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

**Project Manager, IZHAR Concrete (Pvt) Ltd. Lahore**

**Client Reference:** **ICPL/CCBPL/LAB/07** **SOM Lab Ref:** **1469(Page-1/1)**

**Dated:** **26-09-2018** **Dated:** **26-12-2018**

**Test:** **Tension Test & Bend Test** **Test Specification:** **BS -4449 Deformed Bar**

**Gauge Length:** **8 inch** **Sample Type:**

| 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 | 1.487 | 6 | 0.746 | 0.44 | 0.437 | 18.15 | 21.63 | 91000 | 91630 | 108420 | 109170 | 1.00 | 8.0 | 12.5 | |
| 2 | 1.481 | 6 | 0.744 | 0.44 | 0.435 | 18.14 | 21.68 | 90950 | 92000 | 108680 | 109930 | 1.00 | 8.0 | 12.5 | |
| 3 | 1.012 | 5 | 0.615 | 0.31 | 0.297 | 9.86 | 12.35 | 70130 | 73200 | 87900 | 91750 | 1.00 | 8.0 | 12.5 | |
| 4 | 1.002 | 5 | 0.612 | 0.31 | 0.294 | 10.37 | 12.86 | 73760 | 77770 | 91520 | 96500 | 1.10 | 8.0 | 13.8 | |
| 5 | 0.650 | 4 | 0.493 | 0.20 | 0.191 | 6.09 | 9.28 | 67110 | 70270 | 102290 | 107110 | 1.10 | 8.0 | 13.8 | |
| 6 | 0.658 | 4 | 0.496 | 0.20 | 0.193 | 6.19 | 9.33 | 68230 | 70710 | 102860 | 106590 | 1.20 | 8.0 | 15.0 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

**BEND TEST:**

| | |
|---|---|
| # 6 | Sample bend through 180 degrees Satisfactorily without any crack |
| # 5 | 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 Tested**

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

**H. Developments Construction,** **Test Performed By:** **Dr. /Engr.** **S. Asad Ali Gillani**

**4-Babar Block, Main Boulevard, Garden Town, Lahore**

**Client Reference:** **Nil** **SOM Lab Ref:** **1471(Page-1/1)**

**Dated:** **26-09-2019** **Dated:** **26-09-2019**

**Test:** **Tension Test & Bend Test** **Test Specification:** **ASTM-A-615 Deformed**

**Gauge Length:** **8 inch** **Sample Type:** **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 | 2.612 | 8 | 0.989 | 0.79 | 0.768 | 26.86 | 35.47 | 74990 | 77140 | 99030 | 101870 | 1.30 | 8.0 | 16.3 | |
| 2 | 2.602 | 8 | 0.987 | 0.79 | 0.765 | 23.82 | 32.79 | 66510 | 68680 | 91550 | 94540 | 1.20 | 8.0 | 15.0 | |
| 3 | 1.485 | 6 | 0.745 | 0.44 | 0.436 | 14.32 | 18.60 | 71790 | 72450 | 93250 | 94110 | 1.30 | 8.0 | 16.3 | |
| 4 | 1.483 | 6 | 0.745 | 0.44 | 0.436 | 14.37 | 18.73 | 72050 | 72710 | 93860 | 94720 | 1.30 | 8.0 | 16.3 | |
| 5 | 0.642 | 4 | 0.491 | 0.20 | 0.189 | 6.57 | 8.43 | 72510 | 76730 | 92960 | 98370 | 0.90 | 8.0 | 11.3 | |
| 6 | 0.660 | 4 | 0.497 | 0.20 | 0.194 | 7.03 | 8.66 | 77560 | 79960 | 95550 | 98500 | 0.90 | 8.0 | 11.3 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

**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 Tested**

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

**Khalid Latif Sheikh**
**PMCS Manager, MAK Associates, Lahore**

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

**Client Reference:** **MAK/PAF/SV-GL/TB-037**
**Dated:** **24-09-2019**

**SOM Lab Ref:** **1472(Page-1/1)**
**Dated:** **26-09-2019**

**Test:** **Tension Test & Bend Test** **Test Specification:** **ASTM-A-615**
**Guage 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 | 2.660 | 8 | 0.998 | 0.79 | 0.782 | 28.72 | 36.72 | 80170 | 80990 | 102510 | 103560 | 1.20 | 8.0 | 15.0 | |
| 2 | 2.664 | 8 | 0.998 | 0.79 | 0.783 | 28.82 | 36.51 | 80450 | 81170 | 101940 | 102850 | 1.10 | 8.0 | 13.8 | |
| 3 | 1.505 | 6 | 0.750 | 0.44 | 0.442 | 14.78 | 20.56 | 74090 | 73750 | 103060 | 102590 | 1.20 | 8.0 | 15.0 | |
| 4 | 1.489 | 6 | 0.747 | 0.44 | 0.438 | 14.48 | 19.57 | 72560 | 72890 | 98100 | 98550 | 1.00 | 8.0 | 12.5 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

**BEND TEST:**

| | |
|---|---|
| # 8 | Sample bend through 180 degrees Satisfactorily without any crack |
| # 6 | Sample bend through 180 degrees Satisfactorily without any crack |
| | |
| | |
| | |

**Note:-**

**Only Six Samples Received and Tested**

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

**Sub Divisional Officer**
**Highway Sub Division, Arifwala**

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

**Client Reference:** 387/SDO-A
**Dated:** 31-08-2019

**SOM Lab Ref:** 1473 (Page-1/1)
**Dated:** 26-09-2019

**Test:** Tension Test
**Gauge Length:** 8 inch

**Test Specification:** ASTM-A-615
**Sample Type:** Plain & 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 | 2.515 | 8 | 0.970 | 0.79 | 0.739 | 18.86 | 27.37 | 52650 | 56280 | 76410 | 81680 | 2.30 | 8.0 | 28.8 | Plain Bar |
| 2 | 1.284 | 6 | 0.693 | 0.44 | 0.377 | 9.33 | 15.31 | 46760 | 54570 | 76750 | 89570 | 1.10 | 8.0 | 13.8 | Deformed |
| 3 | 0.533 | 4 | 0.447 | 0.20 | 0.157 | 4.20 | 6.54 | 46320 | 59000 | 72170 | 91930 | 1.00 | 8.0 | 12.5 | Deformed |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

**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 Six Samples Received and Tested**

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