

Honeycomb foil thickness	Lay-up	Honeycomb cell size	Damage type	Indenter diameter	Damage size criteria		Max Load Impact & Quasi-Static	Impact velocity	Indent Failure	Deflection in Quasi-Static test		Surface Inspection. Experimental					Surface Inspection. Analytical				Surface Inspection. FEM					Compression After Impact					
					mm	value				unit	N	m/s	Deflection A skin	Deflection B skin	Depth	Mean Ø	Max Ø	Area	Volume	Depth	Mean Ø	Area	Volume	Depth	Mean Ø	Max Ø	Area	Volume	Load	Øskins	Eskins
					mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
Thick foil, 0.0381 mm	[60/0/-60]	3.2	Debonding I	20	20	mm	-	-	-	-	0.87	30.10	32.80	710.00	242.00	-	-	-	-	-	-	-	-	-	-	10.69	203.73	38.30	0.60	Skin debonding, skin crack+	
				35	35	mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.75	147.75	34.37	0.49	Skin debonding, skin crack+	
				48	48	mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.80	129.62	31.80	0.59	Skin debonding, skin crack+	
			Debonding II	12	12	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.69	241.86	35.60	0.77	Skin debonding, skin crack+	
				20	20	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.60	221.15	35.35	0.80	Skin debonding, skin crack+	
				30	30	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.05	172.56	38.10	0.46	Skin debonding, skin crack+	
			Quasi-static	50	50	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.79	148.43	31.67	0.51	Skin debonding+	
				20	500	N	500	-	Dent	1.33	0.20	0.44	17.08	18.92	247.60	34.80	0.62	23.10	418.80	47.00	0.44	17.90	18.40	252.00	20.00	12.23	232.80	40.26	0.71	Skin debonding, skin crack-	
				150	750	N	749	-	Dent	0.78	0.27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.21	213.67	41.93	0.63	Skin debonding, skin crack-	
					1000	N	999	-	Dent	1.18	0.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.13	193.13	40.76	0.52	Skin debonding, skin crack-	
			1400		N	1316	-	Dent	1.61	0.62	1.04	32	33.4	795	340	1.08	35.7	1001	304	-	-	-	-	-	-	9.64	183.83	40.14	0.52	Skin debonding, skin crack-	
			Undamaged	Undamaged	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.70	241.63	38.85	0.79	Skin debonding, skin crack+	
	[0/60/-60/0]		Quasi-static	20	500	N	500	-	Dent	1.14	0.19	0.40	16.78	17.52	228.40	31.80	0.56	23.10	418.00	43.00	0.36	16.70	17.70	222.00	17.00	35.60	494.46	52.71	1.47	Skin crack-	
			150	1400	N	1399	-	Dent	1.77	0.7	1.09	34.7	36.3	979	433	1.02	37.1	1081	293	-	-	-	-	-	-	-	-	-	-	-	
	[-60/60/0]		Undamaged	Undamaged	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37.92	526.71	48.20	1.67	Skin crack+	
			Quasi-static	20	500	N	496	-	Dent	1.31	0.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.14	364.95	41.49	1.01	Skin crack-	
						750	N	686	-	Skin crack	1.60	0.22	-	-	-	-	-	-	-	-	-	-	-	-	-	18.30	348.93	42.14	0.95	Skin crack-	
		150				1000	N	998	-	Dent	1.14	0.26	-	-	-	-	-	-	-	-	-	-	-	-	-	18.43	351.46	39.35	1.04	Skin debonding, skin crack-	
					Undamaged	Undamaged	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.75	319.38	41.55	0.89	Skin debonding, skin crack+		
					Quasi-static	20	500	N	502	-	Dent	1.59	0.21	-	-	-	-	-	-	-	-	-	-	-	-	-	8.05	163.48	39.34	0.55	Skin debonding, skin crack-
						750	N	748	-	Dent	2.26	0.33	-	-	-	-	-	-	-	-	-	-	-	-	8.70	165.79	32.43	0.88	Skin debonding, skin crack-		
									150	500	N	499	-	Dent	0.40	0.11	-	-	-	-	-	-	-	-	-	-	7.54	189.77	48.15	0.52	Skin debonding, skin crack-
									1000	N	1002	-	Dent	1.16	0.31	-	-	-	-	-	-	-	-	-	-	-	7.48	188.33	44.32	0.48	Skin debonding, skin crack-
					Thin foil, 0.0178 mm	[0/-60/+60/0]	3.2	Impact	20	0.33	J	472	0.77	Dent	-	-	-	0.58	27.32	28.92	620.00	143.80	0.74	35.46	1030.60	135.80	-	-	-	-	-
0.50	J	592	0.95	Dent						-	-	0.72	28.72	30.72	672.17	160.00	0.86	39.03	1245.00	192.33	-	-	-	-	-	23.46	335.18	48.68	0.81	Skin buckling, skin crack+	
0.60	J	670	1.07	Dent/skin crack						-	-	0.95	25.55	27.05	520.00	129.50	0.89	35.20	972.00	153.00	-	-	-	-	-	22.87	324.26	46.36	0.83	Skin buckling, skin crack+	
0.70	J	657	1.12	Dent, crack						-	-	1.07	33.24	37.00	915.20	311.80	1.00	44.24	1603.80	283.20	-	-	-	-	-	20.62	301.84	49.48	0.75	Skin buckling, skin crack+	
0.50	J	614	0.9007	Dent						-	-	0.57	25.6	25.9	534	132	0.91	37.1	1078	255	-	-	-	-	-	25.64	397.15	55.60	0.86	Skin buckling, skin crack+	
1.00	J	897	1.2765	Dent						-	-	0.78	33.3	34.1	866	266	1.19	45.3	1609	467	-	-	-	-	-	23.56	364.90	54.32	0.80	Skin buckling, skin crack+	
150	0.70	J	744	1.0578					Dent	-	-	0.66	30.5	31.3	773	186	1.04	40.8	1309	341	-	-	-	-	-	24.25	375.56	51.53	0.83	Skin buckling, skin crack+	
	1.00	J	897	1.2765					Dent	-	-	0.78	33.3	34.1	866	266	1.19	45.3	1609	467	-	-	-	-	-	23.56	364.90	54.32	0.80	Skin buckling, skin crack+	
	1.00	mm	198	-					Dent	1.02	0.149	0.28	22	23.5	386	38	0.48	30.7	742	62	0.52	19.2	21.9	295	79	17.62	230.33	39.50	0.68	Skin buckling-	
	1.50	mm	468	-					Dent	1.51	0.18	0.53	26.00	28.20	544.00	98.60	0.70	33.70	906.00	109.80	0.94	25.40	27.40	523.50	169.50	24.33	331.61	45.33	0.84	Skin buckling, global buckling+	
	2.00	mm	604	-					Dent/crack	1.97	0.28	1.22	31.40	33.80	796.00	241.40	0.84	38.84	1219.60	180.00	1.38	32.10	33.95	833.50	327.00	22.06	300.39	44.15	0.85	Skin buckling, global buckling+	
	2.5	mm	567	-					Dent/invisible crack	2.55	0.32	0.95	42.3	44.9	1416	407	0.97	51.6	2095	348	1.75	46.5	49	1708	878	9.04	118.15	39.65	0.34	Debonding, global buckling-	
Quasi-static	20	0.50	mm	196				-	Dent	0.50	0.08	0.20	20.50	22.10	335.50	25.50	0.44	30.15	714.50	72.00	-	-	-	-	-	16.13	228.73	45.67	0.56	Skin debonding, skin crack -	
		1.00	mm	318				-	Dent	1.01	0.13	0.51	30.5	32.2	724	135	0.62	38.7	1177	158	-	-	-	-	-	15.32	217.25	43.64	0.50	Skin debonding, skin crack -	
		1.50	mm	882				-	Dent	1.51	0.28	0.85	35.03	36.40	979.25	323.50	0.95	41.48	1365.50	306.75	1.26	38.30	38.80	1156.00	481.00	23.06	321.18	44.45	0.85	Skin buckling, skin crack+	
	150	2.00	mm	684				-	Dent	1.98	0.27	0.99	44.6	45.8																	