Client Reference No.: CEO/24/031 **Dated:** 24-06-2024

SOM Lab Ref: CED/SOM/4344 (Page 1/1) **Dated:** 26-06-2024

Test Type: Pull-Out Testing of HORSE HM-500 For Advance Construction Chemicals

Test Performed by: Dr. Syed Asad Ali Gillani

Naeem Ahmad,

C.E.O., Advance Engineering & Chemical Services,

Lahore

This is with reference to your above-mentioned letter and SOM receipt No. 4344 dated: 24-06-2024. The samples for pull-out test submitted in the Laboratory have been tested and the results are provided below.

Pull-Out Test Results

Sample No.	Concrete Size (Cylinder)	Size of Embedded Bolt (Threaded Rod)	Length of Embedded Bolt	Maximum Load Attained	Mode of Failure
1	Diameter = 6 inches Height = 12 inches	M16	175 mm	28.2 kN	Slippage failure occur & Concrete also fails at this load
2		M20	175 mm	75.5 kN	Splitting failure occur & Concrete also fails at this load

Note: Please always confirm the results on web www.uet-civil.edu.pk

Test Performed by: S. Asad Ali Gillani

Ahmet KOC
Resident Engineer (Lab)
Diamer Basha Consultants Group (DBCG)
(Diamer Basha Dam Project, MW-1: Dam Part “Civil Works” And Tangir HydroPower Works)

Client Reference No.: DBCG/Lab/PFJV/2024/038 Dated: 12-09-2024

SOM Lab Ref: CED/SOM/4804 (Page 1/1) Dated: 16-09-2024

Test Type: Tensile Test

Sample Type: MS Seamless Pipe (PTSP-S1-2024-03) **Gauge Length:** 2 inches
(Jamal Industries)

Tensile Test Results

Sr. No.	Size of strip (mm)	X Section Area (mm^2)	Yield Load (kN)	Ultimate Load (kN)	Yield Stress (MPa)	Ultimate Tensile Stress (MPa)	Elongation (inch)	% Elongation
1	16.1 x 3.2	51.52	19.2	23.7	372.67	460.02	0.45	22.50

Muhammad Sarwar, RE **Test Performed By:** **Dr. /Engr.** Nauman Khurram

Prime Engg &Testing Consultants.(Const Of Link Highway Connecting LSM at Umerkot To Narowal)

Client Reference: RE-PE-ACE-P/LSM-NMN/2024/212 **SOM Lab Ref:** 4805 (P-1/2)

Dated: 12-09-2024 **Dated:** 16-09-2024

Test: Tension Test **Test Specification:** ASTM-A-615

Guage Length: 200 mm **Sample Type:** Deformed Bar (Mughal Steel)

S.No.	Weight	Dia.		Area		Yield Load	Ultimate Load	Yield Stress		Ult. Stress		Elongation	Gauge Length	%age Elongation	Remarks
		Nominal	Calculated	Nominal	Calculated			(according to nominal area)	(according to measured area)	(according to nominal area)	(according to measured area)				
	kg/m	mm	mm	mm^2	mm^2	kN	kN	MPa	MPa	MPa	MPa	mm	mm	%	
1	3.828	25	24.93	491	488	244.50	319.50	498	502	651	655	37.5	200	18.8	
2	3.823	25	24.90	491	487	246.00	320.50	501	506	653	659	35.0	200	17.5	
3	3.828	25	24.92	491	488	246.50	319.20	502	506	650	655	35.0	200	17.5	
4	3.838	25	24.95	491	489	245.00	319.20	499	502	650	653	37.5	200	18.8	
5	2.446	20	19.92	314	312	167.50	212.00	533	538	675	681	37.5	200	18.8	
6	2.430	20	19.85	314	309	166.00	209.50	529	537	667	677	32.5	200	16.3	
7	2.440	20	19.89	314	311	168.20	211.20	536	542	673	680	27.5	200	13.8	
8	2.446	20	19.92	314	312	168.00	212.50	535	540	677	682	35.0	200	17.5	
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BEND TEST:

25mm	Sample bend through 180 degrees Satisfactorily without any crack	**Note:-**
25mm	Sample bend through 180 degrees Satisfactorily without any crack	
20mm	Sample bend through 180 degrees Satisfactorily without any crack	Only Twelve Samples Received and Tested
20mm	Sample bend through 180 degrees Satisfactorily without any crack	

Note: Please always confirm the results of above report on web www.uet-civil.edu.pk

Muhammad Sarwar, RE **Test Performed By:** **Dr. /Engr.** Nauman Khurram

Prime Engg &Testing Consultants.(Const Of Link Highway Connecting LSM at Umerkot To Narowal)

Client Reference: RE-PE-ACE-P/LSM-NMN/2024/212 **SOM Lab Ref:** 4805 (P-2/2)

Dated: 12-09-2024 **Dated:** 16-09-2024

Test: Tension Test **Test Specification:** ASTM-A-615

Guage Length: 200 mm **Sample Type:** Deformed Bar (Mughal Steel)

S.No.	Weight	Dia.		Area		Yield Load	Ultimate Load	Yield Stress		Ult. Stress		Elongation	Gauge Length	%age Elongation	Remarks
		Nominal	Calculated	Nominal	Calculated			(according to nominal area)	(according to measured area)	(according to nominal area)	(according to measured area)				
	kg/m	mm	mm	mm^2	mm^2	kN	kN	MPa	MPa	MPa	MPa	mm	mm	%	
1	1.564	16	15.92	201	199	100.20	129.00	499	504	642	649	35.0	200	17.5	
2	1.561	16	15.91	201	199	99.70	129.00	496	502	642	649	35.0	200	17.5	
3	1.570	16	15.96	201	200	100.00	129.20	498	500	643	646	35.0	200	17.5	
4	1.567	16	15.94	201	200	100.20	129.50	499	502	644	649	32.5	200	16.3	
5	0.969	12	12.53	113	123	61.50	78.70	544	499	696	638	27.5	200	13.8	
6	0.974	12	12.57	113	124	63.20	81.00	559	510	717	654	27.5	200	13.8	
7	0.977	12	12.59	113	124	62.50	80.70	553	503	714	649	27.5	200	13.8	
8	0.965	12	12.51	113	123	60.20	78.20	533	490	692	636	32.5	200	16.3	
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BEND TEST:

16mm	Sample bend through 180 degrees Satisfactorily without any crack
16mm	Sample bend through 180 degrees Satisfactorily without any crack
12mm	Sample bend through 180 degrees Satisfactorily without any crack
12mm	Sample bend through 180 degrees Satisfactorily without any crack

Note:-

Only Twelve Samples Received and Tested

Note: Please always confirm the results of above report on web www.uet-civil.edu.pk

Test Performed by: S. Asad Ali Gillani

Malik Muhammad Samiullah
QA/QC Manager
Future Development Holdings (Pvt) Ltd.Islamabad
Project: Development of Capital Smart City (Adventure Arena)

Client Reference No.: FDHL/CSC/9/2024/322 Dated: 16-09-2024

SOM Lab Ref: CED/SOM/4810(Page 1/3) Dated: 16-09-2024

Test Type: Tensile Test

Sample Type: Angle Base Plate **Specification**: ASTM A-36

Tensile Test Results

Sr. No.	Sample Type	Size of strip (mm)	X Section Area (mm^2)	Yield Load (kN)	Ultimate Load (kN)	Yield Stress (MPa)	Ultimate Tensile Stress (MPa)	Elongation (inch)	% Elongation
1	Angle (2"x2"x2"')	25.9 x 6.00	155.40	56.20	78.20	361.65	503.22	0.45	22.50
2		26.0 x 6.00	156.00	56.90	81.70	364.74	523.72	0.50	25.00
3	Angle (1.5"x1.5"x1.5"')	25.1 x 4.00	100.40	31.00	58.10	308.76	578.69	0.20	10.00
4		27.6 x 4.00	110.40	35.10	70.20	317.93	635.87	0.25	12.50
5	Base Plate (18"x18"x20mm)	27.8 x 21.00	583.80	132.70	181.00	227.30	310.04	1.10	55.00
6		28.0 x 21.20	593.60	152.00	198.00	256.06	333.56	1.00	50.00

Note: Please always confirm the results on web www.uet-civil.edu.pk

Test Performed by: S. Asad Ali Gillani

Malik Muhammad Samiullah
QA/QC Manager
Future Development Holdings (Pvt) Ltd.Islamabad
Project: Development of Capital Smart City (Adventure Arena)

Client Reference No.: FDHL/CSC/9/2024/322 Dated: 16-09-2024

SOM Lab Ref: CED/SOM/4810(Page 2/3) Dated: 16-09-2024

Test Type: Tensile Test

Sample Type: Bolts

Tensile Test Results

Sample No.	Sample Type	Tested Diameter of Rod/Bolt (mm)	Ultimate Load (kN)	Ultimate Tensile Stress (MPa)	% Elongation
1	Bolt (35mm)	20.0	359.0	1143.30	10.0
2	Bolt (20mm)	14.0	150.0	974.90	30.0
3	Bolt (12mm)	10.0	58.0	741.40	20.0

Note: Please always confirm the results on web www.uet-civil.edu.pk

Test Performed by: S. Asad Ali Gillani

Malik Muhammad Samiullah
QA/QC Manager
Future Development Holdings (Pvt) Ltd.Islamabad
Project: Development of Capital Smart City (Adventure Arena)

Client Reference No.: FDHL/CSC/9/2024/322 Dated: 16-09-2024

SOM Lab Ref: CED/SOM/4810(Page 3/3) Dated: 16-09-2024

Test Type: Load Test

Sample Type: D-Shaggle, Wire Lock, U-Clamp and Turn Buckle

Load Test Results

Sample No.	Sample Type	Ultimate Load (kN)	Remarks
1	D-Shaggle	203.50	Pin bends at this load
2	Wire Lock	27.80	Lock breaks at this load
3	U-Clamp	97.50	Slippage Failure occurs at this load
4	Turn Buckle	173.50	Clamp Pin bended at this load

Note: Please always confirm the results on web www.uet-civil.edu.pk

Waqas Ahmed Ghumman,PM **Test Performed By:** **Dr. /Engr.** Asad Ali Gilllani

High-Q Constructions Lhr.(Const Of High-Q Mall at 3-A Gulberg II Lahore)

Client Reference: QC/HQ/CIVIL/234 **Dated:** 16-09-2024

SOM Lab Ref: CED/SOM/4808 (Page-1/1) **Dated:** 16-09-2024

Test: Tension Test & Bend Test **Test Specification:** ASTM-A 615

Sample Type: Deformed Bar **Gauge Length:** 200 mm

S.No.	Weight	Dia.		Area		Yield Load	Ultimate Load	Yield Stress		Ult. Stress		Elongation	Gauge Length	%age Elongation	Remarks
		Nominal	Calculated	Nominal	Calculated			(according to nominal area)	(according to measured area)	(according to nominal area)	(according to measured area)				
	kg/m	mm	mm	mm^2	mm^2	kN	kN	MPa	MPa	MPa	MPa	mm	mm	%	
1	3.930	25	25.26	398	501	256.00	337.20	644	511	848	674	25.0	200	12.5	
2	3.854	25	25.00	398	491	262.00	348.20	659	534	876	710	30.0	200	15.0	
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BEND TEST:

25mm	Sample bend through 180 degrees Satisfactorily without any crack

Note:-

Only Three Samples Received and Tested

Note: Please always confirm the results of above report on web www.uet-civil.edu.pk

UMT **Test Performed By:** **Dr. /Engr.** Asad Ali Gillani

Director PMO UMT Lahore.(For Exhibition Building)

Client Reference: EXB-1/02 **SOM Lab Ref:** 4806 (Page-1/1)

Dated: 12-09-2024 **Dated:** 16-06-2024

Test: Tension Test & Bend Test **Test Specification:** ASTM-A-615

Gauge Length: 8 inch **Sample Type:** Deformed Bar (Hunza steel)

S.No.	Weight	Dia.		Area		Yield Load	Ultimate Load	Yield Stress		Ult. Stress		Elongation	Gauge Length	%age Elongation	Remarks
		Nominal	Calculated	Nominal	Calculated			(according to nominal area)	(according to measured area)	(according to nominal area)	(according to measured area)				
	lb/ft	#	in	in^2	in^2	Tons	Tons	psi	psi	psi	psi	in	in	%	
1	2.658	8	0.997	0.79	0.781	25.86	34.53	72200	73030	96390	97500	1.60	8.0	20.0	
2	2.672	8	1.000	0.79	0.785	24.97	33.71	69720	70170	94110	94710	1.40	8.0	17.5	
3	1.487	6	0.746	0.44	0.437	13.30	18.04	66680	67140	90440	91060	1.60	8.0	20.0	
4	1.481	6	0.744	0.44	0.435	13.76	18.22	68980	69770	91310	92360	1.60	8.0	20.0	
5	0.670	4	0.501	0.20	0.197	6.73	8.63	74190	75320	95210	96660	1.30	8.0	16.3	
6	0.667	4	0.500	0.20	0.196	6.54	8.51	72170	73640	93860	95780	1.20	8.0	15.0	
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Witnessed By: Saqib Haroon (Site-Incharge UMT)

BEND TEST:

# 8	Sample bend through 180 degrees Satisfactorily without any crack
# 6	Sample bend through 180 degrees Satisfactorily without any crack
# 4	Sample bend through 180 degrees Satisfactorily without any crack

Note:-

Only Nine Samples Received and Tested

Note: Please always confirm the results of above report on web www.uet-civil.edu.pk

Engr. Naveed Sadiq **Test Performed By:** **Dr. /Engr.** Asad Ali Gillani

RE Orbit Developers.Lahore.(The Springs Atrium,Gulberg Lahore)

Client Reference: Nil **SOM Lab Ref:** 4807 (Page-1/1)

Dated: 16-09-2024 **Dated:** 16-09-2024

Test: Tension Test & Bend Test **Test Specification:** ASTM-A-615

Gauge Length: 8 inch **Sample Type:** Deformed Bar

S.No.	Weight	Dia.		Area		Yield Load	Ultimate Load	Yield Stress		Ult. Stress		Elongation	Gauge Length	%age Elongation	Remarks
		Nominal	Calculated	Nominal	Calculated			(according to nominal area)	(according to measured area)	(according to nominal area)	(according to measured area)				
	lb/ft	#	in	in^2	in^2	Tons	Tons	psi	psi	psi	psi	in	in	%	
1	2.665	8	0.998	0.79	0.783	24.31	32.47	67870	68480	90640	91450	1.50	8.0	18.8	
2	2.653	8	0.997	0.79	0.780	25.03	32.47	69870	70760	90640	91800	1.60	8.0	20.0	
3	1.458	6	0.738	0.44	0.428	15.11	19.44	75720	77850	97440	100170	1.30	8.0	16.3	
4	1.448	6	0.736	0.44	0.426	14.90	19.34	74700	77160	96930	100110	1.30	8.0	16.3	
5	0.649	4	0.493	0.20	0.191	6.32	8.53	69700	72980	94090	98520	1.00	8.0	12.5	
6	0.656	4	0.496	0.20	0.193	6.57	8.99	72510	75140	99150	102740	1.10	8.0	13.8	
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BEND TEST:

# 8	Sample bend through 180 degrees Satisfactorily without any crack
# 6	Sample bend through 180 degrees Satisfactorily without any crack
# 4	Sample bend through 180 degrees Satisfactorily without any crack

Note:-

Only Nine Samples Received and Tested

Note: Please always confirm the results of above report on web www.uet-civil.edu.pk

Muhammad Azmat, RE **Test Performed By:** **Dr. /Engr.** Asad Ali Gillani

NESPAK-Turkpak JV Lhr.(Reconstruction of Lady Willingdon Hospital,Lahore)

Client Reference: 4729/13/MA/04/83 **SOM Lab Ref:** 4809 (Page-1/1)

Dated: 07-08-2024 **Dated:** 16-09-2024

Test: Tension Test & Bend Test **Test Specification:** ASTM-A-615

Gauge Length: 8 inch **Sample Type:** Deformed Bar (AF Steel)

S.No.	Weight	Dia.		Area		Yield Load	Ultimate Load	Yield Stress		Ult. Stress		Elongation	Gauge Length	%age Elongation	Remarks
		Nominal	Calculated	Nominal	Calculated			(according to nominal area)	(according to measured area)	(according to nominal area)	(according to measured area)				
	lb/ft	#	in	in^2	in^2	Tons	Tons	psi	psi	psi	psi	in	in	%	
1	1.518	6	0.754	0.44	0.446	15.16	20.31	75980	74960	101780	100410	1.20	8.0	15.0	
2	1.515	6	0.753	0.44	0.445	14.19	18.67	71130	70330	93610	92560	1.30	8.0	16.3	
3	0.672	4	0.501	0.20	0.197	6.80	9.50	74980	76120	104770	106360	1.10	8.0	13.8	
4	0.672	4	0.501	0.20	0.197	6.80	9.48	74980	76120	104540	106130	1.00	8.0	12.5	
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BEND TEST:

# 6	Sample bend through 180 degrees Satisfactorily without any crack
# 4	Sample bend through 180 degrees Satisfactorily without any crack

Note:-

Only Six Samples Received and Tested

Note: Please always confirm the results of above report on web www.uet-civil.edu.pk

Engr. Haseeb Afzal **Test Performed By:** **Dr. /Engr.** Wasim Abbas

PM HMB Developers Pvt Ltd. Lahore (Commercial Tower, FTC Lahore)

Client Reference: HMBDPL/S.O/09/24/131(LHR) **SOM Lab Ref:** 4811 (Page-1/1)

Dated: 16-09-2024 **Dated:** 16-09-2024

Test: Tension Test & Bend Test **Test Specification:** ASTM-A-615

Gauge Length: 8 inch **Sample Type:** Deformed Bar

S.No.	Weight	Dia.		Area		Yield Load	Ultimate Load	Yield Stress		Ult. Stress		Elongation	Gauge Length	%age Elongation	Remarks
		Nominal	Calculated	Nominal	Calculated			(according to nominal area)	(according to measured area)	(according to nominal area)	(according to measured area)				
	lb/ft	#	in	in^2	in^2	Tons	Tons	psi	psi	psi	psi	in	in	%	
1	2.647	8	0.995	0.79	0.778	25.50	33.38	71200	72300	93200	94640	1.60	8.0	20.0	DO#7915
2	2.643	8	0.995	0.79	0.777	25.48	33.30	71150	72340	92970	94530	1.50	8.0	18.8	DO#7915
3	1.473	6	0.743	0.44	0.433	14.29	18.09	71640	72800	90690	92160	1.50	8.0	18.8	DO#7915
4	1.471	6	0.742	0.44	0.432	13.53	18.32	67810	69060	91820	93520	1.60	8.0	20.0	DO#7915
5	0.666	4	0.500	0.20	0.196	6.80	8.38	74980	76510	92400	94290	1.00	8.0	12.5	DO#7915
6	0.659	4	0.497	0.20	0.194	6.44	7.97	71040	73240	87910	90620	1.00	8.0	12.5	DO#7915
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BEND TEST:

# 8	Sample bend through 180 degrees Satisfactorily without any crack
# 6	Sample bend through 180 degrees Satisfactorily without any crack
# 4	Sample bend through 180 degrees Satisfactorily without any crack

Note:-

Only Nine Samples Received and Tested

Note: Please always confirm the results of above report on web www.uet-civil.edu.pk

Li Wentao **Test Performed By:** **Dr. /Engr.** Wasim Abbas

CCECC-HCS JV.(Expension of Terminal Building and Allied Facilities at AIIAP, Lahore)

Client Reference: CCECCHCSJVIIAP2024-233 **SOM Lab Ref:** 4812 (Page-1/1)

Dated: 16-09-2024 **Dated:** 16-09-2024

Test: Tension Test & Bend Test **Test Specification:** ASTM-A-615

Gauge Length: 8 inch **Sample Type:** Deformed Bar (Makhor Industries)

S.No.	Weight	Dia.		Area		Yield Load	Ultimate Load	Yield Stress		Ult. Stress		Elongation	Gauge Length	%age Elongation	Remarks
		Nominal	Calculated	Nominal	Calculated			(according to nominal area)	(according to measured area)	(according to nominal area)	(according to measured area)				
	lb/ft	#	in	in^2	in^2	Tons	Tons	psi	psi	psi	psi	in	in	%	
1	0.657	4	0.496	0.20	0.193	6.70	8.92	73850	76530	98360	101930	1.00	8.0	12.5	
2	0.671	4	0.501	0.20	0.197	7.85	9.94	86560	87870	109600	111270	1.00	8.0	12.5	
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Witnessed By: M. Asif (M.E Nespak)

BEND TEST:

# 4	Sample bend through 180 degrees Satisfactorily without any crack

Note:-

Only Three Samples Received and Tested

Note: Please always confirm the results of above report on web www.uet-civil.edu.pk