



**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  
 Islamabad International Airport Project (IIAP) Construction of Airport Security Forces Camp-  
 Phase 1

Reference # CED/TFL **34226** (Dr. M Rizwan Riaz)  
 Reference of the request letter # 3864/331/UZ/ASF/1103

Dated: 28-11-2019  
 Dated: 27-11-2019

**Tension Test Report** (Page – 1/1)

Date of Test 05-12-2019  
 Gauge length 2 inches  
 Description Aluminum Sheet Strip Tensile Test

Sr. No.	Designation	Size of Strip	X Section Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Remarks
1	Aluminum Sheet	26.40x3.00	79.20	6.42	10.70	81.06	135.10	0.50	25.00	
2		26.40x3.00	79.20	6.65	11.00	83.96	138.89	0.60	30.00	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
<b>Only Two Samples for Tensile Test</b>										
<b>Bend Test</b>										

**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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**Department of Civil Engineering**  
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**Pakistan. Ph: 92-42-99029202**

To,  
 ARE-ADP Projects  
 NESPAK  
 Rehabilitation of Drainage Network in District Muzaffargarh  
 (A.F Steel)  
 Reference # CED/TFL **34239** (Dr. Usman Akmal)  
 Reference of the request letter # 3158/13/CAA/09/1352

Dated: 02-12-2019  
 Dated: 20-11-2019

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

Date of Test 05-12-2019  
 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 <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	0.380	3	0.377	0.11	0.112	3500	4800	70200	69080	96200	94800	1.00	12.5	
2	0.378	3	0.376	0.11	0.111	3700	5000	74200	73460	100200	99300	1.00	12.5	
3	4.301	10	1.269	1.27	1.264	39000	54600	67700	68000	94800	95200	1.50	18.8	
4	4.237	10	1.259	1.27	1.246	38800	55800	67400	68660	96900	98800	1.40	17.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	

**Note: only four samples for tensile and four samples for bend test**

**Bend Test**

#3 Bar Bend Test Through 180° is Satisfactory

#3 Bar Bend Test Through 180° is Satisfactory

#10 Bar Bend Test Through 180° is Satisfactory

#10 Bar Bend Test Through 180° is Satisfactory

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

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To,  
 Senior Manager Civil - OTL  
 Orient  
 Orient Sqaure Hostel Tower Johar Town, Lahore  
 (Afco Steel)

Reference # CED/TFL **34241** (Dr. Usman Akmal) Dated: 02-12-2019  
 Reference of the request letter # ORIENT/AFCO/Hostel Tower/Steel/012 Dated: 02-12-2019

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

Date of Test 05-12-2019  
 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	4.255	32	32.05	1.25	1.251	21600	38000	38095	38070	67020	67000	1.40	17.5	
2	4.233	32	31.97	1.25	1.244	20400	35400	35979	36140	62434	62800	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
Bend Test														
32mm Dia Bar Bend Test Through 180° is Satisfactory														

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

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**University of Engineering and Technology Lahore, 54890**  
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To,  
 Resident Engineer  
 A.A Associates JV Planners Consultants Engineers  
 Construction of BTR Banda Fateh Khan Road Darmalak Road, Darmalak to Ghor Zand Road  
 Darsha Khel Road Rehman abad Road Pakka Road, Karapa Shakardara Road Including Bridge  
 and PCC Road in UCS Sodhal Lachi Riral Mandori Kohat PK-39 ADP No. 786/150973  
 (Construction of RCC Tarraly Bridge (Balance Work)  
 Reference # CED/TFL **34242** (Dr. Usman Akmal) Dated: 02-12-2019  
 Reference of the request letter # PCE/RE/KHT/018 Dated: 02-12-2019

**Tension Test Report** (Page – 1/7)

Date of Test 05-12-2019  
 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	784.0	17800	174.62	19700	193.26	199	>3.50	Flak 1 (Old)
2	12.70 (1/2")	775.0	782.0	17400	170.69	19300	189.33	198	>3.50	
3	12.70 (1/2")	775.0	783.0	17700	173.64	19700	193.26	199	>3.50	
4	12.70 (1/2")	775.0	781.0	17500	171.68	19200	188.35	198	>3.50	Flak 2 (New)
5	12.70 (1/2")	775.0	781.0	17600	172.66	19400	190.31	199	>3.50	
6	12.70 (1/2")	775.0	779.0	17500	171.68	19200	188.35	198	>3.50	
Only six 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

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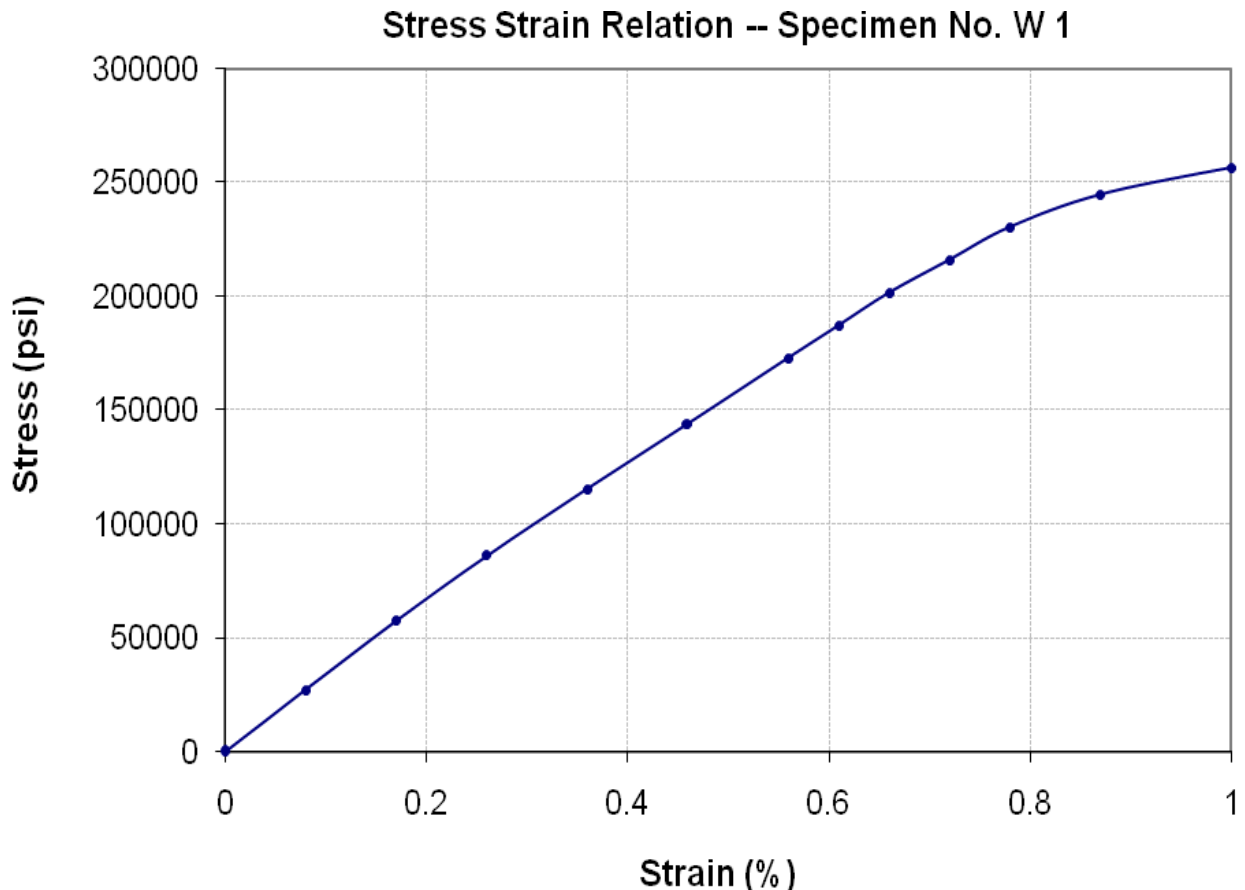
To,  
Resident Engineer  
A.A Associates JV Planners Consultants Engineers  
Construction of BTR Banda Fateh Khan Road Darmalak Road, Darmalak to Ghor Zand Road  
Darsha Khel Road Rehman abad Road Pakka Road, Karapa Shakardara Road Including Bridge  
and PCC Road in UCS Sodhal Lachi Riral Mandori Kohat PK-39 ADP No. 786/150973  
(Construction of RCC Tarraly Bridge (Balance Work))

Reference # CED/TFL **34242** (Dr. Usman Akmal)  
Reference of the request letter # PCE/RE/KHT/018

Dated: 02-12-2019

Dated: 02-12-2019

**Graph** (Page – 2/7)



**I/C Testing Laboratories**  
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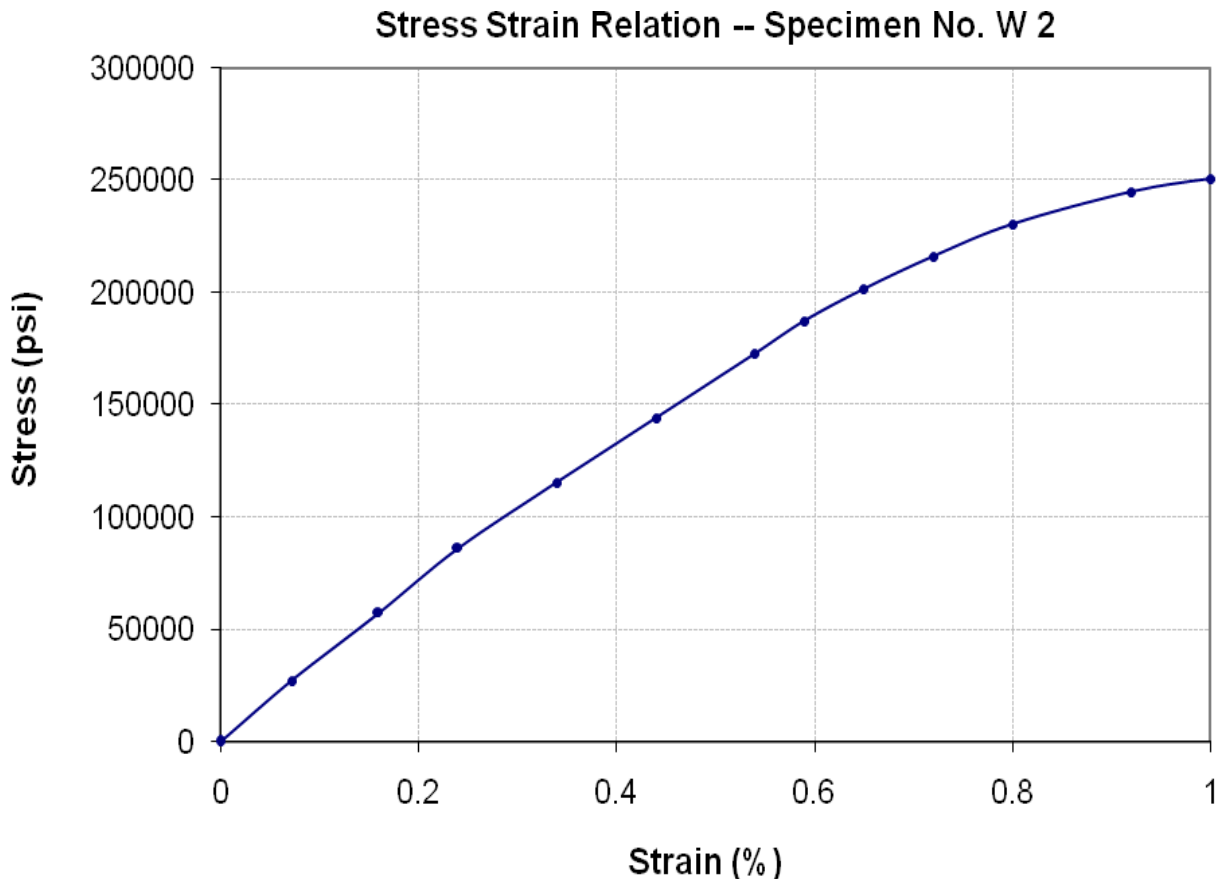
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To,  
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A.A Associates JV Planners Consultants Engineers  
Construction of BTR Banda Fateh Khan Road Darmalak Road, Darmalak to Ghor Zand Road  
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Reference # CED/TFL **34242** (Dr. Usman Akmal)  
Reference of the request letter # PCE/RE/KHT/018

Dated: 02-12-2019  
Dated: 02-12-2019

**Graph** (Page – 3/7)



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**UET Lahore, Pakistan.**

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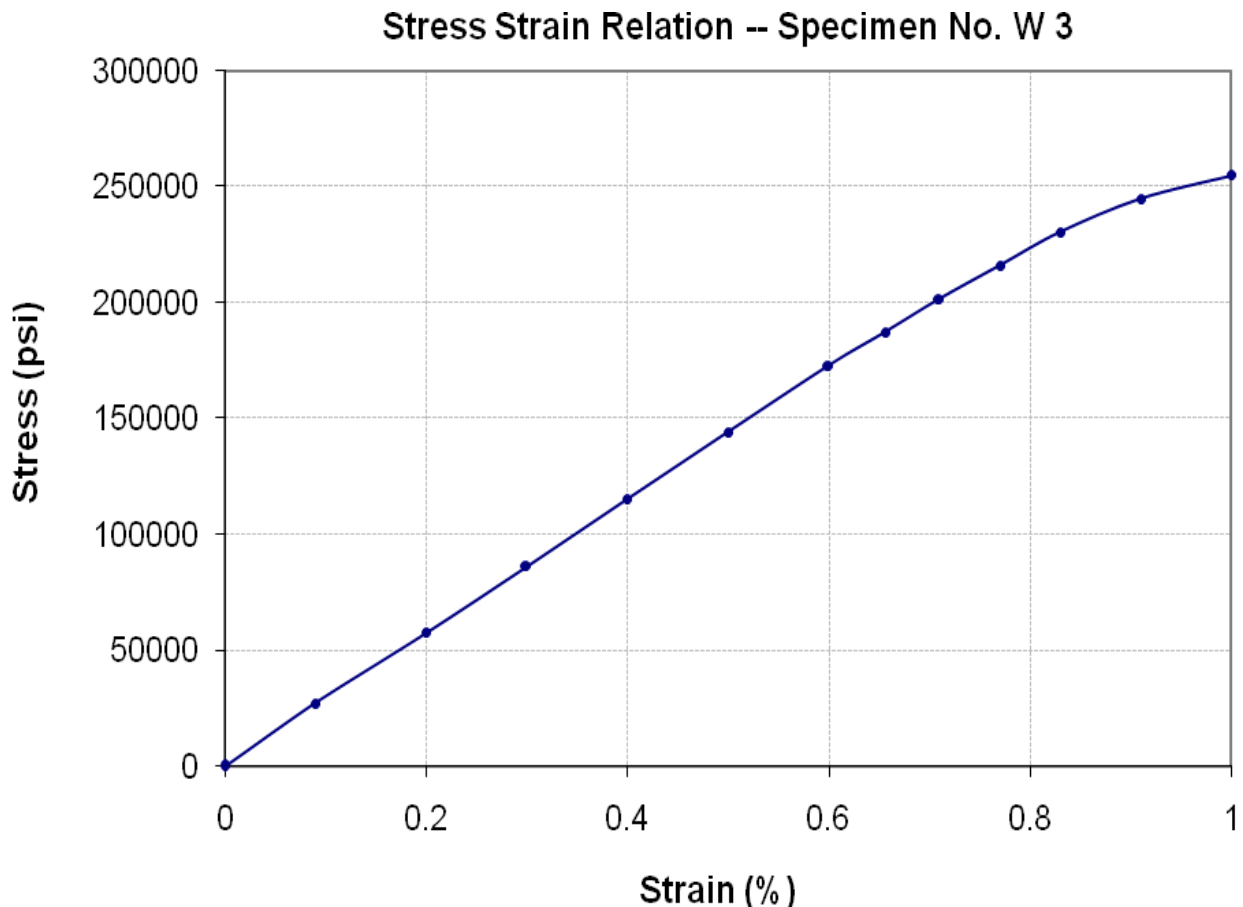
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Reference # CED/TFL **34242** (Dr. Usman Akmal)  
Reference of the request letter # PCE/RE/KHT/018

Dated: 02-12-2019

Dated: 02-12-2019

**Graph** (Page – 4/7)



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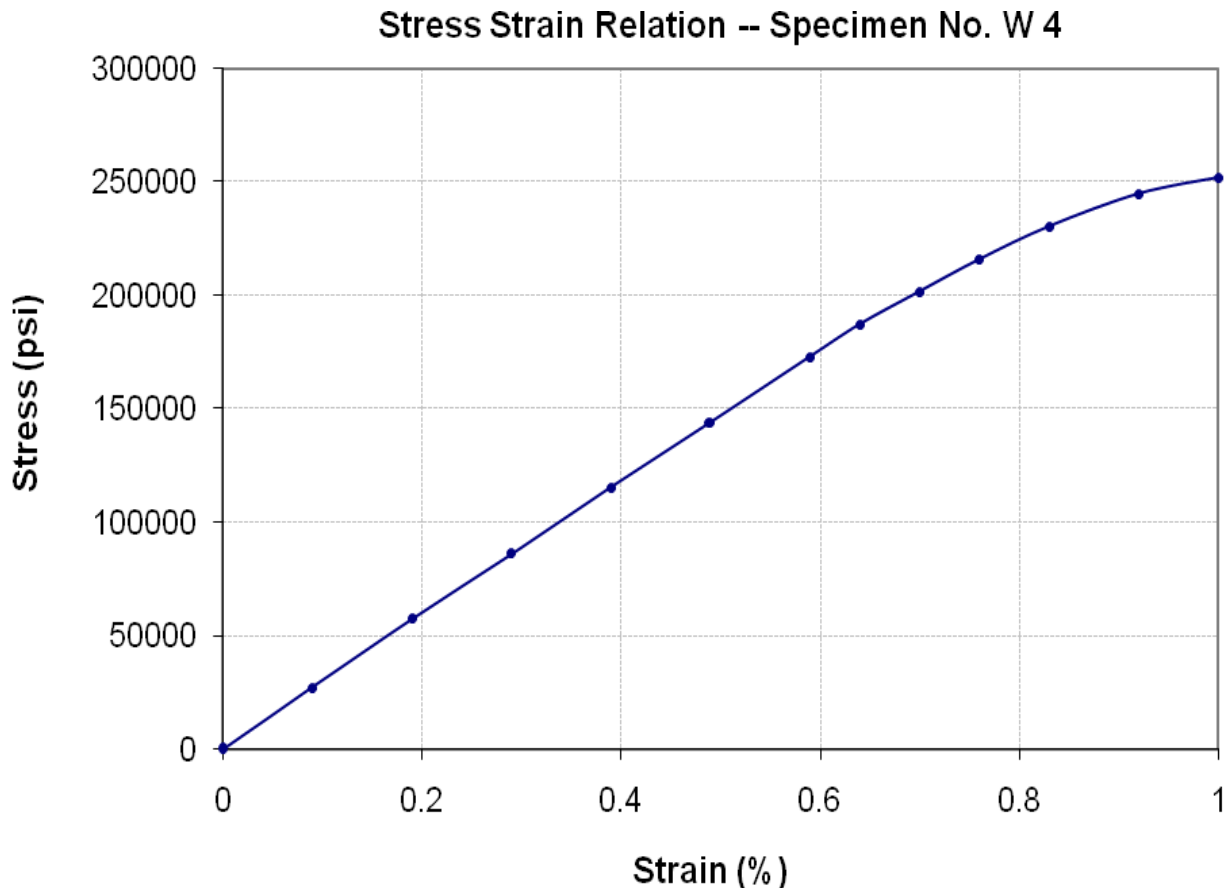
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Construction of BTR Banda Fateh Khan Road Darmalak Road, Darmalak to Ghor Zand Road  
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Reference # CED/TFL **34242** (Dr. Usman Akmal)  
Reference of the request letter # PCE/RE/KHT/018

Dated: 02-12-2019  
Dated: 02-12-2019

**Graph** (Page – 5/7)



**I/C Testing Laboratoires**  
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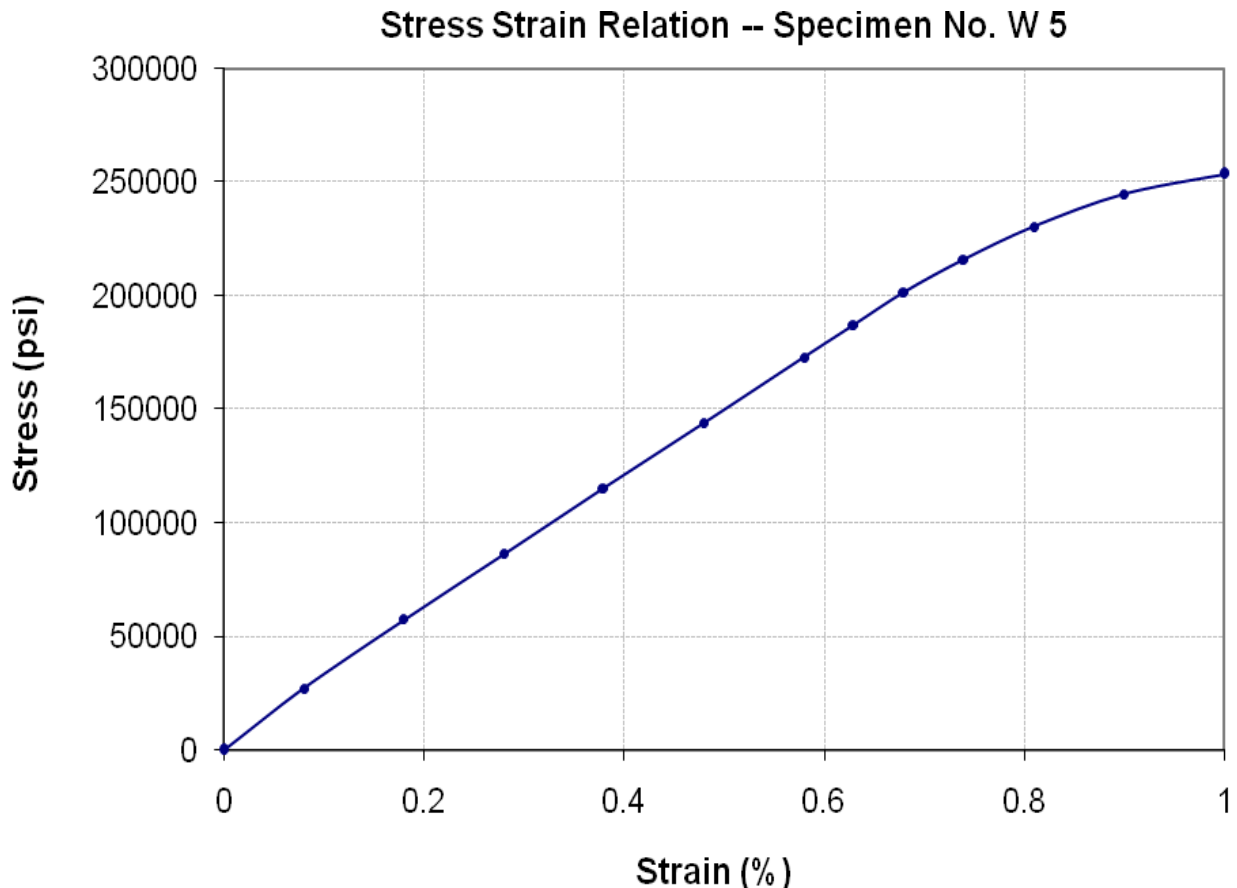
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Reference # CED/TFL **34242** (Dr. Usman Akmal)  
Reference of the request letter # PCE/RE/KHT/018

Dated: 02-12-2019

Dated: 02-12-2019

**Graph** (Page – 6/7)



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

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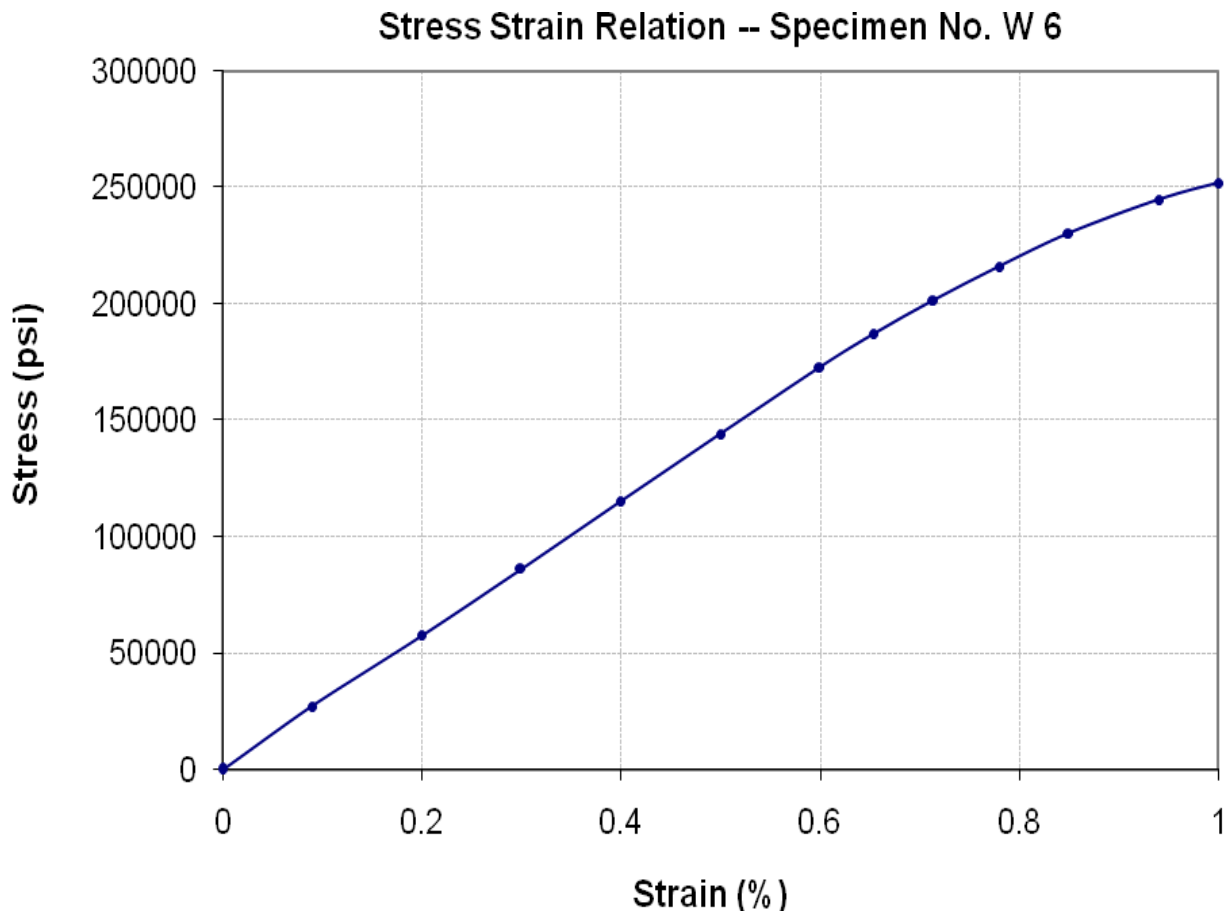
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(Construction of RCC Tarraly Bridge (Balance Work))

Reference # CED/TFL **34242** (Dr. Usman Akmal)  
Reference of the request letter # PCE/RE/KHT/018

Dated: 02-12-2019

Dated: 02-12-2019

**Graph** (Page – 7/7)



**I/C Testing Laboratories**  
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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  
 Construction of Under Passes at Kashmir Bridge along Canal Faisalabad  
 (Mughal Steel)  
 Reference # CED/TFL **34243** (Dr. Usman Akmal)  
 Reference of the request letter # 3994/103/AS/02/170

Dated: 02-12-2019  
 Dated: 28-11-2019

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

Date of Test 05-12-2019  
 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 <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	4.239	10	1.259	1.27	1.246	34800	45200	60400	61570	78500	80000	1.40	17.5	
2	4.233	10	1.259	1.27	1.244	30400	41200	52800	53860	71500	73000	1.40	17.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and two samples for bend test</b>														
Bend Test														
#10 Bar Bend Test Through 180° is Satisfactory														
#10 Bar Bend Test Through 180° is Satisfactory														

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

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To,  
 Resident Engineer  
 NESPAK  
 Construction of Under Passes at Kashmir Bridge along Canal Faisalabad  
 (Kisan Steel)  
 Reference # CED/TFL **34244** (Dr. Usman Akmal)  
 Reference of the request letter # 3994/103/AS/02/165

Dated: 02-12-2019  
 Dated: 17-11-2019

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

Date of Test 05-12-2019  
 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 <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	0.390	3	0.382	0.11	0.115	3500	4900	70200	67270	98200	94200	1.00	12.5	
2	0.388	3	0.381	0.11	0.114	3600	5000	72200	69550	100200	96600	1.00	12.5	
3	5.287	11	1.407	1.56	1.554	43000	73400	60800	60990	103800	104200	1.00	12.5	
4	5.276	11	1.405	1.56	1.551	44200	72600	62500	62820	102600	103200	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	

**Note: only four samples for tensile and four samples for bend test**

**Bend Test**

#3 Bar Bend Test Through 180° is Satisfactory

#3 Bar Bend Test Through 180° is Satisfactory

#11 Bar Bend Test Through 180° is Satisfactory

#11 Bar Bend Test Through 180° is Satisfactory

**I/C Testing Laboratoires**  
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To,  
Managing Director  
Al-Maalik Enterprises  
Lahore  
(KingKong Industries)

Reference # CED/TFL **34255** (Dr. Usman Akamal)  
Reference of the request letter # ALME/UET-09/12/2019

Dated: 03-12-2019

Dated: 02-12-2019

**Tension Test Report** (Page – 1/1)

Date of Test 05-12-2019  
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)		% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)		
1	9.53 (3/8")	432.0	444.0	9000	88.29	11000	107.91	>3.50	xx
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-

**Only one sample for Test**

**I/C Testing Laboratories**  
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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,  
 Senior Manager Civil - OTL  
 Orient  
 Orient Sqaure Hostel Tower Johar Town, Lahore  
 (Afco Steel)

Reference # CED/TFL **34264** (Dr. Usman Akmal)

Dated: 04-12-2019

Reference of the request letter # ORIENT/AFCO/Hostel Tower/Steel/013

Dated: 04-12-2019

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

Date of Test 05-12-2019

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	4.101	32	31.47	1.25	1.205	21000	32600	37037	38400	57496	59700	1.40	17.5	
2	4.242	32	32.00	1.25	1.247	20400	33600	35979	36060	59260	59400	1.40	17.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
Bend Test														
32mm Dia Bar Bend Test Through 180° is Satisfactory														

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

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**University of Engineering and Technology Lahore, 54890**  
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To,  
Sr. Project Manager  
The Aquatic Mall  
GT Road, Islamabad

Reference # CED/TFL **34268, 269** (Dr. Usman Akmal)  
Reference of the request letter # Nil

Dated: 05-12-2019  
Dated: 04-12-2019

**Tension Test Report** (Page – 1/1)

Date of Test 05-12-2019  
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)		% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)		
1	12.70 (1/2")	775.0	773.0	17900	175.60	19600	192.28	>3.50	Set # 1
2	12.70 (1/2")	775.0	772.0	17800	174.62	19400	190.31	>3.50	
3	12.70 (1/2")	775.0	772.0	17900	175.60	19900	195.22	>3.50	
4	12.70 (1/2")	775.0	775.0	18700	183.45	20000	196.20	>3.50	Set # 2
5	12.70 (1/2")	775.0	777.0	17800	174.62	20000	196.20	>3.50	
6	12.70 (1/2")	775.0	775.0	18700	183.45	19900	195.22	>3.50	
7	12.70 (1/2")	775.0	785.0	17500	171.68	19400	190.31	>3.50	Set # 3
8	12.70 (1/2")	775.0	784.0	17000	166.77	19400	190.31	>3.50	
9	12.70 (1/2")	775.0	785.0	17800	174.62	19400	190.3	>3.50	
Only nine samples for Test									

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

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

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