



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

To,
 General Manager (Project)
 Orient
 Hotel Tower Project FTC Johar Town – Lahore
 (Afco Steel)

Reference # CED/TFL **33459** (Dr. Safer Abbas) Dated: 28-06-2019
 Reference of the request letter # ORIENT/AFCO/Hotel Tower/Steel/004 Dated: 27-06-2019

Tension Test Report (Page -1/1)

Date of Test 02-07-2019
 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	0.399	10	9.81	0.12	0.117	3300	5100	60630	62040	93700	95900	0.90	11.3	
2	0.401	10	9.84	0.12	0.118	3200	5400	58790	59830	99210	101000	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
10mm Dia Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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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,
DCRE/RE-1
Zeeruk International (Pvt) Ltd
Lahore Sialkot Motorway Project

Reference # CED/TFL **33442** (Dr. M Riza Riaz)
Reference of the request letter # LSM/RE-1/2019/891

Dated: 26-06-2019
Dated: 26-06-2019

Tension Test Report (Page – 1/2)

Date of Test 02-07-2019
Gauge length -----
Description Chain Link Wire Tensile Test

Sr. No.	Diameter Wire	Breaking Load	Remarks
	(mm)	(kN)	
1	3.10	4.07	M/s AF Steel
2	3.10	4.20	
3	3.10	4.67	M/s AF Steel
4	3.20	4.47	
5	3.10	4.35	M/s FWO
6	3.10	4.50	
-	-	-	
-	-	-	
Only Six Samples for Test			

I/C Testing Laboratoires
UET Lahore, Pakistan.

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To,
DCRE/RE-1
Zeeruk International (Pvt) Ltd
Lahore Sialkot Motorway Project

Reference # CED/TFL **33442** (Dr. M Riza Riaz)
Reference of the request letter # LSM/RE-1/2019/891

Dated: 26-06-2019
Dated: 26-06-2019

Tension Test Report (Page – 2/2)

Date of Test 02-07-2019
Gauge length -----
Description Tension Wire Tensile Test

Sr. No.	Diameter Single Wire	Breaking Load	Remarks
	(mm)	(kN)	
1	3.20	7.55	M/s AF Steel
2	3.20	7.97	
3	3.10	7.40	M/s AF Steel
4	3.30	7.57	
5	3.30	7.65	M/s FWO
6	3.20	7.90	
-	-	-	
-	-	-	
Only Six Samples for Test			

I/C Testing Laboratoires
UET Lahore, Pakistan.

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STRUCTURAL ENGINEERING DIVISION
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Pakistan. Ph: 92-42-99029202

To,
M/S Defence Housing Authority.
Lahore Cantt
(Const. of Mosque Sector-S, DHA Ph-VIII)(M/s Innovative)

Reference # CED/TFL **33456** (Dr. Safeera Abbas)
Reference of the request letter # 408/241/E/Lab/622

Dated: 28-06-2019
Dated: 26-06-2019

Tension Test Report (Page -1/1)

Date of Test 02-07-2019
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	0.366	3	0.370	0.11	0.107	3000	4400	60200	61530	88200	90300	1.30	16.3	Kamran Steel
2	0.362	3	0.368	0.11	0.107	3100	4300	62200	64150	86200	89000	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														

I/C Testing Laboratoires
UET Lahore, Pakistan.

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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,
Managers (Projects)
Luky Cement
7500 TPD Line-1 Project

Reference # CED/TFL **33458, 466** (Dr. Safer Abbas)
Reference of the request letter # Nil

Dated: 28-06-2019
Dated: 28-06-2019

Tension Test Report (Page – 1/4)

Date of Test 02-07-2019
Gauge length 640 mm
Description Steel Strand Tensile Test as per ASTM A-416-94a

Sr. No.	Nominal Diameter	Nominal Weight	Measured weight	Yield strength clause (6.3)		Breaking strength clause (6.2)		Young's Modulus of Elasticity	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)	E, GPa		
1	15.24 (0.6")	1102.0	1118.0	24000	235.44	27100	265.85	199	>3.50	xx
2	15.24 (0.6")	1102.0	1116.0	24700	242.31	27200	266.83	198	>3.50	xx
3	15.24 (0.6")	1102.0	1121.0	24800	243.29	27000	264.87	199	>3.50	xx
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
Only three samples for Test										

Note:

1. Modulus of Elasticity is based on nominal steel area of the steel strand vide clause 13.3 of ASTM – A416a
2. Load versus percentage strain graphs are attached

I/C Testing Laboratoires
UET Lahore, Pakistan.

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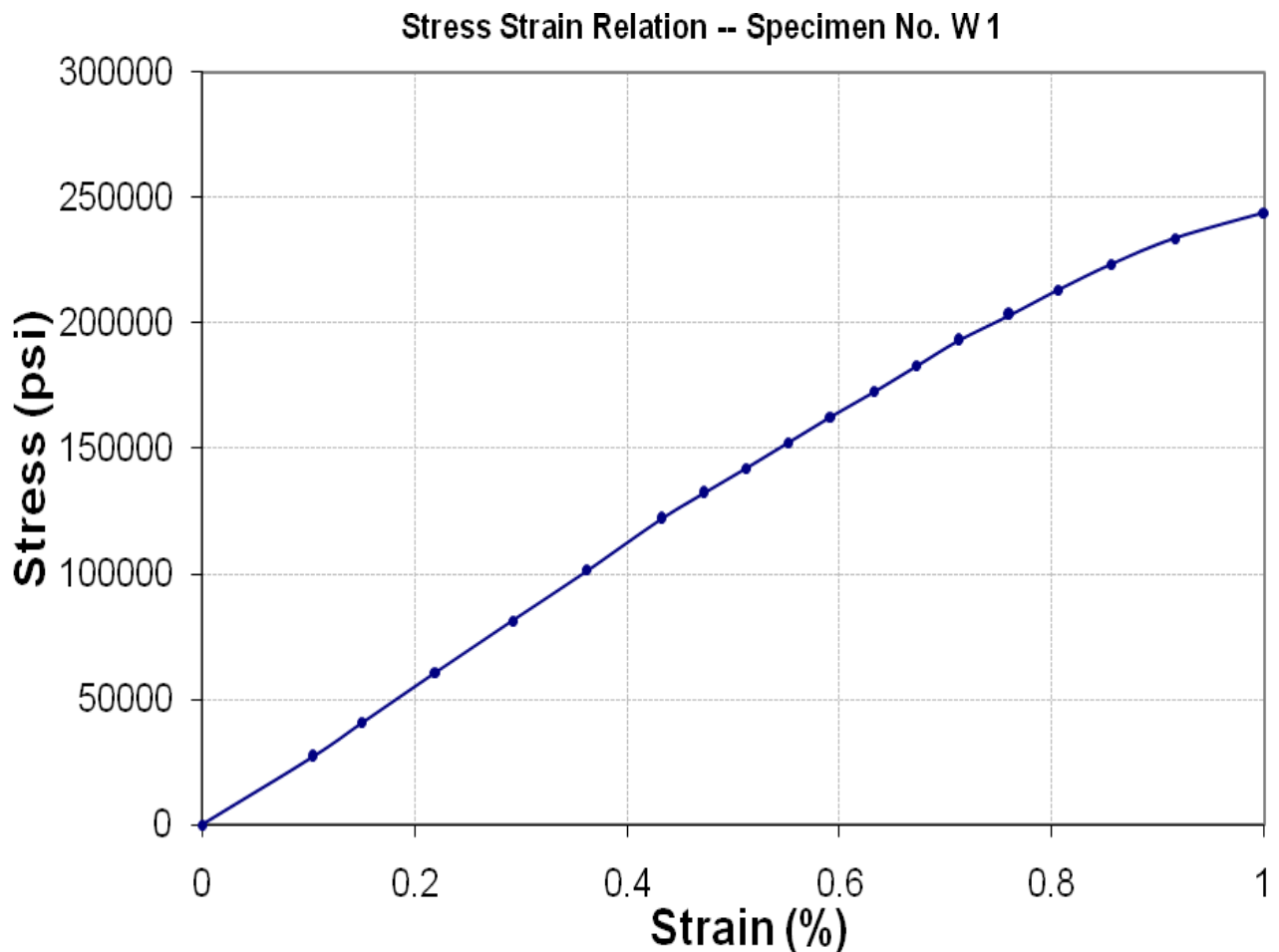
STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Managers (Projects)
Luky Cement
7500 TPD Line-1 Project

Reference # CED/TFL **33458, 466** (Dr. Safer Abbas)
Reference of the request letter # Nil

Dated: 28-06-2019
Dated: 28-06-2019

Graph (Page – 2/4)



I/C Testing Laboratoires
UET Lahore, Pakistan.

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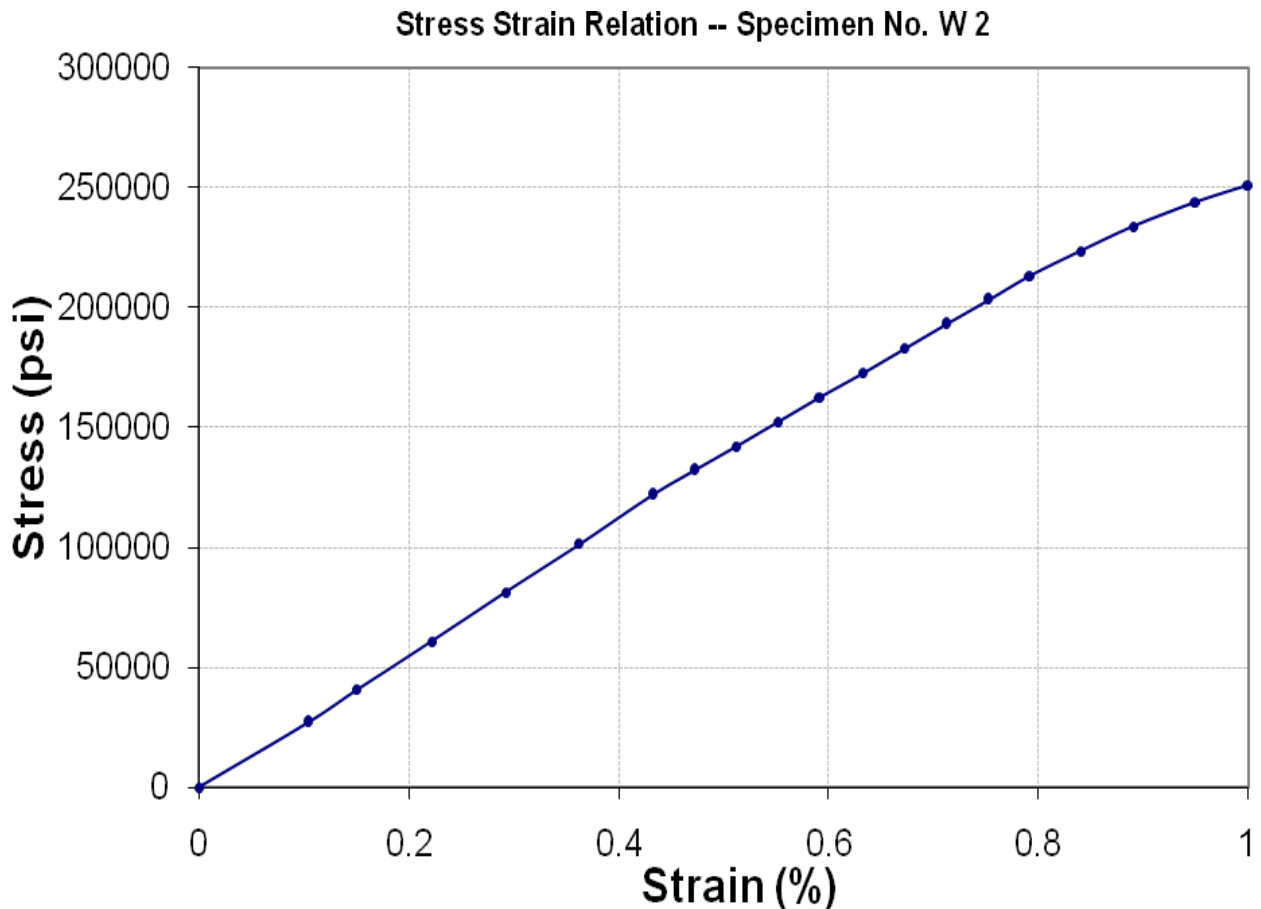
To,
Managers (Projects)
Luky Cement
7500 TPD Line-1 Project

Reference # CED/TFL **33458, 466** (Dr. Safer Abbas)
Reference of the request letter # Nil

Dated: 28-06-2019

Dated: 28-06-2019

Graph (Page – 3/4)



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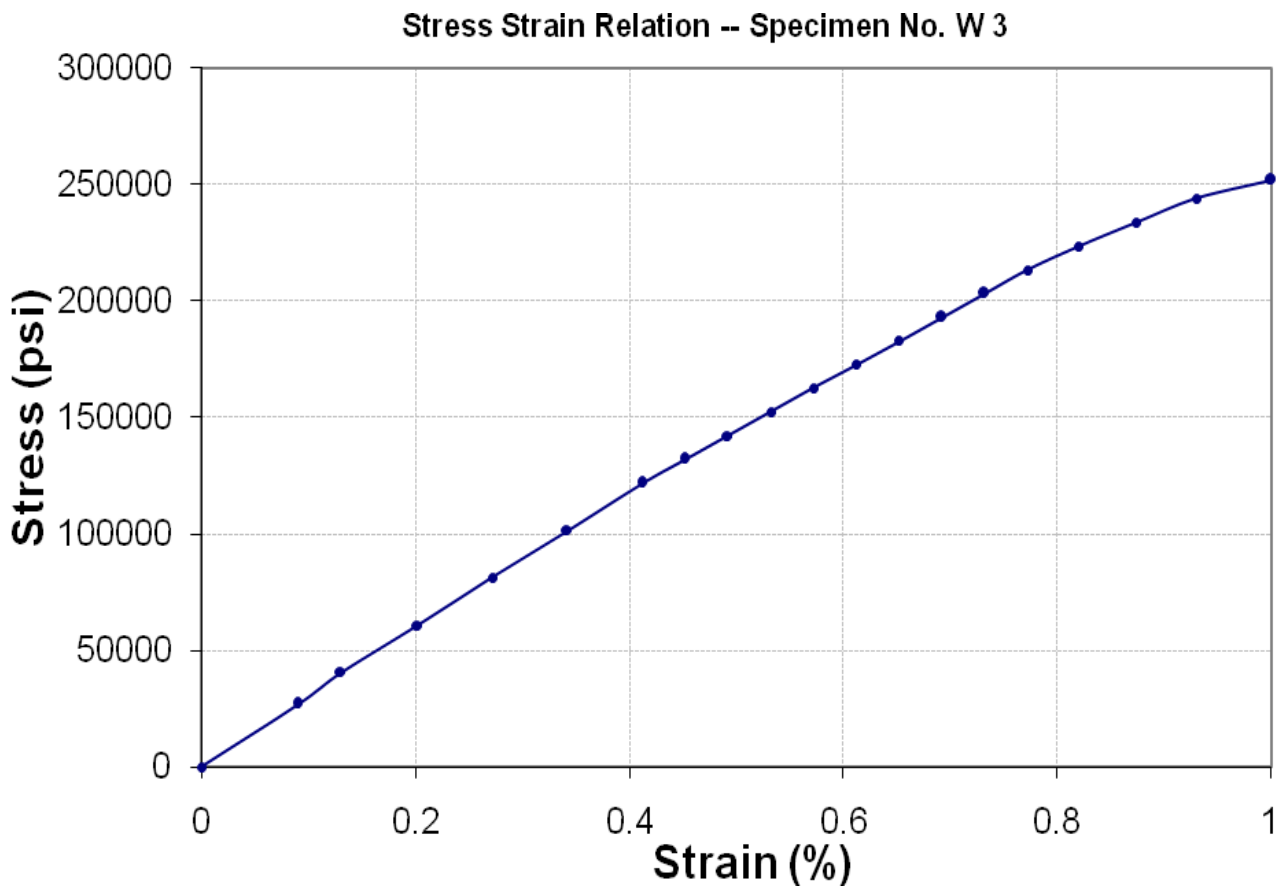
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Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Managers (Projects)
Luky Cement
7500 TPD Line-1 Project

Reference # CED/TFL **33458, 466** (Dr. Safer Abbas)
Reference of the request letter # Nil

Dated: 28-06-2019
Dated: 28-06-2019

Graph (Page – 4/4)



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UET Lahore, Pakistan.

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

To,
M/S Origin Construction Co
Lahore
(Construction of DHA Phase-6, 217-MB Plaza Lahore)

Reference # CED/TFL **33460** (Dr. Safer Abbas)
Reference of the request letter # Nil

Dated: 28-06-2019
Dated: 27-06-2019

Tension Test Report (Page -1/1)

Date of Test 02-07-2019
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	0.385	3	0.380	0.11	0.113	3600	4700	72200	70080	94200	91500	1.30	16.3	
2	0.382	3	0.378	0.11	0.112	3700	4700	74200	72670	94200	92400	0.90	11.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
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Pakistan. Ph: 92-42-99029202

To,
 Project Manager
 P-156 Gulberg-II
 Lahore

Reference # CED/TFL **33461** (Dr. Safer Abbas)
 Reference of the request letter # P-156-005

Dated: 28-06-2019
 Dated: 28-06-2019

Tension Test Report (Page -1/1)

Date of Test 02-07-2019
 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	0.377	3	0.376	0.11	0.111	2900	4300	58200	57650	86200	85500	1.20	15.0	
2	0.376	3	0.375	0.11	0.110	2600	4200	52100	51870	84200	83800	1.30	16.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
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Pakistan. Ph: 92-42-99029202

To,
 Chief Resident Engineer, Package-1
 NESPAK
 Construction/ Improvement & Rehabilitation of at Grade Works along Lahore Orange Line
 Metro Train Corridor Package-1 (Section-I) from Daroghawala Chowk to Pakistan Mint (Left
 Side)

Reference # CED/TFL **33463** (Dr. Safer Abbas)
 Reference of the request letter # 3765/13/FAM/steel-005

Dated: 28-06-2019
 Dated: 27-06-2019

Tension Test Report (Page -1/1)

Date of Test 02-07-2019
 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	0.372	3	0.373	0.11	0.109	3200	5000	64200	64530	100200	100900	1.10	13.8	Ittehad Steel
2	0.373	3	0.374	0.11	0.110	3400	5000	68200	68340	100200	100500	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														

I/C Testing Laboratoires
UET Lahore, Pakistan.

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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,
 Project Engineer
 Icon Developers
 Residence 34-D1 Gulberg 2, Lahore

Reference # CED/TFL **33464** (Dr. Safer Abbas)
 Reference of the request letter # Nil

Dated: 01-07-2019
 Dated: 28-06-2019

Tension Test Report (Page -1/1)

Date of Test 02-07-2019
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ Size (inch)		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	0.394	3/8	0.384	0.11	0.116	4100	5100	82200	78060	102200	97100	1.00	12.5	
2	0.408	3/8	0.391	0.11	0.120	4200	5300	84200	77260	106200	97500	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
3/8" Dia Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

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To,
M/S Defence Housing Authority.
Lahore Cantt
(Const of Mosque Sector-T, DHA Ph-VIII)(M/s Siddique Sons)

Reference # CED/TFL **33465** (Dr. Safer Abbas)
Reference of the request letter # 408/241/E/Lab/626/40

Dated: 01-07-2019
Dated: 29-06-2019

Tension Test Report (Page -1/1)

Date of Test 02-07-2019
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	0.359	3	0.367	0.11	0.106	3800	5000	76200	79300	100200	104400	1.00	12.5	FF Steel
2	0.372	3	0.373	0.11	0.109	3700	5000	74200	74490	100200	100700	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

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

Ref: CED/TFL/07/33468

Dated: 01-07-2019

To
M/s Engineers Guild
Lahore

Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/07/33468)

Reference to your Letter No. Nil, dated: 01/07/2019 on the subject cited above. One Hydraulic Jack No. 19647 as received by us has been calibrated. The results are tabulated as under:

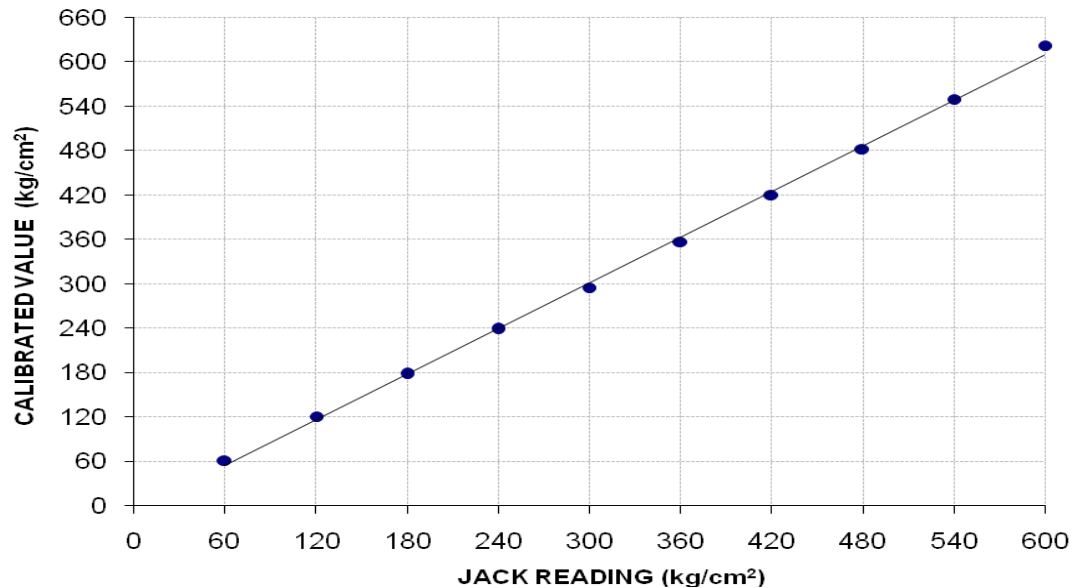
Total Range : Zero - 800 (kg/cm²)
Calibrated Range : Zero - 600 (kg/cm²)

Hydraulic Jack Reading (kg/cm ²)	60	120	180	240	300	340	420	480	540	600
Calibrated Load (kg)	5200	10300	15200	20400	25200	30500	35900	41200	47000	53200
Calibrated Pressure (kg/cm ²)	60.82	120.47	177.78	238.60	294.74	356.73	419.88	481.87	549.71	622.22

The Ram Area of Jack = 85.5 cm²

Calibration Curve For Jack No. 19647

Calibrated Value ((Kg/cm²) = (1.028 x Jack Reading (Kg/cm²)) - 7.173



I/C Testing Laboratoires
UET Lahore, Pakistan.

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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

Ref: CED/TFL/07/33469

Dated: 01-07-2019

To
M/s Engineers Guild
Lahore

Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/07/33468)

Reference to your Letter No. Nil, dated: 01/07/2019 on the subject cited above. One Hydraulic Jack No. 19646 as received by us has been calibrated. The results are tabulated as under:

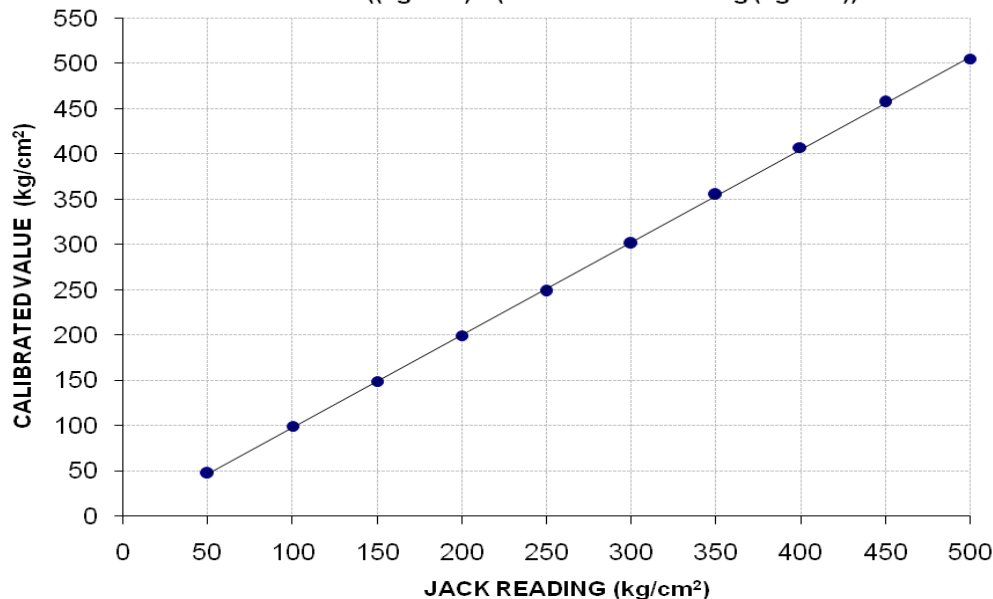
Total Range : Zero - 600 (kg/cm²)
Calibrated Range : Zero - 500 (kg/cm²)

Hydraulic Jack Reading (kg/cm ²)	50	100	150	200	250	300	350	400	450	500
Calibrated Load (kg)	4050	8500	12700	17050	21250	25750	30350	34800	39100	43200
Calibrated Pressure (kg/cm ²)	47.37	99.42	148.54	199.42	248.54	301.17	354.97	407.02	457.31	505.26

The Ram Area of Jack = 85.5 cm²

Calibration Curve For Jack No. 19646

Calibrated Value ((kg/cm²) = (1.022 x Jack Reading (kg/cm²)) - 4.366



I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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- 2- The above results pertain to sample /samples supplied to this laboratory.
- 3- Sealed sample / Unsealed sample / Marked sample / Signed Samples



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

To,
 Senior Resident Engineer
 ProMag Pvt Ltd
 DHA Multan
 Development of Sector-C

Reference # CED/TFL **33471** (Dr. M Rizwan Riaz)
 Reference of the request letter # CRE/Sec-C/281

Dated: 02-07-2019
 Dated: 29-06-2019

Tension Test Report (Page -1/1)

Date of Test 02-07-2019
 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	0.418	9	10.05	0.11	0.123	3800	5000	76200	68130	100200	89700	0.90	11.3	Amreli Steel
2	0.411	9	9.96	0.11	0.121	4000	5200	80200	72960	104200	94900	0.90	11.3	
-	0.373	9	9.49	0.11	0.110	4000	4900	80200	80420	98200	98600	1.10	13.8	Mughal Steel
-	0.371	9	9.46	0.11	0.109	3900	4800	78200	78900	96200	97200	0.90	11.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Note: only four samples for tensile and two sample for bend test

Bend Test

9mm Dia Bar Bend Test Through 180° is Satisfactory

9mm Dia Bar Bend Test Through 180° is Satisfactory

I/C Testing Laboratoires
UET Lahore, Pakistan.

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