



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

To,  
 Resident Head (Civil)  
 Jaggran-II Hydropower Consultants  
 EPC Contract for 48MW Jaggran-II Hydropower Project

Reference # CED/TFL **33324** (Dr. Qasim Khan)  
 Reference of the request letter # E314-L-JHC-RE-EPCC-OC-0109

Dated: 30-05-2019  
 Dated: 27-05-2019

**Tension Test Report** (Page -1/1)

Date of Test 18-06-2019  
 Gauge length -----  
 Description Wire Mesh Tensile and Bend Test as per ASTM-A82

Sr. No.	Weight (Kg/m)	Diameter/ size		Area (mm <sup>2</sup> )		Yield load (kg)	Breaking Load (kg)	Yield Stress (Mpa)		Ultimate Stress (Mpa)		Reduced Area (mm <sup>2</sup> )	% Reduction of Area	Remarks
		Nominal (in)	Actual (mm)	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.206	-----	5.78	-----	26.2	1100	1500	-----	411	-----	561	11.6	55.6	
2	0.208	-----	5.80	-----	26.4	1200	2200	-----	445	-----	816	11.3	57.1	
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
Bend Test														
Wire Mesh 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,  
 Resident Engineer  
 RENARDET S.A ((M-4), Package-III A)  
 Construction Supervision of Four Lane Motorway from Faisalabad to Khanewal Project (M-4)  
 184 km, Package-3A, Shorkot – Dinpur Section (31km) (D & L International)(M/s CGGC)  
 Reference # CED/TFL **33328** (Dr. Ali Ahmed) Dated: 30-05-2019  
 Reference of the request letter # RSA/M-4/3A/2019/362 Dated: 28-05-2019

**Tension Test Report** (Page – 1/1)

Date of Test 18-06-2019  
 Gauge length 2 inches  
 Description W-Section 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
1	W-Section	1.86x0.280	0.52	2000	2600	3840.25	4992.32	0.60	30.00	S-1
2		1.86x0.280	0.52	2100	2600	4032.26	4992.32	0.50	25.00	
3	W-Section	1.86x0.275	0.51	2100	2600	4105.57	5083.09	0.60	30.00	S-2
4		1.86x0.275	0.51	2000	2600	3910.07	5083.09	0.60	30.00	
5	W-Section	1.86x0.280	0.52	1900	2600	3648.23	4992.32	0.60	30.00	S-3
6		1.89x0.280	0.53	2200	2900	4157.22	5479.97	0.60	30.00	

**Only Six Samples for Tensile and Six Samples for Bend Test**

**Bend Test**

Strip Taken from W-Section Bend Test Through 180° is Satisfactory  
 Strip Taken from W-Section Bend Test Through 180° is Satisfactory  
 Strip Taken from W-Section Bend Test Through 180° is Satisfactory  
 Strip Taken from W-Section Bend Test Through 180° is Satisfactory  
 Strip Taken from W-Section Bend Test Through 180° is Satisfactory  
 Strip Taken from W-Section Bend Test Through 180° is Satisfactory

**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

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To,  
 Resident Engineer  
 RENARDET S.A ((M-4), Package-III A)  
 Construction Supervision of Four Lane Motorway from Faisalabad to Khanewal Project (M-4)  
 184 km, Package-3A, Shorkot – Dinpur Section (31km) (D & L International)(M/s CGGC)

Reference # CED/TFL **33329** (Dr. Ali Ahmed)  
 Reference of the request letter # RSA/M-4/3A/2019/364

Dated: 30-05-2019  
 Dated: 28-05-2019

**Tension Test Report** (Page – 1/2)

Date of Test 18-06-2019  
 Gauge length 2 inches  
 Description Vertical Post Strip Tensile Test

Sr. No.	Designation	Size of Strip	X Section Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Remarks
1	Vertical Post	2.10x0.615	1.29	5200	6700	4026.33	5187.77	0.70	35.00	S-1
2		2.10x0.620	1.30	5100	6500	3917.05	4992.32	0.70	35.00	
3	Vertical Post	2.00x0.620	1.24	4900	6200	3951.61	5000.00	0.80	40.00	S-2
4		2.10x0.615	1.29	5000	6600	3871.47	5110.34	0.70	35.00	
5	Vertical Post	2.00x0.620	1.24	4800	6300	3870.97	5080.65	0.70	35.00	S-3
6		2.10x0.620	1.30	4900	6400	3763.44	4915.51	0.80	40.00	
7	Vertical Post	2.00x0.620	1.24	4900	6200	3951.61	5000.00	0.70	35.00	S-4
8		2.00x0.615	1.23	5000	6200	4065.04	5040.65	0.75	37.50	
9	Vertical Post	2.00x0.615	1.23	4900	6300	3983.74	5121.95	0.80	40.00	S-5
10		2.00x0.615	1.23	4800	6200	3902.44	5040.65	0.80	40.00	
<b>Only Ten Samples for Tensile Test</b>										
<b>Bend Test</b>										

**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

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**Department of Civil Engineering**  
**University of Engineering and Technology Lahore, 54890**  
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To,  
Resident Engineer  
RENARDET S.A ((M-4), Package-III A)  
Construction Supervision of Four Lane Motorway from Faisalabad to Khanewal Project (M-4)  
184 km, Package-3A, Shorkot – Dinpur Section (31km) (D & L International)(M/s CGGC)

Reference # CED/TFL **33329** (Dr. Ali Ahmed)  
Reference of the request letter # RSA/M-4/3A/2019/364

Dated: 30-05-2019  
Dated: 28-05-2019

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

Date of Test 18-06-2019  
Gauge length -----  
Description Vertical Post Weight and Size Test

Sr. No.	Designation	Weight	Length	Weight per Unit Length	Web Thickness (t <sub>w</sub> )	Remark
		(g)	(cm)	(kg/m)	(mm)	
1	Vertical Post	13520	100.20	13.49	6.20	S-1
2	Vertical Post	13600	100.50	13.53	6.20	S-2
3	Vertical Post	13550	99.80	13.58	6.20	S-3
4	Vertical Post	13500	100.10	13.49	6.20	S-4
5	Vertical Post	13600	100.60	13.52	6.20	S-5
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	
<b>Only Five Samples for Test</b>						

**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

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**University of Engineering and Technology Lahore, 54890**  
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To,  
M/S Defence Housing Authority.  
Lahore Cantt  
(Infra Dev Works Sector-M (Extn), DHA Ph-V (M/s AAJ Engrs))

Reference # CED/TFL **33338** (Dr. Qasim Khan)  
Reference of the request letter # 408/241/E/Lab/603/29

Dated: 03-06-2019  
Dated: 31-05-2019

**Tension Test Report** (Page – 1/1)

Date of Test 18-06-2019  
Gauge length 2 inches  
Description MS Blind Pipe 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)									
1	MS Blind Pipe	16	25.50x6.40	163.20	4500	7500	270.50	450.83	0.70	35.00	
2		16	25.50x6.40	163.20	4700	7800	282.52	468.86	0.70	35.00	
-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	
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-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	
<b>Only Two Samples for Tensile and One Sample for Bend Test</b>											
<b>Bend Test</b>											
Strip Taken from MS Blind Pipe (16") 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**  
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To,  
M/S Defence Housing Authority.  
Lahore Cantt  
(Infra Dev Works Sector-M (Extn), DHA Ph-V (M/s AAJ Engrs))

Reference # CED/TFL **33339** (Dr. Qasim Khan)  
Reference of the request letter # 408/241/E/Lab/604/30

Dated: 03-06-2019  
Dated: 31-05-2019

**Tension Test Report** (Page – 1/1)

Date of Test 18-06-2019  
Gauge length 2 inches  
Description MS Blind Pipe 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)									
1	MS Blind Pipe	10	25.20x6.30	158.76	5000	7300	308.96	451.08	0.70	35.00	
2		10	25.40x6.30	160.02	4600	7400	282.00	453.66	0.60	30.00	
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<b>Only Two Samples for Tensile and One Sample for Bend Test</b>											
<b>Bend Test</b>											
Strip Taken from MS Blind Pipe (10") Bend Test Through 180° is Satisfactory											

**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 **33362** (Dr. Qasim Khan)  
Reference of the request letter # LSMP/RE-1/2019/797

Dated: 12-06-2019  
Dated: 16-05-2019

**Tension Test Report** (Page – 1/2)

Date of Test 18-06-2019  
Gauge length 2 inches  
Description Bearing Pad Steel Plate Steel Strip Tensile Test

Sr. No.	Designation	Size of Strip	X Section Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Remarks
	-----	(mm)	(mm <sup>2</sup> )	(kg)	(kg)	(MPa)	(MPa)	(in)		
1	Bearing Pad Steel Plate	24.50x3.10	75.95	2000	3100	258.33	400.41	0.40	20.00	
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<b>Only One Sample for Tensile Test</b>										
<b>Bend Test</b>										

**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**

Ref: CED/TFL/06/33362

Dated: 16-06-19

**To**

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

**Subject: - TEST RESULT REPORT FOR BEARING DEVICE (PAD) (SIZE TEST) (Page # 2/2)**

Reference to your letter no. LSMP/RE-1/2019/797, Dated: 16/05/2019 on the above mentioned subject. One Elastomeric Bearing Rubber Pad (EBRP) has been received by us. The same was tested and results are given below.

### Test Results

No. of Steel Plate	:	5
Thickness of Steel Plate	:	3.00 mm (Average)
Thickness of Rubber between Steel Plates	:	Non Uniform (Max : 14.50 mm) (Min : 11.30 mm)
Cover of Rubber to top steel plate	:	3.80 mm
Cover of Rubber to bottom steel plate	:	3.60 mm

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

Reference # CED/TFL **33363** (Dr. Qasim Khan)  
 Reference of the request letter # LSMP/RE-1/2019/767

Dated: 12-06-2019  
 Dated: 02-05-2019

**Tension Test Report** (Page – 1/2)

Date of Test 18-06-2019  
 Gauge length 2 inches  
 Description Bering Pad Steel Plate Steel Strip Tensile Test

Sr. No.	Designation	Size of Strip	X Section Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Remarks
	-----	(mm)	(mm <sup>2</sup> )	(kg)	(kg)	(MPa)	(MPa)	(in)		
1	Bering Pad Steel Plate	24.50x3.00	73.50	1800	3000	240.24	400.41	0.40	20.00	
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<b>Only One Sample for Tensile Test</b>										
<b>Bend Test</b>										

**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

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Ref: CED/TFL/06/33363

Dated: 16-06-19

**To**

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

**Subject: - TEST RESULT REPORT FOR BEARING DEVICE (PAD) (SIZE TEST) (Page # 2/2)**

Reference to your letter no. LSMP/RE-1/2019/767, Dated: 02/05/2019 on the above mentioned subject. One Elastomeric Bearing Rubber Pad (EBRP) has been received by us. The same was tested and results are given below.

### Test Results

<b>No. of Steel Plate</b>	<b>:</b>	<b>5</b>
<b>Thickness of Steel Plate</b>	<b>:</b>	<b>3.00 mm (Average)</b>
<b>Thickness of Rubber between Steel Plates</b>	<b>:</b>	<b>Non Uniform</b> <b>(Max : 15.40 mm)</b> <b>(Min : 12.30 mm)</b>
<b>Cover of Rubber to top steel plate</b>	<b>:</b>	<b>4.10 mm</b>
<b>Cover of Rubber to bottom steel plate</b>	<b>:</b>	<b>5.10 mm</b>

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

To,  
Laboratory Manager  
M/S CGGC Sukhi Kinari Project Management in Pakistan  
874 MW Sukhi Kinari Power Project (Liu Zhou Ovm Machinery Co. Ltd)

Reference # CED/TFL **33370** (Dr. Qasim Khan)  
Reference of the request letter # Nil

Dated: 13-06-2019  
Dated: 11-06-2019

**Tension Test Report** (Page – 1/3)

Date of Test 18-06-2019  
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	1129.0	24800	243.29	27100	265.85	199	>3.50	YPW115-SJ-19059
2	15.24 (0.6")	1102.0	1128.0	25300	248.19	27400	268.79	199	>3.50	YPW115-SJ-19060
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
<b>Only two samples for Test</b>										

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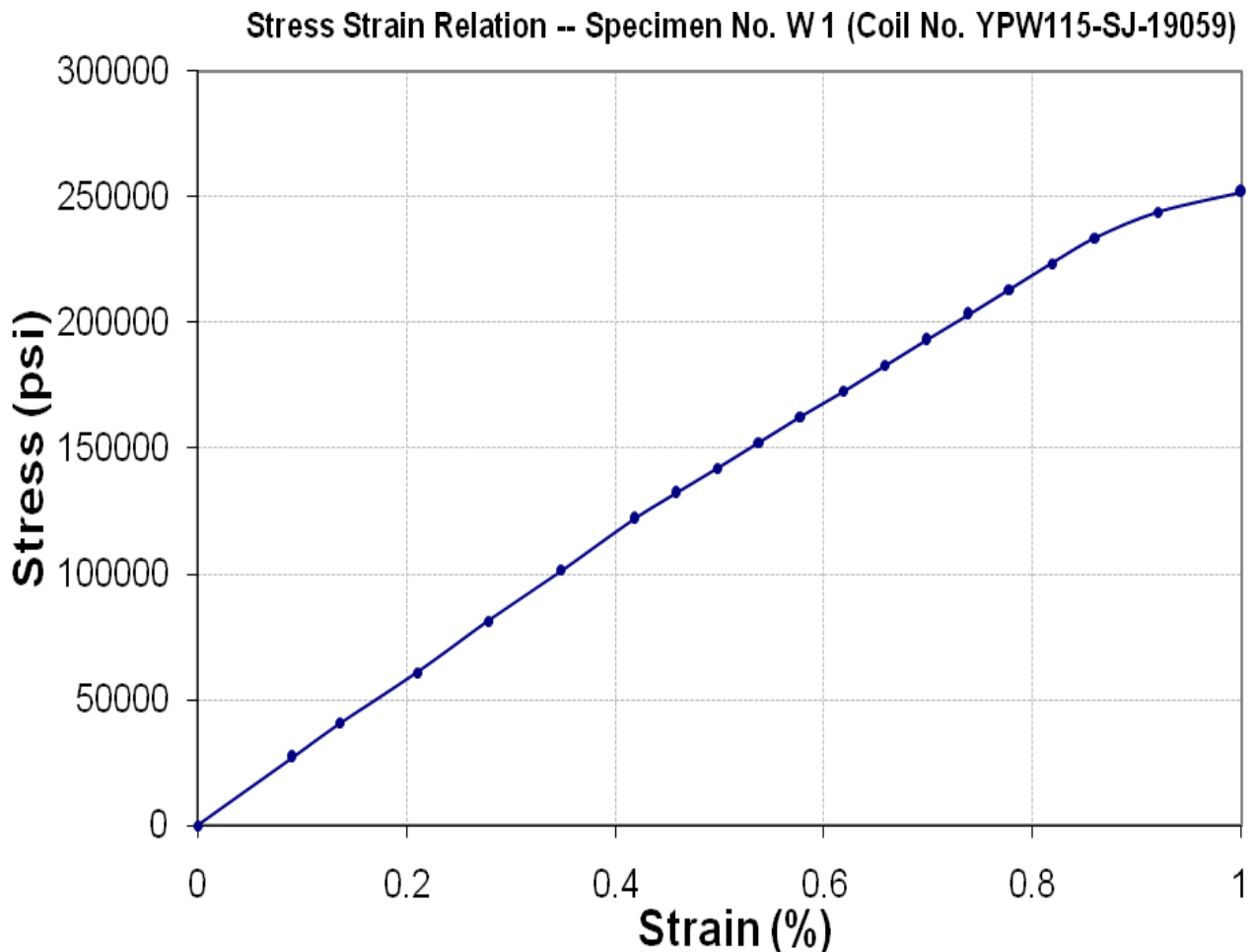
**STRUCTURAL ENGINEERING DIVISION**  
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**Pakistan. Ph: 92-42-99029202**

To,  
Laboratory Manager  
M/S CGGC Sukhi Kinari Project Management in Pakistan  
874 MW Sukhi Kinari Power Project (Liu Zhou Ovm Machinery Co. Ltd)

Reference # CED/TFL **33370** (Dr. Qasim Khan)  
Reference of the request letter # Nil

Dated: 13-06-2019  
Dated: 11-06-2019

**Graph** (Page – 2/3)



**I/C Testing Laboratories**  
**UET Lahore, Pakistan.**

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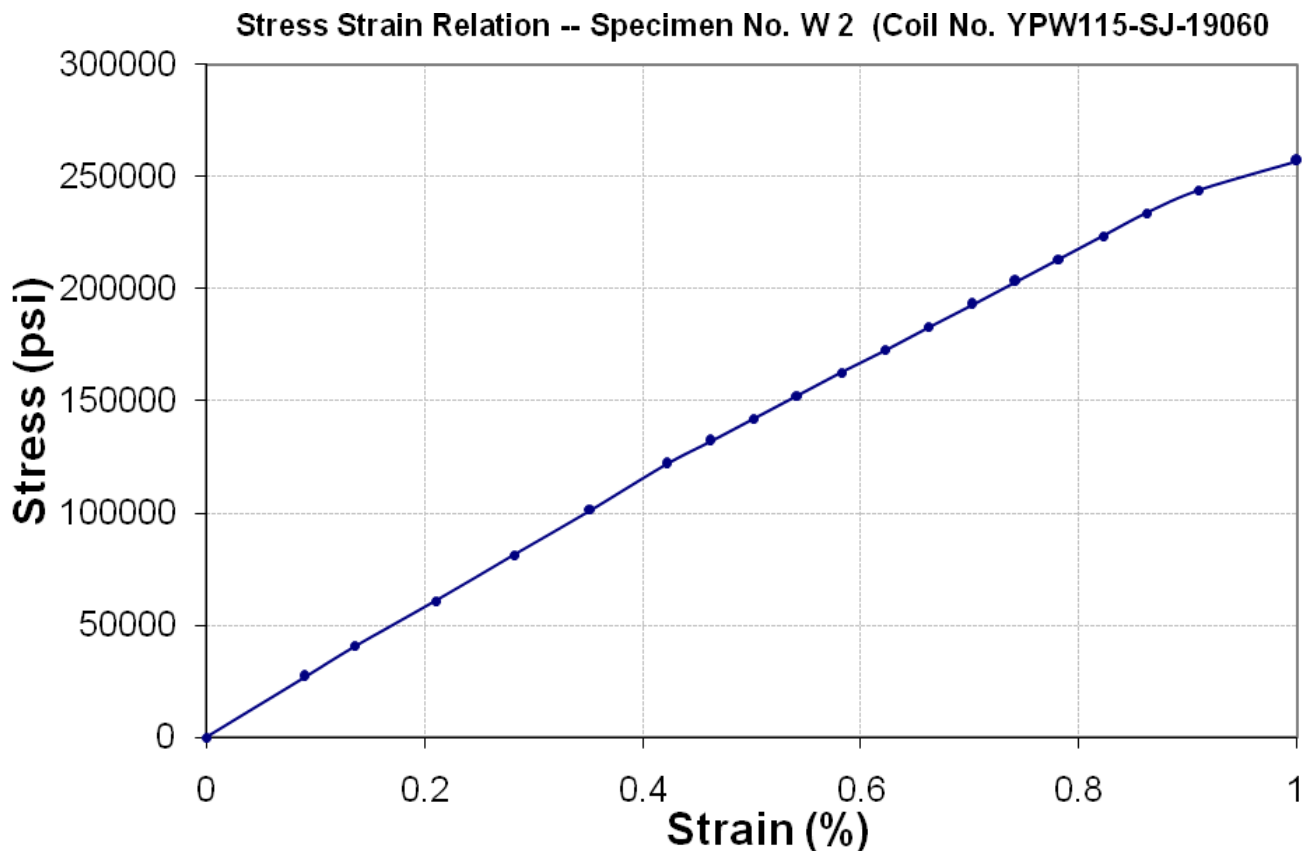
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**Test Floor Laboratory**  
**Department of Civil Engineering**  
**University of Engineering and Technology Lahore, 54890**  
**Pakistan. Ph: 92-42-99029202**

To,  
Laboratory Manager  
M/S CGGC Sukhi Kinari Project Management in Pakistan  
874 MW Sukhi Kinari Power Project (Liu Zhou Ovm Machinery Co. Ltd)

Reference # CED/TFL **33370** (Dr. Qasim Khan)  
Reference of the request letter # Nil

Dated: 13-06-2019  
Dated: 11-06-2019

**Graph** (Page – 3/3)



**I/C Testing Laboratories**  
**UET Lahore, Pakistan.**

Note:

- 1- You can See your reports On Internet in the following web site  
[http://www.uet.edu.pk/faculties/facultiesinfo/civil/index.html?RID=testing\\_reports](http://www.uet.edu.pk/faculties/facultiesinfo/civil/index.html?RID=testing_reports)
- 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,  
 Assistant Engineer (Civil)  
 Al Hussain Traders Constructors  
 Civil Works, Erection, Stringing, Testing & Commissioning of 500 kV Single Circuit T/Line  
 Guddu-Muzaffargarh from Location No. 200 to Location No. 394 (72 km Approx) Lot-I  
 Reference # CED/TFL **33376** (Dr. Qasim Khan) Dated: 14-06-2019  
 Reference of the request letter # AHT/TLC-03/2952-55 Dated: 14-06-2019

**Tension Test Report** (Page -1/1)

Date of Test 18-06-2019  
 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 <sup>2</sup> )		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	0.380	3	0.377	0.11	0.112	3300	5200	66200	65130	104200	102700	1.20	15.0	
2	0.383	3	0.378	0.11	0.112	3200	5200	64200	62720	104200	102000	1.20	15.0	
3	0.383	3	0.379	0.11	0.113	3200	5100	64200	62640	102200	99900	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only three samples for tensile and one sample for bend test</b>														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

Witness by Sohaib Ali (Sub Engr. NESPAK)

**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

Note:

- 1- You can See your reports On Internet in the following web site  
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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,  
 Resident Engineer  
 Minconsult International Ltd JV Creative Engineering Consultants  
 Khyber Pakhtunkhwa Provincial Roads Improvement Project (KP-Prp)(Haripur–Hattar–Taxila  
 Road Section (21.97 km)

Reference # CED/TFL **33377** (Dr. Qasim Khan) Dated: 14-06-2019  
 Reference of the request letter # JV Min-CEC/PRIP/RE-II/HHR/2019/217 Dated: 14-06-2019

**Tension Test Report** (Page – 1/2)

Date of Test 18-06-2019  
 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 "E"	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)	GPa		
1	12.70 (1/2")	775.0	779.0	18100	177.56	19700	193.26	198	>3.50	xx
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
<b>Only one sample for Test</b>										

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.**

Note:

- 1- You can See your reports On Internet in the following web site  
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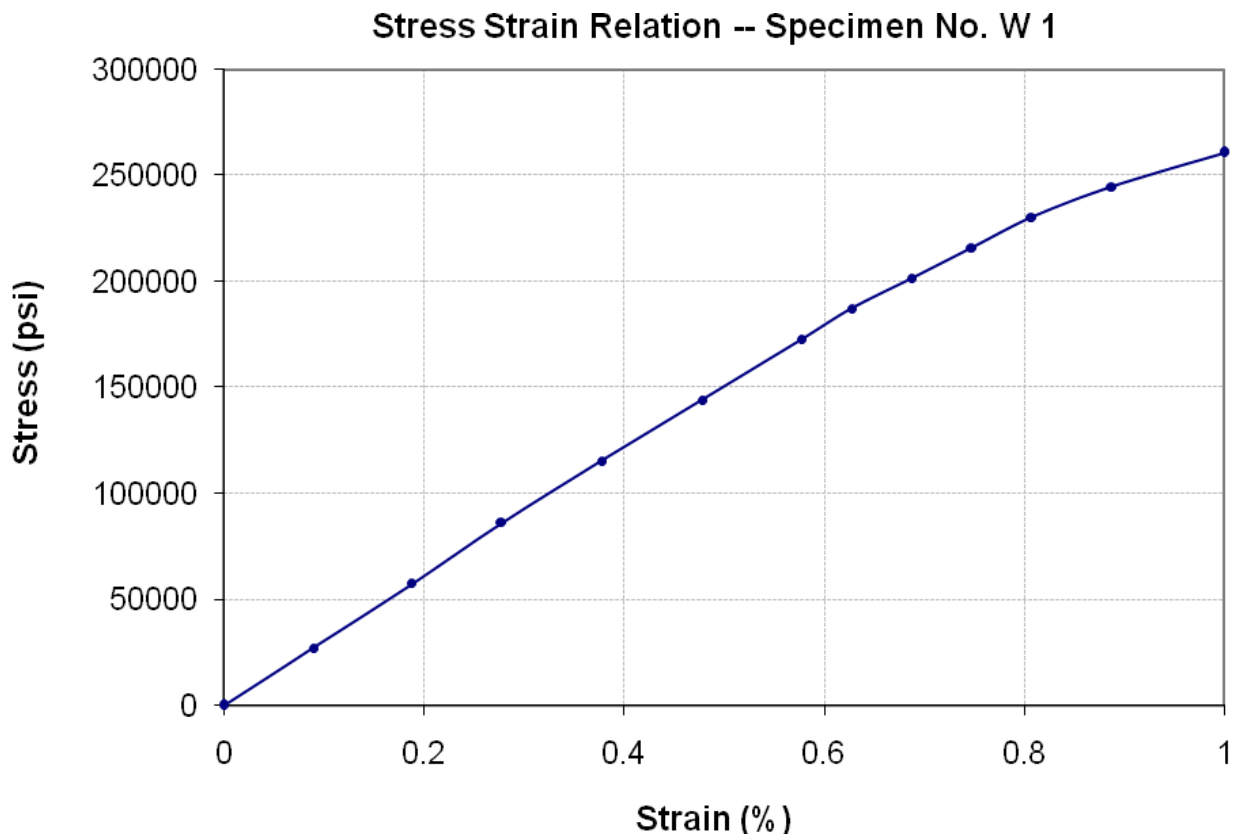


**STRUCTURAL ENGINEERING DIVISION**  
**Test Floor Laboratory**  
**Department of Civil Engineering**  
**University of Engineering and Technology Lahore, 54890**  
**Pakistan. Ph: 92-42-99029202**

To,  
Resident Engineer  
Minconsult International Ltd JV Creative Engineering Consultants  
Khyber Pakhtunkhwa Provincial Roads Improvement Project (KP-Prp)(Haripur–Hattar–Taxila  
Road Section (21.97 km)

Reference # CED/TFL **33377** (Dr. Qasim Khan) Dated: 14-06-2019  
Reference of the request letter # JV Min-CEC/PRIP/RE-II/HHR/2019/217 Dated: 14-06-2019

**Graph** (Page – 2/2)



**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

**Note:**

- 1- You can See your reports On Internet in the following web site  
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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 Manager  
 State Grid  
 China Electric Power Equipment and Technology Co., Ltd  
 ±600kV Matiari-Lahore HVDC Transmission Line (Lot-6)

Reference # CED/TFL **33379** (Dr. Qasim Khan) Dated: 14-06-2019  
 Reference of the request letter # CET/HVDC/SPO(04)L6/S.J Steel/UET-19-675 Dated: 13-06-2019

**Tension Test Report** (Page -1/1)

Date of Test 18-06-2019  
 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 <sup>2</sup> )		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	0.364	3	0.369	0.11	0.107	3200	4800	64200	65890	96200	98900	1.20	15.0	
2	0.367	3	0.371	0.11	0.108	3300	4800	66200	67430	96200	98100	1.40	17.5	
3	0.366	3	0.370	0.11	0.108	3300	4700	66200	67540	94200	96200	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only three samples for tensile and three samples for bend test</b>														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														
#3 Bar Bend Test Through 180° is Satisfactory														
#3 Bar Bend Test Through 180° is Satisfactory														

**I/C Testing Laboratories**  
**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,  
 Resident Engineer  
 Fazaia Housing Scheme, Gujranwala  
 Infrastructure Development Works at Fazaia Housing Scheme, Gujranwala

Reference # CED/TFL **33382** (Dr. Qasim Khan) Dated: 14-06-2019  
 Reference of the request letter # FHSG/6015/5/4/DEV Dated: 13-06-2019

**Tension Test Report** (Page -1/1)

Date of Test 18-06-2019  
 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 <sup>2</sup> )		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	0.355	3	0.364	0.11	0.104	3000	4800	60200	63390	96200	101500	1.00	12.5	
2	0.370	3	0.372	0.11	0.109	3200	5000	64200	64860	100200	101400	1.40	17.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

Note:

- 1- You can See your reports On Internet in the following web site  
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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,  
M/S Defence Housing Authority.  
Lahore Cantt  
(External Elec Works (U/G) IVY Green, Sector-Z, DHA Ph-VIII)(M/s NLC)

Reference # CED/TFL **33384** (Dr. Qasim Khan) Dated: 17-06-2019  
Reference of the request letter # 408/241/E/Lab/606/465 Dated: 17-06-2019

**Tension Test Report** (Page -1/1)

Date of Test 18-06-2019  
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 <sup>2</sup> )		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	0.387	3	0.380	0.11	0.114	3700	4800	74200	71780	96200	93200	1.20	15.0	FF Steel
2	0.384	3	0.379	0.11	0.113	3700	4900	74200	72160	98200	95600	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

Note:

- 1- You can See your reports On Internet in the following web site  
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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,  
 Director Project  
 Innovative Construction Company  
 Construction of Imtiaz Super Market, Sialkot

Reference # CED/TFL **33385** (Dr. Qasim Khan)  
 Reference of the request letter # ICL/ISM/SKT/0619/05

Dated: 17-06-2019  
 Dated: 15-06-2019

**Tension Test Report** (Page -1/1)

Date of Test 18-06-2019  
 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 <sup>2</sup> )		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	0.413	10	9.98	0.12	0.121	4500	5500	82670	81780	101040	100000	1.10	13.8	
2	0.407	10	9.92	0.12	0.120	4600	5600	84510	84660	102880	103100	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
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,  
 A.R.E. Structure  
 Prime Engineering Consultancy  
 Kallurkot Bridge Project  
 Construction of 4 Lane Bridge over River Indus Connecting Kallur Kot with D.I Khan

Reference # CED/TFL **33387** (Dr. Qasim Khan) Dated: 17-06-2019  
 Reference of the request letter # PE-BA-JV/KK-DIK-2019/024 Dated: 15-06-2019

**Tension Test Report** (Page – 1/3)

Date of Test 18-06-2019  
 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 "E"	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)	GPa		
1	12.70 (1/2")	775.0	778.0	18000	176.58	19400	190.31	199	>3.50	xx
2	12.70 (1/2")	775.0	784.0	17700	173.64	19400	190.31	198	>3.50	xx
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
<b>Only two samples for Test</b>										

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.**

Note:

- 1- You can See your reports On Internet in the following web site  
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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,  
A.R.E. Structure  
Prime Engineering Consultancy  
Kallurkot Bridge Project  
Construction of 4 Lane Bridge over River Indus Connecting Kallur Kot with D.I Khan

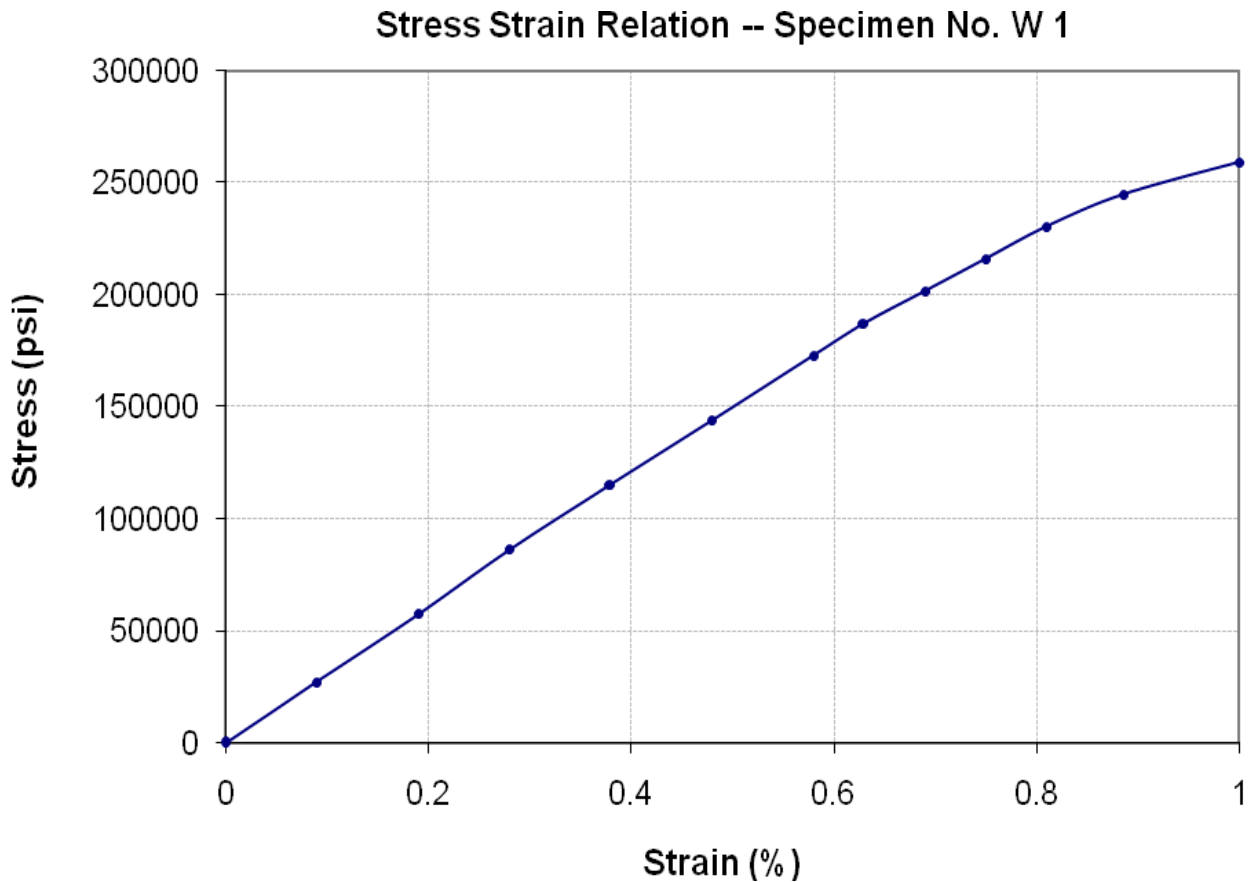
Reference # CED/TFL **33387** (Dr. Qasim Khan)

Dated: 17-06-2019

Reference of the request letter # PE-BA-JV/KK-DIK-2019/024

Dated: 15-06-2019

**Graph** (Page – 2/3)



**I/C Testing Laboratories**  
**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,  
A.R.E. Structure  
Prime Engineering Consultancy  
Kallurkot Bridge Project  
Construction of 4 Lane Bridge over River Indus Connecting Kallur Kot with D.I Khan

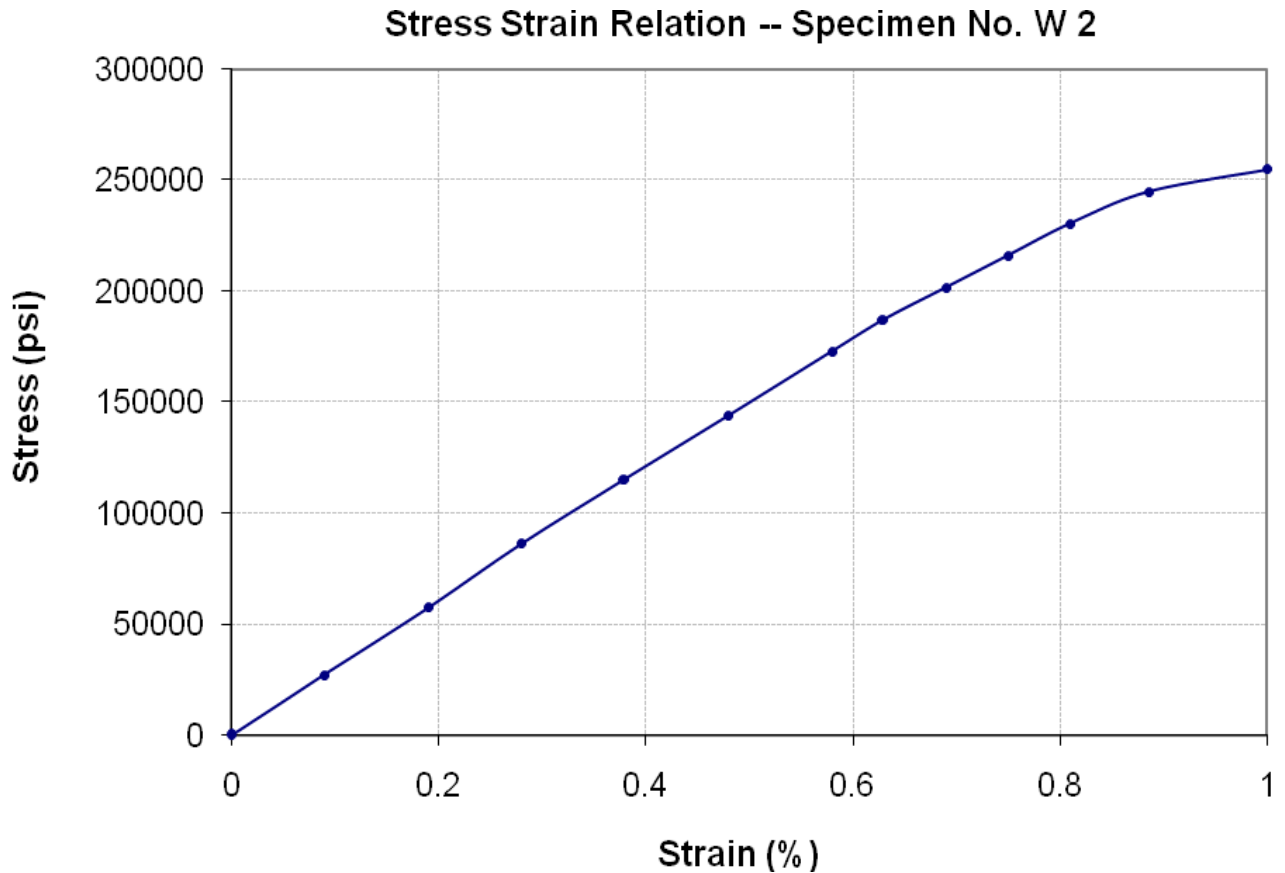
Reference # CED/TFL **33387** (Dr. Qasim Khan)

Dated: 17-06-2019

Reference of the request letter # PE-BA-JV/KK-DIK-2019/024

Dated: 15-06-2019

**Graph** (Page – 3/3)



**I/C Testing Laboratories**  
**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,  
 Assistant Director (Engg-I)  
 WASA Gujranwala  
 (Providing/Laying Missing Links Replacement of Sewer Lines and Construction of Additional at  
 Satellite Town, Madina Colony, Fared Town, Jagna and Ameer Park in Satellite Town Zone  
 WASA Gujranwala  
 Reference # CED/TFL **33391** (Dr. Qasim Khan) Dated: 17-06-2019  
 Reference of the request letter # WASA/ADE-I/195 Dated: 07-05-2019

**Tension Test Report** (Page -1/1)

Date of Test 18-06-2019  
 Gauge length 8 inches  
 Description Plain & Deformed Steel Bar Tensile Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ Size (inch)		Area (in <sup>2</sup> )		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	0.212	3/16	0.282	-----	0.062	2100	3100	-----	74230	-----	109600	1.00	12.5	Plain
2	0.366	3/8	0.370	0.11	0.108	3400	4200	68200	69580	84200	86000	1.20	15.0	Deformed
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile test</b>														
Bend Test														

**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

Note:

- 1- You can See your reports On Internet in the following web site  
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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,  
 Resident Engineer  
 NESPAK  
 Rehabilitation/Carpeting of Nadeem Shaheed Road from Avian Chowk to Stop No. 03 Allama  
 Iqbal Town, Lahore (Kamran Steel)

Reference # CED/TFL **33393** (Dr. Qasim Khan) Dated: 17-06-2019  
 Reference of the request letter # 4047R/13/HAK/04/MCC/03 Dated: 30-05-2019

**Tension Test Report** (Page -1/1)

Date of Test 18-06-2019  
 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 <sup>2</sup> )		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	0.363	3	0.368	0.11	0.107	3200	4600	64200	66140	92200	95100	0.80	10.0	
2	0.357	3	0.366	0.11	0.105	3300	4600	66200	69270	92200	96600	1.00	12.5	
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<b>Note: only two samples for tensile and one sample for bend test</b>														
<b>Bend Test</b>														
#3 Bar Bend Test Through 180° is Satisfactory														

**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

Note:

- 1- You can See your reports On Internet in the following web site  
[http://www.uet.edu.pk/faculties/facultiesinfo/civil/index.html?RID=testing\\_reports](http://www.uet.edu.pk/faculties/facultiesinfo/civil/index.html?RID=testing_reports)
- 2- The above results pertain to sample /samples supplied to this laboratory.
- 3- Sealed sample / Unsealed sample / Marked sample/Signed Samples



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