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**ASTM D 635-14 Horizontal Burning Rate Determination  
of "12 mm Palsun UV"**

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**ACCREDITATION** To ISO/IEC 17025 for a defined Scope of Testing by the International Accreditation Service

### **SPECIFICATIONS OF ORDER**

Determine rate of burning and/or extent and time of burning of plastics in a horizontal position according to ASTM D 635-14, as per Palram Americas, Inc. reference Purchase Order No. 4900080181 and Exova Warringtonfire North America Proposal Ref. #15-002-381,246RV2 dated December 15, 2015.

**IDENTIFICATION** (Exova sample identification number 15-002-S0743-7)

Clear polycarbonate sheet, nominally 12 mm in thickness, identified as "12 mm Palsun UV".

### **SUMMARY OF TEST PROCEDURE**

Specimens are conditioned for at least 48 hours at  $23 \pm 2^\circ\text{C}$  and  $50 \pm 5\%$  relative humidity prior to testing.

At least ten specimens, 125 x 12.5 mm, are each marked at 25 mm and 100 mm from one end. Each specimen is clamped horizontally at the end nearest the 100 mm mark, with its transverse axis inclined at  $45 \pm 2^\circ$  to the horizontal. A 100 mm square wire gauze screen is clamped in a horizontal position, 10 mm below the edge of the specimen, with approximately 13 mm of the specimen extending beyond its edge.

A 20 mm high blue flame from a burner is applied to the end of the specimen for a period of 30 seconds, or whenever the flame front reaches the 25 mm mark, whichever comes first. The times to reach the 25 mm mark and the 100 mm mark, or when burning ceases are recorded, and the extent of burning measured. Repeat the test procedure until three specimens have burned to 100 mm ref mark, or ten have been tested. The behavior of specimens shall be classified as HB (HB = Horizontal Burning) if:

- There are no visible signs of combustion after the ignition source is removed, or
- The flame front does not pass the 25 mm reference mark, or
- The flame front passes the 25 mm reference mark but does not reach the 100 mm reference mark, or
- The flame front reaches the 100 mm reference mark and the linear burning rate does not exceed 40 mm/min for specimens having a thickness between 3 and 13 mm or 75 mm/min for specimens having a thickness less than 3 mm.

For Light-transmitting plastics, the International Building Code (Section 2606.4) requires a maximum burning extent of 1 inch (25 mm) at a thickness of 0.060 inches (1.5 mm), or in the thickness intended for use, for a material to be classified as Class CC1.

For a Class CC2 material, the IBC specifies a maximum burning rate of 2.5 inches per minute at a nominal thickness of 0.060 inches (1.5 mm), or in the thickness intended for use.

*This standard is used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions, but does not by itself incorporate all factors required for fire hazards or fire risk assessment of materials, products, or assemblies under actual fire conditions.*

**TEST RESULTS****ASTM D 635-14**Standard Test Method for Rate of Burning and/or Extent  
and Time of Burning of Plastics in a Horizontal Position

Approximate Material Thickness: 12 mm

Note: The surface pre-marked with "X" (UV side) was the intended primary surface exposed to the test flame.

	Time of Burning (s)	Extent of Burning (mm)	Linear Burn Rate (mm/min.)	Continued Burning of Specimens (Yes/No?)	Flame Reached 25 mm Mark (Yes/No?)	Flame Reached 100 mm Mark (Yes/No?)
1:	0.0	0	-	No	No	No
2:	0.0	0	-	Yes	No	No
3:	0.0	0	-	No	No	No
4:	0.0	0	-	No	No	No
5:	0.0	0	-	No	No	No
6:	0.0	0	-	No	No	No
7:	0.0	0	-	No	No	No
8:	0.0	0	-	No	No	No
9:	0.0	0	-	No	No	No
10:	0.0	0	-	No	No	No
Average:			0.0			

**CONCLUSIONS**

When tested at an approximate thickness of 12 mm, the material identified in this report meets the requirements to be classified HB.

When tested at an approximate thickness of 12 mm, the material identified in this report meets the International Building Code (IBC) requirements to be classified Class CC1.

**Note: This is an uncontrolled electronic copy of the report. Signatures are on file with the original.**

Serap Coskunsever  
Technologist

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Technical Manager

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