# Grenite-R Level Load & Impact Test

Date: July 2, 2008

**Purpose:** To determine the typical load bearing and impact resistance on a representative sample of Grenite-R 24"x27"x.75 " (nominal)

Test Method: As there does not appear to be either an ASTM or ANZI test method acceptable for this type of test procedure, one is being written.

## Preparation:

1- two test pieces measuring 24"x27"x .75" were provided by Greneker Solutions, Los Angeles, CA

2- Both samples were fitted to a perimeter base built of 1.5" X 3.5" (2 x 4) Douglas fir. and bedded in latex caulking material to provide a level surface with an equal load bearing at the perimeter. The two samples were then placed on a concrete floor and shimmed with wedges to provide a level bearing surface.

## Procedure:

## Test for Level Load

1- Level Load Test to determine the ability of the samples to carry a level static load of up to 500 pounds. The load is applied equally over an area that is inside of the perimeter support structure using ten 50lb bags of granular ceramic material. Weight tolerance is +/- .1% The scale used to verify the weight is calibrated and certified by independent sources and meets various FAA requirements.

2- The load remains on the test piece for five minutes and then is removed and the sample is inspected and photographed for any and all failures including deformation.

**Observation:**

Sample # 1- Loaded as described above and deflection was measure to be less than .015". On removing of weight the sample item was inspected and there was no evidence of load damage of any kind.

Sample # 2- Loaded as described above and deflection was measure to be less than .015". On removing of weight the sample item was inspected and there was no evidence of load damage of any kind.

**Assumption(s):** None

**Conclusion(s):** Both samples were capable of carrying a level load of 500 pounds. Thus a properly perimeter supported Grenite-R panel 24" X 27" X .75" is capable of carrying a static load of 500 pounds without damage or significant distortion.

**Impact Test**

Following the above described level load test, both samples are subjected to a vertical impact resistance test. Again, as there is not an acceptable test plan, one is being written.

1- On the assumption that the heaviest item dropped onto a check out counter would reasonably not exceed 60 lbs, with limited point load, have some degree of cushioning i.e. packaging and not drop from a distance higher that 12" three different loads will be dropped from that height. The first being a 60 lb. bag of concrete mix, a 5gal. plastic bucket of water (filled and sealed) and a 5 gal. bucket containing a 68 lb. plug of Grenite-R. After conclusion of the first drop tests, it will be repeated from a drop height of 24" and then 36" or until a failure is doted.

2- The samples are inspected and photographed for any and all failures including deformation after each test.

**Observation:**

Sample #1

12" drop- With a 5 gallon plastic bucket of water weighing 50lbs. (bucket, lid & water) to simulate a typical 5 gallon bucket of paint. There was no damage to the Grenite test sample.

24" drop- With a 5 gallon plastic bucket of water weighing 50lbs. (bucket, lid & water) to simulate a typical 5 gallon bucket of paint. There was no damage to the Grenite test sample but the bucket split on impact and this test method was discontinued as not being of significant value or being a realistic condition that would be encountered in a retail application.

12” drop- With a 60 lb. bag of concrete mix. There was no damage to the Grenite test sample.

24” drop- With a 60 lb. bag of concrete mix. There was no damage to the Grenite test sample.

36” drop- With a 60 lb. bag of concrete mix. There was no damage to the Grenite test sample.

Sample #2

Sample # 2 was subjected to a high impact point load with the intent of causing structural damage. This was accomplished trough a drop test using a 5 gal. paint bucket containing a 70 lb. piece of Grenite-R The drop was made at an angle.

12” drop- With a 70 lb. weight as described above. There was no damage to the Grenite test sample.

24” drop- With a 70 lb. weight as described above. The Grenite test sample fractured in two directions radiating out from the point of impact. There was also damage to the plastic bucket at point of impact.

**Assumption(s):** As below

**Conclusion(s):**

A properly perimeter supported Grenite-R panel 24” X 27” X .75” is capable of withstanding an impact of up to 60 pounds from 36” with the assumption that the impact is over a reasonable area.

This test was conducted on the 2nd day of July, 2008 by:

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