

FIRE BEHAVIOUR

ROHACELL burns with a slightly smoky flame. The fumes contain no corrosive decomposition products. The toxicity of the smoke fumes was determined by the mortality of rats after inhaling the thermal decomposition products of ROHACELL for half an hour, decomposition was according to ASTM D 1929.

In the temperature range up to 1112 °F (600 °C) the decomposition products of ROHACELL are less toxic than the decomposition products of pinewood. From .4 in. (10 mm) material thickness upwards, the grades ROHACELL 31, 51 and 71 are “normally flammable” (class B2) within the meaning of DIN 4102 and have a “non-drip” rating. According to ASTM D 1692-59 T, they are classified as “Burning by this Test”. The burning rate differs from grade to grade and depends on the material thickness. For ROHACELL 51, .4 in. (10 mm) thick, it amounts to .9 in./min (2.4 cm/min).

When provided with suitable skins, sandwich parts not covered at the edges meet the conditions of FAR, paragraph 25.853 (a). and (b). The specifications of Airbus Industry for smoke density and toxicity are also met.

According to VDE 0471-3 (incandescent wire method), the ignition temperature of ROHACELL 51 is 1,310 °F (710 °C) when the specimen is .2 in. (5 mm) thick.

According to DIN 51794, the ignition temperature of all ROHACELL grades is about 1,112 °F (600 °C) without flame and about 662 °F (350 °C) with flame. The calorific value of ROHACELL, measured according to DIN 51708, is about;

$$26000 \frac{\text{Ws}}{\text{g}} \left(2617 \times 10^3 \frac{\text{cal}}{\text{pound}} \right)$$

The LOI (Limiting Oxygen Index) of ROHACELL 31, 51 and 71 is 19 to 20.