ASTM E1354
CONE CALORIMETER TESTING

PRECIDIUM™ MTI FLOOR SYSTEM

TESTED: APRIL 28, 2015

Quantum Chemical

Quantum Technical Services Test Laboratory

April 29, 2015

Subject: Cone Calorimeter Testing. Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter per ASTM E1354.

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

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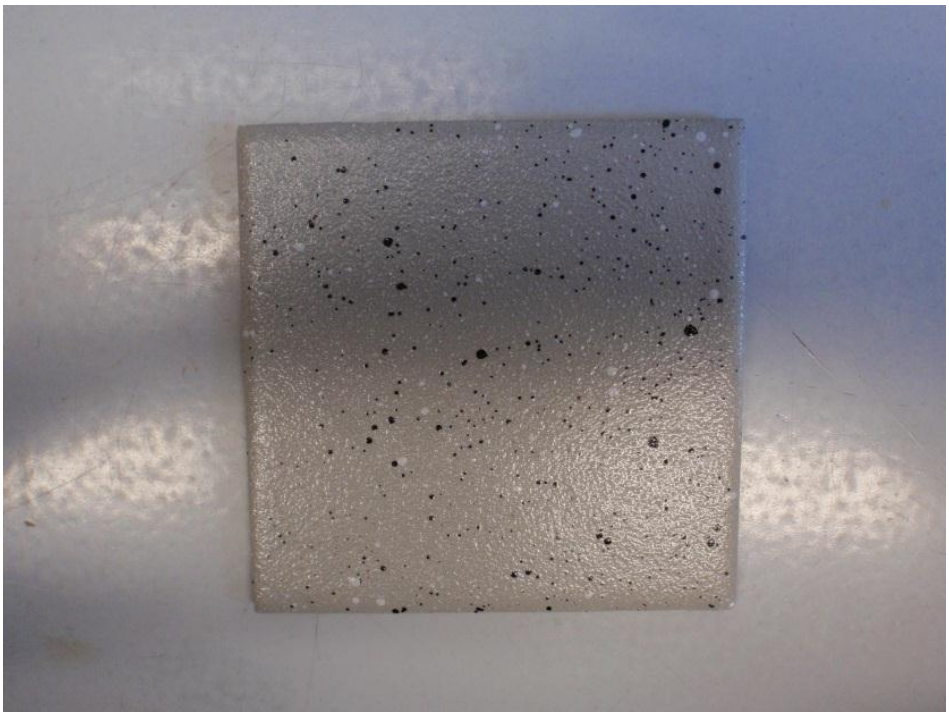
Samples:

1/8” steel substrate
PRECIDIUM™ MTI Primer
PRECIDIUM™ MTI FR Membrane
PRECIDIUM™ MTI FR Color Top Coat
PRECIDIUM™ MTI Accents
PRECIDIUM™ MTI Clear Top Coat
Total thickness of coating ~90 mils

Prepared: February 6th, 2015
Tested: April 28, 2015



ASTM E11354 – CONE CALORIMETER TESTING

DATE: 4/28/15
SPECIMEN ID: **PRECIDIUM™ MTI FLOOR SAMPLES**
COLOR: GRAY BASE; B&W ACCENTS
SPECIMEN THICKNESS: ~90 mils
TEST ORIENTATION: HORIZONTAL
SPECIAL MOUTNING USED: CONE PLACED 60mm FROM SAMPLE
HEAT FLUX: 50 Kw/M^2
CONDITIONING: NONE
NUMBER OF SAMPLES: THREE
PREPARATION OF SAMPLE: SIDES AND BOTTOM WERE WRAPPED WITH ALUMINUM FOIL, SHINY SIDE TO THE SAMPLE. EXCESS FOIL WAS WRAPPED AROUND THE SIDES OF THE SAMPLE HOLDER.

	Sample #1	Sample #2	Sample #3	Average
SPECIMEN THICKNESS (mm)	5.36	5.49	5.41	5.42
INITIAL SPECIMEN MASS (g)	287.32	288.53	288.1	288
FINAL SPECIMEN MASS (g)	272.1	274.2	273.6	273.3
TOTAL SPECIMEN MASS LOSS (kg/sq. m)	1.63	1.70	1.76	1.70
AVG. MASS LOSS RATE (g/sq. m-s)	1.6	1.5	1.6	1.6
TIME TO SUSTAINED FLAME (s)	28	26	24	26
TIME TO SELF-EXTINGUISHMENT (s)	976	1173	1081	1067.7
TIME TO PEAK RATE OF HEAT RELEASE (s)	40	35	35	36.7
PEAK RATE OF HEAT RELEASE (kW/sq. m)	231.43	213.26	245.39	230.02
AVERAGE RATE OF HEAT RELEASE (kW/sq. m)	38.58	35.19	36.91	36.89333
TOTAL HEAT RELEASE (MJ/sq. m)	36.67	40.78	39.12	38.86
AVG. EFFECTIVE HEAT OF COMBUSTION (MJ/kg)	23.87	24.91	23.45	24.08
AVG. EFFECTIVE HEAT OF COMBUSTION (BTU/lb)	10262	10709	10082	10353
AVG. SPECIFIC EXTINCTION AREA (sq. m/kg)	234.34	182.35	231.64	216.11
AVG. HEAT RELEASE RATE, 60 s (kW/sq. m)	71.11	57.64	74.51	67.75
AVG. HEAT RELEASE RATE, 180 s (kW/sq. m)	75.84	72.77	78.59	75.73
AVG. HEAT RELEASE RATE, 300 s (kW/sq. m)	58.26	55.92	58.66	57.61

OBSERVATIONS: All samples self-extinguished less than one minute after re-ignition and then re-ignited about one minute after that. After the first self-extinguishment, the spark igniter was left on for about 12 minutes.