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LAMPIRAN 1

Dokumentasi proses pra cetak dan pembuatan panel komposit


Dokumentasi proses pemotongan tenunan serat rami & proses curing pra cetak menggunakan oven listrik


Dokumentasi persiapan alat serta bahan & proses perataan campuran matriks di dalam cetakan

LAMPIRAN 2

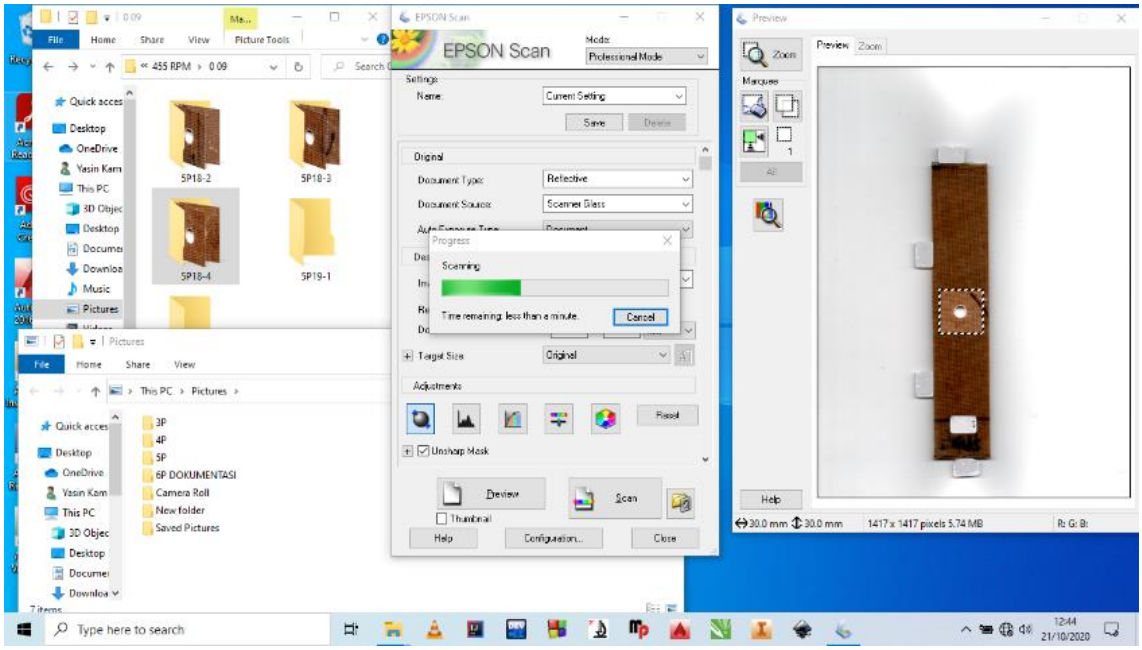
Dokumentasi pemotongan panel, proses penggurdian dan pengambilan foto *scan*

Dokumentasi pemotongan panel komposit menggunakan *scrollsaw* & penggurdian spesimen

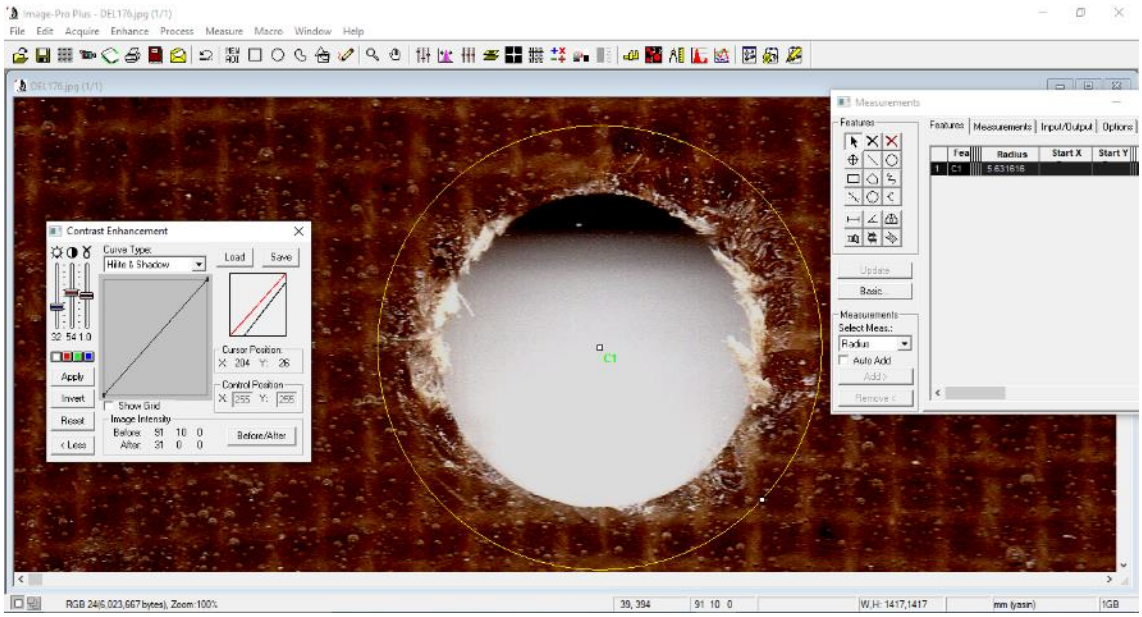
Dokumentasi pengambilan gambar menggunakan *scan* Epson L360

LAMPIRAN 3

Dokumentasi proses visualisasi data hasil *scan*



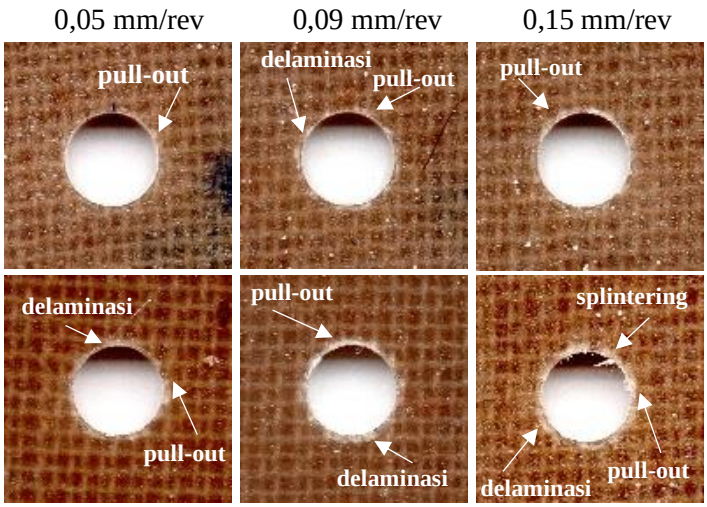
Dokumentasi pengambilan foto *scan* pada *software Epson Scanner*



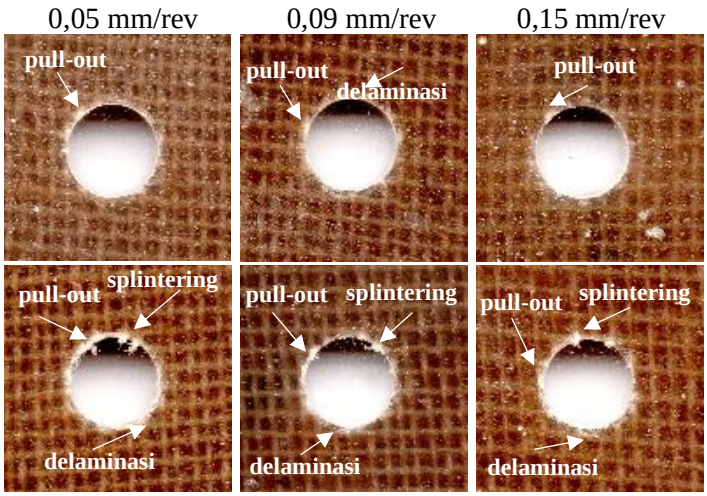
Pengukuran faktor delaminasi spesimen uji pada *software Image pro plus*

LAMPIRAN 4

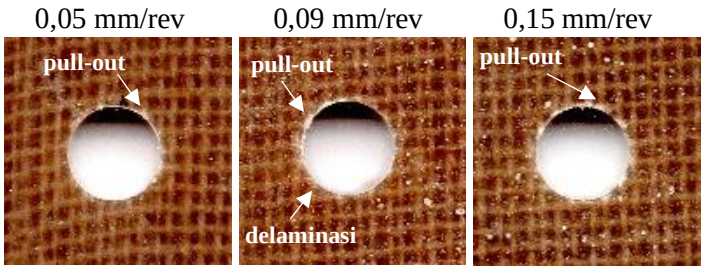
Dokumentasi Hasil scan dan visualisasi bentuk kerusakan pasca penggurdian

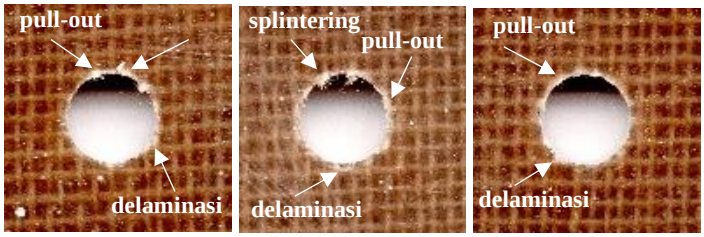


(a) Komposit penguat 3 lapis



(b) Komposit penguat 4 lapis

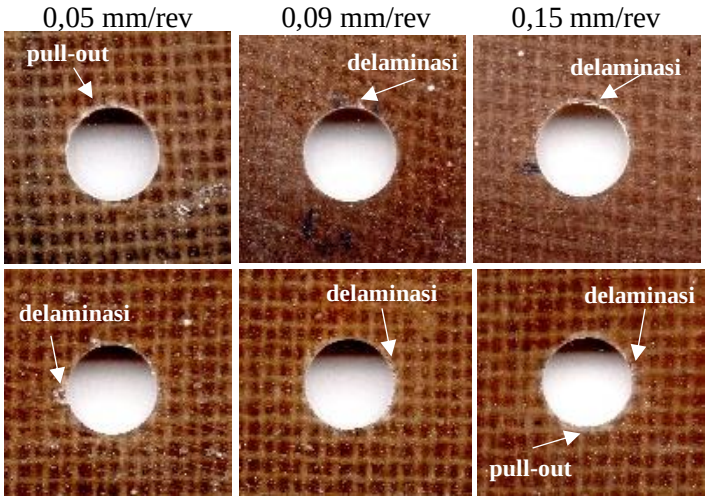




Sisi keluar

(c) Komposit penguat 5 lapis

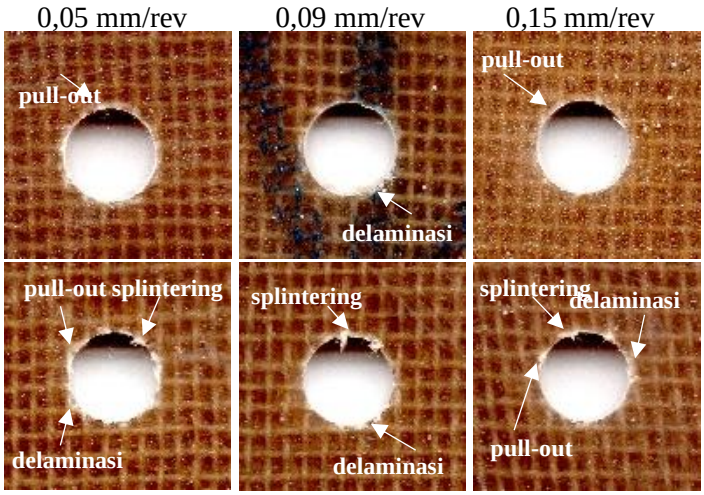
Foto makro pengaruh jumlah lapisan penguat dan feedrate terhadap kerusakan delaminasi pada diameter penggurdian 6 mm dan kecepatan spindle 88 rpm



Sisi masuk

Sisi Keluar

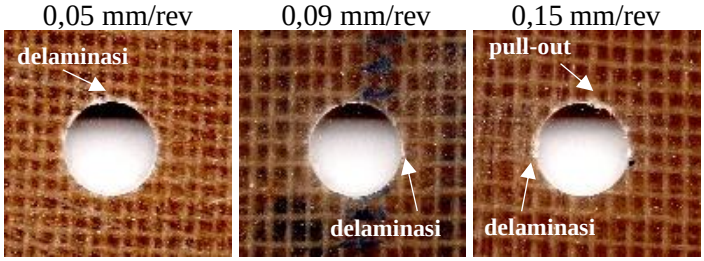
(a) Komposit dengan penguat 3 lapis



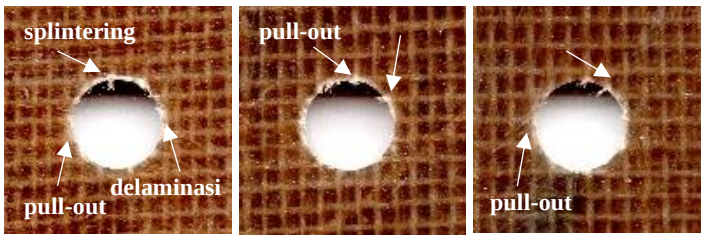
Sisi masuk

Sisi Keluar

(b) Komposit dengan penguat 4 lapis



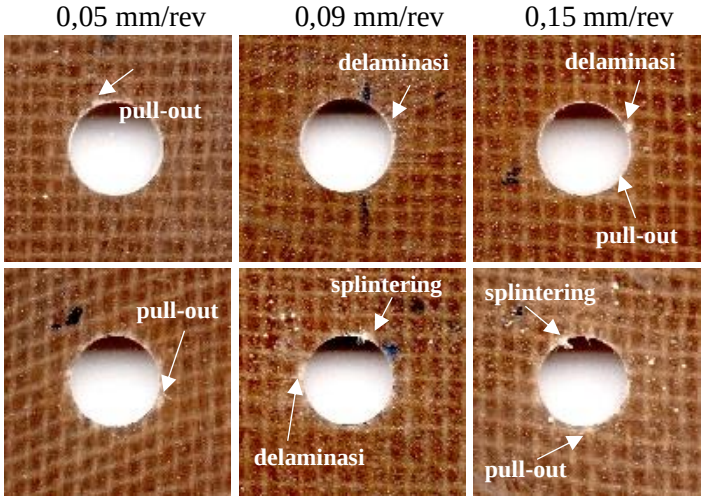
Sisi masuk



Sisi keluar

(c) Komposit dengan penguat 5 lapis

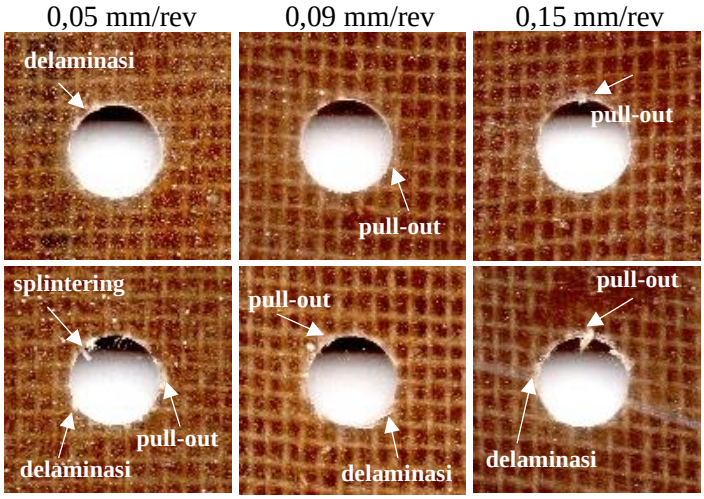
Foto makro pengaruh jumlah lapisan penguat dan feedrate terhadap kerusakan delaminasi pada diameter penggurdian 6 mm dan kecepatan spindle 455 rpm.



Sisi masuk

Sisi Keluar

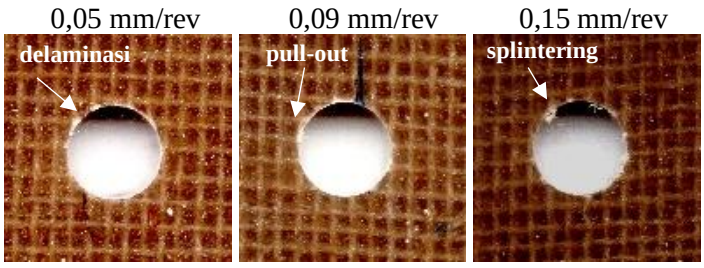
(a) Komposit dengan penguat 3 lapis



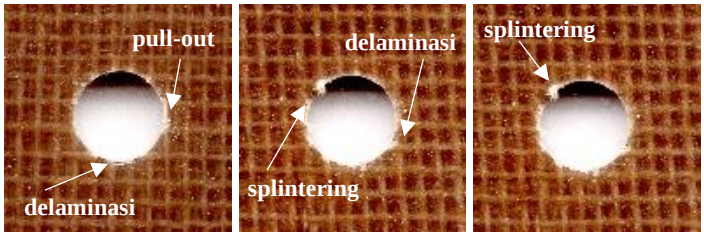
Sisi masuk

Sisi keluar

(b) Kompositdengan penguat 4 lapis

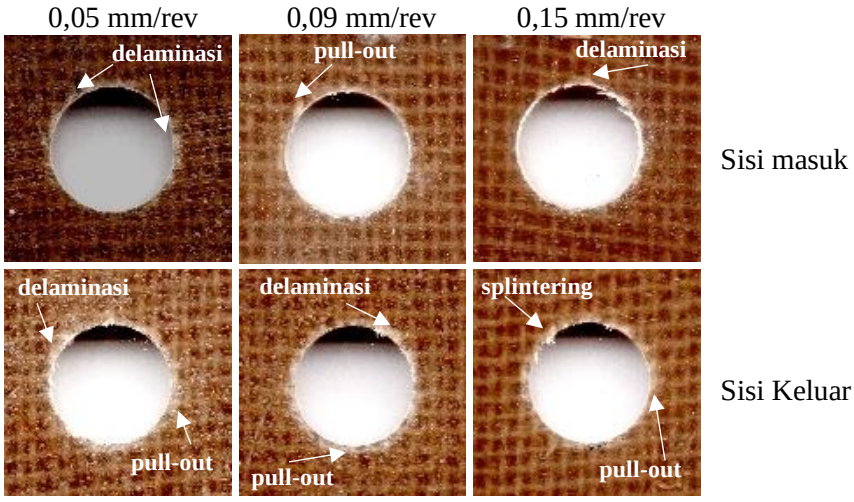


Sisi masuk

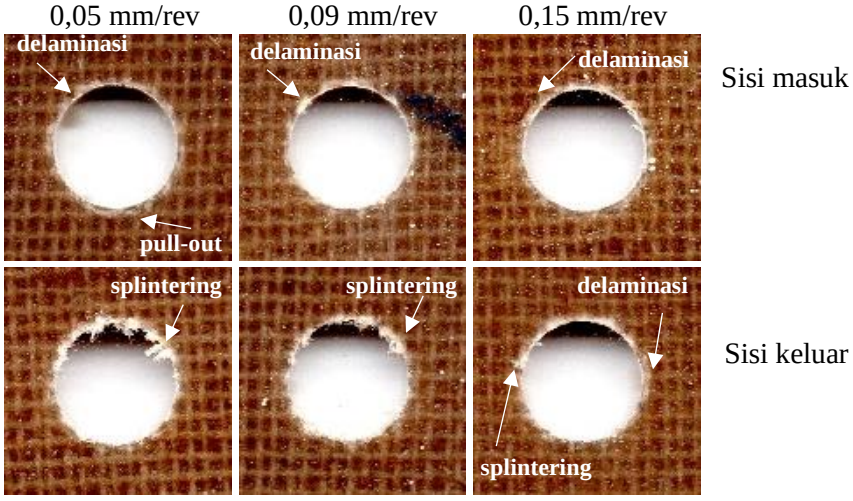


(a) Komposit dengan penguat 5 lapis

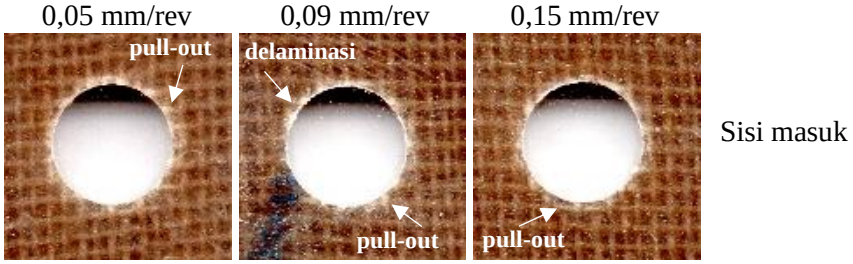
Foto makro pengaruh jumlah lapisan penguat dan feedrate terhadap kerusakan delaminasi pada diameter penggurdian 6 mm dan kecepatan spindle 1500 rpm.

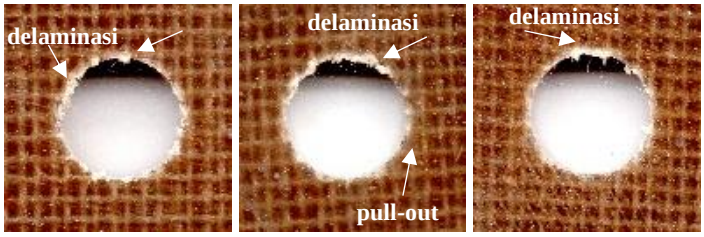


(a) Komposit dengan penguat 3 lapis



(b) Komposit dengan penguat 4 lapis

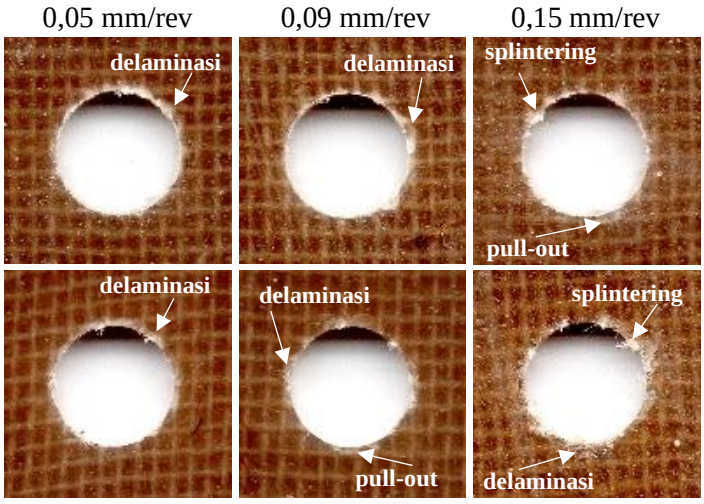




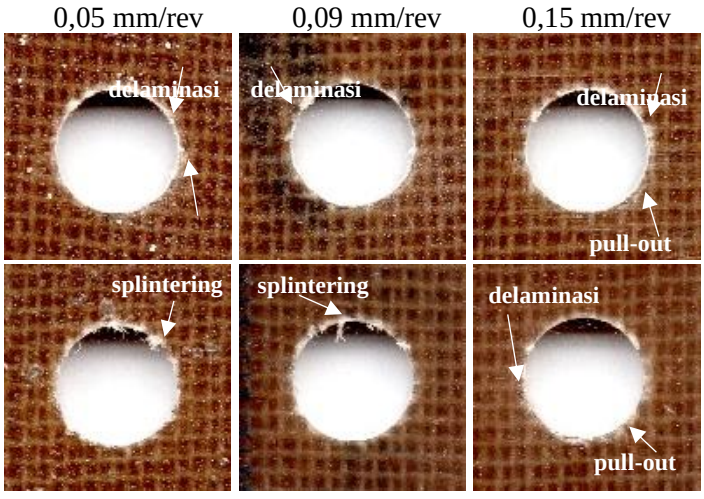
Sisi keluar

(c) Komposit dengan penguat 5 lapis

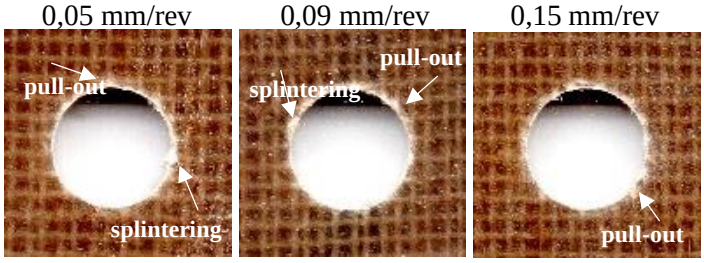
Foto makro pengaruh jumlah lapisan penguat dan feedrate terhadap kerusakan delaminasi pada diameter penggurdian 8 mm dan kecepatan spindle 88 rpm.

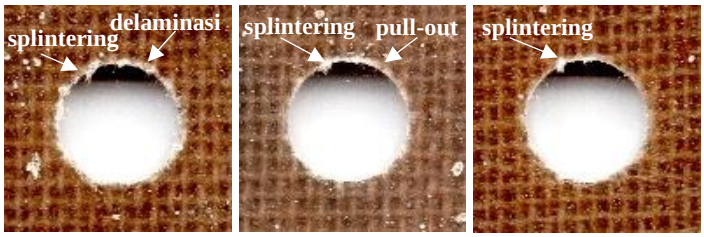


(a) Komposit dengan penguat 3 lapis



(b) Komposit dengan 4 lapis

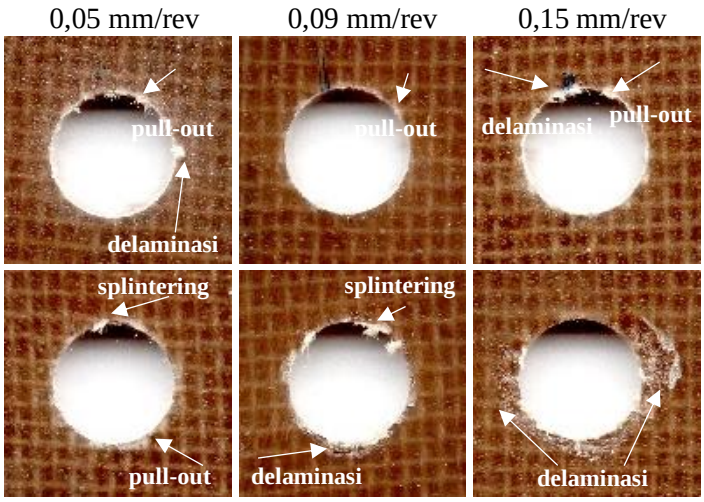




Sisi keluar

(c) Komposit dengan penguat 5 lapis

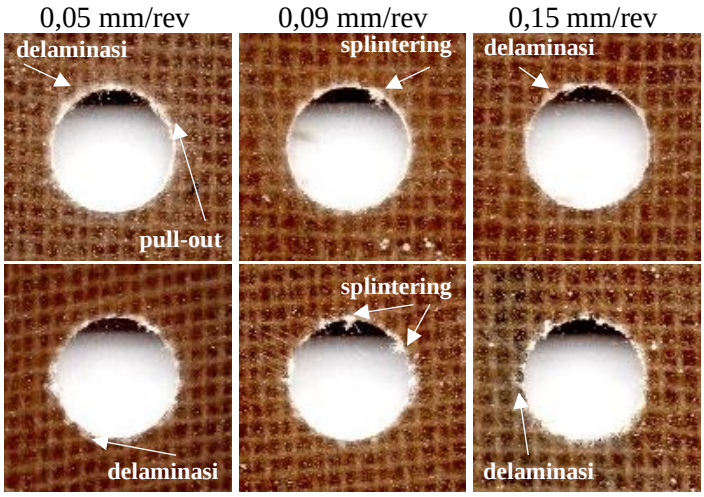
Foto makro pengaruh jumlah lapisan penguat dan feedrate terhadap kerusakan delaminasi pada diameter penggurdian 8 mm dan kecepatan spindle 455 rpm.



Sisi masuk

Sisi keluar

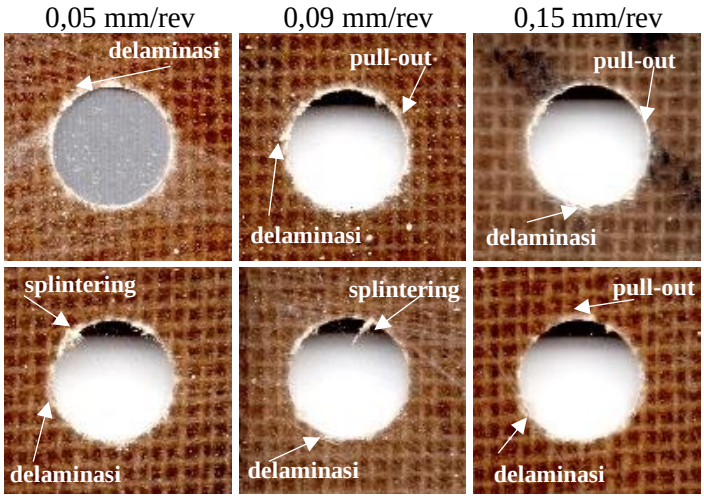
(a) Komposit dengan penguat 3 lapis



Sisi masuk

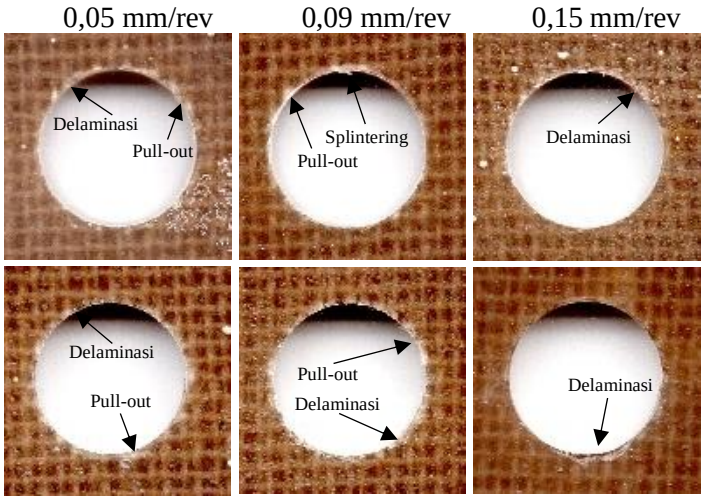
Sisi Keluar

(b) Komposit dengan penguat 4 lapis

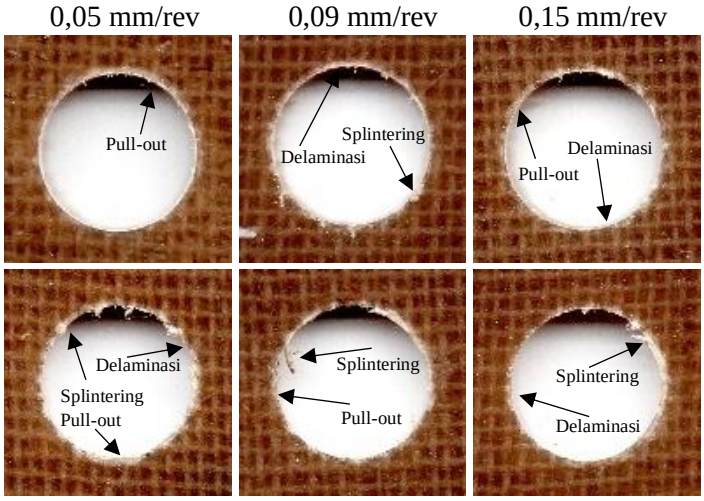


(c) Komposit dengan penguat 5 lapis

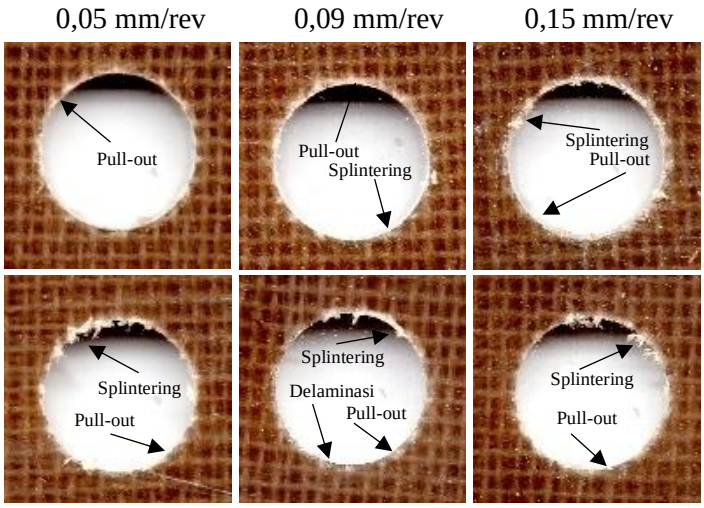
Foto makro pengaruh jumlah lapisan penguat dan feedrate terhadap kerusakan delaminasi pada diameter penggurdian 8 mm dan kecepatan spindle 1500 rpm.



(a) Komposit dengan penguat 3 lapis

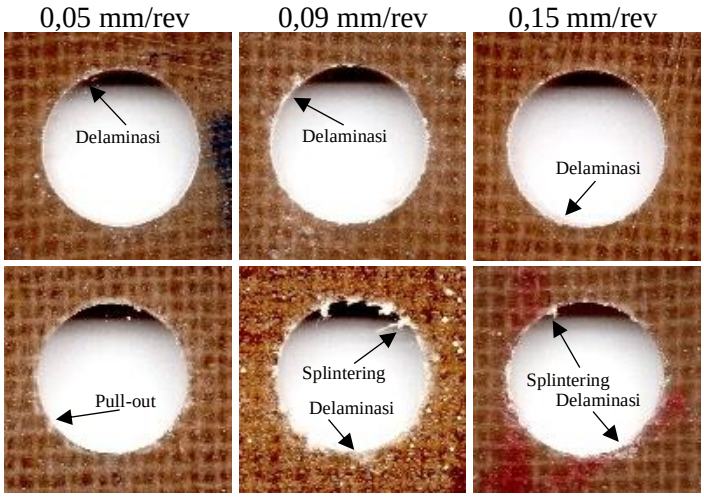


(b) Komposit dengan 4 lapis

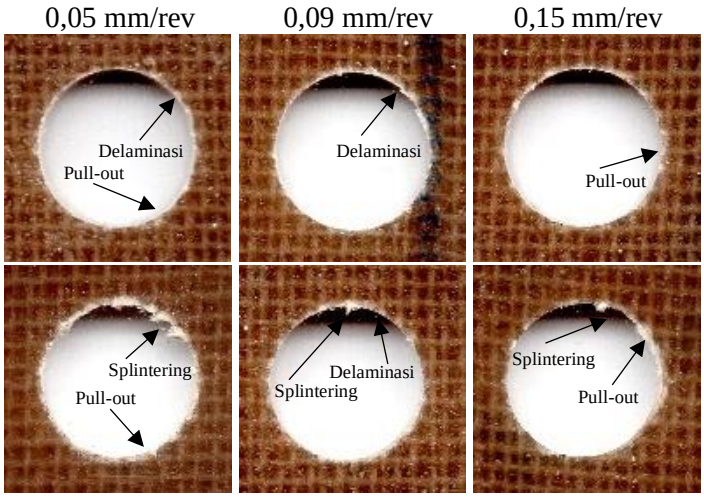


(a) Komposit dengan penguat 5 lapis

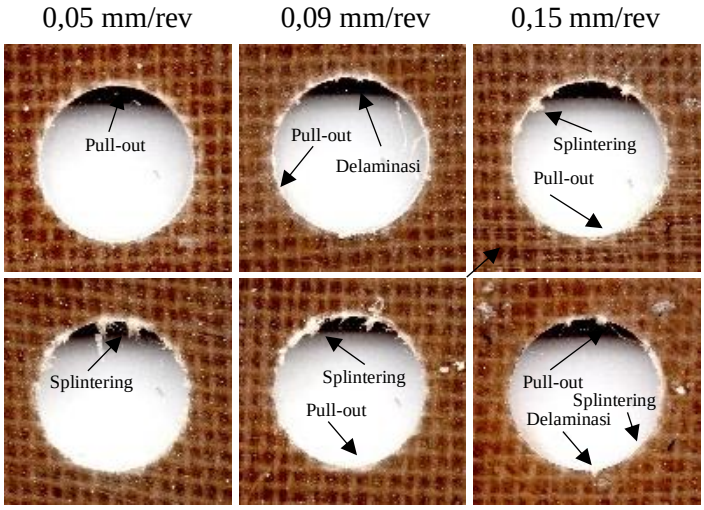
Foto makro pengaruh jumlah lapisan penguat dan feedrate terhadap kerusakan delaminasi pada diameter penggurdian 10 mm dan kecepatan spindle 88 rpm



(a) Komposit dengan penguat 3 lapis

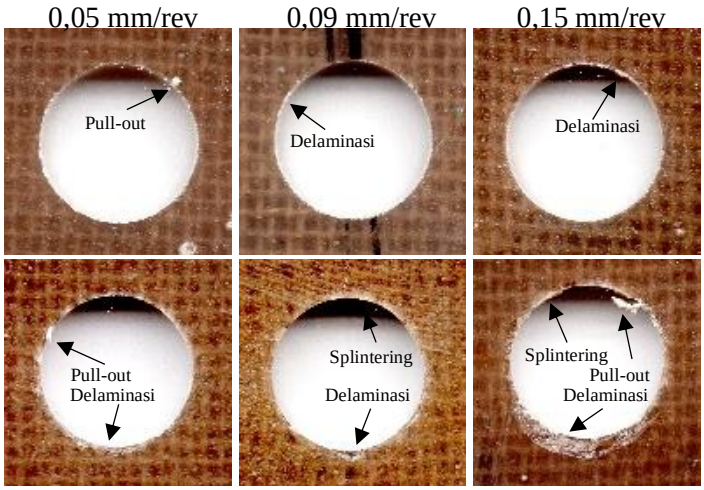


(b) Komposit dengan penguat 4 lapis

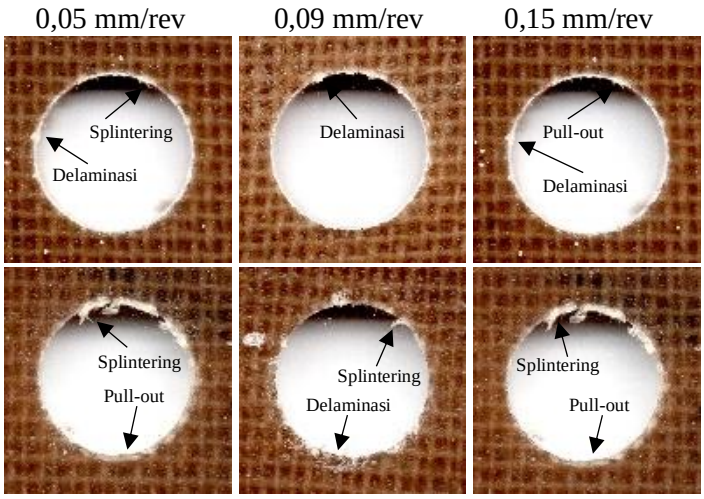


(c) Komposit dengan penguat 5 lapis

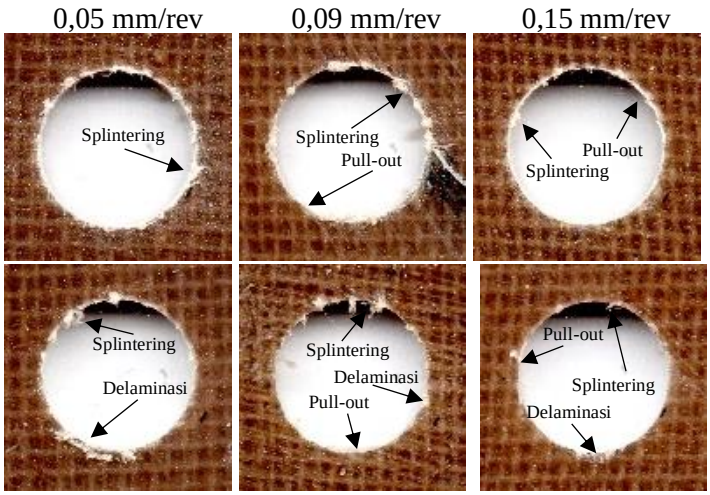
Foto makro pengaruh jumlah lapisan penguat dan feedrate terhadap kerusakan delaminasi pada diameter penggurdian 10 mm dan kecepatan spindle 455 rpm.



(a) Komposit dengan penguat 3 lapis



(b) Komposit dengan penguat 4 lapis



(c) Komposit dengan penguat 5 lapis

Foto makro pengaruh jumlah lapisan penguat dan feedrate terhadap kerusakan delaminasi pada diameter penggurdian 10 mm dan kecepatan spindle 1500 rpm.

LAMPIRAN 5

Data Hasil Pengukuran D_{maks} dan Faktor Delaminasi pada setiap Spesimen

Tabel Hasil pengukuran faktor delaminasi diameter 6 mm, kecepatan spindel 88 rpm

Feedrate (mm/rev)	Jumlah penguat (Lapis)	No. Spesimen	No. Scan	Sisi	Radius (mm)	Diameter (mm)	Faktor delaminasi	
0,05	3	3P1 - 1	DEL 001	Masuk	3,126	6,252	1,042	
			DEL 002	Keluar	3,154	6,308		1,051
		3P1 - 2	DEL 003	Masuk	3,091	6,182	1,030	
			DEL 004	Keluar	3,133	6,266		1,044
		3P1 - 3	DEL 005	Masuk	3,112	6,224	1,037	
			DEL 006	Keluar	3,196	6,392		1,065
		3P1 - 4	DEL 007	Masuk	3,112	6,224	1,037	
			DEL 008	Keluar	3,175	6,350		1,058
		3P1 - 5	DEL 009	Masuk	3,112	6,224	1,037	
			DEL 010	Keluar	3,175	6,350		1,058
		Faktor delaminasi rata-rata					**1,037**	**1,056**
		Standar deviasi					**0,004**	**0,008**
	4	4P18 - 5	DEL 271	Masuk	3,091	6,182	1,030	
			DEL 272	Keluar	3,239	6,478		1,080
		4P20 - 5	DEL 273	Masuk	3,175	6,350	1,058	
			DEL 274	Keluar	3,281	6,562		1,094
		4P21 - 5	DEL 275	Masuk	3,196	6,392	1,065	
			DEL 276	Keluar	3,281	6,562		1,094
		4P22 - 5	DEL 277	Masuk	3,239	6,478	1,080	
			DEL 278	Keluar	3,281	6,562		1,094
		4P24 - 1	DEL 279	Masuk	3,091	6,182	1,030	
			DEL 280	Keluar	3,239	6,478		1,080
		Faktor delaminasi rata-rata					**1,053**	**1,088**
		Standar deviasi					**0,022**	**0,008**
	5	5P2 - 4	DEL 541	Masuk	3,112	6,224	1,037	
			DEL 542	Keluar	3,196	6,392		1,065
		5P16 - 1	DEL 543	Masuk	3,154	6,308	1,051	
			DEL 544	Keluar	3,239	6,478		1,080
		5P16 - 2	DEL 545	Masuk	3,196	6,392	1,065	
			DEL 546	Keluar	3,302	6,604		1,101
		5P16 - 3	DEL 547	Masuk	3,196	6,392	1,065	
			DEL 548	Keluar	3,218	6,436		1,073
		5P17 - 5	DEL 549	Masuk	3,154	6,308	1,051	
			DEL 550	Keluar	3,281	6,562		1,094
		Faktor delaminasi rata-rata					**1,054**	**1,082**
		Standar deviasi					**0,012**	**0,015**
0,09	3 lapis	3P1 - 6	DEL011	Masuk	3,112	6,224	1,037	
			DEL012	Keluar	3,154	6,308		1,051
		3P2 - 1	DEL013	Masuk	3,239	6,478	1,080	
			DEL014	Keluar	3,113	6,226		1,038
		3P2 - 2	DEL015	Masuk	3,091	6,182	1,030	
			DEL016	Keluar	3,133	6,266		1,044
		3P2 - 3	DEL017	Masuk	3,175	6,350	1,058	
			DEL018	Keluar	3,218	6,436		1,073
		3P2 - 4	DEL019	Masuk	3,154	6,308	1,051	
			DEL020	Keluar	3,196	6,392		1,065
		Faktor delaminasi rata-rata					**1,051**	**1,054**
		Standar deviasi					**0,019**	**0,015**
	4 lapis	4P24 - 2	DEL281	Masuk	3,218	6,436	1,073	
			DEL282	Keluar	3,429	6,858		1,143

		4P24 -3	DEL283	Masuk	3,154	6,308	1,051	
			DEL284	Keluar	3,366	6,732		1,122
		4P24 - 4	DEL285	Masuk	3,196	6,392	1,065	
			DEL286	Keluar	3,281	6,562		1,094
		4P24 -5	DEL287	Masuk	3,112	6,224	1,037	
			DEL288	Keluar	3,239	6,478		1,080
		4P24 - 6	DEL289	Masuk	3,239	6,478	1,080	
			DEL290	Keluar	3,281	6,562		1,094
		Faktor delaminasi rata-rata					**1,061**	**1,106**
		Standar deviasi					**0,017**	**0,026**
	5 lapis	5P18 - 5	DEL551	Masuk	3,218	6,436	1,073	
			DEL552	Keluar	3,239	6,478		1,080
		5P19 - 5	DEL553	Masuk	3,154	6,308	1,051	
			DEL554	Keluar	3,302	6,604		1,101
		5P20 - 5	DEL555	Masuk	3,281	6,562	1,094	
			DEL556	Keluar	3,302	6,604		1,101
		5P21 - 5	DEL557	Masuk	3,133	6,266	1,044	
			DEL558	Keluar	3,218	6,436		1,073
		5P22 - 5	DEL559	Masuk	3,218	6,436	1,073	
			DEL560	Keluar	3,302	6,604		1,101
		Faktor delaminasi rata-rata					**1,067**	**1,091**
		Standar deviasi					**0,020**	**0,014**
0,15	3 lapis	3P2 - 5	DEL021	Masuk	3,281	6,562	1,094	
			DEL022	Keluar	3,175	6,350		1,058
		3P2 - 6	DEL023	Masuk	3,133	6,266	1,044	
			DEL024	Keluar	3,218	6,436		1,073
		3P12 - 4	DEL025	Masuk	3,113	6,226	1,038	
			DEL026	Keluar	3,281	6,562		1,094
		3P16 - 1	DEL027	Masuk	3,133	6,266	1,044	
			DEL028	Keluar	3,175	6,350		1,058
		3P16 - 2	DEL029	Masuk	3,218	6,436	1,073	
			DEL030	Keluar	3,235	6,470		1,078
		Faktor delaminasi rata-rata					**1,059**	**1,072**
		Standar deviasi					**0,024**	**0,015**
	4 lapis	4P25 - 1	DEL291	Masuk	3,154	6,308	1,051	
			DEL292	Keluar	3,323	6,646		1,108
		4P25 - 2	DEL293	Masuk	3,175	6,350	1,058	
			DEL294	Keluar	3,345	6,690		1,115
		4P25 - 3	DEL295	Masuk	3,154	6,308	1,051	
			DEL296	Keluar	3,345	6,690		1,115
		4P25 -4	DEL297	Masuk	3,218	6,436	1,073	
			DEL298	Keluar	3,302	6,604		1,101
		4P25 - 5	DEL299	Masuk	3,175	6,350	1,058	
			DEL300	Keluar	3,450	6,90		1,150
		Faktor delaminasi rata-rata					**1,058**	**1,118**
		Standar deviasi					**0,009**	**0,019**
	5 lapis	5P23 - 5	DEL561	Masuk	3,154	6,308	1,051	
			DEL562	Keluar	3,260	6,520		1,087
		5P24 - 3	DEL563	Masuk	3,336	6,672	1,112	
			DEL564	Keluar	3,345	6,690		1,115
		5P24 - 4	DEL565	Masuk	3,218	6,436	1,073	
			DEL566	Keluar	3,408	6,816		1,136
		5P24 - 5	DEL567	Masuk	3,196	6,392	1,065	
			DEL568	Keluar	3,450	6,90		1,150
		5P25 - 1	DEL569	Masuk	3,281	6,562	1,094	
			DEL570	Keluar	3,345	6,690		1,115
		Faktor delaminasi rata-rata					**1,079**	**1,121**
		Standar deviasi					**0,024**	**0,024**

Tabel Hasil pengukuran faktor delaminasi diameter 6 mm, kecepatan spindel 455 rpm

Feedrate	Jumlah penguat	No. Spesimen	No. Scan	Sisi Gurdi	Radius (mm)	Diameter (mm)	Faktor delaminasi	
0,05	3 lapis	3P16 - 3	DEL 031	Masuk	3,086	6,172	1,029	
			DEL 032	Keluar	3,091	6,182		1,030
		3P16 - 4	DEL 033	Masuk	3,112	6,224	1,037	
			DEL 034	Keluar	3,069	6,138		1,023
		3P16 - 5	DEL 035	Masuk	3,027	6,054	1,009	
			DEL 036	Keluar	3,091	6,182		1,030
		3P16 - 6	DEL 037	Masuk	3,048	6,096	1,016	
			DEL 038	Keluar	3,069	6,138		1,023
		3P17 - 1	DEL 039	Masuk	3,091	6,182	1,030	
			DEL 040	Keluar	3,133	6,266		1,044
		Faktor delaminasi rata-rata					**1,024**	**1,030**
		Standar deviasi					0,011	0,009
	4 lapis	4P25 - 6	DEL 301	Masuk	3,112	6,224	1,037	
			DEL 302	Keluar	3,133	6,266		1,044
		4P26 - 3	DEL 303	Masuk	3,154	6,308	1,051	
			DEL 304	Keluar	3,175	6,350		1,058
		4P26 - 4	DEL 305	Masuk	3,218	6,436	1,073	
			DEL 306	Keluar	3,218	6,436		1,073
		4P26 - 5	DEL 307	Masuk	3,239	6,478	1,080	
			DEL 308	Keluar	3,133	6,266		1,044
		4P27 - 2	DEL 309	Masuk	3,133	6,266	1,044	
			DEL 310	Keluar	3,239	6,478		1,080
		Faktor delaminasi rata-rata					**1,057**	**1,060**
		Standar deviasi					0,018	0,016
	5 lapis	5P25 - 2	DEL571	Masuk	3,196	6,392	1,065	
			DEL572	Keluar	3,218	6,436		1,073
		5P25 - 3	DEL573	Masuk	3,154	6,308	1,051	
			DEL574	Keluar	3,429	6,858		1,143
		5P25 - 4	DEL575	Masuk	3,112	6,224	1,037	
			DEL576	Keluar	3,323	6,646		1,108
		5P25 - 5	DEL577	Masuk	3,281	6,562	1,094	
			DEL578	Keluar	3,239	6,478		1,080
		5P26 - 1	DEL579	Masuk	3,133	6,266	1,044	
			DEL580	Keluar	3,345	6,690		1,115
		Faktor delaminasi rata-rata					**1,058**	**1,104**
		Standar deviasi					0,022	0,028
0,09	3 lapis	3P17 - 2	DEL041	Masuk	3,069	6,138	1,023	
			DEL042	Keluar	3,123	6,246		1,041
		3P17 - 3	DEL043	Masuk	3,10	6,20	1,033	
			DEL044	Keluar	3,112	6,224		1,037
		3P17 - 4	DEL045	Masuk	3,091	6,182	1,030	
			DEL046	Keluar	3,069	6,138		1,023
		3P17 - 5	DEL047	Masuk	3,091	6,182	1,030	
			DEL048	Keluar	3,112	6,224		1,037
		3P17 - 6	DEL049	Masuk	3,096	6,192	1,032	
			DEL050	Keluar	3,110	6,220		1,037
		Faktor delaminasi rata-rata					**1,030**	**1,035**
		Standar deviasi					0,004	0,007
	4 lapis	4P27 - 3	DEL311	Masuk	3,132	6,264	1,044	
			DEL312	Keluar	3,366	6,732		1,122
		4P27 - 4	DEL313	Masuk	3,154	6,308	1,051	
			DEL314	Keluar	3,472	6,944		1,157
		4P27 - 5	DEL315	Masuk	3,154	6,308	1,051	
			DEL316	Keluar	3,196	6,392		1,065
		4P29 - 1	DEL317	Masuk	3,239	6,478	1,080	
			DEL318	Keluar	3,239	6,478		1,080

		4P29 - 2	DEL319	Masuk	3,260	6,520	1,087	
			DEL320	Keluar	3,302	6,604		1,101
		Faktor delaminasi rata-rata					**1,063**	**1,105**
		Standar deviasi					0,019	0,036
	5 lapis	5P16 - 2	DEL581	Masuk	3,26	6,520	1,087	
			DEL582	Keluar	3,302	6,604		1,101
		5P26 - 3	DEL583	Masuk	3,218	6,436	1,073	
			DEL584	Keluar	3,387	6,774		1,129
		5P26 - 4	DEL585	Masuk	3,281	6,562	1,094	
			DEL586	Keluar	3,387	6,774		1,129
		5P26 - 5	DEL587	Masuk	3,260	6,520	1,087	
			DEL588	Keluar	3,239	6,478		1,080
		5P26 - 6	DEL589	Masuk	3,239	6,478	1,080	
			DEL590	Keluar	3,345	6,690		1,115
		Faktor delaminasi rata-rata					**1,084**	**1,111**
		Standar deviasi					0,008	0,021
0,15	3 lapis	3P23 - 1	DEL051	Masuk	3,095	6,190	1,032	
			DEL052	Keluar	3,154	6,308		1,051
		3P23 - 2	DEL053	Masuk	3,091	6,182	1,030	
			DEL054	Keluar	3,218	6,436		1,073
		3P23 - 3	DEL055	Masuk	3,133	6,266	1,044	
			DEL056	Keluar	3,175	6,350		1,058
		3P23 - 4	DEL057	Masuk	3,091	6,182	1,030	
			DEL058	Keluar	3,113	6,226		1,038
		3P23 - 5	DEL059	Masuk	3,112	6,224	1,037	
			DEL060	Keluar	3,133	6,266		1,044
		Faktor delaminasi rata-rata					**1,035**	**1,053**
		Standar deviasi					0,006	0,013
	4 lapis	4P29 - 3	DEL321	Masuk	3,112	6,224	1,037	
			DEL322	Keluar	3,281	6,562		1,094
		4P29 - 4	DEL323	Masuk	3,112	6,224	1,037	
			DEL324	Keluar	3,387	6,774		1,129
		4P29 - 5	DEL325	Masuk	3,196	6,392	1,065	
			DEL326	Keluar	3,302	6,604		1,101
		4P29 - 6	DEL327	Masuk	3,154	6,308	1,051	
			DEL328	Keluar	3,281	6,562		1,094
		4P30 - 1	DEL329	Masuk	3,260	6,520	1,087	
			DEL330	Keluar	3,281	6,562		1,094
		Faktor delaminasi rata-rata					**1,056**	**1,102**
		Standar deviasi					0,021	0,015
	5 lapis	5P27 - 1	DEL591	Masuk	3,26	6,520	1,087	
			DEL592	Keluar	3,366	6,732		1,122
		5P27 - 2	DEL593	Masuk	3,261	6,522	1,087	
			DEL594	Keluar	3,323	6,646		1,108
		5P27 - 3	DEL595	Masuk	3,239	6,478	1,080	
			DEL596	Keluar	3,429	6,858		1,143
		5P27 - 4	DEL597	Masuk	3,262	6,524	1,087	
			DEL598	Keluar	3,323	6,646		1,108
		5P27 - 5	DEL599	Masuk	3,218	6,436	1,073	
			DEL600	Keluar	3,387	6,774		1,129
		Faktor delaminasi rata-rata					**1,083**	**1,122**
		Standar deviasi					0,006	0,015

Tabel Hasil pengukuran faktor delaminasi diameter 6 mm, kecepatan spindel 1500 rpm

Feedrate	Jumlah penguat	No. Spesimen	No. Scan	Sisi Gurdi	Radius (mm)	Diameter (mm)	Faktor delaminasi	
0,05	3 lapis	3P23 - 6	DEL 061	Masuk	3,133	6,266	1,044	
			DEL 062	Keluar	3,154	6,308		1,051
		3P24 - 5	DEL 063	Masuk	3,196	6,392	1,065	

			DEL 064	Keluar	3,210	6,420		1,070
		3P25 - 1	DEL 065	Masuk	3,175	6,350	1,058	
			DEL 066	Keluar	3,260	6,520		1,087
		3P25 - 5	DEL 067	Masuk	3,196	6,392	1,065	
			DEL 068	Keluar	3,112	6,224		1,037
		3P28 - 1	DEL 069	Masuk	3,154	6,308	1,051	
			DEL 070	Keluar	3,196	6,392		1,065
		Faktor delaminasi rata-rata					**1,057**	**1,062**
		Standar deviasi					0,009	0,019
	4 lapis	4P30 - 2	DEL 331	Masuk	3,218	6,436	1,073	
			DEL 332	Keluar	3,429	6,858		1,143
		4P30 - 3	DEL 333	Masuk	3,218	6,436	1,073	
			DEL 334	Keluar	3,323	6,646		1,108
		4P30 - 4	DEL 335	Masuk	3,154	6,308	1,051	
			DEL 336	Keluar	3,345	6,690		1,115
		4P30 - 5	DEL 337	Masuk	3,218	6,436	1,073	
			DEL 338	Keluar	3,260	6,520		1,087
		4P30 - 6	DEL 339	Masuk	3,281	6,562	1,094	
			DEL 340	Keluar	3,260	6,520		1,087
		Faktor delaminasi rata-rata					**1,073**	**1,108**
		Standar deviasi					0,015	0,023
	5 lapis	5P27 - 6	DEL 601	Masuk	3,281	6,562	1,094	
			DEL 602	Keluar	3,323	6,646		1,108
		5P28 - 1	DEL 603	Masuk	3,302	6,604	1,101	
			DEL 604	Keluar	3,281	6,562		1,094
		5P28 - 2	DEL 605	Masuk	3,218	6,436	1,073	
			DEL 606	Keluar	3,323	6,646		1,108
		5P28 - 3	DEL 607	Masuk	3,196	6,392	1,065	
			DEL 608	Keluar	3,323	6,646		1,108
		5P28 - 4	DEL 609	Masuk	3,281	6,562	1,094	
			DEL 610	Keluar	3,429	6,858		1,143
		Faktor delaminasi rata-rata					**1,085**	**1,112**
		Standar deviasi					0,015	0,018
0,09	3 lapis	3P28 - 2	DEL071	Masuk	3,122	6,244	1,041	
			DEL072	Keluar	3,218	6,436		1,073
		3P28 - 3	DEL073	Masuk	3,196	6,392	1,065	
			DEL074	Keluar	3,154	6,308		1,051
		3P28 - 4	DEL075	Masuk	3,112	6,224	1,037	
			DEL076	Keluar	3,260	6,520		1,087
		3P28 - 5	DEL077	Masuk	3,175	6,350	1,058	
			DEL078	Keluar	3,218	6,436		1,073
		3P28 - 6	DEL079	Masuk	3,239	6,478	1,080	
			DEL080	Keluar	3,302	6,604		1,101
		Faktor delaminasi rata-rata					**1,056**	**1,077**
		Standar deviasi					0,018	0,018
	4 lapis	4P31 - 1	DEL341	Masuk	3,26	6,520	1,087	
			DEL342	Keluar	3,366	6,732		1,122
		4P31 - 2	DEL343	Masuk	3,154	6,308	1,051	
			DEL344	Keluar	3,387	6,774		1,129
		4P31 - 3	DEL345	Masuk	3,196	6,392	1,065	
			DEL346	Keluar	3,387	6,774		1,129
		4P31 - 4	DEL347	Masuk	3,240	6,480	1,080	
			DEL348	Keluar	3,260	6,520		1,087
		4P31 - 5	DEL349	Masuk	3,323	6,646	1,108	
			DEL350	Keluar	3,345	6,690		1,115
		Faktor delaminasi rata-rata					**1,078**	**1,116**
		Standar deviasi					0,021	0,018
	5 lapis	5P28 - 5	DEL611	Masuk	3,26	6,520	1,087	
			DEL612	Keluar	3,387	6,774		1,129

		5P29 - 1	DEL613	Masuk	3,323	6,646	1,108	
			DEL614	Keluar	3,429	6,858		1,143
		5P29 - 2	DEL615	Masuk	3,387	6,774	1,129	
			DEL616	Keluar	3,493	6,986		1,164
		5P29 - 3	DEL617	Masuk	3,218	6,436	1,073	
			DEL618	Keluar	3,472	6,944		1,157
		5P29 -4	DEL619	Masuk	3,154	6,308	1,051	
			DEL620	Keluar	3,239	6,478		1,080
		Faktor delaminasi rata-rata					**1,089**	**1,135**
		Standar deviasi					0,030	0,034
0,15	3 lapis	3P35 - 1	DEL081	Masuk	3,196	6,392	1,065	
			DEL082	Keluar	3,218	6,436		1,073
		3P35 - 2	DEL083	Masuk	3,113	6,226	1,038	
			DEL084	Keluar	3,239	6,478		1,080
		3P35 - 3	DEL085	Masuk	3,245	6,490	1,082	
			DEL086	Keluar	3,196	6,392		1,065
		3P35 - 4	DEL087	Masuk	3,154	6,308	1,051	
			DEL088	Keluar	3,323	6,646		1,108
		3P35 - 5	DEL089	Masuk	3,450	6,90	1,150	
			DEL090	Keluar	3,281	6,562		1,094
		Faktor delaminasi rata-rata					**1,077**	**1,084**
		Standar deviasi					0,044	0,017
	4 lapis	4P31 - 6	DEL351	Masuk	3,239	6,478	1,080	
			DEL352	Keluar	3,196	6,392		1,065
		4P32 - 1	DEL353	Masuk	3,302	6,604	1,101	
			DEL354	Keluar	3,472	6,944		1,157
		4P32 -2	DEL355	Masuk	3,260	6,520	1,087	
			DEL356	Keluar	3,366	6,732		1,122
		4P32 - 3	DEL357	Masuk	3,218	6,436	1,073	
			DEL358	Keluar	3,345	6,690		1,115
		4P32 - 4	DEL359	Masuk	3,218	6,436	1,073	
			DEL360	Keluar	3,415	6,830		1,138
		Faktor delaminasi rata-rata					**1,082**	**1,120**
		Standar deviasi					0,012	0,034
	5 lapis	5P29 - 5	DEL621	Masuk	3,26	6,520	1,087	
			DEL622	Keluar	3,387	6,774		1,129
		5P29 - 6	DEL623	Masuk	3,323	6,646	1,108	
			DEL624	Keluar	3,345	6,690		1,115
		5P32 - 1	DEL625	Masuk	3,260	6,520	1,087	
			DEL626	Keluar	3,323	6,646		1,108
		5P32 - 2	DEL627	Masuk	3,323	6,646	1,108	
			DEL628	Keluar	3,387	6,774		1,129
		5P32 - 3	DEL629	Masuk	3,260	6,520	1,087	
			DEL630	Keluar	3,323	6,646		1,108
		Faktor delaminasi rata-rata					**1,095**	**1,118**
		Standar deviasi					0,012	0,011

Tabel. Hasil pengukuran faktor delaminasi diameter 8 mm, kecepatan spindel 88 rpm

Feedrate	Jumlah penguat	No. Spesimen	No. Scan	Sisi Gurdi	Radius (mm)	Diameter (mm)	Faktor delaminasi	
0,05	3 lapis	3P3 - 4	DEL 091	Masuk	4,382	8,764	1,096	
			DEL 092	Keluar	4,403	8,806		1,101
		3P4 - 4	DEL 093	Masuk	4,382	8,764	1,096	
			DEL 094	Keluar	4,457	8,915		1,114
		3P5 - 4	DEL 095	Masuk	4,361	8,722	1,090	
			DEL 096	Keluar	4,467	8,934		1,117
		3P6 - 4	DEL 097	Masuk	4,361	8,722	1,090	
			DEL 098	Keluar	4,424	8,848		1,106

		3P7 - 4	DEL 099	Masuk	4,446	8,892	1,112	
			DEL 100	Keluar	4,403	8,806		1,101
		Faktor delaminasi rata-rata					**1,097**	**1,108**
		Standar deviasi					0,009	0,008
	4 lapis	4P3 - 4	DEL361	Masuk	4,467	8,934	1,117	
			DEL362	Keluar	4,530	9,060		1,133
		4P4 - 4	DEL363	Masuk	4,488	8,488	1,122	
			DEL364	Keluar	4,551	9,551		1,138
		4P5 - 4	DEL365	Masuk	4,446	8,466	1,117	
			DEL366	Keluar	4,503	9,503		1,126
		4P7 - 4	DEL367	Masuk	4,318	8,318	1,080	
			DEL368	Keluar	4,657	9,657		1,164
		4P33 - 4	DEL369	Masuk	4,382	8,382	1,096	
			DEL370	Keluar	4,551	9,102		1,138
		Faktor delaminasi rata-rata					**1,106**	**1,140**
		Standar deviasi					0,017	0,014
	5 lapis	5P1 - 4	DEL 631	Masuk	4,551	9,102	1,138	
			DEL 632	Keluar	4,657	9,314		1,164
		5P3 - 4	DEL 633	Masuk	4,594	9,188	1,149	
			DEL 634	Keluar	4,635	9,270		1,159
		5P4 - 4	DEL 635	Masuk	4,594	9,188	1,149	
			DEL 636	Keluar	4,551	9,102		1,138
		5P5 - 4	DEL 637	Masuk	4,594	9,188	1,149	
			DEL 638	Keluar	4,530	9,060		1,133
		5P6 - 4	DEL 639	Masuk	4,403	8,806	1,101	
			DEL 640	Keluar	4,594	9,188		1,149
		Faktor delaminasi rata-rata					**1,137**	**1,148**
		Standar deviasi					0,021	0,013
0,09	3 lapis	3P8 - 4	DEL101	Masuk	4,403	8,806	1,101	
			DEL102	Keluar	4,594	9,188		1,149
		3P9 - 4	DEL103	Masuk	4,424	8,848	1,106	
			DEL104	Keluar	4,551	9,102		1,138
		3P10 - 4	DEL105	Masuk	4,351	8,702	1,088	
			DEL106	Keluar	4,551	9,102		1,138
		3P11 - 4	DEL107	Masuk	4,510	9,020	1,128	
			DEL108	Keluar	4,551	9,102		1,138
		3P13 - 4	DEL109	Masuk	4,318	8,636	1,080	
			DEL110	Keluar	4,584	9,168		1,146
		Faktor delaminasi rata-rata					**1,10**	**1,142**
		Standar deviasi					0,018	0,005
	4 lapis	4P8 - 4	DEL371	Masuk	4,467	8,934	1,117	
			DEL372	1,143	4,573	9,146		1,143
		4P9 - 4	DEL373		4,615	9,230	1,154	
			DEL374	1,154	4,615	9,230		1,154
		4P10 - 4	DEL375		4,636	9,272	1,159	
			DEL376	1,143	4,573	9,146		1,143
		4P11 - 2	DEL377		4,427	8,854	1,107	
			DEL378	1,159	4,636	9,272		1,159
		4P11 - 4	DEL379		4,361	8,722	1,090	
			DEL380	1,133	4,530	9,060		1,133
		Faktor delaminasi rata-rata					**1,125**	**1,146**
		Standar deviasi					0,029	0,01
	5 lapis	5P7 - 4	DEL641	Masuk	4,446	8,892	1,112	
			DEL642	Keluar	4,657	9,314		1,164
		5P8 - 4	DEL643	Masuk	4,657	9,314	1,164	
			DEL644	Keluar	4,573	9,146		1,143
		5P9 - 4	DEL645	Masuk	4,509	9,018	1,127	
			DEL646	Keluar	4,573	9,146		1,143
		5P10 - 4	DEL647	Masuk	4,551	9,102	1,138	

			DEL648	Keluar	4,70	9,40		1,175
		5P11 - 4	DEL649	Masuk	4,636	9,272	1,159	
			DEL650	Keluar	4,573	9,146		1,143
		Faktor delaminasi rata-rata					**1,140**	**1,154**
		Standar deviasi					0,022	0,015
0,15	3 lapis	3P14 - 4	DEL111	Masuk	4,318	8,636	1,080	
			DEL112	Keluar	4,509	9,018		1,127
		3P15 - 4	DEL113	Masuk	4,403	8,806	1,101	
			DEL114	Keluar	4,530	9,060		1,133
		3P19 - 4	DEL115	Masuk	4,297	8,594	1,074	
			DEL116	Keluar	4,615	9,230		1,154
		3P20 - 4	DEL117	Masuk	4,213	8,426	1,053	
			DEL118	Keluar	4,594	9,188		1,149
		3P24 - 1	DEL119	Masuk	4,488	8,976	1,122	
			DEL120	Keluar	4,657	9,314		1,164
		Faktor delaminasi rata-rata					**1,086**	**1,145**
		Standar deviasi					0,026	0,015
	4 lapis	4P12 - 4	1,127	Masuk	4,509	9,018	1,127	
				Keluar	4,573	9,146		1,143
		4P13 - 4	1,122	Masuk	4,488	8,976	1,122	
				Keluar	4,573	9,146		1,143
		4P14 - 4	1,132	Masuk	4,526	9,052	1,132	
				Keluar	4,678	9,356		1,170
		4P15 - 4	1,112	Masuk	4,446	8,892	1,112	
				Keluar	4,509	9,018		1,127
		4P16 - 4	1,154	Masuk	4,615	9,230	1,154	
				Keluar	4,678	9,356		1,170
		Faktor delaminasi rata-rata					**1,129**	**1,151**
		Standar deviasi					0,015	0,018
	5 lapis	5P12 - 4	DEL651	Masuk	4,53	9,060	1,133	
			DEL652	Keluar	4,615	9,230		1,154
		5P13 - 4	DEL653	Masuk	4,530	9,060	1,133	
			DEL654	Keluar	4,636	9,272		1,159
		5P14 - 4	DEL655	Masuk	4,551	9,102	1,138	
			DEL656	Keluar	4,594	9,188		1,149
		5P15 - 4	DEL657	Masuk	4,636	9,272	1,159	
			DEL658	Keluar	4,657	9,314		1,164
		5P16 - 4	DEL659	Masuk	4,657	9,314	1,164	
			DEL660	Keluar	4,573	9,146		1,143
		Faktor delaminasi rata-rata					**1,145**	**1,154**
		Standar deviasi					0,015	0,008

Tabel Hasil pengukuran faktor delaminasi diameter 8 mm, kecepatan spindel 455 rpm

Feedrate	Jumlah penguat	No. Spesimen	No. Scan	Sisi Gurdi	Radius (mm)	Diameter (mm)	Faktor delaminasi	
0,05	3 lapis	3P24 - 2	DEL 121	Masuk	4,403	8,806	1,101	
			DEL 122	Keluar	4,382	8,764		1,096
		3P24 - 3	DEL 123	Masuk	4,424	8,848	1,106	
			DEL 124	Keluar	4,446	8,892		1,112
		3P24 - 4	DEL 125	Masuk	4,382	8,764	1,096	
			DEL 126	Keluar	4,488	8,976		1,122
		3P25 - 2	DEL 127	Masuk	4,424	8,848	1,106	
			DEL 128	Keluar	4,467	8,934		1,117
		3P25 - 3	DEL 129	Masuk	4,403	8,806	1,101	
			DEL 130	Keluar	4,424	8,848		1,106
		Faktor delaminasi rata-rata					**1,102**	**1,110**
		Standar deviasi					0,004	0,010
	4 lapis	4P17 - 1	DEL391	Masuk	4,488	8,976	1,122	

			DEL392	Keluar	4,636	9,272		1,159
		4P17 - 2	DEL393	Masuk	4,403	8,806	1,101	
			DEL394	Keluar	4,594	9,188		1,149
		4P17 - 3	DEL395	Masuk	4,446	8,892	1,112	
			DEL396	Keluar	4,467	8,934		1,117
		4P18 - 1	DEL397	Masuk	4,467	8,934	1,117	
			DEL398	Keluar	4,488	8,976		1,122
		4P18 - 2	DEL399	Masuk	4,446	8,892	1,112	
			DEL400	Keluar	4,448	8,896		1,112
		Faktor delaminasi rata-rata					**1,113**	**1,132**
		Standar deviasi					0,008	0,021
	5 lapis	5P17 - 1	DEL 661	Masuk	4,551	9,102	1,138	
			DEL 662	Keluar	4,530	9,060		1,133
		5P17 - 2	DEL 663	Masuk	4,488	8,976	1,122	
			DEL 664	Keluar	4,805	9,610		1,201
		5P17 - 3	DEL 665	Masuk	4,551	9,102	1,138	
			DEL 666	Keluar	4,530	9,060		1,133
		5P17 - 4	DEL 667	Masuk	4,488	8,976	1,122	
			DEL 668	Keluar	4,509	9,018		1,127
		5P18 - 1	DEL 669	Masuk	4,530	9,060	1,133	
			DEL 670	Keluar	4,594	9,188		1,149
		Faktor delaminasi rata-rata					**1,130**	**1,148**
		Standar deviasi					0,008	0,031
0,09	3 lapis	3P25 - 4	1,112		4,446	8,892	1,112	
				1,127	4,509	9,018		1,127
		3P26 - 1	1,101		4,403	8,806	1,101	
				1,085	4,340	8,680		1,085
		3P26 - 2	1,112		4,446	8,892	1,112	
				1,127	4,509	9,018		1,127
		3P26 - 3	1,113		4,451	8,902	1,122	
				1,127	4,507	9,014		1,127
		3P26 - 4	1,124		4,494	8,988	1,149	
				1,106	4,424	8,848		1,106
		Faktor delaminasi rata-rata					**1,112**	**1,114**
		Standar deviasi					0,008	0,019
	4 lapis	4P18 - 3	DEL401	Masuk	4,446	8,892	1,112	
			DEL402	Keluar	4,530	9,060		1,133
		4P18 - 4	DEL403	Masuk	4,467	8,934	1,117	
			DEL404	Keluar	4,509	9,018		1,127
		4P19 - 1	DEL405	Masuk	4,424	8,848	1,106	
			DEL406	Keluar	4,488	8,976		1,122
		4P19 - 2	DEL407	Masuk	4,446	8,892	1,112	
			DEL408	Keluar	4,573	9,146		1,143
		4P19 - 3	DEL409	Masuk	4,488	8,976	1,122	
			DEL410	Keluar	4,551	9,102		1,138
		Faktor delaminasi rata-rata					**1,114**	**1,133**
		Standar deviasi					0,006	0,008
	5 lapis	5P18 - 2	DEL671	Masuk	4,467	8,934	1,117	
			DEL672	Keluar	4,560	9,120		1,140
		5P18 - 3	DEL673	Masuk	4,594	9,188	1,149	
			DEL674	Keluar	4,594	9,188		1,149
		5P18 - 4	DEL675	Masuk	4,551	9,102	1,138	
			DEL676	Keluar	4,615	9,230		1,154
		5P19 - 1	DEL677	Masuk	4,488	8,976	1,122	
			DEL678	Keluar	4,630	9,260		1,158
		5P19 - 2	DEL679	Masuk	4,530	9,060	1,133	
			DEL680	Keluar	4,593	9,186		1,148
		Faktor delaminasi rata-rata					**1,132**	**1,150**
		Standar deviasi					0,013	0,007

0,15	3 lapis	3P27 - 1	1,125	Masuk	4,499	8,998	1,127	
				Keluar	4,469	8,938		1,117
		3P27 -2	1,128	Masuk	4,510	9,020	1,133	
				Keluar	4,427	8,854		1,207
		3P27 - 3	1,131	Masuk	4,523	9,046	1,143	
				Keluar	4,554	9,108		1,239
		3P27 - 4	1,103	Masuk	4,410	8,820	1,106	
				Keluar	4,488	8,976		1,122
		3P29 - 1	1,135	Masuk	4,541	9,082	1,138	
				Keluar	4,563	9,126		1,141
		Faktor delaminasi rata-rata					**1,124**	**1,125**
		Standar deviasi					0,013	0,014
	4 lapis	4P19 - 4	DEL411	Masuk	4,53	9,060	1,133	
			DEL412	Keluar	4,588	9,176		1,147
		4P20 - 1	DEL413	Masuk	4,509	9,018	1,127	
			DEL414	Keluar	4,593	9,186		1,148
		4P20 - 2	DEL415	Masuk	4,530	9,060	1,133	
			DEL416	Keluar	4,509	9,018		1,127
		4P20 -3	DEL417	Masuk	4,424	8,848	1,106	
			DEL418	Keluar	4,540	9,080		1,135
		4P20 - 4	DEL419	Masuk	4,488	8,976	1,122	
			DEL420	Keluar	4,551	9,102		1,138
		Faktor delaminasi rata-rata					**1,124**	**1,139**
		Standar deviasi					0,011	0,009
	5 lapis	5P19 - 3	DEL681	Masuk	4,53	9,060	1,133	
			DEL682	Keluar	4,598	9,196		1,150
		5P19 - 4	DEL683	Masuk	4,509	9,018	1,127	
			DEL684	Keluar	4,615	9,230		1,154
		5P20 - 1	DEL685	Masuk	4,531	9,062	1,133	
			DEL686	Keluar	4,529	9,058		1,132
		5P20 - 2	DEL687	Masuk	4,594	9,188	1,149	
			DEL688	Keluar	4,678	9,356		1,170
		5P20 - 3	DEL689	Masuk	4,530	9,060	1,133	
			DEL690	Keluar	4,657	9,314		1,164
		Faktor delaminasi rata-rata					**1,135**	**1,154**
		Standar deviasi					0,008	0,014

Tabel Hasil pengukuran faktor delaminasi diameter 8 mm, kecepatan spindel 1500 rpm

Feedrate	Jumlah penguat	No. Spesimen	No. Scan	Sisi Gurdi	Radius (mm)	Diameter (mm)	Faktor delaminasi	
0,05	3 lapis	3P29-2	DEL 151	Masuk	4,488	8,976	1,122	
			DEL 152	Keluar	4,509	9,018		1,127
		3P29-3	DEL 153	Masuk	4,551	9,102	1,138	
			DEL 154	Keluar	4,594	9,188		1,149
		3P29-4	DEL 155	Masuk	4,488	8,976	1,122	
			DEL 156	Keluar	4,573	9,146		1,143
		3P30-1	DEL 157	Masuk	4,382	8,764	1,096	
			DEL 158	Keluar	4,530	9,060		1,133
		3P30-2	DEL 159	Masuk	4,509	9,018	1,127	
			DEL 160	Keluar	4,530	9,060		1,133
		Faktor delaminasi rata-rata					**1,121**	**1,137**
		Standar deviasi					0,016	0,009
	4 lapis	4P21 - 1	DEL 421	Masuk	4,53	9,060	1,133	
			DEL 422	Keluar	5,805	11,610		1,451
		4P21 - 2	DEL 423	Masuk	4,467	8,934	1,117	
			DEL 424	Keluar	4,784	9,568		1,196
		4P21 - 3	DEL 425	Masuk	4,615	9,230	1,154	
			DEL 426	Keluar	4,827	9,654		1,207

		4P21 - 4	DEL 427	Masuk	4,678	9,356	1,170	
			DEL 428	Keluar	4,869	9,738		1,217
		4P22 - 1	DEL 429	Masuk	4,446	8,892	1,112	
			DEL 430	Keluar	4,742	9,484		1,186
		Faktor delaminasi rata-rata					**1,137**	**1,251**
		Standar deviasi					0,025	0,112
	5 lapis	5P20 - 4	DEL691	Masuk	4,763	9,526	1,191	
			DEL692	Keluar	5,070	10,140		1,268
		5P21 - 1	DEL693	Masuk	4,721	9,442	1,180	
			DEL694	Keluar	4,981	9,962		1,245
		5P21 - 2	DEL695	Masuk	4,742	9,484	1,186	
			DEL696	Keluar	4,971	9,941		1,243
		5P21 - 3	DEL697	Masuk	4,743	9,486	1,186	
			DEL698	Keluar	5,086	10,172		1,272
		5P21 - 4	DEL699	Masuk	4,615	9,230	1,154	
			DEL700	Keluar	5,042	10,084		1,261
		Faktor delaminasi rata-rata					**1,179**	**1,257**
		Standar deviasi					0,015	0,013
0,09	3 lapis	3P30 - 3	DEL161	Masuk	4,503	9,006	1,126	
			DEL162	Keluar	4,615	9,230		1,154
		3P30 - 4	DEL163	Masuk	4,688	9,376	1,172	
			DEL164	Keluar	4,701	9,402		1,175
		3P31 - 1	DEL165	Masuk	4,397	8,794	1,099	
			DEL166	Keluar	4,890	9,780		1,223
		3P31 - 2	DEL167	Masuk	4,610	9,220	1,153	
			DEL168	Keluar	4,932	9,864		1,233
		3P31 - 3	DEL169	Masuk	4,440	8,880	1,110	
			DEL170	Keluar	4,594	9,188		1,149
		Faktor delaminasi rata-rata					**1,132**	**1,187**
		Standar deviasi					0,030	0,039
	4 lapis	4P22 - 2	DEL431	Masuk	4,594	9,188	1,149	
			DEL432	Keluar	4,827	9,654		1,207
		4P22 - 3	DEL433	Masuk	4,678	9,356	1,170	
			DEL434	Keluar	5,017	10,034		1,254
		4P22 - 4	DEL435	Masuk	4,594	9,188	1,149	
			DEL436	Keluar	4,678	9,356		1,170
		4P26 - 1	DEL437	Masuk	4,551	9,102	1,138	
			DEL438	Keluar	5,292	10,584		1,323
		4P26 - 2	DEL439	Masuk	4,573	9,146	1,143	
			DEL440	Keluar	5,206	10,412		1,302
		Faktor delaminasi rata-rata					**1,150**	**1,251**
		Standar deviasi					0,012	0,064
	5 lapis	5P22 - 1	DEL701	Masuk	4,657	9,314	1,164	
			DEL702	Keluar	5,051	10,102		1,263
		5P22 - 2	DEL703	Masuk	4,636	9,272	1,159	
			DEL704	Keluar	5,056	10,113		1,264
		5P22 - 3	DEL705	Masuk	4,742	9,484	1,186	
			DEL706	Keluar	4,995	9,990		1,249
		5P22 - 4	DEL707	Masuk	4,636	9,272	1,159	
			DEL708	Keluar	5,031	10,062		1,258
		5P23 - 1	DEL709	Masuk	4,954	9,908	1,239	
			DEL710	Keluar	5,045	10,090		1,261
		Faktor delaminasi rata-rata					**1,181**	**1,259**
		Standar deviasi					0,034	0,006
0,15	3 lapis	3P31 - 4	DEL171	Masuk	4,255	8,510	1,064	
			DEL172	Keluar	4,944	9,888		1,236
		3P33 - 1	DEL173	Masuk	4,509	9,018	1,127	
			DEL174	Keluar	4,863	9,726		1,216

		3P33 - 2	DEL175	Masuk	4,636	9,272	1,159	
			DEL176	Keluar	4,995	9,990		1,249
		3P33 - 3	DEL177	Masuk	4,742	9,484	1,186	
			DEL178	Keluar	4,861	9,722		1,215
		3P33 - 4	DEL179	Masuk	4,701	9,402	1,175	
			DEL180	Keluar	4,530	9,060		1,133
		Faktor delaminasi rata-rata					**1,142**	**1,210**
		Standar deviasi					0,049	0,045
	4 lapis	4P27 - 1	DEL441	Masuk	4,673	9,346	1,168	
			DEL442	Keluar	5,042	10,084		1,261
		4P28 - 1	DEL443	Masuk	4,594	9,188	1,149	
			DEL444	Keluar	5,101	10,202		1,275
		4P28 - 2	DEL445	Masuk	4,636	9,272	1,159	
			DEL446	Keluar	5,001	10,002		1,250
		4P28 - 3	DEL447	Masuk	4,615	9,230	1,154	
			DEL448	Keluar	5,012	10,024		1,253
		4P28 - 4	DEL449	Masuk	4,629	9,258	1,157	
			DEL450	Keluar	5,021	10,042		1,255
		Faktor delaminasi rata-rata					**1,157**	**1,259**
		Standar deviasi					0,007	0,010
	5 lapis	5P23 - 2	DEL711	Masuk	4,821	9,642	1,205	
			DEL712	Keluar	5,106	10,212		1,277
		5P23 - 3	DEL713	Masuk	4,712	9,424	1,178	
			DEL714	Keluar	5,015	10,030		1,254
		5P23 - 4	DEL715	Masuk	4,736	9,472	1,184	
			DEL716	Keluar	5,080	10,160		1,270
		5P24 - 1	DEL717	Masuk	4,778	9,556	1,195	
			DEL718	Keluar	5,012	10,024		1,253
		5P24 - 1	DEL719	Masuk	4,741	9,482	1,185	
			DEL720	Keluar	5,011	10,022		1,253
		Faktor delaminasi rata-rata					**1,189**	**1,261**
		Standar deviasi					0,011	0,011

Tabel Hasil pengukuran faktor delaminasi diameter 10 mm, kecepatan spindel 88 rpm

Feedrate	Jumlah penguat	No. Spesimen	No. Scan	Sisi Gurdi	Radius (mm)	Diameter (mm)	Faktor delaminasi	
0,05	3 lapis	3P3 - 1	DEL181	Masuk	5,716	11,432	1,143	
			DEL182	Keluar	5,737	11,474		1,147
		3P3 - 2	DEL183	Masuk	5,441	10,882	1,088	
			DEL184	Keluar	5,652	11,304		1,130
		3P3 - 3	DEL185	Masuk	5,673	11,346	1,135	
			DEL186	Keluar	5,677	11,354		1,135
		3P4 - 1	DEL187	Masuk	5,695	11,390	1,139	
			DEL188	Keluar	5,885	11,770		1,177
		3P4 - 2	DEL189	Masuk	5,610	11,220	1,122	
			DEL190	Keluar	5,801	11,602		1,160
		Faktor delaminasi rata-rata					**1,125**	**1,150**
		Standar deviasi					0,022	0,019
	4 lapis	4P1 - 1	DEL451	Masuk	5,61	11,220	1,122	
			DEL452	Keluar	5,843	11,686		1,169
		4P1 - 2	DEL453	Masuk	5,634	11,268	1,127	
			DEL454	Keluar	5,882	11,764		1,176
		4P1 - 3	DEL455	Masuk	5,889	11,778	1,178	
			DEL456	Keluar	5,970	11,940		1,194
		4P3 - 1	DEL457	Masuk	5,619	11,238	1,124	
			DEL458	Keluar	5,785	11,570		1,157
		4P3 - 2	DEL459	Masuk	5,695	11,390	1,139	
			DEL460	Keluar	5,759	11,518		1,152

		Faktor delaminasi rata-rata					**1,138**	**1,170**
		Standar deviasi					0,023	0,017
	5 lapis	5P1-1	DEL721	Masuk	5,737	11,474	1,147	
			DEL722	Keluar	5,886	11,772		1,177
		5P1-2	DEL723	Masuk	5,656	11,312	1,131	
			DEL724	Keluar	5,795	11,590		1,159
		5P1-3	DEL725	Masuk	5,673	11,346	1,135	
			DEL726	Keluar	5,802	11,604		1,160
		5P2-1	DEL727	Masuk	5,737	11,474	1,147	
			DEL728	Keluar	5,908	11,816		1,182
		5P2-2	DEL729	Masuk	5,737	11,474	1,147	
			DEL730	Keluar	5,920	11,840		1,184
		Faktor delaminasi rata-rata					**1,142**	**1,172**
		Standar deviasi					0,008	0,012
0,09	3 lapis	3P4 - 3	DEL191	Masuk	5,743	11,486	1,149	
			DEL192	Keluar	5,843	11,686		1,169
		3P5 - 1	DEL193	Masuk	5,483	10,966	1,097	
			DEL194	Keluar	5,791	11,582		1,158
		3P5 - 2	DEL195	Masuk	5,604	11,208	1,121	
			DEL196	Keluar	5,864	11,728		1,173
		3P5 - 3	DEL197	Masuk	5,673	11,346	1,135	
			DEL198	Keluar	5,743	11,486		1,149
		3P6 - 1	DEL199	Masuk	5,716	11,432	1,143	
			DEL200	Keluar	5,745	11,490		1,149
		Faktor delaminasi rata-rata					**1,129**	**1,159**
		Standar deviasi					0,021	0,011
	4 lapis	4P3 - 3	DEL461	Masuk	5,519	11,038	1,104	
			DEL462	Keluar	6,021	12,042		1,204
		4P4 - 1	DEL463	Masuk	5,882	11,764	1,176	
			DEL464	Keluar	5,835	11,670		1,167
		4P4 - 2	DEL465	Masuk	5,716	11,432	1,143	
			DEL466	Keluar	5,933	11,866		1,187
		4P4 - 3	DEL467	Masuk	5,783	11,566	1,157	
			DEL468	Keluar	5,801	11,602		1,160
		4P5 - 1	DEL469	Masuk	5,699	11,398	1,140	
			DEL470	Keluar	5,889	11,778		1,178
		Faktor delaminasi rata-rata					**1,144**	**1,179**
		Standar deviasi					0,027	0,017
	5 lapis	5P2-3	DEL731	Masuk	5,828	11,656	1,166	
			DEL732	Keluar	6,021	12,042		1,204
		5P3-1	DEL733	Masuk	5,533	11,066	1,107	
			DEL734	Keluar	5,943	11,886		1,189
		5P3-2	DEL735	Masuk	5,822	11,644	1,164	
			DEL736	Keluar	5,858	11,716		1,172
		5P3-3	DEL737	Masuk	5,731	11,462	1,146	
			DEL738	Keluar	5,902	11,804		1,180
		5P4-1	DEL739	Masuk	5,877	11,754	1,175	
			DEL740	Keluar	5,843	11,686		1,169
		Faktor delaminasi rata-rata					**1,152**	**1,183**
		Standar deviasi					0,027	0,014
0,15	3 lapis	3P6 - 2	DEL201	Masuk	5,737	11,474	1,147	
			DEL202	Keluar	5,758	11,516		1,152
		3P6 -3	DEL203	Masuk	5,716	11,432	1,143	
			DEL204	Keluar	5,756	11,512		1,151
		3P7 - 1	DEL205	Masuk	5,758	11,516	1,152	
			DEL206	Keluar	5,970	11,940		1,194
		3P7 - 2	DEL207	Masuk	5,586	11,172	1,117	
			DEL208	Keluar	5,882	11,764		1,176
		3P7 -3	DEL209	Masuk	5,586	11,172	1,117	

			DEL210	Keluar	5,758	11,516		1,152
		Faktor delaminasi rata-rata					**1,135**	**1,165**
		Standar deviasi					0,017	0,019
	4 lapis	4P5 - 2	DEL471	Masuk	5,676	11,352	1,135	
			DEL472	Keluar	5,882	11,764		1,176
		4P5 - 3	DEL473	Masuk	5,763	11,526	1,153	
			DEL474	Keluar	6,033	12,066		1,207
		4P7 - 1	DEL475	Masuk	5,677	11,354	1,135	
			DEL476	Keluar	5,804	11,608		1,161
		4P7 - 2	DEL477	Masuk	5,741	11,482	1,148	
			DEL478	Keluar	5,906	11,812		1,181
		4P7 - 3	DEL479	Masuk	5,758	11,516	1,152	
			DEL480	Keluar	5,928	11,856		1,186
		Faktor delaminasi rata-rata					**1,145**	**1,182**
		Standar deviasi					0,009	0,017
	5 lapis	5P4-2	DEL741	Masuk	5,779	11,558	1,156	
			DEL742	Keluar	5,982	11,964		1,196
		5P4-3	DEL743	Masuk	5,885	11,770	1,177	
			DEL744	Keluar	5,893	11,786		1,179
		5P5-1	DEL745	Masuk	5,826	11,652	1,165	
			DEL746	Keluar	5,976	11,952		1,195
		5P5-2	DEL747	Masuk	5,889	11,778	1,178	
			DEL748	Keluar	5,780	11,560		1,156
		5P5-3	DEL749	Masuk	5,828	11,656	1,166	
			DEL750	Keluar	6,002	12,004		1,20
		Faktor delaminasi rata-rata					**1,168**	**1,185**
		Standar deviasi					0,009	0,011

Tabel Hasil pengukuran faktor delaminasi diameter 10 mm, kecepatan spindel 455 rpm

Feedrate	Jumlah penguat	No. Spesimen	No. Scan	Sisi Gurdi	Radius (mm)	Diameter (mm)	Faktor delaminasi	
0,05	3 lapis	3P8 - 1	DEL 211	Masuk	5,652	11,304	1,130	
			DEL 212	Keluar	5,737	11,474		1,147
		3P8 - 2	DEL 213	Masuk	5,549	11,098	1,110	
			DEL 214	Keluar	5,737	11,474		1,147
		3P8 - 3	DEL 215	Masuk	5,441	10,882	1,088	
			DEL 216	Keluar	5,758	11,516		1,152
		3P9 - 1	DEL 217	Masuk	5,539	11,078	1,108	
			DEL 218	Keluar	5,758	11,516		1,152
		3P9 - 2	DEL 219	Masuk	5,653	11,306	1,131	
			DEL 220	Keluar	5,650	11,30		1,130
		Faktor delaminasi rata-rata					**1,113**	**1,146**
		Standar deviasi					0,018	0,009
	4 lapis	4P8 - 1	DEL481	Masuk	5,758	11,516	1,152	
			DEL482	Keluar	5,801	11,602		1,160
		4P8 - 2	DEL483	Masuk	5,720	11,440	1,144	
			DEL484	Keluar	5,885	11,770		1,177
		4P8 - 3	DEL485	Masuk	5,716	11,432	1,143	
			DEL486	Keluar	5,758	11,516		1,152
		4P9 - 1	DEL487	Masuk	5,721	11,442	1,144	
			DEL488	Keluar	5,949	11,898		1,190
		4P9 - 2	DEL489	Masuk	5,652	11,304	1,130	
			DEL490	Keluar	5,822	11,644		1,164
		Faktor delaminasi rata-rata					**1,143**	**1,169**
		Standar deviasi					0,008	0,015
	5 lapis	5P6-1	DEL751	Masuk	5,928	11,856	1,186	
			DEL752	Keluar	6,033	12,066		1,207
		5P6-2	DEL753	Masuk	5,804	11,608	1,161	

			DEL754	Keluar	5,843	11,686		1,169
		5P6-3	DEL755	Masuk	5,862	11,724	1,172	
			DEL756	Keluar	5,889	11,778		1,178
		5P7-1	DEL757	Masuk	5,991	11,982	1,198	
			DEL758	Keluar	5,906	11,812		1,181
		5P7-2	DEL759	Masuk	5,783	11,566	1,157	
			DEL760	Keluar	5,991	11,982		1,198
		Faktor delaminasi rata-rata					**1,175**	**1,186**
		Standar deviasi					0,017	0,016
0,09	3 lapis	3P9 - 3	DEL221	Masuk	5,61	11,220	1,122	
			DEL222	Keluar	5,756	11,512		1,151
		3P10 - 1	DEL223	Masuk	5,716	11,432	1,143	
			DEL224	Keluar	5,855	11,710		1,171
		3P10 - 2	DEL225	Masuk	5,546	11,092	1,109	
			DEL226	Keluar	5,758	11,516		1,152
		3P10 - 3	DEL227	Masuk	5,504	11,008	1,101	
			DEL228	Keluar	5,849	11,698		1,170
		3P11 - 1	DEL229	Masuk	5,610	11,220	1,122	
			DEL230	Keluar	5,760	11,520		1,152
		Faktor delaminasi rata-rata					**1,119**	**1,159**
		Standar deviasi					0,016	0,010
	4 lapis	4P9 - 3	DEL491	Masuk	5,758	11,516	1,152	
			DEL492	Keluar	5,949	11,898		1,190
		4P10 - 1	DEL493	Masuk	5,840	11,680	1,168	
			DEL494	Keluar	5,928	11,856		1,186
		4P10 - 2	DEL495	Masuk	5,762	11,524	1,152	
			DEL496	Keluar	5,885	11,770		1,177
		4P10 - 3	DEL497	Masuk	5,673	11,346	1,135	
			DEL498	Keluar	5,864	11,728		1,173
		4P11 - 1	DEL499	Masuk	5,652	11,304	1,130	
			DEL500	Keluar	6,055	12,110		1,211
		Faktor delaminasi rata-rata					**1,147**	**1,187**
		Standar deviasi					0,015	0,015
	5 lapis	5P7-3	DEL761	Masuk	5,992	11,984	1,198	
			DEL762	Keluar	6,033	12,066		1,207
		5P8-1	DEL763	Masuk	5,949	11,898	1,190	
			DEL764	Keluar	5,928	11,856		1,186
		5P8-2	DEL765	Masuk	5,864	11,728	1,173	
			DEL766	Keluar	6,021	12,042		1,204
		5P8-3	DEL767	Masuk	5,970	11,940	1,194	
			DEL768	Keluar	6,055	12,110		1,211
		5P9-1	DEL769	Masuk	5,991	11,982	1,198	
			DEL770	Keluar	6,182	12,364		1,236
		Faktor delaminasi rata-rata					**1,191**	**1,209**
		Standar deviasi					0,011	0,018
0,15	3 lapis	3P11 - 2	DEL231	Masuk	5,716	11,432	1,143	
			DEL232	Keluar	5,887	11,774		1,177
		3P11 - 3	DEL233	Masuk	5,522	11,044	1,104	
			DEL234	Keluar	6,568	13,136		1,314
		3P12 - 1	DEL235	Masuk	5,843	11,686	1,169	
			DEL236	Keluar	5,591	11,182		1,118
		3P12 - 2	DEL237	Masuk	5,504	11,008	1,101	
			DEL238	Keluar	5,528	11,056		1,106
		3P12 - 3	DEL239	Masuk	5,586	11,172	1,117	
			DEL240	Keluar	5,731	11,462		1,146
		Faktor delaminasi rata-rata					**1,127**	**1,172**
		Standar deviasi					0,029	0,084
	4 lapis	4P11 - 3	DEL501	Masuk	5,762	11,524	1,152	
			DEL502	Keluar	6,033	12,066		1,207

		4P12 - 1	DEL503	Masuk	5,826	11,652	1,165	
			DEL504	Keluar	5,822	11,644		1,164
		4P12 - 2	DEL505	Masuk	5,804	11,608	1,161	
			DEL506	Keluar	6,076	12,152		1,215
		4P12 - 3	DEL507	Masuk	5,868	11,736	1,174	
			DEL508	Keluar	6,012	12,024		1,202
		4P13 - 1	DEL509	Masuk	5,864	11,728	1,173	
			DEL510	Keluar	5,906	11,812		1,181
		Faktor delaminasi rata-rata					**1,165**	**1,194**
		Standar deviasi					0,009	0,021
	5 lapis	5P9-2	DEL771	Masuk	5,928	11,856	1,186	
			DEL772	Keluar	5,995	11,990		1,199
		5P9-3	DEL773	Masuk	5,889	11,778	1,178	
			DEL774	Keluar	5,994	11,988		1,199
		5P10-1	DEL775	Masuk	6,021	12,042	1,204	
			DEL776	Keluar	6,033	12,066		1,207
		5P10-2	DEL777	Masuk	6,055	12,110	1,211	
			DEL778	Keluar	6,059	12,118		1,212
		5P10-3	DEL779	Masuk	6,012	12,024	1,202	
			DEL780	Keluar	6,055	12,110		1,211
		Faktor delaminasi rata-rata					**1,196**	**1,205**
		Standar deviasi					0,014	0,006

Tabel Hasil pengukuran faktor delaminasi diameter 10 mm, kecepatan spindel 1500 rpm

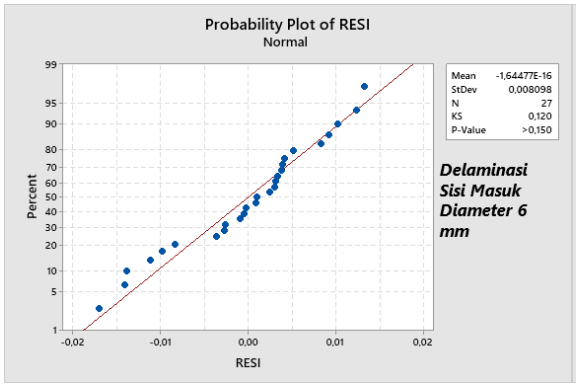
Feedrate	Jumlah penguat	No. Spesimen	No. Scan	Sisi Gurdi	Radius (mm)	Diameter (mm)	Faktor delaminasi	
0,05	3 lapis	3P13 - 1	DEL 241	Masuk	5,756	11,512	1,151	
			DEL 242	Keluar	5,991	11,982		1,198
		3P13 - 2	DEL 243	Masuk	5,625	11,250	1,125	
			DEL 244	Keluar	5,885	11,770		1,177
		3P13 - 3	DEL 245	Masuk	5,652	11,304	1,130	
			DEL 246	Keluar	6,182	12,364		1,236
		3P14 - 1	DEL 247	Masuk	5,737	11,474	1,147	
			DEL 248	Keluar	5,779	11,558		1,156
		3P14 - 2	DEL 249	Masuk	5,610	11,220	1,122	
			DEL 250	Keluar	5,802	11,604		1,160
		Faktor delaminasi rata-rata					**1,135**	**1,186**
		Standar deviasi					0,013	0,033
	4 lapis	4P13 - 2	DEL511	Masuk	5,885	11,770	1,177	
			DEL512	Keluar	5,906	11,812		1,181
		4P13 - 3	DEL513	Masuk	5,822	11,644	1,164	
			DEL514	Keluar	5,928	11,856		1,186
		4P14 - 1	DEL515	Masuk	5,779	11,558	1,156	
			DEL516	Keluar	6,245	12,490		1,249
		4P14 - 2	DEL517	Masuk	5,779	11,558	1,156	
			DEL518	Keluar	5,949	11,898		1,190
		4P14 - 3	DEL519	Masuk	5,762	11,524	1,152	
			DEL520	Keluar	6,021	12,042		1,204
		Faktor delaminasi rata-rata					**1,161**	**1,202**
		Standar deviasi					0,010	0,028
	5 lapis	5P11 - 1	DEL781	Masuk	5,972	11,944	1,194	
			DEL782	Keluar	5,906	11,812		1,181
		5P11 - 2	DEL783	Masuk	5,970	11,940	1,194	
			DEL784	Keluar	5,991	11,982		1,198
		5P11 - 3	DEL785	Masuk	5,970	11,940	1,194	
			DEL786	Keluar	5,970	11,940		1,194
		5P12 - 1	DEL787	Masuk	5,991	11,982	1,198	

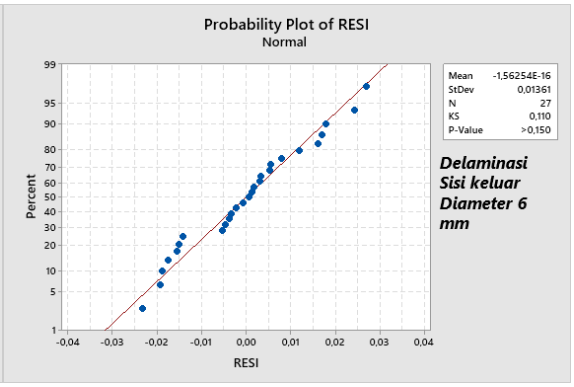
			DEL788	Keluar	6,224	12,448		1,245
		5P12 - 2	DEL789	Masuk	5,802	11,604	1,160	
			DEL790	Keluar	6,187	12,374		1,237
		Faktor delaminasi rata-rata					**1,188**	**1,211**
		Standar deviasi					0,016	0,028
	3 lapis	3P15 - 1	DEL251	Masuk	5,829	11,658	1,166	
			DEL252	Keluar	5,928	11,856		1,186
		3P15 - 2	DEL253	Masuk	5,578	11,156	1,116	
			DEL254	Keluar	5,737	11,474		1,147
		3P15 - 3	DEL255	Masuk	5,631	11,262	1,126	
			DEL256	Keluar	5,716	11,432		1,143
		3P19 - 1	DEL257	Masuk	5,761	11,522	1,152	
			DEL258	Keluar	6,393	12,786		1,279
		3P19 - 2	DEL259	Masuk	5,673	11,346	1,135	
			DEL260	Keluar	6,160	12,320		1,232
		Faktor delaminasi rata-rata					**1,139**	**1,197**
		Standar deviasi					0,0020	0,058
0,09	4 lapis	4P15 - 1	DEL521	Masuk	5,758	11,516	1,152	
			DEL522	Keluar	6,139	12,278		1,228
		4P15 - 2	DEL523	Masuk	5,779	11,558	1,156	
			DEL524	Keluar	6,245	12,490		1,249
		4P15 - 3	DEL525	Masuk	5,882	11,764	1,176	
			DEL526	Keluar	6,187	12,374		1,237
		4P16 - 1	DEL527	Masuk	5,928	11,856	1,186	
			DEL528	Keluar	6,076	12,152		1,215
		4P16 - 2	DEL529	Masuk	5,737	11,474	1,147	
			DEL530	Keluar	6,203	12,406		1,241
		Faktor delaminasi rata-rata					**1,163**	**1,234**
		Standar deviasi					0,017	0,013
	5 lapis	5P12 - 3	DEL791	Masuk	5,97	11,940	1,194	
			DEL792	Keluar	6,205	12,410		1,241
		5P13 - 1	DEL793	Masuk	5,948	11,896	1,190	
			DEL794	Keluar	6,033	12,066		1,207
		5P13 - 2	DEL795	Masuk	5,779	11,558	1,156	
			DEL796	Keluar	6,023	12,046		1,205
		5P13 - 3	DEL797	Masuk	5,973	11,946	1,195	
			DEL798	Keluar	5,991	11,982		1,198
		5P14 - 1	DEL799	Masuk	6,097	12,194	1,219	
			DEL800	Keluar	6,118	12,236		1,224
		Faktor delaminasi rata-rata					**1,191**	**1,215**
		Standar deviasi					0,023	0,017
0,15	3 lapis	3P19 - 3	DEL261	Masuk	5,721	11,442	1,144	
			DEL262	Keluar	5,898	11,796		1,180
		3P20 - 1	DEL263	Masuk	5,779	11,558	1,156	
			DEL264	Keluar	6,088	12,176		1,218
		3P20 - 2	DEL265	Masuk	5,699	11,398	1,140	
			DEL266	Keluar	6,094	12,188		1,219
		3P20 - 3	DEL267	Masuk	5,610	11,220	1,122	
			DEL268	Keluar	6,130	12,260		1,226
		3P21 - 1	DEL269	Masuk	5,812	11,624	1,162	
			DEL270	Keluar	5,987	11,974		1,197
		Faktor delaminasi rata-rata					**1,145**	**1,208**
		Standar deviasi					0,016	0,019
	4 lapis	4P13 - 2	DEL531	Masuk	5,802	11,604	1,160	
			DEL532	Keluar	6,108	12,216		1,222
		4P13 - 3	DEL533	Masuk	5,868	11,736	1,174	
			DEL534	Keluar	6,112	12,224		1,222
		4P14 - 1	DEL535	Masuk	5,843	11,686	1,169	
			DEL536	Keluar	6,055	12,110		1,211

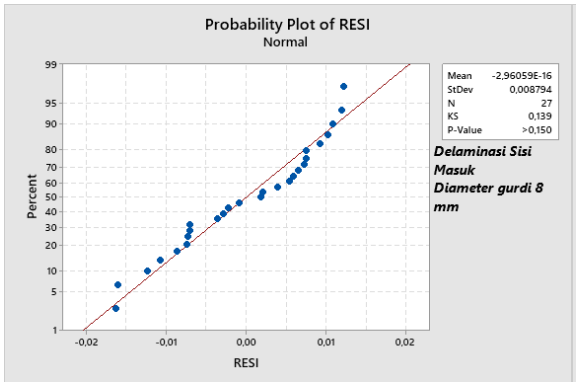
		4P14 - 2	DEL537	Masuk	5,864	11,728	1,173	
			DEL538	Keluar	6,109	12,218		1,222
		4P14 - 3	DEL539	Masuk	5,868	11,736	1,174	
			DEL540	Keluar	6,033	12,066		1,207
		Faktor delaminasi rata-rata					**1,170**	**1,217**
		Standar deviasi					0,006	0,007
	5 lapis	5P14 - 2	DEL801	Masuk	6,033	12,066	1,207	
			DEL802	Keluar	5,928	11,856		1,186
		5P14 - 3	DEL803	Masuk	5,928	11,856	1,186	
			DEL804	Keluar	6,091	12,182		1,218
		5P15 - 1	DEL805	Masuk	5,843	11,686	1,169	
			DEL806	Keluar	6,105	12,210		1,221
		5P15 - 2	DEL807	Masuk	5,949	11,898	1,190	
			DEL808	Keluar	6,120	12,240		1,224
		5P15 - 3	DEL809	Masuk	5,949	11,898	1,190	
			DEL810	Keluar	6,224	12,448		1,245
		Faktor delaminasi rata-rata					**1,188**	**1,219**
		Standar deviasi					0,014	0,021

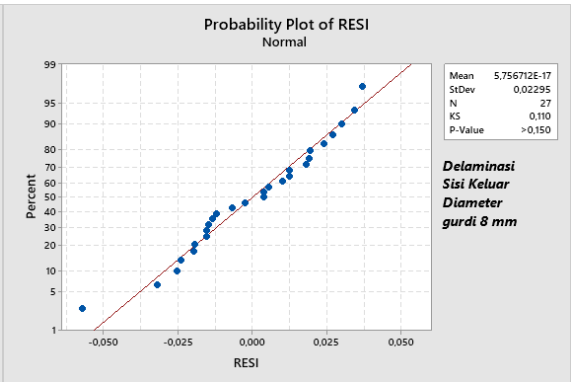
LAMPIRAN 6

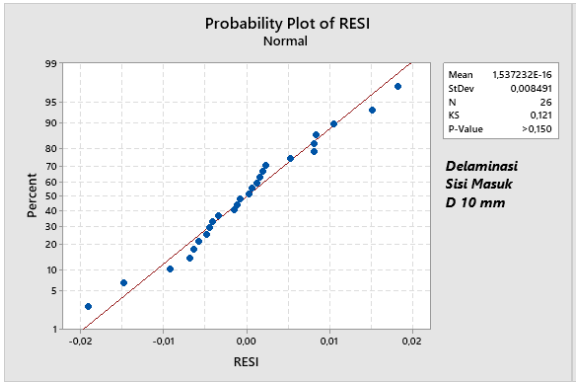
Uji Normalitas pada Tools Diameter

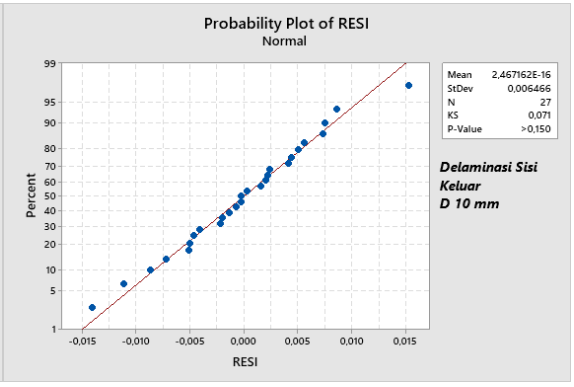












LAMPIRAN 7

Regression Analysis: FD versus Spindelspeed; Ply; Feedrate (Sisi Masuk D10 mm)

Regression Equation

FD = 1,03654 + 0,000015 Spindelspeed + 0,02344 Ply
+ 0,1310 Feedrate

Coefficients

Term	Coef	SE Coef	95% CI	T-Value	P-Value	VIF
Constant	1,03654	0,00997	(1,01591; 1,05717)	103,93	0,000	
Spindelspeed	0,000015	0,000003	(0,000009; 0,000021)	5,03	0,000	1,00
Ply	0,02344	0,00217	(0,01897; 0,02792)	10,83	0,000	1,00
Feedrate	0,1310	0,0430	(0,0420; 0,2199)	3,04	0,006	1,00

Model Summary

S	R-sq	R-sq(adj)	PRESS	R-sq(pred)	AICc	BIC
0,0091855	86,85%	85,13%	0,0026958	81,73%	-168,12	-164,49

Analysis of Variance

Source	DF	Seq SS	Contribution	Adj SS	Adj MS	F-Value	P-Value
Regression	3	0,012812	86,85%	0,012812	0,004271	50,62	0,000
Spindelspeed	1	0,002136	14,48%	0,002136	0,002136	25,32	0,000
Ply	1	0,009894	67,06%	0,009894	0,009894	117,26	0,000
Feedrate	1	0,000782	5,30%	0,000782	0,000782	9,27	0,006
Error	23	0,001941	13,15%	0,001941	0,000084		
Total	26	0,014753	100,00%				

Fits and Diagnostics for Unusual Observations

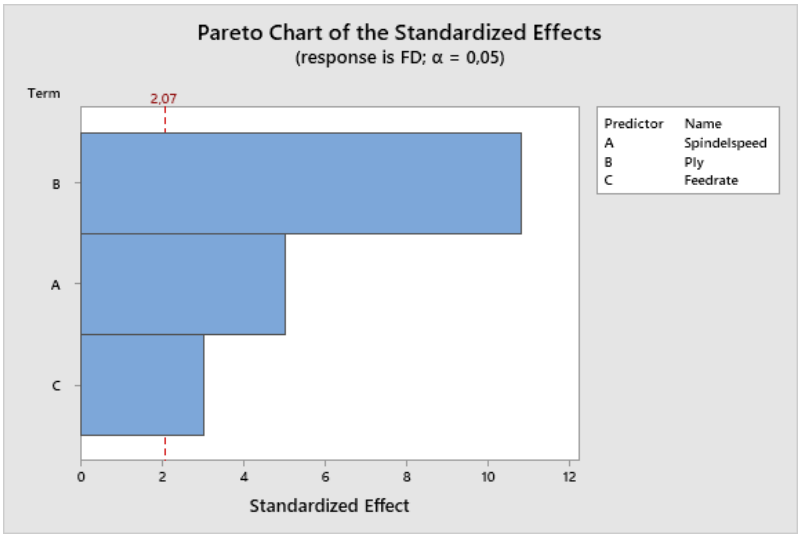
Obs	FD	Fit	SE Fit	95% CI	Resid	Std Resid	Del Resid	HI
7	1,14160	1,16162	0,00386	(1,15363; 1,16961)	-0,02002	-2,40	-2,71	0,176748
17	1,19064	1,17231	0,00289	(1,16634; 1,17829)	0,01833	2,10	2,29	0,098854

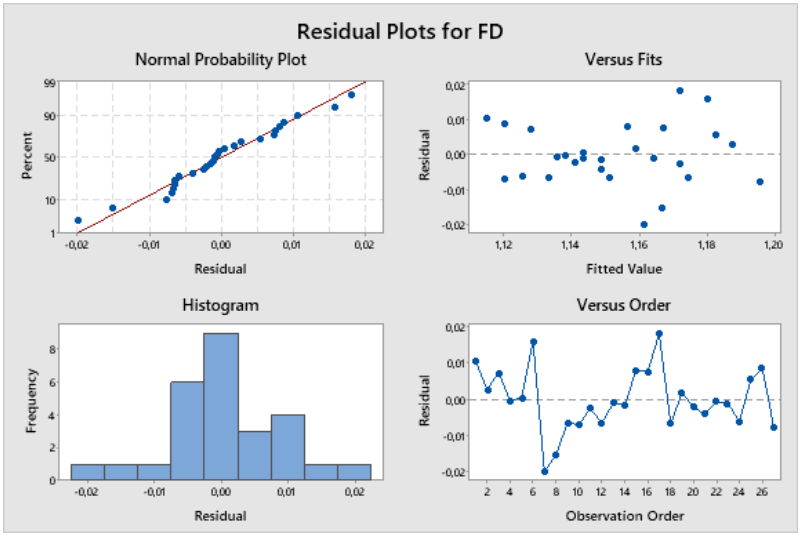
Obs	Cook's D	DFITS	
7	0,31	-1,25760	R
17	0,12	0,75737	R

R Large residual

Durbin-Watson Statistic

Durbin-Watson Statistic = 1,66254





Regression Analysis: Fd versus Spindelspeed; Ply; Feedrate (Sisi Keluar D10 mm)

Regression Equation

Fd = 1,09923 + 0,000025 Spindelspeed + 0,01353 Ply
+ 0,1661 Feedrate

Coefficients

Term	Coef	SE Coef	95% CI	T-Value	P-Value	VIF
Constant	1,09923	0,00746	(1,08379; 1,11467)	147,26	0,000	
Spindelspeed	0,000025	0,000002	(0,000021; 0,000030)	11,49	0,000	1,00
Ply	0,01353	0,00162	(0,01018; 0,01688)	8,35	0,000	1,00
Feedrate	0,1661	0,0322	(0,0995; 0,2327)	5,16	0,000	1,00

Model Summary

S	R-sq	R-sq(adj)	PRESS	R-sq(pred)	AICc	BIC

0,0068752	90,85%	89,66%	0,0014687	87,64%	-183,76	-180,14	

Analysis of Variance

Source	DF	Seq SS	Contribution	Adj SS	Adj MS	F-Value	P-Value
Regression	3	0,010793	90,85%	0,010793	0,003598	76,11	0,000
Spindelspeed	1	0,006240	52,52%	0,006240	0,006240	132,01	0,000
Ply	1	0,003296	27,74%	0,003296	0,003296	69,72	0,000
Feedrate	1	0,001258	10,59%	0,001258	0,001258	26,60	0,000
Error	23	0,001087	9,15%	0,001087	0,000047		
Total	26	0,011880	100,00%				

Fits and Diagnostics for Unusual Observations

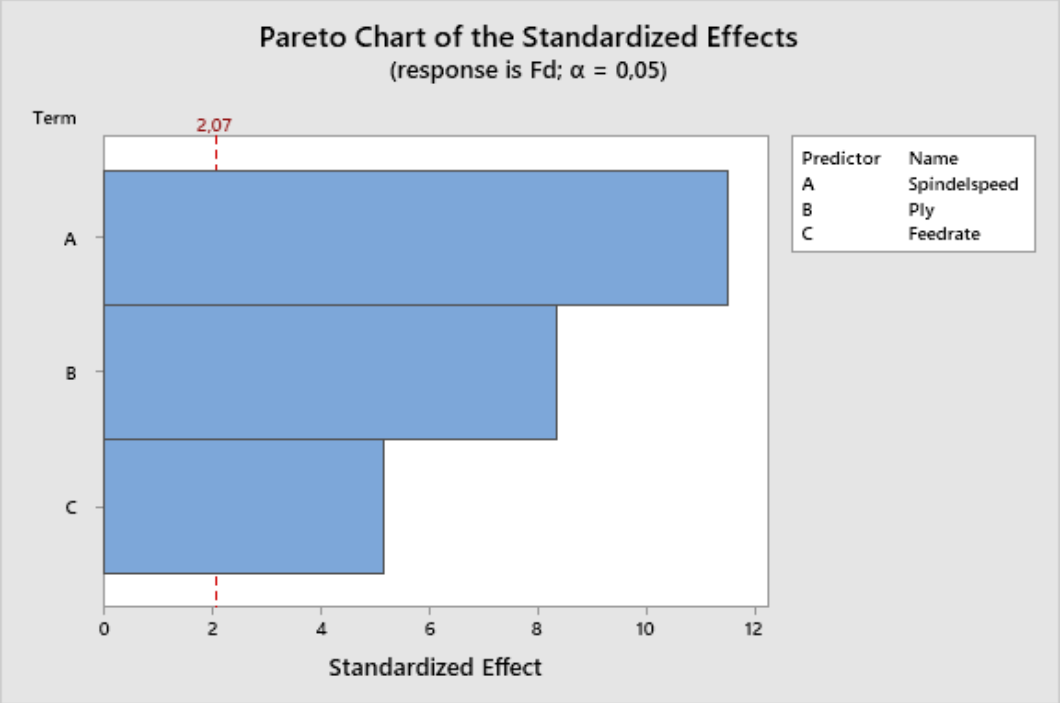
Obs	Fd	Fit	SE Fit	95% CI	Resid	Std Resid	Del Resid	HI
12	1,20876	1,19339	0,00216	(1,18892; 1,19786)	0,01537	2,35	2,64	0,098854
26	1,14560	1,15969	0,00262	(1,15426; 1,16512)	-0,01409	-2,22	-2,45	0,145637

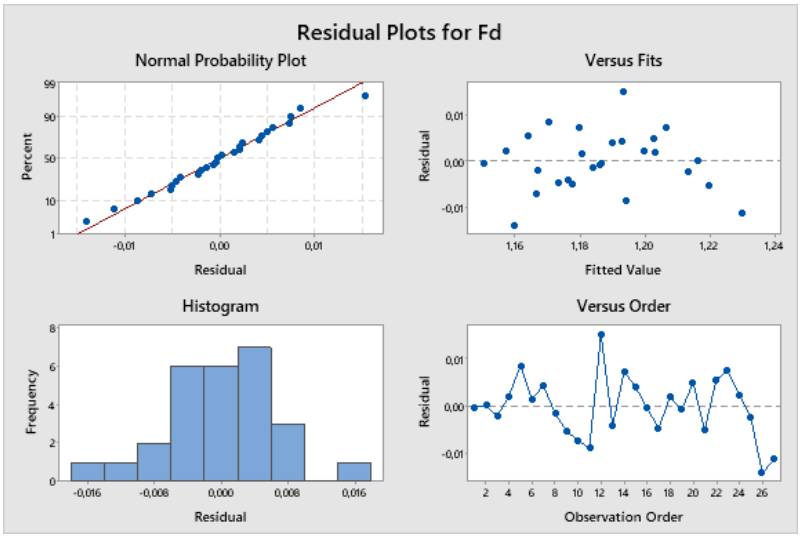
Obs	Cook's D	DFITS	
12	0,15	0,87547	R
26	0,21	-1,00954	R

R Large residual

Durbin-Watson Statistic

Durbin-Watson Statistic = 1,67061





Regression Analysis: FD versus Spindelspeed; Ply; Feedrate (Sisi Masuk D8 mm)

Regression Equation

FD = 1,0229 + 0,000027 Spindelspeed + 0,01959 Ply
+ 0,1201 Feedrate

Coefficients

Term	Coef	SE Coef	95% CI	T-Value	P-Value	VIF
Constant	1,0229	0,0102	(1,0019; 1,0439)	100,76	0,000	
Spindelspeed	0,000027	0,000003	(0,000021; 0,000033)	8,93	0,000	1,00
Ply	0,01959	0,00220	(0,01503; 0,02415)	8,89	0,000	1,00
Feedrate	0,1201	0,0438	(0,0295; 0,2106)	2,74	0,012	1,00

Model Summary

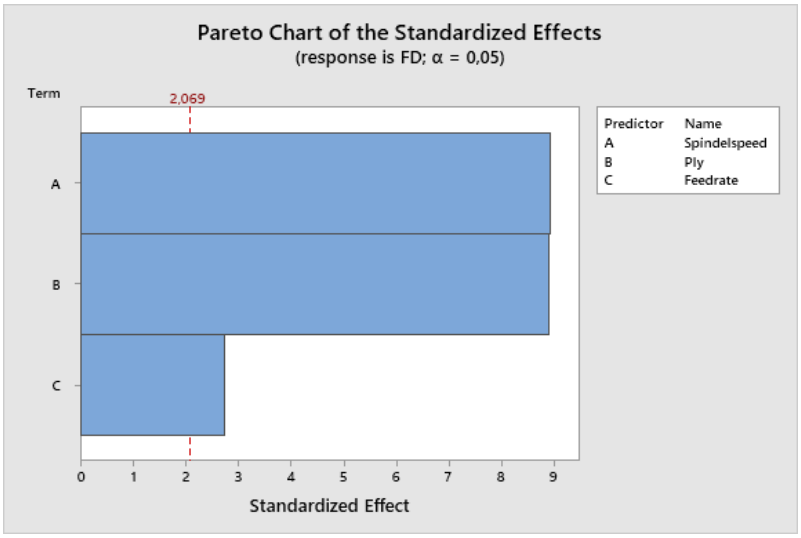
S	R-sq	R-sq(adj)	PRESS	R-sq(pred)	AICc	BIC
0,0093499	87,85%	86,26%	0,0028259	82,92%	-167,16	-163,54

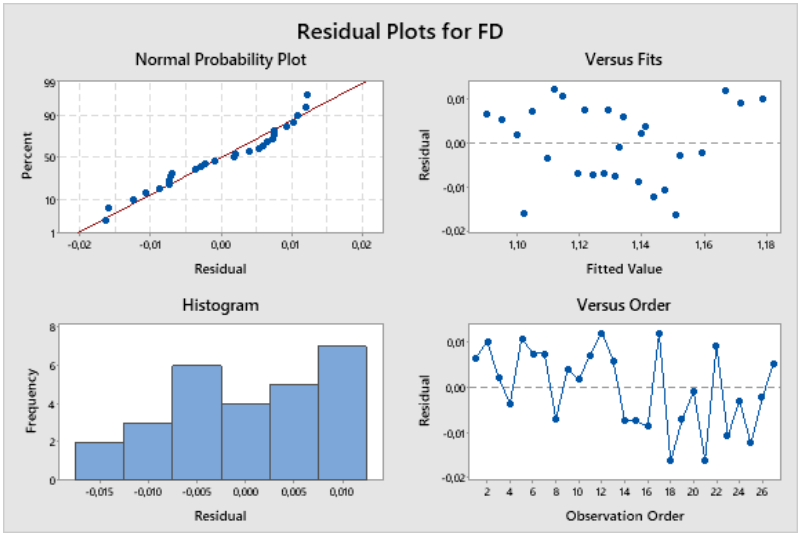
Analysis of Variance

Source	DF	Seq SS	Contribution	Adj SS	Adj MS	F-Value	P-Value
Regression	3	0,014535	87,85%	0,014535	0,004845	55,42	0,000
Spindelspeed	1	0,006969	42,12%	0,006969	0,006969	79,72	0,000
Ply	1	0,006909	41,76%	0,006909	0,006909	79,03	0,000
Feedrate	1	0,000657	3,97%	0,000657	0,000657	7,52	0,012
Error	23	0,002011	12,15%	0,002011	0,000087		
Total	26	0,016546	100,00%				

Durbin-Watson Statistic

Durbin-Watson Statistic = 1,93794





Regression Analysis: Fd versus Spindelspeed; Ply; Feedrate (Sisi Keluar D8 mm)

Regression Equation

Fd = 1,0145 + 0,000068 Spindelspeed + 0,02266 Ply
+ 0,179 Feedrate

Coefficients

Term	Coef	SE Coef	95% CI	T-Value	P-Value	VIF
Constant	1,0145	0,0265	(0,9597; 1,0693)	38,29	0,000	
Spindelspeed	0,000068	0,000008	(0,000052; 0,000085)	8,72	0,000	1,00
Ply	0,02266	0,00575	(0,01076; 0,03456)	3,94	0,001	1,00
Feedrate	0,179	0,114	(-0,058; 0,415)	1,56	0,132	1,00

Model Summary

S	R-sq	R-sq(adj)	PRESS	R-sq(pred)	AICc	BIC

0,0244037	80,34%	77,78%	0,0193412	72,24%	-115,35	-111,73	

Analysis of Variance

Source	DF	Seq SS	Contribution	Adj SS	Adj MS	F-Value	P-Value
Regression	3	0,055973	80,34%	0,055973	0,018658	31,33	0,000
Spindelspeed	1	0,045275	64,99%	0,045275	0,045275	76,02	0,000
Ply	1	0,009245	13,27%	0,009245	0,009245	15,52	0,001
Feedrate	1	0,001453	2,09%	0,001453	0,001453	2,44	0,132
Error	23	0,013697	19,66%	0,013697	0,000596		
Total	26	0,069670	100,00%				

Fits and Diagnostics for Unusual Observations

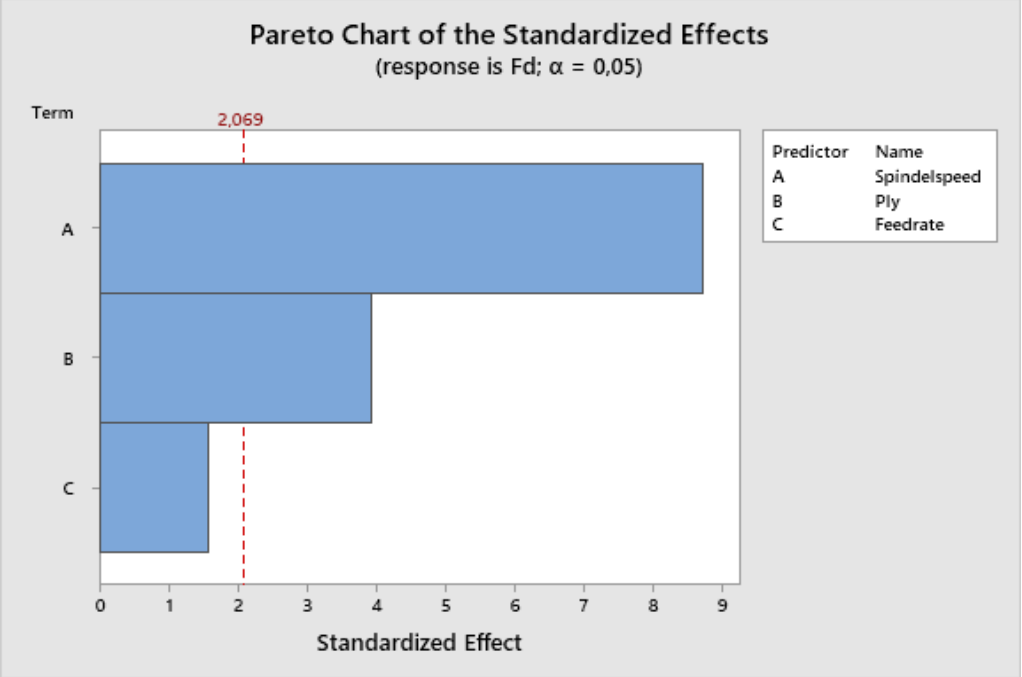
Obs	Fd	Fit	SE Fit	95% CI	Resid	Std Resid	Del Resid	HI
20	1,13680	1,19410	0,01118	(1,17098; 1,21722)	-0,05730	-2,64	-3,09	0,209778

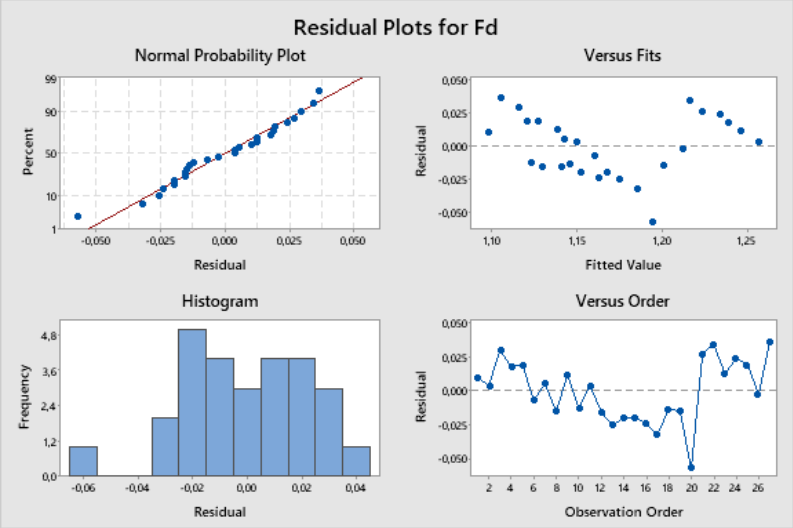
Obs	Cook's D	DFITS	
20	0,46	-1,59460	R

R Large residual

Durbin-Watson Statistic

Durbin-Watson Statistic = 1,19220





Regression Analysis : Fd versus Feedrate; Ply; Spindelspeed (Entry for D6)

Regression Equation

Fd = 0,97976 + 0,1348 Feedrate + 0,01493 Ply
+ 0,000015 Spindelspeed

Coefficients

Term	Coef	SE Coef	95% CI	T-Value	P-Value	VIF
Constant	0,97976	0,00935	(0,96042; 0,99910)	104,80	0,000	
Feedrate	0,1348	0,0403	(0,0514; 0,2182)	3,34	0,003	1,00
Ply	0,01493	0,00203	(0,01073; 0,01912)	7,35	0,000	1,00
Spindelspeed	0,000015	0,000003	(0,000010; 0,000021)	5,58	0,000	1,00

Model Summary

S	R-sq	R-sq(adj)	PRESS	R-sq(pred)	AICc	BIC
0,0086104	80,74%	78,23%	0,0023253	73,74%	-171,61	-167,99

Analysis of Variance

Source	DF	Seq SS	Contribution	Adj SS	Adj MS	F-Value	P-Value
Regression	3	0,007149	80,74%	0,007149	0,002383	32,14	0,000
Feedrate	1	0,000829	9,36%	0,000829	0,000829	11,18	0,003
Ply	1	0,004010	45,29%	0,004010	0,004010	54,09	0,000
Spindelspeed	1	0,002310	26,09%	0,002310	0,002310	31,16	0,000
Error	23	0,001705	19,26%	0,001705	0,000074		
Total	26	0,008854	100,00%				

Fits and Diagnostics for Unusual Observations

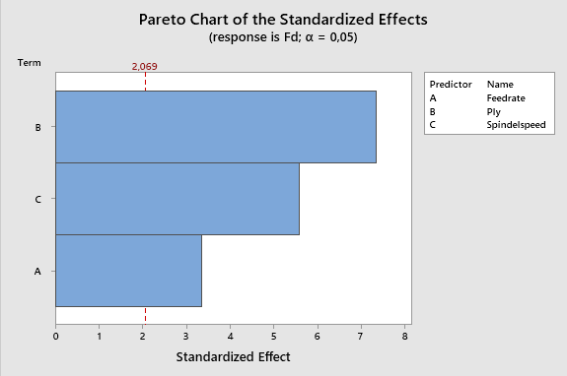
Obs	Fd	Fit	SE Fit	95% CI	Resid	Std Resid	Del Resid	HI
12	1,03480	1,05180	0,00345	(1,04467; 1,05893)	-0,01700	-2,15	-2,36	0,160257

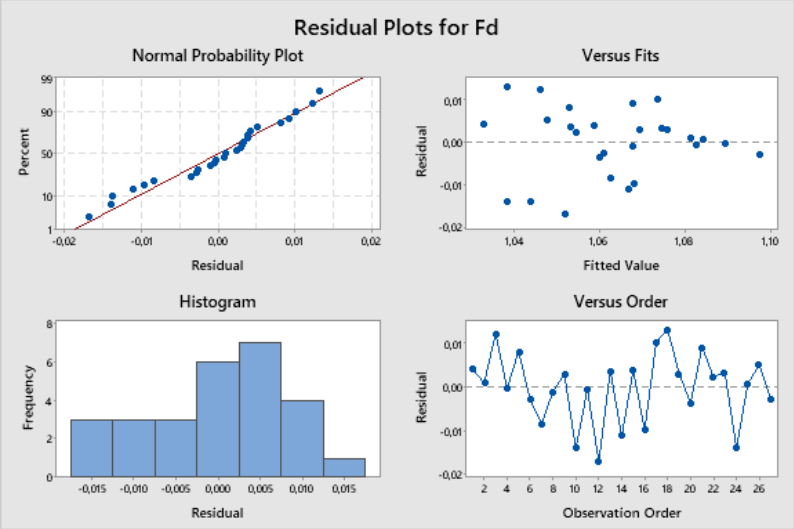
Obs	Cook's D	DFITS	
12	0,22	-1,03032	R

R Large residual

Durbin-Watson Statistic

Durbin-Watson Statistic = 2,22703





Regression Analysis: Fd versus Feedrate; Ply; Spindelspeed (Sisi Keluar D6)

Regression Equation

Fd = 0,9512 + 0,2331 Feedrate + 0,02648 Ply
+ 0,000015 Spindelspeed

Coefficients

Term	Coef	SE Coef	95% CI	T-Value	P-Value	VIF
Constant	0,9512	0,0157	(0,9187; 0,9837)	60,53	0,000	
Feedrate	0,2331	0,0678	(0,0928; 0,3733)	3,44	0,002	1,00
Ply	0,02648	0,00341	(0,01942; 0,03353)	7,76	0,000	1,00
Spindelspeed	0,000015	0,000005	(0,000005; 0,000024)	3,16	0,004	1,00

Model Summary

S	R-sq	R-sq(adj)	PRESS	R-sq(pred)	AICc	BIC
0,0144734	78,10%	75,24%	0,0064235	70,80%	-143,56	-139,94

Analysis of Variance

Source	DF	Seq SS	Contribution	Adj SS	Adj MS	F-Value	P-Value
Regression	3	0,017183	78,10%	0,017183	0,005728	27,34	0,000
Feedrate	1	0,002477	11,26%	0,002477	0,002477	11,82	0,002
Ply	1	0,012619	57,36%	0,012619	0,012619	60,24	0,000
Spindelspeed	1	0,002087	9,49%	0,002087	0,002087	9,96	0,004
Error	23	0,004818	21,90%	0,004818	0,000209		
Total	26	0,022001	100,00%				

Durbin-Watson Statistic

Durbin-Watson Statistic = 2,00959