

TEST REPORT

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Product : REINFORCEMENT BAR 20mm DIAMETER GRADE B600D-R

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 : 13th 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

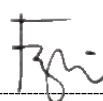
Sample Nominal Size : N/A

Date of Receipt : 29th of November 2024

Date of Test : 30th of December 2024

Prepared by :

Name : Mohamad Fazli bin Halim
Test Engineer
Construction Research Institute
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Approved by :

Name : Ahmad Hazlin Abdul Rahim
Lab Manager
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**Construction Research Institute of Malaysia (CREAM)**

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

Specimen : Reinforcement Bar Grade : B600D-R
Nominal Diameter, d : 20 mm Sample ID : GPH QUANTUM B600D-R 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)	453	453	454	454	455
Test date	6/1/2025~ 7/1/2025	7/1/2025~ 8/1/2025	8/1/2025~ 9/1/2025	9/1/2025~ 10/1/2025	10/1/2025~ 11/1/2025
Frequency (Hz)			75		
Upper load (kN)			72.66		
Lower Force (kN)			14.53		
Range (Mpa)			185		
Cycles	5000001	5000001	5000008	5000008	5000005
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



SOIL INSTRUMENTS (M) SDN. BHD. MATERIAL TESTING SERVICES <i>No. 12, Jalan Umarif US/14, Seksyen US 40150 Shah Alam, Selangor Darul Ehsan Tel : 03-7859 1353 Fax : 03-7859 1566 Email : HQ-Lab@soil.cnu.my</i>	TEST REPORT : Axial Force Fatigue Test	  SAND 403
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Client : *Construction Research Institute of Malaysia (CREAM)*

Project : *Internal Testing*

Report Ref : *SIM/MTS/CREAM/IT/AFF/0002*

Date Received	: 30-Dec-24	Location : -
Date Tested	: 06-Jan-25	Ambient Temperature : 20.0°C
Test frequency (Hz)	: 76	Range of Specimen Temperature : 19.4°C - 24.2°C

Grade of Steel **** : B600D-R

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

Specimen Ref. :	CREAM RE 0002 F-A	CREAM RE 0002 F-B	CREAM RE 0002 F-C	CREAM RE 0002 F-D	CREAM RE 0002 F-E	Specification				
Manufacturer/Supplier	**** GPH Ispat Limited					-				
Heat No/Mill Cert.Number	N/A					-				
Date Start	06-Jan-25	07-Jan-25	08-Jan-25	09-Jan-25	10-Jan-25	-				
Time Start	14:00	9:00	9:20	10:00	10:05	-				
Date End	07-Jan-25	08-Jan-25	09-Jan-25	10-Jan-25	11-Jan-25	-				
Time End	8:00	3:00	3:20	4:00	4:30	-				
Nominal Diameter, d (mm)	20					-				
Mass of Specimen, M (kg)	1.100	1.102	1.109	1.107	1.112	-				
Length of the Specimen, L (m)	0.453	0.453	0.454	0.454	0.455	-				
Mass per Metre (kg)	2.429	2.433	2.443	2.438	2.444	-				
Nominal Cross Sectional Area (mm²)	314	314	314	314	314	-				
Free Length between the Grips (mm)*	280	280	280	280	280	≥ 140 mm / 14d				
Cycles	5000001	5000001	5000008	5000008	5000005					
Apply Load (kN)**	43.57					<table border="1"> <tr> <td>Lower load</td> <td>Upper load</td> </tr> <tr> <td>14.53</td> <td>72.05</td> </tr> </table>	Lower load	Upper load	14.53	72.05
Lower load	Upper load									
14.53	72.05									
Stress Range (MPa) **	185					<table border="1"> <tr> <td>Lower stress</td> <td>Upper stress</td> </tr> <tr> <td>45.25</td> <td>231.25</td> </tr> </table>	Lower stress	Upper stress	45.25	231.25
Lower stress	Upper stress									
45.25	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 15630-1:2018 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