

**APPENDIX A32**

**MODEL SUMMARY FOR REGRESSION OF PEEL FORCE ON BURST PRESSURE BY PACKAGE GROUP**

**Table A32-1. Parameter coefficients and model fit statistics for regression of peak peel force at burst location on burst pressure by package group**

Package Group	Model	Model ID	Dependent Variable	Intercept	Burst Pressure	Gap	Burst Pressure x Gap	R square	Adjusted R Square	Prediction R Square	Mallow's Cp	Akaike's AIC	RMSE	PRESS	PRESS - SSE	Adj RSq - RSq	Cp - P	Model Selected
PS1 PS2 PS4 PS7	M21	M21-1	PeakForce_at_BurstLoc	5.93	-0.05			0.05	0.02	-0.05	2	9.72	1.10	50.74	4.59	0.03	0.00	
PS1 PS2 PS4 PS7	M17	M17-1	PeakForce_at_BurstLoc	5.77			-0.07	0.02	-0.01	-0.08	2	10.92	1.12	52.43	4.87	0.03	0.00	
PS1 PS2 PS4 PS7	M21	M21-2	PeakForce_at_BurstLoc	5.26		0.62		0.01	-0.01	-0.10	2	11.20	1.12	53.54	5.65	0.03	0.00	
PS1 PS2 PS4 PS7	M21	M21-3	PeakForce_at_BurstLoc	5.79	-0.05	0.22		0.05	0.00	-0.11	3	11.66	1.12	53.97	7.90	0.05	0.00	
PS1 PS2 PS4 PS7	M21	M21-4	PeakForce_at_BurstLoc		0.21	7.46		0.88	0.88	0.88	2	56.86	1.99	158.48	8.53	0.01	0.00	TRUE
PS1 PS2 PS4 PS7	M21	M21-5	PeakForce_at_BurstLoc			9.87		0.83	0.83	0.82	1	69.62	2.36	224.35	7.45	0.00	0.00	
PS1 PS2 PS4 PS7	M17	M17-2	PeakForce_at_BurstLoc				1.18	0.61	0.60	0.59	1	102.74	3.57	525.76	29.42	0.01	0.00	TRUE
PS3 PS6	M21	M21-1	PeakForce_at_BurstLoc		0.52	2.03		0.95	0.95	0.94	2	7.08	1.09	38.58	5.34	0.00	0.00	TRUE
PS3 PS6	M21	M21-2	PeakForce_at_BurstLoc	-0.81	0.58	2.82		0.62	0.60	0.53	3	8.52	1.10	40.77	8.14	0.03	0.00	
PS3 PS6	M21	M21-3	PeakForce_at_BurstLoc	1.52	0.45			0.55	0.54	0.47	2	11.81	1.18	45.90	6.99	0.02	0.00	
PS3 PS6	M21	M21-4	PeakForce_at_BurstLoc		0.65			0.93	0.93	0.92	1	17.13	1.31	53.71	4.04	0.00	0.00	
PS3 PS6	M17	M17-1	PeakForce_at_BurstLoc	2.22			0.73	0.26	0.23	0.14	2	27.00	1.52	74.40	9.82	0.03	0.00	TRUE
PS3 PS6	M17	M17-2	PeakForce_at_BurstLoc				1.36	0.88	0.87	0.87	1	32.64	1.69	88.75	5.44	0.00	0.00	
PS3 PS6	M21	M21-5	PeakForce_at_BurstLoc	5.57		2.08		0.06	0.03	-0.06	2	33.94	1.70	92.21	10.82	0.03	0.00	

**Table A32-2. ANOVA statistics for regression of peak peel force at burst location on burst pressure by package group**

Package Group	Model	Model ID	N	Model DF	Error DF	Total DF	MSE	SSE	SSR	SST	F Value for the model	Prob > F for the Model	t Value for Intercept	Prob > t for Intercept	t Value for Burst Pressure	Prob > t for Burst Pressure	t Value for Gap	Prob > t for Gap	t Value for Burst Pressure x Gap	Prob > t for Burst Pressure x Gap
PS1 PS2 PS4 PS7	M21	M21-1	40	2	38	39	1.21	46.15	2.45	48.52	0.98	0.38	9.13	0.00	-1.21	0.24	0.24	0.81		
PS1 PS2 PS4 PS7	M17	M17-1	40	1	38	39	1.25	47.56	0.96	48.52	0.77	0.39	18.94	0.00					-0.88	0.39
PS1 PS2 PS4 PS7	M21	M21-2	40	2	38	39	1.26	47.89	2.45	48.52	0.98	0.38	9.13	0.00	-1.21	0.24	0.24	0.81		
PS1 PS2 PS4 PS7	M21	M21-3	40	2	37	39	1.25	46.07	2.45	48.52	0.98	0.38	9.13	0.00	-1.21	0.24	0.24	0.81		
PS1 PS2 PS4 PS7	M21	M21-4	40	2	38	40	3.95	149.95	1131.40	1281.35	143.36	0.00			4.12	0.00	8.91	0.00		
PS1 PS2 PS4 PS7	M21	M21-5	40	2	39	40	5.56	216.90	1131.40	1281.35	143.36	0.00			4.12	0.00	8.91	0.00		
PS1 PS2 PS4 PS7	M17	M17-2	40	1	39	40	12.73	496.34	785.01	1281.35	61.68	0.00							7.85	0.00
PS3 PS6	M21	M21-1	30	2	28	30	1.19	33.24	655.66	688.90	276.14	0.00			12.11	0.00	3.72	0.00		
PS3 PS6	M21	M21-2	30	2	27	29	1.21	32.63	54.33	86.96	22.48	0.00	-0.71	0.48	6.35	0.00	2.28	0.03		
PS3 PS6	M21	M21-3	30	2	28	29	1.39	38.92	54.33	86.96	22.48	0.00	-0.71	0.48	6.35	0.00	2.28	0.03		
PS3 PS6	M21	M21-4	30	2	29	30	1.71	49.67	655.66	688.90	276.14	0.00			12.11	0.00	3.72	0.00		
PS3 PS6	M17	M17-1	30	1	28	29	2.31	64.58	22.39	86.96	9.71	0.00	2.85	0.01					3.12	0.00
PS3 PS6	M17	M17-2	30	1	29	30	2.87	83.31	605.59	688.90	210.80	0.00							14.52	0.00
PS3 PS6	M21	M21-5	30	2	28	29	2.91	81.38	54.33	86.96	22.48	0.00	-0.71	0.48	6.35	0.00	2.28	0.03		

**Table A32-3. Parameter coefficients and model fit statistics for regression of average peel force at burst location on burst pressure by package group**

Package Group	Model	Model ID	Dependent Variable	Intercept	Burst Pressure	Gap	Burst Pressure x Gap	R square	Adjusted R Square	Prediction R Square	Mallow's Cp	Akaike's AIC	RMSE	PRESS	PRESS - SSE	Adj RSq - RSq	Cp - P	Model Selected
PS1 PS2 PS4 PS7	M22	M22-1	AvgForce_at_BurstLoc	4.84	-0.06			0.06	0.04	-0.04	2	5.00	1.04	45.21	4.20	0.02	0.00	
PS1 PS2 PS4 PS7	M18	M18-1	AvgForce_at_BurstLoc	4.72			-0.09	0.03	0.01	-0.09	2	6.13	1.05	47.45	5.26	0.03	0.00	
PS1 PS2 PS4 PS7	M22	M22-2	AvgForce_at_BurstLoc	4.15		0.63		0.02	-0.01	-0.10	2	6.86	1.06	48.18	5.21	0.03	0.00	
PS1 PS2 PS4 PS7	M22	M22-3	AvgForce_at_BurstLoc	4.72	-0.05	0.22		0.06	0.01	-0.11	3	6.93	1.05	48.37	7.42	0.05	0.00	
PS1 PS2 PS4 PS7	M22	M22-4	AvgForce_at_BurstLoc		0.16	6.11		0.87	0.86	0.86	2	44.38	1.70	117.02	7.26	0.01	0.00	TRUE
PS1 PS2 PS4 PS7	M22	M22-5	AvgForce_at_BurstLoc			7.93		0.82	0.82	0.82	1	54.39	1.95	153.97	5.75	0.00	0.00	
PS1 PS2 PS4 PS7	M18	M18-2	AvgForce_at_BurstLoc				0.93	0.59	0.58	0.57	1	87.83	2.96	362.46	20.51	0.01	0.00	TRUE
PS3 PS6	M22	M22-1	AvgForce_at_BurstLoc		0.45	1.42		0.94	0.93	0.93	2	4.41	1.04	35.23	4.81	0.00	0.00	TRUE
PS3 PS6	M22	M22-2	AvgForce_at_BurstLoc	-1.40	0.55	2.78		0.62	0.60	0.52	3	4.57	1.03	36.29	7.68	0.03	0.00	
PS3 PS6	M22	M22-3	AvgForce_at_BurstLoc	0.90	0.42			0.54	0.53	0.46	2	8.37	1.11	41.05	6.34	0.02	0.00	
PS3 PS6	M22	M22-4	AvgForce_at_BurstLoc		0.54			0.92	0.92	0.91	1	9.46	1.15	41.63	3.15	0.00	0.00	
PS3 PS6	M18	M18-1	AvgForce_at_BurstLoc	1.54			0.69	0.26	0.23	0.16	2	23.12	1.42	64.39	7.65	0.03	0.00	TRUE
PS3 PS6	M18	M18-2	AvgForce_at_BurstLoc				1.12	0.86	0.86	0.85	1	25.54	1.51	69.62	3.86	0.00	0.00	
PS3 PS6	M22	M22-5	AvgForce_at_BurstLoc	4.61		1.84		0.06	0.02	-0.07	2	30.21	1.60	81.69	9.81	0.03	0.00	

**Table A32-4. ANOVA statistics for regression of average peel force at burst location on burst pressure by package group**

Package Group	Model	Model ID	N	Model DF	Error DF	Total DF	MSE	SSE	SSR	SST	F Value for the model	Prob > F for the Model	t Value for Intercept	Prob > t for Intercept	t Value for Burst Pressure	Prob > t for Burst Pressure	t Value for Gap	Prob > t for Gap	t Value for Burst Pressure x Gap	Prob > t for Burst Pressure x Gap
PS1 PS2 PS4 PS7	M22	M22-1	40	2	38	39	1.08	41.01	2.68	43.63	1.21	0.31	7.89	0.00	-1.35	0.18	0.25	0.81		
PS1 PS2 PS4 PS7	M18	M18-1	40	1	38	39	1.11	42.19	1.43	43.63	1.29	0.26	16.43	0.00					-1.14	0.26
PS1 PS2 PS4 PS7	M22	M22-2	40	2	38	39	1.13	42.97	2.68	43.63	1.21	0.31	7.89	0.00	-1.35	0.18	0.25	0.81		
PS1 PS2 PS4 PS7	M22	M22-3	40	2	37	39	1.11	40.95	2.68	43.63	1.21	0.31	7.89	0.00	-1.35	0.18	0.25	0.81		
PS1 PS2 PS4 PS7	M22	M22-4	40	2	38	40	2.89	109.76	725.83	835.59	125.65	0.00			3.65	0.00	8.53	0.00		
PS1 PS2 PS4 PS7	M22	M22-5	40	2	39	40	3.80	148.23	725.83	835.59	125.65	0.00			3.65	0.00	8.53	0.00		
PS1 PS2 PS4 PS7	M18	M18-2	40	1	39	40	8.77	341.96	493.63	835.59	56.30	0.00							7.50	0.00
PS3 PS6	M22	M22-1	30	2	28	30	1.09	30.41	445.58	476.00	205.11	0.00			10.85	0.00	2.72	0.01		
PS3 PS6	M22	M22-2	30	2	27	29	1.06	28.61	47.63	76.24	22.48	0.00	-1.31	0.20	6.39	0.00	2.40	0.02		
PS3 PS6	M22	M22-3	30	2	28	29	1.24	34.71	47.63	76.24	22.48	0.00	-1.31	0.20	6.39	0.00	2.40	0.02		
PS3 PS6	M22	M22-4	30	2	29	30	1.33	38.47	445.58	476.00	205.11	0.00			10.85	0.00	2.72	0.01		
PS3 PS6	M18	M18-1	30	1	28	29	2.03	56.74	19.50	76.24	9.62	0.00	2.11	0.04					3.10	0.00
PS3 PS6	M18	M18-2	30	1	29	30	2.27	65.76	410.24	476.00	180.91	0.00							13.45	0.00
PS3 PS6	M22	M22-5	30	2	28	29	2.57	71.88	47.63	76.24	22.48	0.00	-1.31	0.20	6.39	0.00	2.40	0.02		

**Table A32-5. Parameter coefficients and model fit statistics for regression of lowest peak force on burst pressure by package group**

Package Group	Model	Model ID	Dependent Variable	Intercept	Burst Pressure	Gap	Burst Pressure x Gap	R square	Adjusted R Square	Prediction R Square	Mallow's Cp	Akaike's AIC	RMSE	PRESS	PRESS - SSE	Adj RSq - RSq	Cp - P	Model Selected
PS1 PS2 PS4 PS7	M23	M23-1	LowPeakForce	4.34		0.48		0.01	-0.02	-0.09	2	-0.74	0.97	39.32	3.79	0.03	0.00	
PS1 PS2 PS4 PS7	M23	M23-2	LowPeakForce	4.67	-0.01			0.00	-0.02	-0.08	2	-0.51	0.97	38.69	2.95	0.03	0.00	
PS1 PS2 PS4 PS7	M19	M19-1	LowPeakForce	4.52			0.02	0.00	-0.02	-0.08	2	-0.39	0.97	38.70	2.86	0.03	0.00	
PS1 PS2 PS4 PS7	M23	M23-3	LowPeakForce	4.43	-0.01	0.41		0.01	-0.04	-0.13	3	1.21	0.98	40.48	4.99	0.05	0.00	
PS1 PS2 PS4 PS7	M23	M23-4	LowPeakForce		0.19	5.95		0.89	0.88	0.88	2	39.11	1.59	101.34	5.11	0.01	0.00	TRUE
PS1 PS2 PS4 PS7	M23	M23-5	LowPeakForce			8.12		0.83	0.82	0.82	1	55.15	1.97	156.38	5.33	0.00	0.00	
PS1 PS2 PS4 PS7	M19	M19-2	LowPeakForce				1.00	0.64	0.63	0.62	1	84.04	2.82	331.22	20.17	0.01	0.00	TRUE
PS3 PS6	M23	M23-1	LowPeakForce	-1.56	0.57	3.63		0.62	0.60	0.52	3	5.56	1.05	37.70	8.14	0.03	0.00	TRUE
PS3 PS6	M23	M23-2	LowPeakForce		0.46	2.12		0.95	0.94	0.94	2	5.76	1.07	36.88	5.07	0.00	0.00	
PS3 PS6	M23	M23-3	LowPeakForce	1.44	0.40			0.49	0.47	0.40	2	12.62	1.20	46.85	6.86	0.02	0.00	
PS3 PS6	M23	M23-4	LowPeakForce		0.59			0.91	0.91	0.91	1	17.13	1.31	53.59	3.91	0.00	0.00	
PS3 PS6	M19	M19-1	LowPeakForce	1.69			0.78	0.32	0.30	0.22	2	21.24	1.38	61.14	7.85	0.02	0.00	TRUE
PS3 PS6	M19	M19-2	LowPeakForce				1.26	0.89	0.89	0.88	1	24.81	1.49	68.36	4.19	0.00	0.00	
PS3 PS6	M23	M23-5	LowPeakForce	4.72		1.19		0.02	-0.01	-0.12	2	32.21	1.66	87.93	11.12	0.03	0.00	

**Table A32-6. ANOVA statistics for regression of lowest peak force on burst pressure by package group**

Package Group	Model	Model ID	N	Model DF	Error DF	Total DF	MSE	SSE	SSR	SST	F Value for the model	Prob > F for the Model	t Value for Intercept	Prob > t for Intercept	t Value for Burst Pressure	Prob > t for Burst Pressure	t Value for Gap	Prob > t for Gap	t Value for Burst Pressure x Gap	Prob > t for Burst Pressure x Gap
PS1 PS2 PS4 PS7	M23	M23-1	40	2	38	39	0.93	35.53	0.42	35.91	0.22	0.80	7.96	0.00	-0.22	0.83	0.51	0.61		
PS1 PS2 PS4 PS7	M23	M23-2	40	2	38	39	0.94	35.73	0.42	35.91	0.22	0.80	7.96	0.00	-0.22	0.83	0.51	0.61		
PS1 PS2 PS4 PS7	M19	M19-1	40	1	38	39	0.94	35.84	0.06	35.91	0.07	0.80	17.08	0.00					0.26	0.80
PS1 PS2 PS4 PS7	M23	M23-3	40	2	37	39	0.96	35.48	0.42	35.91	0.22	0.80	7.96	0.00	-0.22	0.83	0.51	0.61		
PS1 PS2 PS4 PS7	M23	M23-4	40	2	38	40	2.53	96.22	776.27	872.49	153.28	0.00			4.65	0.00	8.87	0.00		
PS1 PS2 PS4 PS7	M23	M23-5	40	2	39	40	3.87	151.05	776.27	872.49	153.28	0.00			4.65	0.00	8.87	0.00		
PS1 PS2 PS4 PS7	M19	M19-2	40	1	39	40	7.98	311.05	561.44	872.49	70.39	0.00							8.39	0.00
PS3 PS6	M23	M23-1	30	2	27	29	1.09	29.56	49.08	78.64	22.41	0.00	-1.43	0.16	6.57	0.00	3.09	0.00		
PS3 PS6	M23	M23-2	30	2	28	30	1.14	31.82	550.47	582.29	242.23	0.00			10.92	0.00	3.97	0.00		
PS3 PS6	M23	M23-3	30	2	28	29	1.43	39.99	49.08	78.64	22.41	0.00	-1.43	0.16	6.57	0.00	3.09	0.00		
PS3 PS6	M23	M23-4	30	2	29	30	1.71	49.68	550.47	582.29	242.23	0.00			10.92	0.00	3.97	0.00		
PS3 PS6	M19	M19-1	30	1	28	29	1.90	53.29	25.35	78.64	13.32	0.00	2.39	0.02					3.65	0.00
PS3 PS6	M19	M19-2	30	1	29	30	2.21	64.17	518.11	582.29	234.13	0.00							15.30	0.00
PS3 PS6	M23	M23-5	30	2	28	29	2.74	76.81	49.08	78.64	22.41	0.00	-1.43	0.16	6.57	0.00	3.09	0.00		

**Table A32-7. Parameter coefficients and model fit statistics for regression of lowest average force on burst pressure by package group**

Package Group	Model	Model ID	Dependent Variable	Intercept	Burst Pressure	Gap	Burst Pressure x Gap	R square	Adjusted R Square	Prediction R Square	Mallow's Cp	Akaike's AIC	RMSE	PRESS	PRESS - SSE	Adj RSq - RSq	Cp - P	Model Selected
PS1 PS2 PS4 PS7	M20	M20-1	LowAvgForce	3.12			0.06	0.03	0.00	-0.04	2	-14.18	0.82	27.22	1.84	0.03	0.00	
PS1 PS2 PS4 PS7	M24	M24-1	LowAvgForce	3.15	0.02			0.02	-0.01	-0.06	2	-13.77	0.82	27.76	2.11	0.03	0.00	
PS1 PS2 PS4 PS7	M24	M24-2	LowAvgForce	3.31		0.01		0.00	-0.03	-0.11	2	-13.07	0.83	28.97	2.86	0.03	0.00	
PS1 PS2 PS4 PS7	M24	M24-3	LowAvgForce	3.02	0.03	0.22		0.02	-0.03	-0.11	3	-11.88	0.83	29.03	3.45	0.05	0.00	
PS1 PS2 PS4 PS7	M24	M24-4	LowAvgForce		0.16	3.99		0.88	0.88	0.88	2	15.80	1.19	57.18	3.45	0.01	0.00	TRUE
PS1 PS2 PS4 PS7	M24	M24-5	LowAvgForce			5.83		0.80	0.79	0.79	1	35.75	1.54	96.80	3.79	0.01	0.00	
PS1 PS2 PS4 PS7	M20	M20-2	LowAvgForce				0.74	0.66	0.65	0.64	1	56.68	2.01	168.13	11.18	0.01	0.00	TRUE
PS3 PS6	M24	M24-1	LowAvgForce	-2.06	0.55	3.45		0.67	0.65	0.59	3	-3.17	0.90	28.00	5.89	0.02	0.00	TRUE
PS3 PS6	M24	M24-2	LowAvgForce		0.41	1.45		0.94	0.93	0.93	2	-0.26	0.96	29.82	3.79	0.00	0.00	
PS3 PS6	M24	M24-3	LowAvgForce	0.79	0.39			0.54	0.52	0.46	2	5.45	1.06	36.47	4.98	0.02	0.00	
PS3 PS6	M24	M24-4	LowAvgForce		0.49			0.92	0.91	0.91	1	6.10	1.09	36.86	2.47	0.00	0.00	
PS3 PS6	M20	M20-1	LowAvgForce	1.11			0.73	0.33	0.30	0.24	2	16.57	1.28	51.56	5.94	0.02	0.00	TRUE
PS3 PS6	M20	M20-2	LowAvgForce				1.05	0.88	0.87	0.87	1	17.50	1.32	53.42	3.12	0.00	0.00	
PS3 PS6	M24	M24-5	LowAvgForce	4.00		1.20		0.03	-0.01	-0.11	2	27.67	1.54	75.58	9.55	0.03	0.00	



**Table A32- 8. ANOVA statistics for regression of lowest average force on burst pressure by package group**

Package Group	Model	Model ID	N	Model DF	Error DF	Total DF	MSE	SSE	SSR	SST	F Value for the model	Prob > F for the Model	t Value for Intercept	Prob > t for Intercept	t Value for Burst Pressure	Prob > t for Burst Pressure	t Value for Gap	Prob > t for Gap	t Value for Burst Pressure x Gap	Prob > t for Burst Pressure x Gap
PS1 PS2 PS4 PS7	M20	M20-1	40	1	38	39	0.67	25.39	0.72	26.11	1.08	0.31	14.03	0.00					1.04	0.31
PS1 PS2 PS4 PS7	M24	M24-1	40	2	38	39	0.68	25.65	0.53	26.11	0.38	0.68	6.38	0.00	0.87	0.39	0.32	0.75		
PS1 PS2 PS4 PS7	M24	M24-2	40	2	38	39	0.69	26.11	0.53	26.11	0.38	0.68	6.38	0.00	0.87	0.39	0.32	0.75		
PS1 PS2 PS4 PS7	M24	M24-3	40	2	37	39	0.69	25.58	0.53	26.11	0.38	0.68	6.38	0.00	0.87	0.39	0.32	0.75		
PS1 PS2 PS4 PS7	M24	M24-4	40	2	38	40	1.41	53.73	411.12	464.84	145.38	0.00			5.27	0.00	7.96	0.00		
PS1 PS2 PS4 PS7	M24	M24-5	40	2	39	40	2.38	93.01	411.12	464.84	145.38	0.00			5.27	0.00	7.96	0.00		
PS1 PS2 PS4 PS7	M20	M20-2	40	1	39	40	4.02	156.95	307.90	464.84	76.51	0.00							8.75	0.00
PS3 PS6	M24	M24-1	30	2	27	29	0.82	22.10	45.80	67.90	27.97	0.00	-2.19	0.04	7.33	0.00	3.39	0.00		
PS3 PS6	M24	M24-2	30	2	28	30	0.93	26.03	381.73	407.76	205.34	0.00			10.62	0.00	3.00	0.01		
PS3 PS6	M24	M24-3	30	2	28	29	1.12	31.49	45.80	67.90	27.97	0.00	-2.19	0.04	7.33	0.00	3.39	0.00		
PS3 PS6	M24	M24-4	30	2	29	30	1.19	34.39	381.73	407.76	205.34	0.00			10.62	0.00	3.00	0.01		
PS3 PS6	M20	M20-1	30	1	28	29	1.63	45.62	22.29	67.90	13.68	0.00	1.69	0.10					3.70	0.00
PS3 PS6	M20	M20-2	30	1	29	30	1.73	50.30	357.46	407.76	206.11	0.00							14.36	0.00
PS3 PS6	M24	M24-5	30	2	28	29	2.36	66.03	45.80	67.90	27.97	0.00	-2.19	0.04	7.33	0.00	3.39	0.00		