|-------------|--------|--------|------------------------|-------|-------|-----------|--------|
| | (inch) | (g) | (cm) | (kg/m) | (mm) | (mm) | (mm) | |
| 1 | 2x2x1/4 | 3049 | 60.30 | 5.06 | 50.80 | 50.20 | 6.70 | |
| - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | |
| Only One Sample for Test | | | | | | | | |

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Ref: CED/TFL/06/33373

Dated: 13-06-19

To
Director, Equipment & Material
M/S CGGC
Suki Kinari Project Management in Pakistan

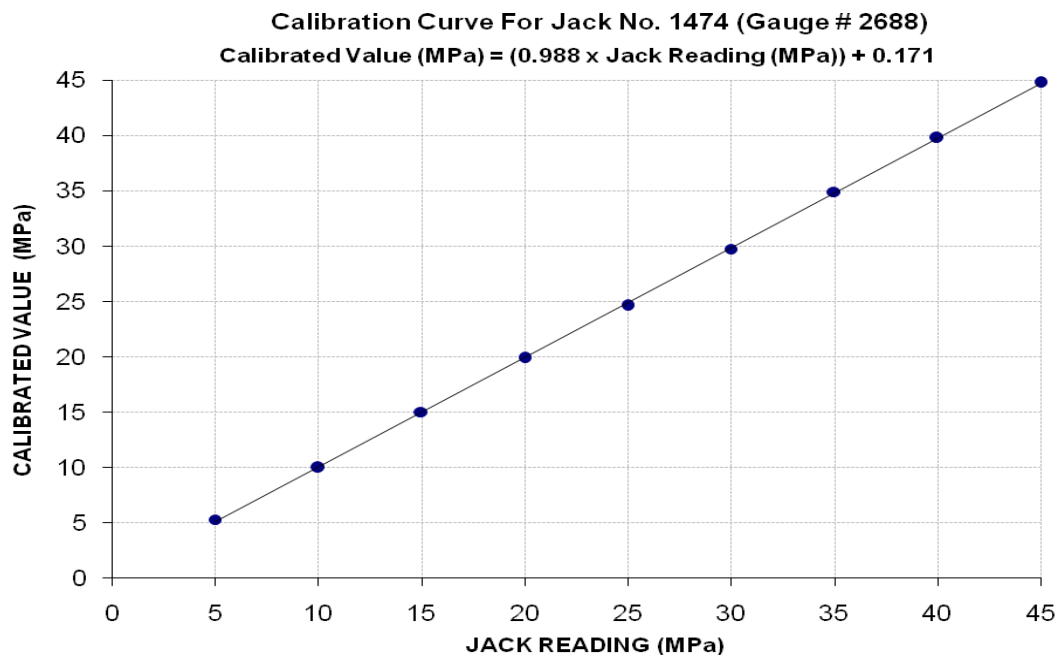
Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/06/33373) (Page -1/2)

Reference to your Letter No. Nil, dated: 11/06/2019 on the subject cited above. One Hydraulic Jack (Jack No. 1474, Gauge No. 2688) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 45 (MPa)

| Hydraulic Jack Reading (MPa) | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 |
|------------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| Calibrated Load (Kg) | 16200 | 30400 | 45600 | 60400 | 74800 | 90400 | 106000 | 120800 | 136000 |
| Calibrated Pressure (Mpa) | 5.33 | 10.00 | 15.01 | 19.88 | 24.62 | 29.75 | 34.88 | 39.75 | 44.76 |

The Ram Area of Jack = 298 cm²



I/C Testing Laboratoires
UET Lahore, Pakistan.

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Ref: CED/TFL/06/33373

Dated: 13-06-19

To
Director, Equipment & Material
M/S CGGC
Suki Kinari Project Management in Pakistan

Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/06/33373) (Page -2/2)

Reference to your Letter No. Nil, dated: 11/06/2019 on the subject cited above. One Hydraulic Jack (Jack No. 1474, Gauge No. 2948) as received by us has been calibrated. The results are tabulated as under:

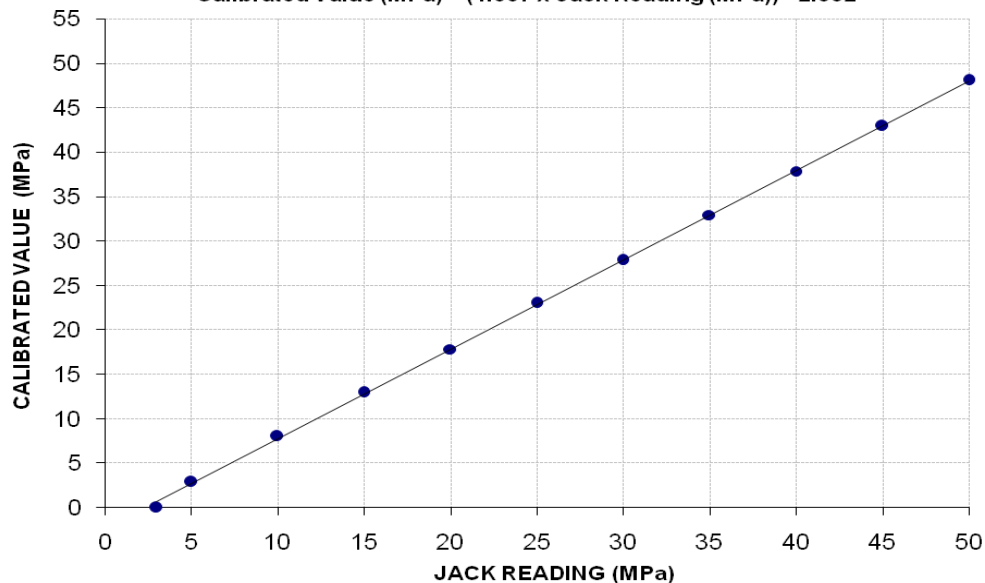
Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 50 (MPa)

| Hydraulic Jack Reading (MPa) | 3 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |
|------------------------------|---|------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| Calibrated Load (Kg) | 0 | 8800 | 24400 | 39400 | 54200 | 70000 | 84600 | 100000 | 115000 | 130400 | 146000 |
| Calibrated Pressure (Mpa) | 0 | 2.90 | 8.03 | 12.97 | 17.84 | 23.04 | 27.84 | 32.91 | 37.85 | 42.91 | 48.05 |

The Ram Area of Jack = 298 cm²

Calibration Curve For Jack No. 1474 (Gauge # 2948)

Calibrated Value (MPa) = (1.007 x Jack Reading (MPa)) - 2.352



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Test Floor Laboratory
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University of Engineering and Technology Lahore, 54890
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To,
M/S Khushi Mohammad & Brothers Construction Company
Lahore
(Beaconhouse School Sahiwal)

Reference # CED/TFL **33425, 434** (Dr. Safer Abbas)
Reference of the request letter # Nil

Dated: 24-06-2019
Dated: 24-06-2019

Tension Test Report (Page -1/1)

Date of Test 25-06-2019
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight (lbs/ft) | Diameter/ Size | | Area (in ²) | | Yield load (kg) | Breaking Load (kg) | Yield Stress (psi) | | Ultimate Stress (psi) | | Elongation (inch) | % Elongation | Remarks |
|---|--------------------|-------------------|------------------|----------------------------|--------|--------------------|--------------------------|-----------------------|--------|--------------------------|--------|----------------------|--------------|---------|
| | | Nominal (#) | Actual (inch) | Nominal | Actual | | | Nominal | Actual | Nominal | Actual | | | |
| 1 | 0.374 | 3 | 0.374 | 0.11 | 0.110 | 3000 | 4900 | 60200 | 60220 | 98200 | 98400 | 1.20 | 15.0 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Note: only one sample for tensile and one sample for bend test | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
| #3 Bar Bend Test Through 180° is Satisfactory | | | | | | | | | | | | | | |
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University of Engineering and Technology Lahore, 54890
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To,
 Resident Engineer
 SMEC International Pty Ltd
 Post Flood National Highway Rehabilitation Project (PNHRP) (Package 5 – Lot 1 & Lot 2)

Reference # CED/TFL **33429, 431** (Dr. Safer Abbas) Dated: 25-06-2019
 Reference of the request letter # 5065060/R3/55-5-1-22/2/203 Dated: 30-04-2019

Tension Test Report (Page -1/1)

Date of Test 25-06-2019
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight (lbs/ft) | Diameter/ Size (mm) | | Area (in ²) | | Yield load (kg) | Breaking Load (kg) | Yield Stress (psi) | | Ultimate Stress (psi) | | Elongation (inch) | % Elongation | Remarks |
|--|--------------------|---------------------------|--------|----------------------------|--------|--------------------|--------------------------|-----------------------|--------|--------------------------|--------|----------------------|--------------|---------|
| | | Nominal | Actual | Nominal | Actual | | | Nominal | Actual | Nominal | Actual | | | |
| 1 | 0.416 | 10 | 10.02 | 0.12 | 0.122 | 3200 | 5200 | 58789 | 57740 | 95533 | 93900 | 1.30 | 16.3 | |
| 2 | 0.412 | 10 | 9.98 | 0.12 | 0.121 | 3100 | 5300 | 56952 | 56360 | 97370 | 96400 | 1.10 | 13.8 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Note: only two samples for tensile and one sample for bend test | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
| 10mm Dia Bar Bend Test Through 180° is Satisfactory | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
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To,
 Resident Engineer
 Orbit Housing
 The Spring Apartment Homes

Reference # CED/TFL **33432** (Dr. Safer Abbas)
 Reference of the request letter # Nil

Dated: 25-06-2019
 Dated: 25-06-2019

Tension Test Report (Page -1/1)

Date of Test 25-06-2019
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight (lbs/ft) | Diameter/ Size | | Area (in ²) | | Yield load (kg) | Breaking Load (kg) | Yield Stress (psi) | | Ultimate Stress (psi) | | Elongation (inch) | % Elongation | Remarks |
|--|--------------------|-------------------|------------------|----------------------------|--------|--------------------|--------------------------|-----------------------|--------|--------------------------|--------|----------------------|--------------|---------|
| | | Nominal (#) | Actual (inch) | Nominal | Actual | | | Nominal | Actual | Nominal | Actual | | | |
| 1 | 0.374 | 3 | 0.374 | 0.11 | 0.110 | 3700 | 4700 | 74200 | 74200 | 94200 | 94300 | 1.30 | 16.3 | |
| 2 | 0.373 | 3 | 0.373 | 0.11 | 0.110 | 3800 | 4700 | 76200 | 76480 | 94200 | 94600 | 1.20 | 15.0 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Note: only two samples for tensile and one sample for bend test | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
| #3 Bar Bend Test Through 180° is Satisfactory | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
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