

**TEST REPORT**

**TR**

**Product** : REINFORCEMENT BAR 20mm DIAMETER GRADE B500DWR

**Type of Test** : AXIAL FORCE FATIGUE TEST

**Test Requirement/ Method** : BDS ISO 6935-2:2021 – Steel for reinforcement of concrete – Part 2: Ribbed bars/ BDS ISO 15630-1:2021 – Steel For the reinforcement and prestressing of concrete – Test Methods – Part1: Reinforcing bars, rods and wire. (Bangladesh)

**Date of Issue** : 13<sup>th</sup> of February 2025

**Name of Client** : GPH ISPAT LIMITED

**Address (Office)** : Crown Chamber,  
325 Asadgonj,  
Chattogram-4000,  
Bangladesh.

**Sampling Location** : N/A

**Job Ref. No.** : AMS/24333/GPH/01

**TPIB No.** : N/A

**Test Report Series** : 8 of 9

**No. of Sample** : refer attachment

**Sample Nominal Size** : N/A

**Date of Receipt** : 29<sup>th</sup> of November 2024

**Date of Test** : 30<sup>th</sup> of December 2024 until 4<sup>th</sup> of January 2025

**Prepared by :**

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**Approved by :**

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**TEST REPORT****TR****AXIAL FORCE FATIGUE TEST****Details Provided by Client**

Specimen : Reinforcement Bar Grade : B500DWR  
Nominal Diameter, d : 20 mm Sample ID : GPH QUANTUM B500WR 20  
(if any) \_\_\_\_\_

Sample ID : N/A Sample Condition : Good  
Temperature : 19.4~24.2°C Humidity : N/A

**Result :**

Test Parameter	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Free length (mm)	452	451	449	454	446
Test date	30/12/2024~ 31/12/2024	31/12/24~ 1/1/2025	1/11/2025~ 2/1/2025	2/1/2025~ 3/1/2025	3/1/2025~ 4/1/2025
Frequency (Hz)			75		
Upper load (kN)			72.66		
Lower Force (kN)			14.53		
Range (Mpa)			185		
Cycles	5000013	5000003	5000008	5000001	5000010
Result (Observation)	Cycles completed with no crack				



## THE USE OF TEST REPORT/DATA

- 1.1 The test report/data produced is solely for the client business operation and not for advertising purposes.
- 1.2 Test report/data will be issued in respect of Term of Services and shall be related only to the actual sample tested. The test result represents the actual sample only not its duplication or mass productions.
- 1.3 The test report/data shall not be amended, changed, verified or modified in any manner by client or otherwise.
- 1.4 The test report/data is not a quality assurance certification and NEITHER an endorsement certificate.
- 1.5 Should the client intend to reveal the test report/data the client shall present such report in full and in entirety.
- 1.6 Should the client intend to publish any articles, journals or related publications derived from the test report/data, the client may acknowledge CREAM, in appropriate circumstances where CREAM has contributed in providing data for the intended articles, journals or related publications.
- 1.7 Either Party has the right to take any necessary action should the other party has breached any provision of terms of services in this agreement.
- 1.8 CREAM has the right not to submit the test report/data to the Client until full payment and/or any additional payment (deemed necessary) has been received from the Client.
- 1.9 CREAM has the right not to submit the test report/data to the Client until all tested samples are disposed /collected and returned to the Client's premises by the Client.

## END OF TEST REPORT



<b>SOIL INSTRUMENTS (M) SDN. BHD.</b> <b>MATERIAL TESTING SERVICES</b> <i>No. 12, Jalan Utara 65/14, Seksyen 65  40150 Shah Alam, Selangor Darul Ehsan  Tel : 03-7839 1353 Fax : 03-7839 1566  Email : HQ-Lab@soil.com.my</i>	<b>TEST REPORT :</b> <b>Axial Force Fatigue Test</b>	  <b>STANDARDS MALAYSIA ACCREDITED</b> <b>SAMM 400</b>
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**Client** : *Construction Research Institute of Malaysia (CREAM)*

**Project** : *Internal Testing*

**Report Ref** : *SIM/MTS/CREAM/IT/AFF/0001*

Date Received	: 30-Dec-24	Location	: -
Date Tested	: 30-Dec-24	Ambient Temperature	: 20.0°C
Test frequency (Hz)	: 75	Range of Specimen Temperature	: 19.4°C - 24.2°C

Grade of Steel \*\*\*\* : B500D-WR

**Test Procedure :** BS EN ISO 15630-1:2019 / MS 146:2014 / MS ISO 15630-1:2012

Specimen Ref. :	CREAM RE 0001 F-A	CREAM RE 0001 F-B	CREAM RE 0001 F-C	CREAM RE 0001 F-D	CREAM RE 0001 F-E	Specification
Manufacturer/Supplier	**** GPH Ispat Limited					-
Heat No/Mil Cert.Number	N/A					-
Date Start	30-Dec-24	31-Dec-24	01-Jan-25	02-Jan-25	03-Jan-25	-
Time Start	15:00	10:05	10:00	9:45	10:00	-
Date End	31-Dec-24	01-Jan-25	02-Jan-25	03-Jan-25	04-Jan-25	-
Time End	21:30	4:45	5:00	4:55	5:00	-
Nominal Diameter, d (mm)	20					-
Mass of Specimen, M (kg)	1.121	1.117	1.109	1.124	1.111	-
Length of the Specimen, L (m)	0.452	0.451	0.449	0.454	0.446	-
Mass per Metre (kg)	2.480	2.477	2.470	2.476	2.491	-
Nominal Cross Sectional Area (mm <sup>2</sup> )	314	314	314	314	314	-
Free Length between the Grips (mm)*	280	280	280	280	280	≥ 140 mm / 14d
Cycles	5000013	5000003	5000008	5000001	5000010	
Apply Load (kN)**	43.57					Lower load 14.63 Upper load 72.66
Stress Range (MPa) **	185					Lower stress 48.25 Upper stress 231.25
Observation / Validity ***	No Failure Observed	No Failure Observed	No Failure Observed	No Failure Observed	No Failure Observed	
Remarks	-	-	-	-	-	

Note : \* Specification from BS EN ISO 15630-1:2019 Clause 8.2

\*\* Specification from MS 146:2014 Clause 7.3.4.1

\*\*\* If failure occurs in the grips or within a distance of 2d of the grips, or initiates at an exceptional feature of the test piece, the test may be considered as invalid.

\*\*\*\* Information was provided by the client

Authorized Signatory :



**Hisham Husin**  
Laboratory Manager

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