CERTIFICATE

Material Fire Test Certificate

IGNL-3163-07-05
Date of Test 30-Oct-19
ISSUED 18-Nov-19
EXPIRY 30-Oct-24

AS/NZS 3837:1998 Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter

PRESENTED TO
3M Australia

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TEST BODY
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Specimen Identification
3M DI-NOC Architectural finish

Specimen Description
The sponsor described the tested specimen as:
Self adhesive decorating film with the nominal composition being PVC

Test Method
Three (3) specimens were tested in accordance with the requirements of AS/NZS 3837

Observations
Due to the thin nature of the specimens, the burning behaviour and resultant heat release rates were inconsistent between the tested specimens.

Input

			Sp 1	Sp 2	Sp 3	Sp 4	Sp 5	Sp 6	Mean
Test Heat Flux (kW/m²)	50.0								
Thickness (mm)			6.46	-	6.44	-	6.33	-	6.41
Surface Area (m²)	A_s		0.00884	-	0.0088	-	0.00884	-	0.00884
Mass before the Test (g)	m_i		88.1299	-	86.476	-	84.7207	-	86.4421
Mass after the Test (g)	m_f		80.9603	-	84.157	-	79.9976	-	81.7049
Time to Ignition (sec)	t_{ig}		29	-	40	-	40	-	36.3333
Test start time (sec)	t_{start}		0	-	0	-	0	-	0

Calculation

Density (kg/m³)	ρ		1543.26	-	1519	-	1514.03	-	1525.43
Irradiance (kW/m²)			50.3	-	50.63	-	50.38	-	50.4367
Exhaust System Flow Rate (m³/sec)			0.024	-	0.024	-	0.024	-	0.024
Mass Loss (kg/m²)			0.81104	-	0.2623	-	0.53429	-	0.53588
Average rate of Mass Loss per unit area (g/m².s)			5.96349	-	1.9148	-	3.89989	-	3.92606
Total Mass Pyrolyzed (%)			8.13521	-	2.6817	-	5.57488	-	5.46392
Time to 50kW/m² (sec)	t_{50}		-	-	36.491	-	-	-	36.4907
Ignitability Index (1/min)	I_{ig}	$60/(t_{50}-t_{sta}$	-	-	1.6443	-	-	-	1.64425
Test duration (sec)			165	-	177	-	177	-	173

Peak Rate of Heat Release (0-60s)			46.5484	-	63.268	-	29.2077	-	46.3415
Peak Rate of Heat Release (0-180s)			46.5484	-	63.268	-	29.2077	-	46.3415
Peak Rate of Heat Release (0-300s)			46.5484	-	63.268	-	29.2077	-	46.3415
Average Rate of Heat Release (0-60s)			12.9427	-	33.551	-	-1.6414	-	14.9509
Average Rate of Heat Release (0-180s)			7.80649	-	12.967	-	5.30473	-	8.69287
Average Rate of Heat Release (0-300s)			7.80649	-	12.967	-	5.30473	-	8.69287
Total Heat Released (MJ/m²)			0.25635	-	-	-	-	-	0.25635
Average Effective Heat of Combustion (MJ/kg)	$\Delta h_{c,eff(avg)}$		1.58936	-	12.814	-	-0.7424	-	4.55373
Average Specific Extinction Area (m²/kg)	$\sigma_{f(avg)}$		186.561	-	369.93	-	216.827	-	257.771

Rate of Heat Release Index (m=0.34)	I_{Q1}		-	-	898.06	-	-	-	898.061
Rate of Heat Release Index (m=0.93)	I_{Q2}		-	-	202.12	-	-	-	202.12
Integral Limit at 10 min	$I_{Q,\ 10\ min}$	$6800 - 540\ I_{ig}$	-	-	5912.1	-	-	-	5912.1
Integral Limit at 2 min	$I_{Q,\ 2\ min}$	$2475 - 165\ I_{ig}$	-	-	2203.7	-	-	-	2203.7
Integral Limit at 12 min	$I_{Q,\ 12\ min}$	$1650 - 165\ I_{ig}$	-	-	1378.7	-	-	-	1378.7

Result

BCA Group Classification Prediction			1	-	1	-	1	-	

IGNIS LABS PTY LTD ignis labs MATERIAL FIRE TESTING Certificate ABN 36 620 256 617

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