



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
 China – Pakistan Economic Corridor (CPEC), Western Route Hakla (on M1) – Yarak (D.I Khan)
 Motorway, Package-3 (Tarap to Kot Belian)(Shaheen & CO)

Reference # CED/TFL **32832** (Dr. Ali Ahmed) Dated: 14-03-2019
 Reference of the request letter # CPEC/NESPAK/CS/RE/PKG3/19/850 Dated: 12-03-2019

Tension Test Report (Page – 1/2)

Date of Test 20-03-2019
 Gauge length 2 inches
 Description Post, Spacer & W-Shape Beam 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	Post	2.73x0.615	1.68	5700	8200	3394.98	4884.00	0.60	30.00	
2		2.77x0.615	1.70	5700	8100	3345.95	4754.78	0.65	32.50	
3	Spacer	2.72x0.500	1.36	5200	7900	3823.53	5808.82	0.50	25.00	
4		2.72x0.500	1.36	5100	7800	3750.00	5735.29	0.50	25.00	
5	W-Shape Beam	2.74x0.275	0.75	2500	3400	3317.85	4512.28	0.60	30.00	
6		2.74x0.275	0.75	2700	3400	3583.28	4512.28	0.50	25.00	
Only Six Samples for Tensile and Two Samples for Bend Test										
Bend Test										
Strip Taken from W-Shape Beam Bend Test Through 180° is Satisfactory										
Strip Taken from W-Shape Beam Bend Test Through 180° is Satisfactory										

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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Motorway, Package-3 (Tarap to Kot Belian)(Shaheen & CO)

Reference # CED/TFL **32832** (Dr. Ali Ahmed) Dated: 14-03-2019
Reference of the request letter # CPEC/NESPAK/CS/RE/PKG3/19/850 Dated: 12-03-2019

Thickness Test Report (Page – 2/2)

Date of Test 20-03-2019
Gauge length -----
Description Post & W-Shape Beam Thickness Test

Sr. No.	Designation	Thickness	Remark
		(mm)	
1	W-Shape Beam	2.75	
2	Post	6.15	
-	-	-	
-	-	-	
-	-	-	
-	-	-	
-	-	-	
-	-	-	
-	-	-	
Only Two Samples for Test			

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To,
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 China – Pakistan Economic Corridor (CPEC), Western Route Hakla (on M1) – Yarak (D.I Khan)
 Motorway, Package-3 (Tarap to Kot Belian)(FABCO)

Reference # CED/TFL **32833** (Dr. Ali Ahmed) Dated: 14-03-2019
 Reference of the request letter # CPEC/NESPAK/CS/RE/PKG3/19/849 Dated: 12-03-2019

Tension Test Report (Page – 1/2)

Date of Test 20-03-2019
 Gauge length 2 inches
 Description Post, Spacer & W-Shape Beam 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	Post	2.75x0.625	1.72	6300	8600	3665.45	5003.64	0.60	30.00	
2		2.74x0.625	1.71	6700	8600	3912.41	5021.90	0.60	30.00	
3	Spacer	2.74x0.600	1.64	5600	8200	3406.33	4987.83	0.60	30.00	
4		2.74x0.600	1.64	5700	8100	3467.15	4927.01	0.60	30.00	
5	W-Shape Beam	2.72x0.355	0.97	3200	4200	3314.00	4349.63	0.50	25.00	
6		2.73x0.355	0.97	3200	4100	3301.86	4230.51	0.50	25.00	
Only Six Samples for Tensile and Two Samples for Bend Test										
Bend Test										
Strip Taken from W-Shape Beam Bend Test Through 180° is Satisfactory										
Strip Taken from W-Shape Beam Bend Test Through 180° is Satisfactory										

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Reference # CED/TFL **32833** (Dr. Ali Ahmed) Dated: 14-03-2019
Reference of the request letter # CPEC/NESPAK/CS/RE/PKG3/19/849 Dated: 12-03-2019

Thickness Test Report (Page – 2/2)

Date of Test 20-03-2019
Gauge length -----
Description Post & W-Shape Beam Thickness Test

Sr. No.	Designation	Thickness	Remark
		(mm)	
1	W-Shape Beam	3.55	
2	Post	6.25	
-	-	-	
-	-	-	
-	-	-	
-	-	-	
-	-	-	
-	-	-	
-	-	-	
Only Two Samples for Test			

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STRUCTURAL ENGINEERING DIVISION
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To,
Resident Engineer –II
Zeeruk International (Pvt) Ltd
Lahore – Sialkot Motorway
(Aziz Industries)
Reference # CED/TFL **32844** (Dr. Asif Hameed)
Reference of the request letter # LSM/RE-II/St/19/099

Dated: 15-03-2019
Dated: 15-03-2019

Tension Test Report (Page – 1/4)

Date of Test 20-03-2019
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	792.0	18700	183.45	20300	199.14	199	>3.50	xx
2	12.70 (1/2")	775.0	791.0	18700	183.45	20300	199.14	198	>3.50	xx
3	12.70 (1/2")	775.0	792.0	18800	184.43	20400	200.12	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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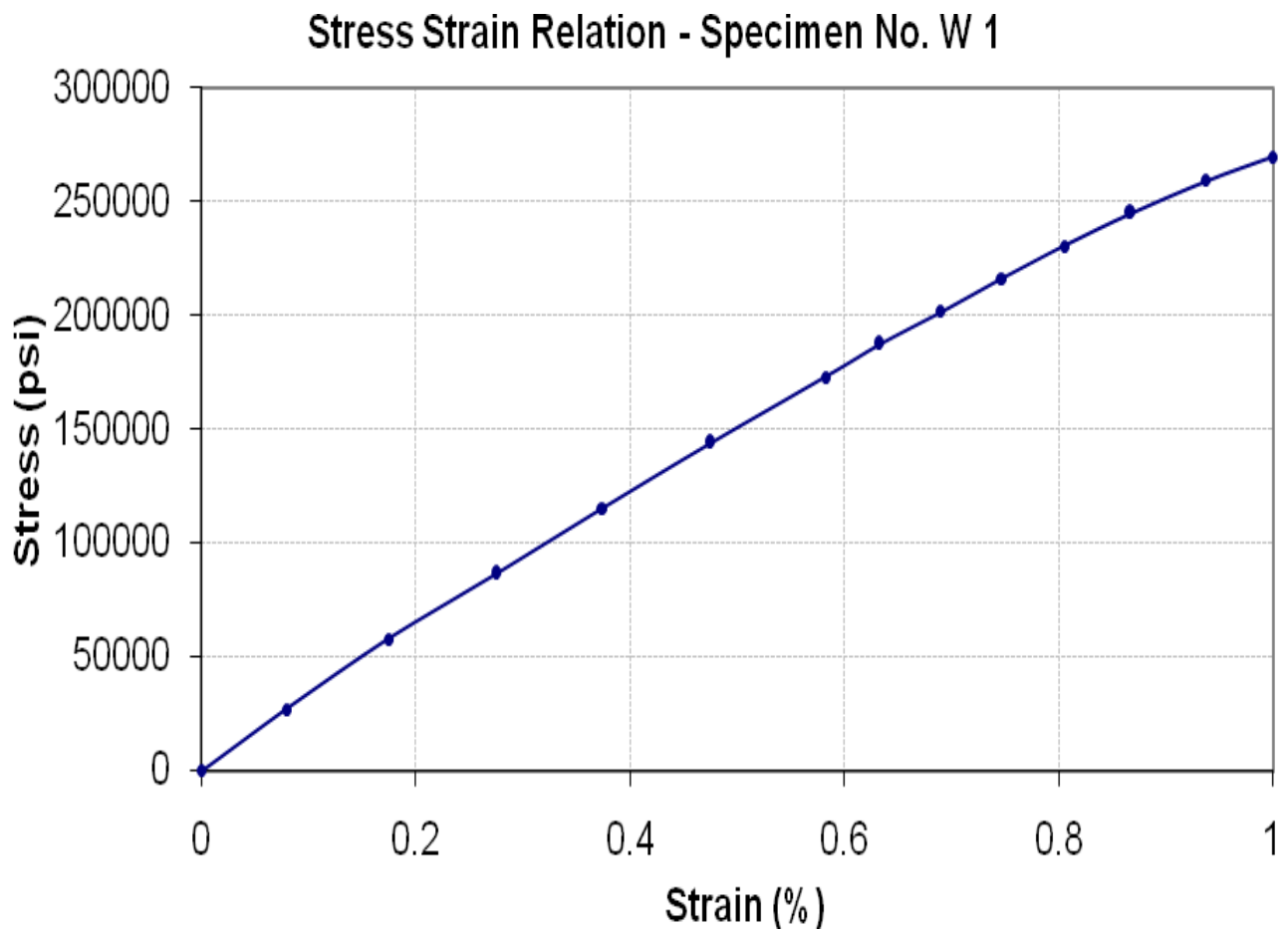
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Test Floor Laboratory
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University of Engineering and Technology Lahore, 54890
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To,
Resident Engineer –II
Zeeruk International (Pvt) Ltd
Lahore – Sialkot Motorway

Reference # CED/TFL **32844** (Dr. Asif Hameed)
Reference of the request letter # LSM/RE-II/St/19/099

Dated: 15-03-2019
Dated: 15-03-2019

Graph (Page – 2/4)



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UET Lahore, Pakistan.

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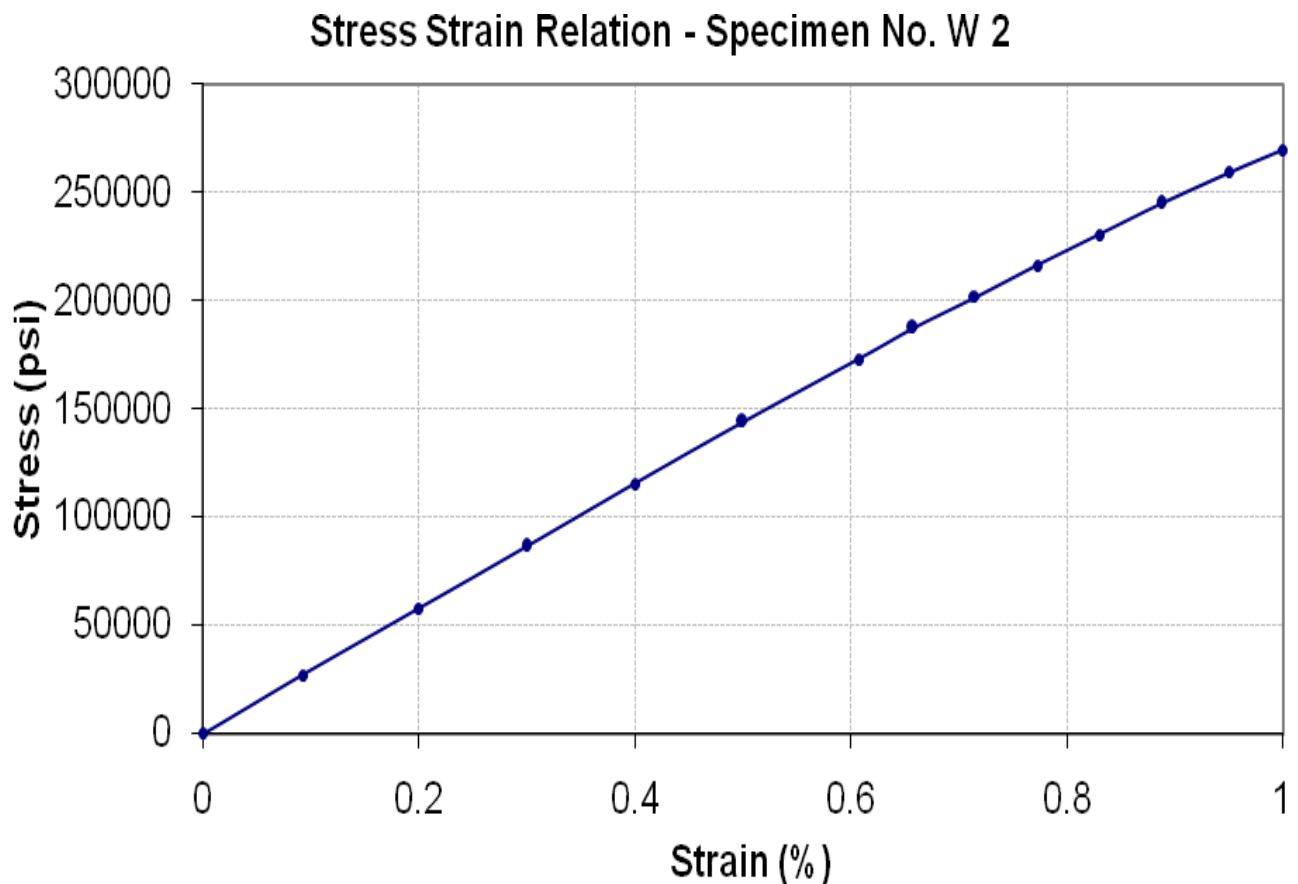
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To,
Resident Engineer –II
Zeeruk International (Pvt) Ltd
Lahore – Sialkot Motorway

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Reference of the request letter # LSM/RE-II/St/19/099

Dated: 15-03-2019
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Graph (Page – 3/4)



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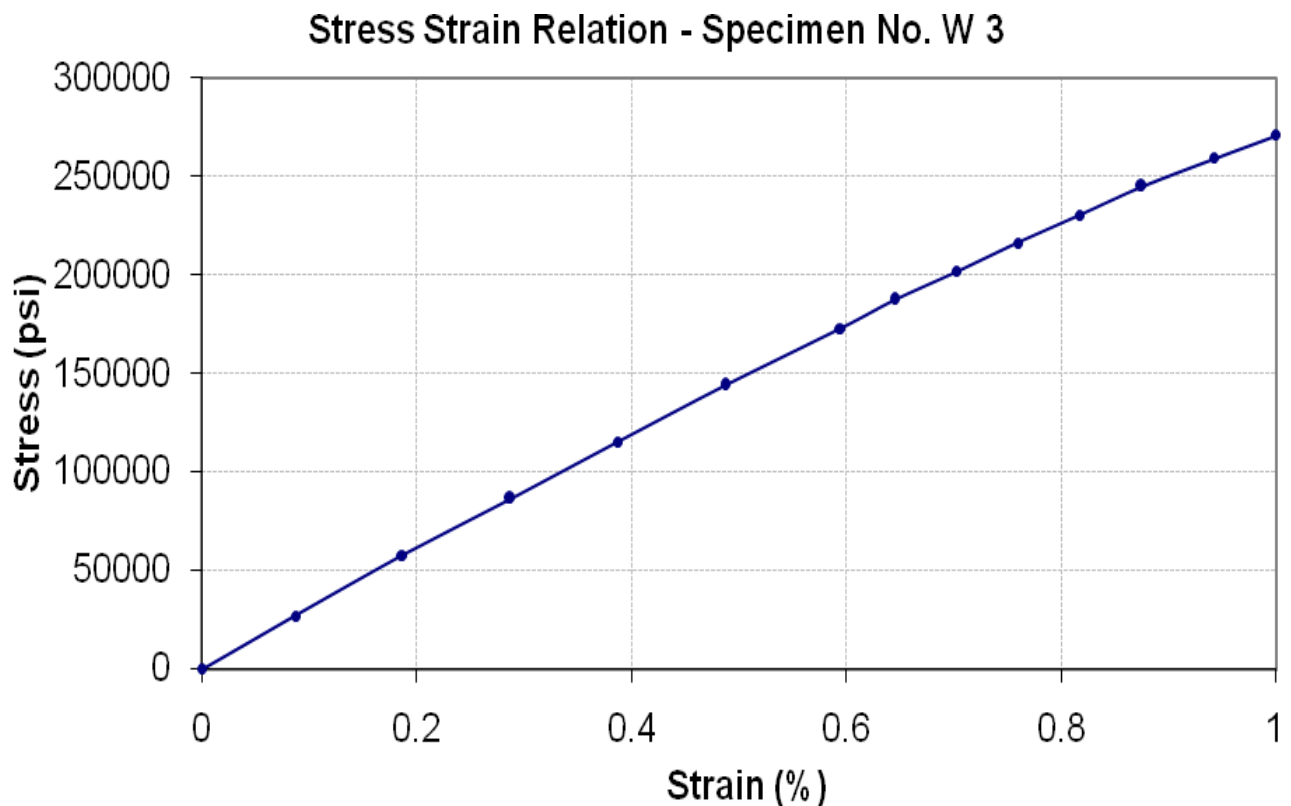
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To,
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Zeeruk International (Pvt) Ltd
Lahore – Sialkot Motorway

Reference # CED/TFL **32844** (Dr. Asif Hameed)
Reference of the request letter # LSM/RE-II/St/19/099

Dated: 15-03-2019
Dated: 15-03-2019

Graph (Page – 4/4)



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

To,
M/S Al-Abdullah Construction (Pvt) Ltd
Sukkur

Reference # CED/TFL **32849** (Dr. Qasim Khan)
Reference of the request letter # Nil

Dated: 15-03-2019

Dated: 15-03-2019

Tension Test Report (Page – 1/2)

Date of Test 20-03-2019
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	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)	E, GPa		
1	9.53 (3/8")	432.0	440.0	10100	99.08	11100	108.89	199	>3.50	xx
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
Only one sample 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.

Note:

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Test Floor Laboratory
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To,
M/S Al-Abdullah Construction (Pvt) Ltd
Sukkur

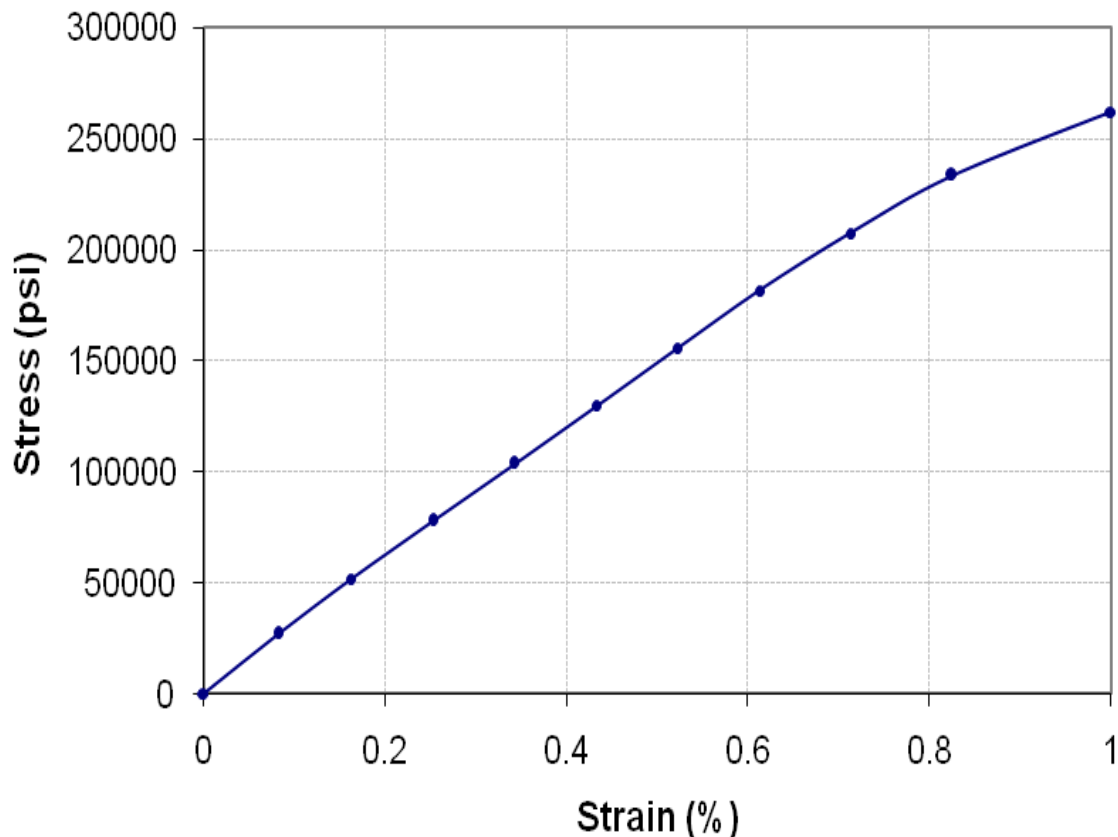
Reference # CED/TFL **32849** (Dr. Qasim Khan)
Reference of the request letter # Nil

Dated: 15-03-2019

Dated: 15-03-2019

Graph (Page – 2/2)

Stress Strain Relation--Specimen No.W 1



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Pakistan. Ph: 92-42-99029202

To,
M/S Indus Crete
Nooria Abad

Reference # CED/TFL **32850** (Dr. Qasim Khan)
Reference of the request letter # Nil

Dated: 15-03-2019

Dated: 15-03-2019

Tension Test Report (Page – 1/2)

Date of Test 20-03-2019
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	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)	E, GPa		
1	9.53 (3/8")	432.0	441.0	10100	99.08	11200	109.87	199	>3.50	xx
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
Only one sample 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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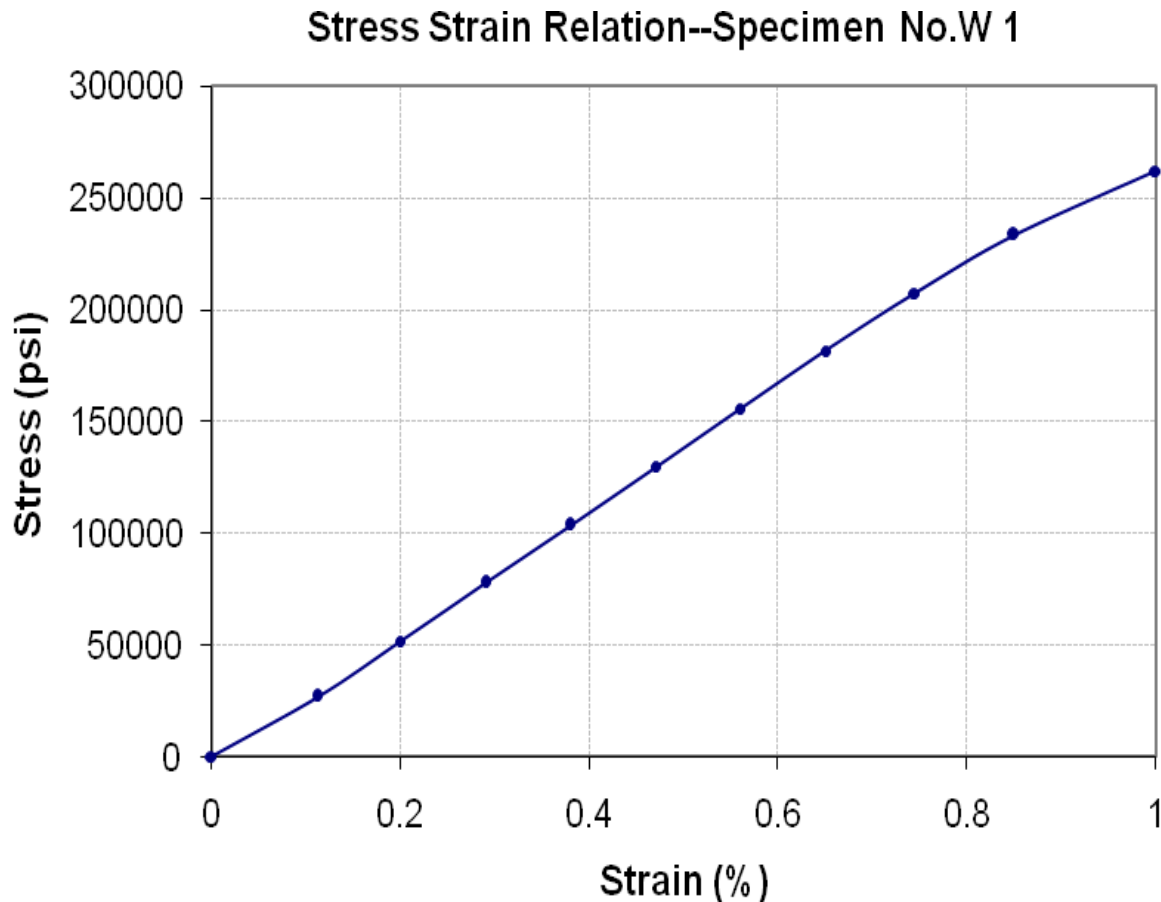
STRUCTURAL ENGINEERING DIVISION
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To,
M/S Indus Crete
Nooria Abad

Reference # CED/TFL **32850** (Dr. Qasim Khan)
Reference of the request letter # Nil

Dated: 15-03-2019
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Graph (Page – 2/2)



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To,
Resident Engineer
EA Consulting (Pvt) Ltd
Sukkur – Multan Motorway Project
Section-III
(AMS Industrial and Engineering Co. Karachi)

Reference # CED/TFL **32852** (Dr. Waseem Abbas)
Reference of the request letter # RE/EA/M.P-III/355-2019

Dated: 18-03-2019

Dated: 18-03-2019

Tension Test Report (Page – 1/2)

Date of Test 20-03-2019
Gauge length -----
Description Fence Wire Tensile Test as per AASHTO-M-181

Sr. No.	Diameter of Single Wire	Breaking Load		Remarks
	(mm)	(kg)	(kN)	
1	3.45	600	5.89	
2	3.50	600	5.89	
3	3.50	540	5.30	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
Only Three Samples for Test				

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To,
Resident Engineer
EA Consulting (Pvt) Ltd
Sukkur – Multan Motorway Project
Section-III
(Beijing Xinfangsheng Hardware and Alternating Appliance Co. Ltd (China))

Reference # CED/TFL **32852** (Dr. Waseem Abbas)
Reference of the request letter # RE/EA/M.P-III/356-2019

Dated: 18-03-2019
Dated: 18-03-2019

Tension Test Report (Page – 2/2)

Date of Test 20-03-2019
Gauge length -----
Description Fence Wire Tensile Test as per AASHTO-M-181

Sr. No.	Diameter of Single Wire	Breaking Load		Remarks
	(mm)	(kg)	(kN)	
1	3.45	560	5.49	
2	3.50	580	5.69	
3	3.45	560	5.49	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
Only Three Samples for Test				

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To,
Resident Engineer (Reach-1)
MM Pakistan (Pvt) Ltd
Peshawar Sustainable Bus Rapid Transit Corridor R-1

Reference # CED/TFL **32857** (Dr. Asif Hameed)
Reference of the request letter # PMCSC/R1/BRTC/RE/91

Dated: 18-03-2019
Dated: 16-03-2019

Tension Test Report (Page – 1/4)

Date of Test 20-03-2019
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	780.0	18400	180.50	19900	195.22	198	>3.50	xx
2	12.70 (1/2")	775.0	779.0	17900	175.60	19900	195.22	199	>3.50	xx
3	12.70 (1/2")	775.0	777.0	18000	176.58	19900	195.22	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

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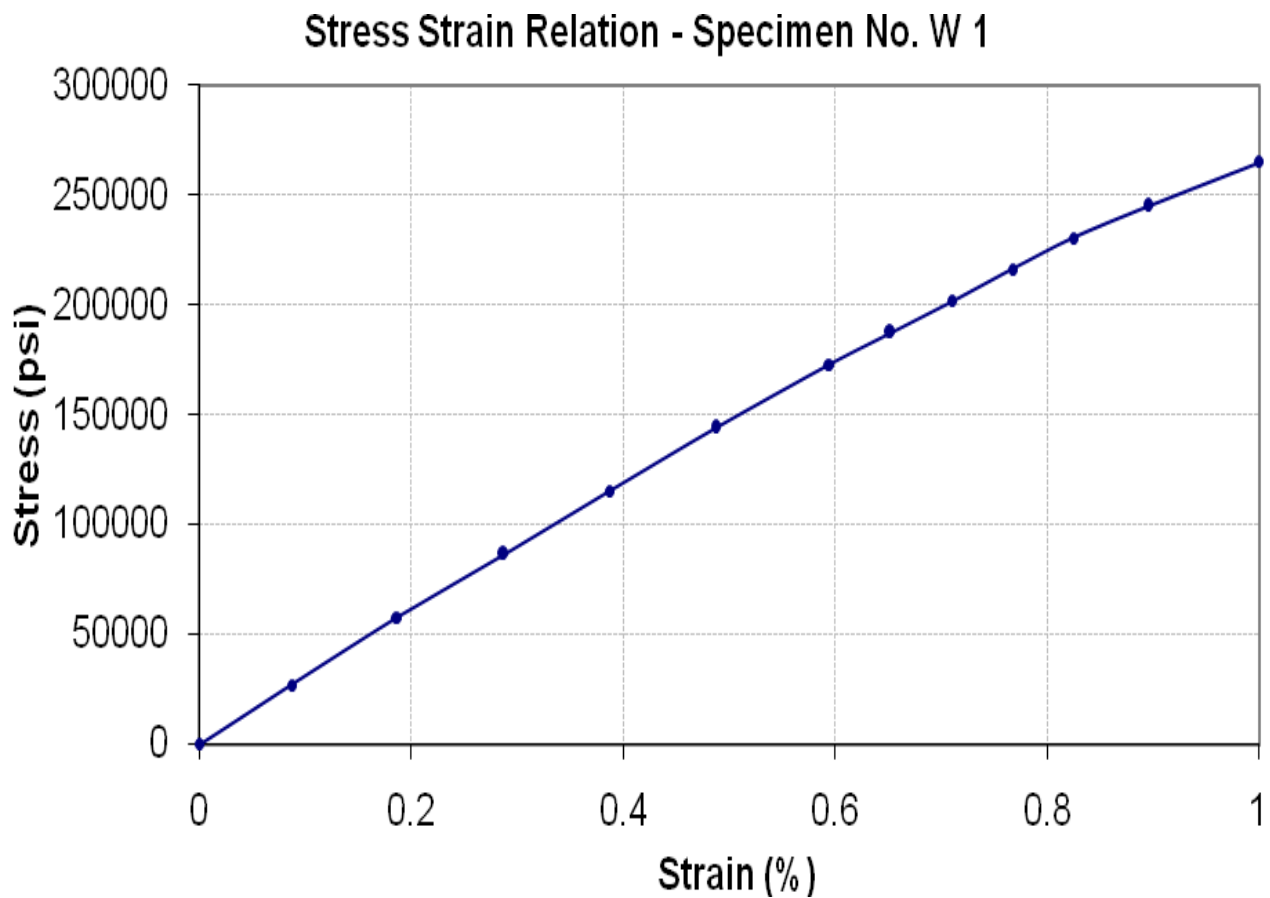
STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Resident Engineer (Reach-1)
MM Pakistan (Pvt) Ltd
Peshawar Sustainable Bus Rapid Transit Corridor R-1

Reference # CED/TFL **32857** (Dr. Asif Hameed)
Reference of the request letter # PMCSC/R1/BRTC/RE/91

Dated: 18-03-2019
Dated: 16-03-2019

Graph (Page – 2/4)



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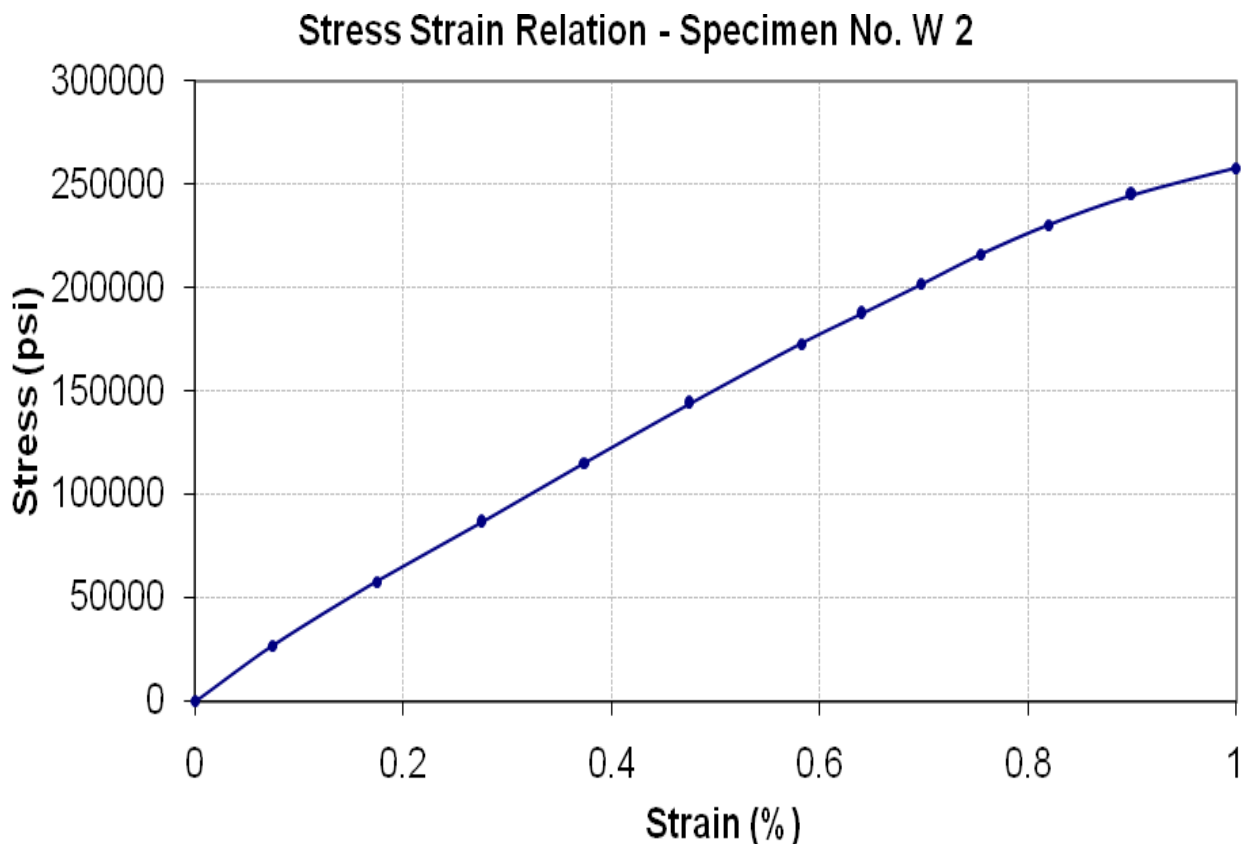
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To,
Resident Engineer (Reach-1)
MM Pakistan (Pvt) Ltd
Peshawar Sustainable Bus Rapid Transit Corridor R-1

Reference # CED/TFL **32857** (Dr. Asif Hameed)
Reference of the request letter # PMSC/R1/BRTC/RE/91

Dated: 18-03-2019
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Graph (Page – 3/4)



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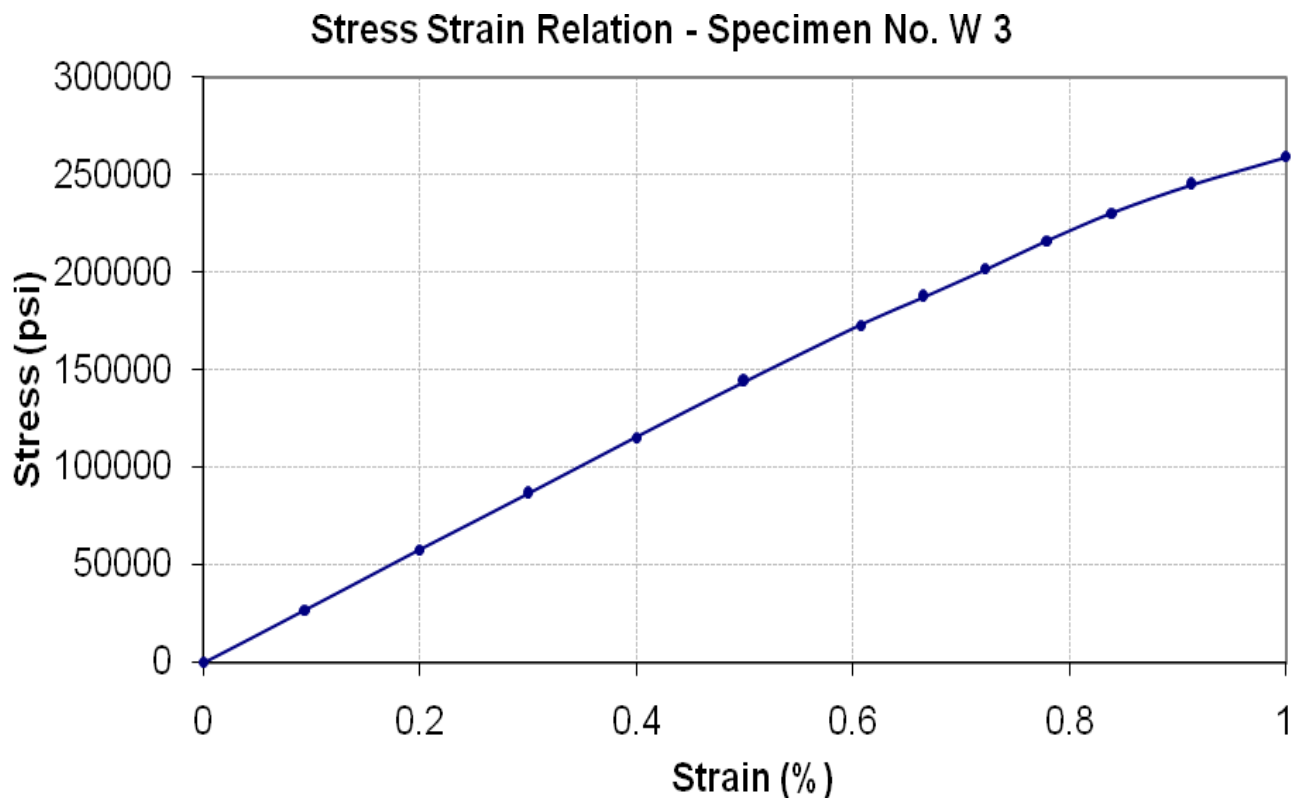
STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Resident Engineer (Reach-1)
MM Pakistan (Pvt) Ltd
Peshawar Sustainable Bus Rapid Transit Corridor R-1

Reference # CED/TFL **32857** (Dr. Asif Hameed)
Reference of the request letter # PMCSC/R1/BRTC/RE/91

Dated: 18-03-2019
Dated: 16-03-2019

Graph (Page – 4/4)



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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 High Level Bridge Over Sill Nullah on Road from Kaur to Nakka Pindi Gheb
District Attock

Reference # CED/TFL **32858** (Dr. M Rizwan Riaz)
Reference of the request letter # 3126/RE/ADP/SUJ/03/22

Dated: 18-03-2019
Dated: 16-03-2019

Tension Test Report (Page – 1/5)

Date of Test 19-03-2019
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	786.0	18300	179.52	20000	196.20	199	>3.50	xx
2	12.70 (1/2")	775.0	785.0	18200	178.54	20300	199.14	198	>3.50	xx
3	12.70 (1/2")	775.0	783.0	18400	180.50	19900	195.22	199	>3.50	xx
4	12.70 (1/2")	775.0	785.0	18400	180.50	19800	194.2	198	>3.50	xx
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	

Only four 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 Laboratories
UET Lahore, Pakistan.

Note:

- 1- You can See your reports On Internet in the following web site
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Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

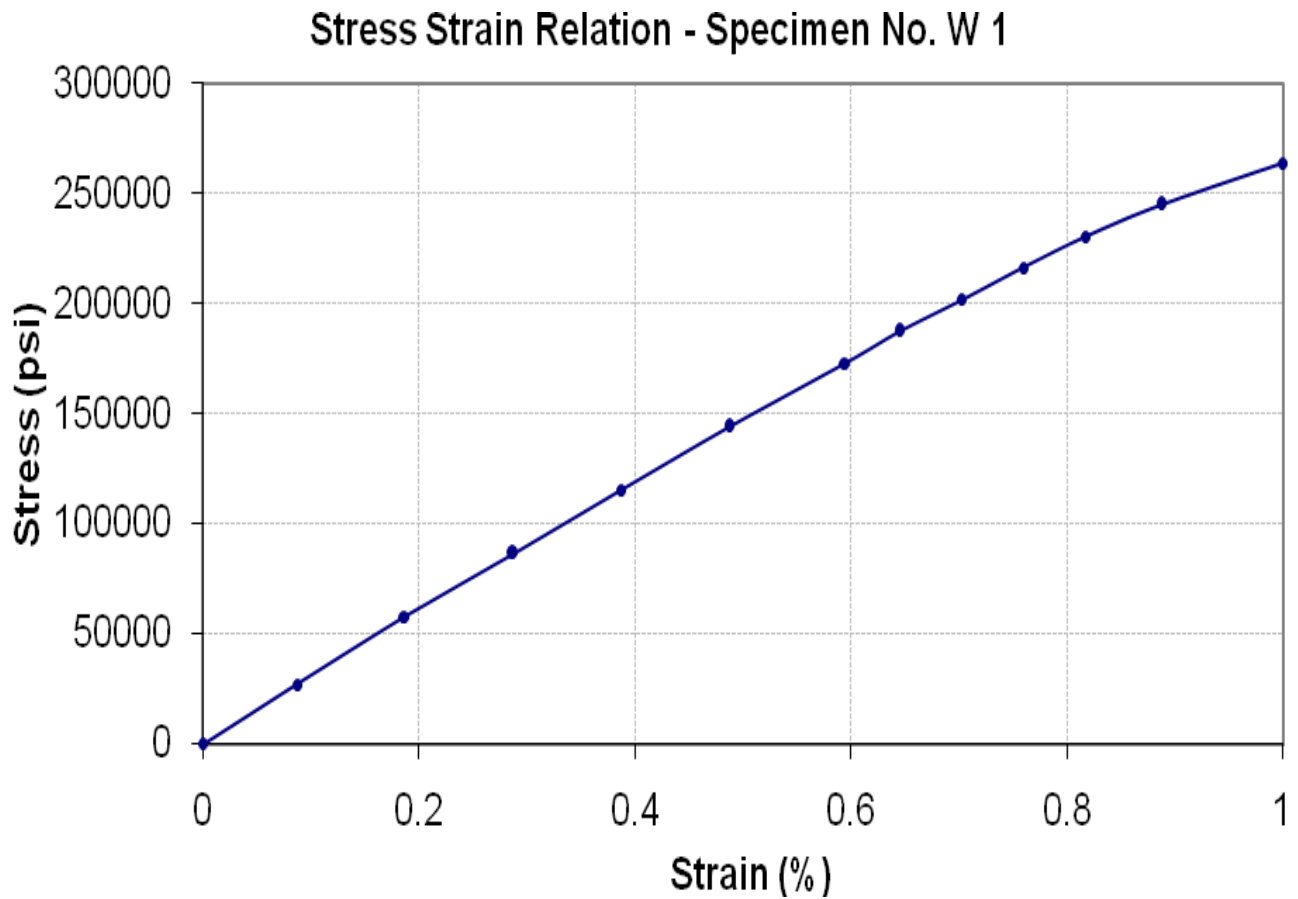
To,
Resident Engineer
NESPAK
Construction of High Level Bridge Over Sill Nullah on Road from Kaur to Nakka Pindi Gheb
District Attock

Reference # CED/TFL **32858** (Dr. M Rizwan Riaz)
Reference of the request letter # 3126/RE/ADP/SUJ/03/22

Dated: 18-03-2019

Dated: 16-03-2019

Graph (Page – 2/5)



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

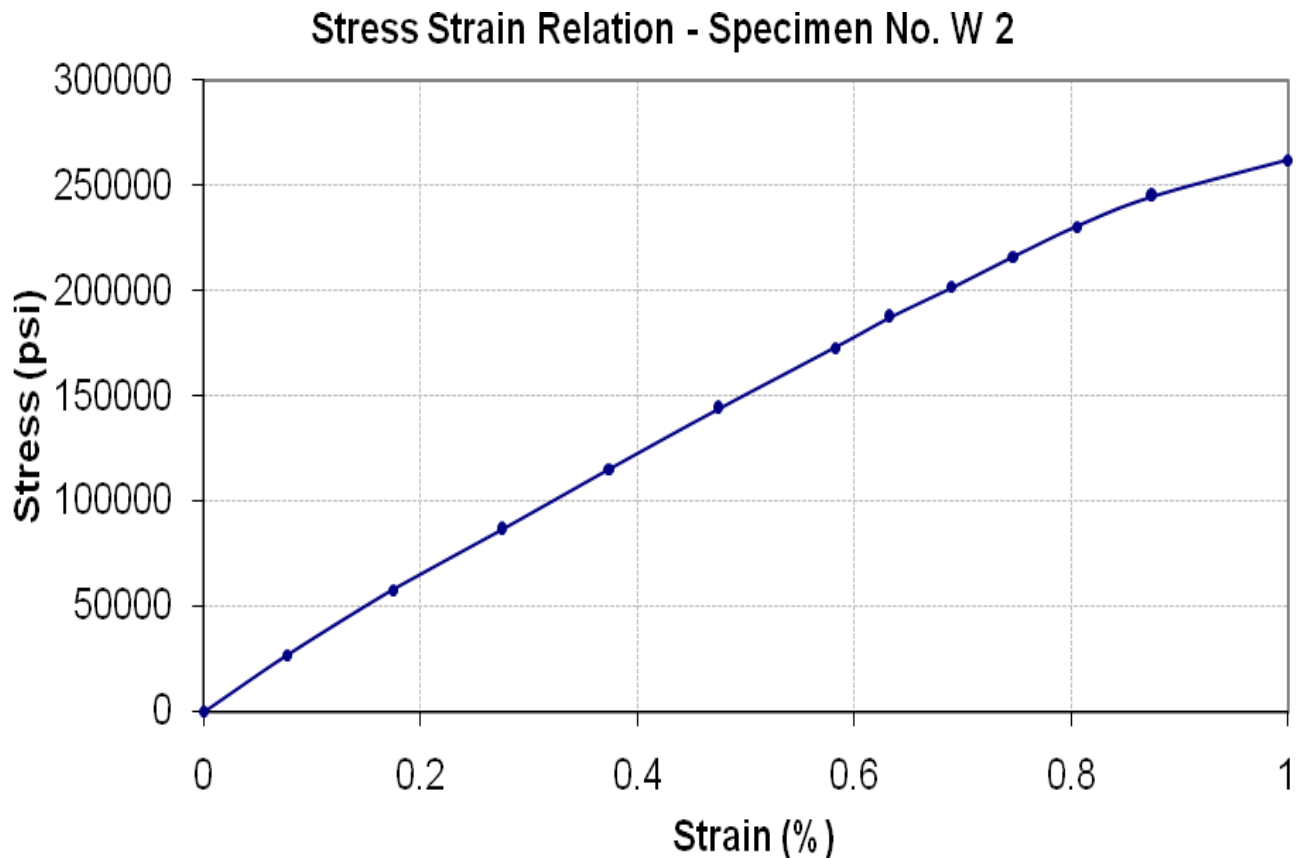
To,
Resident Engineer
NESPAK
Construction of High Level Bridge Over Sill Nullah on Road from Kaur to Nakka Pindi Gheb
District Attock

Reference # CED/TFL **32858** (Dr. M Rizwan Riaz)
Reference of the request letter # 3126/RE/ADP/SUJ/03/22

Dated: 18-03-2019

Dated: 16-03-2019

Graph (Page – 3/5)



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

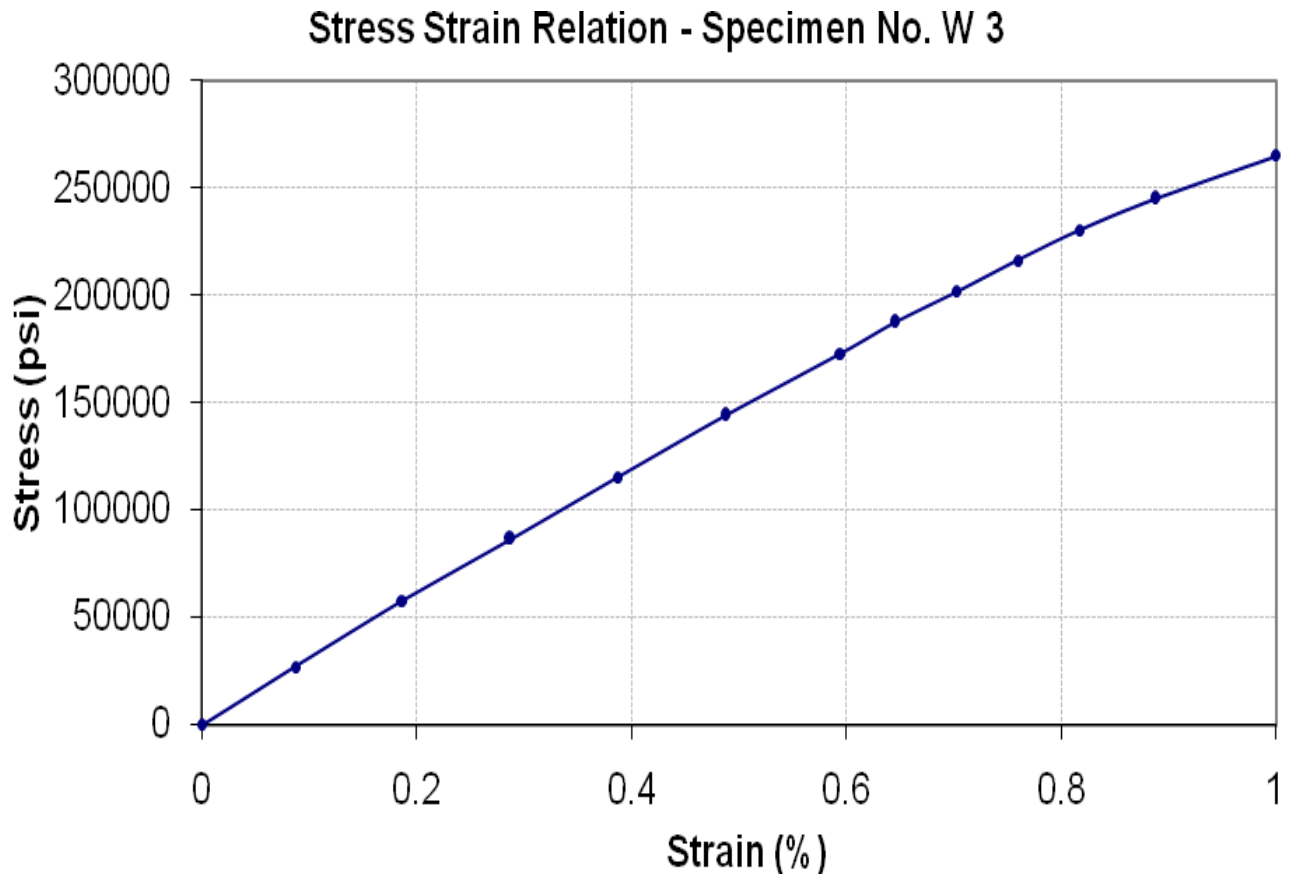
To,
Resident Engineer
NESPAK
Construction of High Level Bridge Over Sill Nullah on Road from Kaur to Nakka Pindi Gheb
District Attock

Reference # CED/TFL **32858** (Dr. M Rizwan Riaz)
Reference of the request letter # 3126/RE/ADP/SUJ/03/22

Dated: 18-03-2019

Dated: 16-03-2019

Graph (Page – 4/5)



I/C Testing Laboratoires
UET Lahore, Pakistan.

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

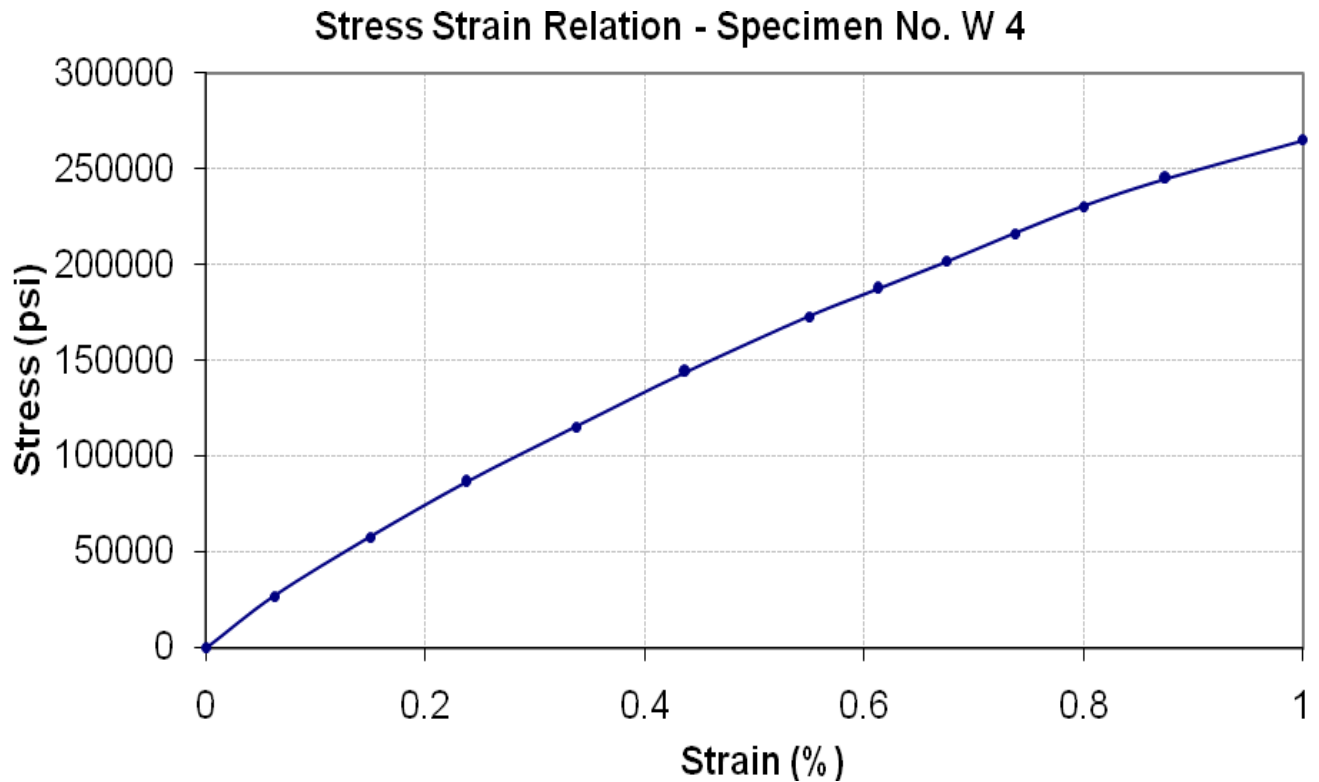
To,
Resident Engineer
NESPAK
Construction of High Level Bridge Over Sill Nullah on Road from Kaur to Nakka Pindi Gheb
District Attock

Reference # CED/TFL **32858** (Dr. M Rizwan Riaz)
Reference of the request letter # 3126/RE/ADP/SUJ/03/22

Dated: 18-03-2019

Dated: 16-03-2019

Graph (Page – 5/5)



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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
Spectora Engineering Solutions (Pvt) Limited
Construction of Thilikote Bridge at Jharikas Road District Haripur

Reference # CED/TFL **32868** (Dr. Asif Hameed)
Reference of the request letter # SES-TBH-07

Dated: 19-03-2019
Dated: 16-03-2019

Tension Test Report (Page – 1/2)

Date of Test 20-03-2019
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	775.0	18400	180.50	19400	190.31	199	>3.50	xx
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
Only one sample 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.

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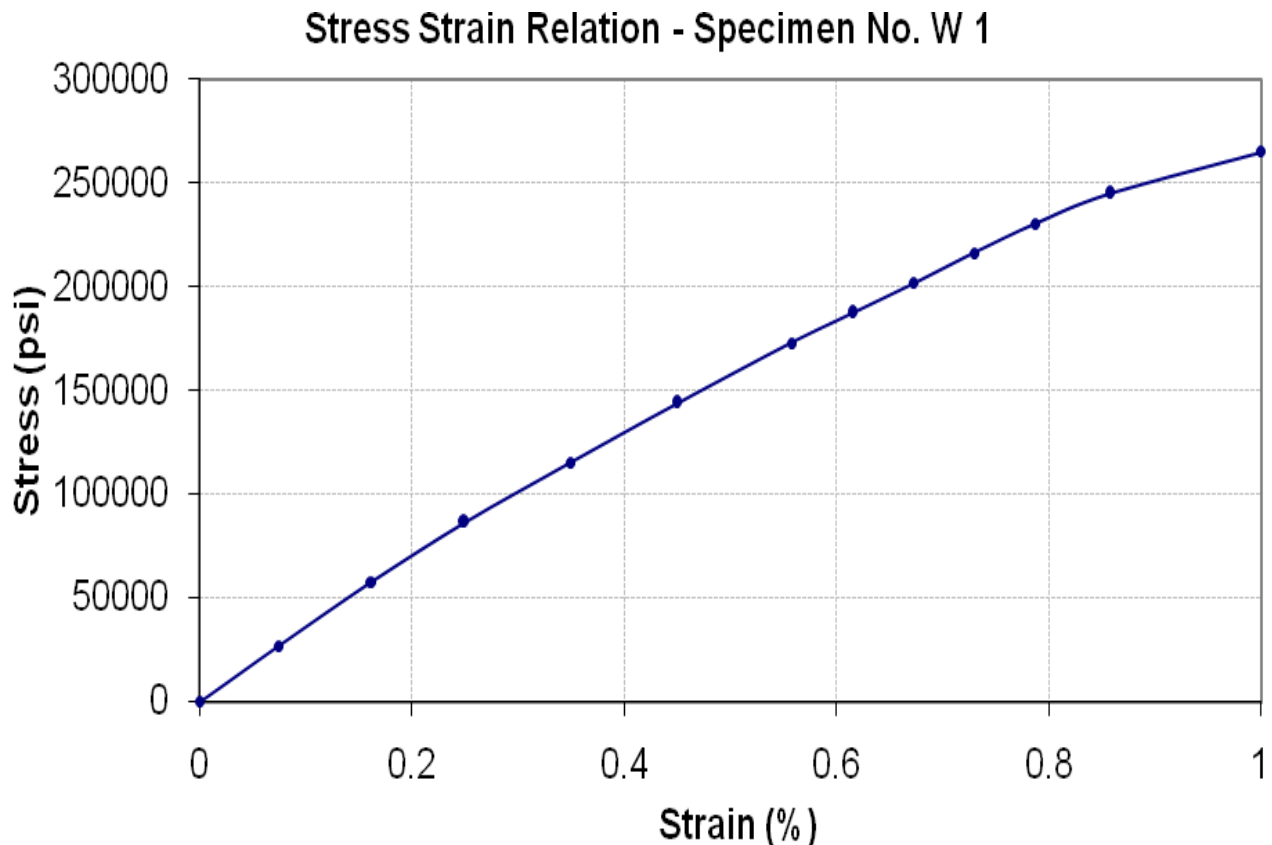
STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Resident Engineer
Spectora Engineering Solutions (Pvt) Limited
Construction of Thilikote Bridge at Jharikas Road District Haripur

Reference # CED/TFL **32868** (Dr. Asif Hameed)
Reference of the request letter # SES-TBH-07

Dated: 19-03-2019
Dated: 16-03-2019

Graph (Page – 2/2)



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,
M/S Defence Housing Authority.
Lahore Cantt
(Const. Of Commercial Plaza # 58 Sector-M DHA Ph-VI)(M/s Iftikhar & Coy)

Reference # CED/TFL **32869** (Dr. Waseem Abbas)
Reference of the request letter # 408/241/E/Lab/483

Dated: 19-03-2019
Dated: 13-03-2019

Tension Test Report (Page -1/1)

Date of Test 20-03-2019
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	0.390	3	0.382	0.11	0.115	3600	5000	72200	69200	100200	96200	1.10	13.8	Amreli Supreme
2	0.364	3	0.369	0.11	0.107	3700	5100	74200	76160	102200	105000	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.

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
Development of Kartar Pur Corridor

Reference # CED/TFL **32871** (Dr. M Rizwan Riaz)
Reference of the request letter # SA-394/DKC/SW.Test/SM/34

Dated: 19-03-2019
Dated: 17-03-2019

Tension Test Report (Page – 1/3)

Date of Test 20-03-2019
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" GPa	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)			
1	12.70 (1/2")	775.0	788.0	18500	181.49	20000	196.20	199	>3.50	44A
2	12.70 (1/2")	775.0	784.0	18300	179.52	20200	198.16	199	>3.50	45A
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
Only two samples for Test										

Witness by Aftab Baloch (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.

Note:

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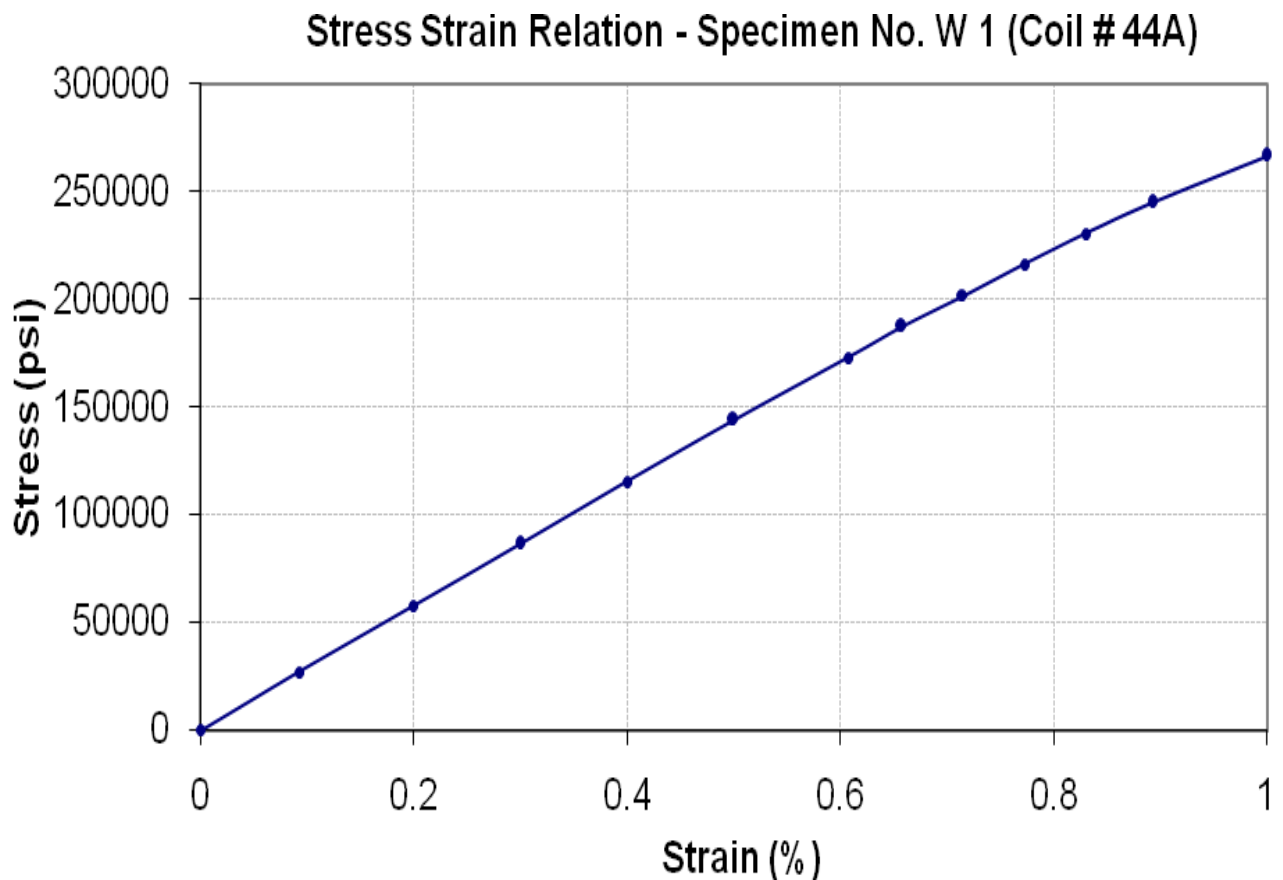
STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Resident Engineer
NESPAK
Development of Kartar Pur Corridor

Reference # CED/TFL **32871** (Dr. M Rizwan Riaz)
Reference of the request letter # SA-394/DKC/SW.Test/SM/34

Dated: 19-03-2019
Dated: 17-03-2019

Graph (Page – 2/3)



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UET Lahore, Pakistan.

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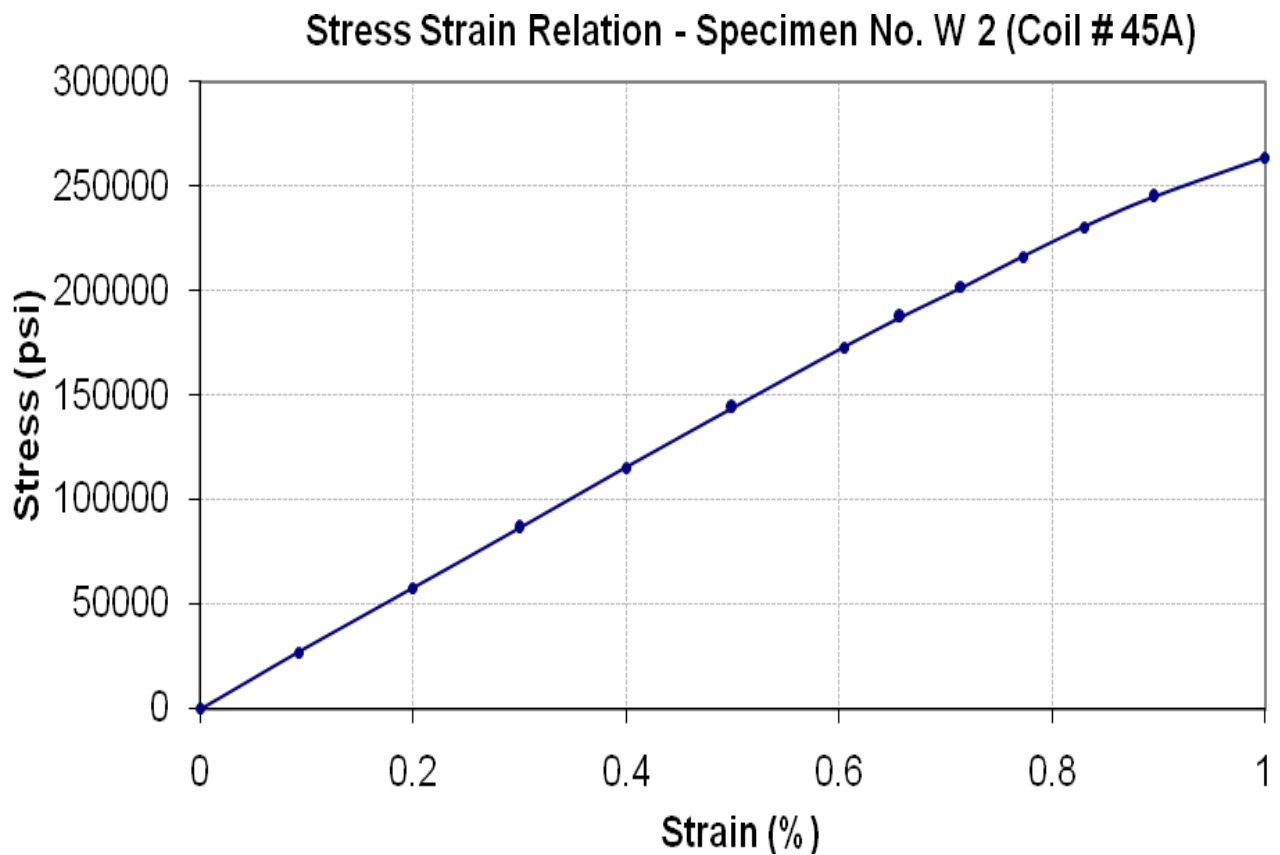
STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Resident Engineer
NESPAK
Development of Kartar Pur Corridor

Reference # CED/TFL **32871** (Dr. M Rizwan Riaz)
Reference of the request letter # SA-394/DKC/SW.Test/SM/34

Dated: 19-03-2019
Dated: 17-03-2019

Graph (Page – 3/3)



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,
 General Manager (Projects)
 A.S Enterprises
 (US Apparel & Textile Mills Ltd)(US & Dynamo(AA Associates)(Afco)

Reference # CED/TFL **32872** (Dr. Waseem Abbas)
 Reference of the request letter # USD/ASE/13

Dated: 19-03-2019
 Dated: 18-03-2019

Tension Test Report (Page -1/1)

Date of Test 20-03-2019
 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	0.408	10	9.92	0.11	0.120	4100	5300	82200	75400	106200	97500	0.80	10.0	
2	0.407	10	9.92	0.11	0.120	4200	5400	84200	77350	108200	99500	0.80	10.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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,
 Civil Engineer
 US Apparel & Textile Pvt Ltd
 US & Dynamo Mills (Pvt) Ltd
 230-231 Sundar Industrial Estate Lahore
 (FF Steel)

Reference # CED/TFL **32873** (Dr. Waseem Abbas)
 Reference of the request letter # TEST/USDY/19/01

Dated: 19-03-2019
 Dated: 19-03-2019

Tension Test Report (Page -1/1)

Date of Test 20-03-2019
 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	0.424	10	10.12	0.11	0.125	4100	5800	82200	72480	116300	102600	1.00	12.5	
2	0.418	10	10.04	0.11	0.123	4000	5700	80200	71820	114300	102400	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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.

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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
(Beijing Xinfangsheng Hardware and Alternating Appliance Co. Ltd (China))
Reference # CED/TFL **32874** (Dr. Waseem Abbas) Dated: 19-03-2019
Reference of the request letter # RE/EA/M.P-III/361-2019 Dated: 18-03-2019

Tension Test Report (Page – 1/1)

Date of Test 20-03-2019
Gauge length -----
Description Tension Wire Tensile Test as per AASHTO-M-181

Sr. No.	Diameter of Single Wire	Breaking Load		Remarks
	(mm)	(kg)	(kN)	
1	3.20	760	7.46	
2	3.20	840	8.24	
3	3.20	760	7.46	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
Only Three Samples for Test				

I/C Testing Laboratoires
UET Lahore, Pakistan.

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