

APPENDIX A13

MODEL SUMMARY FOR REGRESSION OF PEEL FORCE ON SEALING PARAMETERS BY PACKAGE GROUP

Table A13-1. Parameter coefficients and model fit statistics for regression of peak peel force on sealing parameters by package group

Package Group	Model	Model ID	Dependent Variable	Intercept	Seal Temp	Seal Pressure	Dwell Time	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	PM5	PM5-1	PeakForce	-8.84	0.05	0.01	0.34	0.35	0.34	0.34	4	-117.88	0.85	270.92	5.71	0.01	0.00	TRUE
PS1 PS2 PS4 PS7	PM5	PM5-2	PeakForce	-7.73	0.05	.	0.34	0.34	0.34	0.33	3	-115.48	0.85	272.71	4.35	0.00	0.00	
PS1 PS2 PS4 PS7	PM5	PM5-3	PeakForce	.	0.02	.	0.30	0.98	0.97	0.97	2	-74.57	0.90	304.20	3.03	0.00	0.00	
PS1 PS2 PS4 PS7	PM5	PM5-4	PeakForce	.	0.02	-0.01	0.30	0.98	0.97	0.97	3	-73.34	0.90	305.10	4.55	0.00	0.00	
PS1 PS2 PS4 PS7	PM5	PM5-5	PeakForce	-6.69	0.04	0.01	.	0.18	0.18	0.17	3	-34.68	0.95	339.30	5.84	0.00	0.00	
PS3 PS6	PM5	PM5-1	PeakForce	-11.37	0.05	0.02	0.49	0.62	0.61	0.61	4	-52.08	0.90	206.93	5.46	0.00	0.00	TRUE
PS3 PS6	PM5	PM5-2	PeakForce	-9.64	0.05	.	0.49	0.61	0.60	0.60	3	-46.36	0.91	212.28	4.62	0.00	0.00	
PS3 PS6	PM5	PM5-3	PeakForce	.	0.02	-0.03	0.40	0.95	0.95	0.95	3	51.18	1.10	310.00	5.57	0.00	0.00	
PS3 PS6	PM5	PM5-4	PeakForce	-9.16	0.05	0.02	.	0.41	0.41	0.40	3	56.93	1.11	318.47	7.09	0.00	0.00	
PS3 PS6	PM5	PM5-5	PeakForce	-7.43	0.05	.	.	0.40	0.40	0.39	2	59.95	1.12	322.81	5.25	0.00	0.00	

Table A13-2. ANOVA statistics for regression of peak peel force on sealing parameters 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 Seal Temp	Prob>t for Seal Temp	t Value for Seal Pressure	Prob>t for Seal Pressure	t Value for Dwell Time	Prob>t for Dwell Time
PS1 PS2 PS4 PS7	PM5	PM5-1	372	3	368	371	0.72	265.21	142.77	407.98	66.03	0.00	-7.00	0.00	10.43	0.00	2.09	0.04	9.73	0.00
PS1 PS2 PS4 PS7	PM5	PM5-2	372	3	369	371	0.73	268.36	142.77	407.98	66.03	0.00	-7.00	0.00	10.43	0.00	2.09	0.04	9.73	0.00
PS1 PS2 PS4 PS7	PM5	PM5-3	372	3	370	372	0.81	301.17	11775.0	12075.58	4818.92	0.00	.	.	8.86	0.00	-0.87	0.38	8.13	0.00
PS1 PS2 PS4 PS7	PM5	PM5-4	372	3	369	372	0.81	300.55	11775.0	12075.58	4818.92	0.00	.	.	8.86	0.00	-0.87	0.38	8.13	0.00
PS1 PS2 PS4 PS7	PM5	PM5-5	372	3	369	371	0.90	333.46	142.77	407.98	66.03	0.00	-7.00	0.00	10.43	0.00	2.09	0.04	9.73	0.00
PS3 PS6	PM5	PM5-1	255	3	251	254	0.80	201.47	326.98	528.46	135.79	0.00	-11.33	0.00	16.14	0.00	2.78	0.01	11.70	0.00
PS3 PS6	PM5	PM5-2	255	3	252	254	0.82	207.66	326.98	528.46	135.79	0.00	-11.33	0.00	16.14	0.00	2.78	0.01	11.70	0.00
PS3 PS6	PM5	PM5-3	255	3	252	255	1.21	304.43	6438.55	6742.98	1776.56	0.00	.	.	9.44	0.00	-4.40	0.00	7.94	0.00
PS3 PS6	PM5	PM5-4	255	3	252	254	1.24	311.38	326.98	528.46	135.79	0.00	-11.33	0.00	16.14	0.00	2.78	0.01	11.70	0.00
PS3 PS6	PM5	PM5-5	255	3	253	254	1.26	317.57	326.98	528.46	135.79	0.00	-11.33	0.00	16.14	0.00	2.78	0.01	11.70	0.00

Table A13-3. Parameter coefficients and model fit statistics for regression of average peel force on sealing parameters by package group

Package Group	Model	Model ID	Dependent Variable	Intercept	Seal Temp	Seal Pressure	Dwell Time	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	PM6	PM6-1	AvgForce	-8.42	0.04	0.01	0.33	0.33	0.32	0.31	4	-146.04	0.82	251.11	5.25	0.01	0.00	TRUE
PS1 PS2 PS4 PS7	PM6	PM6-2	AvgForce	-7.37	0.04	.	0.33	0.32	0.32	0.31	3	-143.79	0.82	252.73	4.04	0.00	0.00	
PS1 PS2 PS4 PS7	PM6	PM6-3	AvgForce	.	0.01	.	0.28	0.97	0.97	0.97	2	-103.62	0.87	281.42	2.87	0.00	0.00	
PS1 PS2 PS4 PS7	PM6	PM6-4	AvgForce	.	0.01	-0.01	0.29	0.97	0.97	0.97	3	-102.40	0.87	282.16	4.19	0.00	0.00	
PS1 PS2 PS4 PS7	PM6	PM6-5	AvgForce	-6.38	0.04	0.01	.	0.16	0.16	0.15	3	-65.01	0.91	312.65	5.30	0.00	0.00	
PS3 PS6	PM6	PM6-1	AvgForce	-11.60	0.04	0.02	0.53	0.67	0.67	0.66	4	-109.89	0.80	164.86	4.26	0.00	0.00	TRUE
PS3 PS6	PM6	PM6-2	AvgForce	-10.15	0.04	.	0.53	0.66	0.66	0.65	3	-105.01	0.81	168.50	3.51	0.00	0.00	
PS3 PS6	PM6	PM6-3	AvgForce	.	0.02	-0.04	0.44	0.94	0.94	0.94	3	18.49	1.03	272.63	4.83	0.00	0.00	
PS3 PS6	PM6	PM6-4	AvgForce	-9.21	0.05	0.02	.	0.41	0.40	0.39	3	37.77	1.07	295.51	6.67	0.00	0.00	
PS3 PS6	PM6	PM6-5	AvgForce	-7.76	0.05	.	.	0.40	0.40	0.39	2	39.62	1.08	297.96	4.73	0.00	0.00	

Table A13-4. ANOVA statistics for regression of average peel force on sealing parameters 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 Seal Temp	Prob>t for Seal Temp	t Value for Seal Pressure	Prob>t for Seal Pressure	t Value for Dwell Time	Prob>t for Dwell Time
PS1 PS2 PS4 PS7	PM6	PM6-1	372	3	368	371	0.67	245.87	120.16	366.03	59.95	0.00	-6.93	0.00	9.62	0.00	2.06	0.04	9.59	0.00
PS1 PS2 PS4 PS7	PM6	PM6-2	372	3	369	371	0.67	248.70	120.16	366.03	59.95	0.00	-6.93	0.00	9.62	0.00	2.06	0.04	9.59	0.00
PS1 PS2 PS4 PS7	PM6	PM6-3	372	3	370	372	0.75	278.55	7817.39	8095.36	3459.20	0.00	.	.	7.27	0.00	-0.88	0.38	8.01	0.00
PS1 PS2 PS4 PS7	PM6	PM6-4	372	3	369	372	0.75	277.97	7817.39	8095.36	3459.20	0.00	.	.	7.27	0.00	-0.88	0.38	8.01	0.00
PS1 PS2 PS4 PS7	PM6	PM6-5	372	3	369	371	0.83	307.35	120.16	366.03	59.95	0.00	-6.93	0.00	9.62	0.00	2.06	0.04	9.59	0.00
PS3 PS6	PM6	PM6-1	255	3	251	254	0.64	160.60	326.89	487.50	170.30	0.00	-12.94	0.00	17.34	0.00	2.62	0.01	14.16	0.00
PS3 PS6	PM6	PM6-2	255	3	252	254	0.65	165.00	326.89	487.50	170.30	0.00	-12.94	0.00	17.34	0.00	2.62	0.01	14.16	0.00
PS3 PS6	PM6	PM6-3	255	3	252	255	1.06	267.80	4532.44	4800.25	1421.67	0.00	.	.	8.96	0.00	-5.33	0.00	9.26	0.00
PS3 PS6	PM6	PM6-4	255	3	252	254	1.15	288.84	326.89	487.50	170.30	0.00	-12.94	0.00	17.34	0.00	2.62	0.01	14.16	0.00
PS3 PS6	PM6	PM6-5	255	3	253	254	1.16	293.23	326.89	487.50	170.30	0.00	-12.94	0.00	17.34	0.00	2.62	0.01	14.16	0.00