The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
site	9	1 2 3 4 5 6 7 8 9
type	4	1 2 3 4

Number of Observations Read	36
Number of Observations Used	36

The GLM Procedure

Dependent Variable: wear

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	11	4414.333333	401.303030	30.90	<.0001
Error	24	311.666667	12.986111		
Corrected Total	35	4726.000000			

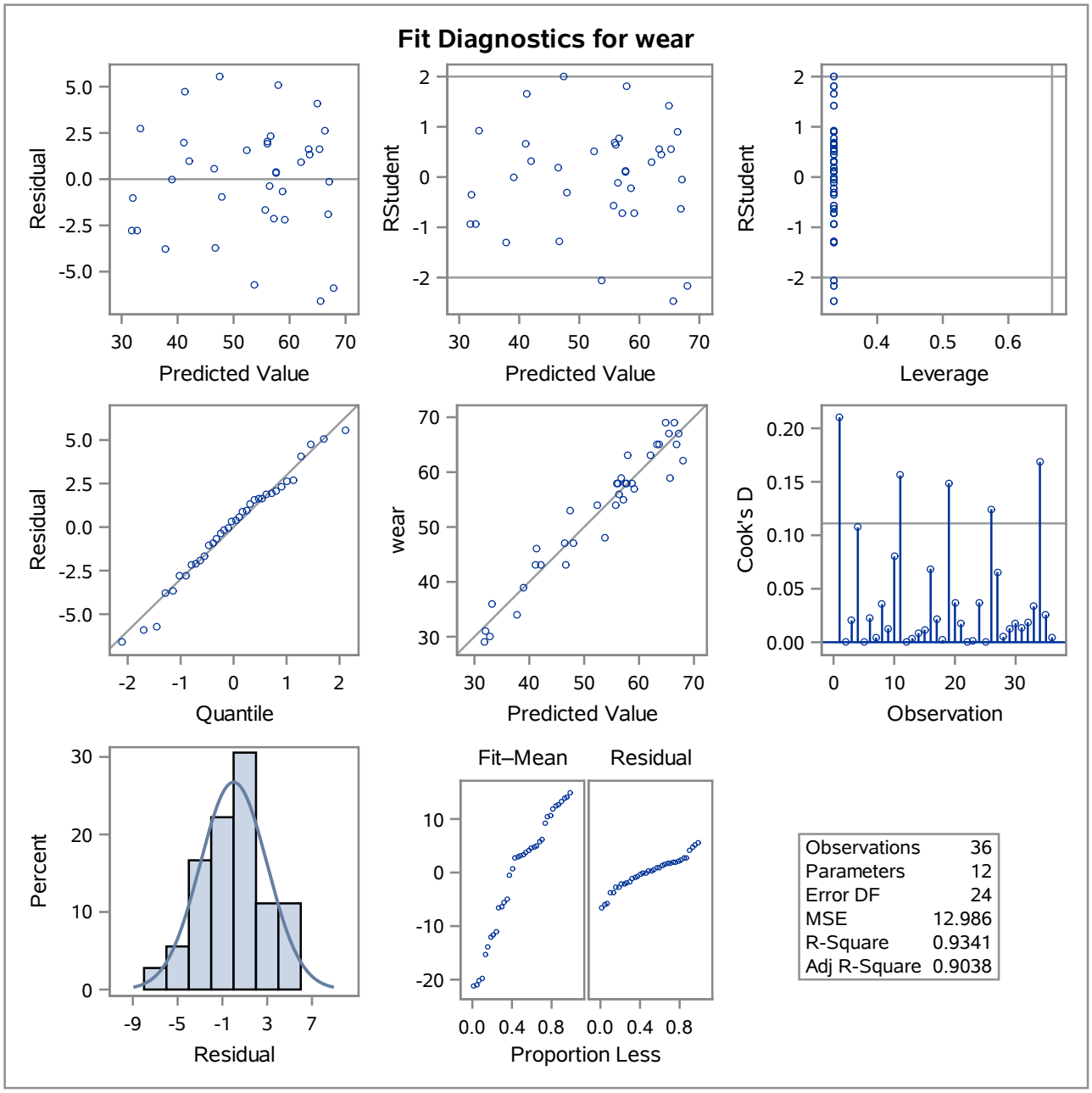
R-Square	Coeff Var	Root MSE	wear Mean
0.934053	6.799292	3.603625	53.00000

Source	DF	Type I SS	Mean Square	F Value	Pr > F
type	3	3823.333333	1274.444444	98.14	<.0001
site	8	591.000000	73.875000	5.69	0.0004

Source	DF	Type III SS	Mean Square	F Value	Pr > F
type	3	3823.333333	1274.444444	98.14	<.0001
site	8	591.000000	73.875000	5.69	0.0004

The GLM Procedure

Dependent Variable: wear



The GLM Procedure

t Tests (LSD) for wear

Note: This test controls the Type I comparisonwise error rate, not the experimentwise error rate.

Alpha	0.05
Error Degrees of Freedom	24
Error Mean Square	12.98611
Critical Value of t	2.06390
Least Significant Difference	3.5061

Comparisons significant at the 0.05 level are indicated by *.**				
type Comparison	**Difference Between Means**	**95% Confidence Limits**		
2 - 1	1.556	-1.951	5.062	
2 - 3	11.222	7.716	14.728	***
2 - 4	25.889	22.383	29.395	***
1 - 2	-1.556	-5.062	1.951	
1 - 3	9.667	6.161	13.173	***
1 - 4	24.333	20.827	27.839	***
3 - 2	-11.222	-14.728	-7.716	***
3 - 1	-9.667	-13.173	-6.161	***
3 - 4	14.667	11.161	18.173	***
4 - 2	-25.889	-29.395	-22.383	***
4 - 1	-24.333	-27.839	-20.827	***
4 - 3	-14.667	-18.173	-11.161	***

The GLM Procedure

Tukey's Studentized Range (HSD) Test for wear

Note: This test controls the Type I experimentwise error rate.

Alpha	0.05
Error Degrees of Freedom	24
Error Mean Square	12.98611
Critical Value of Studentized Range	3.90126
Minimum Significant Difference	4.6862

Comparisons significant at the 0.05 level are indicated by *.**

type Comparison	Difference Between Means	Simultaneous 95% Confidence Limits		
2 - 1	1.556	-3.131	6.242	
2 - 3	11.222	6.536	15.908	***
2 - 4	25.889	21.203	30.575	***
1 - 2	-1.556	-6.242	3.131	
1 - 3	9.667	4.980	14.353	***
1 - 4	24.333	19.647	29.020	***
3 - 2	-11.222	-15.908	-6.536	***
3 - 1	-9.667	-14.353	-4.980	***
3 - 4	14.667	9.980	19.353	***
4 - 2	-25.889	-30.575	-21.203	***
4 - 1	-24.333	-29.020	-19.647	***
4 - 3	-14.667	-19.353	-9.980	***

The GLM Procedure

Bonferroni (Dunn) t Tests for wear

Note: This test controls the Type I experimentwise error rate, but it generally has a higher Type II error rate than Tukey's for all pairwise comparisons.

Alpha	0.05
Error Degrees of Freedom	24
Error Mean Square	12.98611
Critical Value of t	2.87509
Minimum Significant Difference	4.8841

Comparisons significant at the 0.05 level are indicated by *.**

type Comparison	Difference Between Means	Simultaneous 95% Confidence Limits		
2 - 1	1.556	-3.329	6.440	
2 - 3	11.222	6.338	16.106	***
2 - 4	25.889	21.005	30.773	***
1 - 2	-1.556	-6.440	3.329	
1 - 3	9.667	4.783	14.551	***
1 - 4	24.333	19.449	29.217	***
3 - 2	-11.222	-16.106	-6.338	***
3 - 1	-9.667	-14.551	-4.783	***
3 - 4	14.667	9.783	19.551	***
4 - 2	-25.889	-30.773	-21.005	***
4 - 1	-24.333	-29.217	-19.449	***
4 - 3	-14.667	-19.551	-9.783	***

Parameter Estimates Using proc transreg

The REG Procedure
Model: MODEL1
Dependent Variable: wear

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	53.00000	0.60060	88.24	<.0001
type1	type 1	1	8.11111	1.04028	7.80	<.0001
type2	type 2	1	9.66667	1.04028	9.29	<.0001
type3	type 3	1	-1.55556	1.04028	-1.50	0.1479
site1	site 1	1	4.50000	1.69876	2.65	0.0141
site2	site 2	1	-3.50000	1.69876	-2.06	0.0504
site3	site 3	1	2.25000	1.69876	1.32	0.1978
site4	site 4	1	1.00000	1.69876	0.59	0.5616
site5	site 5	1	-4.00000	1.69876	-2.35	0.0271
site6	site 6	1	-5.00000	1.69876	-2.94	0.0071
site7	site 7	1	-4.75000	1.69876	-2.80	0.0100
site8	site 8	1	4.25000	1.69876	2.50	0.0196

Parameter Estimates Using proc glm

The GLM Procedure

Dependent Variable: wear

Parameter	Estimate	Standard Error	t Value	Pr > |t|
mu	53.0000000	0.60060412	88.24	<.0001
type 1	8.1111111	1.04027685	7.80	<.0001
type 2	9.6666667	1.04027685	9.29	<.0001
type 3	-1.5555556	1.04027685	-1.50	0.1479
type 4	-16.2222222	1.04027685	-15.59	<.0001
site 1	4.5000000	1.69876498	2.65	0.0141
site 2	-3.5000000	1.69876498	-2.06	0.0504
site 3	2.2500000	1.69876498	1.32	0.1978
site 4	1.0000000	1.69876498	0.59	0.5616
site 5	-4.0000000	1.69876498	-2.35	0.0271
site 6	-5.0000000	1.69876498	-2.94	0.0071
site 7	-4.7500000	1.69876498	-2.80	0.0100
site 8	4.2500000	1.69876498	2.50	0.0196
site 9	5.2500000	1.69876498	3.09	0.0050