

# ADVANCED INDUSTRIAL & MARINE SERVICES, INC.

FIBERGLASS GRATING SYSTEMS

FIBERGLASS STRUCTURES, LADDERS,  
HANDRAILS, AND STAIRS

## **FIBERGLASS MUDMATS**

FIBERGLASS PLATFORM IDENTIFICATION  
SIGNS

VORTEX STRAKES AND FAIRINGS

CUSTOM FIBERGLASS HAND LAY UP

SYNTACTIC FOAM SUB-SEA INSULATION

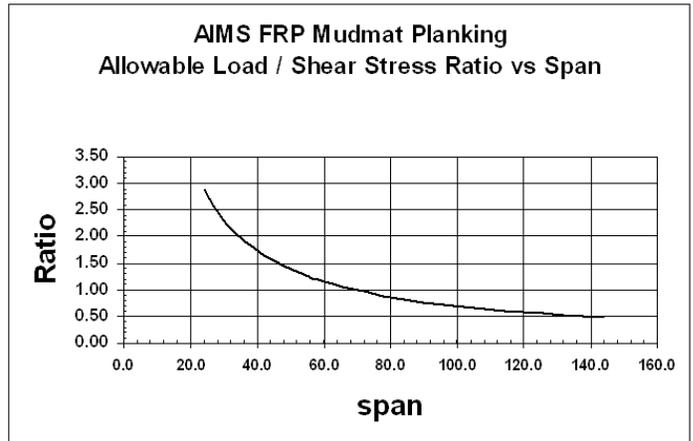
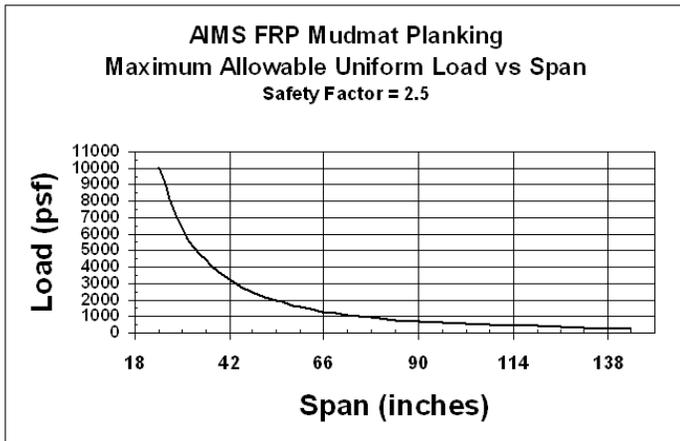
BARGE BUMPER SYSTEMS

OFFSHORE PIPELINE CROSSING COVERS

UNDERWATER ANTIFOULING SIGNS

# FIBERGLASS MUDMATS

U.S. PATENT NO. 6,257,800



**AIMS' Fiberglass Mudmat Planks**-the smart choice for mudmat systems!

As the skin of a mudmat system, AIMS Fiberglass Mudmat Planks are superior to traditional steel mudmat systems---**they provide an economical alternative to traditional steel plate mudmat systems.** Due to the products' high flexural strength (62,000 psi), coupled with its high flexural stiffness (EI = 9,386,685 lb-in<sup>2</sup>), AIMS Fiberglass Mudmat Planks span 2-3 times further than unstiffened steel plate mudmat skins, thus eliminating as many as one-half to two-thirds of the beams required to support the steel mudmat skin. This relates to the **elimination of many fabricated joints and considerable weight savings.**

In addition to the reduction in steel fabricated joints and tonnage, AIMS Fiberglass Mudmat Planks are non-metallic, thus eliminating the need for cathodic protection. The service life of any mudmat system is very short, and after the piles have been driven, mudmats provide no further service, however, **a steel mudmat system continues to draft from the platform's cathodic protection system.** Because our planks are non-metallic, many anodes are eliminated.

**Adding the steel weight savings, the reduction of fabricated joints, and the reduction of anodes, the AIMS Fiberglass Mudmat System is an economical alternative to steel plate mudmats.**

### Direct Money Savings

- High flexural strength resulting in spans 2-3 times further than steel plate
- High flexural stiffness - **24 times stiffer than 1/4" steel plate, and 7 times stiffer than 3/8" steel plate**
- Reduction in the number of beams to frame the mudmats
- Reduction in fabrication costs
- Reduction in anodes
- Saves weight (9-12 lbs/ft<sup>2</sup> in air, 10-12 lbs/ft<sup>2</sup> submerged)
- Easily Installed----**NO BOLTING REQUIRED**

### Calculated Reduction in Anodes

The reduction in anodes is a function of the wetted steel surface area. After calculating the wetted area (**remember the steel plate has two surfaces**), use of the following formula provides the expected reduction in anodes.

$$N = (WSA_{\text{steel}} - WSA_{\text{frp}}) \times (0.006 \text{ amps/ft}^2) \times (8.0 \text{ lbs/year/amp}) \times PL / P_{\text{anode}}; \text{ where:}$$

N = Number of Anodes to be Eliminated

WSA<sub>steel</sub> = Wetted Surface Area of Steel Skinned System, ft<sup>2</sup> (previously designed steel system)

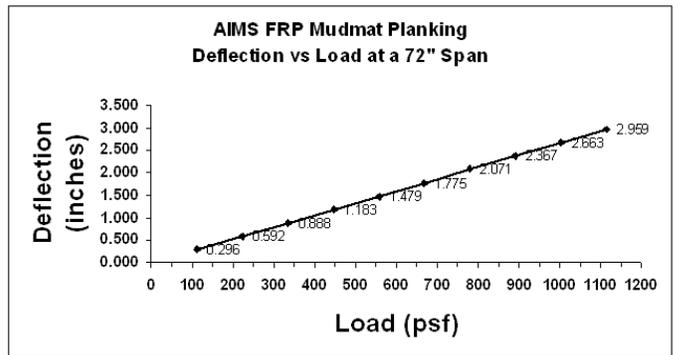
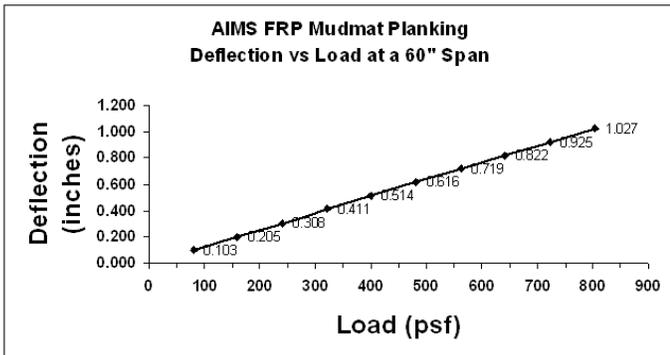
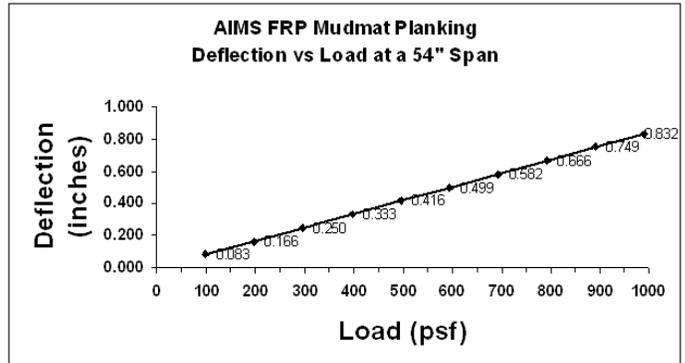
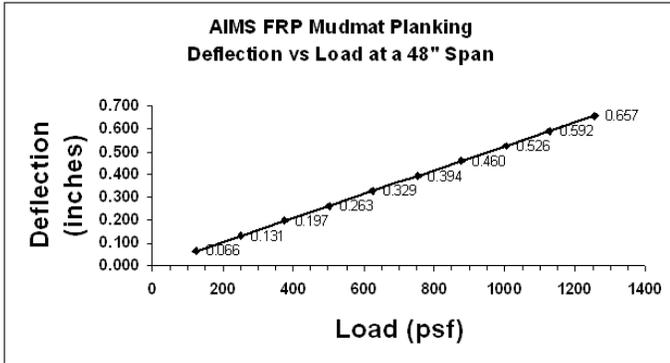
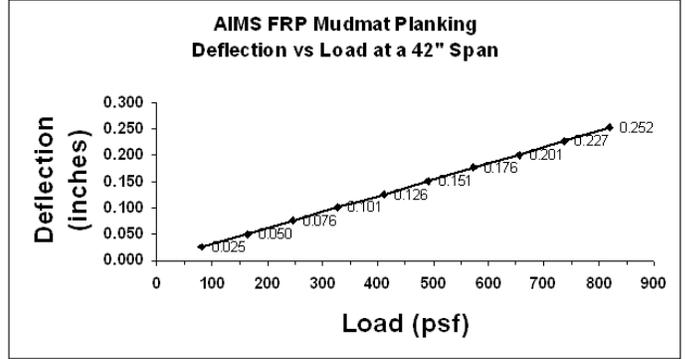
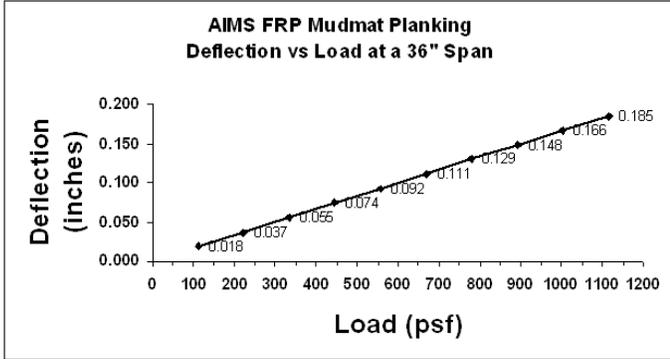
WSA<sub>frp</sub> = Wetted Surface Area of Fiberglass Skinned System, ft<sup>2</sup> (alternative FRP design)

PL = Platform Life, years (typically 20 or 30 years)

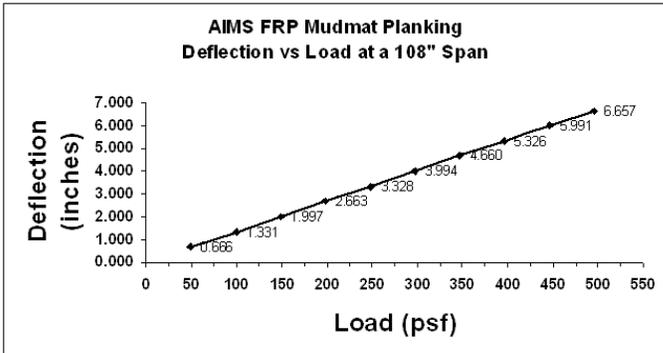
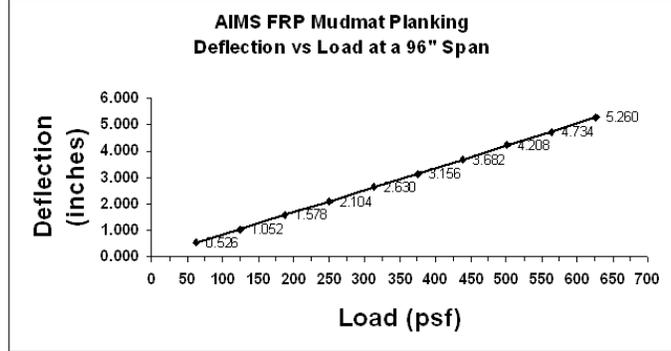
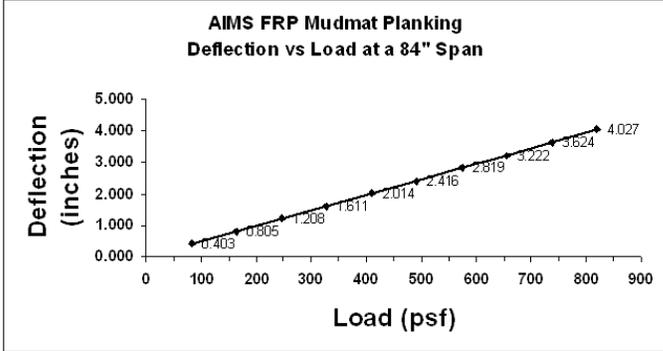
P<sub>anode</sub> = Poundage of anode, i.e., 725 for a 725 pound anode

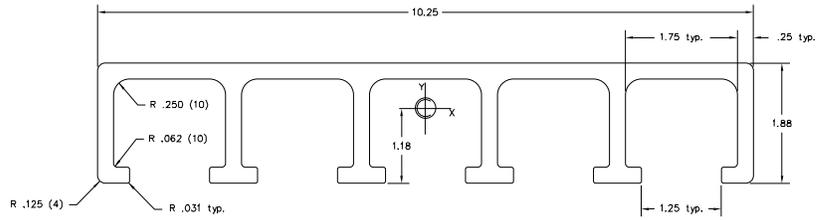
[www.aims-intl.com](http://www.aims-intl.com)

# LOAD TABLES



# LOAD TABLES





AIMS FRP MUDMAT PLANKING

$F_{b_{ult}}$	= Ultimate Flexural Stress	= 62,000 psi
Safety Factor	= 2.5	
$F_{b_{allow}}$	= Allowable Flexural Stress	= 24,800 psi
E	= Modulus of Elasticity	= $3.85 \times 10^6$ psi
I	= Moment of Inertia	= $2.4381 \text{ in}^4$

WEIGHT (IN AIR)  
 -4.7 lbs/linear foot  
 -5.5 lbs/sq. foot

SUBMERGED UNIT WEIGHT  
 negatively buoyant  
 -2.5 lbs/sq. foot

CROSS SECTION PROPERTIES		
Area	5.758	$\text{in}^2$
$I_x$	2.438	$\text{in}^4$
$I_y$	57.200	$\text{in}^4$
$I_{xy}$	0	$\text{in}^4$
$S_x$	2.073	$\text{in}^3$
$S_y$	11.161	$\text{in}^3$
$r_x$	.651	in
$r_y$	3.152	in

U.S. PATENT NO. 6,257,800

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AIMS DWG : FRP MUDMAT PLANKING  
 REV No. : 0  
 DATE : 5/12/02

FRP MUDMAT PLANKING



AIMS FIBERGLASS MUDMAT PLANKS

## **OTHER PRODUCTS:**



THE "NEW" AIMS WAVE ZONE  
FIBERGLASS HANDRAIL SYSTEM  
(PATENT PENDING)



UNDERWATER ANTI-FOULING  
SIGNS



BOAT LANDING RUBSTRIPS



BARGE BUMPER SYSTEMS



ENERGY CELLS



FIBERGLASS  
WINDWALL PANELS



FIBERGLASS  
PLATFORM ID SIGNS



DRY TREE  
WORK PLATFORMS



VORTEX STRAKES



FIBERGLASS STRUCTURES AROUND  
WELLHEADS AND VESSELS



SUBSEA SYNTACTIC  
FOAM INSULATION



FIBERGLASS  
STAIRTREADS



FIBERGLASS  
LADDERS AND CAGES



FIBERGLASS  
STAIR TREAD COVERS



FIBERGLASS PIPE  
PENETRATION COLLARS

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