

COMPRESSION RESISTANCE (SIDE TO SIDE)

NTS-Belcamp 4603B Compass Point Road Belcamp, MD 21017	Client: Hardhead Veterans Project No.: PH00008992 Test Date: 11/9/2023 Page No.: 1 of 2
Manufacturer: Hardhead Veterans	Sample ID: 01-132-19JAN22

Sample		
Size: Large Weight: 3.035 lbs. Color: Black	Model: ACH Mfg. Date: NA Lot No.: NA	Date Received: 11/3/2023 Via: UPS Returned: UPS

Setup		
Temperature: 70.0 °F Humidity: 46 % Conditioning: Ambient	System Load Cell: 144143 Load Cell Cal Due: 10/31/2024 Scale Serial: 56663-104 Scale Cal Due: 12/19/2023	Test System: Instron 3366 System Cal Due: 10/31/2024 Tester: Hunter Crist Test Location: Mechanical Lab

Applicable Standards or Procedures

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

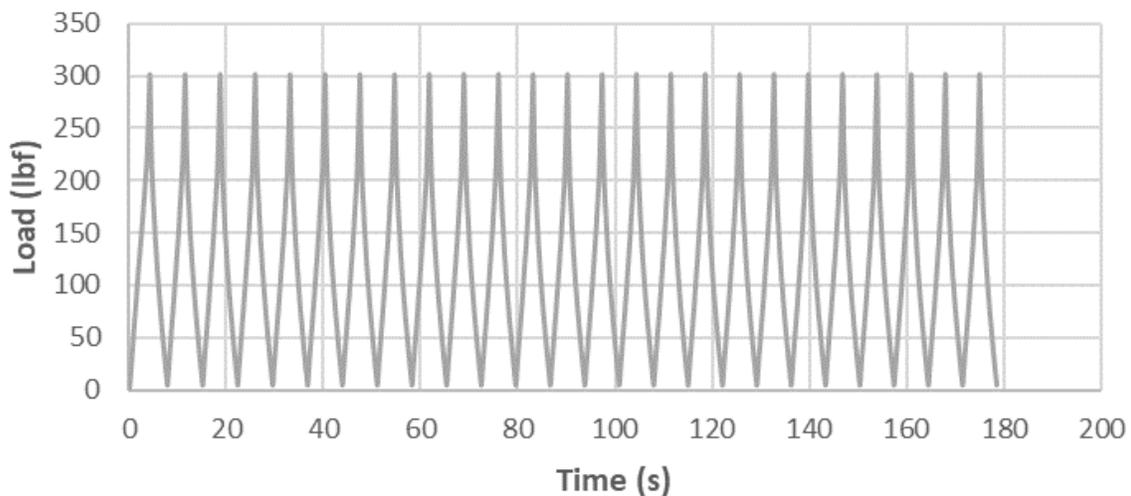
Requirement Number	Inspection Pass/Fail	Inspection Requirement
1	Pass	There shall be no dimensional change in excess of 0.200-inch immediately (within 5 minutes) following compressions.
2	Pass	There shall be no dimensional change in excess of 0.125-inch immediately (within 24 ± 1 hour) following compressions.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

The decision rule used to state compliance is in accordance with the test specification used for testing.

Results

Maximum Load (lbf.)		Maximum Compression (in.)			Mode of Failure (If Applicable)	
301.10		0.878			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.)
1.351	11/9/2023 9:42 AM	1.411	0.060	11/10/2023 9:42 AM	1.400	0.049

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 (SIDE TO SIDE)

NTS-Belcamp

4603B Compass Point Road
Belcamp, MD 21017

Manufacturer: Hardhead Veterans

Client: Hardhead Veterans

Project No.: PH00008992

Test Date: 11/8/2023

Page No.: 2 of 2

Sample ID: 01-132-19JAN22

Test Visual Inspection - Pre Test



Outside of Sample



Inside of Sample

Pre Test Remarks:

Test Visual Inspection - Post Test



Outside of Sample



Inside of Sample

Post Test Remarks:

COMPRESSION RESISTANCE (TOP TO BOTTOM)

NTS-Belcamp 4603B Compass Point Road Belcamp, MD 21017	Client: Hardhead Veterans Project No.: PH00008992 Test Date: 11/8/2023 Page No.: 1 of 2
Manufacturer: Hardhead Veterans	Sample ID: 01-132-19JAN22

Sample		
Size: Large Weight: 3.035 lbs. Color: Black	Model: ACH Mfg. Date: NA Lot No.: NA	Date Received: 11/3/2023 Via: UPS Returned: UPS

Setup		
Temperature: 69.3 °F Humidity: 41 % Conditioning: Ambient	System Load Cell: 144143 Load Cell Cal Due: 10/31/2024 Scale Serial: 56663-104 Scale Cal Due: 12/19/2023	Test System: Instron 3366 System Cal Due: 10/31/2024 Tester: Jason Kelsch Test Location: Mechanical Lab

Applicable Standards or Procedures

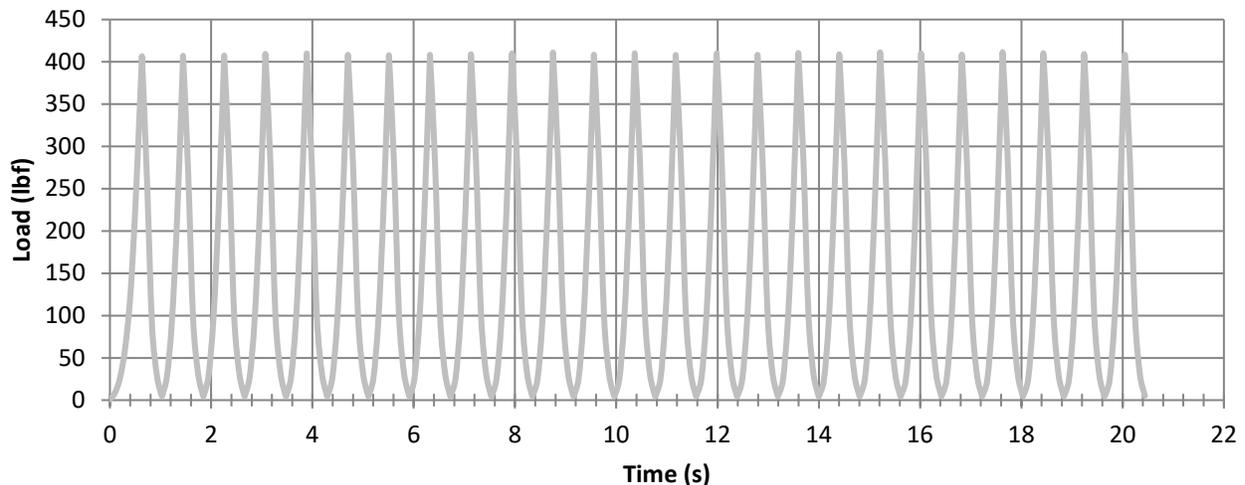
(1) AR/PD 10-02 Rev A with Change 6		
Requirement Number	Inspection Pass/Fail	Inspection Requirement
1	Pass	There shall be no dimensional change in excess of 0.020-inch immediately (within 5 minutes) following compressions.
2	Pass	There shall be no dimensional change in excess of 0.020-inch immediately (within 24 ± 1 hour) following compressions.
3	Pass	The shell shall exhibit no visible delamination, ply separation, distortion after the compressions.

The decision rule used to state compliance is in accordance with the test specification used for testing.

Results

Maximum Load (lbf.)		Maximum Compression (in.)			Mode of Failure (If Applicable)	
411.47		0.139			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.)
2.713	11/8/2023 8:31 AM	2.726	0.013	11/9/2023 8:31 AM	2.722	0.009

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.



COMPRESSION RESISTANCE (TOP TO BOTTOM)

NTS-Belcamp

4603B Compass Point Road
Belcamp, MD 21017

Client: Hardhead Veterans
Project No.: PH00008992
Test Date: 11/8/2023
Page No.: 2 of 2

Manufacturer: Hardhead Veterans

Sample ID: 01-132-19JAN22

Test Visual Inspection - Pre Test



Outside of Sample



Inside of Sample

Pre Test Remarks:

Test Visual Inspection - Post Test



Outside of Sample



Inside of Sample

Post Test Remarks: