



**DEPARTMENT OF THE ARMY**  
**ENGINEER RESEARCH AND DEVELOPMENT CENTER, CORPS OF ENGINEERS**  
**COLD REGIONS RESEARCH AND ENGINEERING LABORATORY**  
**72 LYME ROAD**  
**HANOVER, NEW HAMPSHIRE 03755-1290**

6 April 2012

**Testing summary of tests conducted on Signature Systems Group - Pedestrian Mats**

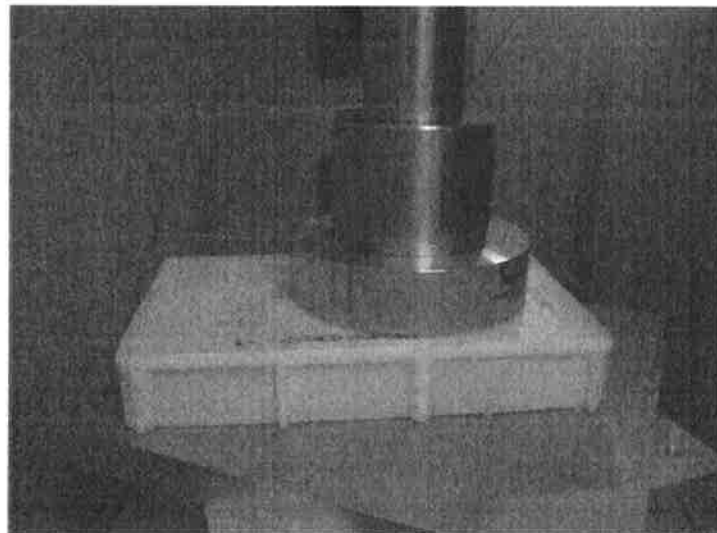
Compression tests were conducted on Event Deck, Ultra Deck, Armor Deck and Armor Deck III mats. All tests were conducted at room temperature at approximately 75 Fahrenheit. A six inch diameter foot was applied to the mats at 2 inches per minute until failure occurred. Summary graphs of the tests follow.

*15.24 cm diameter*

$\pi r^2 = A$   
 $A = \pi r^2$   
 $A = 182 \text{ cm}^2$

Mat	Max load (Lbs)	Remarks
Event Deck-1	7517	center loading
Event Deck-2	7339	center loading
Event Deck-3	7603	off center loading
Event Deck-4	11328	center loading-perforated 3 section mat
Ultra Deck-1	11920	center loading
Ultra Deck-2	14166	off center loading
Ultra Deck-3	15354	off center loading , perforated mat
Armor Deck-1	14110	center loading
Armor Deck-2	10265	slightly off center loading
Armor Deck-3	12058	slightly off center loading
Armor Deck III-1	15357	
Armor Deck III-2	25000	load kept increasing to 25,000 Lbs
Armor Deck III-3	15300	

*6426 kg*



Test setup



## Compression Strength Testing

(EventDeck, UltraDeck, ArmorDeck & ArmorDeck III)

### Executive Summary

The following report describes the results of compression strength tests conducted on samples of the products listed above. The testing was administered through a joint effort with the Department of Army, Corps of Engineers Cold Regions Research and Engineering Laboratory (CECRREL) in Hanover, New Hampshire.

#### Background

Signature Systems Group was interested in determining the compressive strength of each product in pounds per square foot (PSF). In discussions with CECRREL, it was determined to utilize a 6 inch diameter foot to apply the static compression load. This would best represent the types of items placed upon the various products. (foot traffic, poles, stage bases, bleachers, etc.) Three (3) test samples were provided for each product in order for test location on the surface of the matting to be altered on each product to provide an average reading across the entire surface of the matting. (Figures shown are the average of the tests)

#### Testing

*15.24cm* The test used a 6" diameter platen driven by a hydraulic press to exert a vertical force upon a plastic sample supported by a solid base. The compressive load was applied at a rate of 2 inches *5.08cm* a minute until failure occurred. The testing was conducted at room temperature (75° F). *23.89°C*

#### EventDeck

The EventDeck matting structural composition has the capacity to withstand 265psi or *18.63 kg/cm<sup>2</sup>* 38,160psf static compressive loading at 75° F without permanent deformation to the plastic.

#### UltraDeck

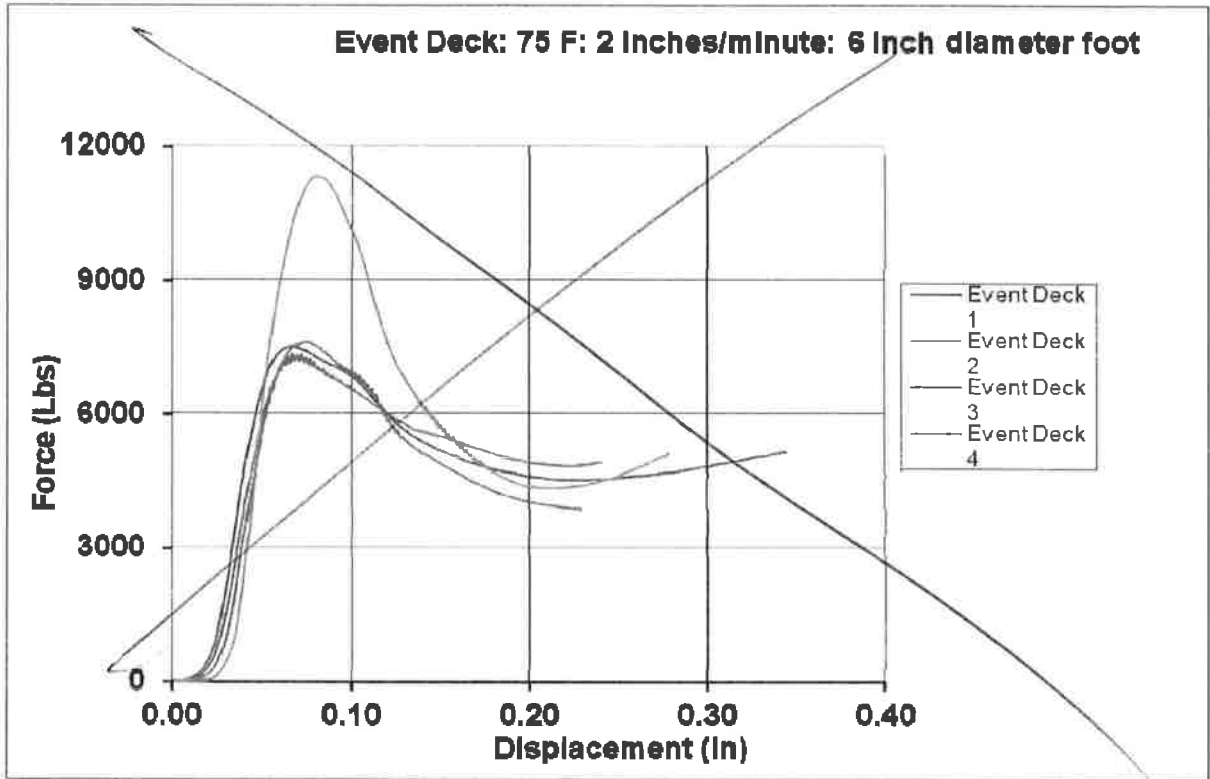
The UltraDeck matting structural composition has the capacity to withstand 489psi or 70,416psf static compressive loading at 75° F without permanent deformation to the plastic. *34 kg/cm<sup>2</sup>*

#### ArmorDeck

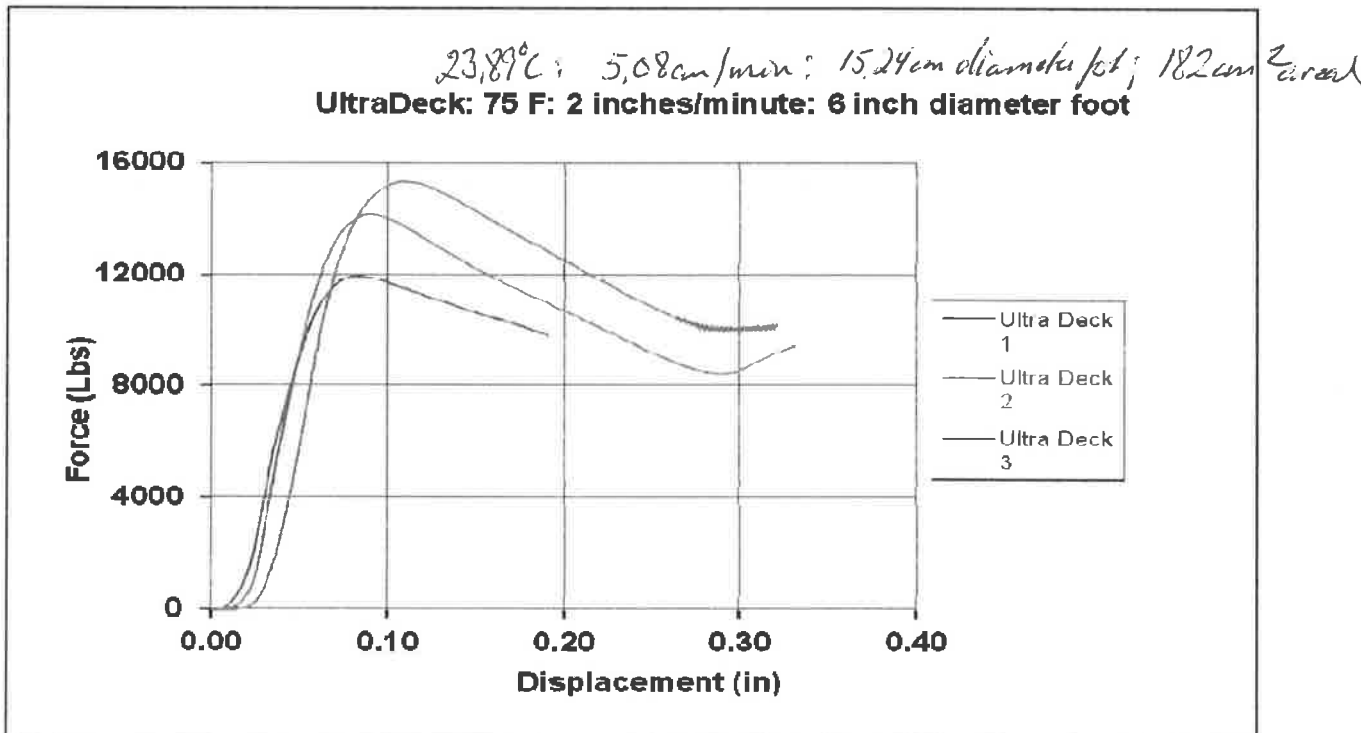
*23.89°C*  
The ArmorDeck matting structural composition has the capacity to withstand 430psi or 61,920psf static compressive loading at 75° F without permanent deformation to the plastic.

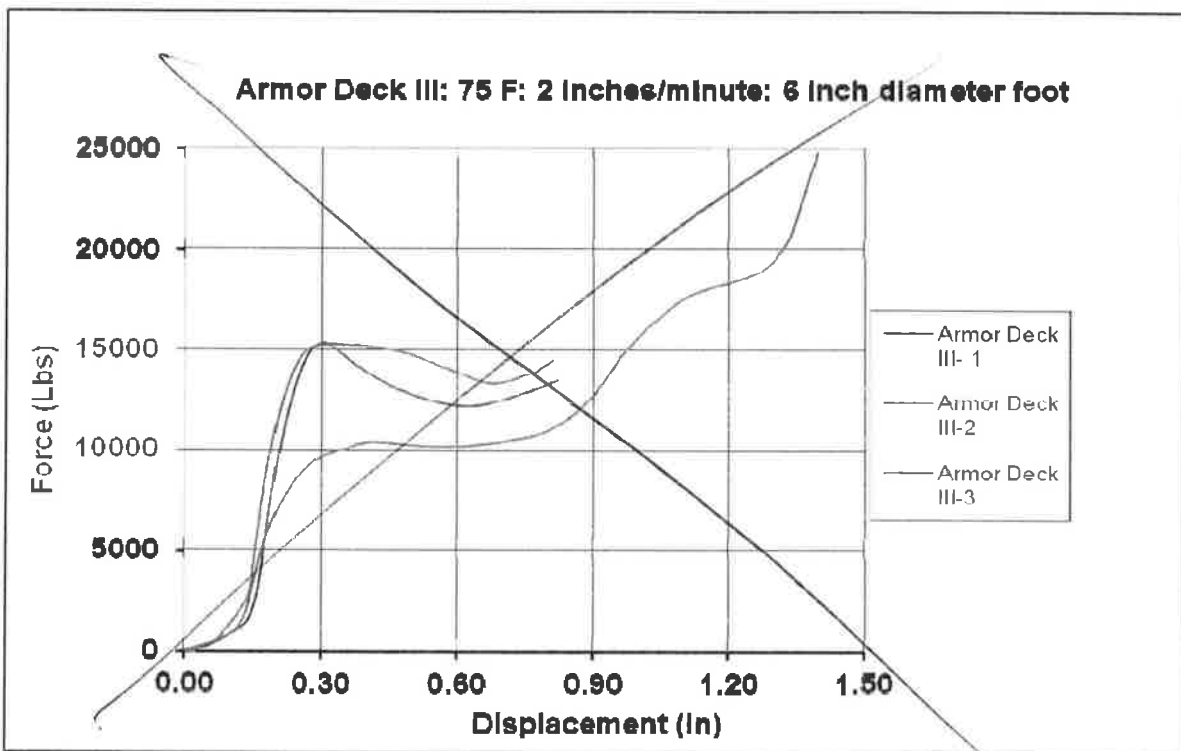
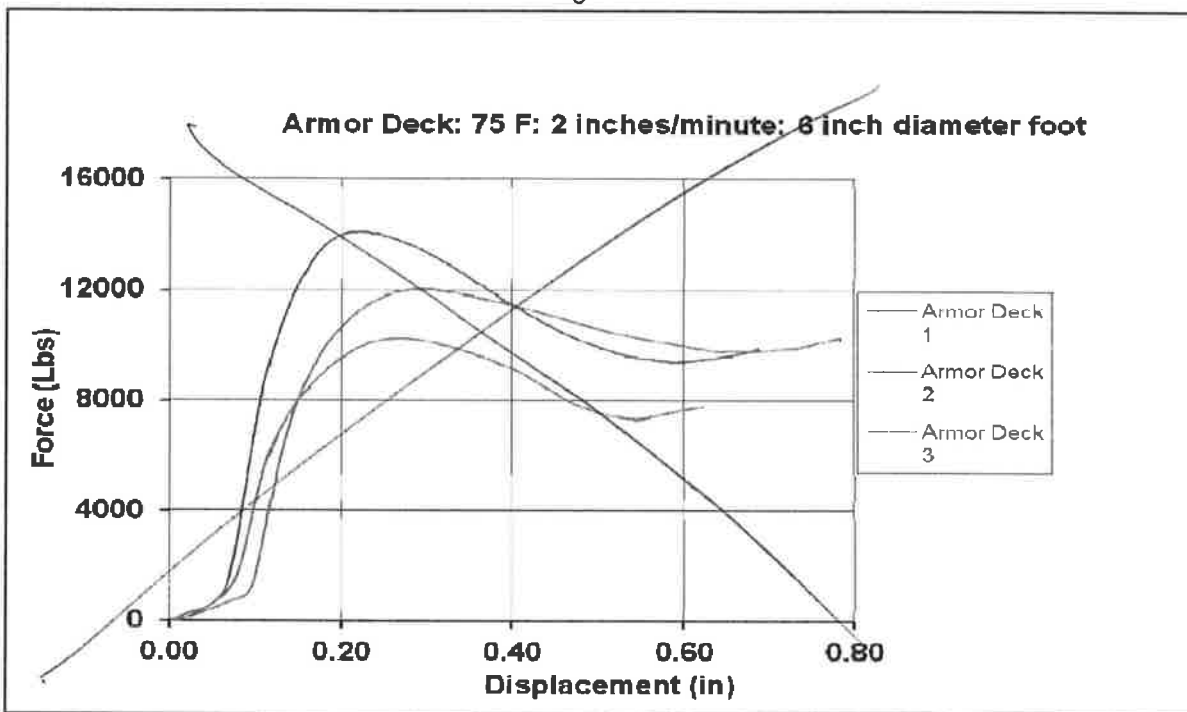
#### ArmorDeck III

The AmorDeck III matting structural composition has the capacity to withstand 542psi or 78,048psf static compressive loading at 75° F without permanent deformation to the plastic.



Event Deck-4 was the 3 section perforated mat.





Armor deck III-2 had a slight initial yield at just over 10,000 Lbs but kept increasing to the limit of the testing system.

