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
EA Consulting (Pvt) Ltd
Sukkur-Multan Motorway Project Section-III
(CSCEC)

Reference # CED/TFL **32851** (Dr. Usman Akmal) Dated: 18-03-2019
Reference of the request letter # CRE/EA/M.P-III/352-2019 Dated: 18-03-2019

Tension Test Report (Page – 1/1)

Date of Test 28-03-2019
Gauge length 2 inches
Description W-Beam Steel Strip Tensile Test

Sr. No.	Designation	Size of Strip	X Section Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Remarks
	------	(cm)	(cm^2)	(kg)	(kg)	(kg/cm^2)	(kg/cm^2)	(in)		
1	W-Beam	2.48x0.29	0.72	2700	3700	3754.17	5144.61	0.55	27.50	S-1
2		2.45x0.29	0.71	2700	3700	3800.14	5207.60	0.50	25.00	
3	W-Beam	2.47x0.29	0.72	2900	3800	4048.58	5305.04	0.55	27.50	S-2
4		2.44x0.29	0.71	2500	3700	3533.07	5228.94	0.55	27.50	
5	W-Beam	2.44x0.29	0.71	2800	3700	3957.04	5228.94	0.50	25.00	S-3
6		2.44x0.28	0.68	2600	3600	3805.62	5269.32	0.55	27.50	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
Only Six Samples for Tensile Test										
Bend Test										

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
PEPAC
Establishment of Workers Welfare Complex (Phase-I) Adjacent to Sundar Industrial Estate, District Kasur (Package-H)

Reference # CED/TFL **32939** (Dr. Usman Akmal) Dated: 27-03-2019
Reference of the request letter # RE/PEPAC/WWC-K/H107 Dated: 22-03-2019

Tension Test Report (Page -1/1)

Date of Test 28-03-2019
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight	Diameter/ Size (inch)		Area (in^2)		Yield load	Breaking Load	Yield Stress (psi)		Ultimate Stress (psi)		Elongation	% Elongation	Remarks
	(lbs/ft)	Nominal	Actual	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)		
1	0.377	3/8	0.376	0.11	0.111	3500	4900	70200	69620	98200	97500	1.30	16.3	
2	0.409	3/8	0.391	0.11	0.120	3800	5300	76200	69640	106200	97200	1.30	16.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
3/8" Dia Bar Bend Test Through 180º is Satisfactory														

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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,
Executive Engineer
PASSCO, Okara

Reference # CED/TFL **32940** (Dr. Usman Akmal) Dated: 27-03-2019
Reference of the request letter # PASSCO/Works/EE/OK/19/11 Dated: 26-03-2019

Tension Test Report (Page -1/1)

Date of Test 28-03-2019
Gauge length 8 inches
Description Deformed Steel Bar Tensile Test as per ASTM-A615

Sr. No.	Weight	Diameter/ Size (inch)		Area (in^2)		Yield load	Breaking Load	Yield Stress (psi)		Ultimate Stress (psi)		Elongation	% Elongation	Remarks
	(lbs/ft)	Nominal	Actual	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)		
1	0.362	3/8	0.368	0.11	0.106	3600	5000	72200	74510	100200	103500	1.10	13.8	
2	0.362	3/8	0.368	0.11	0.106	3700	5000	74200	76740	100200	103700	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile test														
Bend 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,
Resident Engineer
AAA – ACC (Jv)
TurkPak International (Pvt) Limited
Improvement /Widening of Thokar Niaz Baig – Hudiyara Drain Section of N-5

Reference # CED/TFL **32941** (Dr. Usman Akmal) Dated: 27-03-2019
Reference of the request letter # THDP/RE/01/256 Dated: 21-03-2019

Tension Test Report (Page -1/1)

Date of Test 28-03-2019
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight	Diameter/ Size (mm)		Area (in^2)		Yield load	Breaking Load	Yield Stress (psi)		Ultimate Stress (psi)		Elongation	% Elongation	Remarks
	(lbs/ft)	Nominal	Actual	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)		
1	0.425	10	10.13	0.11	0.125	4200	5600	84200	74150	112300	98900	1.10	13.8	
2	0.412	10	9.98	0.11	0.121	4000	5400	80200	72720	108200	98200	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
10mm Dia Bar Bend Test Through 180º is Satisfactory														

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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,
SQN LDR
GE (Air) Mushaf
Construction of 01 X Block of 16 Airmen Quarters (Site-II) at PAF Base Mushaf CS No. CEAF-CZ-42/2019 (M/s Shoukat Awan & CO)

Reference # CED/TFL **32942** (Dr. Usman Akmal) Dated: 27-03-2019
Reference of the request letter # 6100-/2019/12/E6 Dated: 27-03-2019

Tension Test Report (Page -1/2)

Date of Test 28-03-2019
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight	Diameter/ Size (inch)		Area (in^2)		Yield load	Breaking Load	Yield Stress (psi)		Ultimate Stress (psi)		Elongation	% Elongation	Remarks
	(lbs/ft)	Nominal	Actual	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)		
1	0.354	3/8	0.364	0.11	0.104	2440	4000	48900	51640	80200	84700	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only one sample for tensile and one sample for bend test														
Bend Test														
3/8" Dia Bar Bend Test Through 180º is Satisfactory														

- Stress versus percentage strain graph of Sample at Sr. No.2 is attached

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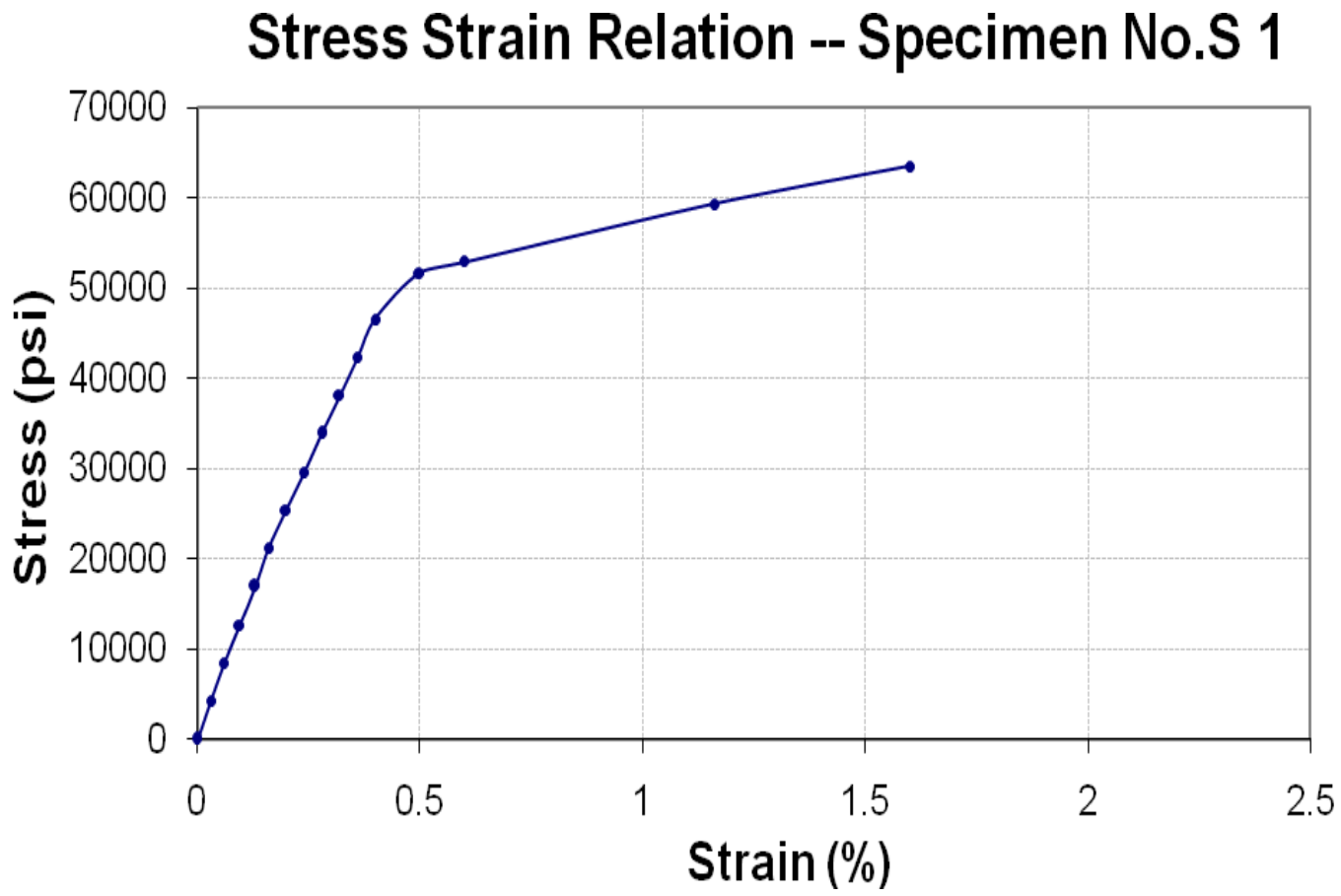
STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To
SQN LDR
GE (Air) Mushaf
Construction of 01 X Block of 16 Airmen Quarters (Site-II) at PAF Base Mushaf CS No. CEAF-CZ-42/2019 (M/s Shoukat Awan & CO)

Reference # CED/TFL **32942** (Dr. Usman Akmal) Dated: 27-03-2019
Reference of the request letter # 6100-/2019/12/E6 Dated: 27-03-2019

Graph (Page -2/2)



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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
EA Consulting (Pvt) Ltd
Sukkur-Multan Motorway Project Section-III
(CSCEC)

Reference # CED/TFL **32943** (Dr. Waseem Abbas) Dated: 27-03-2019
Reference of the request letter # CRE/EA/M.P-III/375-2019 Dated: 27-03-2019

Tension Test Report (Page – 1/2)

Date of Test 28-03-2019
Gauge length 2 inches
Description I Shaped Beam 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^2)	(kg)	(kg)	(MPa)	(MPa)	(in)		
1	I Shaped Beam	26.20x3.20	83.84	3200	4800	374.43	561.64	0.50	25.00	
2		26.20x3.20	83.84	3200	4800	374.43	561.64	0.50	25.00	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
Only Two Samples for Tensile Test										
Bend Test										

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,
Resident Engineer
EA Consulting (Pvt) Ltd
Sukkur-Multan Motorway Project Section-III
(CSCEC)

Reference # CED/TFL **32943** (Dr. Waseem Abbas) Dated: 27-03-2019
Reference of the request letter # CRE/EA/M.P-III/375-2019 Dated: 27-03-2019

Weight &Size Test Report (Page – 2/2)

Date of Test 28-03-2019
Gauge length -------
Description I Shaped 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
	--------	(g)	(mm)	(kg/m)	(mm)	(mm)	(mm)	(mm)	
1	**I Shaped Beam**	**2072**	**307.60**	**6.74**	**124.20**	**70.30**	**4.40**	**3.20**	
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-		-	
-	-	-	-	-	-	-		-	
-	-	-	-	-	-	-		-	
-	-	-	-	-	-	-		-	
-	-	-	-	-	-	-		-	
-	-	-	-	-	-	-		-	
Only One Sample for Test									

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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,
Resident Engineer
EA Consulting (Pvt) Ltd
Sukkur-Multan Motorway Project Section-III

Reference # CED/TFL **32944** (Dr. Waseem Abbas) Dated: 27-03-2019
Reference of the request letter # CRE/EA/M.P-III/367-2019 Dated: 25-03-2019

Tension Test Report (Page -1/1)

Date of Test 28-03-2018
Gauge length 2 inches
Description Anchor Bolt Tensile Test

Sr. No.	Weight	Diameter/ size		Area (mm^2)		Yield load	Breaking Load	Yield Stress (MPa)	Ultimate Stress (MPa)	Elongation	% Elongation	Remarks
	(kg/m)	Nominal (mm)	Actual (mm)	Nominal	Actual	(kg)	(kg)	Actual	Actual	(inch)		
1	6.377	32	32.16	-------	812.4	36800	47000	444	568	0.6	30.0	
-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	
Note: only one sample for tensile test												
Bend Test												

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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,
Resident Engineer
EA Consulting (Pvt) Ltd
Sukkur-Multan Motorway Project Section-III
(CSCEC)

Reference # CED/TFL **32945** (Dr. Waseem Abbas) Dated: 27-03-2019
Reference of the request letter # CRE/EA/M.P-III/369-2019 Dated: 25-03-2019

Tension Test Report (Page – 1/1)

Date of Test 28-03-2019
Gauge length 2 inches
Description Plate Steel Strip Tensile Test as per ASTM A36

Sr. No.	Designation	Size of Strip	X Section Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Remarks
	(mm)	(mm)	(mm^2)	(kg)	(kg)	(MPa)	(MPa)	(in)		
1	**5**	**26.30x5.00**	**131.50**	**4400**	**6400**	**328.24**	**477.44**	**0.60**	**30.00**	
2	**5**	**26.30x5.00**	**131.50**	**4300**	**6400**	**320.78**	**477.44**	**0.60**	**30.00**	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
Only Two Samples for Tensile Test										
Bend 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,
Sub Divisional Officer
Public Health Engg : Sub Divisio
Gojra
(Extenstion / Rehabilitation of Urban Sewrage Scheme Gojra Tehsil Gojra Distt: Toba Tek Singh)

Reference # CED/TFL **32946** (Dr. Usman Akmal) Dated: 27-03-2019
Reference of the request letter # 170/G Dated: 09-03-2019

Tension Test Report (Page -1/1)

Date of Test 28-03-2019
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight	Diameter/ Size (inch)		Area (in^2)		Yield load	Breaking Load	Yield Stress (psi)		Ultimate Stress (psi)		Elongation	% Elongation	Remarks
	(lbs/ft)	Nominal	Actual	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)		
1	0.370	3/8	0.372	0.11	0.109	2900	4200	58200	58710	84200	85100	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only one sample for tensile and one sample for bend test														
Bend Test														
3/8" Dia Bar Bend Test Through 180º is Satisfactory														

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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,
Resident Engineer
NESPAK
Development of Kartar Pur Corridor
(Steel Complex)

Reference # CED/TFL **32947** (Dr. Safeer Abbas) Dated: 27-03-2019
Reference of the request letter # SA-394/DKC/SW.Test/SM/35 Dated: 27-03-2019

Tension Test Report (Page – 1/3)

Date of Test 28-03-2019
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**	**785.0**	**18500**	**181.49**	**19900**	**195.22**	**198**	**>3.50**	**15**
2	**12.70 (1/2")**	**775.0**	**786.0**	**18700**	**183.45**	**20100**	**197.18**	**199**	**>3.50**	**16**
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
Only two samples for Test										

Witness by Imran Mehmood (NESPAK)
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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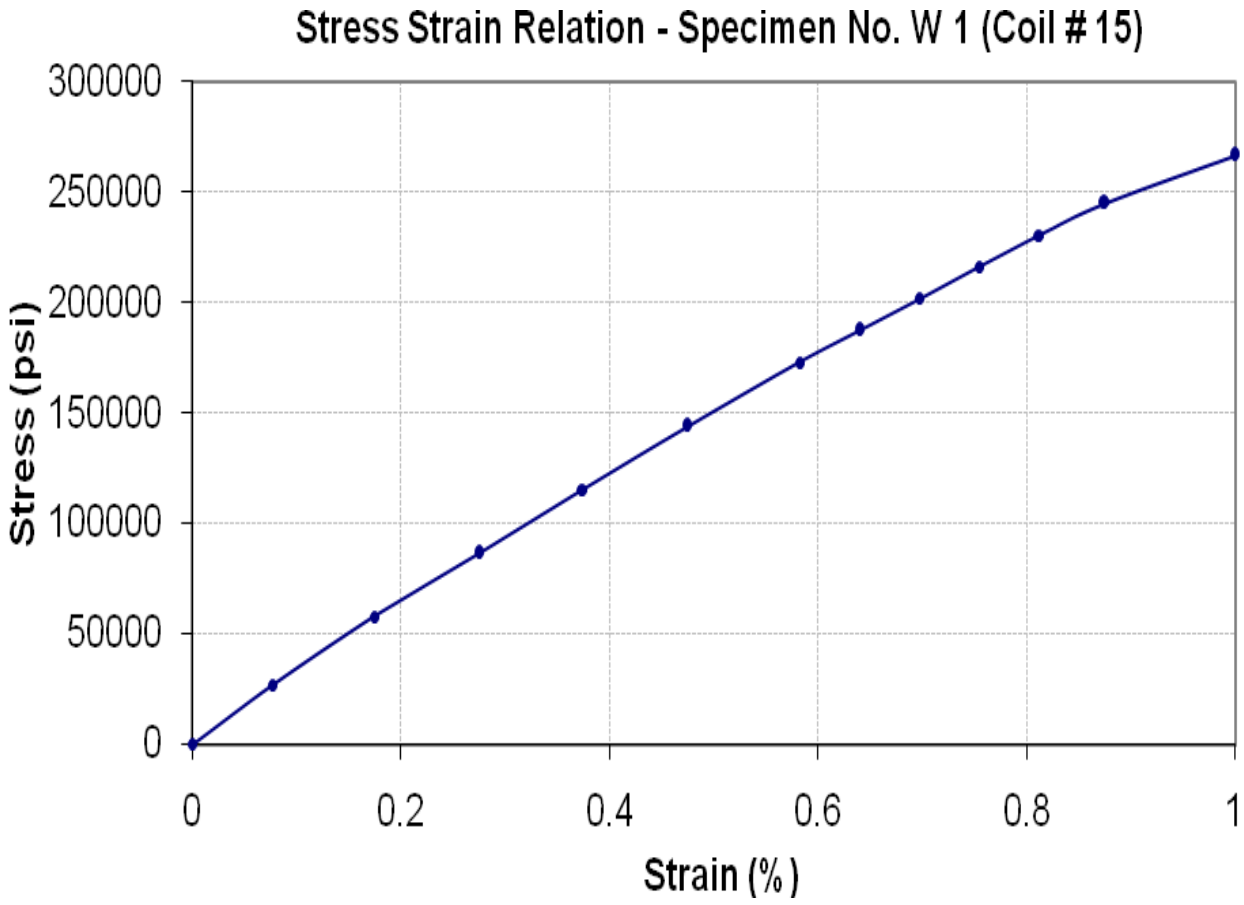
STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Resident Engineer
NESPAK
Development of Kartar Pur Corridor

Reference # CED/TFL **32947** (Dr. Safeer Abbas) Dated: 27-03-2019
Reference of the request letter # SA-394/DKC/SW.Test/SM/35 Dated: 27-03-2019

Graph (Page – 2/3)



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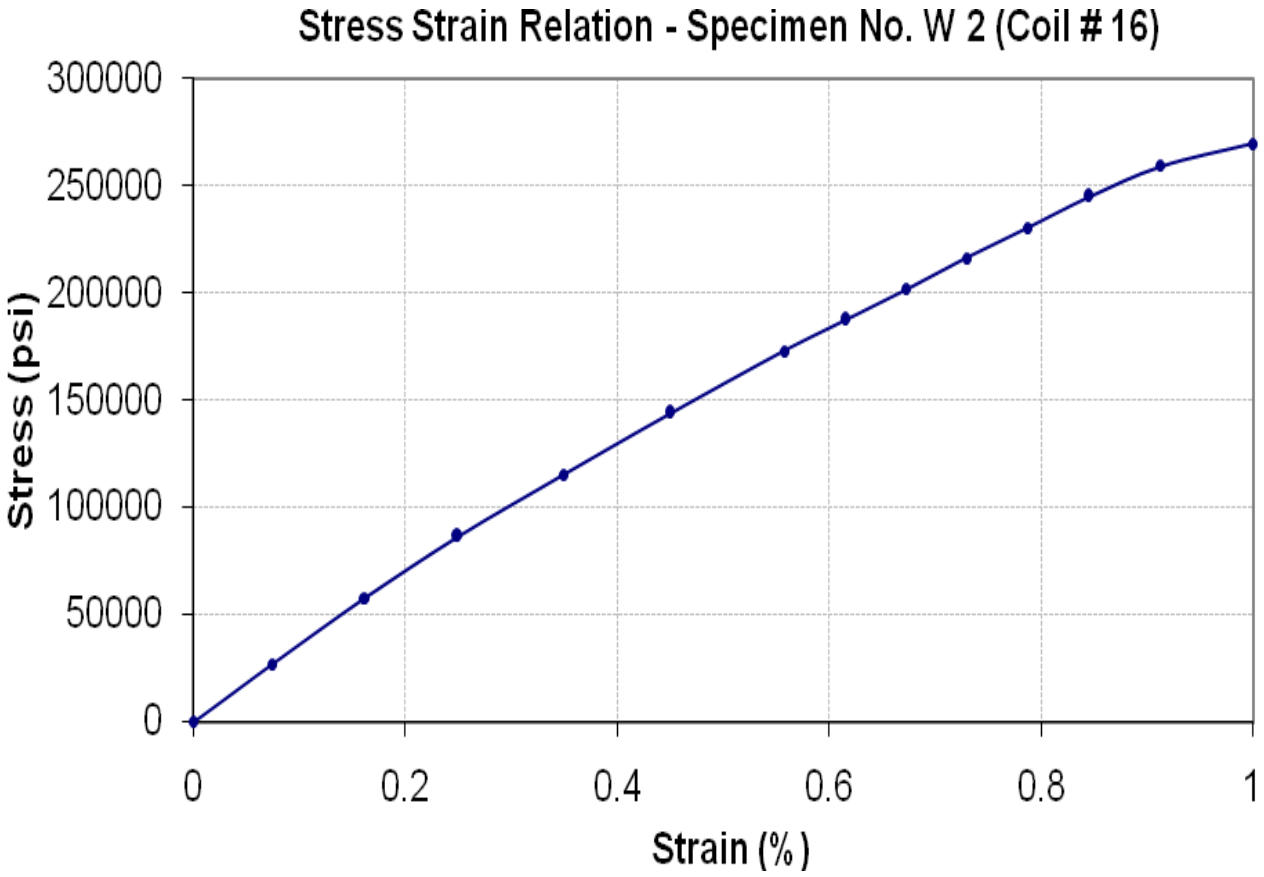
STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Resident Engineer
NESPAK
Development of Kartar Pur Corridor

Reference # CED/TFL **32947** (Dr. Safeer Abbas) Dated: 27-03-2019
Reference of the request letter # SA-394/DKC/SW.Test/SM/35 Dated: 27-03-2019

Graph (Page – 3/3)



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