

COMBINED STATE BINDER GROUP ROUND ROBIN 2009-4 SUMMARY B

PG 64-28

Supplier Number	Rotational Viscosity (Pa.s) @135°C	DSR Original (kPa) @64°C	DSR RTFO (kPa) @64°C	DSR PAV (kPa) @22°C	Mass Loss (%) @163°C	BBR S-value (MPa) @-18°C	BBR m-value @-18°C
IADOT	0.550	1.29	2.65	2570	-0.298	210	0.317
MNDOT	0.487	1.29	2.98	2725	-0.345	186	0.327
NCSPC	0.555	1.36	2.92	2650	-0.350	198	0.325
NDDOT	0.548	1.31	2.69	2617	-0.320	204	0.320
NEDOR	0.545	1.34	3.02	2678	-0.276	208	0.324
SDDOT	0.517	1.32	3.07	2304	-0.350	189	0.332
UW	1.254	1.33	2.95	2940	-0.199	222	0.316
WISDOT	0.580	1.23	2.56	1959	-0.144	194	0.327
07	0.570	1.23	2.64	3054	-0.322	203	0.310
12	0.557	1.36	2.85	2700	-0.418	210	0.320
29	0.561	1.32	2.59	2444	-0.384	187	0.319
35	0.567	1.34	2.95	2320	-0.280	246	0.300
37	0.595	1.39	2.62	2452	-0.342	237	0.308
42	0.573	1.23	2.78	2390	-0.369	211	0.321
43	0.550	1.30	2.77	2469	-0.258	215	0.340
49	0.560	1.26	2.86	2530	-0.340	203	0.323
65	0.555	1.23	2.91	2260	-0.280	189	0.326
69	0.573	1.38	2.60	3597	-0.342	210	0.318
70	0.545	1.36	2.76	2190	-0.268	204	0.330
77	0.520	1.32	2.83	2860	-0.272	221	0.318
95	0.580	1.34	3.08	2711	-0.333	213	0.314
A	0.540	1.29	2.90	2513	-0.358	214	0.325
B	0.554	1.29	3.02	2588	-0.255	200	0.321
C	0.554	1.26	2.73	2696	-0.282	225	0.314
E	0.638	1.29	2.86	2438	-0.310	189	0.331
F	0.526	1.30	2.93	2,672	-0.295	221	0.321
J	0.600	1.25	2.62	2511	-0.248	201	0.315
L	0.598	1.25	2.93	3099	-0.284	215	0.321
M	0.581	1.27	2.72	2513	-0.308	208	0.315
O	0.560	1.25	3.00	2,702	-0.229	229	0.311
P	0.560	1.35	2.95	2034	-0.282	194	0.335
S							
T	0.559	1.27	2.89	2605	-0.270	213	0.317
U	0.582	1.20	2.91	2635	-0.309	191	0.318
V	0.549	1.32	3.03	2937	-0.304	215	0.319
Average	0.581	1.30	2.84	2,599	-0.301	208	0.320
Std. Dev.	0.1220	0.0487	0.1523	309.58	0.0536	14.29	0.0079
Coef. of Var.	21.008	3.750	5.362	11.912	17.816	6.868	2.477

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A	Rot. Visc.	ODSR	RTFO DSR	PAVDSR	Mass Loss	S-value	m-value
19	0.540	1.28	2.90	2480	-0.337	218	0.323
51	0.540	1.30	2.89	2460	-0.368	216	0.327
97	0.540	1.28	2.92	2570	-0.360	211	0.324
98	0.538	1.30	2.88	2540	-0.366	209	0.325
Average	0.540	1.29	2.90	2,513	-0.358	214	0.325

B	Rot. Visc.	ODSR	RTFO DSR	PAVDSR	Mass Loss	S-value	m-value
01	0.550	1.26	3.04	2548	-0.262	206	0.322
17	0.557	1.28	2.98	2569	-0.252	198	0.322
45	0.555	1.32	3.05	2647	-0.250	195	0.320
Average	0.554	1.29	3.02	2,588	-0.255	200	0.321

C	Rot. Visc.	ODSR	RTFO DSR	PAVDSR	Mass Loss	S-value	m-value
28	0.555	1.27	2.66	3026	-0.278	227	0.310
66	0.553	1.24	2.71	2779	-0.286	228	0.315
90	0.553	1.26	2.84	2651	-0.285	222	0.311
99	0.555	1.28	2.71	2329	-0.278	221	0.318
Average	0.554	1.26	2.73	2696	-0.282	225	0.314

E	Rot. Visc.	ODSR	RTFO DSR	PAVDSR	Mass Loss	S-value	m-value
15	0.626	1.27	2.82	2416	-0.309	191	0.330
89	0.650	1.31	2.89	2459	-0.311	186	0.331
Average	0.638	1.29	2.86	2438	-0.310	189	0.331

F	Rot. Visc.	ODSR	RTFO DSR	PAVDSR	Mass Loss	S-value	m-value
02	0.530	1.33	2.91	2953	-0.307	215	0.321
11	0.547	1.33	3.07	2953	-0.307	223	0.324
34	0.525	1.30	2.99	2317	-0.265	219	0.319
48	0.554	1.31	2.98	2460	-0.255	226	0.321
56	0.496	1.28	2.78	2627	-0.309	222	0.319
62	0.503	1.23	2.86	2720	-0.325	219	0.321
Average	0.526	1.30	2.93	2,672	-0.295	221	0.321

J	Rot. Visc.	ODSR	RTFO DSR	PAVDSR	Mass Loss	S-value	m-value
05	0.598	1.25	2.63	2568	-0.285	199	0.318
08	0.602	1.25	2.59	2370	-0.215	196	0.318
31	0.596	1.21	2.60	2544	-0.287	202	0.315
41	0.600	1.26	2.70	2405	-0.219	211	0.316
44	0.599	1.28	2.65	2727	-0.214	198	0.311
52	0.602	1.22	2.53	2409	-0.294	202	0.313
83	0.601	1.26	2.65	2552	-0.219	196	0.316
Average	0.600	1.25	2.62	2511	-0.248	201	0.315

L	Rot. Visc.	ODSR	RTFO DSR	PAVDSR	Mass Loss	S-value	m-value
25	0.596	1.25	2.92	3099	-0.294	212	0.321
59	0.600	1.25	2.93	3099	-0.274	217	0.320
Average	0.598	1.25	2.93	3099	-0.284	215	0.321

M	Rot. Visc.	ODSR	RTFO DSR	PAVDSR	Mass Loss	S-value	m-value
04	0.580	1.28	2.71	2480	-0.306	208	0.315
47	0.582	1.27	2.72	2516	-0.311	209	0.316
57	0.582	1.26	2.74	2544	-0.308	207	0.315
Average	0.581	1.27	2.72	2513	-0.308	208	0.315

O	Rot. Visc.	ODSR	RTFO DSR	PAVDSR	Mass Loss	S-value	m-value
76	0.555	1.25	2.98	2648	-0.204	238	0.310
85	0.565	1.25	3.01	2755	-0.253	219	0.312
Average	0.560	1.25	3.00	2702	-0.229	229	0.311

P	Rot. Visc.	ODSR	RTFO DSR	PAVDSR	Mass Loss	S-value	m-value
30	0.574	1.44	2.98	1827	-0.277	189	0.345
71	0.552	1.33	3.07	2524	-0.269	202	0.324
73	0.555	1.29	2.80	1750	-0.301	192	0.336
Average	0.560	1.35	2.95	2034	-0.282	194	0.335

S	Rot. Visc.	ODSR	RTFO DSR	PAVDSR	Mass Loss	S-value	m-value
53							
64							
Average	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

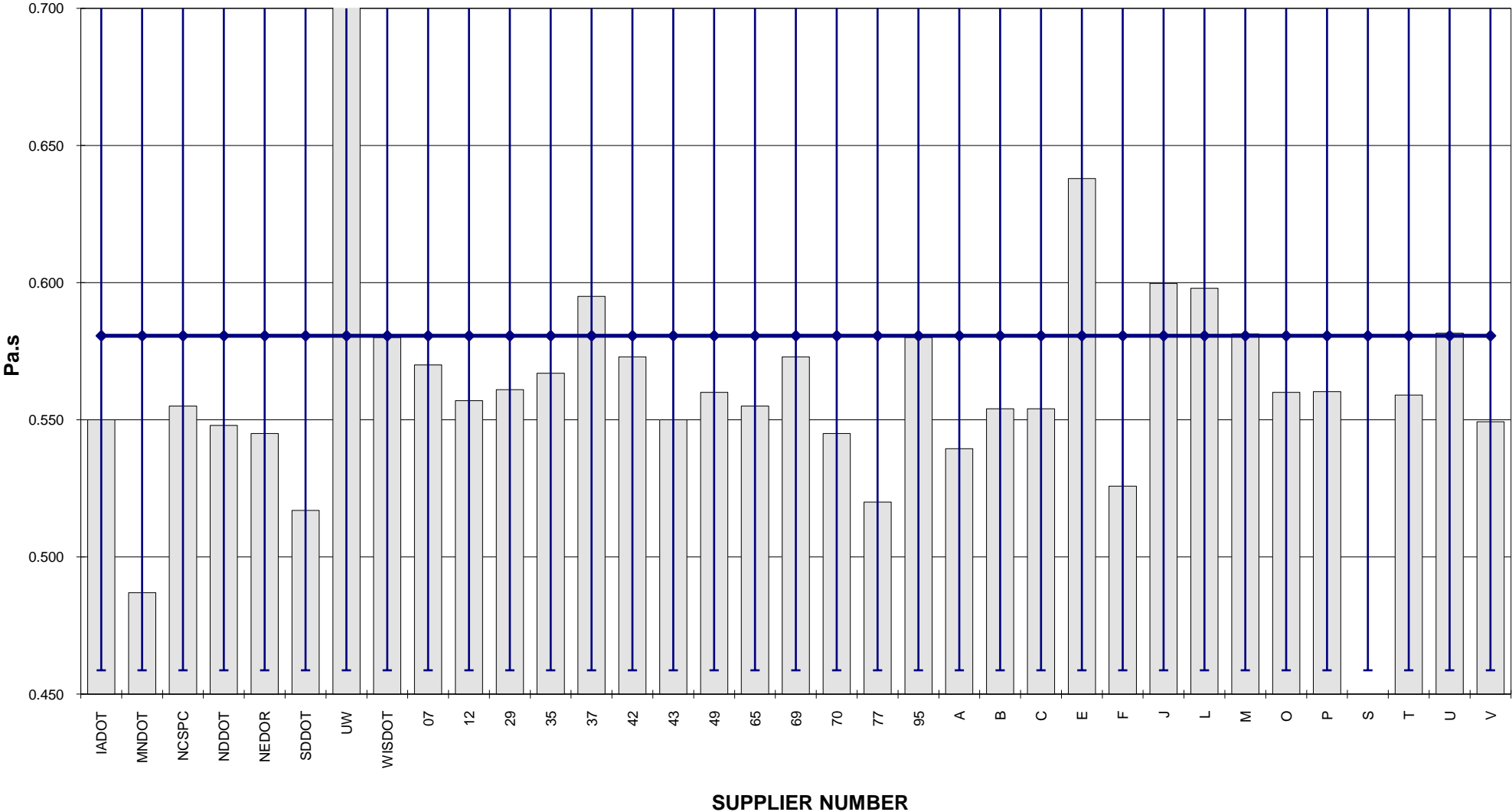
T	Rot. Visc.	ODSR	RTFO DSR	PAVDSR	Mass Loss	S-value	m-value
39	0.559	1.23	2.95	2510	-0.289	212	0.319
87	0.559	1.31	2.83	2700	-0.251	214	0.314
Average	0.559	1.27	2.89	2605	-0.270	213	0.317

U	Rot. Visc.	ODSR	RTFO DSR	PAVDSR	Mass Loss	S-value	m-value
13	0.580	1.13	2.87	2525	-0.342	194	0.320
24	0.585	1.19	2.84	2620	-0.294	181	0.313
93	0.580	1.28	3.03	2760	-0.292	199	0.321
Average	0.582	1.20	2.91	2635	-0.309	191	0.318

V	Rot. Visc.	ODSR	RTFO DSR	PAVDSR	Mass Loss	S-value	m-value
58	0.549	1.32	3.00	3010	-0.304	220	0.321
78	0.549	1.32	3.03	2780	-0.306	210	0.319
81	0.550	1.32	3.06	3020	-0.302	214	0.317
Average	0.549	1.32	3.03	2937	-0.304	215	0.319

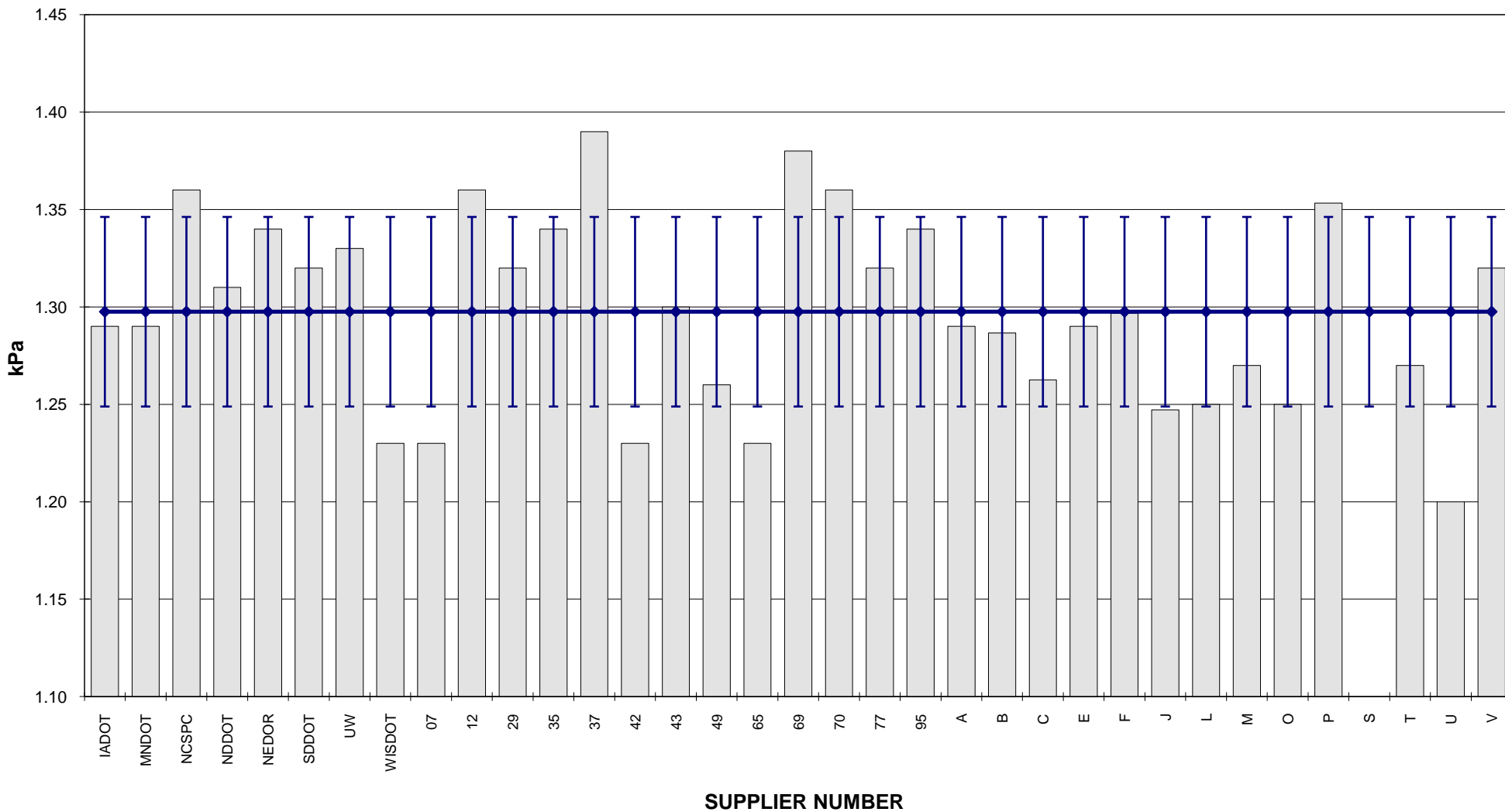
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SUMMARY B
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ROTATIONAL VISCOSITY



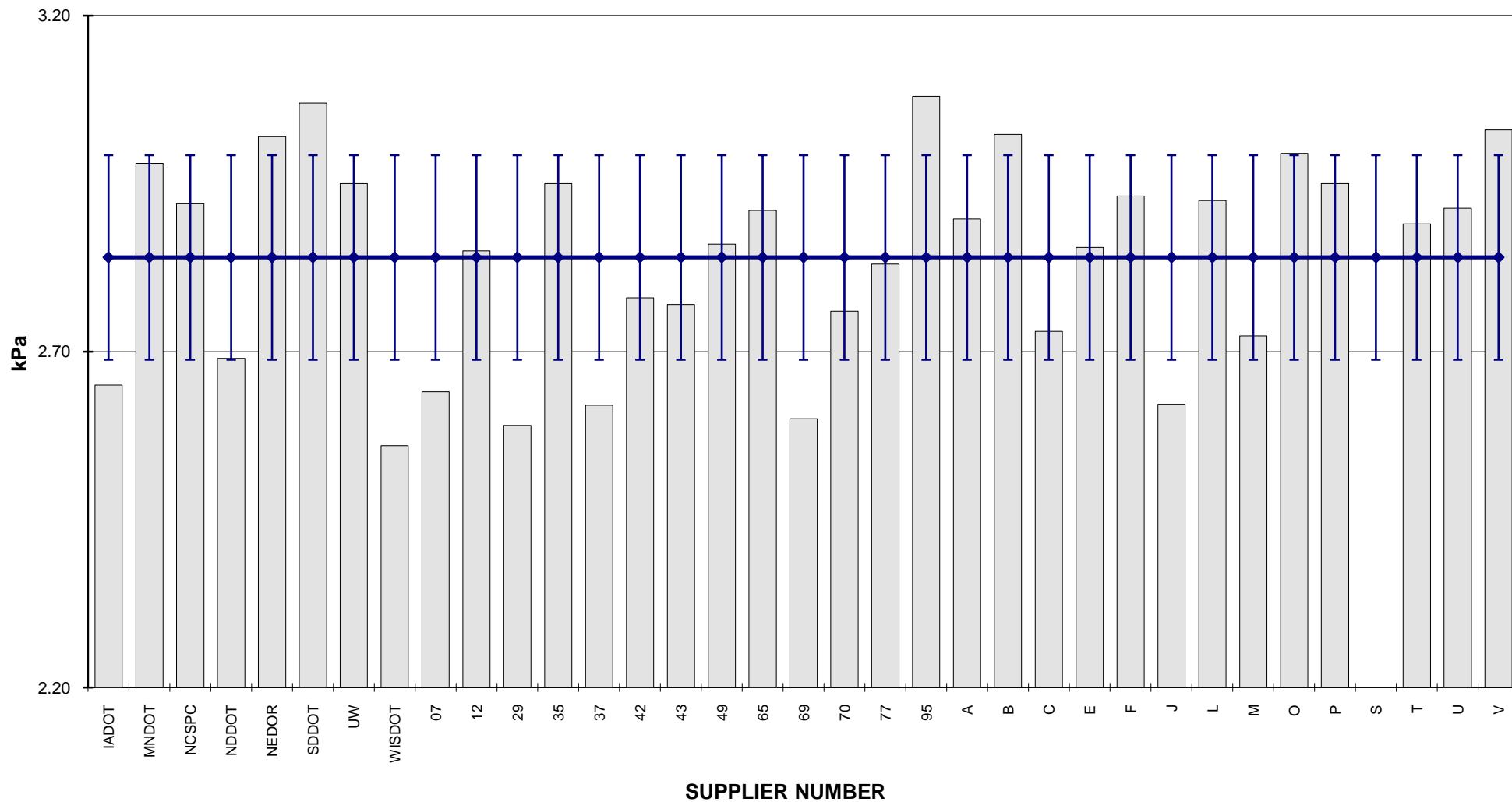
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DSR - ORIGINAL

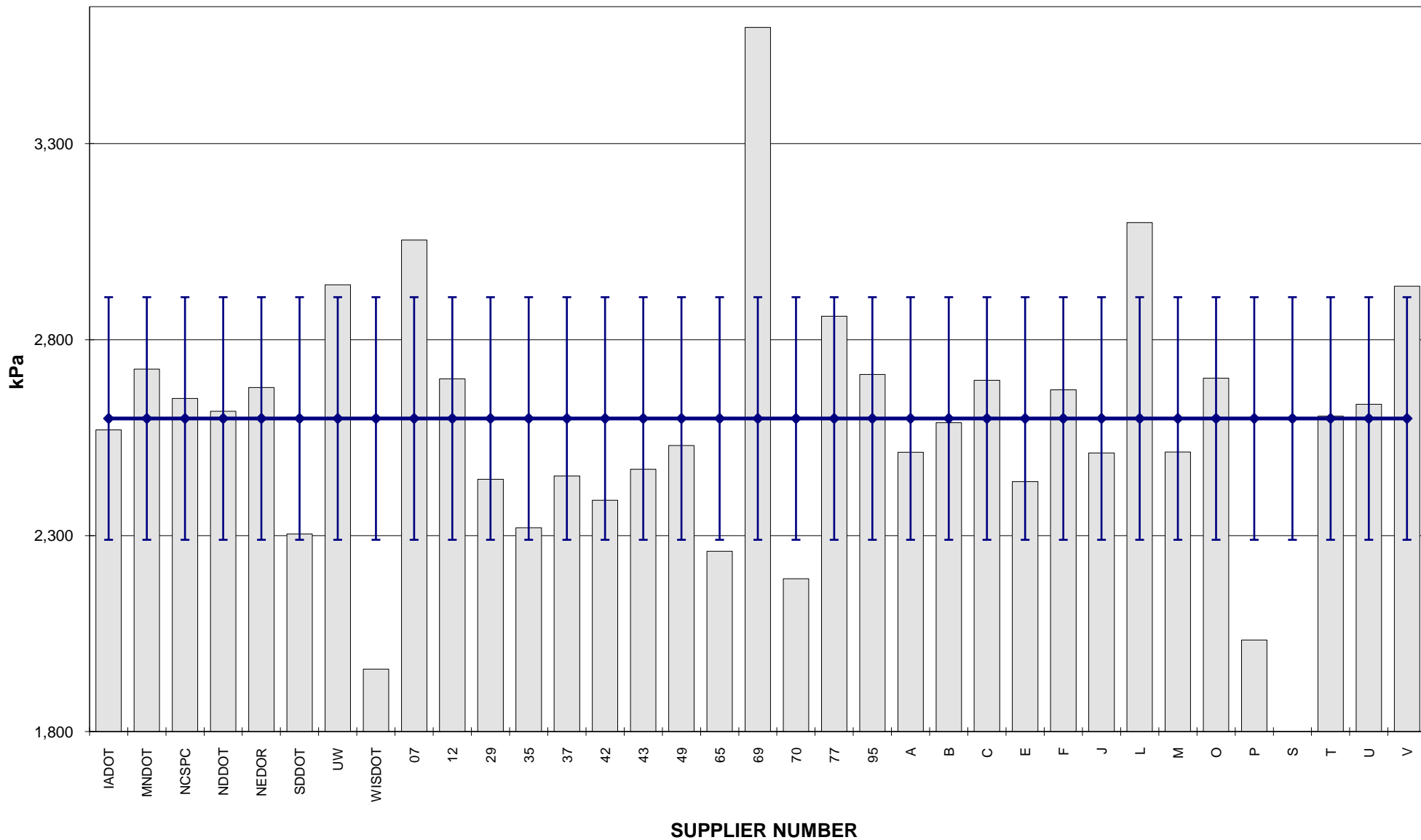


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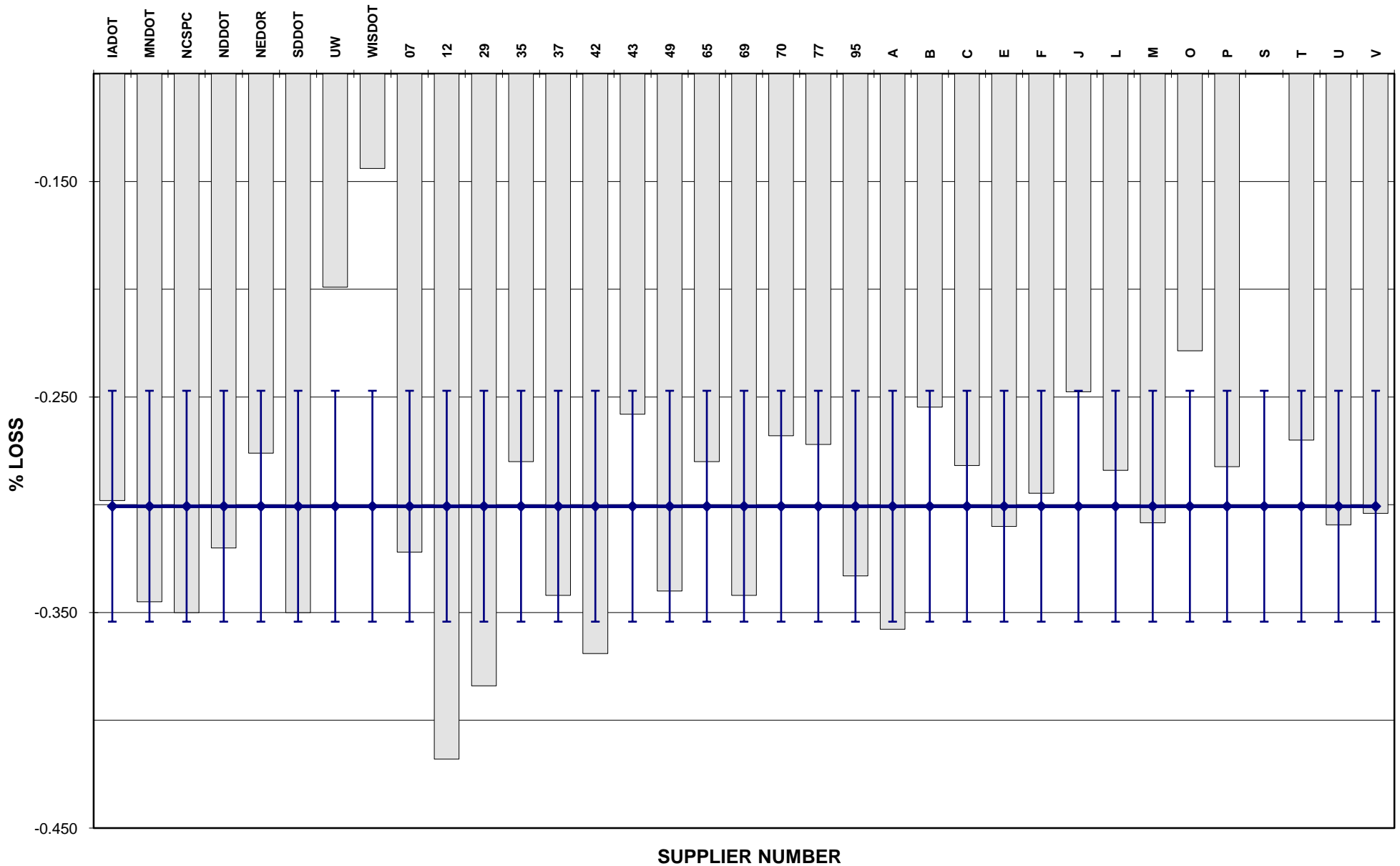
DSR - RTFO



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DSR - PAV



RTFO MASS LOSS

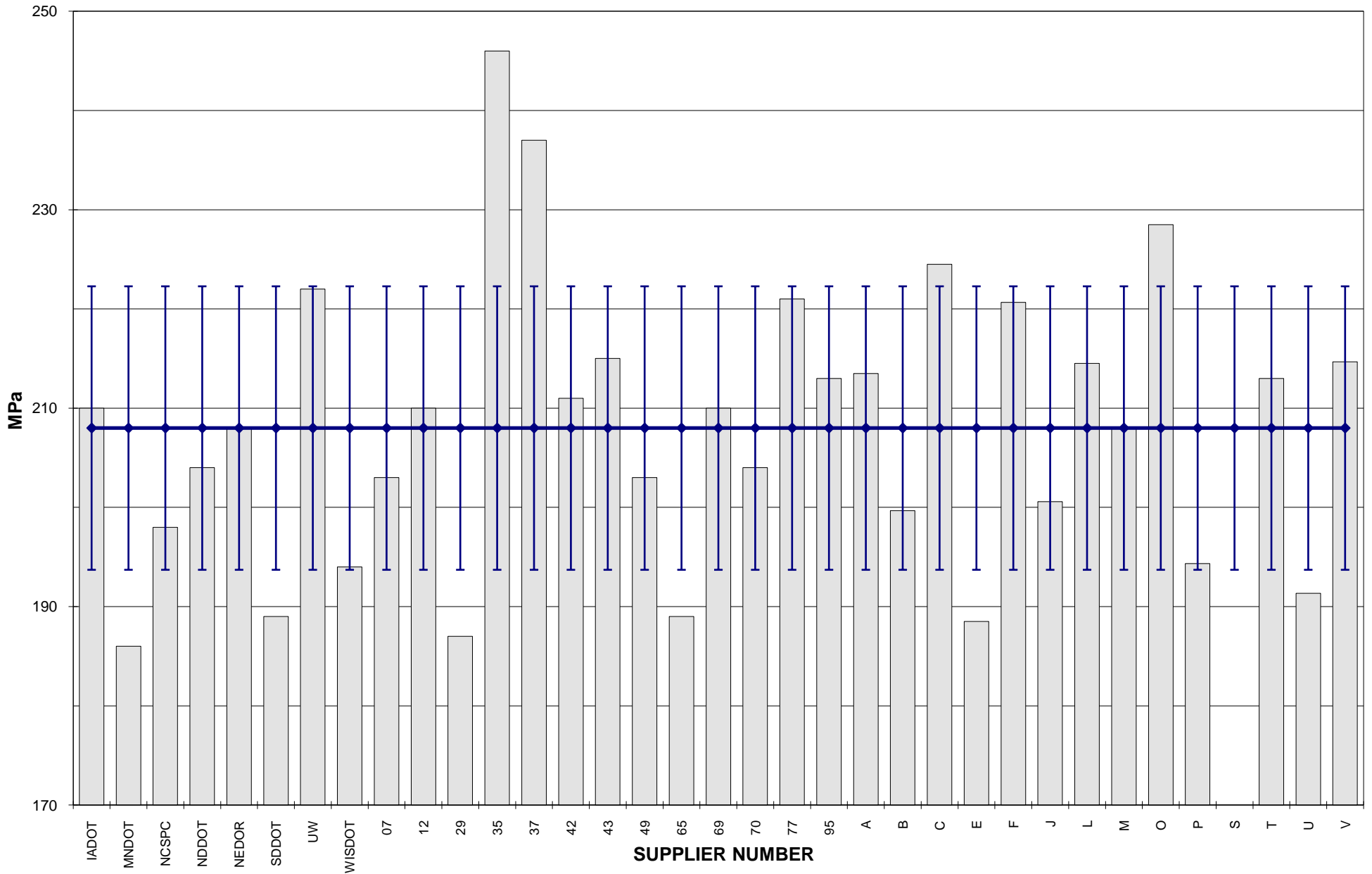


COMBINED STATE BINDER GROUP ROUND ROBIN 2009-3

SUMMARY B

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BBR STIFFNESS



COMBINED STATE BINDER GROUP ROUND ROBIN 2009-3
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BBR m-VALUE

