

COMPRESSION RESISTANCE (SIDE TO SIDE)

NTS-Chesapeake Testing 4603B Compass Point Road Belcamp, MD 21017	Client: Hardhead Veterans LLC Job No.: PR144616 Test Date: 9/2/2021 Page No.: 1 of 2
Manufacturer: Hardhead Veterans LLC	Sample ID: Hard Head-02

Sample		
Size: Large Weight: 2.09 lbs. Color: Green	Model: NA Mfg. Date: NA Lot No.: NA	Date Received: 8/26/2021 Via: UPS Returned: UPS

Setup		
Temperature: 70 °F Humidity: 41 % Conditioning: Ambient	System Load Cell: 144143 Load Cell Cal Due: 11/5/2021 Scale Serial: AE79801510 Scale Cal Due: 12/19/2021	Test System: Instron 3366 System Cal Due: 11/5/2021 Tester: Johnathan Harris Test Location: Mechanical Lab

Applicable Standards or Procedures

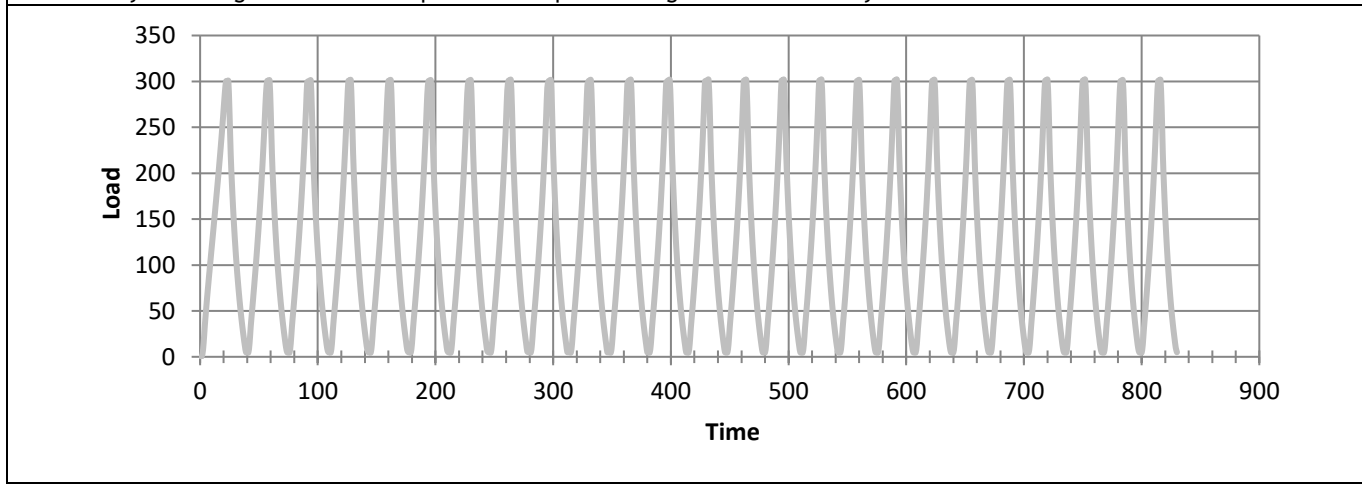
- (1) AR/PD 10-02 Rev A with Change 6
- (2) Customer Request

Requirement Number	Inspection Pass/Fail	Inspection Requirement
1	Pass	There shall be no dimensional change in excess of 0.200-inch immediately (within 5 minutes) following compressions.
2	Pass	There shall be no dimensional change in excess of 0.125-inch immediately (within 24 ± 1 hour) following compressions.
3	Pass	The shell shall exhibit no visible delamination, ply separation, distortion after the compressions.

Results

Maximum Load (lb.)		Maximum Compression (in.)			Mode of Failure (If Applicable)	
302.11		0.466			NA	
Pre Test Measurement (in.)	Date / Time	Post Test (<5 minute) (in.)	Post Test Delta (<5 minute) (inches)	Date / Time	Post Test (24 ±1 hour) (in.)	Post Test Delta (24 ±1 hour) (in.)
1.412	9/2/2021 9:25 AM	1.484	0.072	9/3/2021 9:30 AM	1.460	0.048

Remarks:
 Using a 2.50-inch diameter flat anvil, the test specimen was positioned so that the highest width dimension is aligned with the center of the top anvil. The sample was compressed at a rate of 12-inches per minute until a force of 300-pounds was reached followed by unloading the force to 5.0-pound and repeat testing for a total of 25 cycles.



COMPRESSION RESISTANCE (TOP TO BOTTOM)

NTS-Chesapeake Testing 4603B Compass Point Road Belcamp, MD 21017	Client: Hardhead Veterans LLC Job No.: PR144616 Test Date: 9/1/2021 Page No.: 1 of 2
Manufacturer: Hardhead Veterans LLC	Sample ID: Hardhead-02

Sample		
Size: Large Weight: 2.09 lbs. Color: Green	Model: NA Mfg. Date: NA Lot No.: NA	Date Received: 8/26/2021 Via: DHL Returned: UPS

Setup		
Temperature: 69.3 °F Humidity: 50 % Conditioning: Ambient	System Load Cell: 144143 Load Cell Cal Due: 11/5/2021 Scale Serial: AE79801510 Scale Cal Due: 12/1/2021	Test System: Instron 3366 System Cal Due: 11/5/2021 Tester: Johnathan Harris Test Location: Mechanical Lab

Applicable Standards or Procedures

- (1) AR/PD 10-02 Rev A with Change 6
- (2) Customer Request

Requirement Number	Inspection Pass/Fail	Inspection Requirement
1	Pass	There shall be no dimensional change in excess of 0.020-inch immediately (within 5 minutes) following compressions.
2	Pass	There shall be no dimensional change in excess of 0.020-inch immediately (within 24 ± 1 hour) following compressions.
3	Pass	The shell shall exhibit no visible delamination, ply separation, distortion after the compressions.

Results

Maximum Load (lb.)		Maximum Compression (in.)			Mode of Failure (If Applicable)	
417.14		0.109			NA	
Pre Test Measurement (in.)	Date / Time	Post Test (<5 minute) (in.)	Post Test Delta (<5 minute) (inches)	Date / Time	Post Test (24 ± 1 hour) (in.)	Post Test Delta (24 ± 1 hour) (in.)
3.727	9/1/2021 8:30 AM	3.737	0.010	9/2/2021 8:35 AM	3.735	0.008

Remarks:
 Using a 2.50-inch diameter flat anvil, the test specimen was positioned so that the highest width dimension is aligned with the center of the top anvil. The sample was compressed at a rate of 12-inches per minute until a force of 400-pounds was reached followed by unloading the force to 5.0-pound and repeat testing for a total of 25 cycles.

