



**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 China Gezhouba Group Co., Ltd  
CGGC Dasu Hydropower Project Management in Pakistan  
Dasu Hydropower Project

Reference # CED/TFL **35337** (Dr. Qasim Khan)  
Reference of the request letter # Nil

Dated: 09-09-2020  
Dated: 07-09-2020

**Tension Test Report** (Page – 1/1)

Date of Test 17-09-2020  
Gauge length 2 inches  
Description H Beam & I Beam Steel Strip Tensile Test as per ASTM A36

Sr. No.	Designation		Size of Strip	X Section Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Remarks
	(mm)		(mm)	(mm <sup>2</sup> )	(kg)	(kg)	(MPa)	(MPa)	(in)		
1	H Beam	200x200x12x13	24.20x10.60	256.52	7500	12100	286.82	462.74	0.60	30.00	
2			24.20x10.60	256.52	6900	11500	263.87	439.79	0.65	32.50	
	I Beam	200x100x7	23.50x7.20	169.20	5600	8800	324.68	510.21	0.75	37.50	
			23.50x7.20	169.20	5400	8900	313.09	516.01	0.80	40.00	
-	-		-	-	-	-	-	-	-	-	
-	-		-	-	-	-	-	-	-	-	
-	-		-	-	-	-	-	-	-	-	
-	-		-	-	-	-	-	-	-	-	
<b>Only Four Samples for Tensile Test</b>											
<b>Bend Test</b>											

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

Note:

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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



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**University of Engineering and Technology Lahore, 54890**  
**Pakistan. Ph: 92-42-99029202**

To,  
 A.Senior Engineer  
 University of Education Lahore  
 Strengthening of University of Education, Lahore (Main/Township) - Construction of Student Service Csntr.  
 Reference # CED/TFL **35367** (Dr. Qasim Khan) Dated: 15-09-2020  
 Reference of the request letter # UE/Engg/UE/20/244 Dated: 08-06-2020

**Tension Test Report** (Page -1/2)

Date of Test 17-09-2020  
 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 <sup>2</sup> )		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	0.372	0.11	0.109	3700	4900	74200	75100	98200	99500	1.00	12.5	AF Steel
2	0.370	3	0.372	0.11	0.109	3700	4900	74200	74980	98200	99300	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
<b>Bend Test</b>														
#3 Bar Bend Test Through 180° is Satisfactory														

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

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

To,  
 A.Senior Engineer  
 University of Education Lahore  
 Construction of Academic Block at University of Education, Lahore. (Main/Township)

Reference # CED/TFL **35367** (Dr. Qasim Khan)  
 Reference of the request letter # UE/Engg/UE/20/144

Dated: 15-09-2020  
 Dated: 19-02-2020

**Tension Test Report** (Page -2/2)

Date of Test 17-09-2020  
 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 <sup>2</sup> )		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	3600	5100	72200	71180	102200	100900	0.90	11.3	AF Steel
2	0.375	3	0.375	0.11	0.110	3700	5100	74200	74040	102200	102100	0.80	10.0	
3	4.293	10	1.268	1.27	1.262	41000	52400	71200	71620	91000	91600	1.50	18.8	
4	4.314	10	1.271	1.27	1.268	40600	52000	70500	70580	90300	90400	1.60	20.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only four samples for tensile and two samples for bend test</b>														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														
#10 Bar Bend Test Through 180° is Satisfactory														

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

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**Department of Civil Engineering**  
**University of Engineering and Technology Lahore, 54890**  
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To,  
M/S Defence Housing Authority.  
Lahore Cantt  
(U/G External Elect Works alongwith Street Light System DHA Ph-IX Prism-9(M/s DHA Const.)

Reference # CED/TFL **35371** (Dr. Qasim Khan)  
Reference of the request letter # 408/241/E/Lab/978/29

Dated: 16-09-2020  
Dated: 14-09-2020

**Tension Test Report** (Page -1/1)

Date of Test 17-09-2020  
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 <sup>2</sup> )		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	0.361	3	0.368	0.11	0.106	4000	4900	80200	83080	98200	101800	1.20	15.0	Mughal Steel
2	0.373	3	0.374	0.11	0.110	3800	4800	76200	76400	96200	96600	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

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

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**Department of Civil Engineering**  
**University of Engineering and Technology Lahore, 54890**  
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To,  
Resident Engineer  
A. A. Associates Jv Planners Consultant Engineers  
Construction of BRT Banda Fateh Khan Road Darmalak Road, Darmalak to Ghor Zand Road  
Darsha Khel Road Rehman Abad Road Pakka Road, Karapa Shakardara Road Including Bridge  
and PCC Road in UCS Sodhal Lachi Rural Mandori Kohat Pk-39

Reference # CED/TFL **35372** (Dr. Qasim Khan)  
Reference of the request letter # PCE/RE/KHT/060

Dated: 16-09-2020  
Dated: 15-09-2020

**Tension Test Report** (Page – 1/4)

Date of Test 17-09-2020  
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	20100	197.18	198	>3.50	xx
2	12.70 (1/2")	775.0	780.0	18200	178.54	19900	195.22	199	>3.50	xx
3	12.70 (1/2")	775.0	785.0	18000	176.58	20400	200.12	199	>3.50	xx
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
<b>Only three samples 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

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**UET Lahore, Pakistan.**

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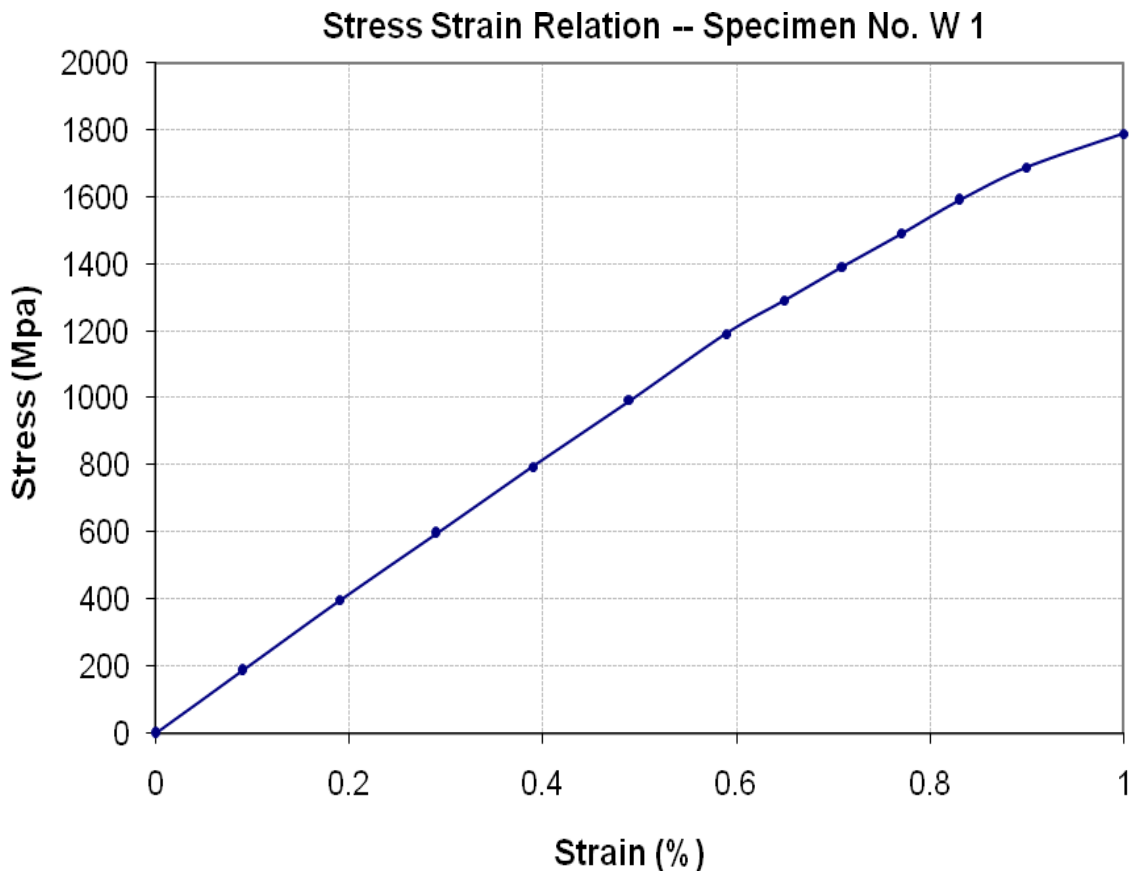
To,  
Resident Engineer  
A. A. Associates Jv Planners Consultant Engineers  
Construction of BRT Banda Fateh Khan Road Darmalak Road, Darmalak to Ghor Zand Road  
Darsha Khel Road Rehman Abad Road Pakka Road, Karapa Shakardara Road Including Bridge  
and PCC Road in UCS Sodhal Lachi Rural Mandori Kohat Pk-39

Reference # CED/TFL **35372** (Dr. Qasim Khan)  
Reference of the request letter # PCE/RE/KHT/060

Dated: 16-09-2020

Dated: 15-09-2020

**Graph** (Page – 2/4)



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

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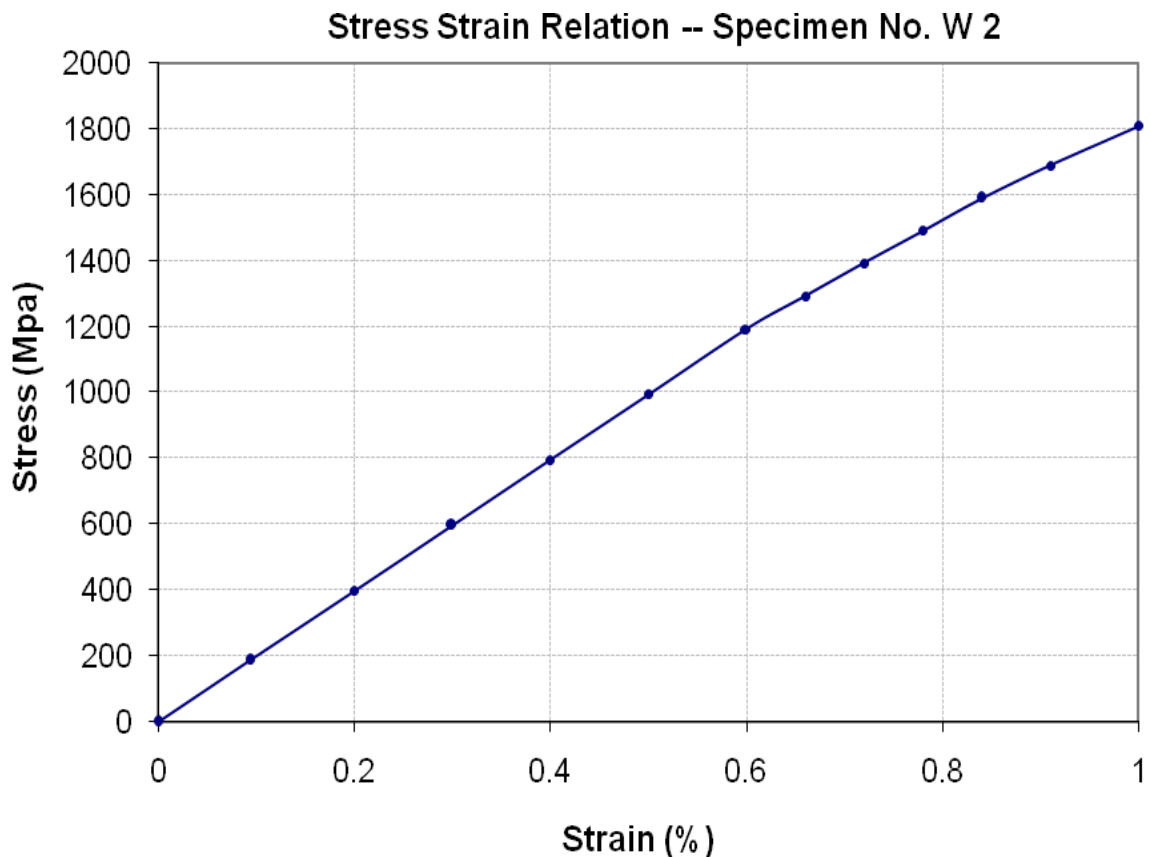
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Reference # CED/TFL **35372** (Dr. Qasim Khan)  
Reference of the request letter # PCE/RE/KHT/060

Dated: 16-09-2020

Dated: 15-09-2020

**Graph** (Page – 3/4)



**I/C Testing Laboratories**  
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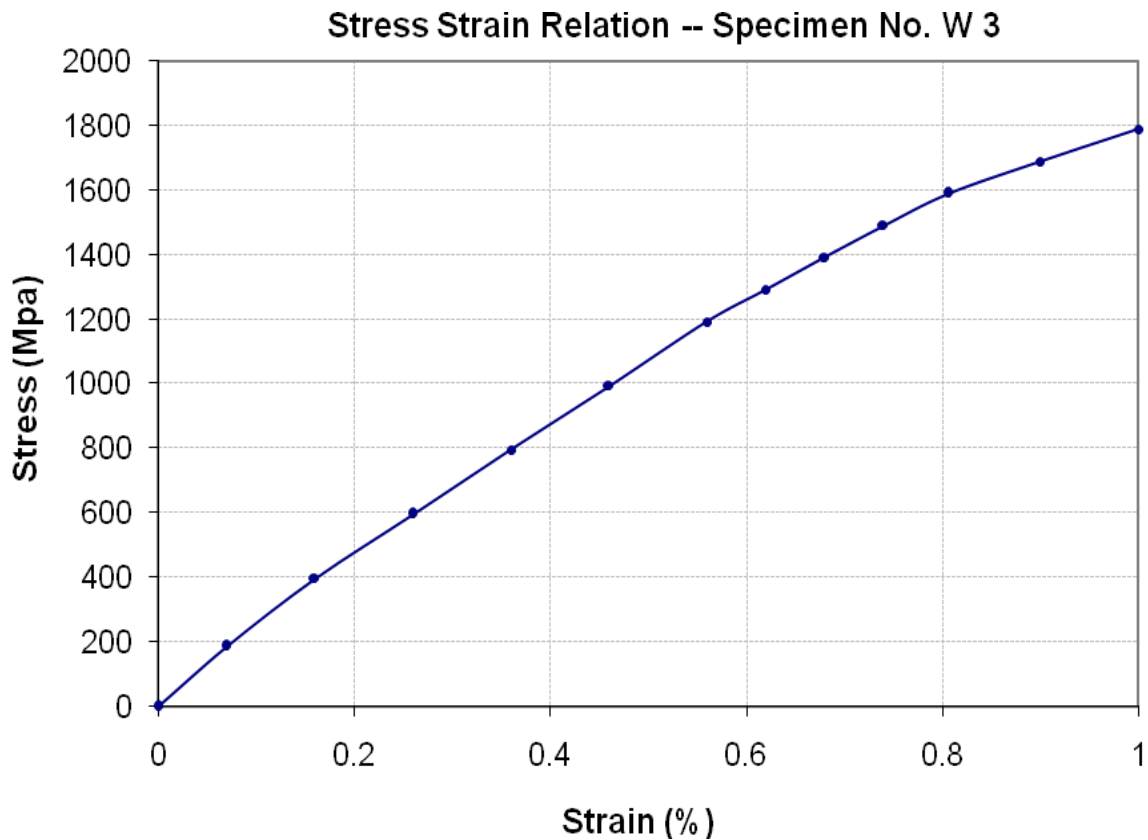
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Resident Engineer  
A. A. Associates Jv Planners Consultant Engineers  
Construction of BRT Banda Fateh Khan Road Darmalak Road, Darmalak to Ghor Zand Road  
Darsha Khel Road Rehman Abad Road Pakka Road, Karapa Shakardara Road Including Bridge  
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Reference # CED/TFL **35372** (Dr. Qasim Khan)  
Reference of the request letter # PCE/RE/KHT/060

Dated: 16-09-2020

Dated: 15-09-2020

**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**  
**University of Engineering and Technology Lahore, 54890**  
**Pakistan. Ph: 92-42-99029202**

To,  
 Sub Divisional Officer  
 Public Health Engg: Sub Division  
 Faisalabad  
 (Provision of Sewerage System at Dijkot District Faisalabad)

Reference # CED/TFL **35373** (Dr. Qasim Khan)  
 Reference of the request letter # 332

Dated: 16-09-2020  
 Dated: 17-08-2020

**Tension Test Report** (Page -1/1)

Date of Test 17-09-2020  
 Gauge length 8 inches  
 Description Deformed Steel Bar Tensile Test

Sr. No.	Weight (lbs/ft)	Diameter/ Size (inch)		Area (in <sup>2</sup> )		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	0.088	3/16	0.182	-----	0.026	560	720	-----	47620	-----	61300	1.30	16.3	
2	0.091	3/16	0.184	-----	0.027	560	880	-----	46250	-----	72700	1.20	15.0	
3	0.159	1/4	0.244	-----	0.047	1400	2080	-----	66200	-----	98400	1.10	13.8	
4	0.162	1/4	0.247	-----	0.048	1280	2080	-----	59090	-----	96100	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only four samples for tensile test</b>														
Bend Test														

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

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**Department of Civil Engineering**  
**University of Engineering and Technology Lahore, 54890**  
**Pakistan. Ph: 92-42-99029202**

To,  
 Resident Engineer  
 Usman Industries  
 56 B-3, Gulberg III, Lahore

Reference # CED/TFL **35374** (Dr. Qasim Khan)  
 Reference of the request letter # Nil

Dated: 16-09-2020  
 Dated: 16-06-2020

**Tension Test Report** (Page -1/1)

Date of Test 17-09-2020  
 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 <sup>2</sup> )		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	4000	4900	80200	80820	98200	99100	0.90	11.3	
2	0.377	3	0.376	0.11	0.111	4400	5100	88200	87560	102200	101500	0.90	11.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

**I/C Testing Laboratoires**  
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To,  
 Resident Engineer  
 Metroplan-Asian Jv  
 Resident Construction Supervision for Establishment of 200 Bedded Mother & Child Hospital  
 and Nursing College, District Mianwali

Reference # CED/TFL **35375** (Dr. Qasim Khan) Dated: 16-09-2020  
 Reference of the request letter # Metroplan Asian Jv-Nexus-MMCH-RE-459 Dated: 10-09-2020

**Tension Test Report** (Page -1/1)

Date of Test 17-09-2020

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 <sup>2</sup> )		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	4.248	10	1.261	1.27	1.249	41800	56600	72600	73790	98300	100000	1.20	15.0	SJ Steel
2	4.293	10	1.268	1.27	1.262	42200	57000	73300	73710	99000	99600	1.30	16.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
Bend Test														
#10 Bar Bend Test Through 180° is Satisfactory														

**I/C Testing Laboratoires**  
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