

RESILIENT ARMOUR



ASTM F970 STATIC LOAD TESTING

Static Load: ASTM F970: Brief description of test procedure:

- Apply the calculated forces to each two sets of Resilient Armour panels based of the following calculations of a Gulfstream G550 business jet aircraft (see below).



- Jet Loaded Takeoff Weight: 91,000 lbs.
- Number of Wheels: 6
- Area of ground contact of 4 rear wheels~320 square inches
- Area of ground contact of 2 front wheels~ 120 square inches
- ✓ **Total Area of Ground Contact of All 6 Wheels~ 440 square inches**
- ✓ **Total Area of Ground Contact with Jet Loaded Weight in Pounds Per Square**
- ✓ **Inch (PSI): $54,000/440 = 123$ psi**
- ✓ **Total Area of Ground Contact with Jet Takeoff Loaded Weight in Pounds Per**
- ✓ **Square Inch (PSI): $91,000/440 = 206$ psi**
- ✓ **The 123 psi and 206 psi weights were used in this test procedure**

- Apply the loads to the stacked pile of tile samples for 24 ± 0.25 hours in two individual test procedures.
- After 24 hours remove the load and separate the samples, allow them to lay on a flat surface with the wear layer on top an additional 24 ± 0.25 hours.
- Measure the final thickness at the same point that the samples were measured initially.
- Calculated the residual indentation of each sample and report out the average indentation of all three samples

Test Method: Static Load: ASTM F970

Test (1): 123 psi Load.

Requirement: Max 0.005 inches (generally recommended as acceptable limit) @ 123 psi Load.

(800) 520-4770

resilientarmour@gmail.com

www.resilientarmour.com



Resilient Armour Panel Testing Results:

Readings

Initial Thickness (inches)- before testing.

Sample 1: 0.204
Sample 2: 0.205
Sample 3: 0.205

Final Thickness (inches) – after testing.

Sample 1:	0.203	Difference:	0.001
Sample 2:	0.204	Difference:	0.001
Sample 3:	0.204	Difference:	0.001

Indentation (inches)

Sample 1: 0.001
Sample 2: 0.001
Sample 3: 0.001

Final testing results @ 123 psi. Average indentation (inches) 0.001.

Test (2): 206 psi Load.

Readings

Initial Thickness (inches)- before testing.

Sample 1: 0.200
Sample 2: 0.201
Sample 3: 0.200

Final Thickness (inches) – after testing.

Sample 1:	0.199	Difference:	0.001
Sample 2:	0.199	Difference:	0.001
Sample 3:	0.199	Difference:	0.001

Indentation (inches)

Sample 1: 0.001
Sample 2: 0.001
Sample 3: 0.001

Final testing results @ 206 psi. Average indentation (inches) 0.001.

Static Load: The static loads of 123 psi and 206 psi produced an indentation of 0.001 inches after a 24-contact period. This indentation value is acceptable and complies with ASTM F970.

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