



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

To,
 Deputy Director (QCD)
 WASA, LDA, Lahore
 (Manufacturing of R.C.C Manhole Covers in Different Sizes)(M/s Eagle RCC Pipe Industry)

Reference # CED/TFL **34500** (Dr. Asad Ali)
 Reference of the request letter # QCD/88-89

Dated: 17-01-2020
 Dated: 13-01-2020

Tension Test Report (Page – 1/2)

Date of Test 23-01-2020
 Gauge length 2 inches
 Description Angle Iron 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
	(inch)	(mm)	(mm ²)	(kg)	(kg)	(MPa)	(MPa)	(in)		
1	2x2x1/4	21.60x6.10	131.76	6000	8700	446.72	647.75	0.50	25.00	
2		21.60x6.20	133.92	5700	8300	417.54	608.00	0.50	25.00	
-	-	-	-	-	-	-	-	-	-	
-		-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	
-		-	-	-	-	-	-	-	-	-
Only Two Samples for Tensile and One sample for Bend Test										
Bend Test										
Strip Taken from Angle Iron (2"x2"x1/4") Bend Test Through 180° is Satisfactory										

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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To,
Deputy Director (QCD)
WASA, LDA, Lahore
(Manufacturing of R.C.C Manhole Covers in Different Sizes)(M/s Eagle RCC Pipe Industry)

Reference # CED/TFL **34500** (Dr. Asad Ali)
Reference of the request letter # QCD/88-89

Dated: 17-01-2020
Dated: 13-01-2020

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

Date of Test 23-01-2020
Gauge length -----
Description Angle Iron Weight and Size Test

Sr. No.	Designation	Weight	Length	Weight per Unit Length	L-1	L-2	Thickness	Remark
	(inch)	(g)	(cm)	(kg/m)	(mm)	(mm)	(mm)	
1	2x2x1/4	2725	61.40	4.44	52.40	50.80	6.20	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
Only One Sample for Test								

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To,
 G.E (Army) –II
 Gujranwala Cantt
 (CA No. ENC-A-176/2018 – Const of MLRS Repair Wksp Shed with Allied Facilities for 607
 Regl Wksp at Gwa)(M/s Riaz-ud-Din Engineering (Pvt) Ltd)

Reference # CED/TFL **34519** (Dr. Usman Akmal)
 Reference of the request letter # 6000-674/11/E-6

Dated: 21-01-2020
 Dated: 21-01-2020

Tension Test Report (Page -1/1)

Date of Test 23-01-2020
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ Size (inch)		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	0.372	3/8	0.373	0.11	0.109	3000	4400	60200	60440	88200	88700	1.00	12.5	
2	0.270	3/8	0.318	0.11	0.079	3200	4400	64200	88860	88200	122200	0.80	10.0	
3	0.381	3/8	0.378	0.11	0.112	3500	5800	70200	68810	116300	114100	0.90	11.3	
4	0.357	3/8	0.366	0.11	0.105	2900	4300	58200	60880	86200	90300	0.90	11.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only four samples for tensile test														
Bend Test														

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UET Lahore, Pakistan.

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Test Floor Laboratory
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To,
 Assistant Director-II
 Building Research Station
 Lahore
 (Koh-e-Noor Steel)

Reference # CED/TFL **34523** (Dr. Usman Akmal)
 Reference of the request letter # 154-R/194

Dated: 22-01-2020
 Dated: 22-01-2020

Tension Test Report (Page -1/1)

Date of Test 23-01-2020
 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 ²)		Yield load (kg)	Breaking Load (kg)	Yield Stress (psi)		Ultimate Stress (psi)		Elongation (inch)	% Elongation	Grade
		Nominal	Actual	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.398	3/8	0.386	0.11	0.117	3200	4700	64200	60350	94200	88700	1.20	15.0	60
2	0.375	3/8	0.375	0.11	0.110	2400	3400	48100	47970	68200	68000	1.60	20.0	40
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Note: only two samples for tensile and two samples for bend test														
Bend Test														
3/8" Dia Bar Bend Test Through 180° is Satisfactory														
3/8" 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,
 Project Engineer
 N.A Associates
 Pepsi Cola International
 Khan Brothers

Reference # CED/TFL **34524** (Dr. Usman Akmal)
 Reference of the request letter # Nil

Dated: 22-01-2020
 Dated: 21-01-2020

Tension Test Report (Page -1/1)

Date of Test 23-01-2020
 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	0.396	3	0.385	0.11	0.116	3500	5400	70200	66350	108200	102400	1.40	17.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only one sample 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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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Chief Resident Engineer
Osmani & Company (Pvt) Ltd
Swat Motorway Project

Reference # CED/TFL **34525** (Dr. Usman Akmal)
Reference of the request letter # 355/CRE/QAT/SMP/2020

Dated: 22-01-2020
Dated: 22-01-2020

Tension Test Report (Page – 1/3)

Date of Test 23-01-2020
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	788.0	17800	174.62	19600	192.28	199	>3.50	297
2	12.70 (1/2")	775.0	784.0	18600	182.47	20600	202.09	198	>3.50	299
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
Only two 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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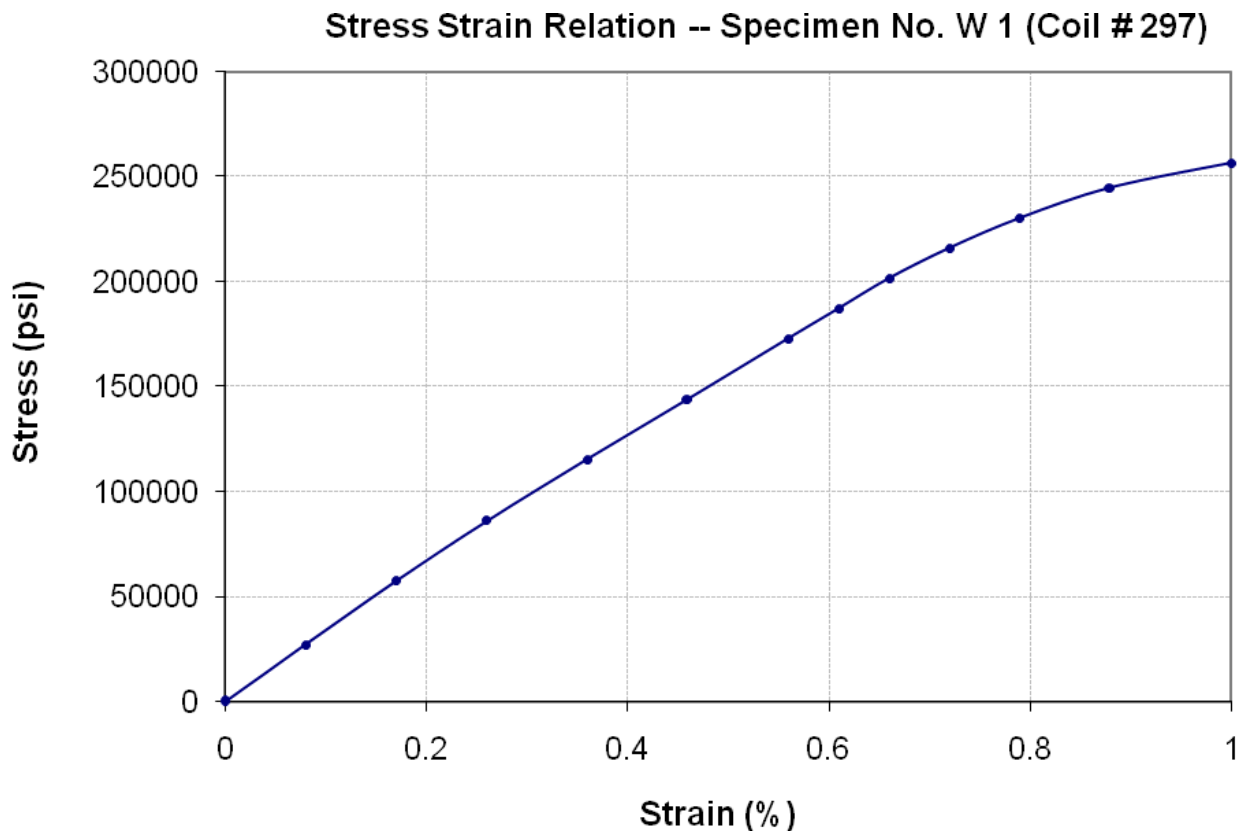
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To,
Chief Resident Engineer
Osmani & Company (Pvt) Ltd
Swat Motorway Project

Reference # CED/TFL **34525** (Dr. Usman Akmal)
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Dated: 22-01-2020
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Graph (Page – 2/3)



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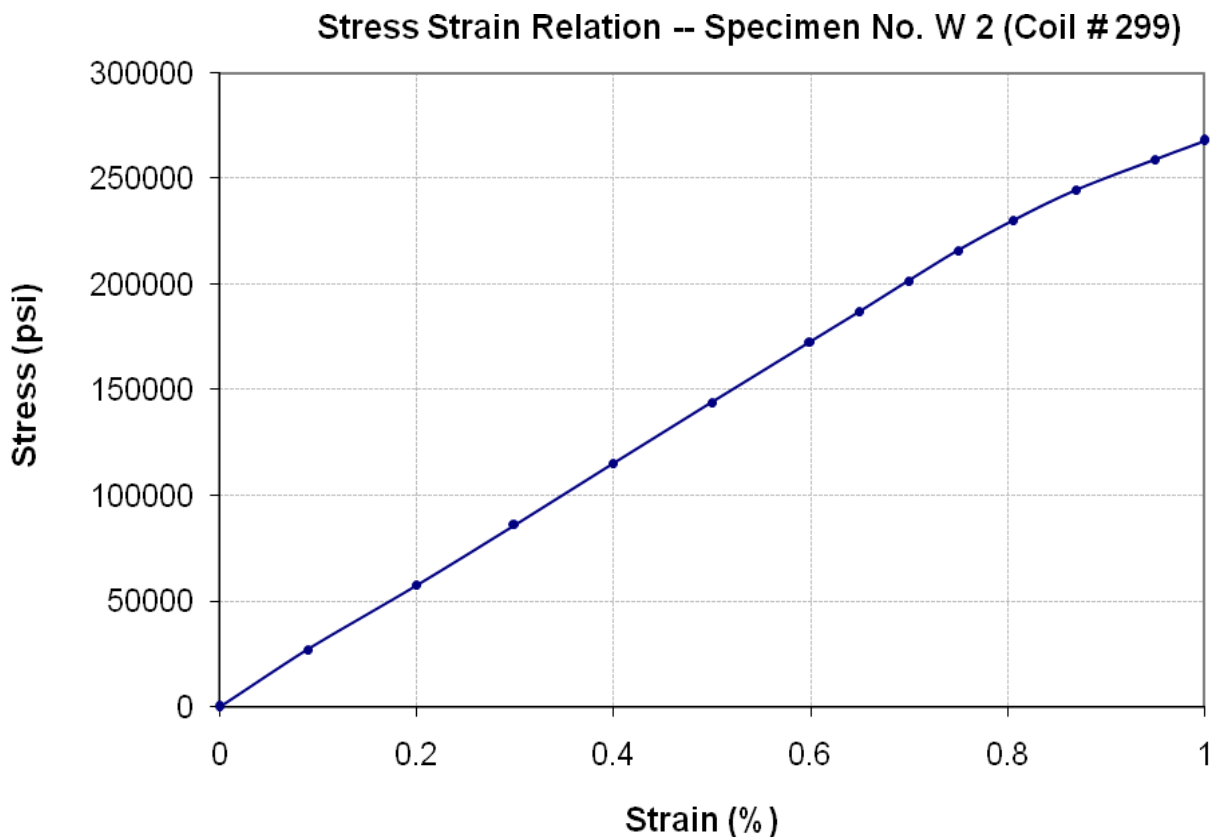
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Test Floor Laboratory
Department of Civil Engineering
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To,
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Osmani & Company (Pvt) Ltd
Swat Motorway Project

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Graph (Page – 3/3)



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To,
Chief Resident Engineer
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Swat Motorway Project

Reference # CED/TFL **34526** (Dr. Usman Akmal)
Reference of the request letter # A 355/CRE/QAT/SMP/2020

Dated: 22-01-2020
Dated: 22-01-2020

Tension Test Report (Page – 1/3)

Date of Test 23-01-2020
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	789.0	18000	176.58	20000	196.20	199	>3.50	298
2	12.70 (1/2")	775.0	787.0	17500	171.68	18900	185.41	198	>3.50	298A
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
Only two 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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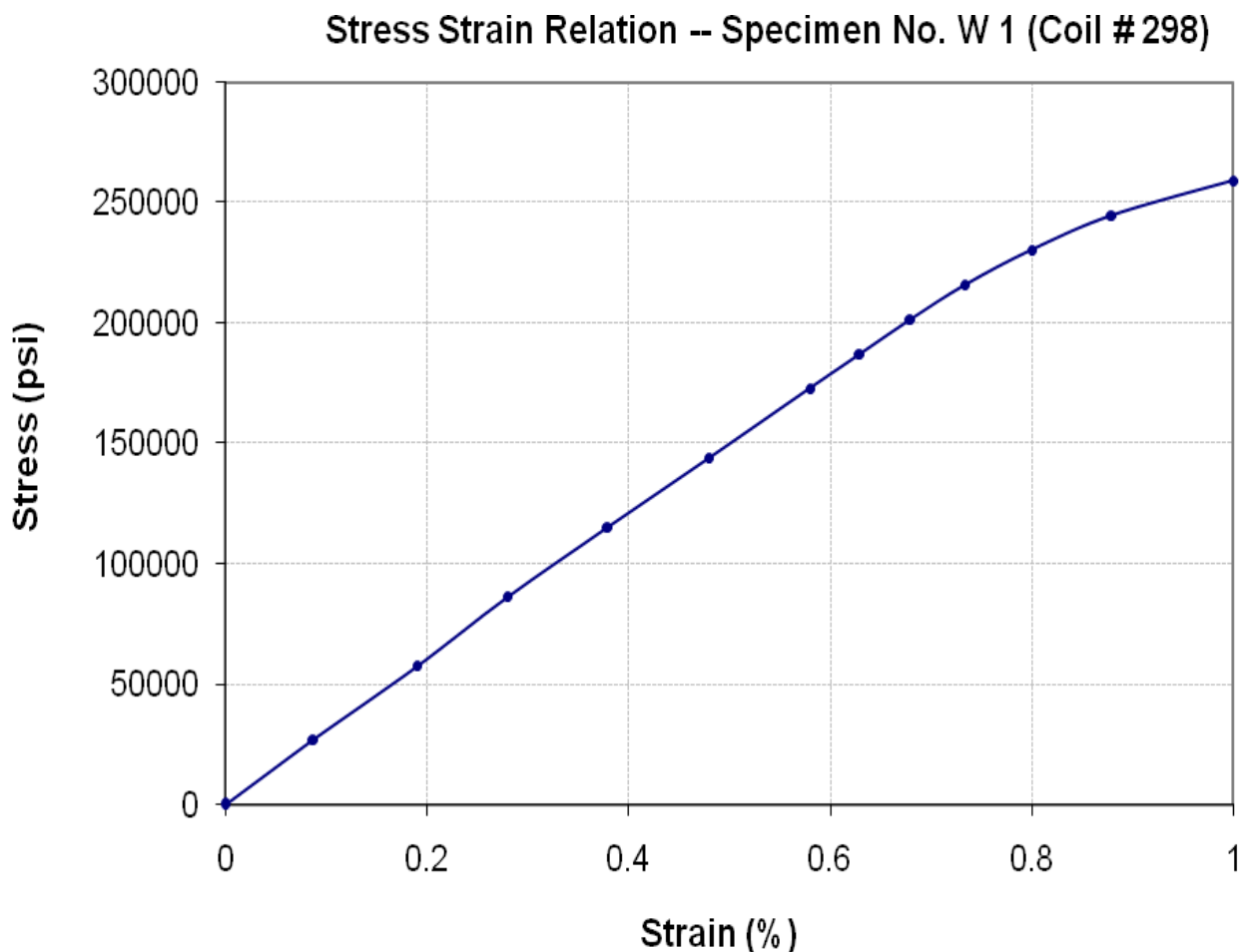
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Test Floor Laboratory
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University of Engineering and Technology Lahore, 54890
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To,
Chief Resident Engineer
Osmani & Company (Pvt) Ltd
Swat Motorway Project

Reference # CED/TFL **34526** (Dr. Usman Akmal)
Reference of the request letter # A 355/CRE/QAT/SMP/2020

Dated: 22-01-2020
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Graph (Page – 2/3)



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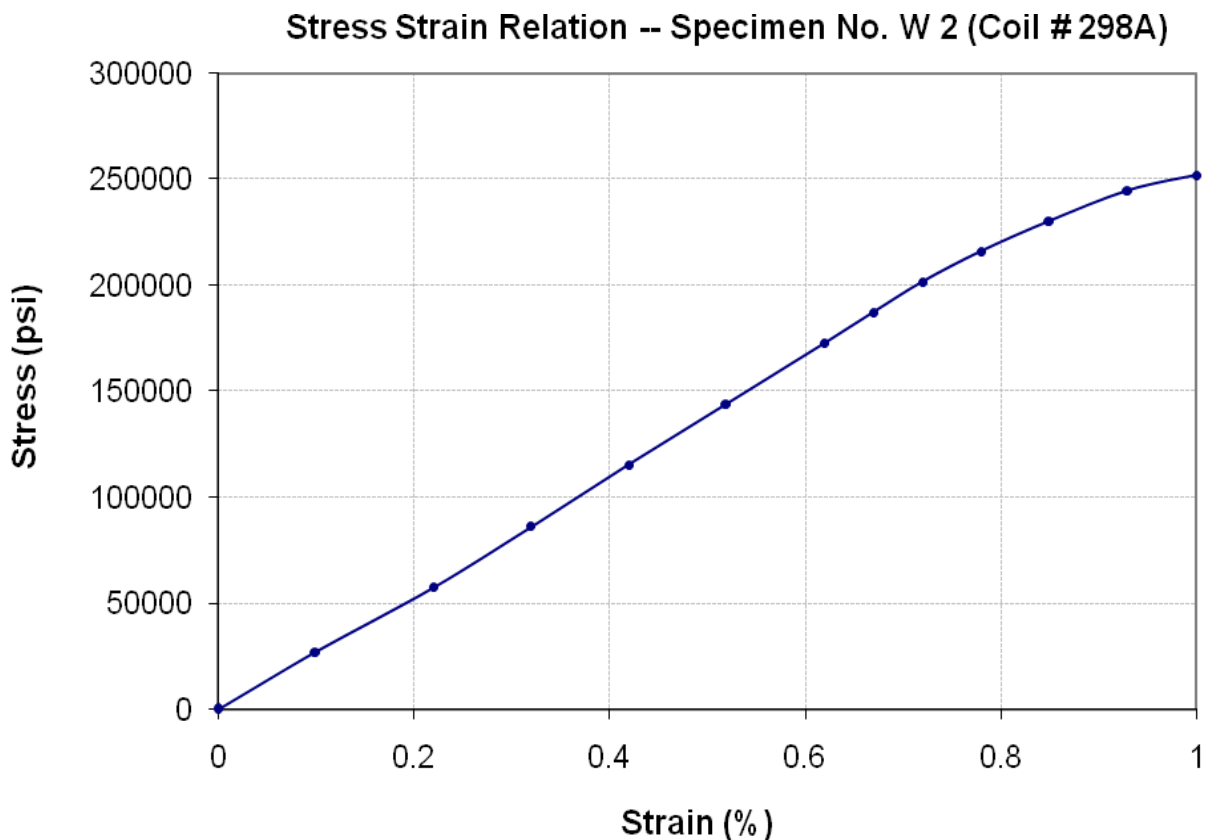
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To,
Chief Resident Engineer
Osmani & Company (Pvt) Ltd
Swat Motorway Project

Reference # CED/TFL **34526** (Dr. Usman Akmal)
Reference of the request letter # A 355/CRE/QAT/SMP/2020

Dated: 22-01-2020
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Graph (Page – 3/3)



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Test Floor Laboratory
Department of Civil Engineering
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To,
Chief Resident Engineer
Osmani & Company (Pvt) Ltd
Swat Motorway Project

Reference # CED/TFL **34527** (Dr. Usman Akmal)
Reference of the request letter # 356/CRE/QAT/SMP/2020

Dated: 22-01-2020
Dated: 22-01-2020

Tension Test Report (Page – 1/4)

Date of Test 23-01-2020
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	788.0	17500	171.68	19300	189.33	198	>3.50	237
2	12.70 (1/2")	775.0	785.0	17700	173.64	20000	196.20	199	>3.50	240
3	12.70 (1/2")	775.0	786.0	18600	182.47	20000	196.20	199	>3.50	243
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
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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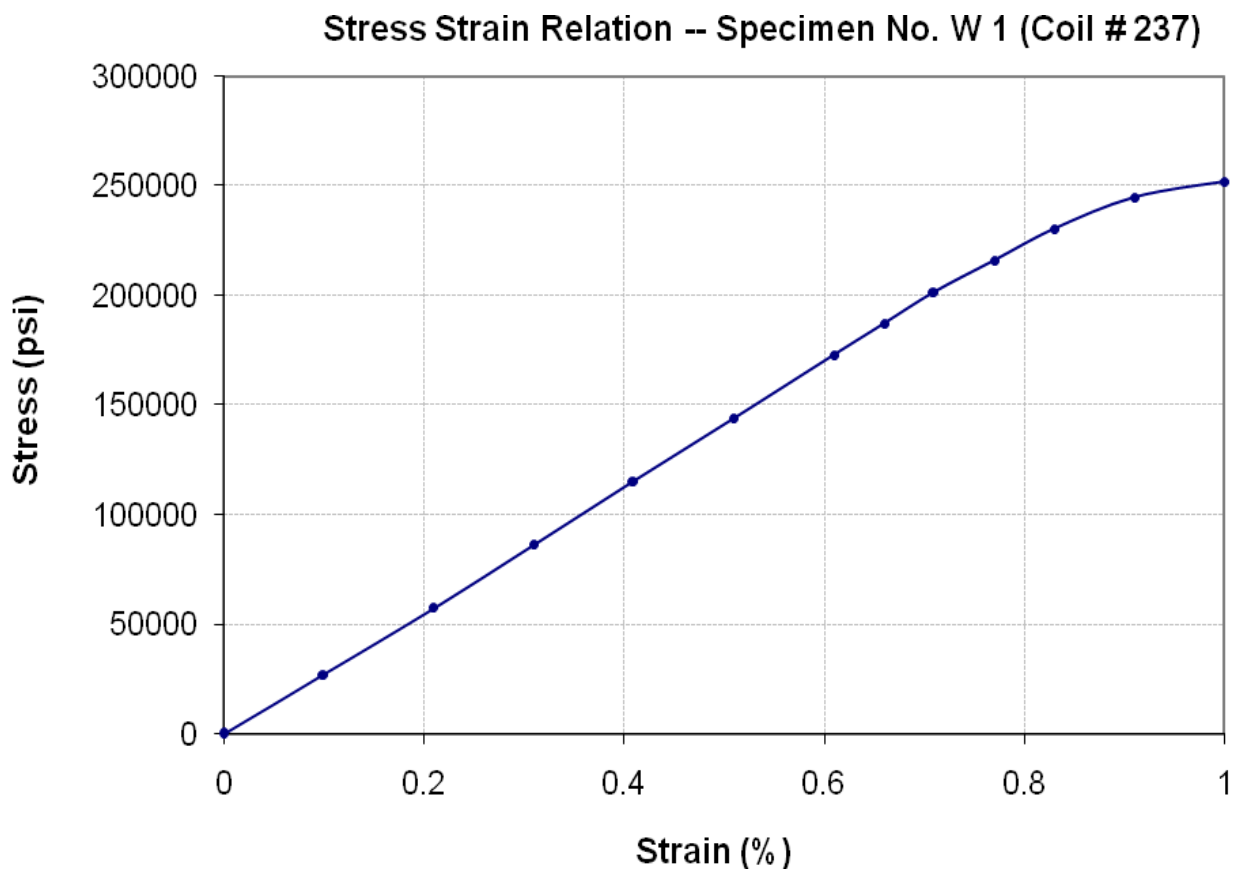
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To,
Chief Resident Engineer
Osmani & Company (Pvt) Ltd
Swat Motorway Project

Reference # CED/TFL **34527** (Dr. Usman Akmal)
Reference of the request letter # 356/CRE/QAT/SMP/2020

Dated: 22-01-2020
Dated: 22-01-2020

Graph (Page – 2/4)



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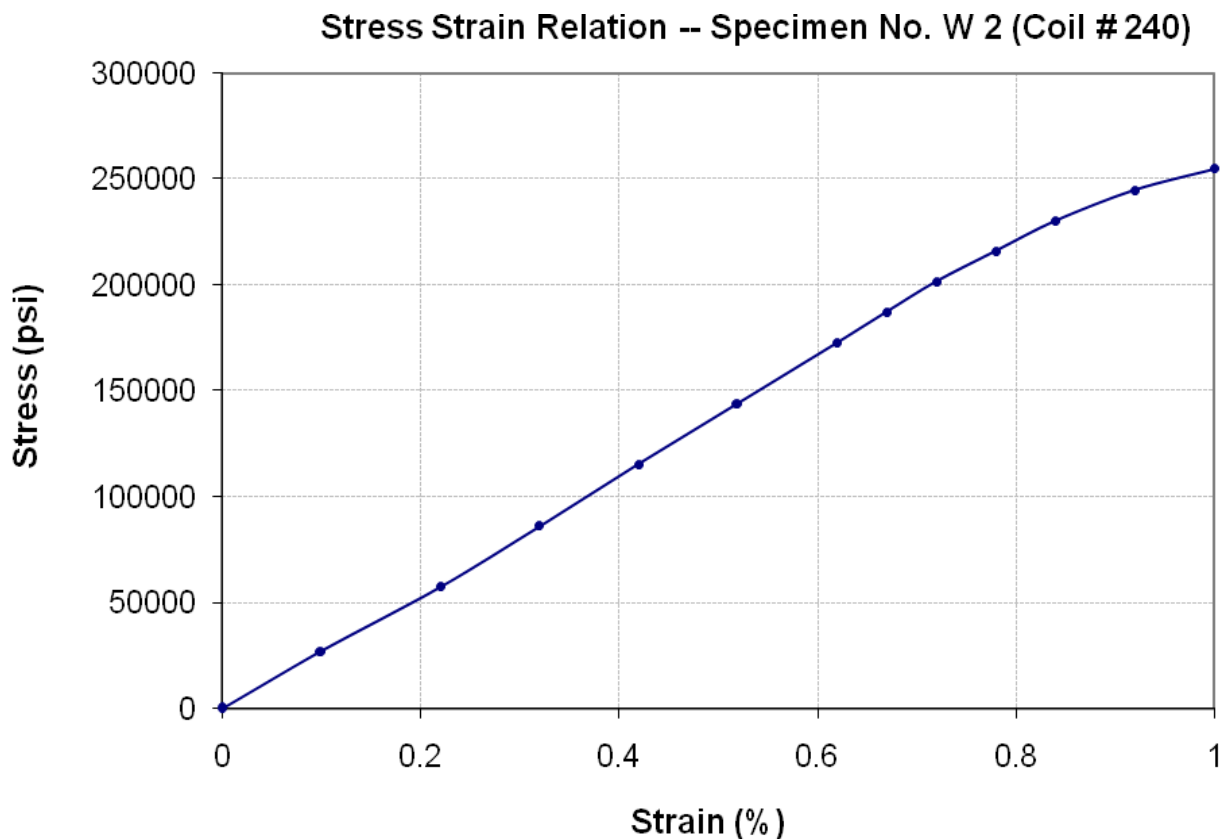
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To,
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Osmani & Company (Pvt) Ltd
Swat Motorway Project

Reference # CED/TFL **34527** (Dr. Usman Akmal)
Reference of the request letter # 356/CRE/QAT/SMP/2020

Dated: 22-01-2020
Dated: 22-01-2020

Graph (Page – 3/4)



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UET Lahore, Pakistan.

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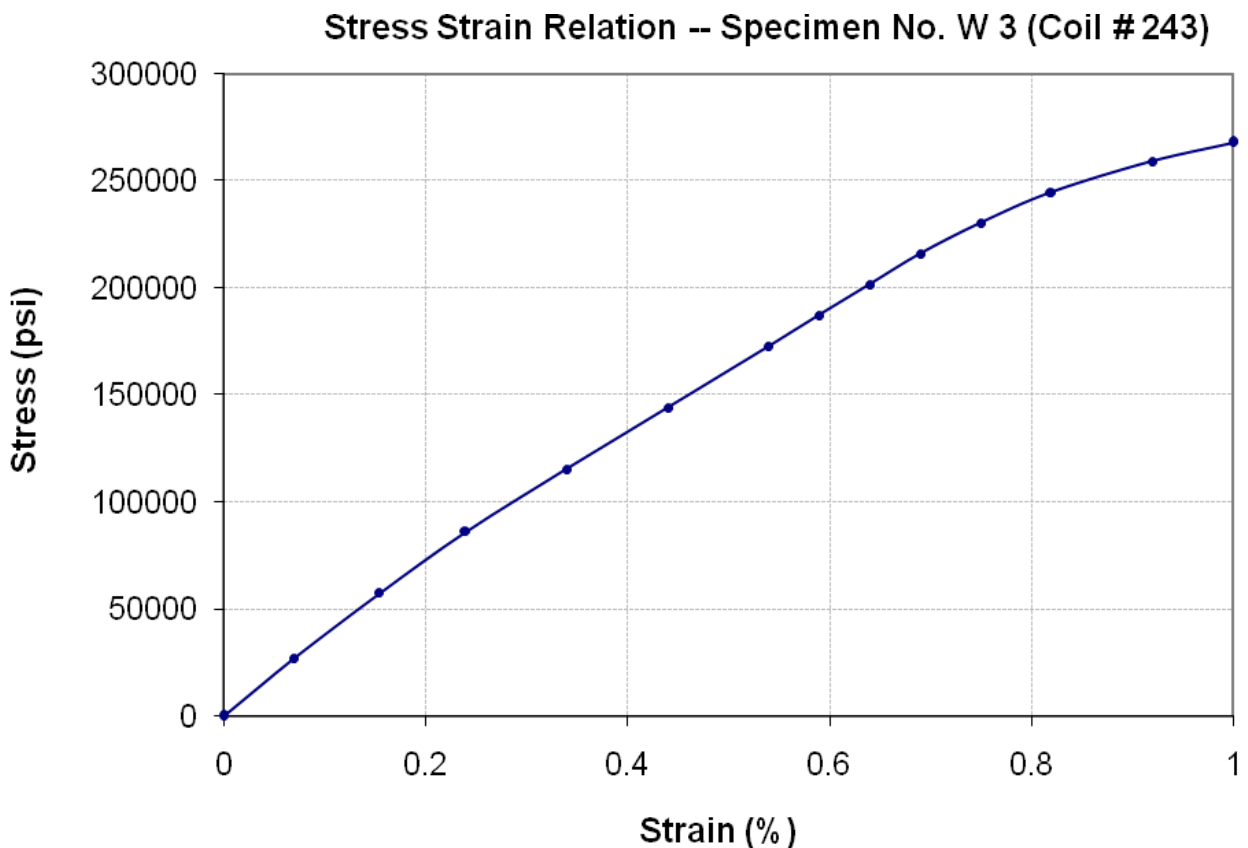
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To,
Chief Resident Engineer
Osmani & Company (Pvt) Ltd
Swat Motorway Project

Reference # CED/TFL **34527** (Dr. Usman Akmal)
Reference of the request letter # 356/CRE/QAT/SMP/2020

Dated: 22-01-2020
Dated: 22-01-2020

Graph (Page – 4/4)



I/C Testing Laboratories
UET Lahore, Pakistan.

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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
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To,
 Assistant Engineer (Civil)
 University of Okara
 (Construction of Bus Stand and Bus Station at University of Okara)

Reference # CED/TFL **34528** (Dr. Usman Akmal)
 Reference of the request letter # Engg.Cell/UO/684

Dated: 22-01-2020
 Dated: 21-01-2020

Tension Test Report (Page -1/2)

Date of Test 23-01-2020
 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	0.364	3	0.369	0.11	0.107	4200	5200	84200	86410	104200	107000	1.10	13.8	
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Note: only one sample 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,
 Assistant Engineer (Civil)
 University of Okara
 (Construction of Balance Work Finishing Work of Food Court (at Risk and Cost of Ch. Liaquat Ali and Co) at University of Okara)

Reference # CED/TFL **34528** (Dr. Usman Akmal)
 Reference of the request letter # Engg.Cell/UO/681

Dated: 22-01-2020
 Dated: 21-01-2020

Tension Test Report (Page -2/2)

Date of Test 23-01-2020
 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	0.374	3	0.374	0.11	0.110	4000	5100	80200	80210	102200	102300	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only one sample 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
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



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

To,
 Project Manager
 Liberty Builders
 (Construction of Zee Avenue-Ramada Hotel & Suites 17-A Cooper Road, Lahore)

Reference # CED/TFL **34529** (Dr. Usman Akmal)
 Reference of the request letter # ST/UET/20200123

Dated: 23-01-2020
 Dated: 23-01-2020

Tension Test Report (Page -1/1)

Date of Test 23-01-2020
 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	0.367	3	0.371	0.11	0.108	3400	4900	68200	69410	98200	100100	1.30	16.3	KSR
2	0.364	3	0.369	0.11	0.107	3300	4800	66200	67900	96200	98800	1.20	15.0	
3	0.370	3	0.372	0.11	0.109	3500	4900	70200	70880	98200	99300	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only three 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,
 Executive Engineer
 Trimmu Barrage Division
 Trimmu District Jhang
 (Replacing Deck Slab at RD 20+000 Haveli Main Line)

Reference # CED/TFL **34532, 533** (Dr. Nauman Khurram)
 Reference of the request letter # 471-475/24-W/H.W

Dated: 23-01-2020
 Dated: 22-01-2020

Tension Test Report (Page -1/1)

Date of Test 23-01-2020
 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	0.356	3	0.365	0.11	0.105	3100	4700	62200	65320	94200	99100	1.30	16.3	Kamran Steel
2	0.356	3	0.365	0.11	0.105	3200	4700	64200	67410	94200	99100	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
UET Lahore, Pakistan.

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