SMALL SCALE ASTM E 119/UL 263
ONE HOUR FIRE TESTING
FOR MARINOWARE
ON JOIST-RITE WITH ARMOROC FLOOR
VTEC #100-2949-1
TESTED: MAY 23, 2008
REVISION 2.0: OCTOBER 14, 2008
October 14, 2008

Client: Marinoware
137 Broadway, Suite B1
Amityville, NY 11701

Attn: Mr. Nick Camizzi

Subject: Small Scale One Hour ASTM E119/UL263 Fire Endurance Screening Testing on Marinoware Joist-Rite with ARMOROC Panel, as furnished by Ameriform, LLC.

SAMPLE DESCRIPTION:

1- ARMOROC Panel, 3/4” minimum thickness (as manufactured by Jilin Tiancheng) with Pemco P5100 adhesive applied to Armoroc board joints only, screw fastened direct to Joist-Rite Steel framing with #8 Rock-On Climacoat screws. Fastener spacing 12” O.C.

2- 1000JR200-54 Joist-Rite Galvanized steel joists, 10” depth x 16 Ga thickness x 2” flange width. Joists spaced at 16” O.C. maximum. Double joists only at end of panel spaced 7” apart.

3- 1000JT250-54 Galvanized steel Joist-Rite Track receiving ends of Joist-Rite joists, 10” depth x 16 Ga minimum. Screw fastened to top & bottom flange of Joist-Rite joist with #10-16 x 3/4” corrosion resistant self-drilling screws.

4- Galvanized steel Joist-Rite web stiffener, 3-5/8” x 16Ga, placed inside of perimeter Joist-Rite flange and placed outside of other Joist-Rite steel joists. Joist-Rite Web Stiffener attached to web of Joist-Rite with four #10-16 x 3/4” corrosion resistant self-drilling screws.

5- 1000JB16 JoistRite Solid Blocking was placed between the second and third JoistRite joists, between the third and fourth JoistRite joists, between the forth and fifth JoistRite joists, and between the fifth and sixth JoistRite Joists. Screw fastened to top and bottom flange of JoistRite joist with #10-16 x 3/4” corrosion resistant self-drilling screws through predrilled holes.
6- 1-1/2” CR Channel along the bridging line.

7- Marinoware RC-1 single leg galvanized resilient channel, 1/2” deep x 25 Ga minimum at 12” O.C. screw fastened to bottom flange of Joist-Rite steel joist with #10-16 x 3/4” corrosion resistant self-drilling screws.

8- Thermafiber insulation 4” thick in joist cavity against Armoroc Panel.

9- One layer of 5/8” Type C gypsum board, screw fastened to resilient furring channels with #6 x 1” drywall screws at 12” O.C.
PROCEDURE:

The furnace measures nominally 5 ft x 5 ft x 7 ft. The outside construction is steel and the furnace is lined with a ceramic refractory insulation.

Four burners, one centered on each wall, provide uniform heat. Each burner is rated for 1.5 million Btu/hr and is of the flat flame or non-impinging flame design. Furnace conditions are monitored by four 1/4" grounded Inconel-sheathed chromel-alumel thermocouples.

The unexposed surface temperature of the sample was monitored by nine, 20-gauge type K, fiberglass sheathed thermocouples. An insulating pad was placed over each thermocouple on the unexposed side of the sample.

The fire test was run following the E119/UL263 time-temperature curve.
The endpoint for the E119 Fire Endurance Testing occurs when either all the thermocouples on the unexposed side of the sample reach an average of 250°F + ambient starting temperature, any individual thermocouple on the sample exceeds 325°F + ambient starting temperature, or when the sample experiences burn-through.

RESULTS:

At 20 minutes, smoke began emitting from the sample.

At 60 minutes, the test was stopped without reaching any of the end points.

<table>
<thead>
<tr>
<th>TIME (MINS)</th>
<th>DEFLECTION (IN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>15</td>
<td>0.00</td>
</tr>
<tr>
<td>30</td>
<td>0.00</td>
</tr>
<tr>
<td>45</td>
<td>0.00</td>
</tr>
<tr>
<td>60</td>
<td>0.00</td>
</tr>
</tbody>
</table>

The time-temperature data are contained on the following pages.

Neil Schultz                  Amirudin Rahim  
Executive Director            Technical Director

Revision 1.0: “Sample Description” was corrected.
Revision 2.0: Added “as furnished by Ameriform, LLC”, “as manufactured by Jilin Tiancheng”, and Armoroc “Panel”

Disclaimer: This test should be used to measure and describe the properties of materials, products or assemblies in response to heat and flame under controlled laboratory conditions. It should not be used to describe or appraise the fire hazards or fire risks of materials, products or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment that takes into account all of the factors that are pertinent to an assessment of fire hazard of a particular end use.

Notice: VTEC Laboratories Inc. will not be liable for any loss or damage resulting from the use of the data in this report, in excess of the invoice. This report pertains to the sample tested only. Such report shall not be interpreted to be a warranty, either expressed or implied as to the suitability or fitness of said sample for such uses or applications, as the party contracting for the report may apply such sample.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>70</td>
<td>73</td>
<td>77</td>
<td>76</td>
<td>74</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>70</td>
<td>73</td>
<td>77</td>
<td>76</td>
<td>74</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>70</td>
<td>73</td>
<td>77</td>
<td>76</td>
<td>74</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>70</td>
<td>73</td>
<td>77</td>
<td>76</td>
<td>74</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>70</td>
<td>73</td>
<td>77</td>
<td>76</td>
<td>74</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>70</td>
<td>73</td>
<td>77</td>
<td>76</td>
<td>74</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>70</td>
<td>73</td>
<td>77</td>
<td>76</td>
<td>74</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>70</td>
<td>73</td>
<td>77</td>
<td>76</td>
<td>74</td>
<td>62</td>
<td></td>
</tr>
</tbody>
</table>

May 23, 2008