

TEST REPORT

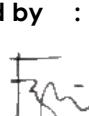
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| | | |
|-------------------------------------|---|--|
| Product | : | REINFORCEMENT COUPLERS FOR MECHANICAL SPLICES FOR 32mm DIAMETER REBAR GRADE B600D-R |
| Type of Test | : | AXIAL FORCE HIGH CYCLE FATIGUE TEST |
| Test Requirement/ Method | : | ISO 15835-1: 2018 – Steels for reinforcement of concrete – Reinforcement couplers for mechanical splices of bars – Part 1: Requirements. ISO 15835-2: 2018: - Steels for reinforcement of concrete – Reinforcement couplers for mechanical splices of bars – Part 2: Test methods |
| Date of Issue | : | 12 th of March 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/02 |
| TPIB No. | : | N/A |
| Test Report Series | : | 9 of 9 |
| No. of Sample | : | refer attachment |
| Sample Nominal Size | : | N/A |
| Date of Receipt | : | 29 th of November 2024 |
| Date of Test | : | 19 th to 21 st of February 2025 |
| Tested By | : | Nusantara Technologies Sdn Bhd. |

Prepared by :

Name :

Mohmad Fazli bin Halim
Test Engineer
Construction Research Institute
of Malaysia (CREAM)




Approved by :

Name :
Abu Bakar Abdul Rahim
Lab Manager
Makmal Kerja Raya Malaysia
Construction Research Institute
of Malaysia (CREAM)



**Construction Research Institute of Malaysia (CREAM)**

Makmal Kerja Raya Malaysia,
Lot 8, 1st Floor, Seksyen 91, Jalan Chan Sow Lin,
55200 Kuala Lumpur, MALAYSIA
Tel: +603 – 9212 0165 Fax: +603 – 2779 1474
Email: general@cream.my Website: <http://www.cream.my>

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

Specimen : Mechanical Splice Grade : B600D-R
Nominal Diameter, d : 32 mm Sample ID : GPH QUANTUM B600D-R 32
(if any) _____

Sample ID : N/A Sample Condition : **Good**
Temperature : **N/A** Humidity : **N/A**

Result :

| Test Parameter | Sample 1 | Sample 2 | Sample 3 |
|--|-------------------------------|----------|----------|
| Free length (mm) | 448 | 448 | 448 |
| Coupler length (mm) | 72 | 72 | 72 |
| Coupler Diameter (mm) | 50 | 50 | 50 |
| Bar Nominal Cross Section Area (mm²) | 804 | | |
| Upper stress, 0.6ReH (Mpa) | 360 | | |
| Stress Range (Mpa) | 60 | | |
| Cycles | 2000055 | 2000055 | 2000050 |
| Result (Observation) | Cycle completed with no break | | |



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- 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.
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- 1.4 The test report/data is not a quality assurance certification and NEITHER an endorsement certificate.
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- 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



Title

Page 1 of 2

**MECHANICAL TEST
REPORT**

| | |
|----------------|--------------|
| Your Ref. : | |
| Our Ref. : | NT/250608-01 |
| Issue No. : | 01 |
| Revision No. : | 00 |

| | |
|------------|----------------|
| Report No. | MAT/0608-01/25 |
|------------|----------------|

| | |
|-----------------|--|
| Date Received : | February 12, 2025 |
| Date Tested : | February 19, 2025 - February 21, 2025 |
| Date Issued : | March 03, 2025 |

Client

CONSTRUCTION RESEARCH INSTITUTE OF MALAYSIA (CREAM)
Level 14, CIDB 520, The Met Corporate Towers,
No. 20, Jalan Dutamas 2,
50480 Kuala Lumpur.

Sample Information

| | | |
|------------------------|--|--------|
| Subject | To Conduct Mechanical Test on Reinforcement Bar with Coupler | |
| Sample Description | Reinforcement Bar with Coupler | |
| Material Specification | B600D-R | |
| Material Size | Ø32 mm (Reinforcement Bar) | |
| Test Required | 1.0 Axial Force Fatigue Test (High-Cycle) | 3 pcs. |
| Test Specification | ISO 15835 PART 1 – 2018 EDITION | |

Disclaimer : "The sample and its information have been provided by the customer, and the test results applied to the sample as received"

Tested by :

Mohd Salman bin Mohd Isa
Sr. Lab. Technician
(No Signature Required)

Prepared by :

Artikah Binti Moor Radhi
Material Engineer

Approved Signatory :

Norhidayah Binti Saldon
Sr. Material Engineer



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Metrology & NDT Division : No. 9, Jalan Sungai Jerih 32/196, Seksyen 32, Bukit Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia. Tel: 603-5525 1766 Fax: 603-5525 2766

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|--|--|-------------|
| Report No. MAT/0608-01/25 Issue No. : 01 (Rev00) | Title TEST RESULT (Sample Reference : PI/WPS/AWS/FCAW/355/4G) | Page 2 of 2 |
|--|--|-------------|

1.0 Axial force Fatigue Test (High-Cycle)

| | |
|--|--|
| 1.1 Type of Fatigue Specimen | : Reinforcement Bar with Coupler |
| 1.2 Test Method | : ISO 15835 PART 2 – 2018 EDITION |
| 1.3 Fatigue Requirement | : Test specimen shall survived at least 2×10^6 cycles without failure |
| 1.4 Stress Range | : 60 N/mm ² |
| 1.5 Upper Stress (0.6 σ_u): (N/mm ²) | : 360 N/mm ² |

| Specimen No. | Sample 1 | Sample 2 | Sample 3 |
|---|------------|------------|------------|
| Coupler Length (mm) | 72 | 72 | 72 |
| Coupler Diameter (mm) | 50 | 50 | 50 |
| Bar Nominal Diameter (mm) | 32 | 32 | 32 |
| Bar Nominal Cross Section Area (mm ²) | 804 | 804 | 804 |
| Mechanical Splice Length (mm) | 136 | 136 | 136 |
| Free Length (mm) | 448 | 448 | 448 |
| Specimen Length (mm) | 890 | 890 | 890 |
| Stress Range σ_u (N/mm ²) | 60 | 60 | 60 |
| Upper Stress, 0.6 σ_u : (N/mm ²) | 360 | 360 | 360 |
| Cycle | 2000055 | 2000055 | 2000050 |
| Observation | No Failure | No Failure | No Failure |



The above mentioned test were witnessed by

| | | |
|--------------|--------------|--------------|
| Name : _____ | Name : _____ | Name : _____ |
|--------------|--------------|--------------|

*****END OF REPORT*****

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