



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 Multi-Level Grade Separation Flyover at Shahdra Moor, Lahore

Reference # CED/TFL **3144** (Dr. M Kashif)

Dated: 02-05-2023

Reference of the request letter # 4537/03/MSA/09/35

Dated: 02-05-2023

Tension Test Report (Page -1/1)

Date of Test 05-05-2023

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	4.177	10	1.250	1.27	1.228	38800	54400	67400	69660	94500	97700	1.60	20.0	A 653
2	4.172	10	1.250	1.27	1.226	37800	53200	65600	67930	92400	95700	1.50	18.8	B 3707
3	4.193	10	1.253	1.27	1.233	38800	54400	67400	69380	94500	97300	1.60	20.0	B 3708
4	4.201	10	1.254	1.27	1.235	38800	53600	67400	69250	93100	95700	1.60	20.0	B 3709
5	4.177	10	1.250	1.27	1.228	39200	54400	68100	70370	94500	97700	1.70	21.3	D 8215
6	4.187	10	1.252	1.27	1.231	40000	55400	69500	71640	96200	99300	1.60	20.0	D 5216
7	4.156	10	1.247	1.27	1.222	37600	50600	65300	67840	87900	91300	1.80	22.5	E8979

Note: only seven samples for tensile and seven samples for bend test

Bend Test

- #10 Bar Bend Test Through 180° is Satisfactory
- #10 Bar Bend Test Through 180° is Satisfactory
- #10 Bar Bend Test Through 180° is Satisfactory
- #10 Bar Bend Test Through 180° is Satisfactory
- #10 Bar Bend Test Through 180° is Satisfactory
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- #10 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,

Resident Engineer
 NESPAK
 Construction of Fatima Jinnah Institute of Dental Sciences, Lahore
 Balance Works of Construction Teaching College / Academic Block, Boys and Girls
 Hostel & Miscellaneous Work (Group No. 02)

Reference # CED/TFL **3147** (Dr. M Kashif)
 Reference of the request letter # 3016/13/MS/05/52

Dated: 03-05-2023
 Dated: 14-04-2023

Tension Test Report (Page -1/1)

Date of Test 05-05-2023
 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	0.377	3	0.376	0.11	0.111	3100	4700	62200	61670	94200	93500	1.40	17.5	Kamran Steel
2	0.379	3	0.377	0.11	0.111	3400	4900	68200	67240	98200	96900	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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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
Establishment of Sports Complex in Singh Pura, Lahore, (LDA), NA-122

Reference # CED/TFL **3148** (Dr. M Kashif)

Dated: 03-05-2023

Reference of the request letter # 3772/103/NA-122/RE/05/14

Dated: 29-03-2023

Tension Test Report (Page -1/1)

Date of Test 05-05-2023

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	0.362	3	0.368	0.11	0.107	3300	4300	66200	68270	86200	89000	1.20	15.0	
2	0.366	3	0.370	0.11	0.108	3300	4400	66200	67540	88200	90100	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
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Material Engineer
Banu Mukhtar Contracting (Pvt) Ltd
Burj – 1 by Ajwa Builders.

Reference # CED/TFL **3149** (Dr. M Kashif)
Reference of the request letter # DOC-BMC/AJWA/054

Dated: 03-05-2023
Dated: 03-05-2023

Tension Test Report (Page -1/1)

Date of Test 05-05-2023
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	0.406	3	0.390	0.11	0.119	3600	5400	72200	66460	108200	99700	1.10	13.8	
2	0.375	3	0.375	0.11	0.110	3400	5000	68200	67960	100200	100000	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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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Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
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Ref: CED/TFL/05/3150

Dated: 03-05-2023

Dated of Test: 05-05-2023

To

Head QA/QC
Vision Developers Pvt. Ltd.
Park View City Lahore

Subject: **TESTING OF R.C.C. PIPE [ASTM-C76 - 08a]**

Reference to your letter No. Nil, dated 03.05.2023 on the subject cited above. Two R.C.C. Pipes as received by us have been tested. The results are tabulated as under.

Sr. No	Nominal Size	Total Length	Loaded Length	External Diameter	Internal Diameter	Wall Thickness	Proof load	Ultimate Load	Proof Stress	Ultimate Stress
	(inch)	(foot)	(foot)	(inch)	(inch)	(inch)	(kg)	(kg)	Pound/Linear foot/foot	Pound/Linear foot/foot
1	9	7.73	7.28	12.40	8.93	1.74	12200	15300	4961	6222
2	9	7.77	7.31	12.44	8.87	1.79	11500	15800	4694	6450

Witness by M Waqas (QA/QC Lab Tech. Vision Developers Pvt. Ltd.)

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 Technical Officer
 Sabcon Associates (Pvt) Ltd
 Construction of Commercial Building at 108 P Gulberg, Lahore

Reference # CED/TFL **3152** (Dr. M Kashif)
 Reference of the request letter # SABCON.2023/CT/22

Dated: 04-05-2023
 Dated: 03-05-2023

Tension Test Report (Page -1/1)

Date of Test 05-05-2023
 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	0.369	3	0.371	0.11	0.108	3500	5300	70200	71180	106200	107800	1.00	12.5	Malik Steel
2	0.363	3	0.368	0.11	0.107	3100	5100	62200	64100	102200	105500	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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:

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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
Mascon Associates (Pvt) Ltd – HA Consulting
Establishment of Model Bazaar Head Office Building.

Reference # CED/TFL **3153** (Dr. M Kashif)

Dated: 04-05-2023

Reference of the request letter # MAC-HAC/23/PMBC/LT/043

Dated: 14-04-2023

Tension Test Report (Page -1/1)

Date of Test 05-05-2023

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	0.377	0.11	0.111	3800	4900	76200	75120	98200	96900	1.30	16.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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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University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,

M/S Bridgeway Developers Pvt Ltd
 Lahore
 (Column & Salb at Pearl Residencies by Bridgeway Developer's 26 Block-C M.M Alam
 Road Gulberg III Lahore)

Reference # CED/TFL **3154** (Dr. M Kashif)
 Reference of the request letter # Nil

Dated: 04-05-2023
 Dated: 04-05-2023

Tension Test Report (Page -1/1)

Date of Test 05-05-2023
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight	Diameter/ Size		Area (in ²)		Yield load	Breaking Load	Yield Stress (psi)		Ultimate Stress (psi)		Elongation	% Elongation	Remarks
	(lbs/ft)	Nominal (#)	Actual (inch)	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)		
1	0.374	3	0.374	0.11	0.110	3300	4600	66200	66220	92200	92300	1.30	16.3	Batala Premium
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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,
Project Manager - Technical
Sitara Developers
Construction of Flyover at Sitara Green City.

Reference # CED/TFL **3155** (Dr. M Kashif)
Reference of the request letter # SGC/Flyover/28

Dated: 04-05-2023
Dated: 04-05 -2023

Tension Test Report (Page -1/7)

Date of Test 05-05-2023
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	19200	188.35	199	>3.50	S-1, 24512
2	12.70 (1/2")	775.0	794.0	17600	172.66	19200	188.35	198	>3.50	S-2, 24515
3	12.70 (1/2")	775.0	791.0	17600	172.66	19300	189.33	199	>3.50	S-3
4	12.70 (1/2")	775.0	795.0	17400	170.69	19300	189.33	199	>3.50	S-4
5	12.70 (1/2")	775.0	789.0	17800	174.62	19400	190.31	198	>3.50	S-5
6	12.70 (1/2")	775.0	792.0	17900	175.60	19100	187.37	199	>3.50	24511
Only six 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
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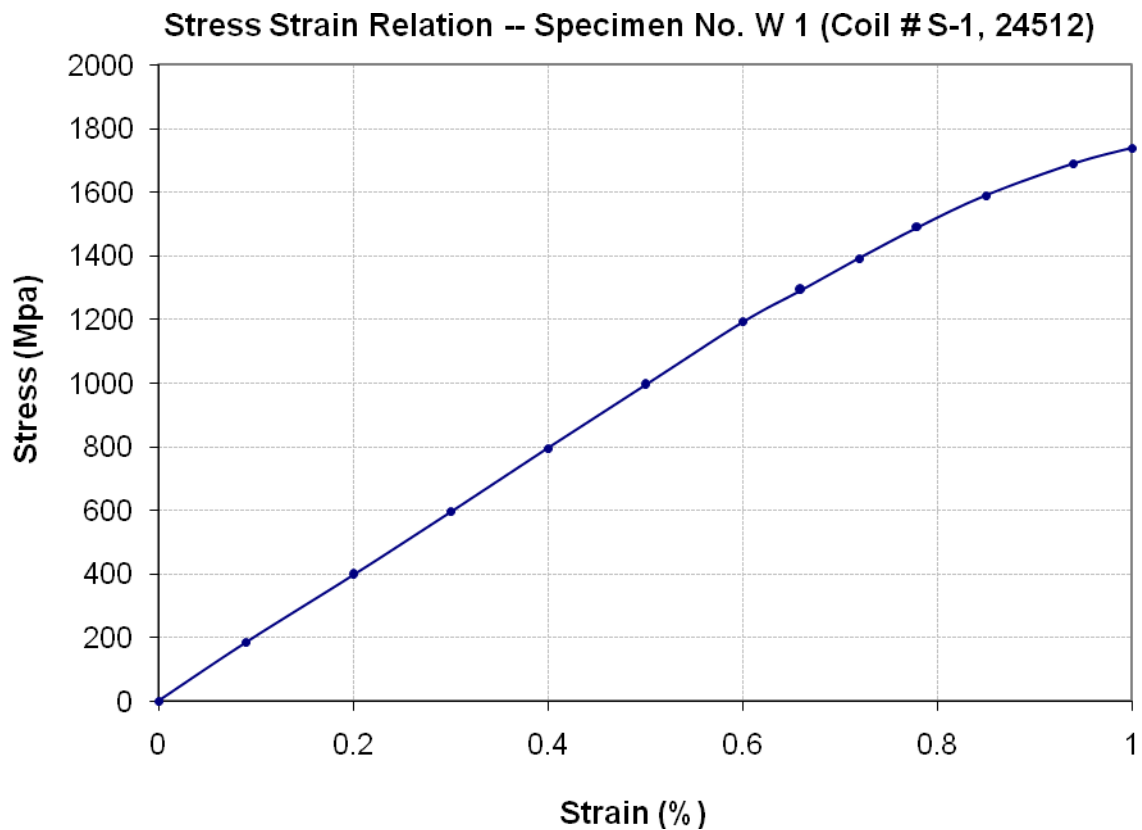
To,

Project Manager - Technical
Sitara Developers
Construction of Flyover at Sitara Green City.

Reference # CED/TFL 3155 (Dr. M Kashif)
Reference of the request letter # SGC/Flyover/28

Dated: 04-05-2023
Dated: 04-05 -2023

Graph (Page – 2/7)



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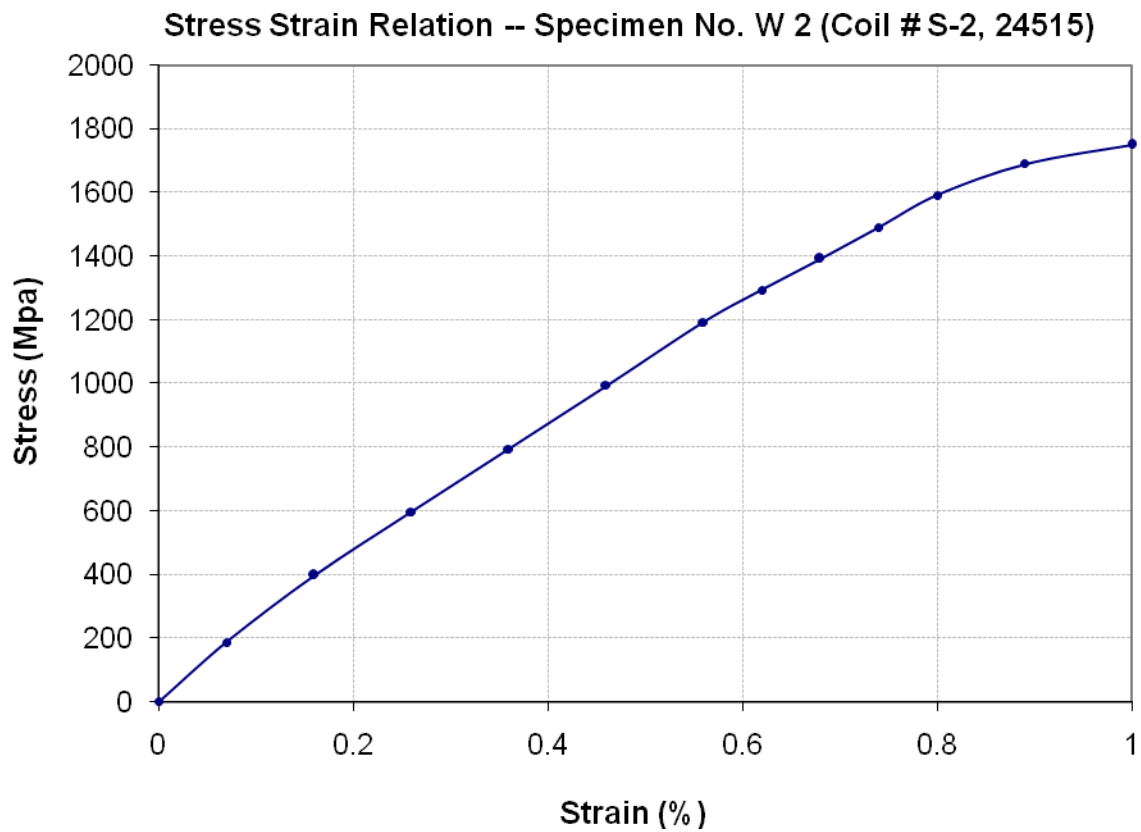
To,

Project Manager - Technical
Sitara Developers
Construction of Flyover at Sitara Green City.

Reference # CED/TFL 3155 (Dr. M Kashif)
Reference of the request letter # SGC/Flyover/28

Dated: 04-05-2023
Dated: 04-05 -2023

Graph (Page – 3/7)



I/C Testing Laboratories
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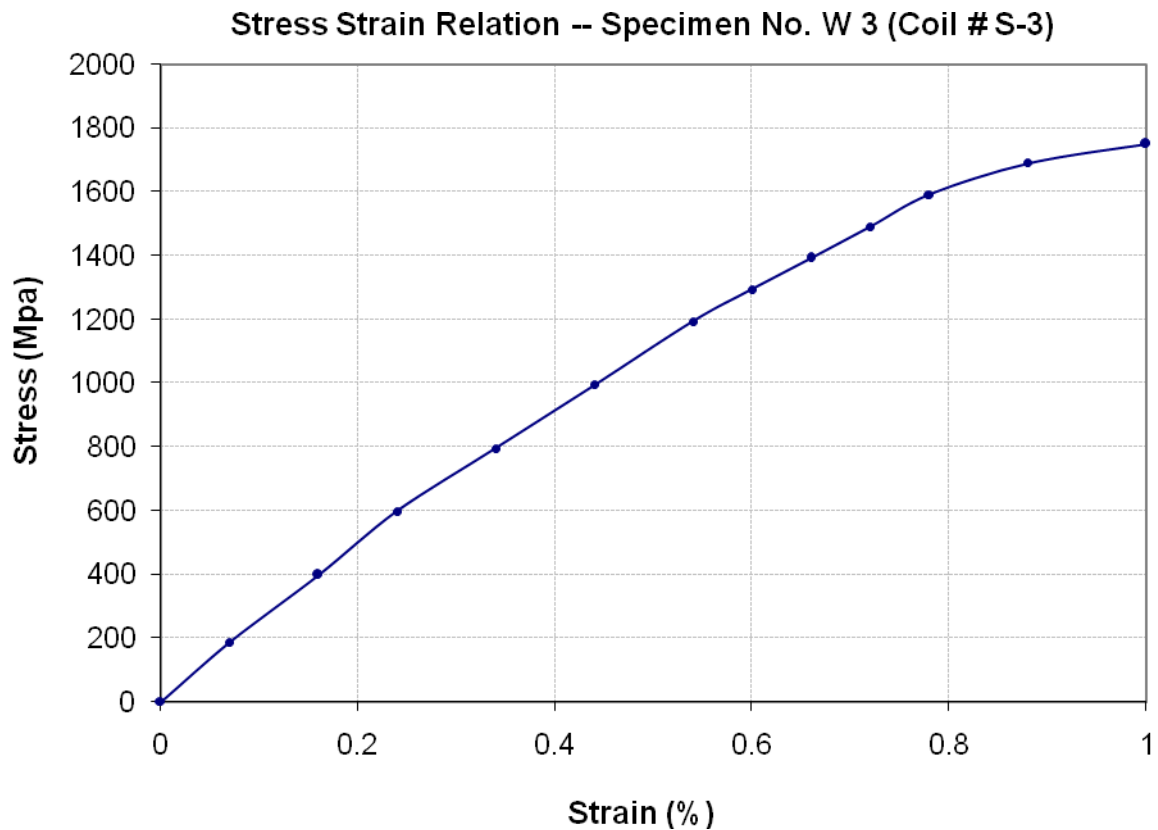
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Test Floor Laboratory
Department of Civil Engineering
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To,
Project Manager - Technical
Sitara Developers
Construction of Flyover at Sitara Green City.

Reference # CED/TFL **3155** (Dr. M Kashif)
Reference of the request letter # SGC/Flyover/28

Dated: 04-05-2023
Dated: 04-05-2023

Graph (Page – 4/7)



I/C Testing Laboratories
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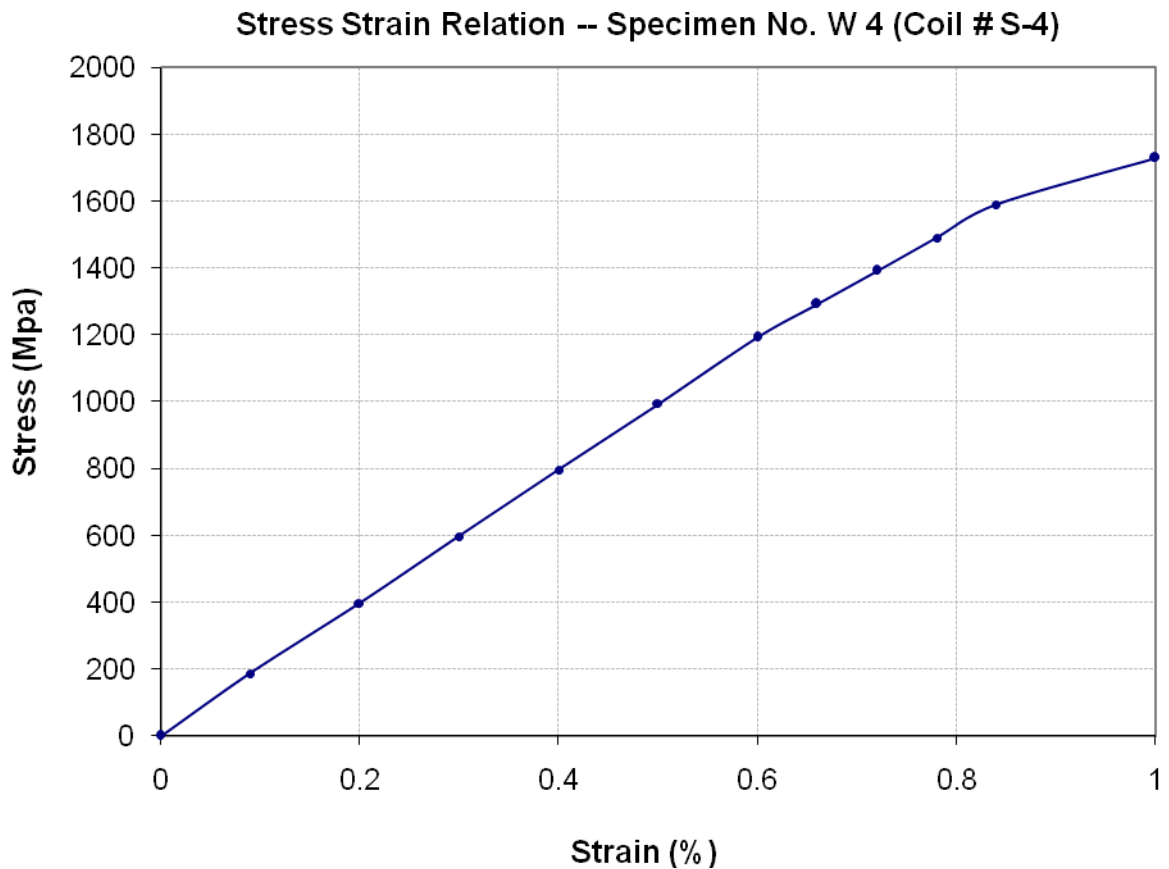
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To,
Project Manager - Technical
Sitara Developers
Construction of Flyover at Sitara Green City.

Reference # CED/TFL **3155** (Dr. M Kashif)
Reference of the request letter # SGC/Flyover/28

Dated: 04-05-2023
Dated: 04-05-2023

Graph (Page – 5/7)



I/C Testing Laboratories
UET Lahore, Pakistan.

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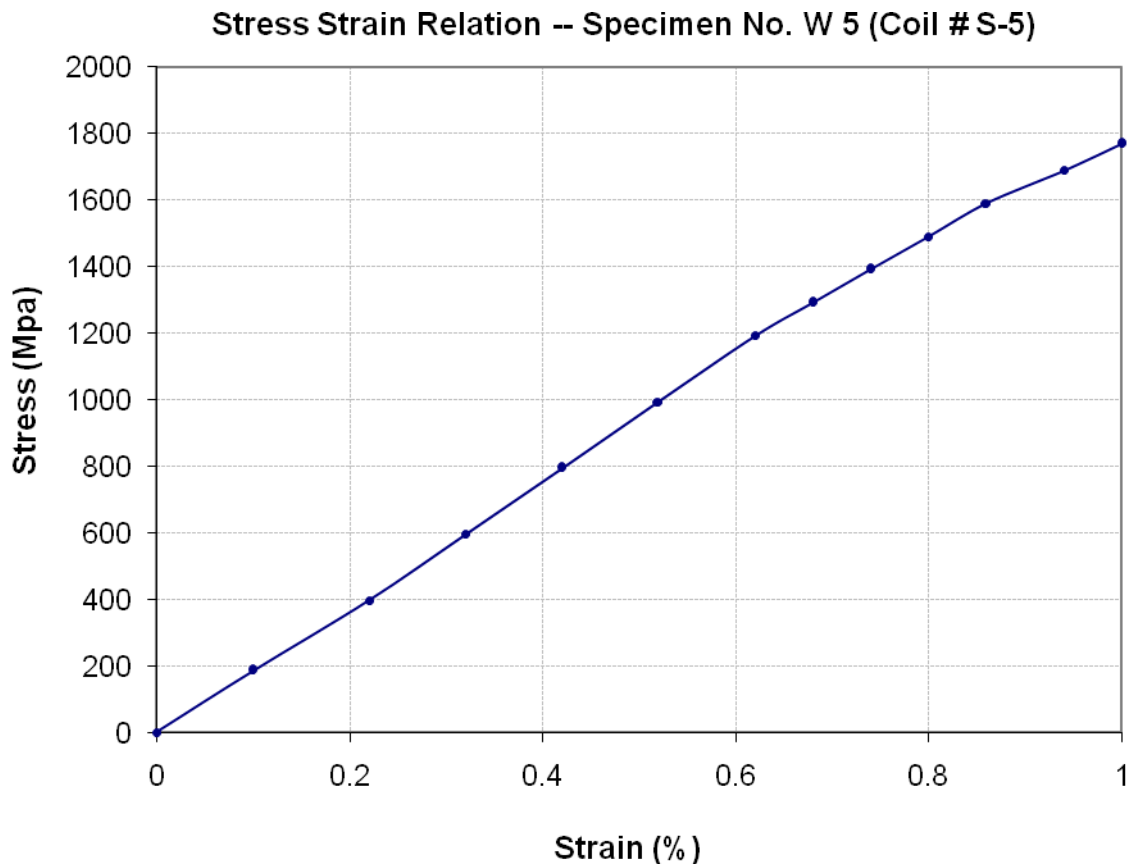
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To,
Project Manager - Technical
Sitara Developers
Construction of Flyover at Sitara Green City.

Reference # CED/TFL **3155** (Dr. M Kashif)
Reference of the request letter # SGC/Flyover/28

Dated: 04-05-2023
Dated: 04-05-2023

Graph (Page – 6/7)



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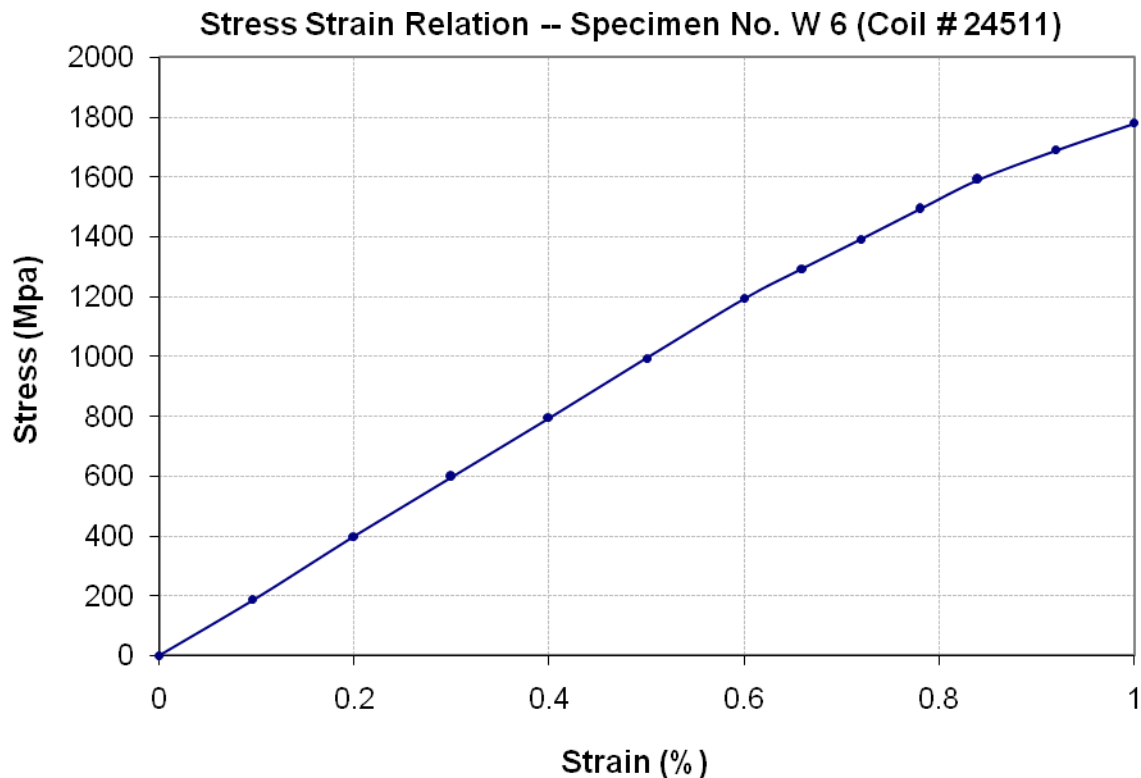
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To,
Project Manager - Technical
Sitara Developers
Construction of Flyover at Sitara Green City.

Reference # CED/TFL **3155** (Dr. M Kashif)
Reference of the request letter # SGC/Flyover/28

Dated: 04-05-2023
Dated: 04-05-2023

Graph (Page – 7/7)



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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

Ref: CED/TFL/05/3159

Dated: 05-05-2023

Dated of Test: 05-05-2023

To,

M/S Amjad Engineering Services
Lahore

Subject: - CALIBRATION OF PRESSURE GAUGE (MARK: TFL/05/3159) (Page -1/2)

Reference to your Letter No. Nil, Dated: 05/05/2023 on the subject cited above. One Pressure Gauge No. AES-310 as received by us has been calibrated. The results are tabulated as under:

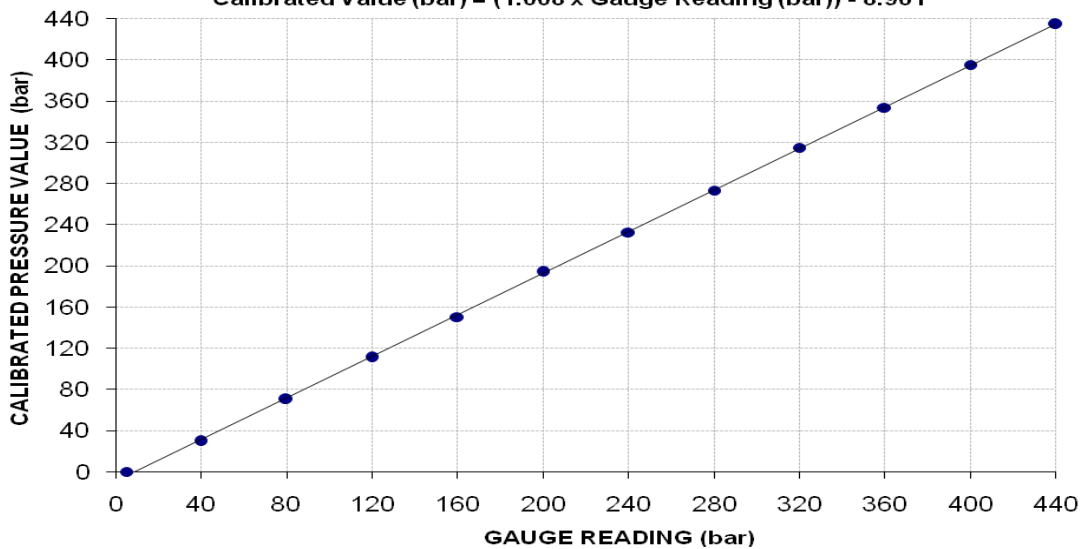
Total Range : Zero - 1000 (bar)
Calibrated Range : Zero - 440 (bar)

Pressure Gauge Reading (bar)	5	40	80	120	160	200	240	280	320	360	400	440
Calibrated Load (kg)	0	6000	14200	22400	30400	39200	47000	55200	63600	71400	79800	87800
Calibrated Pressure (bar)	0	30	70	111	151	194	233	273	315	354	395	435

The Ram Area use for Calibration = 198 cm²

Calibration Curve for Pressure Gauge No. AES-310

Calibrated Value (bar) = (1.008 x Gauge Reading (bar)) - 8.961



I/C Testing Laboratories
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



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Test Floor Laboratory
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Dated: 05-05-2023

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To,

M/S Amjad Engineering Services
Lahore

Subject: - CALIBRATION OF PRESSURE GAUGE (MARK: TFL/05/3159) (Page -2/2)

Reference to your Letter No. Nil, Dated: 05/05/2023 on the subject cited above. One Pressure Gauge No. AES-320 as received by us has been calibrated. The results are tabulated as under:

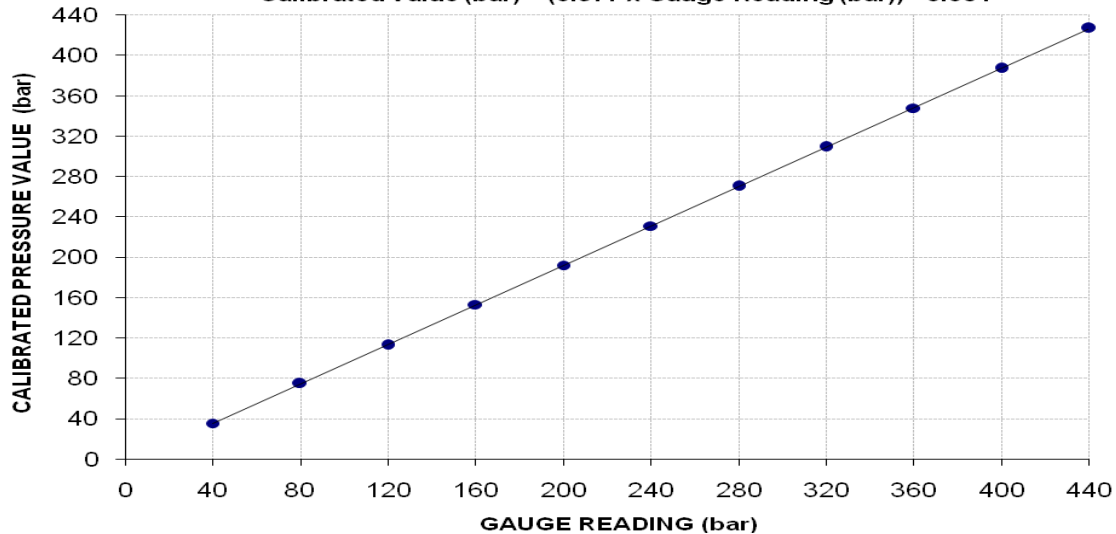
Total Range : Zero - 1000 (bar)
Calibrated Range : Zero - 440 (bar)

Pressure Gauge Reading (bar)	40	80	120	160	200	240	280	320	360	400	440
Calibrated Load (kg)	7200	15100	22800	30900	38800	46700	54600	62500	70200	78200	86200
Calibrated Pressure (bar)	36	75	113	153	192	231	270	310	348	387	427

The Ram Area use for Calibration = 198 cm²

Calibration Curve for Pressure Gauge No. AES-320

Calibrated Value (bar) = (0.977 × Gauge Reading (bar)) - 3.584



I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

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STRUCTURAL ENGINEERING DIVISION
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To,

M/S United Wire Industries (Pvt) Ltd
Lahore

Reference # CED/TFL **3160** (Dr. M Kashif)
Reference of the request letter # UWIL/D-

Dated: 05-05-2023

Dated: 05-05-2023

Tension Test Report (Page – 1/1)

Date of Test 05-05-2023

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)		% Elongation	Remarks/ Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)		
1	12.70 (1/2")	775.0	776.0	17500	171.68	19500	191.30	>3.50	xx
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
Only one sample for Test									

I/C Testing Laboratoires
UET Lahore, Pakistan.

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- 2- The above results pertain to sample /samples supplied to this laboratory.
- 3- Sealed sample / Unsealed sample / Marked sample/Signed Samples