

October 18, 2010

Frank Breek  
P.T. Polymindo  
Kawasan Industri Jatake  
Jl. Industri 2 Blok F No: 8  
Tangerang 15135, Indonesia

**RE: ASTM E108 Testing of Viro Roofing HDPE.**

Dear Mr. Breek

A series of three *ASTM E108 Standard Methods for Fire Tests of Roof Coverings* (E108) Class A tests were conducted on the Viro Roofing system, one Burning Brand test and two Spread of Flame tests. Each test deck was constructed, and each test was performed as per the E108 standard. The results of each test are as follows.

Lumber : Nominal 2" x 4" Douglas Fir, moisture content between 8-12%.  
Deck : 15/32 AC Exterior Grade plywood (moisture content not greater than 8%).  
1/2" Dens Deck mechanically fastened to the deck using 4D 1 1/2" nails spaced 12" O.C.  
Deck Covering : A single layer of Soprema peel and stick membrane.  
Viro Roofing HDPE mechanically fastened to the deck using 16 Gauge 1/2" x 1 1/2" staples, and leaving 8" exposure.

- July 26, 2010, Class A Spread of Flame, **PASS**

Surface Ignition occurred 55 sec after flame application, the flame front progressed to a maximum spread of 6 feet at 4 min 57 sec. Shortly after reaching maximum flame spread, the flame front receded back down to 4 feet at 9 min 28 sec.

Lumber : Nominal 2" x 4" Douglas Fir, moisture content between 8-12%.  
Deck : 15/32 AC Exterior Grade plywood (moisture content not greater than 8%).  
Deck Covering : A single layer of Soprema peel and stick membrane.  
Viro Roofing HDPE mechanically fastened to the deck using 16 Gauge 1/2" x 1 1/2" staples, and leaving 8" exposure.

- July 28, 2010, Class A Spread of Flame, **PASS**

Surface Ignition occurred 56 sec after flame application, the flame front progressed to a maximum spread of 5 feet at 5 min 21 sec.

- July 28, 2010, Class A Burning Brand, **PASS**

After placement of the brand surface ignition occurred at 28 sec. At 32 min 58 sec the brand was consumed and was no longer burning. At 47 min 14 sec there was no longer any evidence of burning and the test was concluded.

Sincerely,

**QAI Laboratories, Inc.**



Prepared By:  
Christopher W. Clark  
Test Technician



Reviewed By:  
**Chris Bowness, P.E., P.Eng.**  
General Manager