CYCOM® 6070

CYCOM® 6070 is a 280°F to 320°F (138°C to 160°C) curing phenolic resin. It has a service temperature up to 500°F (260°C) when step-wise post cured at 450°F (232°C). It can be processed by vacuum bag, press or autoclave methods. It is available on fiberglass or carbon woven broad goods.

CYCOM® 6070 is a self-extinguishing, low smoke, low heat release resin that is offered as both a tacky, drapeable prepreg for the fabrication of complex vacuum bags or autoclave cured parts and as a tack-free prepreg for press cured parts. It was developed specifically for use in aircraft interior laminates and crushed-core panels.

Typical applications for CYCOM® 6070 include various aircraft interiors such as interior aircraft laminates and crushed-core panels.

Features and Benefits

- When post cured, service temperature up to 500°F (260°C)
- Vacuum bag, press and autoclave cure cycles.
- Developed specifically for aircraft interior laminates and crushed-core panels.
- Self-extinguishing
- Low smoke
- Shelf Life of 300 days at or below -10°F (-23°C) from date of manufacture

CHARACTERISTICS

Table 1 | Physical Properties

Property	7781 E-Glass	Carbon PW	Carbon Crowfoot	120 E-Glass	Test Method
Resin Solids, %	29 – 35	38 – 44	38 – 44	36 – 44	ASTM D 3529
Volatiles [1], %	6.0 max	6.0 max	6.0 max	6.0 max	ASTM D 3530
Flow [2], %	10 – 20	10 – 30	10 – 30	10 – 20	ASTM D 3531
Gel Time [3], seconds	35 – 120	35 – 120	35 – 120	35 – 120	ASTM D 3532
Shelf Life	300 days at or below -10°F (-23°C) from date of manufacture				
Shop Life	10 days at or below 72°F (22°C)				

[1]: Test Conditions: 320°F (160°C), 10 minutes

[2]: Test Conditions: 320°F (160°C), 100 psi (0.69 MPa)

[3]: Test Temperature: 320°F (160°C)

Table 2 | Product Availability

Typical Syensqo product codes: MXB 6070/7781, MXG 6070/120 or 220, MXG 6070/5-322, MXG 6070/5-2648.

Carrier	Woven Glass and Carbon
Roll Width	38 in – 60 in (965 mm – 1524 mm)
Roll Length	60 – 120 yds. (55 -110 m)

PROPERTIES

Table 3 | Typical Properties of CYCOM® 6070 Phenolic Sandwich Panels

Properties	7781 Fiberglass Fabric 8HS	Carbon PW	Carbon Crowfoot	Test Method
Climbing drum peel, (1) Honeycomb, in-lb/3 in (N-m/m)	11 (16)	6.0 (9)	7.0 (10)	AMS STD-401
Long beam flexural (1) (3) Strength, ksi (MPa) P/Y, lb/in (kN/m)	 26 (179) 115 (20)	 31 (210) 180 (32)	 31 (210) 180 (32)	AMS STD-401
OSU heat release (2) Total, kW-min/m^2 Peak, kW/m^2	 30 43	 38 48	 38 48	FAR 25
NBS smoke (2) Ds at 4 minutes	 <5	 0 – 10	 0 – 10	FAR 25
Flammability 60 second vertical (2) Self-extinguish time, sec Burn length, in (mm) Drip	 <1 <2 (51) None	 <1 <2 (51) None	 <1 <2 (51) None	FAR 25

(1) Property values listed are typical for 2 ply/ 2 ply Nomex honeycomb sandwich panels.

(2) Property values listed are typical for 1 ply/1 ply Nomex honeycomb sandwich panels.

(3) Test parameters: 4-inch load span, 22-inch support span.

Table 4 | Typical properties of CYCOM® 6070 phenolic composite laminates, Glass

Property	Test Temperature	7781/1581 Fiberglass Fabric 8HS	120/220 Fiberglass Fabric 4HS	Test Method
0° Tensile Strength ksi (MPa)	-67°F (-55°C) 75°F (24°C) 180°F (82°C)	73.5 (507) 60 (414) 51 (352)	62 (428) 54 (369) 59 (407)	ASTM D 638
0° Compressive Strength ksi (MPa)	-67°F (-55° C) 75°F (24°C) 180°F (82°C)	59 (407) 49 (338) 40 (273)	74 (507) 71 (479) 58 (397)	ASTM D 695
0° Flexural Strength ksi (MPa)	-67°F (-55°C) 75°F (24°C) 180°F (82°C)	72 (493) 71 (486) 65 (445)	84 (579) 71 (490) 64 (438)	ASTM D 790
0° Flexural Modulus msi (GPa)	-67°F (-55° C) 75°F (24°C) 180°F (82°C)	3.9 (27) 3.7 (25) 3.7 (26)	3.7 (25) 3.7 (25) 3.6 (24)	ASTM D 790

Property values listed are typical for laminates with 50-55% F.V

PROCESSING

Recommended Cure Cycles:

Press Cure Cycle	Hot in/ hot out. Apply 100 psi (0.69 MPa) pressure. Hold at 280°F - 320°F (138°C – 160°C) for 8 minutes - 16 minutes. * Crushed core requires higher pressure.
Autoclave Cure Cycle	Apply full vacuum, 24 in Hg (0.081 MPa) minimum. Apply 45 psi (0.31 MPa) pressure, vent vacuum at 20 psi (0.14 MPa). Heat from 75°F (24°C) to 280°F (138°C) at 2°F - 5°F (1°C - 3°C)/minute. Hold at 280°F (138°C) for 60 minutes. Cool under pressure below 140°F (60°C) at 2°F - 5°F (1°C - 3°C)/minute.
Vacuum Bag Cure Cycle	Apply vacuum, 22 in Hg (0.075 MPa) minimum. Heat from 75°F (24°C) to 280°F (138°C) at 2°F - 5°F (1°C - 3°C)/minute. Hold at 280°F (138°C) for 15 – 45 minutes.

Recommended Consumables

Table 6 below provides a list of consumable processing materials recommended for use with CYCOM® 6070.

Table 6 | Syensqo's Processing Materials

Sealant Tape	SM 5142BY, SM 5127, SM 5142
Release Film	A6200, A5000
Release Fabric	200 TFP, 200 TFNP
Breather/Bleeder Fabric	RC3000-10, A3000-4
Peel Ply	60001
Bagging Film	Vac-Pak® HS6262, Vacfilm® 450V
Adhesive Tape	Flashtape 1, Flashtape 2

HEALTH & SAFETY

Please refer to the product SDS for safe handling, personal protective equipment recommendations and disposal considerations.