Fibergrate
Composite Structures

TECHNICAL REPORT
Low Temperature Drop Test On Fibergrate Grating

I. CONCERN

A. Could Fibergrate grating withstand high impact of a 340 pound motor at -23 degrees Fahrenheit.

II. OBJECTIVE

A. Conduct a Drop Test which would impact our grating at -23 degrees Fahrenheit temperatures.

III. PROCEDURES

A. Grating was packed with dry ice inside an insulated box.
B. A Fluke Digital Multimeter and a Fluke Degree Fahrenheit Temperature Probe were used for monitoring temperature.
C. Two pieces of Fibergrate grating 1-1/2" square mesh x 1-1/2" thick type Standard grating 36-1/4" x 40-5/8". A 3/16" diameter hole was drilled in one of the grating bars (refer to Sketch #2). The Fluke temperature probe was inserted in this hole for the temperature monitoring.
D. The cut grating and dry ice were packed into a wooden box and left over night.

IV. TESTING

A. We placed one piece of Fibergrate 1-1/2" grating which had been left over night in dry ice onto our drop test fixture. Temperature of the grating before removal from the box was approximately -95.8 degrees Fahrenheit.
B. Temperature of grating after it was clipped to drop test fixture was -37 degrees Fahrenheit.
C. The motor was dropped from a height of 6'-0" with minimal damage (refer to deflection report and picture sequence).

V. CONCLUSION

A. Fibergrate grating was able to resist high impact at -37 degrees Fahrenheit temperature.
B. Difference between ambient temperature impact and low temperature impact. Ambient experienced minor tensile failure at bottom of grating versus minor compression failure at top surface of the grating at -37 degrees Fahrenheit.
C. Damage to top surface of low temperature grating was greater due to brittleness of resin

Joe F. Valdez
Sales Administrator

LOW TEMPERATURE DROP TEST REPORT

DATE: April 18, 1980

TEST FOR: 1-1/2" x 1-1/2" Square Mesh x 1-1/2" Thick Type Standard Grating

DATA & RESULTS: Test Mode: Proof loading, 1.0% Span.

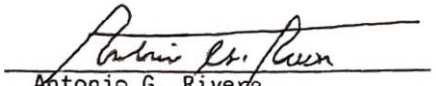
(Deflections in inches at load below)

Specimen #	100	200	300	400	500	600	700	800	900
PANEL A									
1 (1=24")	0.02875	0.06125	0.0951	0.1287	0.1600	0.195	0.2287	0.2625	0.2950
2 (1=24")	0.03125	0.0635	0.0975	0.1300	0.1612	0.196	0.2300	0.263	0.2960
PANEL B									
3 (1=24")	0.0362	0.0713	0.1063	0.1413	0.1751	0.2125	0.2475	0.2825	0.3175
4 (1=36")	0.1025	0.2137	0.3262	0.435					

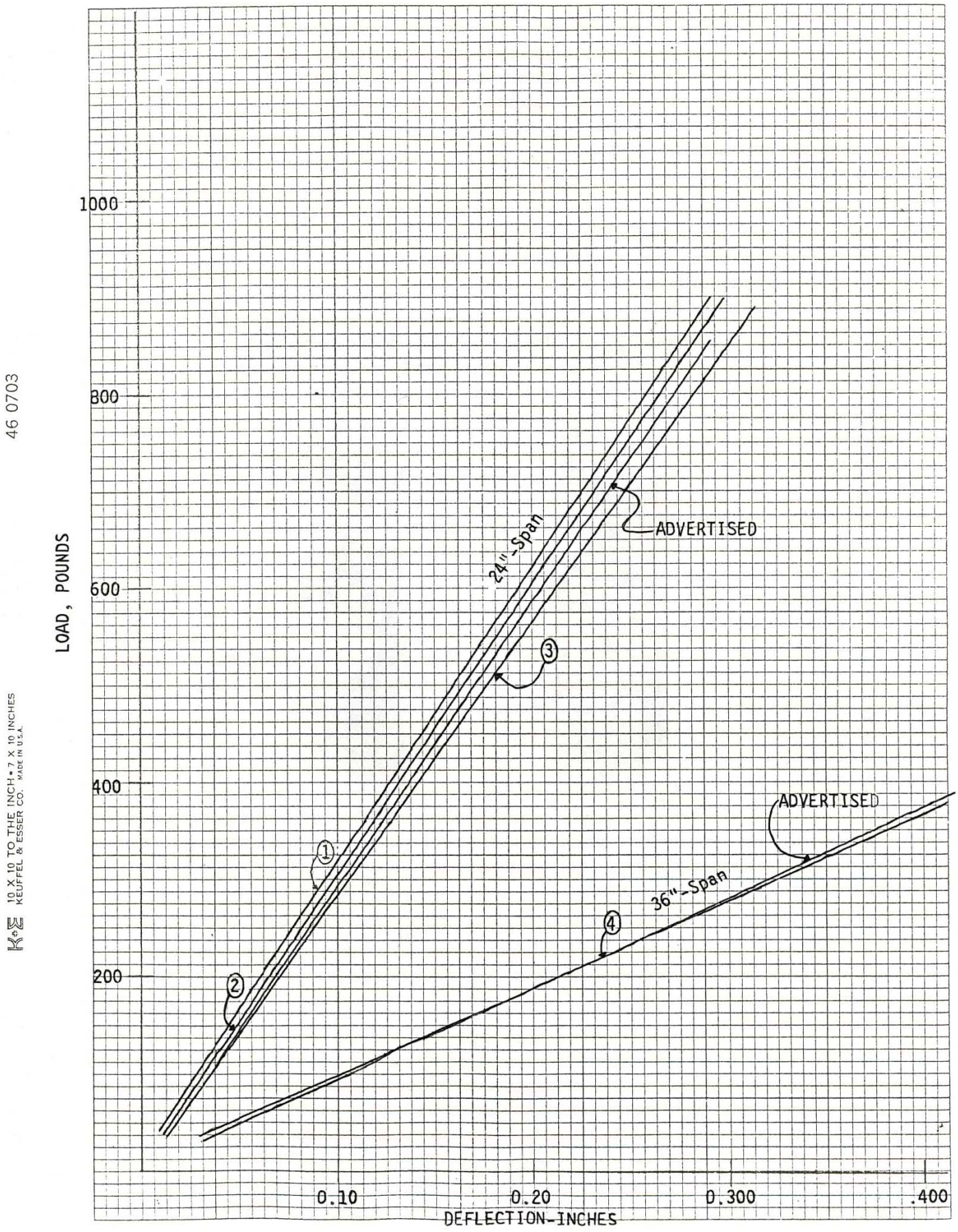
PANEL A	@750#'s	@1000#'s
1	0.2450	0.3260
2	0.2460	0.3300
PANEL B		
3	0.265	0.3525
4	--------	--------

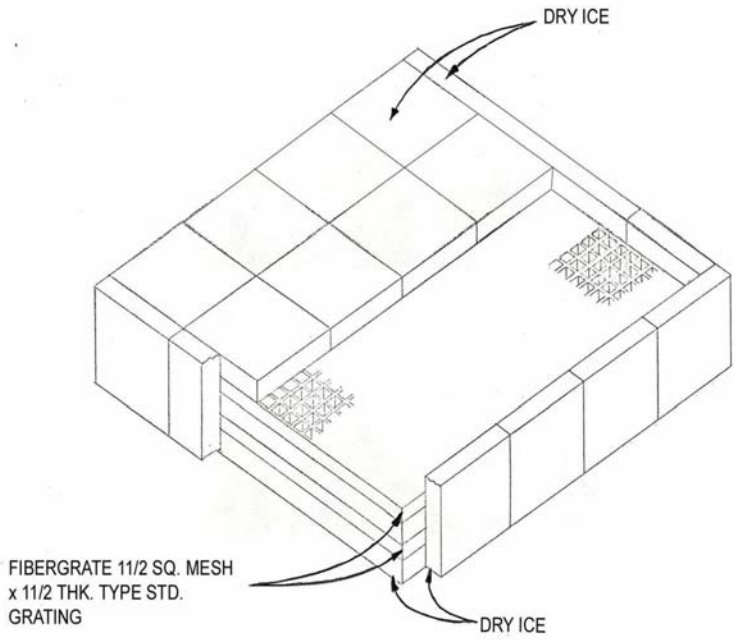
Specimen 2 & 4 – With drop mark as shown below
1 & 3 – Right or left of drop mark

REMARKS: = Location of temperature probe

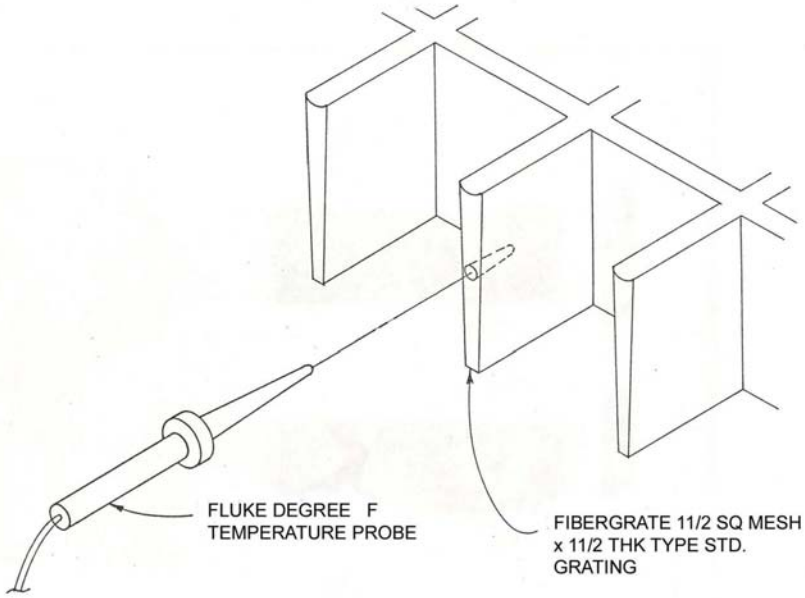


Antonio G. Rivera
Technical Services Engineer


46 0703
10 X 10 TO THE INCH • 7 X 10 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.
LOAD, POUNDS
1000
800
600
400
200
24"-Span
ADVERTISED
36"-Span
ADVERTISED
1
2
3
4
0.10
0.20
0.300
.400
DEFLECTION-INCHES


DRY ICE
FIBERGRATE 11/2 SQ. MESH
x 11/2 THK. TYPE STD.
GRATING
DRY ICE

SK-I


FLUKE DEGREE F
TEMPERATURE PROBE
FIBERGRATE 11/2 SQ MESH
x 11/2 THK TYPE STD.
GRATING

SK-2