



**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 of Faisalabad-Khanewal Motorway (M-4) Project, Package-III, Shortkot-Dinpur,  
 Section 3A

Reference # CED/TFL **32493** (Dr. Ali Ahmed)  
 Reference of the request letter # RE/M-4/3A/2019/278

Dated: 23-01-2019  
 Dated: 22-01-2019

**Tension Test Report** (Page – 1/1)

Date of Test 28-01-2019  
 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	1.90x0.275	0.52	2000	2600	3827.75	4976.08	0.55	27.50	S-1
2		1.90x0.275	0.52	2100	2700	4019.14	5167.46	0.50	25.00	
3	W-Section	1.90x0.275	0.52	2100	2600	4019.14	4976.08	0.55	27.50	S-2
4		1.90x0.275	0.52	2100	2700	4019.14	5167.46	0.55	27.50	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
<b>Only Four Samples for Tensile and Four Samples for Bend Test</b>										
<b>Bend Test</b>										
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.**

Note:

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To,  
 Resident Engineer  
 RENARDET S.A ((M-4), Package-III-A)  
 Construction of Faisalabad - Khanewal (M-4) Project Package-III, Shorkot-Dinpur Section 3A  
 (M/s D & L International.)

Reference # CED/TFL **32494** (Dr. Ali Ahmed)  
 Reference of the request letter # RE/M-4/3A/2019/279

Dated: 23-01-2019  
 Dated: 22-01-2019

**Tension Test Report** (Page – 1/2)

Date of Test 28-01-2019  
 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	2.40x0.61	1.46	5800	7400	3961.75	5054.64	0.60	30.00	
2	Vertical Post	2.40x0.61	1.46	5400	7500	3688.52	5122.95	0.50	25.00	
3	Vertical Post	2.40x0.60	1.44	5100	7200	3541.67	5000.00	0.60	30.00	
4	Vertical Post	2.40x0.61	1.46	5200	7300	3551.91	4986.34	0.65	32.50	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
<b>Only Four Samples for Tensile Test</b>										
<b>Bend Test</b>										

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To,  
Resident Engineer  
RENARDET S.A ((M-4), Package-III-A)  
Construction of Faisalabad - Khanewal (M-4) Project Package-III, Shorkot-Dinpur Section 3A  
(M/s D & L International.)

Reference # CED/TFL **32494** (Dr. Ali Ahmed)  
Reference of the request letter # RE/M-4/3A/2019/279

Dated: 23-01-2019  
Dated: 22-01-2019

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

Date of Test 28-01-2019  
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)	(mm)	(kg/m)	(mm)	
1	Vertical Post	1395	104.40	13.36	6.10	
2	Vertical Post	1418	105.90	13.39	6.10	
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	
<b>Only Two Samples for Test</b>						

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

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To,  
Resident Engineer  
NESPAK  
Widening and Rehabilitation of Road from Mufti Mehmood Flyover upto Wahid Gari Including  
Reconstruction of Old Bundi Bridge Peshawar (WMI)

Reference # CED/TFL **32503** (Dr. Ali Ahmed) Dated: 24-01-2019  
Reference of the request letter # 3848/021/FF/Bakhshoo/Strand Dated: 22-01-2019

**Tension Test Report** (Page – 1/2)

Date of Test 28-01-2019  
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	781.0	17500	171.68	19700	193.26	199	>3.50	20215
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
<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 Laboratories**  
**UET Lahore, Pakistan.**

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To,  
Resident Engineer  
NESPAK  
Widening and Rehabilitation of Road from Mufti Mehmood Flyover upto Wahid Gari Including  
Reconstruction of Old Bundi Bridge Peshawar (WMI)

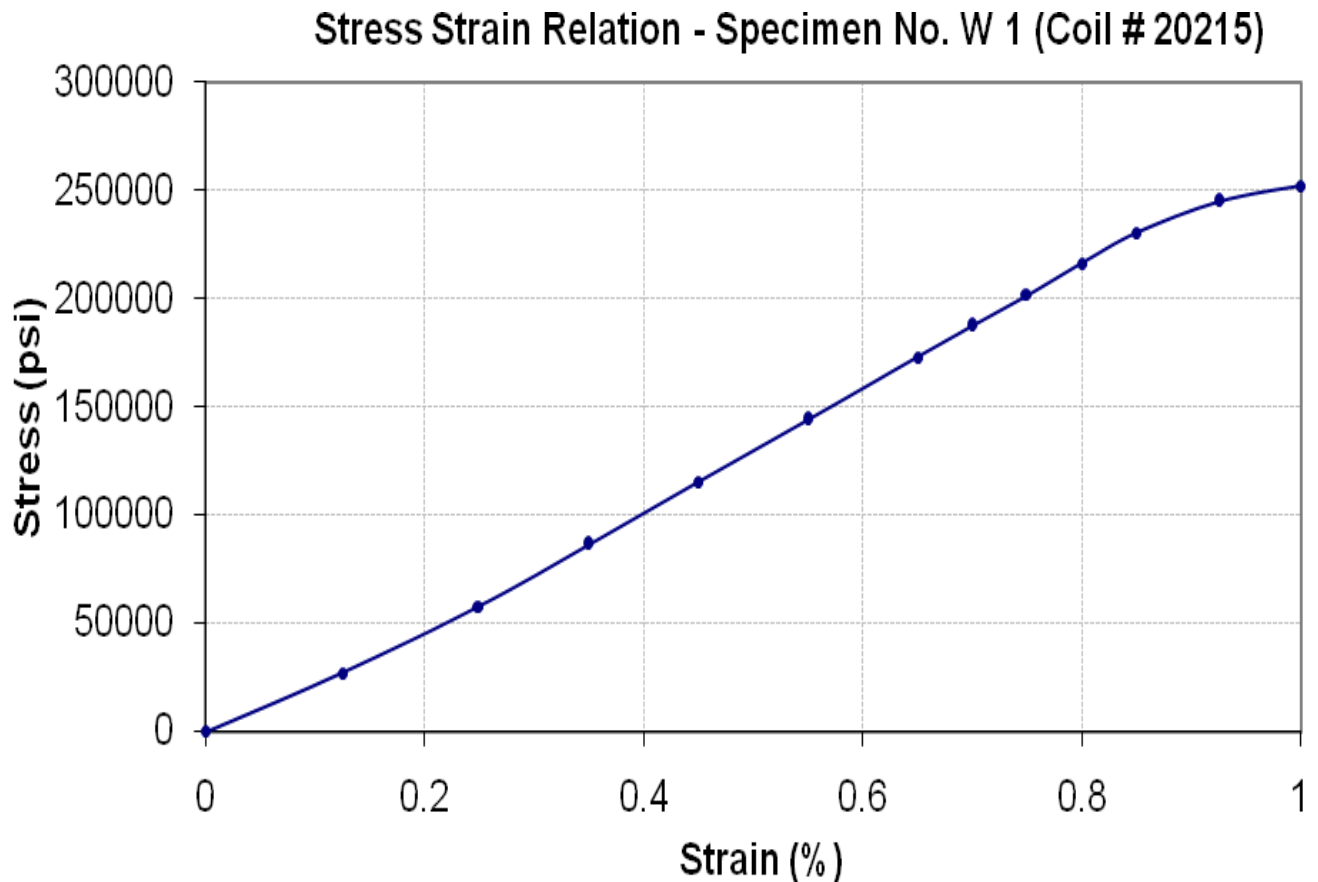
Reference # CED/TFL **32503** (Dr. Ali Ahmed)

Dated: 24-01-2019

Reference of the request letter # 3848/021/FF/Bakhshoo/Strand

Dated: 22-01-2019

**Graph** (Page – 2/2)



**I/C Testing Laboratoires**  
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To,  
Resident Engineer  
RENARDET S.A ((M-4), Package-II)  
Construction of Faisalabad-Khanewal Motorway (M-4) Project, Package-II, Jamani-Shorkot,  
Section 2B (93+600 – 95+400 L/S & Waryam wala Interchange) (M/s China Railway First  
Group, Ltd)  
Reference # CED/TFL **32508** (Dr. Ali Ahmed) Dated: 25-01-2019  
Reference of the request letter # RE/M-4/2B/2019/524 Dated: 24-01-2019

**Tension Test Report** (Page – 1/3)

Date of Test 28-01-2019  
Gauge length -----  
Description Chain Link Fence Wire Tensile Test as per AASHTO-M-181

Sr. No.	Diameter of Wire	Breaking Load		Remarks
	(mm)	(kg)	(kN)	
1	3.20	500	4.91	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
<b>Only One Sample for Test</b>				

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**UET Lahore, Pakistan.**

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To,  
Resident Engineer  
RENARDET S.A ((M-4), Package-II)  
Construction of Faisalabad-Khanewal Motorway (M-4) Project, Package-II, Jamani-Shorkot,  
Section 2B (118+150 – 119+200 L/S & 118+500 – 119+200 R/S) (M/s China Railway First  
Group, Ltd)  
Reference # CED/TFL **32508** (Dr. Ali Ahmed) Dated: 25-01-2019  
Reference of the request letter # RE/M-4/2B/2019/523 Dated: 24-01-2019

**Tension Test Report** (Page – 2/3)

Date of Test 28-01-2019  
Gauge length -----  
Description Chain Link Fence Wire Tensile Test as per AASHTO-M-181

Sr. No.	Diameter of Wire	Breaking Load		Remarks
	(mm)	(kg)	(kN)	
1	3.20	500	4.91	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
<b>Only One Sample for Test</b>				

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Construction of Faisalabad-Khanewal Motorway (M-4) Project, Package-II, Jamani-Shorkot,  
Section 2B (103+500 – 105+500 R/S) (M/s China Railway First Group, Ltd)

Reference # CED/TFL **32508** (Dr. Ali Ahmed)  
Reference of the request letter # RE/M-4/2B/2019/522

Dated: 25-01-2019  
Dated: 24-01-2019

**Tension Test Report** (Page – 3/3)

Date of Test 28-01-2019  
Gauge length -----  
Description Chain Link Fence Wire Tensile Test as per AASHTO-M-181

Sr. No.	Diameter of Wire	Breaking Load		Remarks
	(mm)	(kg)	(kN)	
1	3.20	500	4.91	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
<b>Only One Sample for Test</b>				

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