

SYNTAC® 350

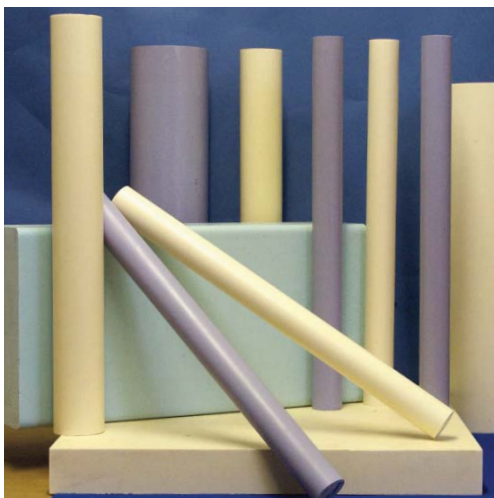
Syntactic Composite Material for Thermoforming

Introduction

Trelleborg Emerson & Cuming, Inc. pioneered the development and introduction of the first syntactic foam thermoforming material in 1981 and through a process of continuous investment and product development are recognised as leaders in the field.

Syntac® 350 is the industry standard white syntactic foam, made from high grade epoxy resin and hollow glass microspheres designed specifically for fabricating thermoforming plugs and other associated tooling.

Available in block, sheet and rod form, Syntac® 350 is easily machined using standard shop tools and offers a lightweight, durable and cost effective alternative to wood, felt, aluminium and delrin.



Features & Benefits

Syntac® 350 is engineered to address problems inherent in traditional thermoforming tooling, such as sticking, deformation and failure.

- **Simple and fast plug preparation**
Syntac® 350 can be easily machined, using standard tooling equipment.
- **Low thermal conductivity and Specific Heat**
Reduced warm up times, and virtual elimination of plug sticking or fouling.
- **Excellent Dimensional Stability and Temperature Resistance**
Maintains shape and temperature at elevated temperatures. Consistent and reliable performance. Long plug life, proven by long service history in application.
- **Lightweight**
Reduces wear and tear on moving machinery parts.
- **Variety of rods, sheet and block available**
Customised plugs can also be molded.

Major cost saving benefits

- Simple and fast plug preparation.
- No plug heaters.
- Reduced warm up time.
- No plug sticking or fouling.
- Consistent performance.
- Long plug life.

Typical Properties

Syntac® 350	Metric	Imperial
Colour	White	White
Density	672kg/m ³	42lb/ft ³
Service temperature	177°C	350°F
Thermal conductivity	0.12W/m ² K	0.07 BTU/hr-ft ² °F
Specific heat	2090 J/kg ² K	0.50 BTU/lb ² F
Coefficient of thermal expansion	31x10 ⁻⁶ cm/cm/°C	17x10 ⁻⁶ in/in/°F
Compressive strength	45MPa	6,500psi
Compressive modulus	2337MPa	339,000psi
Shore D hardness	55°D@177°C	55°D@350°F

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Applications

Syntac® 350 is used to form a wide range of polymer sheet materials, such as PS, PE and PVC. It is ideal for thermoforming on a wide range of inline, sheet or rotary fed systems, such as components manufacture within the food and medical packaging, aerospace and automotive sectors.

The material's versatility also makes it ideal for prototype tooling in many other plastics processes.

Syntac® can be used as a direct replacement for Hytac®-W and Synform®.

Safety

Syntac® 350 can be handled without any specific ventilation, hygiene or flammability precautions being necessary.

However, sanding, grinding and other machine operations may result in nuisance dusts that may be irritating to the eyes and upper respiratory tract. Nuisance particle masks, safety goggles and good local ventilation (preferably flexible duct work extending to the point of contact) should always be used. Consult the MSDS for more detailed information on safety and personal protection.

Machining

Recommended speeds and feeds for optimum performance when turning Syntac® 350 are as follows:

Speeds	3,000-3,500 rpm
Cut Size	6mm (0.25") maximum
Feed	508-635mm (20-25") per min.
Tooling	Carbide or high speed steel. Maintain sharp edge with slight chip breaker
Flutes	2-3 to minimise potential breakout

Technical Assistance

Trelleborg Emerson & Cuming, Inc. provide information and assistance to help users achieve maximum benefits from Syntac® 350.



TRELLEBORG

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