

Supplementary Material

Akkerman R, Bouwman M and Wijskamp S (2020) Analysis of the Thermoplastic Composite Overmolding Process: Interface Strength. *Frontiers in Materials*. 7:2, doi: 10.3389/fmats.2020.00027.

TABLES

Material	G/PA6 woven fabric laminate	G/PA6 injection molding grade	C/PAEK woven fabric laminate	C/PEEK injection molding grade
Trade name	Toray AC Cetex TC912	BASF Ultramid PA6 B3ZG6	Toray AC Cetex TC1225	Victrex PEEK 90HMF40
Fibre	glass	glass	carbon	carbon
Fibre mass fraction	0.66	0.30	0.58	0.40
Fibre volume fraction	0.45	0.16	0.50	0.33
Glass transition temperature [°C]	60	60	154	143
Melting temperature [°C]	220	220	305	343
Lay-up	[0, 90] _{3s}	-	[0, 90] _{5s}	-
Nominal thickness [mm]	3.0	-	3.1	-

Table S1. Materials and properties of the injection molding resins and composite laminates.

Material	G/PA6 injection molding grade	C/PEEK injection molding grade
T_b [°C]	128	186
A [-]	1.1935E-7	2.8247E-8
B [1/°C]	0.0703	0.0562

Table S2. Degree of Melting parameters for the PA6 and PEEK resins used.

Material	G/PA6 woven fabric laminate	C/PAEK woven fabric laminate
density [kg/m ³]	1820	1545
specific heat [J/kg · K]	1486	1305
transverse conductivity [W/m · K]	0.53	0.80
in-plane conductivity [W/m · K]	0.63	5.1

Table S3. Averaged thermal properties used for the PA6 and PAEK composite laminates.

Material	Insert temperature [°C]	Melt temperature [°C]
G/PA6	90 (M) / 180 (IR) / 230 (IR) / 270 (IR)	280
C/PEEK	155(M) / 175 (M) / 220 (M) / 240 (M)	380

Table S4. Insert temperatures used for the overmolding coupon specimens. The inserts were heated by either the mold (M) or the infrared heating setup (IR).