

HCGF is made from placed adhesive film HAF160 between unidirectional glass fiber reinforced epoxy GU270A and Nomex honeycomb core.

HCGF is made in accordance with BMS4-17 specification requirement.

PHYSICAL PROPERTIES

Reinforcement / Adhesive

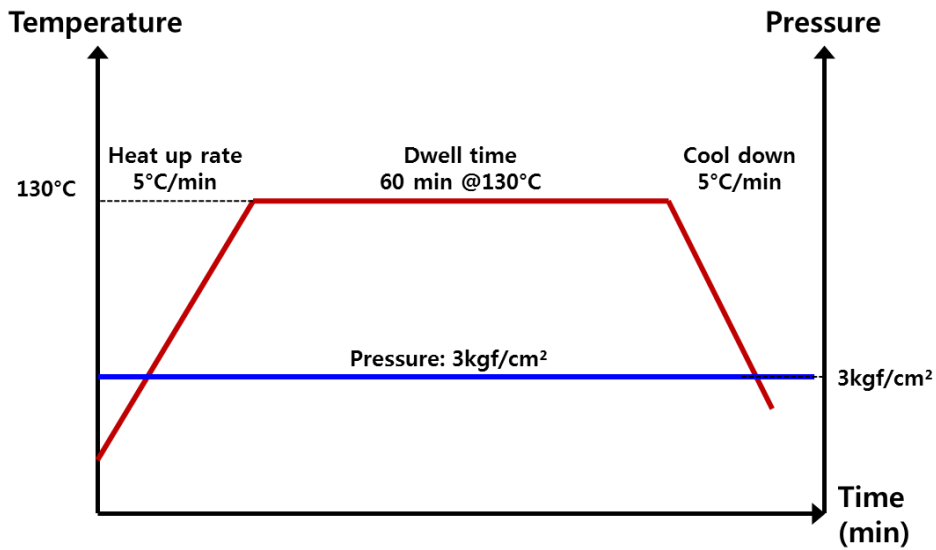
MATERIALS	PROPERTIES	TEST RESULT			TEST METHOD
		Type I	Type II	Type IV	
GU270A (Glass Prepreg)	Fabric Areal Weight (g/m ²)		270 ± 14		ASTM D 3776
	Resin Content (%)		20 ± 3		ASTM D 3529
	Prepreg Gel Time (sec.)		240 ± 60		BSS7276 Method II Modified
HAF160 (Adhesive Film)	Weight (g/m ²)		160 ± 15 Carrier : None		ASTM D 3776
	Volatile Content (%)		Max. 2.5		ASTM D 3530
	Gel Time (sec.)		420 ± 20		BSS7276 Method II Modified

Core

MATERIALS	PROPERTIES	TEST RESULT			TEST METHOD
		Type I	Type II	Type IV	
Nomex	Thickness (in.), [mm]	0.38 [9.72]	0.38 [9.74]	0.65 [16.5]	-
Honeycomb	Density (lb/ft ³)	5	9	5	
Core	Cell Size (in.)	5/32	5/32	5/32	

CURING CYCLE

Typical Press cure cycle is shown as below.



PANEL PROPERTIES

Panel Lay-up Pattern

[GU270A 90°/ GU270A 0°/HAF160/ Nomex Honeycomb]s

Mechanical Properties

PROPERTIES		REQUIREMENTS			TEST RESULT			TEST METHOD
		Type I	Type II	Type IV	Type I	Type II	Type IV	
Areal Weight (lbf/ft²)		< 0.52	< 0.64	< 0.65	0.50	0.640	0.630	-
Thickness (in.)		0.39	0.39	0.65	0.40	0.4	0.66	ASTM
		~ 0.41	~ 0.41	~ 0.68	~ 0.41		~ 0.67	C 366
Long Beam Weaker Direction Determination (lbf)	L Direction		> 230		291	320	425	
	W Direction		> 230		278	392	422	
	Load (lbf)		> 230		258	305	382	
Long Beam Flexure, W Load	100 lbf							ASTM
	Deflection (in.)	< 0.85	< 0.85	< 0.31	0.69	0.60	0.26	C 393
Long Beam W, Humidity Exposed (lbf)			> 200		254	312	367	
Panel Shear (lbf)		> 360	> 585	> 360	395	676	562	
Drum Peel Strength (in.-lbf/3in.)			> 25		43	36	41	ASTM
Drum Peel Strength, Humidity Exposed (in.-lbf/3in.)			> 30		58	51	48	D 1781

In-pane Shear (lbf)	> 300	> 312	-	377	427	-	BMS 4-17
Insert Shear (lbf)		> 840		871	1,189	1,032	BMS 4-17
Impact Strength (in.-lbf)		> 35		64	37	50	ASTM D 5420
Stabilized Core Compression (lbf/in ²)	> 600	> 1,600	> 600	765	2,674	954	ASTM C 365
Warpage (in./ft)		< 0.025		0.01	0.02	0.01	BMS 4-17

Flammability

PROPERTIES		REQUIREMENTS			TEST RESULT			TEST METHOD
		Type I	Type II	Type IV	Type I	Type II	Type IV	
60 sec. Vertical	Self-extinguish Time (sec.)		< 12		5.3	7.5	3.3	BSS 7230
	Burn Length (in.)		< 5		3	2.5	3.3	
	Drip Extinguish Time (sec.)		No Drip		No Drip			
45 Degree Angle	Self-extinguish Time (sec.)		< 15		4.1	4.8	10.1	
	Penetration		No penetration		No penetration			
	Glow time (sec.)		< 10		0	0	0	

SHELF LIFE

GU270A

STORAGE TEMPERATURE	SHELF LIFE
Room Temperature 23°C	30 day
Frozen below -18°C	12 month

HAF160

STORAGE TEMPERATURE	SHELF LIFE
Room Temperature 23°C	4 day
Frozen below -18°C	5 month

HCGF Rev. 1 Sep. 25, 2020