# HyboFOAM® A

## *Introduction 产品介绍*

HyboFOAM® A（Advanced）是一种基于 PMI（聚甲基丙烯酰亚胺）的高等级闭孔刚性泡沫材料，不含卤素。产品的泡沫孔径细小且均匀（大于 0.5 毫米）

HyboFOAM® A (Advanced) is high-class closed-cell rigid foam plastic, based on PMI (polymethacrylimide) polymer, which does not contain any CFC's. HyboFOAM® A attributes a fine and unique cell size grade (greater than 0.5mm).

其加工工艺可以耐受最高 180°C 温度和最大 0.7 MPa 的压力。而且适用于各种固化工艺：热压罐，真空袋，RTM，VARTM，VARI，HP-RTM 等。由于具备优异的表面树脂吸收率，工程师可以在剥离强度和轻量化要求之间找到一个完美的平衡。为了适应不同尺寸和外形工件的加工要求，使用 HyboFOAM® A 可以非常容易的采用热压成型，使用各种胶粘剂粘接，或者常见的 CNC 数控机床进行随意的加工。

The processing parameter is up to temperature of 180°C and maximum pressure up to 0.7 MPa. Structural components can be manufactured by the following cure methods; Autoclave, Vacuum bagged, RTM, VARTM, VARI，HP-RTM and others. Due to superb resin absorption property, engineer will seek an excellent balance between peel-off strength and light-weight requirement. To meet different dimension parts and geometry, it is very easy to shape HyboFOAM® A by thermo-shaping, bonding by various adhesive, and common CNC machine.

HyboFOAM® A 主要用于制造高等级的复合材料部件，比如军用/民用飞机，航天/运载火箭，无人机等。

The application of HyboFOAM® A is basically focused on military/civil aircraft, aerospace/launching rocket, UAV, etc.

为了更好的指导用户，我们进行了大量的各方面的测试，包括：

- ✓ 吸潮性能
- ✓ 介电常数
- ✓ 压缩蠕变
- ✓ 高温力学性能
- ✓ 热膨胀系数
- ✓ 树脂吸收率

In order to provide solid guidance to customer, kinds of tests are conducted, including:

- ✓ Moisture absorption
- ✓ Di-electrics property
- ✓ Compressive creep
- ✓ Mechanics property at high Temp.
- ✓ Expansion Coefficient
- ✓ Resin Absorption

您可以联系我们的销售团队以获取更详细的测试结果。

You may contact our sales team for detail test result, or other more information.

# *Basic Property 基本性能*

| | 密度 Density | 压缩强度 Compression Strength | 拉伸强度 Tension Strength | 剪切强度 Shear Strength | 弹性模量 Elastic Modulus | 剪切模量 Shear Modulus | 热变形温度 Heat Distortion | 空隙直径 Cell Size |
|---|---|---|---|---|---|---|---|---|
| Grade | Kg/m$^3$ (lb/ft$^3$) | MPa ( bf/in$^2$) | MPa ( bf/in$^2$) | MPa ( bf/in$^2$) | MPa ( bf/in$^2$) | MPa ( bf/in$^2$) | ℃ | mm |
| Spec. | ASTM D1622 | ASTM D1621 | ASTM D638 | ASTM C273 | ASTM D1621 | ASTM C273 | DIN 53424 | GB/T 12811 |
| A-52 | 52(3.24) | 0.8(116) | 1.6(232) | 0.8(116) | 74(10733) | 23(3336) | 200 | >0.5mm |
| A-75 | 75(4.68) | 1.7(247) | 2.2(319) | 1.3(188) | 101(14649) | 40 (5802) | 200 | |
| A-110 | 110(6.86) | 3.6(522) | 3.7(537) | 2.4(348) | 170(24656) | 70(10153) | 200 | |

注意：以上数值均为名义密度的典型值，不可用于产品设计及验收。实测值会由于制造偏差而不同。请联系我公司质量管理部门以确认材料质量标准。

Remarks: Technical data values presented above are typical for nominal density. Not applicable for designing and acceptance. True data values are subject to normal manufacturing variations. Please contact our QA team for material criterion and standard.