PGB 64-16

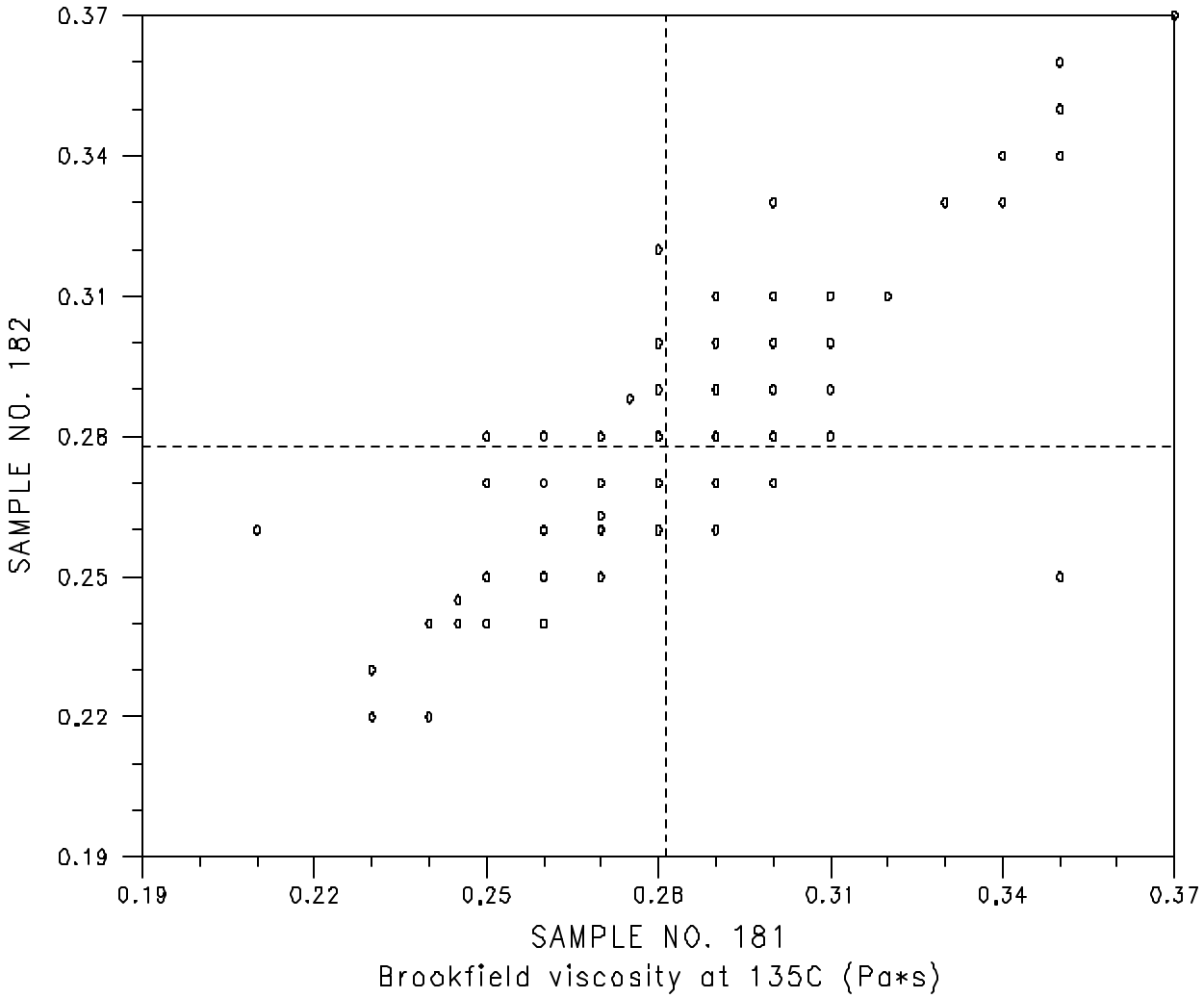
PERFORMANCE GRADED BINDER SAMPLES	NO. LABS	SAMPLE NUMBER 181			SAMPLE NUMBER 182		
TEST RESULT		AVG.	STAND. DEV.	COEFF. VAR.	AVG.	STAND. DEV.	COEFF. VAR.
TESTS ON ORIGINAL BINDER							
AASHTO TP48/ASTM D4402, Brookfield Viscosity Viscosity at 135°C (Pa·s)	204	0.287	0.065	22.6	0.283	0.069	24.5
	197	0.281	0.024	8.69	0.278	0.026	9.45
AASHTO TP5, Dynamic Shear Rheometer (64°C, 25-mm plate, 1-mm gap) Complex Shear Modulus, G^* (kPa)	206	1.123	0.088	7.84	1.085	0.092	8.50
	200	1.114	0.067	6.05	1.075	0.073	6.76
Phase Angle, δ (Degrees)	205	88.72	1.1	1.20	88.80	1.2	1.39
	197	88.80	0.78	0.880	88.90	0.79	0.892
G^* / sin δ (kPa)	207	1.125	0.089	7.87	1.086	0.092	8.50
	201	1.115	0.068	6.08	1.076	0.073	6.78
TESTS ON TFO (T179) OR RTFO (T240) RESIDUE							
Change in Mass (Percent)	203	-0.2540	0.210	-81.77	-0.2450	0.230	-95.86
	196	-0.2743	0.073	-26.72	-0.2646	0.071	-26.80
AASHTO TP5, Dynamic Shear Rheometer (64°C, 25-mm plate, 1-mm gap) Complex Shear Modulus, G^* (kPa)	205	2.398	0.27	11.3	2.312	0.25	10.8
	198	2.383	0.21	8.74	2.290	0.21	8.99
Phase Angle, δ (Degrees)	204	87.30	0.77	0.885	87.41	0.77	0.882
	197	87.40	0.56	0.643	87.50	0.56	0.644
G^* / sin δ (kPa)	203	2.402	0.27	11.1	2.315	0.25	10.8
	197	2.383	0.21	8.88	2.293	0.21	8.96
TESTS ON PAV RESIDUE - PAV AT 100°C							
AASHTO TP5, Dynamic Shear Rheometer (28°C, 8-mm plate, 2-mm gap) Complex Shear Modulus, G^* (kPa)	197	5463.2	1160.9	21.2	5372.9	1065.3	19.8
	196	5428.0	1052.9	19.4	5359.5	1051.3	19.6
Phase Angle, δ (Degrees)	198	56.06	2.7	4.88	55.93	2.4	4.34
	191	56.05	1.6	2.82	56.15	1.6	2.90
G^* sin δ (kPa)	199	4548.7	914.9	20.1	4472.6	853.9	19.1
	198	4523.2	843.0	18.6	4463.3	845.8	19.0
AASHTO TP1, Bending Beam Rheometer (-6°C, 60 s) Creep Stiffness (MPa)	199	180.7	25.9	14.3	178.0	26.1	14.7
	196	179.7	19.0	10.6	176.6	18.9	10.7
Slope, m	199	0.366	0.030	8.16	0.367	0.028	7.73
	191	0.369	0.012	3.15	0.370	0.012	3.20
AASHTO TP3, Direct Tension (-6°C, 1 mm/min) Failure Stress (MPa)	39	2.730	0.59	21.6	2.797	0.60	21.5
Failure Strain (%)	39	0.953	0.30	31.6	1.012	0.40	39.7
	38	0.935	0.28	30.1	0.963	0.27	28.1

NOTE: The rows in blue show results after removing outlying data. Ratings are based on the results shown in blue (Any outlying data have been removed).

January 2001

AMRL PROFICIENCY SAMPLE PROGRAM

PERFORMANCE GRADED BINDER SAMPLE NOS. 181 & 182



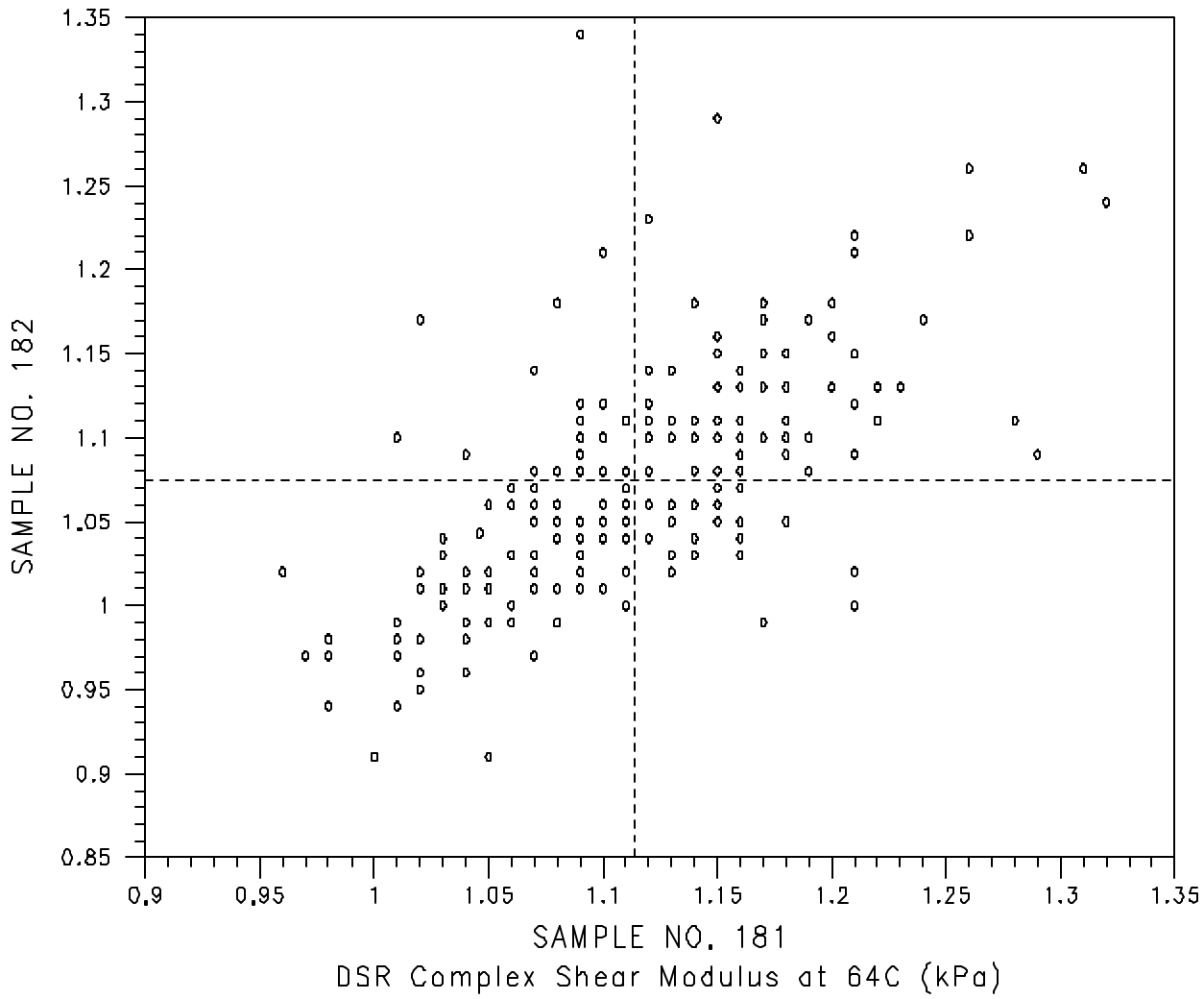
Test No. 1 195 Points

Labs Eliminated: 35 36 51 251 1312 3272 3389

Labs off the Diagram: 369 3325

AMRL PROFICIENCY SAMPLE PROGRAM

PERFORMANCE GRADED BINDER SAMPLE NOS. 181 & 182



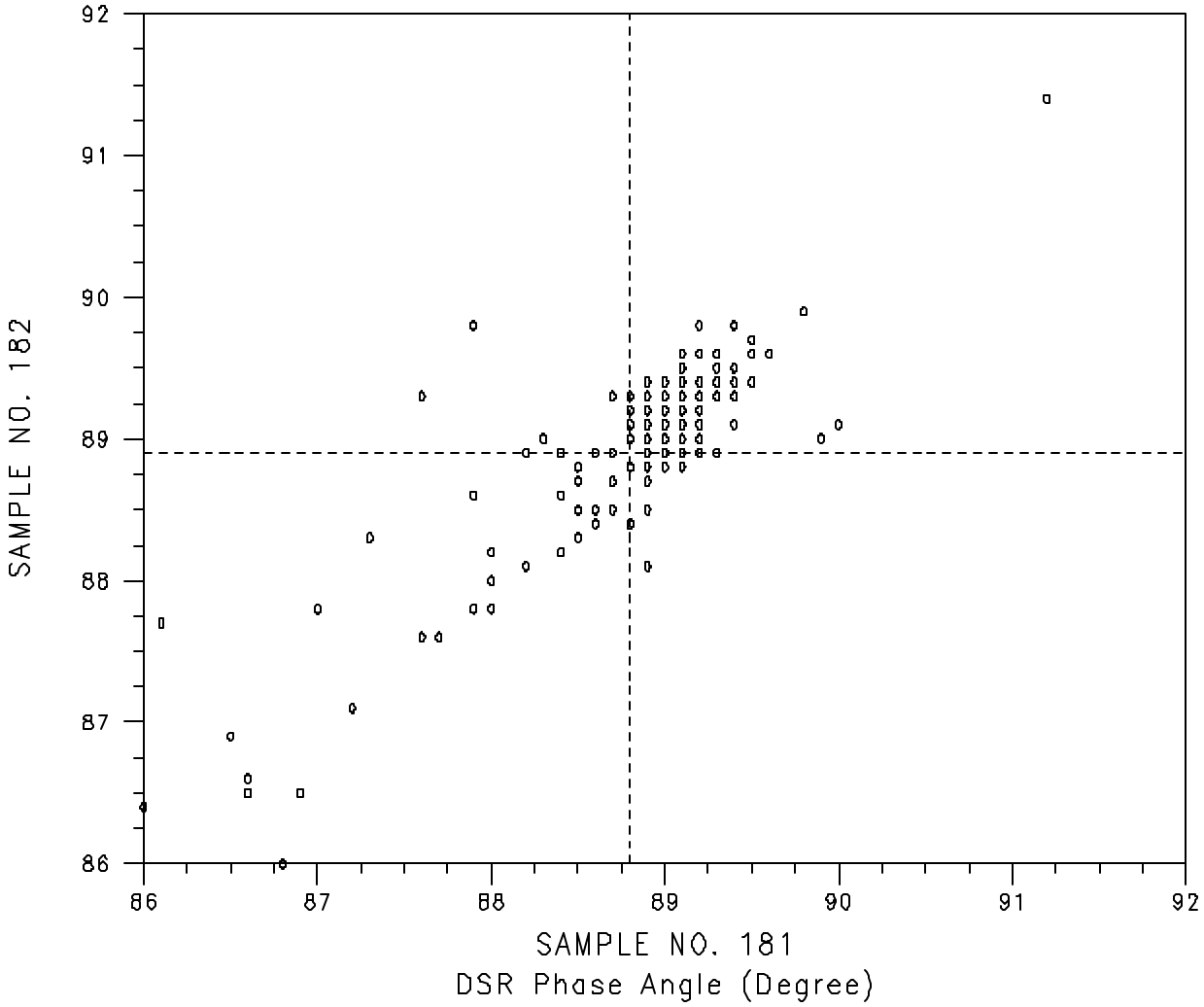
Test No. 2 199 Points

Labs Eliminated: 20 51 367 3144 3311 3782

Labs off the Diagram: 26

AMRL PROFICIENCY SAMPLE PROGRAM

PERFORMANCE GRADED BINDER SAMPLE NOS. 181 & 182



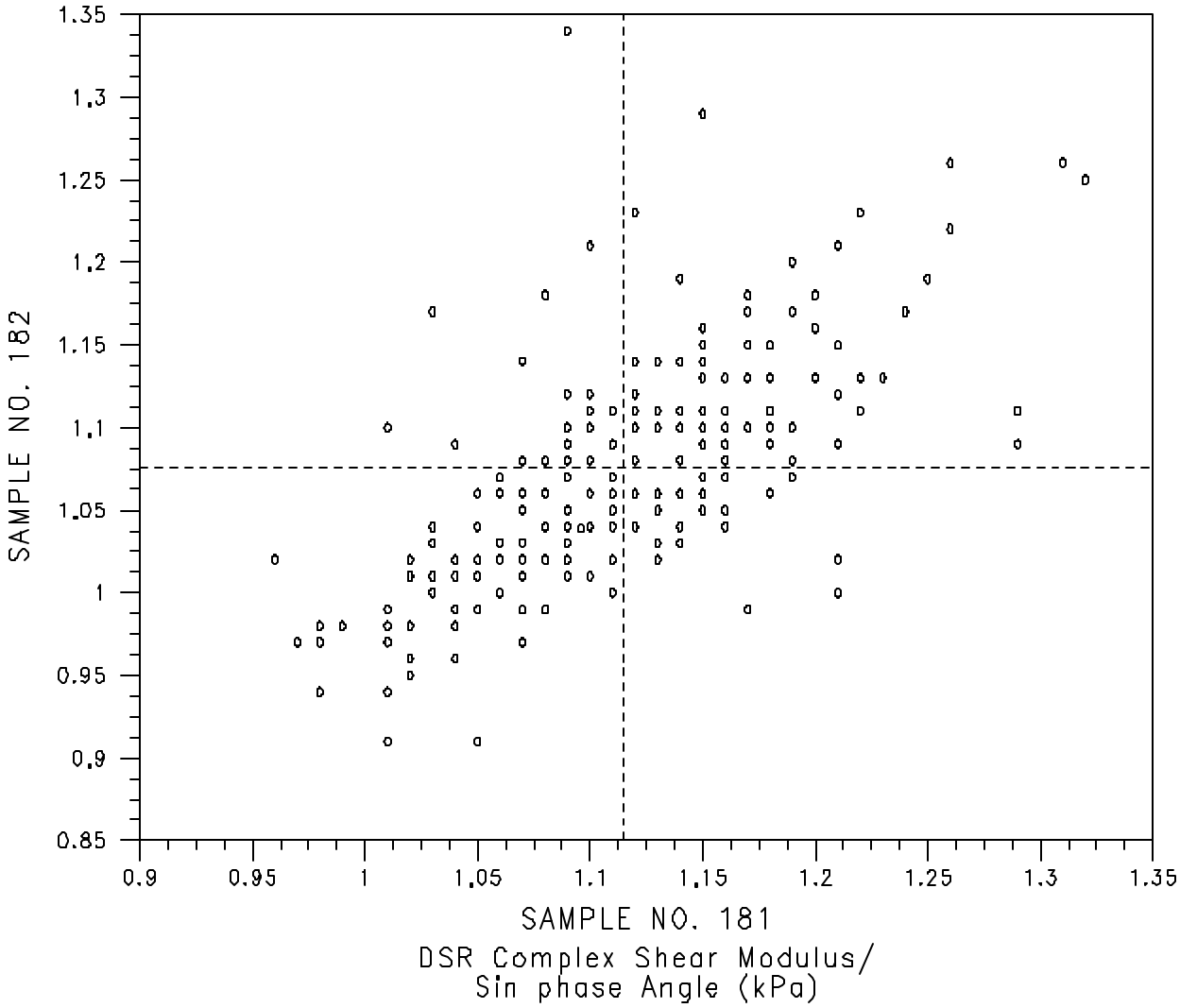
Test No. 3 192 Points

Labs Eliminated: 42 367 369 3018 3349 3377 3677 3800

Labs off the Diagram: 21 35 3148 3368 3700

AMRL PROFICIENCY SAMPLE PROGRAM

PERFORMANCE GRADED BINDER SAMPLE NOS. 181 & 182



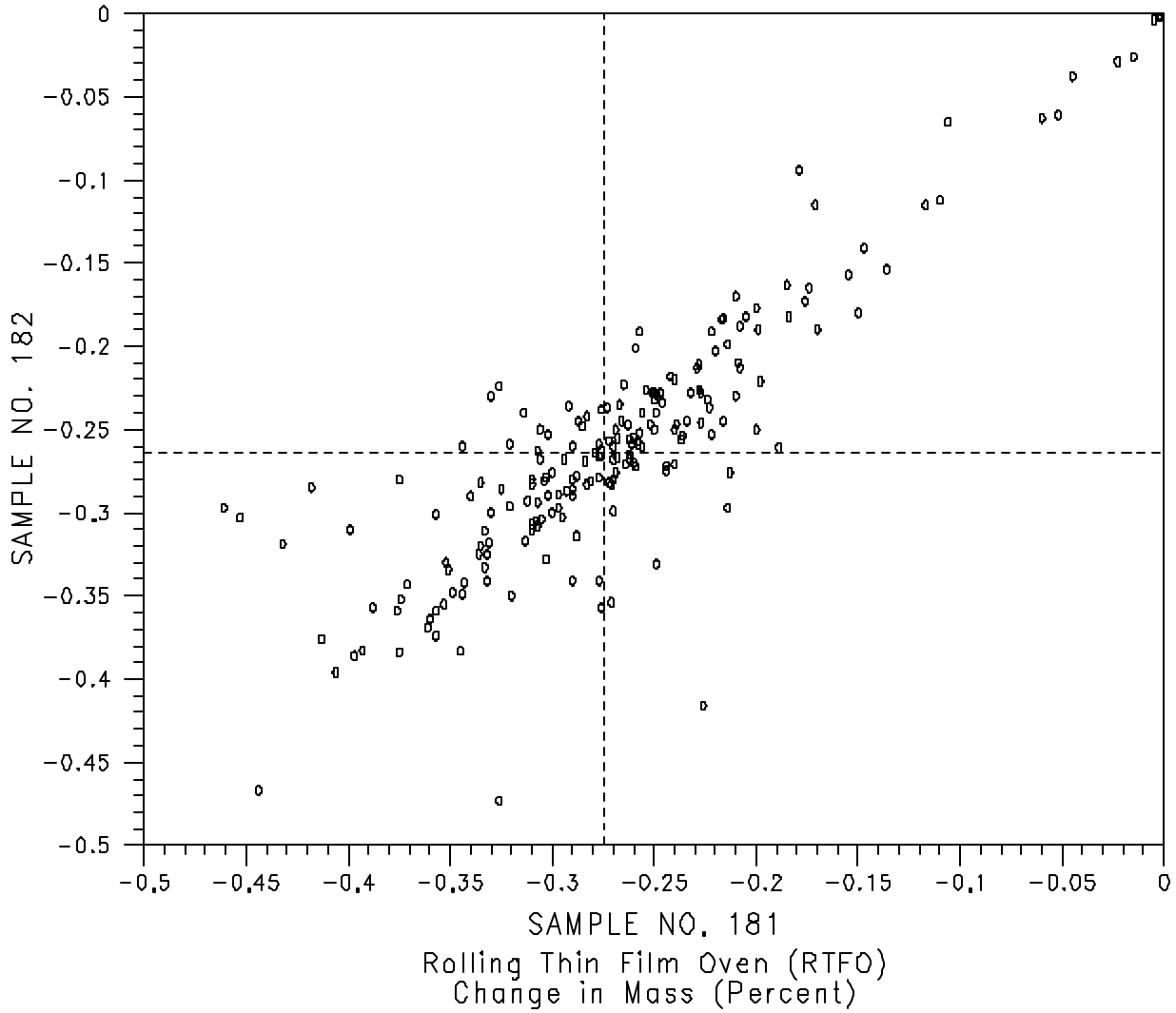
Test No. 4 200 Points

Labs Eliminated: 20 51 367 3144 3311 3782

Labs off the Diagram: 26

AMRL PROFICIENCY SAMPLE PROGRAM

PERFORMANCE GRADED BINDER SAMPLE NOS. 181 & 182



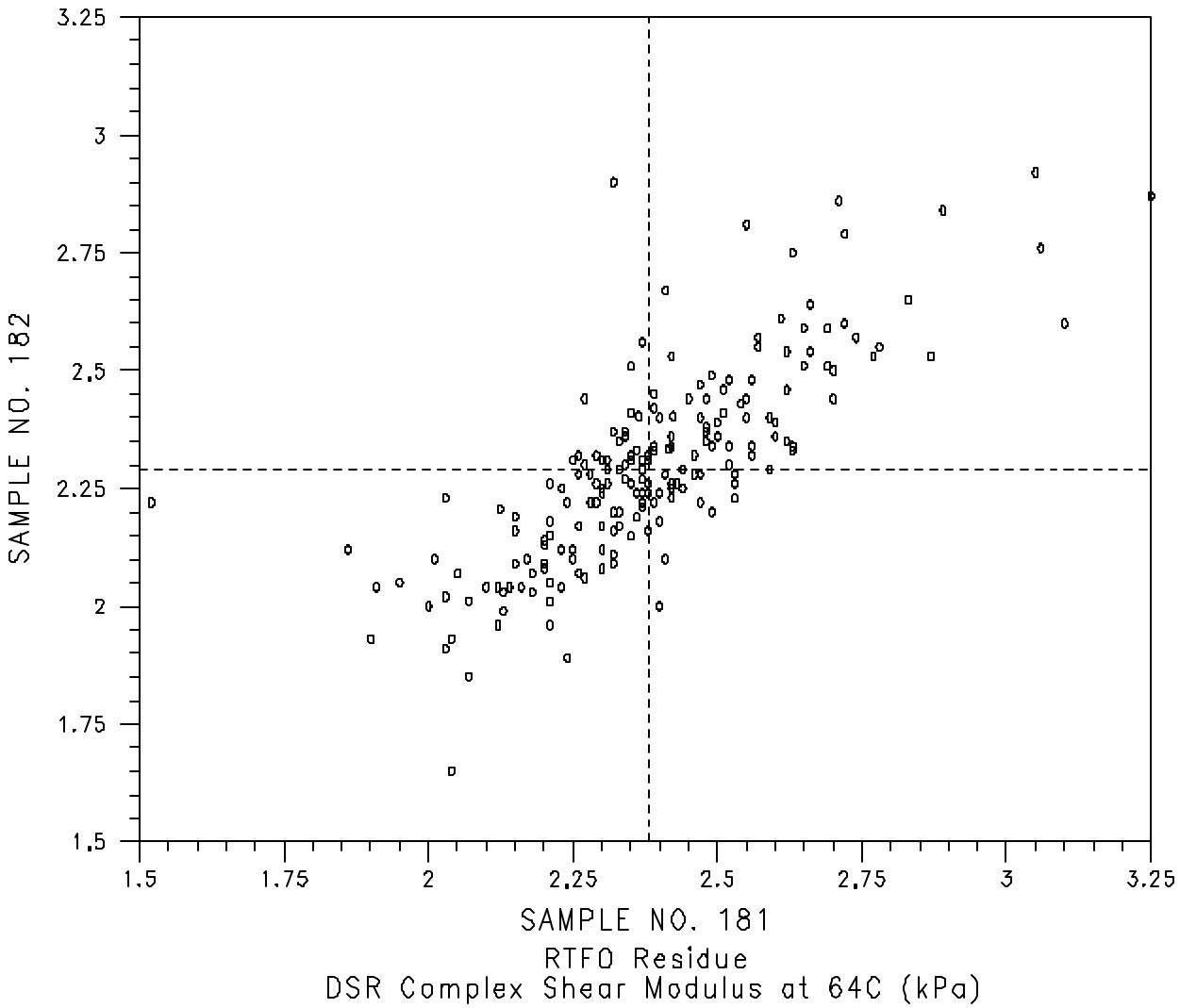
Test No. 5 195 Points

Labs Eliminated: 297 372 807 1312 3272 3319 3700

Labs off the Diagram: 615

AMRL PROFICIENCY SAMPLE PROGRAM

PERFORMANCE GRADED BINDER SAMPLE NOS. 181 & 182



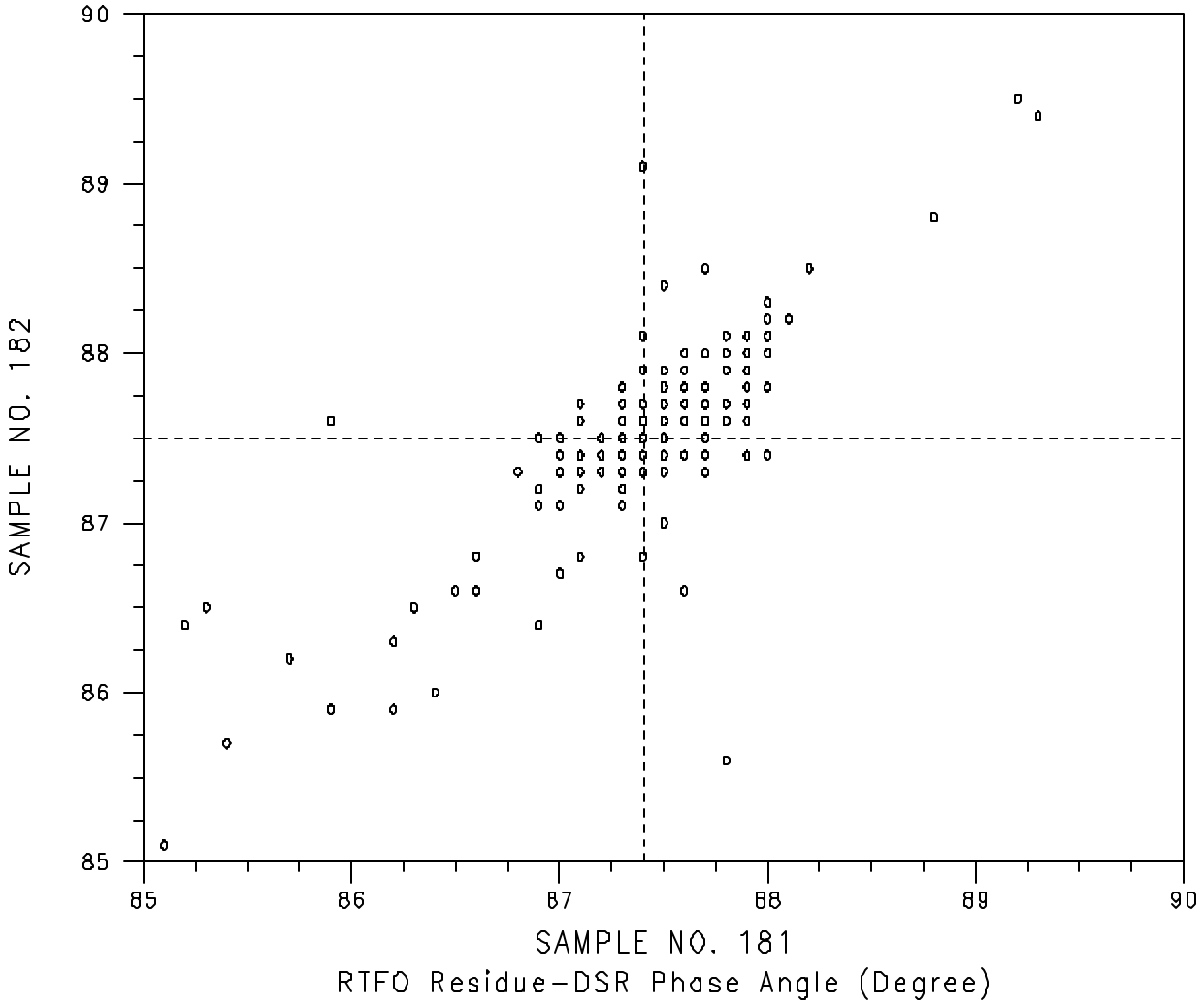
Test No. 6 198 Points

Labs Eliminated: 20 26 51 1061 3272 3363 3782

Labs off the Diagram: None

AMRL PROFICIENCY SAMPLE PROGRAM

PERFORMANCE GRADED BINDER SAMPLE NOS. 181 & 182



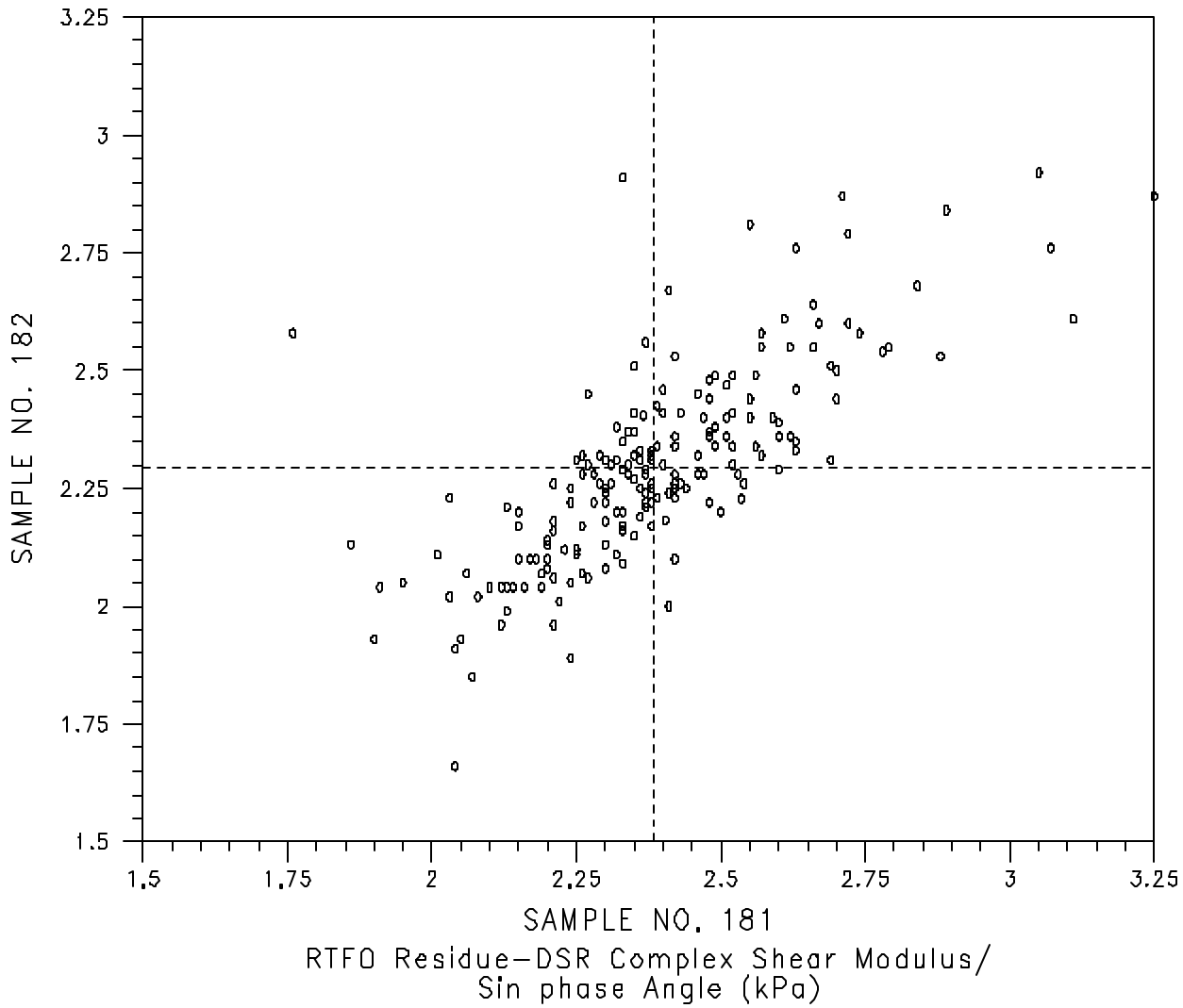
Test No. 7 197 Points

Labs Eliminated: 35 51 367 3018 3158 3349 3800

Labs off the Diagram: None

AMRL PROFICIENCY SAMPLE PROGRAM

PERFORMANCE GRADED BINDER SAMPLE NOS. 181 & 182



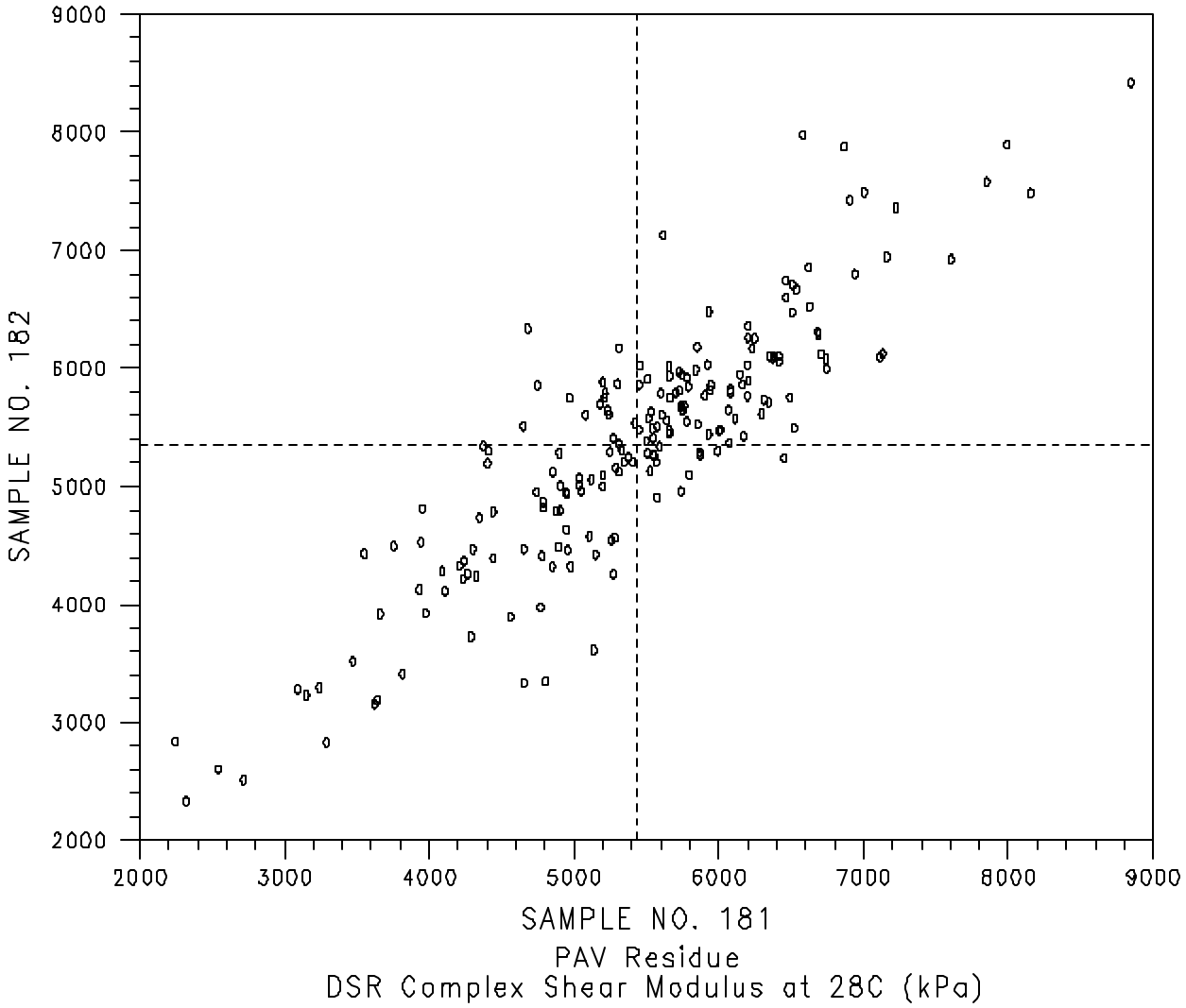
Test No. 8 197 Points

Labs Eliminated: 20 26 51 1061 3272 3782

Labs off the Diagram: None

AMRL PROFICIENCY SAMPLE PROGRAM

PERFORMANCE GRADED BINDER SAMPLE NOS. 181 & 182



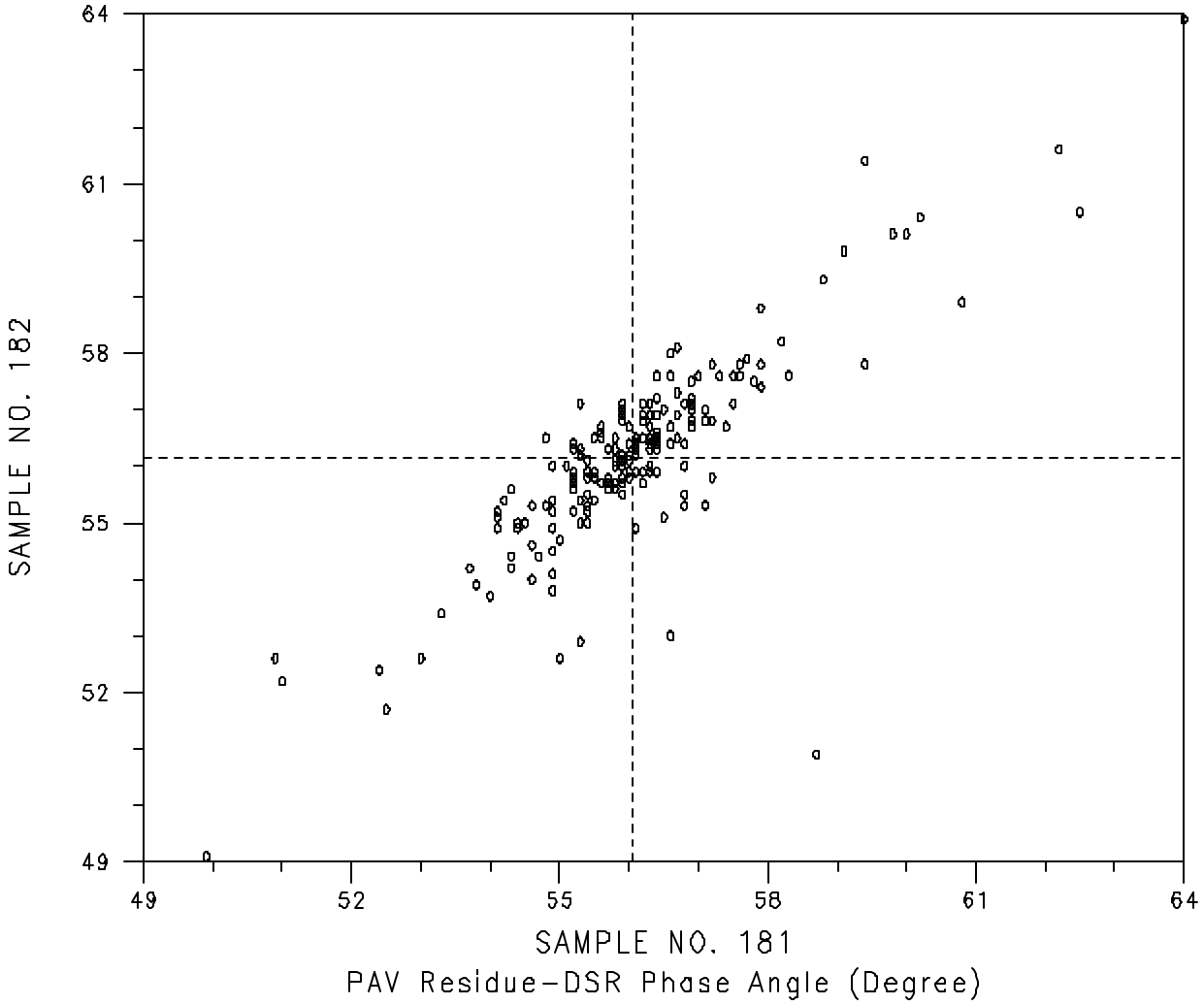
Test No. 9 $ Points

Labs Eliminated: 3381

Labs off the Diagram: None

AMRL PROFICIENCY SAMPLE PROGRAM

PERFORMANCE GRADED BINDER SAMPLE NOS. 181 & 182



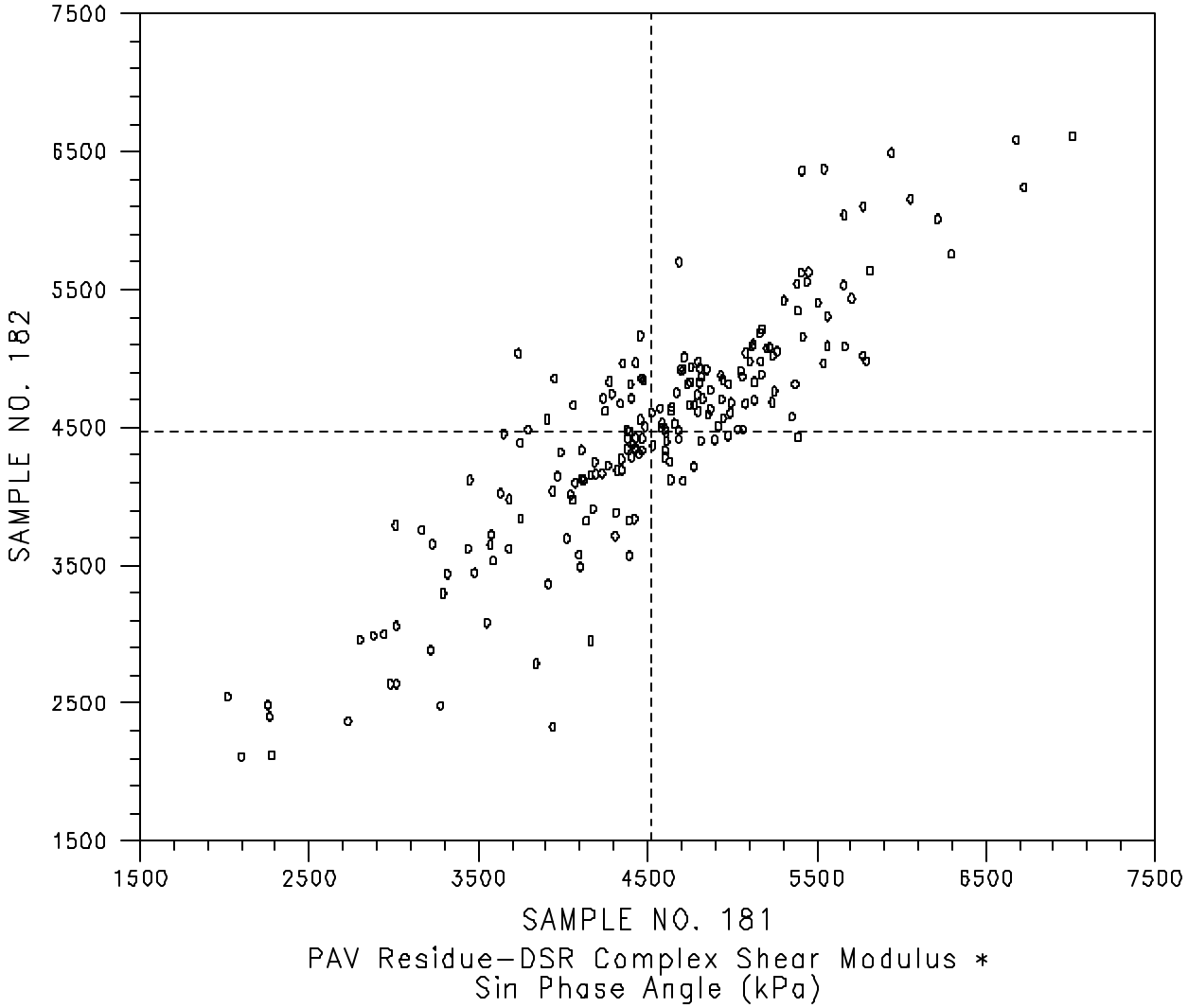
Test No. 10 191 Points

Labs Eliminated: 1 70 367 3272 3277 3363 3698

Labs off the Diagram: None

AMRL PROFICIENCY SAMPLE PROGRAM

PERFORMANCE GRADED BINDER SAMPLE NOS. 181 & 182



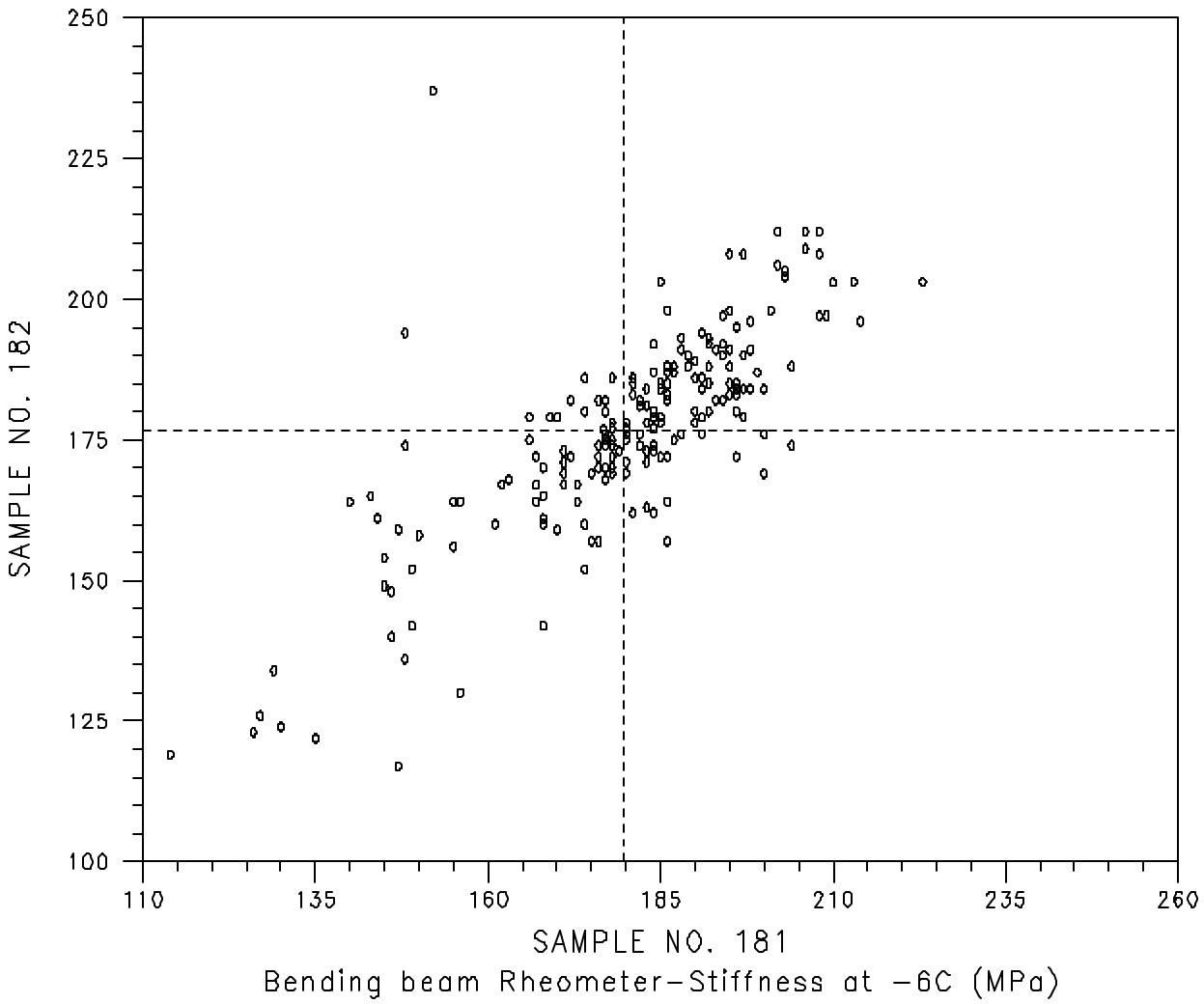
Test No. 11 198 Points

Labs Eliminated: 3381

Labs off the Diagram: None

AMRL PROFICIENCY SAMPLE PROGRAM

PERFORMANCE GRADED BINDER SAMPLE NOS. 181 & 182



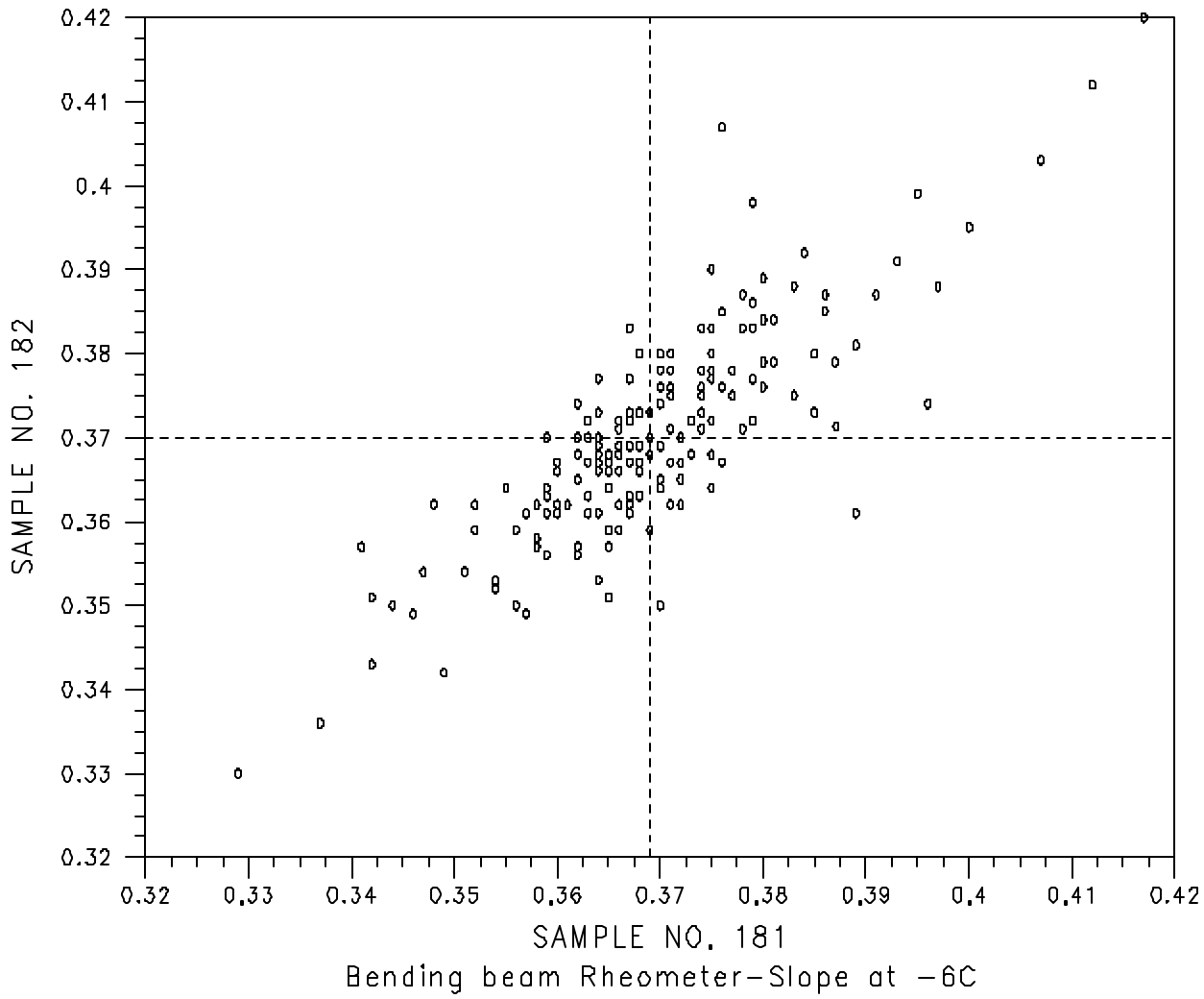
Test No. 12 195 Points

Labs Eliminated: 1 367 1426

Labs off the Diagram: 3272

AMRL PROFICIENCY SAMPLE PROGRAM

PERFORMANCE GRADED BINDER SAMPLE NOS. 181 & 182



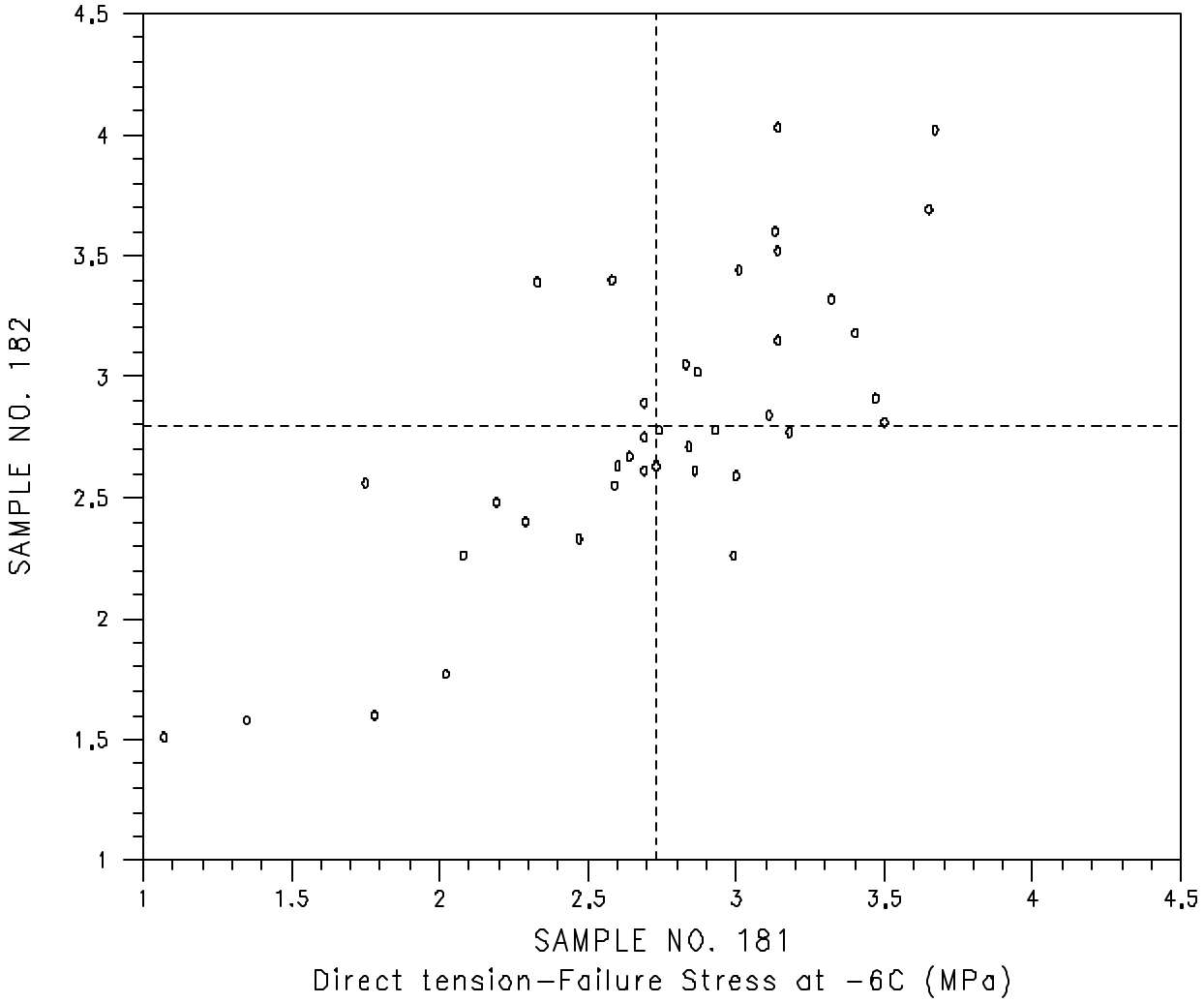
Test No. 13 39 Points

Labs Eliminated: None

Labs off the Diagram: None

AMRL PROFICIENCY SAMPLE PROGRAM

PERFORMANCE GRADED BINDER SAMPLE NOS. 181 & 182



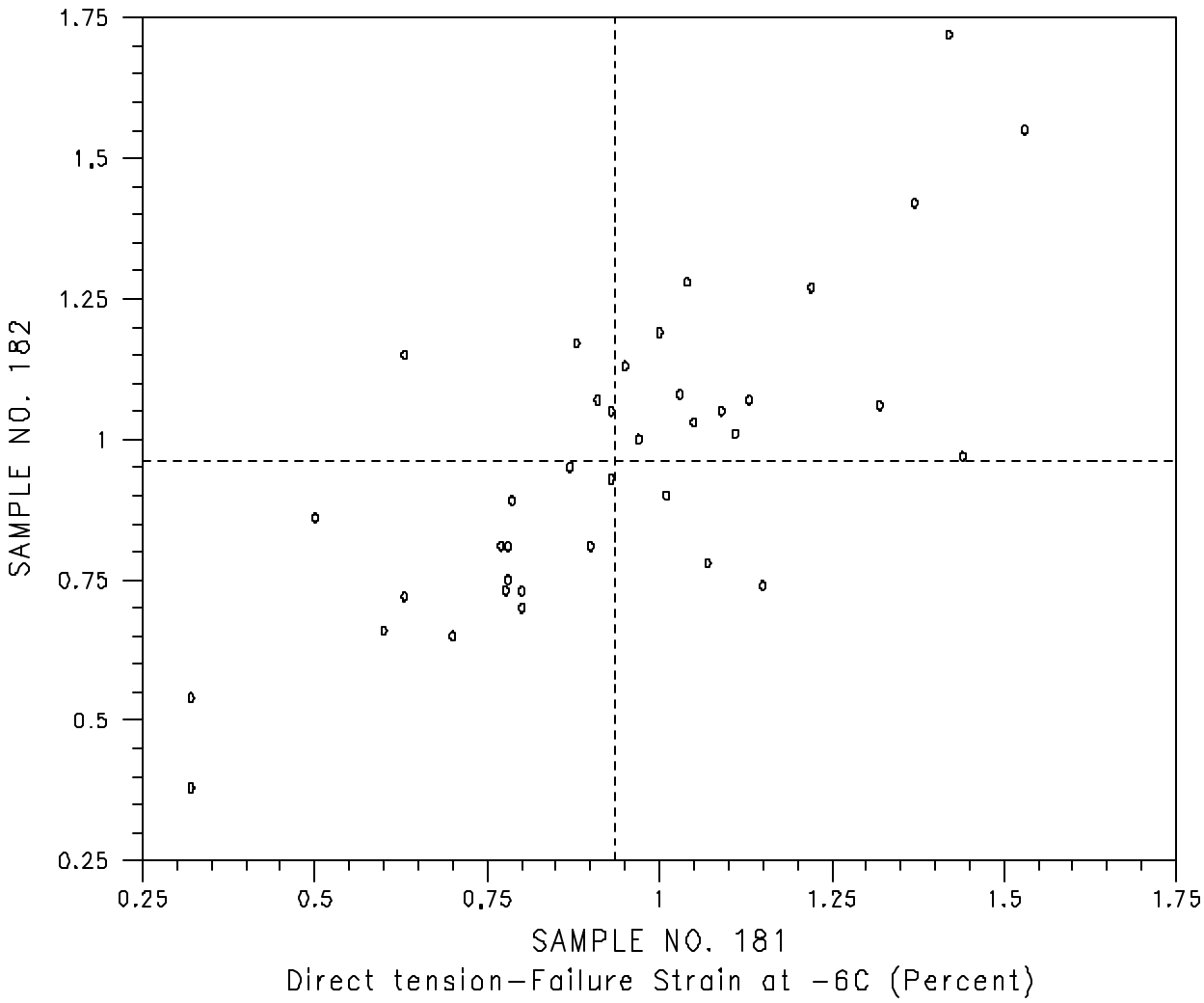
Test No. 14 39 Points

Labs Eliminated: None

Labs off the Diagram: None

AMRL PROFICIENCY SAMPLE PROGRAM

PERFORMANCE GRADED BINDER SAMPLE NOS. 181 & 182



Test No. 15 38 Points

Labs Eliminated: 47

Labs off the Diagram: None