



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

To,
Acting Chief Resident Engineer
Trimmu Panjnad Barrages Consultants (TPB Consultants)
Trimmu Panjnad Barrages Improvement Project (TPBIP)

Reference # CED/TFL **36117** (Dr. Waseem Abbass)
Reference of the request letter # TPBC/CRE/NCB-01/5048

Dated: 23-02-2021
Dated: 16-02-2021

Tension Test Report (Page – 1/4)

Date of Test 25-02-2021
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	17800	174.62	19300	189.33	199	>3.50	22139
2	12.70 (1/2")	775.0	791.0	17000	166.77	18900	185.41	198	>3.50	22142
3	12.70 (1/2")	775.0	783.0	17800	174.62	19700	193.26	199	>3.50	22143
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	

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.

Note:

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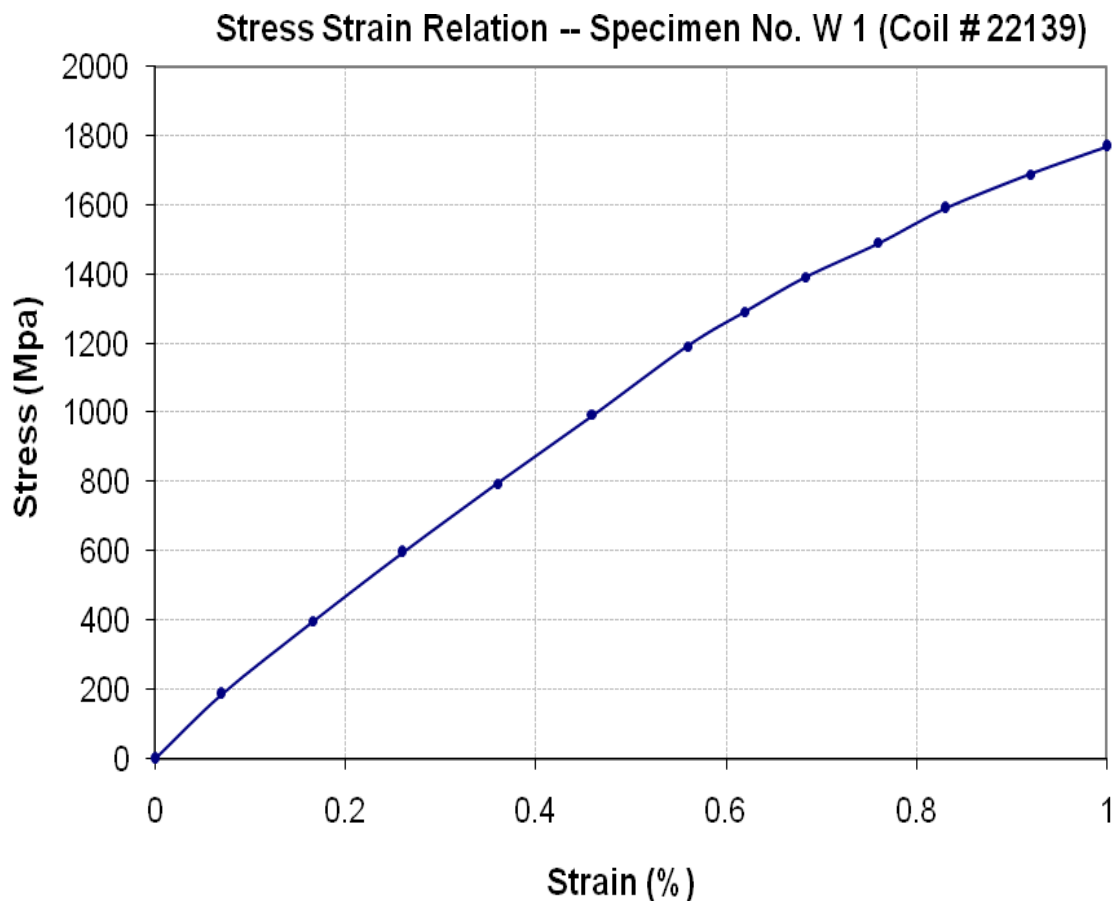
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Graph (Page – 2/4)



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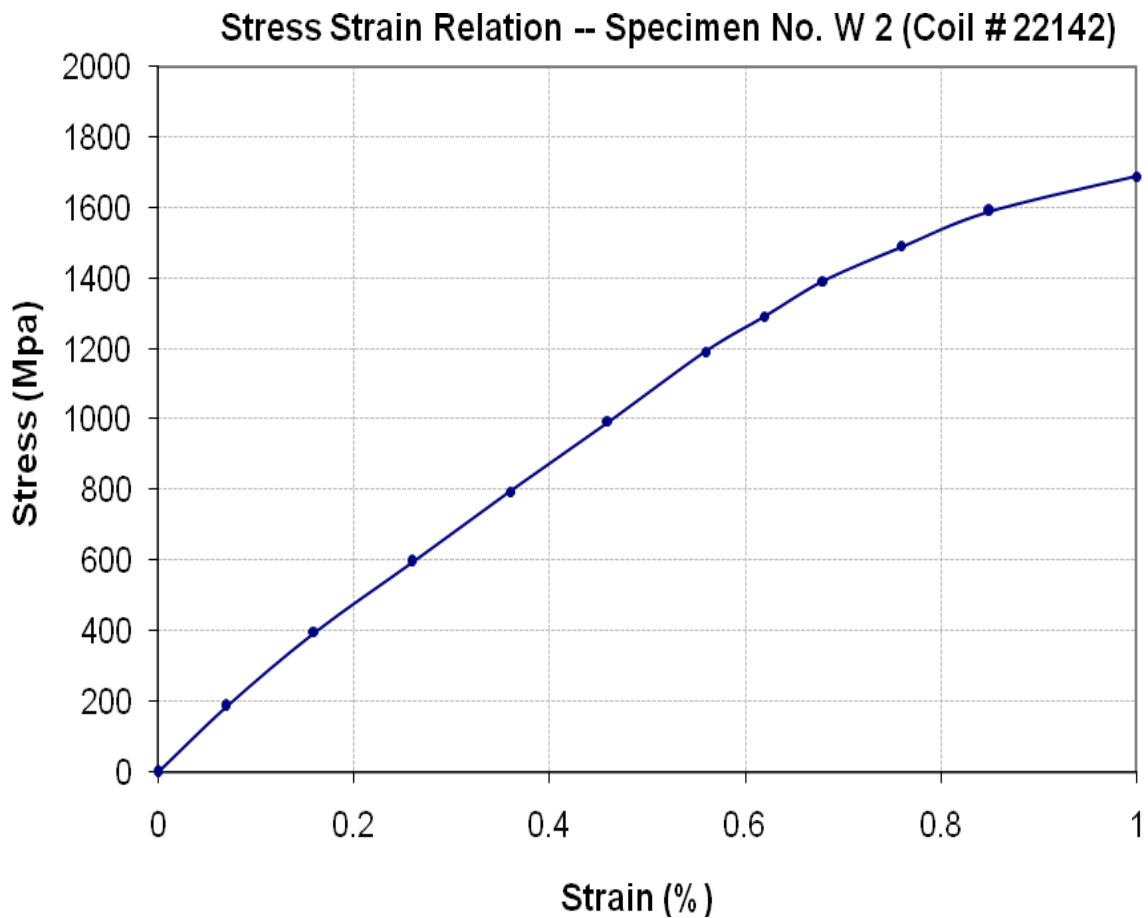
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Graph (Page – 3/4)



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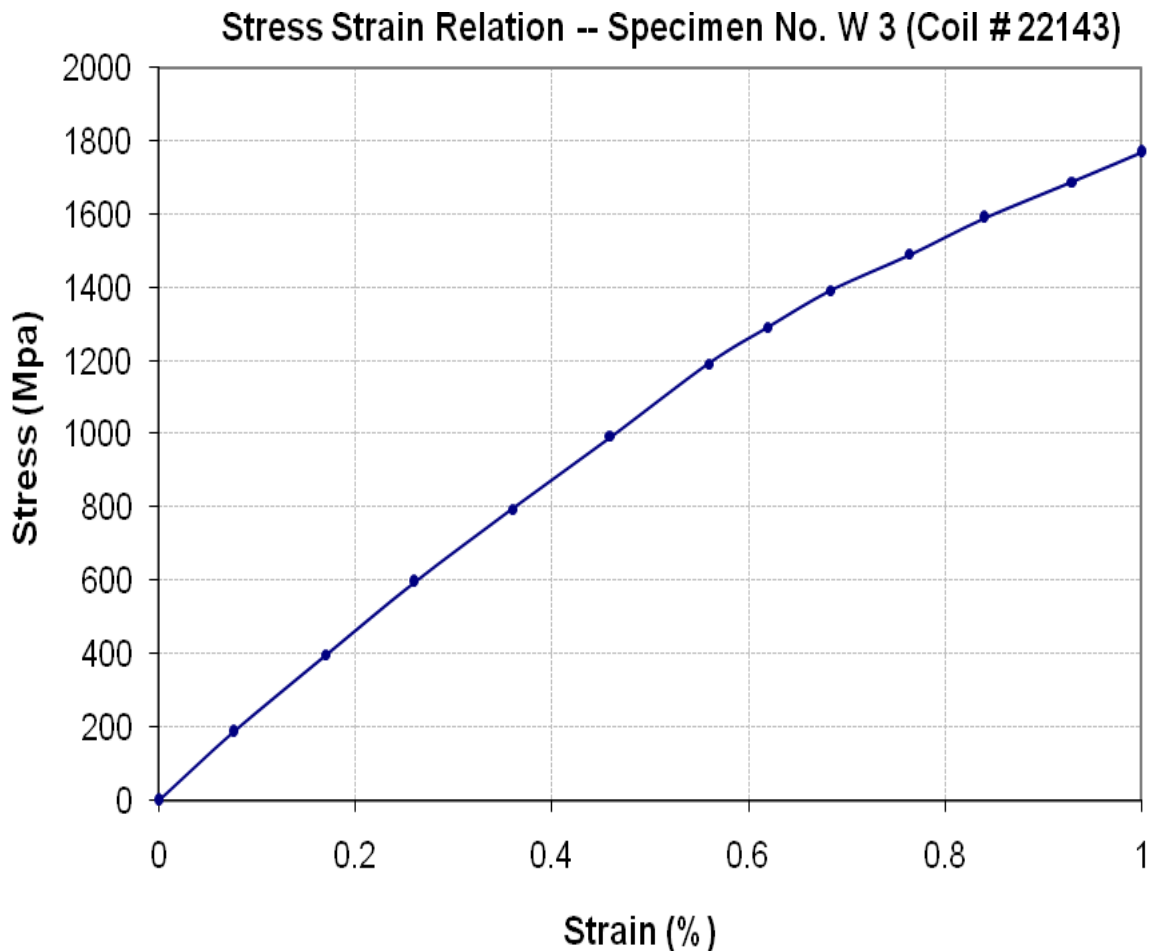
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Graph (Page – 4/4)



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To,
 Senior Project Manager
 Regal City
 Sheikhpura

Reference # CED/TFL **36118** (Dr. Usman Akmal)
 Reference of the request letter # RC/PM/07

Dated: 23-02-2021
 Dated: 22-02-2021

Tension Test Report (Page -1/1)

Date of Test 25-02-2021
 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	4000	5300	80200	82330	106200	109100	1.00	12.5	SJ Steel
2	0.375	3	0.375	0.11	0.110	4000	5300	80200	79930	106200	106000	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														

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STRUCTURAL ENGINEERING DIVISION
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To,
 Project Incharge
 Ravi Chemical Complex
 Construction of Cooling Tower at Ravi Chemical Complex

Reference # CED/TFL **36120** (Dr. Usman Akmal)
 Reference of the request letter # Nil

Dated: 23-02-2021
 Dated: 16-02-2021

Tension Test Report (Page -1/1)

Date of Test 25-02-2021
 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	0.379	3	0.376	0.11	0.111	3500	4900	70200	69320	98200	97100	1.20	15.0	
2	0.385	3	0.380	0.11	0.113	3500	4900	70200	68120	98200	95400	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
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To,
 R.E QA/QC Department
 Bahria Town Private Limited
 Masjid at Imam Bargah Hussain Block, Multan Road Site, Bahria Town Lahore

Reference # CED/TFL **36121** (Dr. Usman Akmal)
 Reference of the request letter # QA/QC-Steel-2257

Dated: 23-02-2021
 Dated: 22-02-2021

Tension Test Report (Page -1/1)

Date of Test 25-02-2021
 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	0.380	3	0.377	0.11	0.112	3500	4700	70200	69110	94200	92800	1.10	13.8	FF Steel
2	0.372	3	0.373	0.11	0.109	3400	4600	68200	68500	92200	92700	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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STRUCTURAL ENGINEERING DIVISION
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To,
 Sub Divisional Officer
 Building Sub Division
 Depalpur
 (Construction of Additional Class Rooms under Dfeid (UK) Project in Punjab Phase-II (One at Govt: Primary School at Doula Mustaqeem Depalpur District Okara))

Reference # CED/TFL **36123** (Dr. Usman Akmal)
 Reference of the request letter # 150/D

Dated: 23-02-2021
 Dated: 20-02-2021

Tension Test Report (Page -1/1)

Date of Test 25-02-2021
 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	0.382	3/8	0.378	0.11	0.112	3700	5200	74200	72710	104200	102200	1.10	13.8	FF Steel
2	0.378	3/8	0.376	0.11	0.111	3700	5200	74200	73440	104200	103300	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile test														
Bend Test														

I/C Testing Laboratoires
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To,
 Sub Divisional Officer
 Highway Sub Division No. 1
 Gujrat
 (Rehabilitation / Carpetting of Raod from Halsi Nullah Bund to Kharianwali via Gilanwala,
 Chak Sadda, L = 8kms District Gujrat)
 Reference # CED/TFL **36124** (Dr. Usman Akmal) Dated: 24-02-2021
 Reference of the request letter # 06/GTI Dated: 04-02-2021

Tension Test Report (Page -1/1)

Date of Test 25-02-2021
 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	0.342	3	0.358	0.11	0.101	3300	4200	66200	72360	84200	92100	1.60	20.0	
2	0.342	3	0.358	0.11	0.101	3300	4100	66200	72370	82200	90000	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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,
M/S Shahan Brothers
Lahore
(16-Shadman Jail Road Lahore)

Reference # CED/TFL **36125** (Dr. Usman Akmal)
Reference of the request letter # Nil

Dated: 24-02-2021
Dated: 24-02-2021

Tension Test Report (Page -1/1)

Date of Test 25-02-2021
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	3200	4500	64200	65980	90200	92800	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only one sample 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
 Punjab Intermediate Cities Improvement Investment Program (PICIIP),
 Consultancy Services for Engineering, Procurement and Construction Management
 Watsan Sialkot (NCB-Works/PICIIP-02)(Lot-01, Lot-02 & Lot-04)

Reference # CED/TFL **36126** (Dr. Usman Akmal)
 Reference of the request letter # Nespak/SAH/UET/010

Dated: 24-02-2021
 Dated: 24-02-2021

Tension Test Report (Page -1/1)

Date of Test 25-02-2021
 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	0.070	3.175	4.10	-----	0.020	-----	960	-----	-----	-----	103500	0.40	5.0	SJ Steel
2	0.070	3.175	4.10	-----	0.020	-----	880	-----	-----	-----	94800	0.30	3.8	
3	0.372	9.5	9.48	0.110	0.109	3200	4700	64200	64470	94200	94700	1.30	16.3	Ittefaq Steel
4	0.368	9.5	9.42	0.110	0.108	3200	4600	64200	65240	92200	93800	1.40	17.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only four samples for tensile and two samples for bend test														
Bend Test														
3.175mm Dia Bar Bend Test Through 180° is Satisfactory														
9.5mm Dia Bar Bend Test Through 180° is Satisfactory														

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