

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

To, M/S Engineers Associates Precast Pvt Ltd 18 km Lahore Sheikhupura Road

Reference # CED/TFL 33565 (Dr. Qasim Khan)	Date
Reference of the request letter # EAP/UET/2019-20/2062	Date

Dated: 16-07-2019 Dated: 08-07-2019

Tension Test Rep	ort (Page – 1/2)
Date of Test	19-07-2019
Gauge length	640 mm
Description	Steel Strand Tensile Test as per ASTM A-416-94a

Sr. No.	Nominal Diameter	Nominal Measured Weight weight		Yield st clause	trength e (6.3)	Brea strength (6.	king 1 clause 2)	Elongation	rks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)	%	Rema
1	9.53 (3/8")	432.0	441.0	10100	99.08	11600	113.80	>3.50	XX
2	11.11 (7/16")	582.0	589.0	12400	121.64	15400	151.07	>3.50	xx
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
			Or	nly two sample	es for Test				

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.



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

Ref: <u>CED/TFL/07/33565</u>

Dated: 16-07-2019

To, M/S Engineers Associates Precast Pvt Ltd 18 km Lahore Sheikhupura Road

Subject: - CALIBRATION OF DYNAMOMETER (MARK: TFL/07/33565) (Page – 1/2)

Ref: Your letter No. EAP/UET/2019-20/2063, dated: 08/07/2019 on the subject cited above. One Dynamometer as received by us has been calibrated. The results are tabulated as under:

Zero -

Zero -

5000 (kg) 4500 (kg)

Total Range	:	
Calibrated Rang	;e :	

Dynamometer Readings (kg)	500	1000	1500	2000	2500	3000	3500	4000	4500
Calibrated Readings (kg)	467	917	1400	1800	2383	2733	3267	3867	4400



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, Director Arab Shah Construction Company Kabul, Afghanistan Construction of 140M Suspension Bridge, Borka Village, Bangee District- Takhar Provice (Ministry of Rural Rehabilitation and Development)

Reference # CED/TFL 33577 (Dr. Waseem Abbas)Dated: 17-07-2019Reference of the request letter # RRD/MOF/NRAP/NRHE/TKR/067/C2/001 Dated: 16-07-2019

Tension Test Report (Page – 1/1)

Date of Test22-07-2019Gauge length------DescriptionSteel Wire Rope Tensile Test

Sr. No.	Nominal Diameter	Measured weight	Yield Load	Breaking Load	ırks / Coil No.
	(mm)	(kg/m)	(kg)	(kg)	Rema
1	13	0.69		12000	
2	26	2.70		47400	
3	32	4.11		64000	
4	40	7.46		108000	
-	-	-	-	-	
		Only four s	samples for Test		

I/C Testing Laboratoires UET Lahore, Pakistan.

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

Ref: <u>CED/TFL/07/33593</u>

Dated: 19-07-19

To Material Engineer ACC (Pvt) Ltd Lahore Sialkot Motorway (BOT) Project

Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/07/33593) (Page -1/2)

Reference to your Letter No. ACC/RE/LSM/2019/278, Dated: 18/07/2019 on the subject cited above. One Hydraulic Jack (Jack No 313, Gauge No. AES-313) as received by us has been calibrated. The results are tabulated as under:

Total Range :	Zero -	1000 (bar
Calibrated Range :	Zero -	320 (bar)

Hydraulic Jack Re	5	40	80	120	160	200	240	280	320	
Calibrated Load	(Kg)	0	25000	51000	74600	100200	125200	149200	175200	197800
Cambrated Load	Tonne	0	25.00	51.00	74.60	100.20	125.20	149.20	175.20	197.80
Calibrated Pressu	0	40.72	83.07	121.51	163.21	203.93	243.02	285.37	322.18	

1 Tonne = 1000 Kg, The Ram Area of Jack = 602.09 cm^2



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

Ref: <u>CED/TFL/07/33593</u>

Dated: 19-07-19

To Material Engineer ACC (Pvt) Ltd Lahore Sialkot Motorway (BOT) Project

Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/07/33593) (Page -2/2)

Reference to your Letter No. ACC/RE/LSM/2019/278, Dated: 18/07/2019 on the subject cited above. One Hydraulic Jack (Jack No 314, Gauge No. AES-314) as received by us has been calibrated. The results are tabulated as under:

Total Range :	Zero -	1000 (bar
Calibrated Range :	Zero -	320 (bar)

Hydraulic Jack Re	5	40	80	120	160	200	240	280	320	
Calibrated Load	(Kg)	0	28000	52000	74800	102000	125200	149400	175400	197400
Cambrated Load	Tonne	0	28.00	52.00	74.80	102.00	125.20	149.40	175.40	197.40
Calibrated Pressu	0	45.61	84.70	121.84	166.14	203.93	243.35	285.70	321.53	

1 Tonne = 1000 Kg, The Ram Area of Jack = 602.09 cm^2



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, Resident Engineer PEPAC Establishment of Workers Welfare Complex (Phase-I) Adjacent to Sundar Industrial Estate, District Kasur (Package A & B)(Ittefaq Steel)

Reference # CED/TFL 33594 (Dr. Ali Ahmed)	Dated: 19-07-2019
Reference of the request letter # RE/PEPAC/Sundar/AB-186	Dated: 18-07-2019

Tension Test Report (Page -1/1)

Date of Test22-07Gauge length8 inchDescriptionDefor

22-07-2019 8 inches Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight	H Bion Bize Cinch) H Diameter/ Size (inch)		Diameter/ Size (inch) Area (in ²) Jiefeld load Kield load Kield load Load Breaking		Yield Stress (psi)		Ultimate Stress (psi)		Elongation	longation	emarks		
S	(lbs/ft)	Nominal	Actual	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)	H %	R
1	0.376	3/8	0.375	0.11	0.110	3100	4700	62200	61840	94200	93800	1.10	13.8	
2	0.372	3/8	0.373	0.11	0.109	3000	4600	60200	60510	92200	92800	1.40	17.5	
-	-	-	-	I	-	-	-	-	-	-	-	-	•	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	I	-	-	-	-	-	-	-	-	-	
			N	ote: on	ly two s	amples f	or tensile	and one	sample f	or bend	test			r
							Bend T	est						
3/8	" Dia Ba	ır Bend	Test Th	nrough	180° is \$	Satisfacto	ory							

I/C Testing Laboratoires UET Lahore, Pakistan.

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

To, Project Manager State Grid China Electric Power Equipment and Technology Co., Ltd <u>+600kV Matiari-Lahore HVDC Transmission Line (Lot-6)</u>

Reference # CED/TFL 33595 (Dr. Ali Ahmed)

Dated: 19-07-2019

Reference of the request letter # CET/HVDC/SPO(04)L6/Kamran Steel/UET-19-712Dated: 19-07-2019

Tension Test Report (Page -1/1)

Date of Test22-0Gauge length8 inDescriptionDefendence

22-06-2019 8 inches 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	longation	Remarks
	(llbs/ft)	Nominal (#)	Actual (inch)	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)	H %	R
1	0.373	3	0.374	0.11	0.110	3100	4500	62200	62360	90200	90600	1.30	16.3	
2	0.375	3	0.375	0.11	0.110	3100	4600	62200	62000	92200	92000	1.50	18.8	
3	0.371	3	0.373	0.11	0.109	3200	4500	64200	64690	90200	91000	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Note	e: only	three sa	amples fo	or tensile	and thre	e sample	s for ben	d test			
							Bend T	'est						
#3	#3 Bar Bend Test Through 180° is Satisfactory													
#3	#3 Bar Bend Test Through 180° is Satisfactory													
#3	Bar Ben	d Test	Through	n 180° i	s Satisfa	ctory								

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.

AND REAL PROPERTY OF THE PROPE

STRUCTURAL ENGINEERING DIVISION

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

To, Acting Project Director Air University Multan Campus Construction of Academic Block-I (Ittefaq Steel)

Reference # CED/TFL **33596** (Dr. Ali Ahmed) Reference of the request letter # MUX/AUMC/AB1/2018/98 Dated: 19-07-2019 Dated: 18-07-2019

Tension Test Rep	ort (Page -1/1)
Date of Test	22-07-2019
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	longation	Remarks
S	(lbs/ft)	Nominal (#)	Nominal (#) Actual (inch)		Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)	3 %	Ro
1	0.369	3	0.371	0.11	0.108	2800	4300	56200	56950	86200	87500	1.40	17.5	
2	0.379	3	0.377	0.11	0.111	3000	4500	60200	59330	90200	89000	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	•	-	•	-	•	-	-	-	•	•	-	•	
-	-	•	-	•	-	•	-	-	-	•	•	-	•	
			N	ote: on	ly two s	amples f	or tensile	and one	sample f	or bend t	test	T		-
							Bend T	est						
#3	#3 Bar Bend Test Through 180° is Satisfactory													

I/C Testing Laboratoires UET Lahore, Pakistan.

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

To, Project Manager State Grid China Electric Power Equipment and Technology Co., Ltd <u>+</u>600kV Matiari-Lahore HVDC Transmission Line (Lot-4)

Reference # CED/TFL 33597 (Dr. Ali Ahmed)

Dated: 19-07-2019

Reference of the request letter # CET/HVDC/SPO(04A)L4/SJ Steel/UET-19-711Dated: 19-07-2019

Tension Test Report (Page -1/1)

Date of Test22-Gauge length8 inDescriptionDescription

22-07-2019 8 inches 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	longation	Remarks
	(lbs/ft)	Nominal (#)	Actual (inch)	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)	H %	Rc
1	0.380	3	0.377	0.11	0.112	3700	5200	74200	72940	104200	102600	1.20	15.0	
2	0.383	3	0.378	0.11	0.112	4000	5400	80200	78400	108200	105900	1.00	12.5	
3	0.383	3	0.378	0.11	0.112	3800	5300	76200	74480	106200	103900	1.10	13.8	
-	-	-	-	I	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Not	e: only	three sa	amples fo	or tensile	and thre	e sample	s for ben	d test			
							Bend T	'est						
#3	#3 Bar Bend Test Through 180° is Satisfactory													
#3	#3 Bar Bend Test Through 180° is Satisfactory													
#3	Bar Ben	d Test	Fhrough	n 180° is	s Satisfa	ctory								

I/C Testing Laboratoires UET Lahore, Pakistan.

Note:

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

To, Assistant Engineer/SDO (Civil) University of Okara (Vertical Extension 2ND Floor on Academic Block, Vertical Extension 1st Floor on Student Service Center, Vertical Extension 1st Floor on Hostel Building)

Reference # CED/TFL **33599** (Dr. Ali Ahmed) Reference of the request letter # Cell/2019/411 Dated: 19-07-2019 Dated: 15-07-2019

Tension Test Rep	ort (Page -1/1)
Date of Test	22-07-2019
Gauge length	8 inches
Description	Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

ir. No.	Weight	Diameter/ Size		Area (in ²)		Yield load	Breaking Load	Yield Stress (psi)		Ultimate Stress (psi)		Elongation	longation	Remarks
S	(lbs/ft)	Nominal (#)	Actual (inch)	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)	3 %	R
1	0.398	3	0.386	0.11	0.117	3200	4500	64200	60360	90200	84900	1.30	16.3	
2	0.417	3	0.395	0.11	0.122	3300	4700	66200	59380	94200	84600	1.40	17.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	I	-	•	-	-	-	-	•	-	•	
-	-	-	-	I	-	•	-	-	-	-	•	-	•	
			N	ote: on	ly two s	amples f	or tensile	and one	sample f	or bend	test	1		
<u> </u>							Bend T	est						
#3	#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, Sub Divisional Officer Buildings Sub Division No. 15 Lahore (Construction of New Administration Block In The Premises of Lahore High Court Lahore)

Reference # CED/TFL **33600** (Dr. Ali Ahmed) Reference of the request letter # 2339 Dated: 19-07-2019 Dated: 08-07-2019

Tension Test Rep	oort (Page -1/1)
Date of Test	22-07-2019
Gauge length	8 inches
Description	Deformed Steel Bar Tensile Test as per ASTM-A615

Sr. No.	Weight	Diameter/ Size (inch)		Area (in ²)		Yield load	Breaking Load	Yield Stress (psi)		Ultimate Stress (psi)		Elongation	longation	temarks
S	(lbs/ft)	Nominal	Actual	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	Actual (inch)		R
1	0.379	3/8	0.377	0.11	0.111	3100	4600	62200	61360	92200	91100	1.30	16.3	
2	0.381	3/8	0.378	0.11	0.112	3200	4600	64200	62920	92200	90500	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			N	ote: on	ly two s	amples f	or tensile	and one	sample f	or bend t	test			
							Bend T	est						
3/8	3/8" Dia 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

Ref: <u>CED/TFL/07/33601</u>

Total Range

Dated: 19-07-19

To Chief Executive Officer Pak Matiari-Lahore Transmission Company (Pvt) Ltd +600kV Matiari-Lahore HVDC Transmission Project Lot-08 Camp Pakpattan

Subject:- CALIBRATION OF COMPRESSION TESTING MACHINE OF 2000 kN (MARK: CED/TFL/07/33601) (Page -1/2)

Zero - 2000 (kN)

Reference to your letter No. MLTC-UET-19-2464, dated: 17/07/2019 on the subject cited above. One Compression Testing Machine (Model: YES 2000) has been calibrated by using standard calibration device. The results are tabulated as under:

:

Calibrated Rang : Zero – 1400 (kN)												
Machine Reading (kN)	Corrected Load Value (kN)	Machine Reading (kN)	Corrected Load Value (kN)									
50	48	600	598									
100	95	650	651									
150	145	700	700									
200	195	800	800									
250	255	900	899									
300	295	1000	1000									
350	345	1100	1101									
400	396	1200	1200									
450	447	1300	1301									
500	496	1400	1402									
550	549											

Note : Calibration was carried out at a constant loading rate of 1 kN/sec.

I/C Testing Laboratoires UET Lahore, Pakistan.

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

 Ref: CED/TFL/07/33601
 Dated: 19-07

 19
 To

 To
 Chief Executive Officer

 Pak Matiari-Lahore Transmission Company (Pvt) Ltd
 +600kV Matiari-Lahore HVDC Transmission Project Lot-08 Camp Pakpattan

Subject:- CALIBRATION OF COMPRESSION TESTING MACHINE OF 2000 kN (MARK: CED/TFL/07/33601) (Page -2/2)

CALIBRATION CURVE FOR COMPRESSION TESTING MACHINE

Callibrated Value (kN) = (1.004 x Machine Reading (kN)) - 4.127



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

Ref: <u>CED/TFL/07/33602</u>

Total Range

Dated: 19-07-19

To Chief Executive Officer Pak Matiari-Lahore Transmission Company (Pvt) Ltd +600kV Matiari-Lahore HVDC Transmission Project Lot-07 Camp Bakhshan Khan

Subject:- CALIBRATION OF COMPRESSION TESTING MACHINE OF 2000 kN (MARK: CED/TFL/07/33602) (Page -1/2)

Zero - 2000 (kN)

Reference to your letter No. MLTC-UET-19-2465, dated: 17/07/2019 on the subject cited above. One Compression Testing Machine (Model: YES 2000) has been calibrated by using standard calibration device. The results are tabulated as under:

:

Calibrated Rang : Zero – 1400 (kN)												
Machine Reading (kN)	Corrected Load Value (kN)	Machine Reading (kN)	Corrected Load Value (kN)									
50	41	600	604									
100	89	650	655									
150	140	700	705									
200	195	800	806									
250	246	900	906									
300	297	1000	1007									
350	349	1100	1109									
400	401	1200	1209									
450	452	1300	1311									
500	501	1400	1409									
550	554											

Note : Calibration was carried out at a constant loading rate of 1 kN/sec.

I/C Testing Laboratoires UET Lahore, Pakistan.

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Ref: <u>CED/TFL/07/33602</u>

Dated: 19-07-19

To Chief Executive Officer Pak Matiari-Lahore Transmission Company (Pvt) Ltd +600kV Matiari-Lahore HVDC Transmission Project Lot-07 Camp Bakhshan Khan

Subject:- CALIBRATION OF COMPRESSION TESTING MACHINE OF 2000 kN (MARK: CED/TFL/07/33602) (Page -2/2)



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, Project Manager Depac Construction of Dr. Maqbool Ahmad Block, King Edward Medical University (KEMU), Lahore

Reference # CED/TFL **33607** (Dr. Waseem Abbas) Reference of the request letter # T-03/22 Dated: 22-07-2019 Dated: 22-07-2019

Tension Test Report (Page -1/1)

Date of Test Gauge length Description 22-07-2019 8 inches Deformed Steel Bar Tensile Test as per ASTM-A615

Sr. No.	Weight	Diameter/ Size		Area (in ²)		Yield load	Breaking Load	Yield Stress (psi)		Ultimate Stress (psi)		Elongation	longation	kemarks
	(lbs/ft)	Nominal (#)	Actual (inch)	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)	H %	R
1	0.391	3	0.383	0.11	0.115	3500	4900	70200	67140	98200	94000	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	•	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			N	ote: on	ly one s	sample fo	or tensile	and one	sample fo	or bend t	est			
							Bend T	est						
#3	#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.