



**Combined State Binder  
Group**

Method of Acceptance for  
Asphalt Binders

Round Robin 2006-3

Summary A

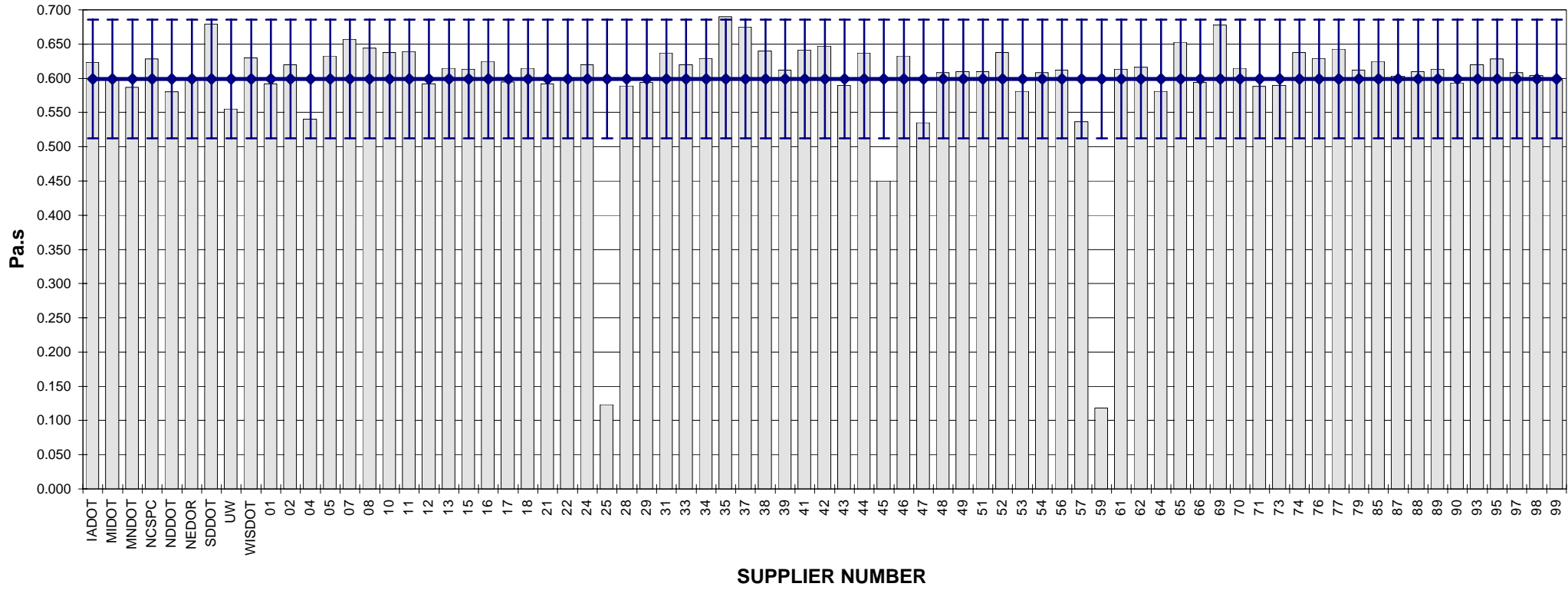
**COMBINED STATE BINDER GROUP ROUND ROBIN 2006-3  
SUMMARY A  
PG 64-28P**

Supplier Number	Rotational Viscosity (Pa.s) @135°C	DSR Original (kPa) @64°C	Phase Angle @64°C	DSR RTFO (kPa) @64°C	Elastic Recovery (%) @25°C	DSR PAV (kPa) @22°C	Mass Loss (%) @163°C	BBR S-value (MPa) @-18°C	BBR m-value @-18°C	DTT Strain (%) @-18°C	DTT Stress (MPa) @-18°C	CRITICAL CRACK TEMP (°C)
IADOT	0.623	1.31	79.5	2.85	65	2,627	-0.215	235	0.323			
MIDOT	0.600	1.21	79.8	2.75	68	2,216	-0.275	202	0.321			
MNDOT	0.587	1.20	79.9	3.10		2,663	-0.267	201	0.298			
NCSPC	0.628	1.28	79.6	2.91		2,373	-0.236	230	0.316			
NDDOT	0.580	1.22	80.4	2.65	64	2,478	-0.265	208	0.307			
NEDOR	0.600	1.27	79.7	2.92	65	2,750	-0.269	245	0.315			
SDDOT	0.679	1.29	79.7	2.78	69	2,898	-0.210	235	0.314			
UW	0.555	1.10	79.2	3.17		2,910	-0.076	233	0.325			
WISDOT	0.630	1.20	79.7	2.60		2,494	-0.221	204	0.314	1.12	4.05	
01	0.592	1.20	79.9	2.88		2,432	-0.186	235	0.320			
02	0.620	1.29	79.5	3.09	64	2,840	-0.230	241	0.311			
04	0.540	1.33	79.7	2.81		2,774	-0.232	231	0.315			
05	0.633	1.24	79.9	2.74	67	2,579	-0.191	206	0.323			
07	0.657	1.20	80.2	2.63	63	2,957	-0.219	226	0.317			
08	0.644	1.31	79.7	2.70	66	2,589	-0.174	206	0.314			
10	0.638	1.22	79.7	2.65	65	2,573	-0.182	214	0.325			
11	0.639	1.29	79.3	3.02	64	2,699	-0.233	250	0.314			
12	0.592	1.24	80.0	2.75	60	2,652	-0.295	230	0.326			
13	0.615	1.22	79.4	2.96	65	4,228	-0.197	224	0.316			
15	0.613	1.29	79.8	2.73	64	2,547	-0.317	211	0.318			
16	0.625	1.23	79.6	2.76	65	2,808	-0.205	221	0.330			
17	0.595	1.22	79.9	2.88		4,143	-0.163	225	0.318			
18	0.615	1.24	79.9	2.72	68	2,580	-0.253	212	0.322			
21	0.592	1.18	79.9	2.56	64	2,159	-0.237	241	0.315			
22	0.598	1.24	80.0	2.63		1,622	-0.431	235	0.322			
24	0.620	1.29	79.5	2.94	63	4,379	-0.233	228	0.325			
25	0.123	1.24	79.6	2.75	67	3,197	-0.274	235	0.323			
28	0.589	1.20	79.5	2.75	65	2,423	-0.286	239	0.318			
29	0.594	1.25	79.8	2.82	63	2,946	-0.307	237	0.317			
31	0.637	1.27	79.8	2.80	66	2,619	-0.199	214	0.320			
33	0.620	1.29	79.5	2.90	63	4,343	-0.227	216	0.342			
34	0.629	1.28	79.7	2.89	64	2,617	-0.233	237	0.317			
35	0.690	1.47	78.9	3.25		2,604	-0.209	233	0.320			
37	0.675	1.35	79.4	2.93	58	3,236	-0.218	201	0.330	1.51	4.54	-30.3
38	0.640	1.23	79.7	2.90	65	2,708	-0.195	215	0.320			
39	0.612	1.24	79.8	2.84	63	2,669	-0.232	208	0.328			
41	0.641	1.30	79.5	2.66	65	2,405	-0.176	220	0.324			
42	0.647	1.26	78.2	2.69	70	2,433	-0.294	197	0.330			
43	0.590	1.22	79.8	2.76	70	2,585	-0.231	234	0.332			
44	0.637	1.27	79.8	2.64	65	2,708	-0.193	205	0.324			
45	0.450	1.13	79.8	2.95		2,519	-0.199	230	0.321			
46	0.633	1.35	80.0	2.94	66	2,868	-0.239	222	0.326			
47	0.535	1.28	79.8	2.81		2,818	-0.243	228	0.326			
48	0.608	1.27	79.8	2.83	64	2,465	-0.236	233	0.321			
49	0.610	1.25	79.8	2.99	70	2,190	-0.330	223	0.325			
51	0.610	1.13	79.9	2.70	63	2,855	-0.393	253	0.324			
52	0.638	1.26	79.9	2.66	65	2,511	-0.190	186	0.316			
53	0.581	1.34	79.1	2.64		2,971	-0.259	228	0.315			
54	0.608	1.20	79.8	2.87	63	2,726	-0.235	214	0.325			
56	0.612	1.27	79.4	2.95	64	2,340	-0.237	247	0.316			
57	0.537	1.31	80.0	2.85		2,837	-0.239	230	0.316	1.35	3.81	
59	0.118	1.25	79.6	2.55	67	3,040	-0.445	221	0.323			
61	0.613	1.28	78.9	2.71	68	4,552	-0.314	235	0.309			
62	0.616	1.33	79.4	2.98	65	2,501	-0.223	231	0.320			
64	0.581	1.26	79.2	2.84		3,226	-0.297	233	0.316			
65	0.653	1.27	79.6	3.28		2,799	-0.157	220	0.310			
66	0.594	1.19	79.9	2.71	64	2,421	-0.232	234	0.315			
69	0.678	1.26	80.0	2.56	64	2,775	-0.256	236	0.317	1.95	5.66	-30.9
70	0.615	1.28	79.7	2.80		2,430	-0.290	220	0.329			
71	0.588	1.23	80.1	2.76		2,599	-0.387	198	0.328			
73	0.590	1.21	80.4	2.63		2,419	-0.233	200	0.340			
74	0.638	1.27	79.8	2.92	65	2,330	-0.192	221	0.322			
76	0.629	1.15	79.7	2.88	66	2,645	-0.205	236	0.320			
77	0.643	1.51	79.1	3.34	75	2,790	-0.261	233	0.321			
79	0.612	1.24	80.0	2.72	63	2,732	-0.326	235	0.321			
85	0.625	1.20	79.5	2.68	66	2,028	-0.195	218	0.322			
87	0.603	1.22	79.8	2.80	63	2,804	-0.177	224	0.320			
88	0.610	1.22	79.7	2.87	63	2,672	-0.191	222	0.322			
89	0.613	1.24	79.7	2.86	64	2,533	-0.253	222	0.315			
90	0.593	1.21	80.0	2.90	64	2,366	-0.267	240	0.311			
93	0.620	1.17	79.7	2.71	65	4,171	-0.223	214	0.331			
95	0.628	1.31	79.8	2.96	73	2,226	-0.212	280	0.309			
97	0.608	1.15	79.8	2.76	63	2,945	-0.394	239	0.323			
98	0.604	1.16	79.8	2.69	63	2,799	-0.347	239	0.324			
99	0.598	1.20	79.9	2.91	64	2,722	-0.220	242	0.309			
Average	0.5990	1.2503	79.7	2.8235	65.0333	2,761.17	-0.2451	225.43	0.3202	1.482	4.52	
Std. Dev.	0.0870	0.0658	0.3325	0.1627	2.8262	529.66	0.0634	15.39	0.0071	0.352	0.82	
Coef. of Var.	14.526	5.259	0.417	5.762	4.346	19.183	25.848	6.829	2.219	23.743	18.20	

COMBINED STATE BINDER GROUP ROUND ROBIN 2006-3  
SUMMARY A

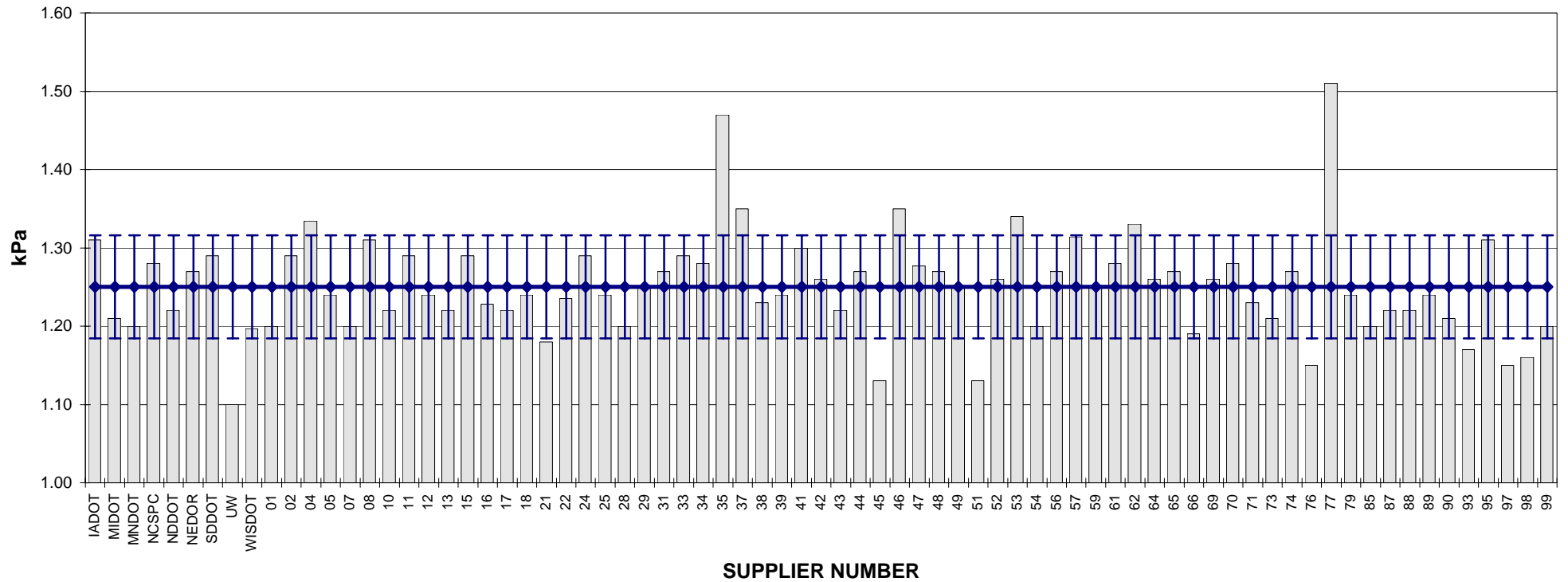
PG 64-28P

ROTATIONAL VISCOSITY



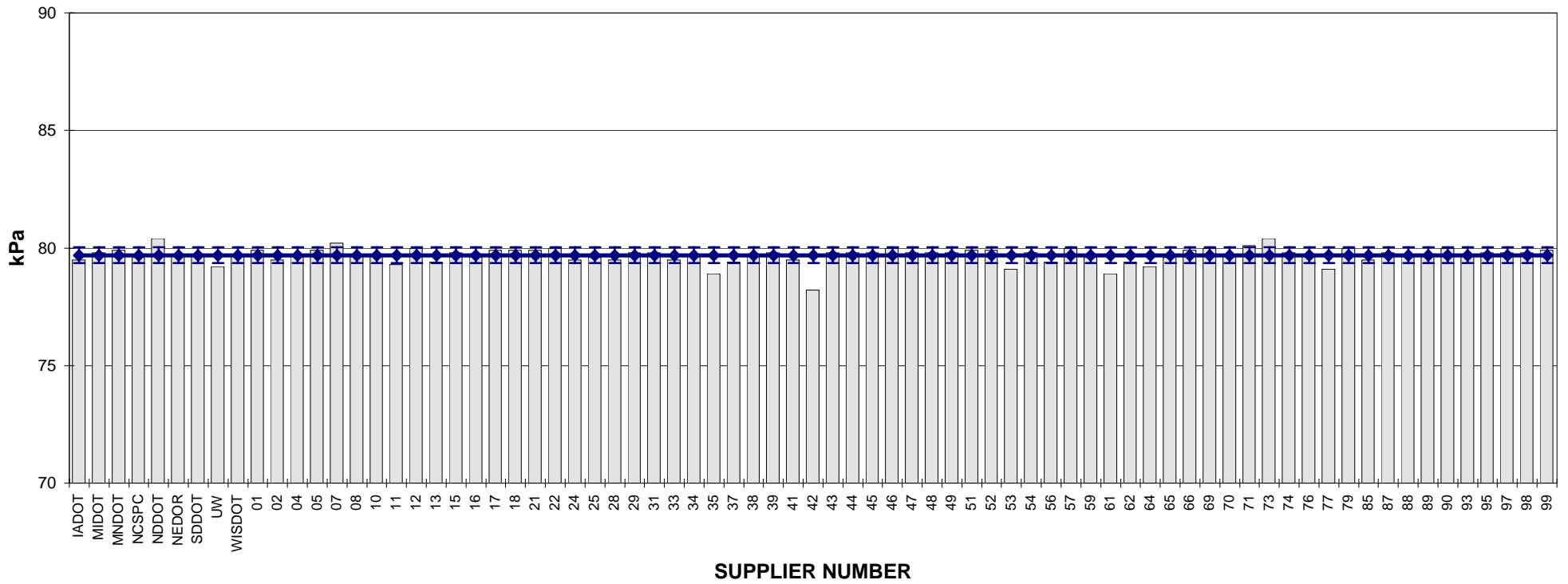
**COMBINED STATE BINDER GROUP ROUND ROBIN 2006-3  
SUMMARY A  
PG 64-28P**

**DSR - ORIGINAL**



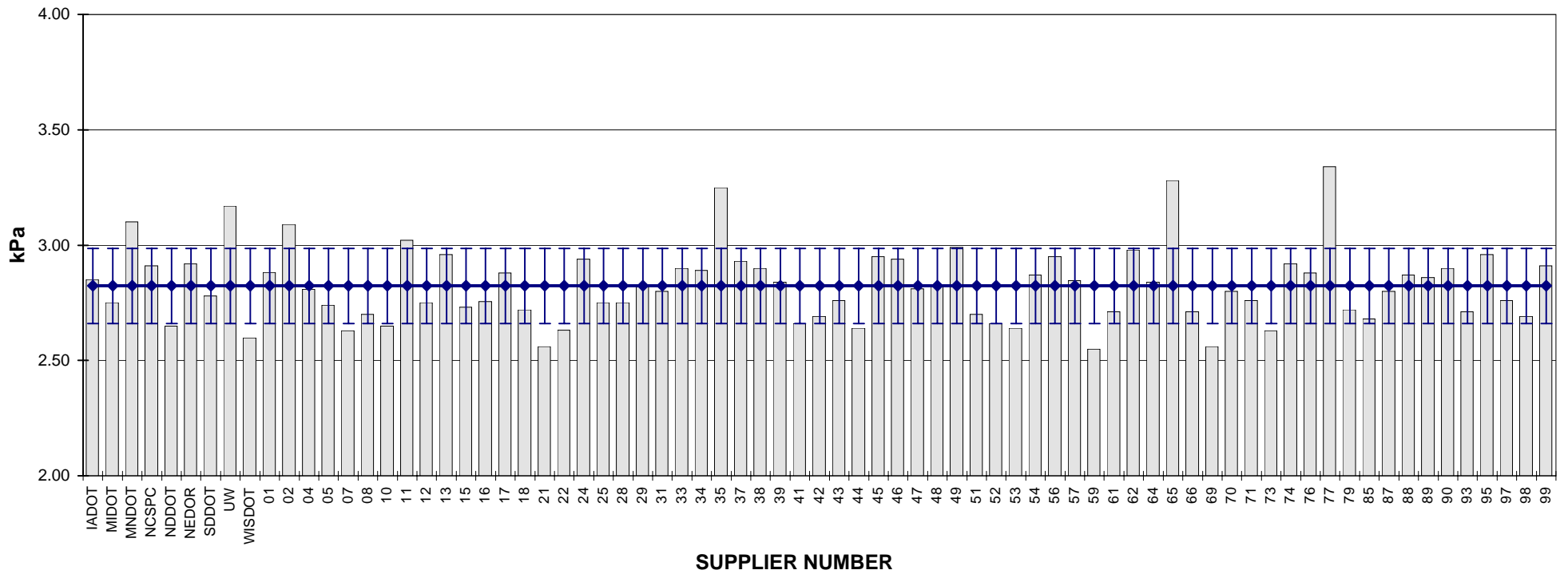
COMBINED STATE BINDER GROUP ROUND ROBIN 2006-3  
SUMMARY A  
PG 64-28P

DSR - PHASE ANGLE



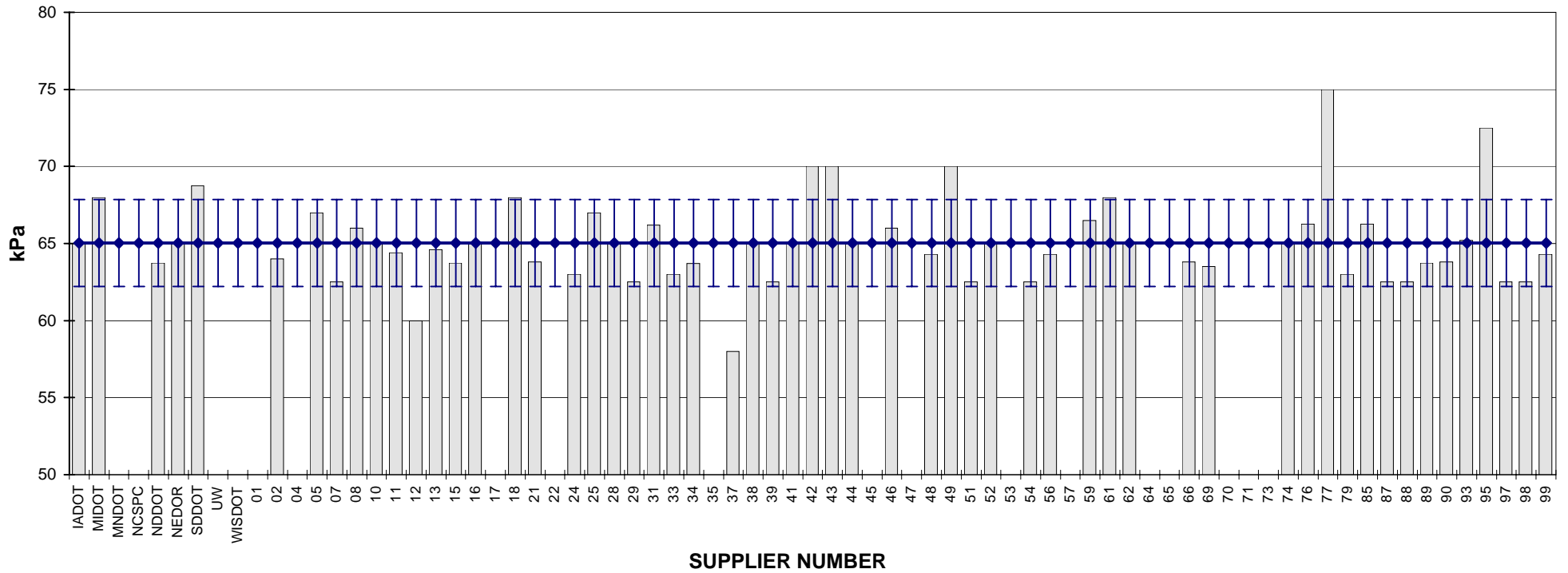
**COMBINED STATE BINDER GROUP ROUND ROBIN 2006-3  
SUMMARY A  
PG 64-28P**

**DSR - RTFO**



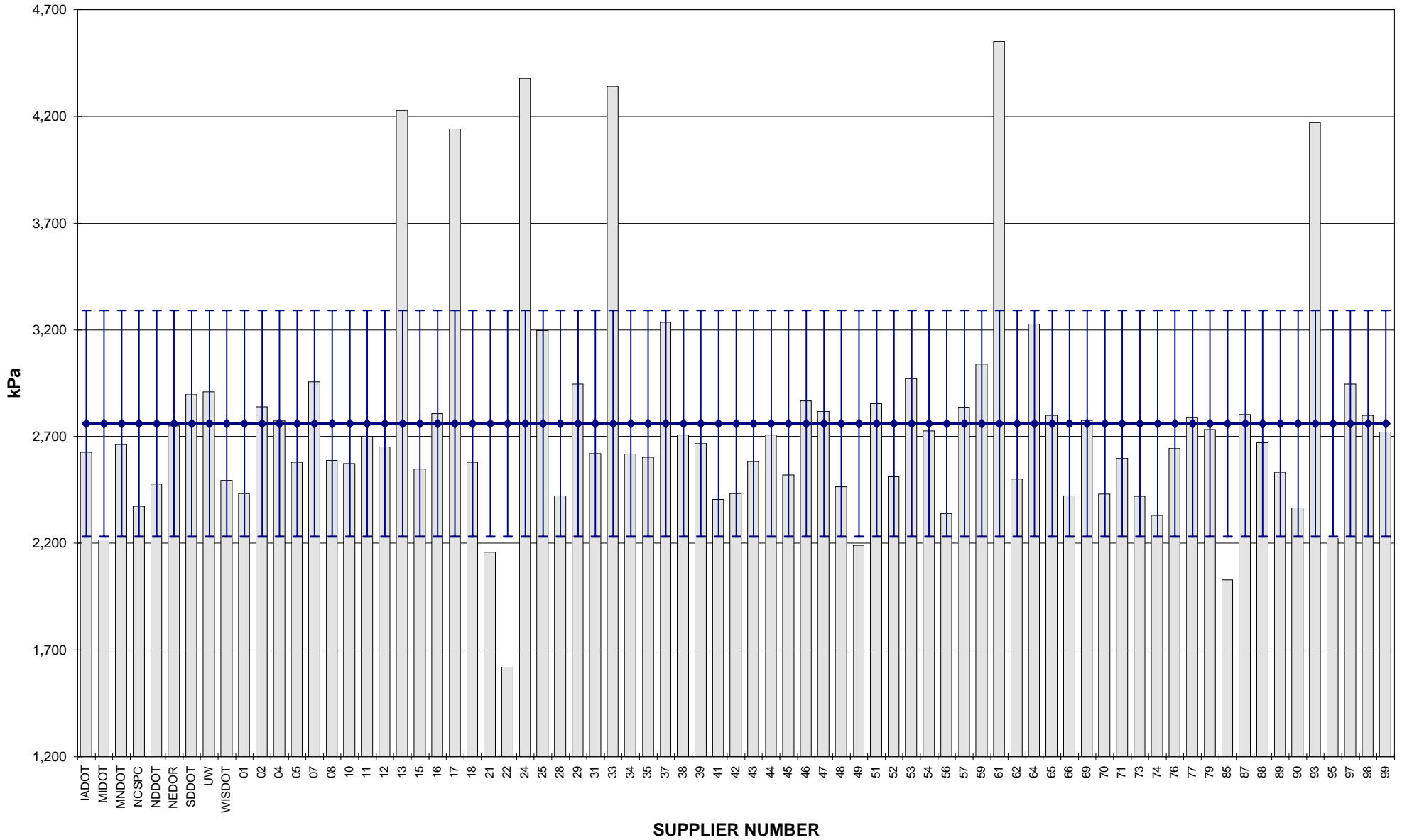
**COMBINED STATE BINDER GROUP ROUND ROBIN 2006-3  
SUMMARY A  
PG 64-28P**

**ELASTIC RECOVERY**



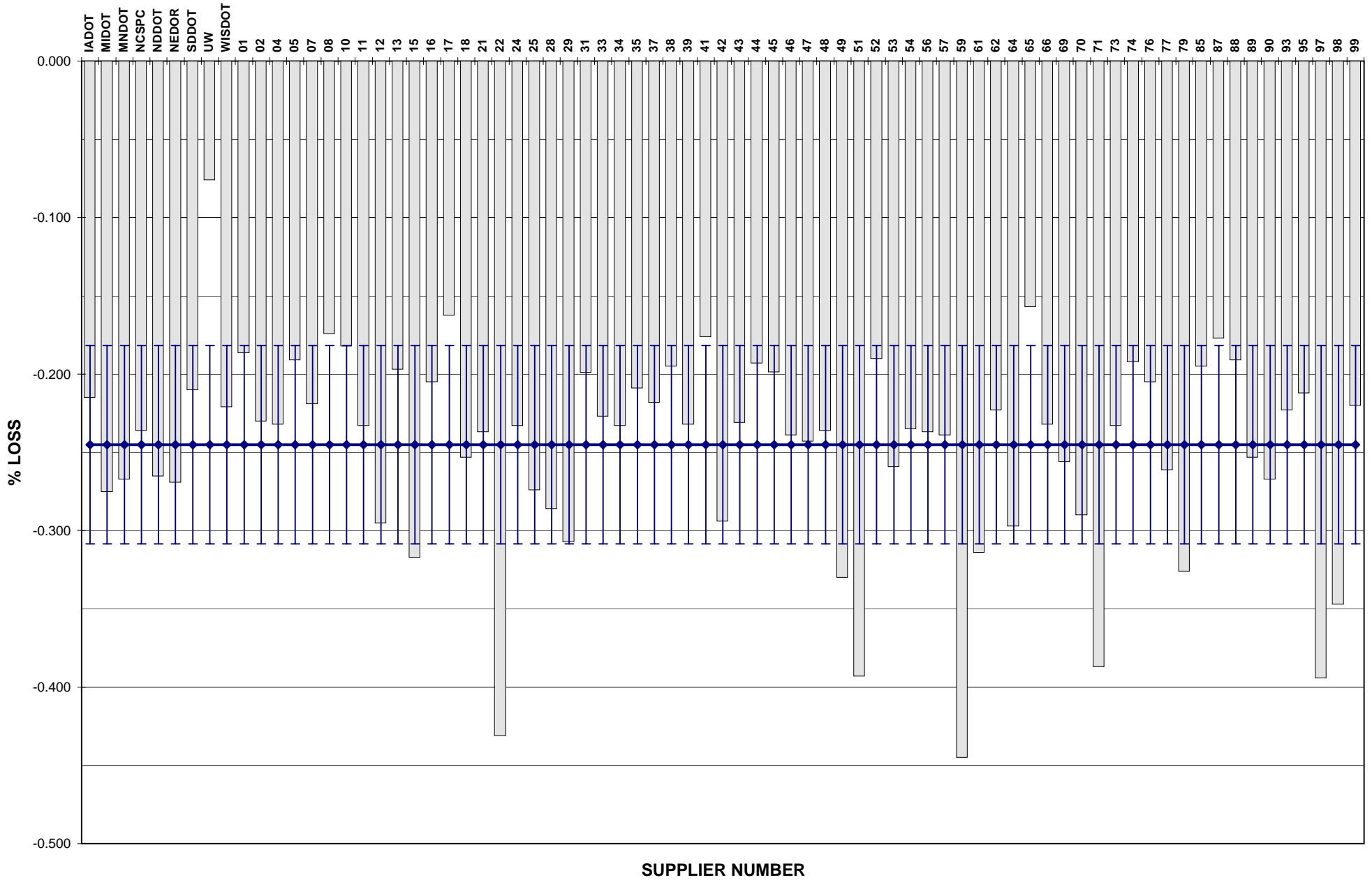
COMBINED STATE BINDER GROUP ROUND ROBIN 2006-3  
SUMMARY A  
PG 64-28P

DSR - PAV

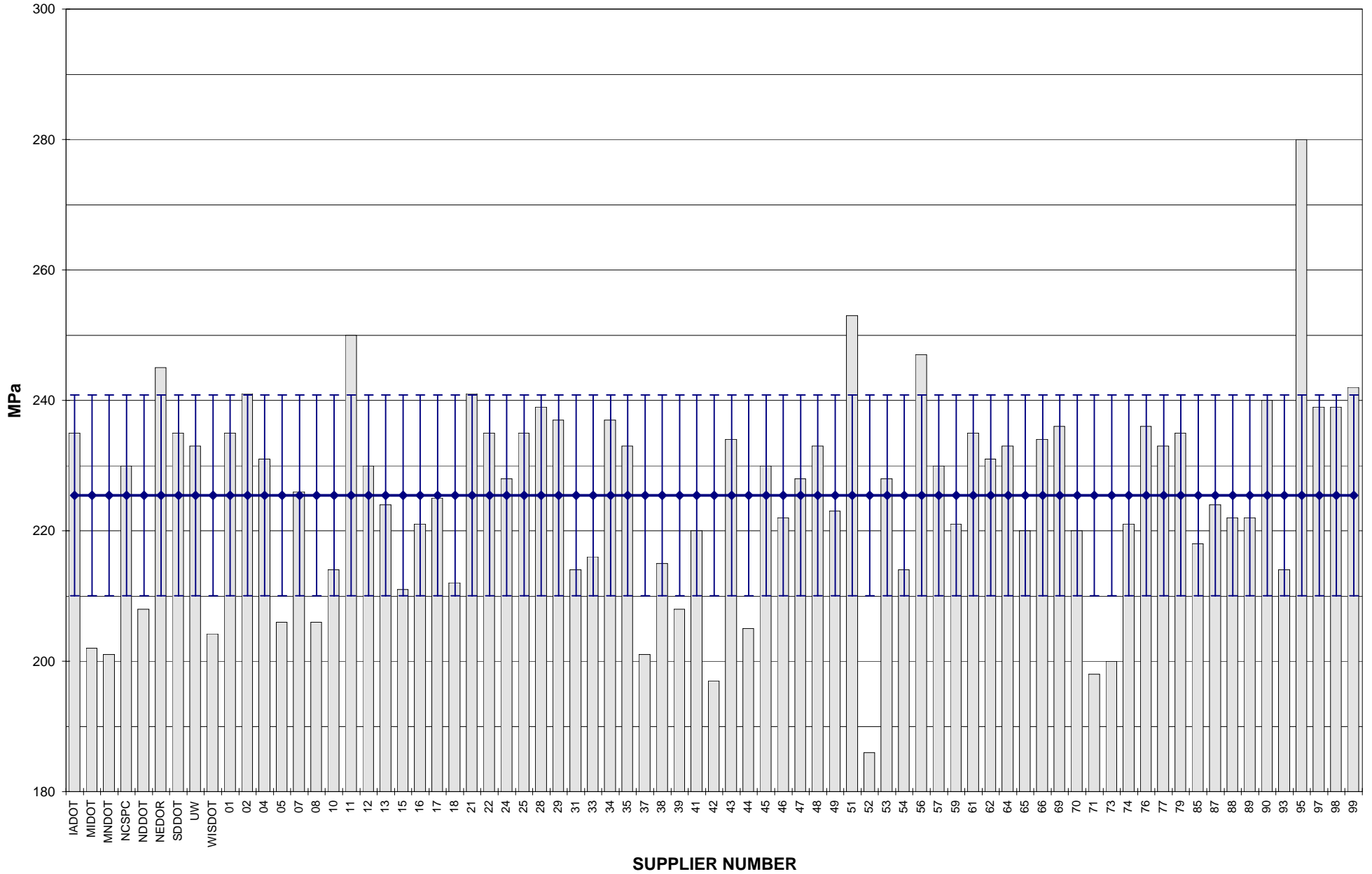




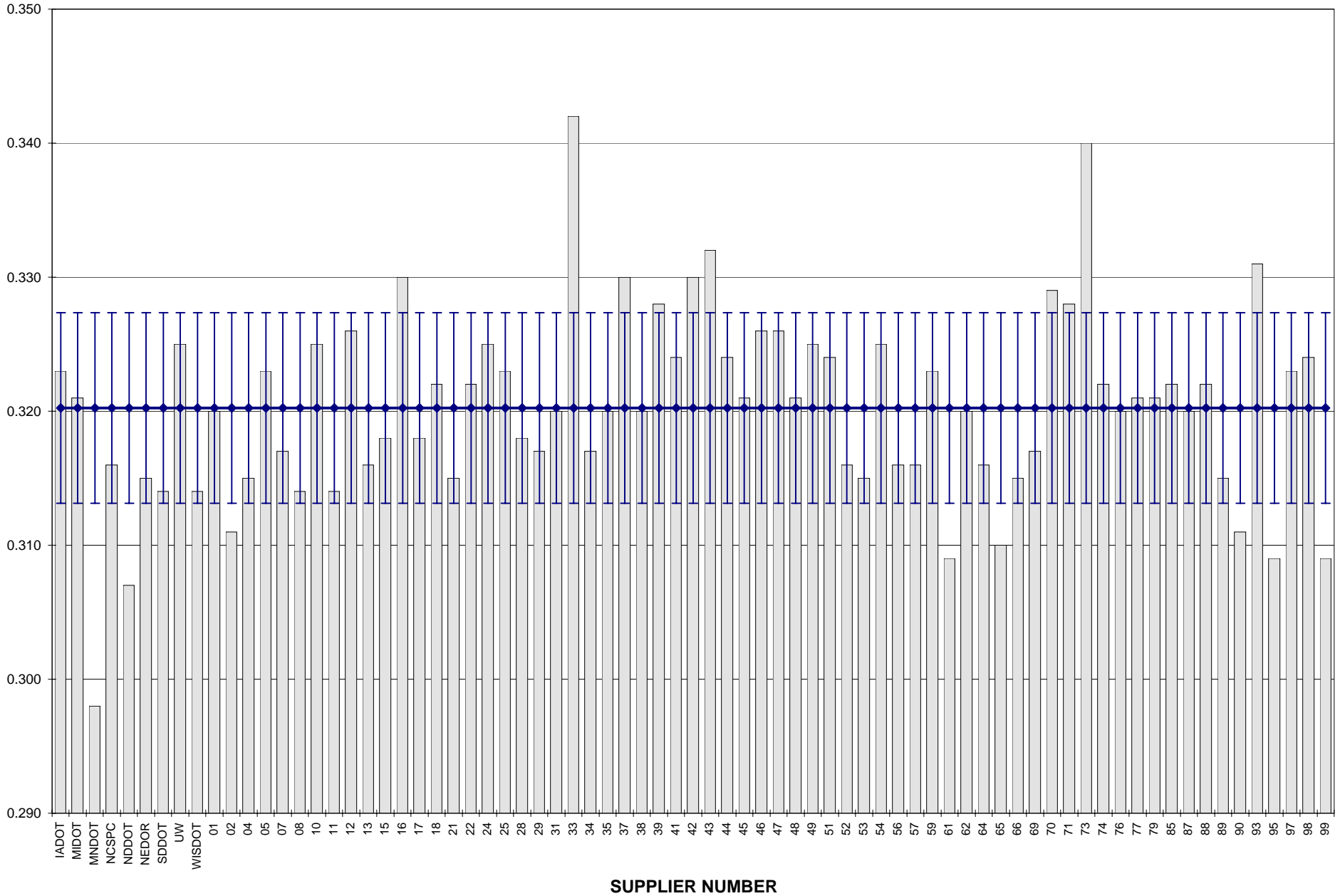
COMBINED STATE BINDER GROUP ROUND ROBIN 2006-3  
 SUMMARY A  
 PG 64-28P  
**RTFO MASS LOSS**



**COMBINED STATE BINDER GROUP ROUND ROBIN 2006-3**  
**SUMMARY A**  
**PG 64-28P**  
**BBR STIFFNESS**



**COMBINED STATE BINDER GROUP ROUND ROBIN 2006-3**  
**SUMMARY A**  
**PG 64-28P**  
**BBR m-VALUE**



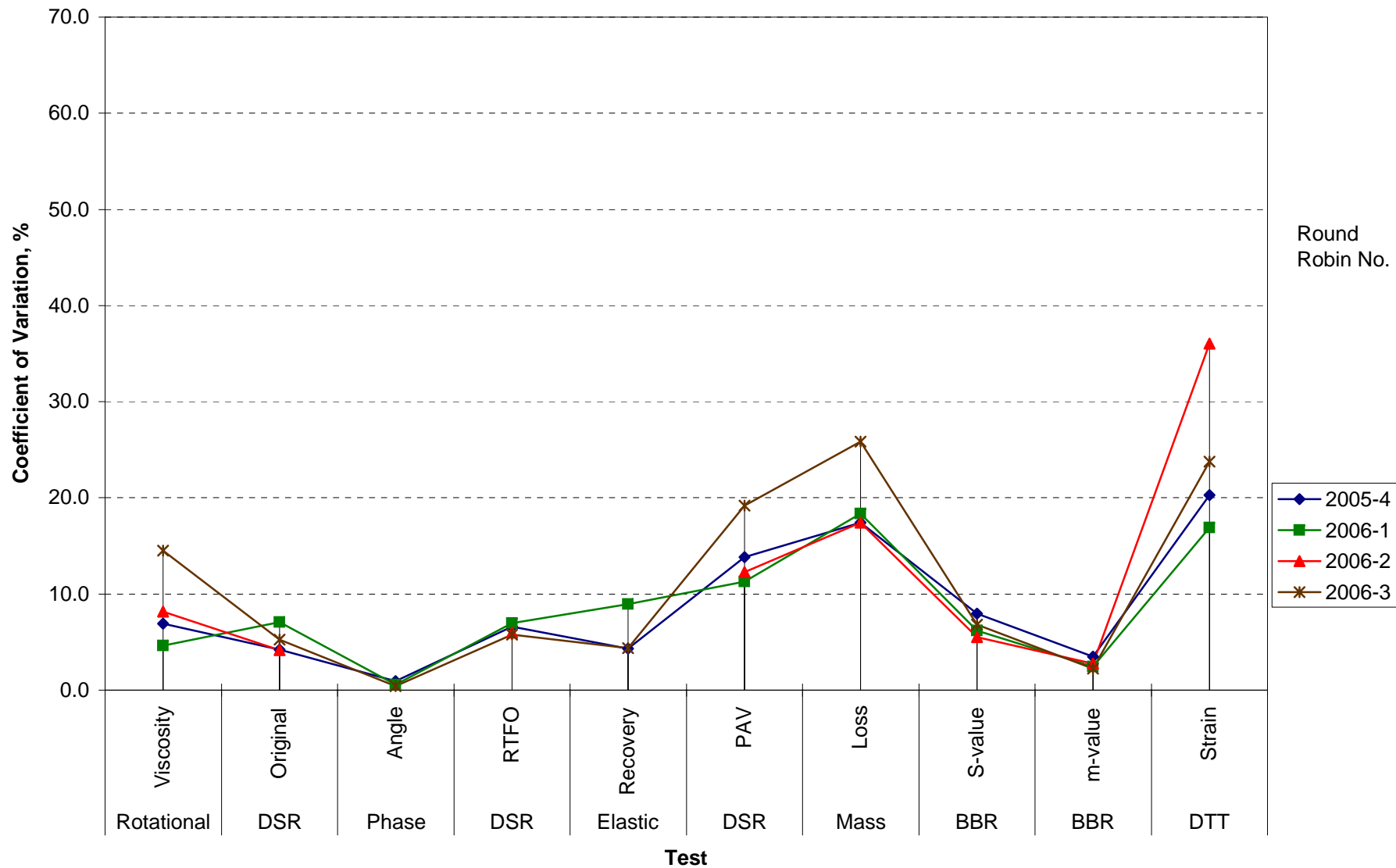
**COMBINED STATE BINDER GROUP ROUND ROBIN 2006-3  
SUMMARY A**

**COEFFICIENT OF VARIATION**

Round Robin No.	Number of Participants	Coefficient of Variation, %									
		Rotational Viscosity	DSR Original	Phase Angle	DSR RTFO	Elastic Recovery	DSR PAV	Mass Loss	BBR S-value	BBR m-value	DTT Strain
2005-4	78	6.893	4.191	0.958	6.616	4.333	13.815	17.441	7.971	3.495	20.270
2006-1	77	4.623	7.087	0.559	6.959	8.933	11.263	18.345	6.202	2.421	16.910
2006-2	77	8.182	4.138		5.992		12.270	17.442	5.496	2.752	36.040
2006-3	75	14.526	5.259	0.417	5.762	4.346	19.183	25.848	6.829	2.219	23.743

COMBINED STATE BINDER GROUP ROUND ROBIN 2006-3  
SUMMARY A

COEFFICIENT OF VARIATION



**COMBINED STATE BINDER GROUP ROUND ROBIN 2006-3  
SUMMARY A  
PG 64-28P**

**STATISTICS WITH OUTLIERS REMOVED:**

	<b>Rotational Viscosity (Pa.s) @135°C</b>	<b>DSR Original (kPa) @64°C</b>	<b>Phase Angle @64°C</b>	<b>DSR RTFO (kPa) @64°C</b>	<b>Elastic Recovery (%) @25°C</b>	<b>DSR PAV (kPa) @22°C</b>	<b>Mass Loss (%) @163°C</b>	<b>BBR S-value (MPa) @-18°C</b>	<b>BBR m-value @-18°C</b>
<b>Average</b>	0.6144	1.2438	79.7115	2.8040	64.7164	2,641.91	-0.2398	224.69	0.3202
<b>Std. Dev.</b>	0.0298	0.0529	0.2850	0.1340	2.3041	247.97	0.0553	14.10	0.0071
<b>Coef. of Var.</b>	4.852	4.250	0.357	4.778	3.560	9.386	23.073	6.276	2.219