



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 – Zeeruk (Jv)
CPEC (Western Route), Package-II
Isakhel

Reference # CED/TFL **32459** (Dr. Waseem Abbas)
Reference of the request letter # RE/NESPAK/P-2/CPEC-WR/670

Dated: 17-01-2019
Dated: 16-01-2019

Tension Test Report (Page – 1/4)

Date of Test 23-01-2019
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	18800	184.43	20200	198.16	199	>3.50	xx
2	12.70 (1/2")	775.0	784.0	17600	172.66	20100	197.18	198	>3.50	xx
3	12.70 (1/2")	775.0	784.0	18200	178.54	20200	198.16	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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UET Lahore, Pakistan.

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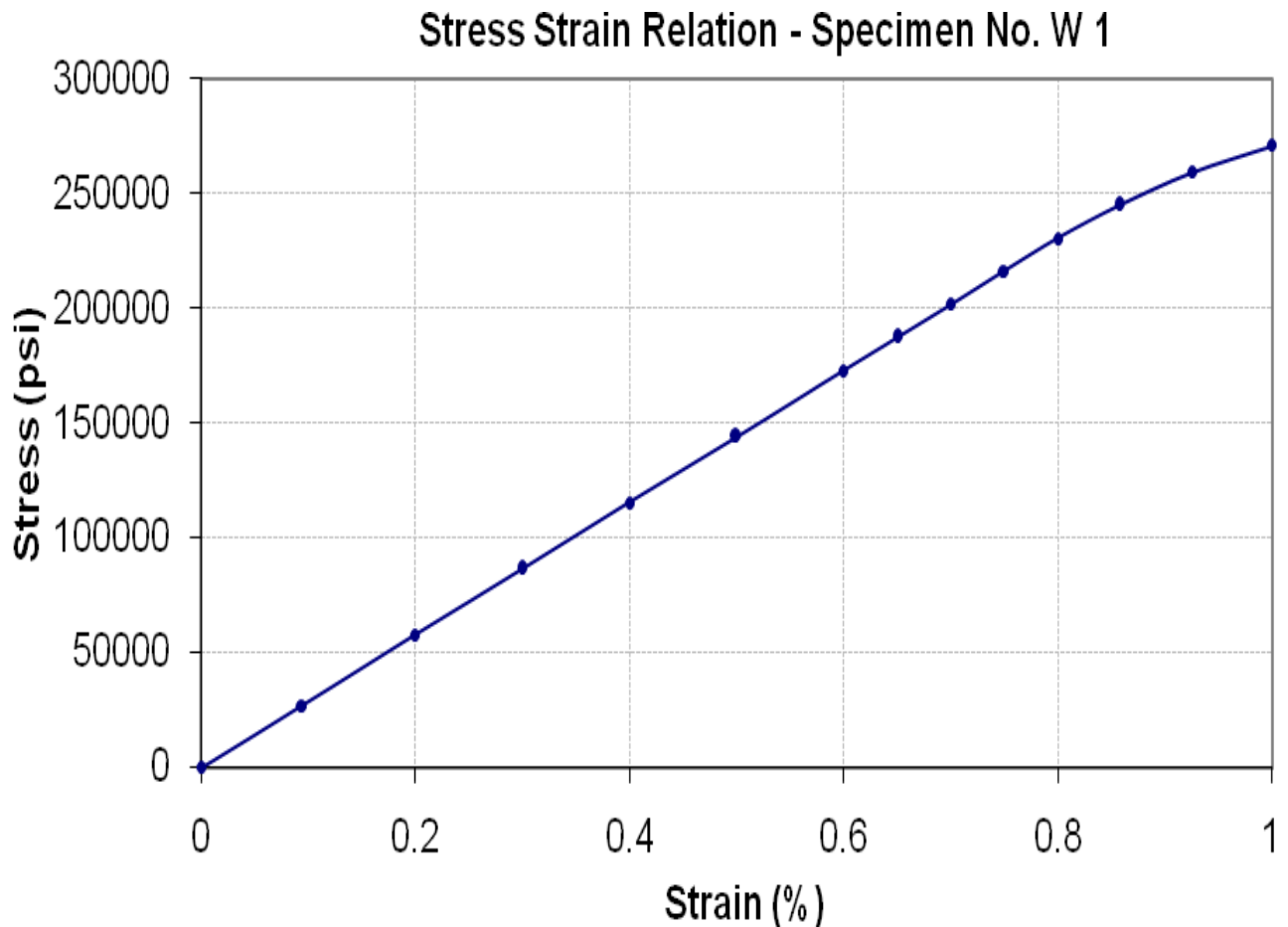
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Test Floor Laboratory
Department of Civil Engineering
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To,
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Dated: 17-01-2019
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Graph (Page – 2/4)



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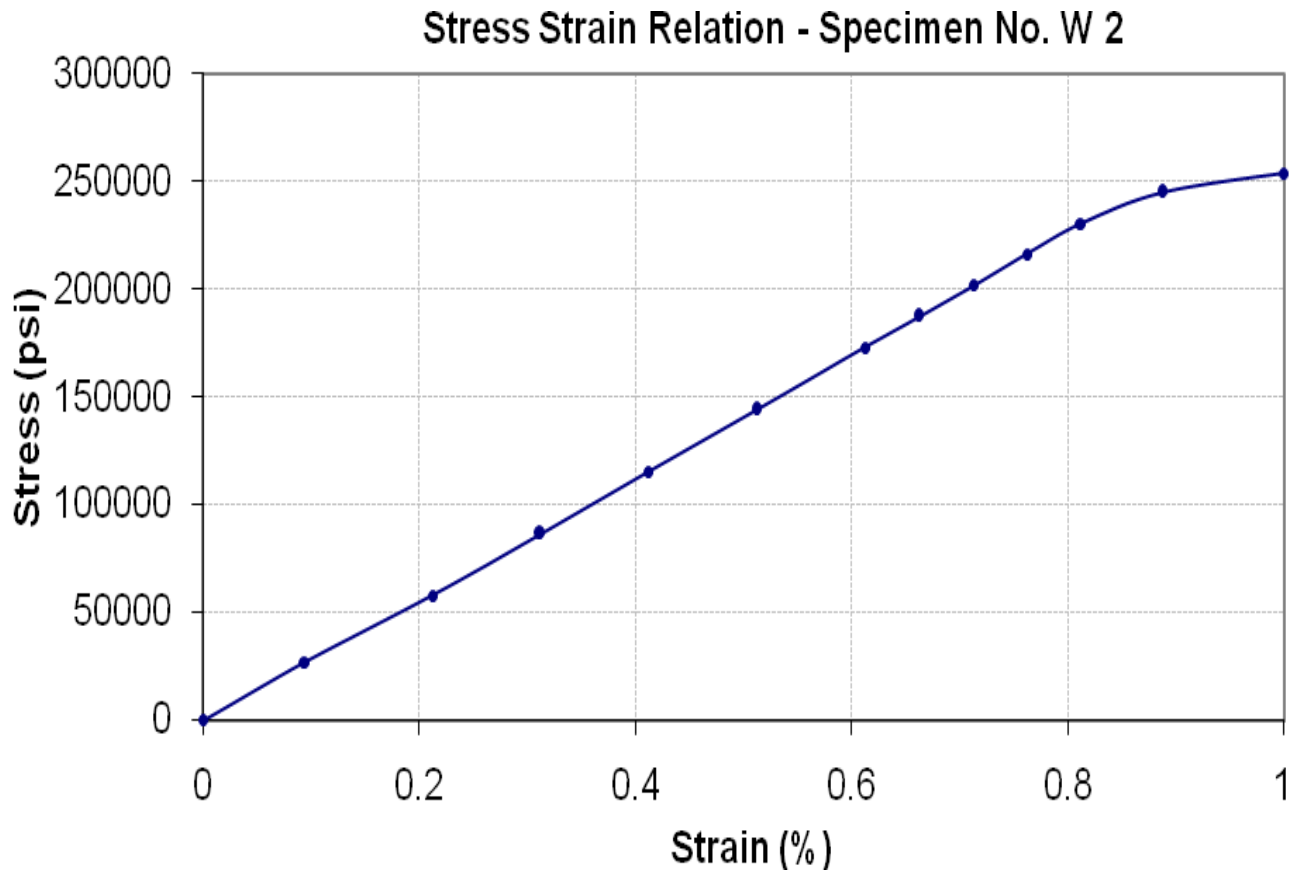
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Dated: 17-01-2019
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Graph (Page – 3/4)



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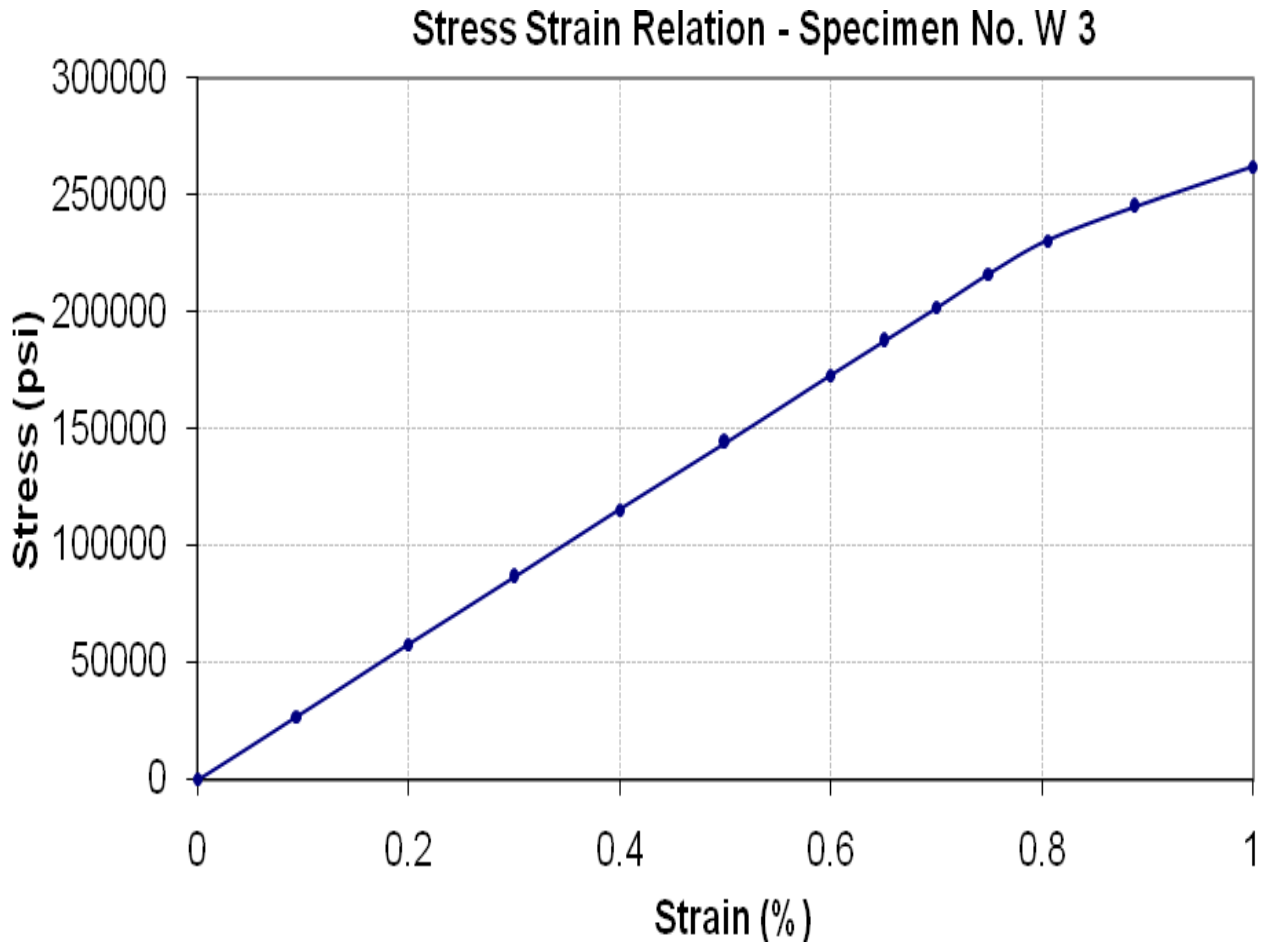
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Graph (Page – 4/4)



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Test Floor Laboratory
Department of Civil Engineering
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To,
Acting Chief Resident Engineer
Trimmu Panjnad Barrages Consultants
Trimmu Panjnad Barrages Improvement Project

Reference # CED/TFL **32466** (Dr. Waseem Abbas)
Reference of the request letter # TPBC/CRE/1549

Dated: 18-01-2019
Dated: 16-01-2019

Tension Test Report (Page – 1/2)

Date of Test 23-01-2019
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	783.0	18700	183.45	20000	196.20	198	>3.50	20153
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
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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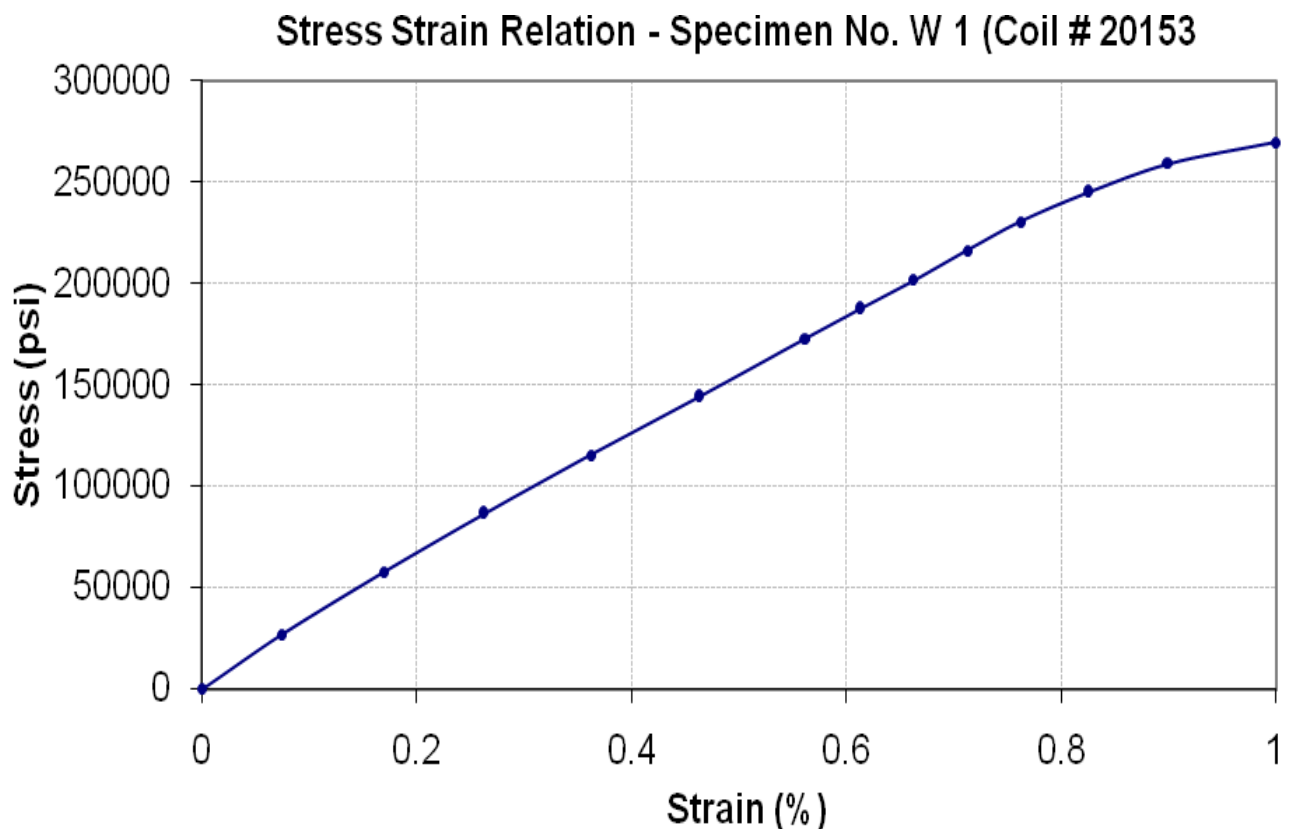
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Pakistan. Ph: 92-42-99029202

To,
Acting Chief Resident Engineer
Trimmu Panjnad Barrages Consultants
Trimmu Panjnad Barrages Improvement Project

Reference # CED/TFL **32466** (Dr. Waseem Abbas)
Reference of the request letter # TPBC/CRE/1549

Dated: 18-01-2019
Dated: 16-01-2019

Graph (Page – 2/2)



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

Reference # CED/TFL **32476** (Dr. Rizwan Azam)
 Reference of the request letter # LSMP/RE-1/2018/622

Dated: 21-01-2019
 Dated: 21-01-2019

Tension Test Report (Page -1/1)

Date of Test 23-01-2019
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test

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	4.113	32	31.51	1.27	1.209	45200	58800	78500	82410	102100	107200	1.50	18.8	
2	4.121	32	31.54	1.27	1.211	45600	59400	79200	82980	103100	108100	1.40	17.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
32mm 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,
M/S Tijaarat Developers
Lahore

Reference # CED/TFL **32478** (Dr. Rizwan Azam)
Reference of the request letter # Nil

Dated: 22-01-2019
Dated: 22-01-2019

Tension Test Report (Page -1/1)

Date of Test 23-01-2019

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	0.422	3	0.398	0.11	0.124	3900	5200	78200	69270	104200	92400	1.40	17.5	
2	0.418	3	0.396	0.11	0.123	4200	5300	84200	75300	106200	95100	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

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UET Lahore, Pakistan.

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Department of Civil Engineering
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To,
M/S Defence Housing Authority.
Lahore Cantt
(Const. Infra Dev Works of IVY Green Sector-Z Ph-VIII)(M/s MCC Ruba)

Reference # CED/TFL **32479** (Dr. Rizwan Azam)
Reference of the request letter # 408/241/E/Lab/266/419

Dated: 22-01-2019
Dated: 22-01-2019

Tension Test Report (Page -1/1)

Date of Test 23-01-2019
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	0.371	3	0.373	0.11	0.109	3200	5000	64200	64650	100200	101100	1.00	12.5	City Steel
2	0.376	3	0.375	0.11	0.111	3500	5300	70200	69810	106200	105800	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
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To,
 Resident Engineer
 TYPSA-Asian Jv
 Revamping of DHQs & THQs Hospitals in Punjab Province Package- 3-A (Prime Steel)

Reference # CED/TFL **32480** (Dr. Rizwan Azam) Dated: 22-01-2019
 Reference of the request letter # AsCE TYPSA-DHQ-CHNT-P3a-DCT-14 Dated: 21-01-2019

Tension Test Report (Page -1/1)

Date of Test 23-01-2019

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	0.375	3	0.375	0.11	0.110	3300	5100	66200	65990	102200	102000	1.00	12.5	
2	0.379	3	0.377	0.11	0.111	3400	5200	68200	67280	104200	102900	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

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To,
 Resident Engineer
 Dar Engineering
 Punjab Agriculture Food and Durg Authority's Science Enclave, Lahore Pakistan
 (Heat No. P-889 – Kamran Steel)

Reference # CED/TFL **32482** (Dr. Rizwan Azam)

Dated: 22-01-2019

Reference of the request letter # DB-78/DAR/RE/ME/2018/0173

Dated: 18-01-2019

Tension Test Report (Page -1/1)

Date of Test 23-01-2019

Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ Size		Area (in ²)		Yield load (kg)	Breaking Load (kg)	Yield Stress (psi)		Ultimate Stress (psi)		Elongation (inch)	% Elongation	Remarks
		Nominal (#)	Actual (inch)	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.359	3	0.367	0.11	0.106	3700	4900	74200	77190	98200	102300	1.00	12.5	
2	0.360	3	0.367	0.11	0.106	3800	5000	76200	79180	100200	104200	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

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To,
Resident Engineer
NESPAK
Construction of Khazana Bypass Bridge over River Panjkora District Low Dir

Reference # CED/TFL **32486** (Dr. Waseem Abbas)
Reference of the request letter # 3956/021/NUK/18/113

Dated: 23-01-2019
Dated: 16-01-2019

Tension Test Report (Page – 1/2)

Date of Test 23-01-2019
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	782.0	18600	182.47	20200	198.16	199	>3.50	20165
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
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

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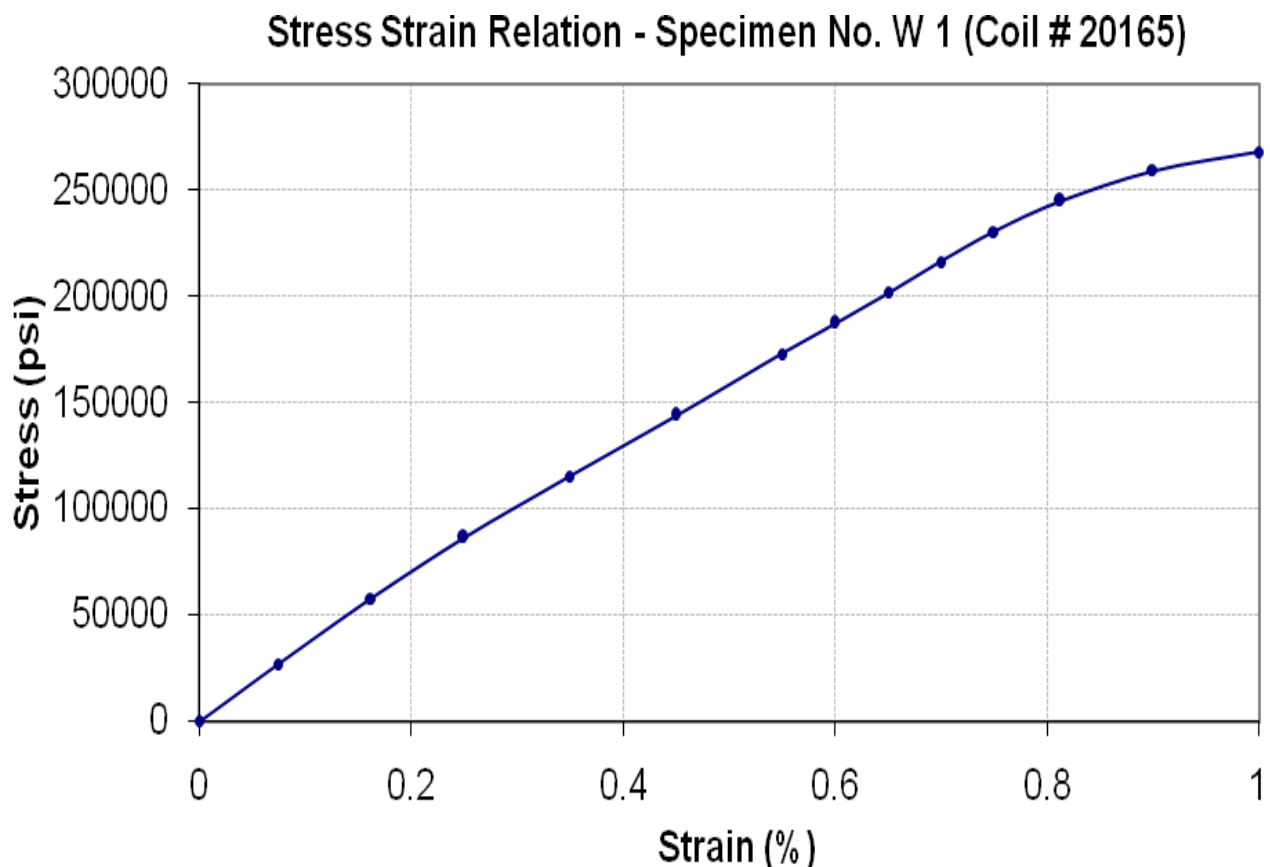
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To,
Resident Engineer
NESPAK
Construction of Khazana Bypass Bridge over River Panjkora District Low Dir

Reference # CED/TFL **32486** (Dr. Waseem Abbas)
Reference of the request letter # 3956/021/NUK/18/113

Dated: 23-01-2019
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Graph (Page – 2/2)



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