

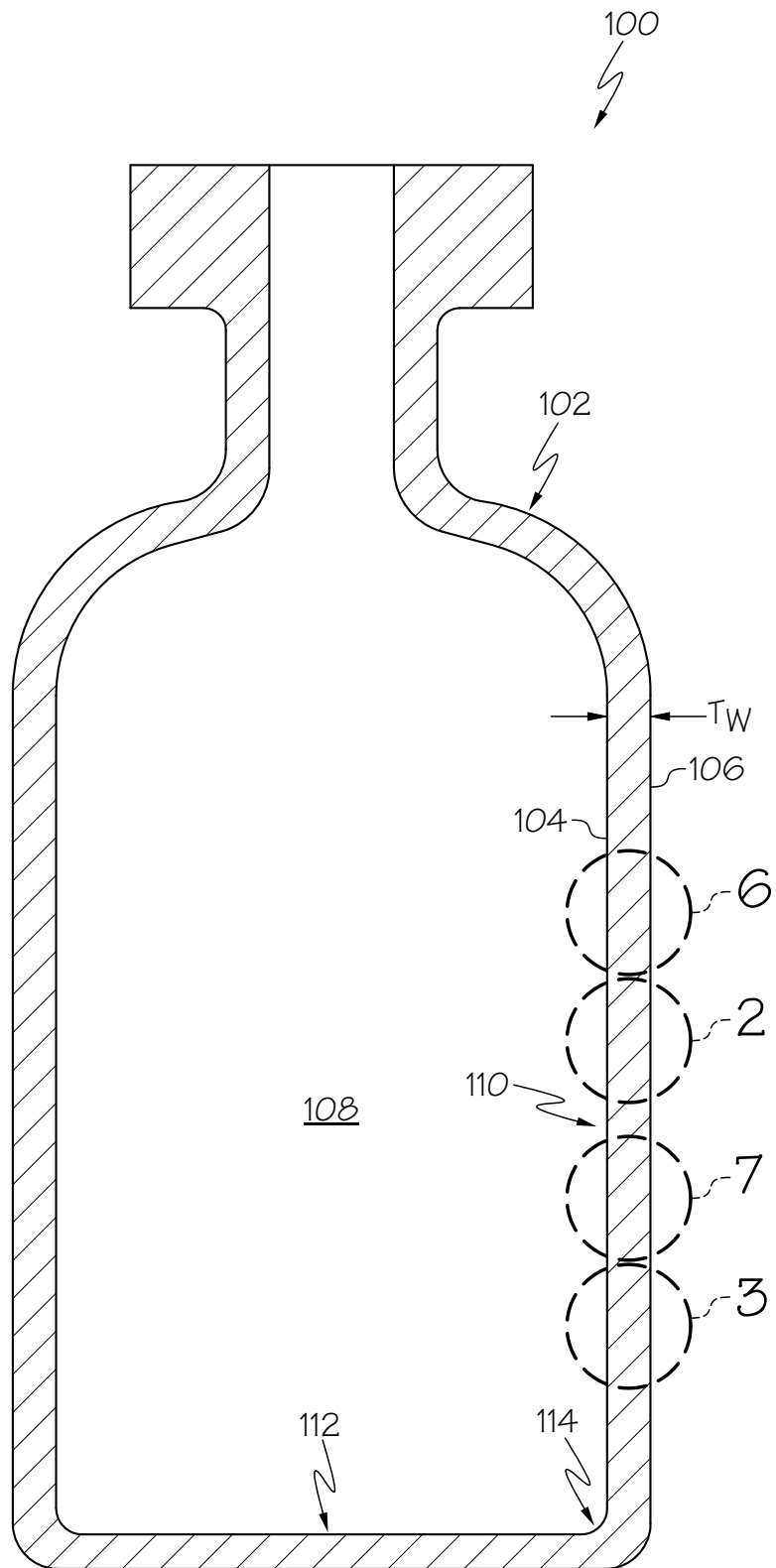


FIG. 1

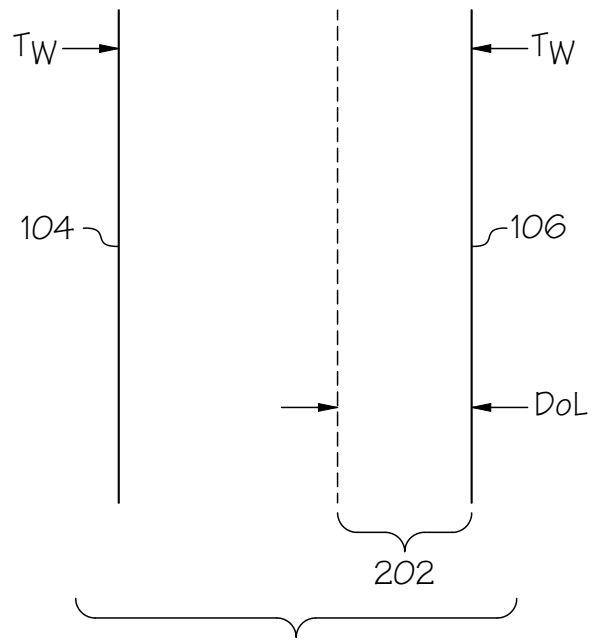


FIG. 2

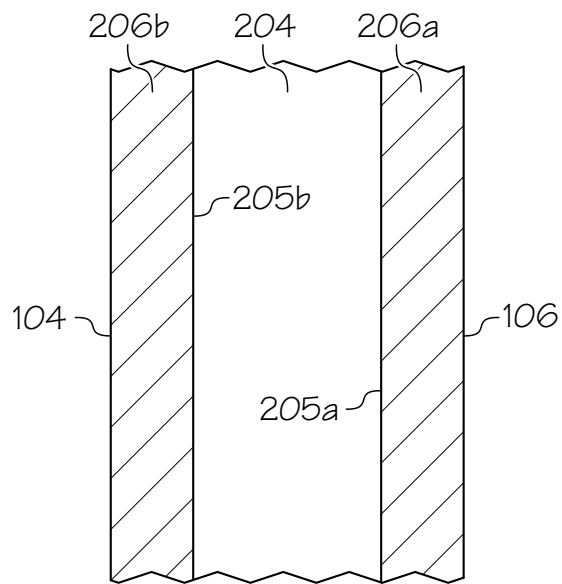


FIG. 3

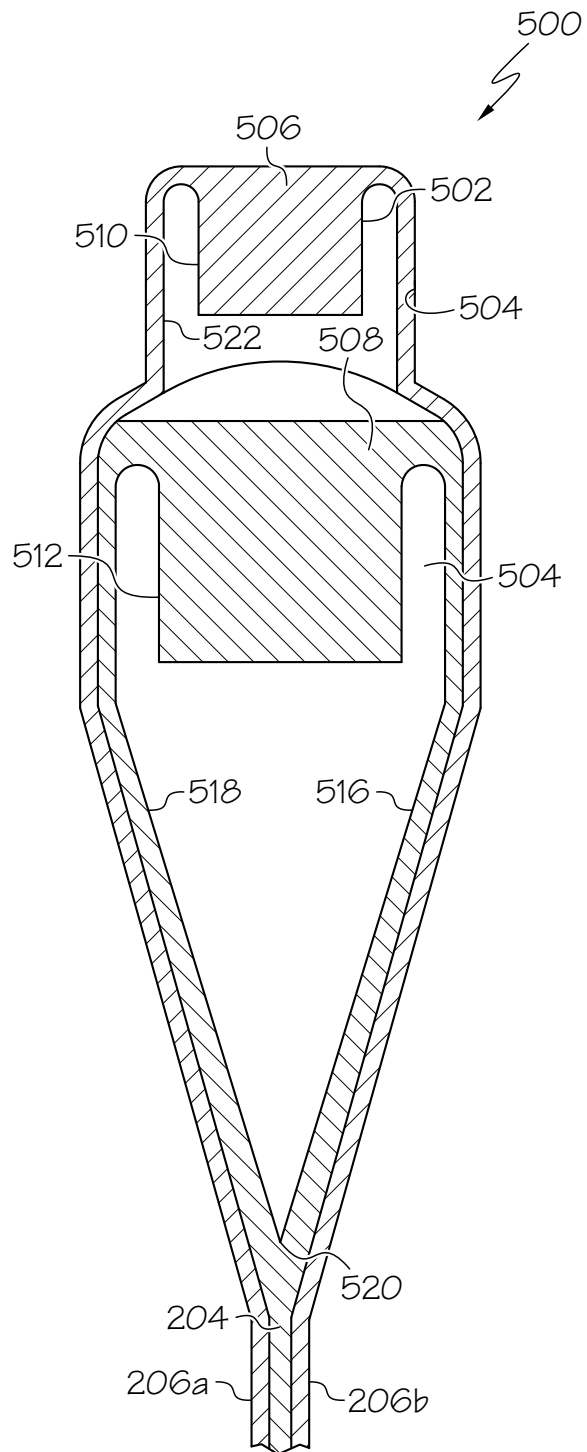


FIG. 4

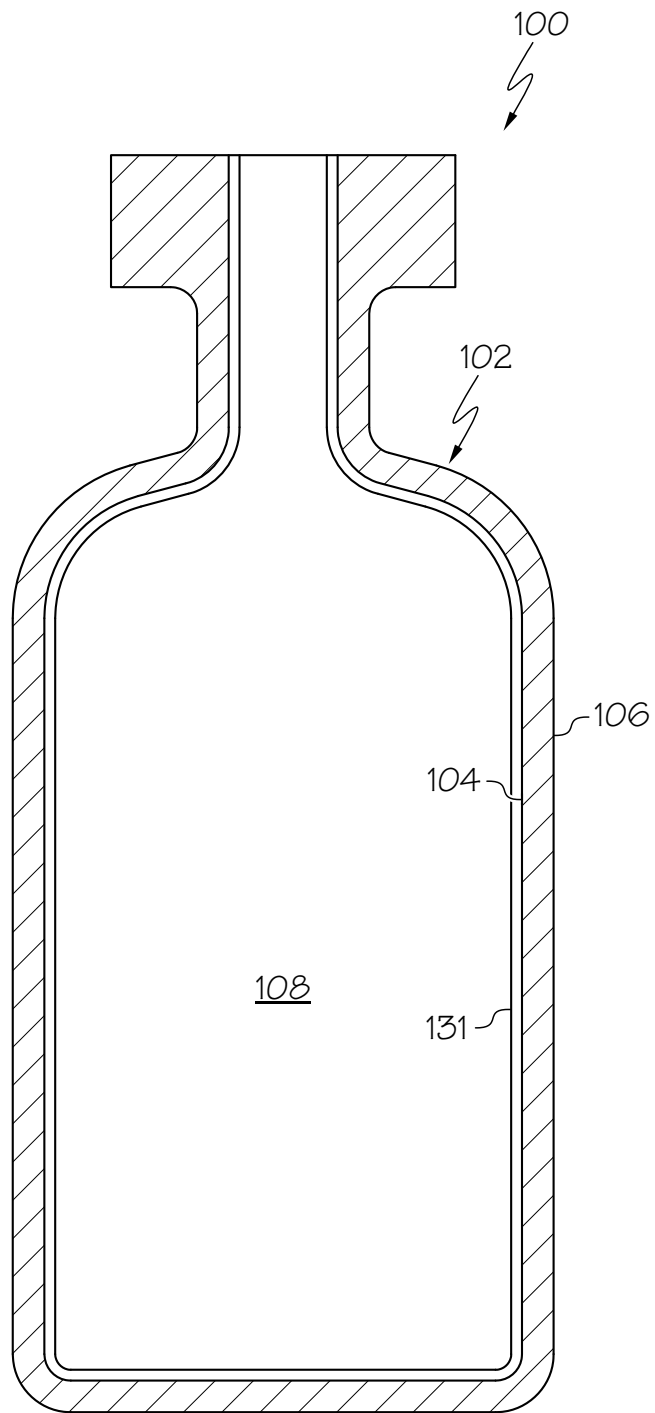


FIG. 5

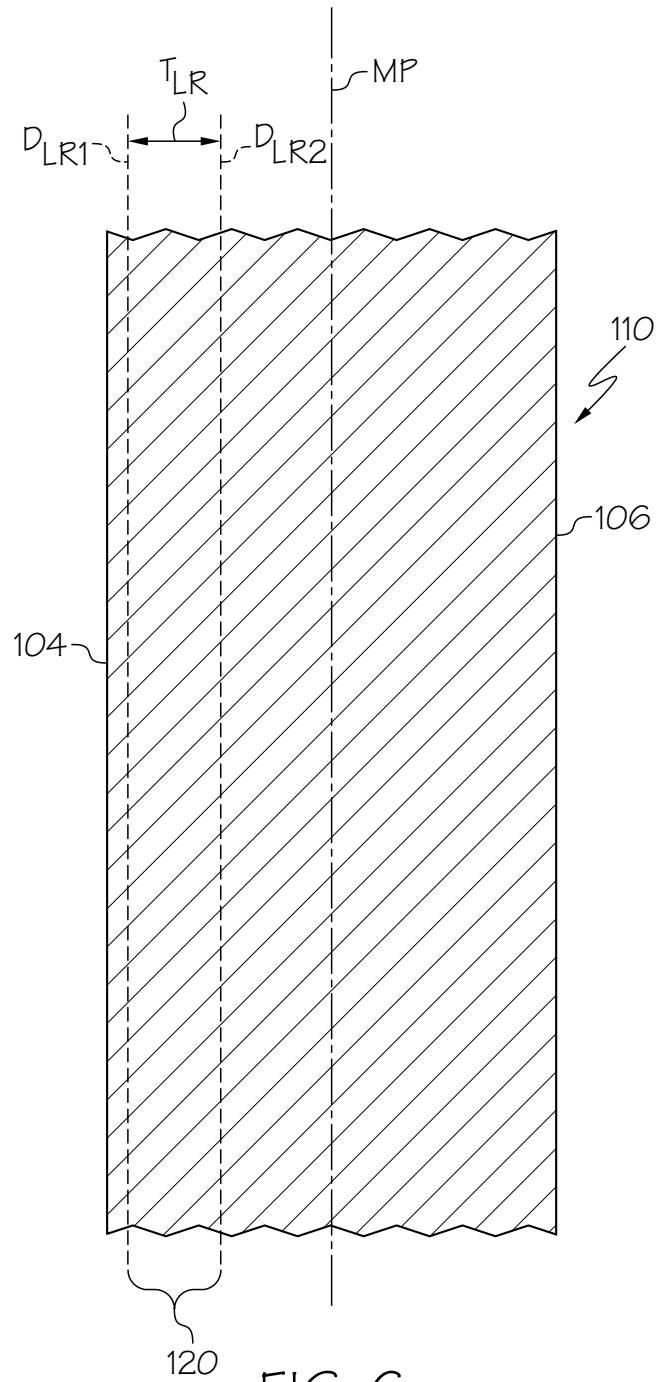


FIG. 6

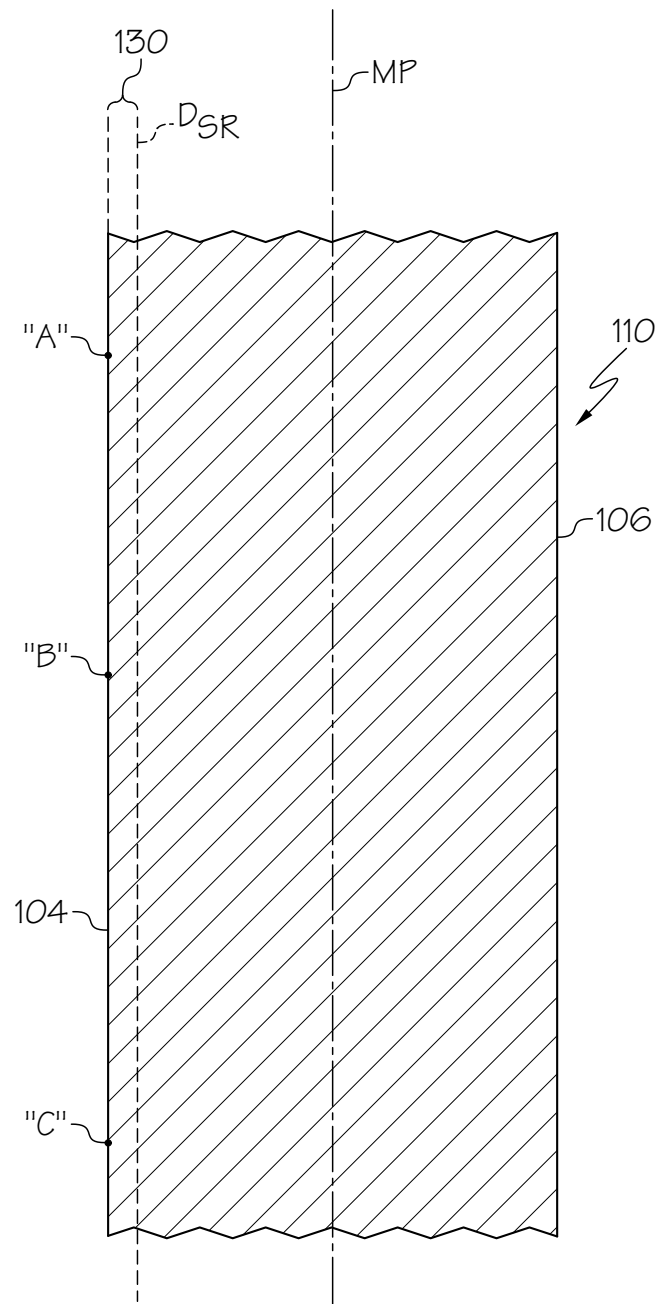


FIG. 7

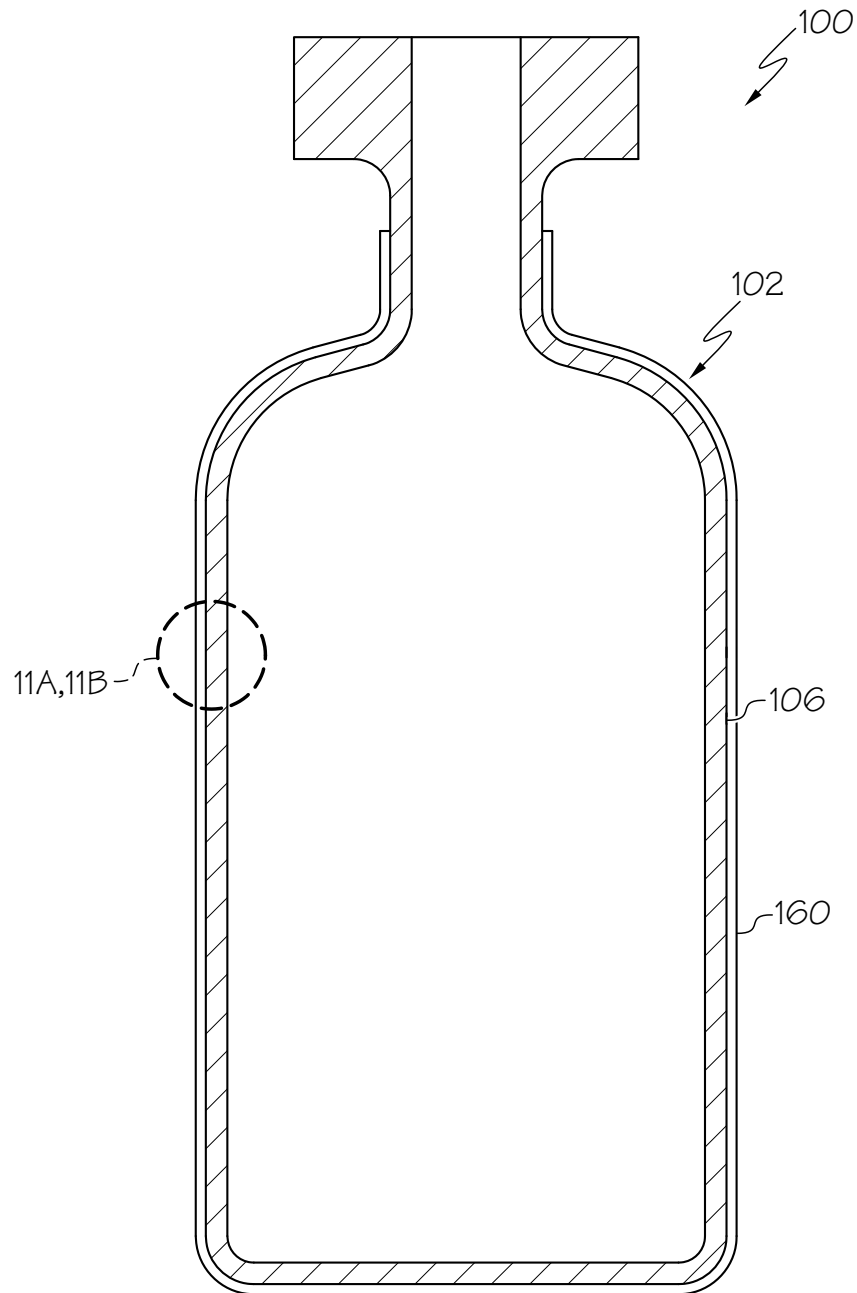


FIG. 8

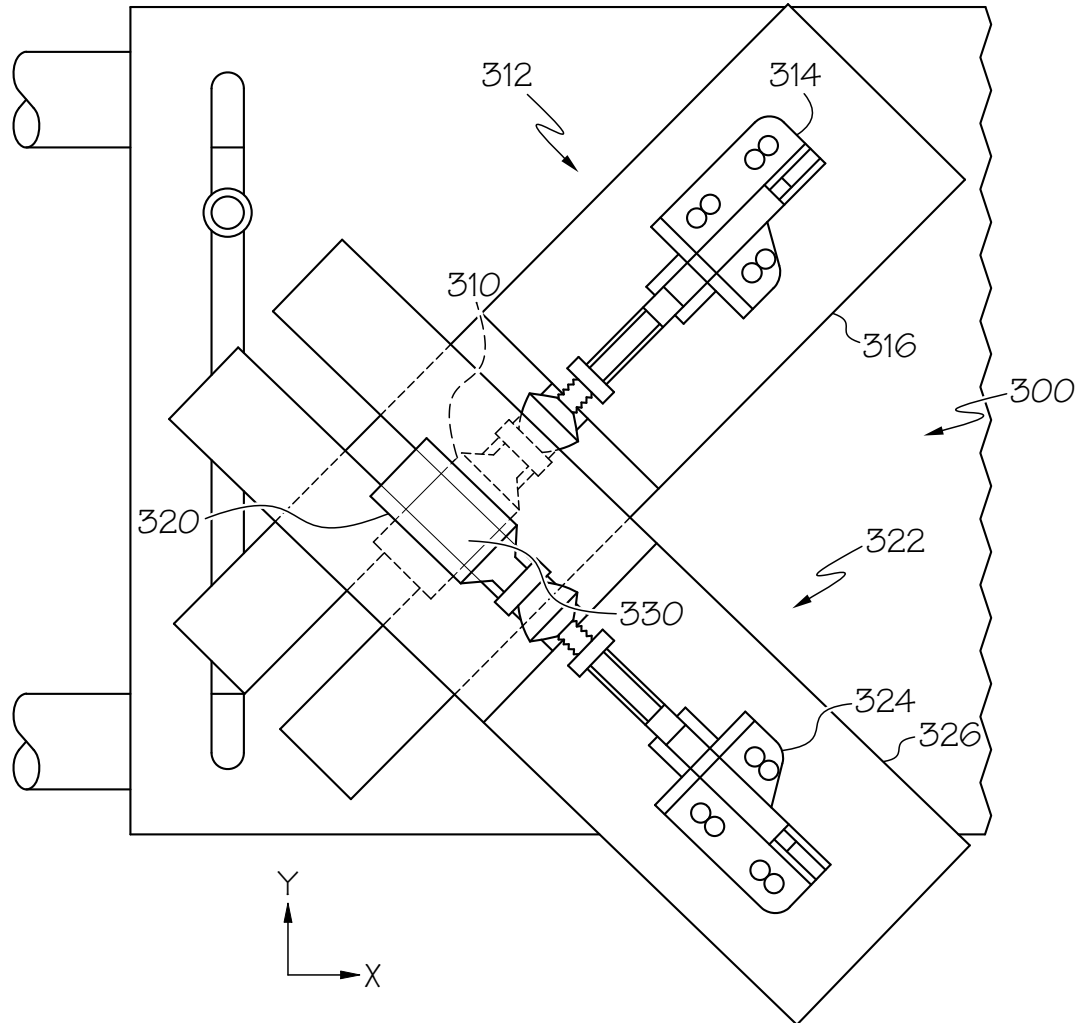


FIG. 9

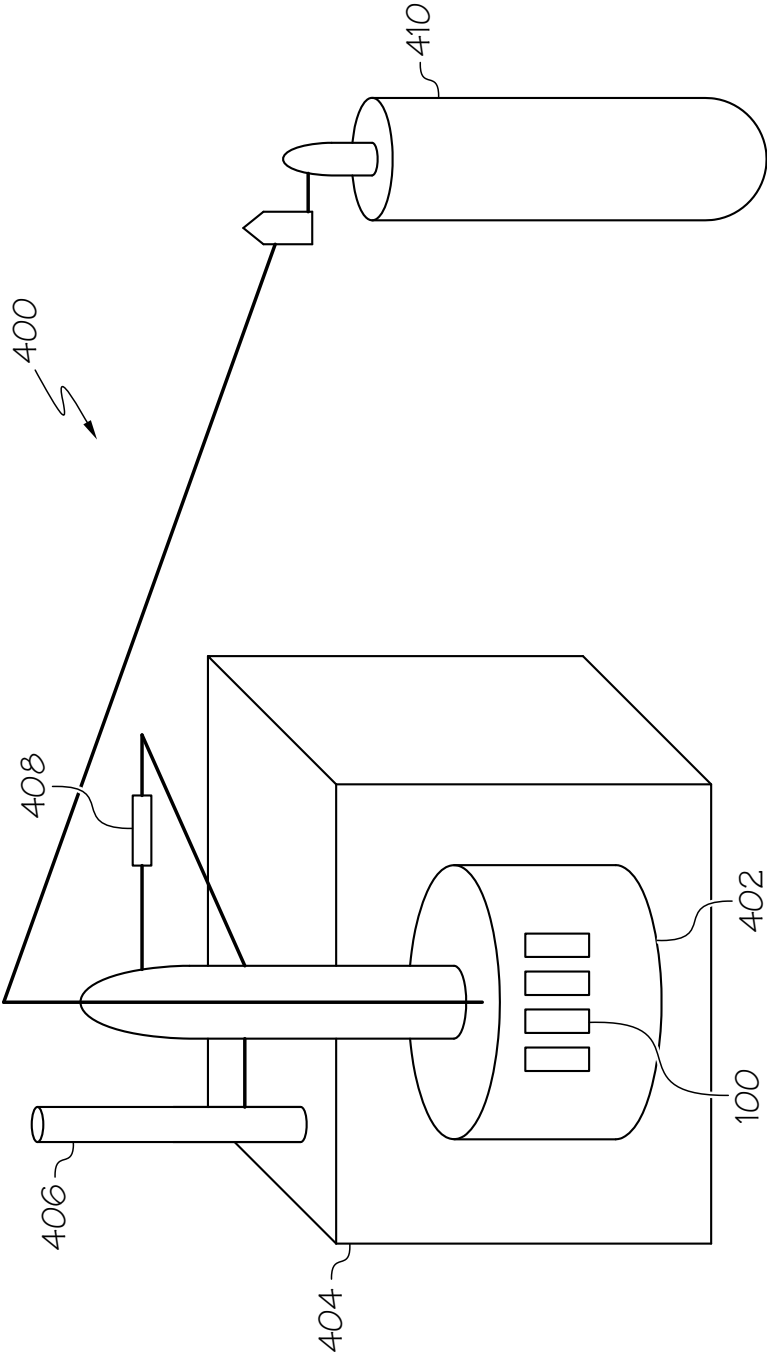


FIG. 10

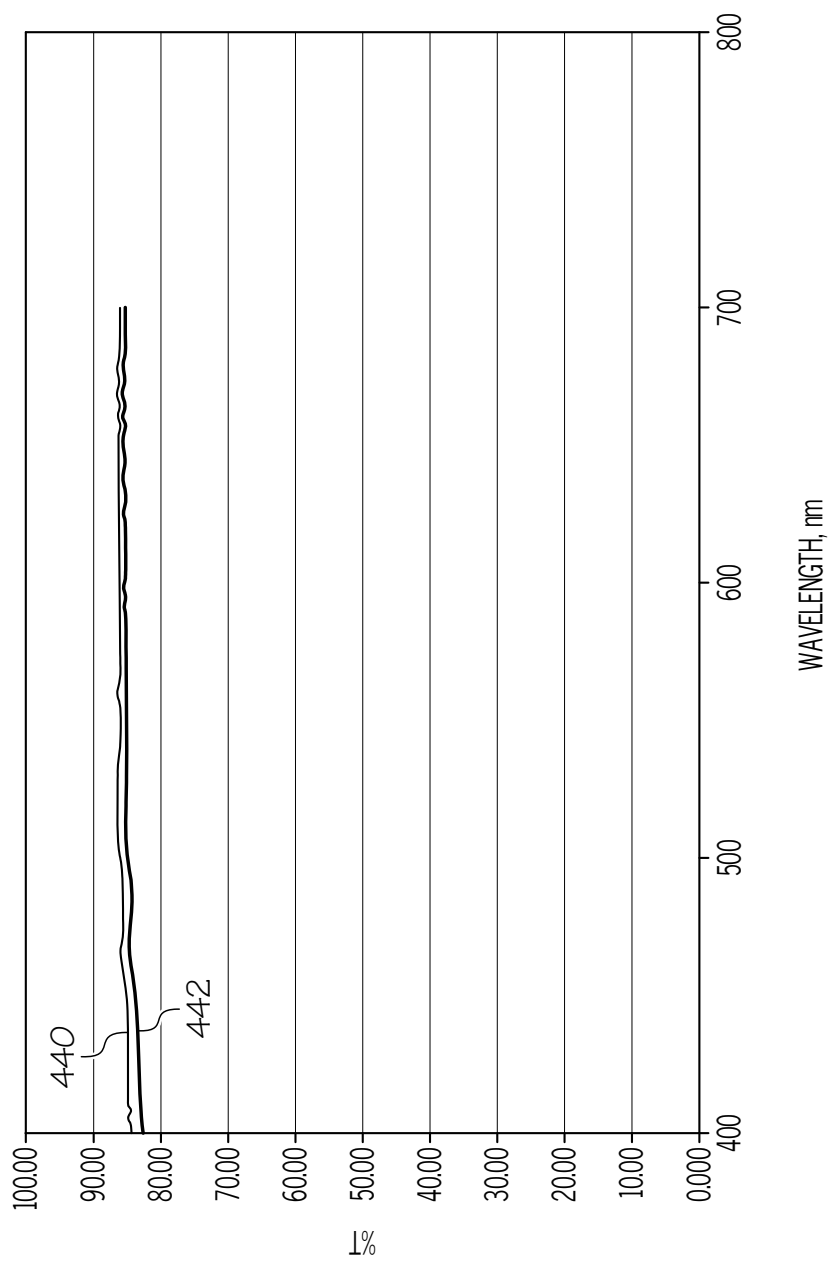


FIG. 11

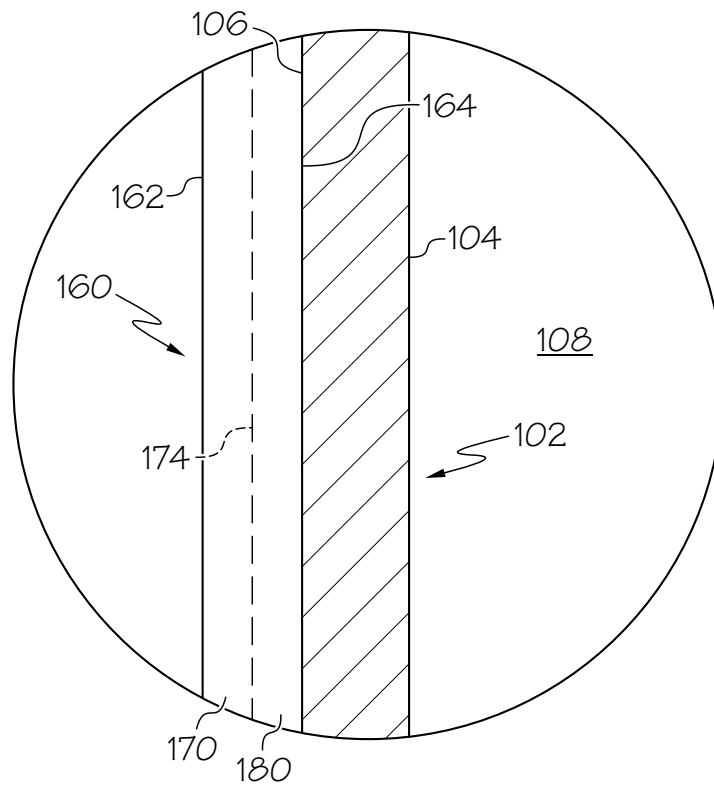


FIG. 12A

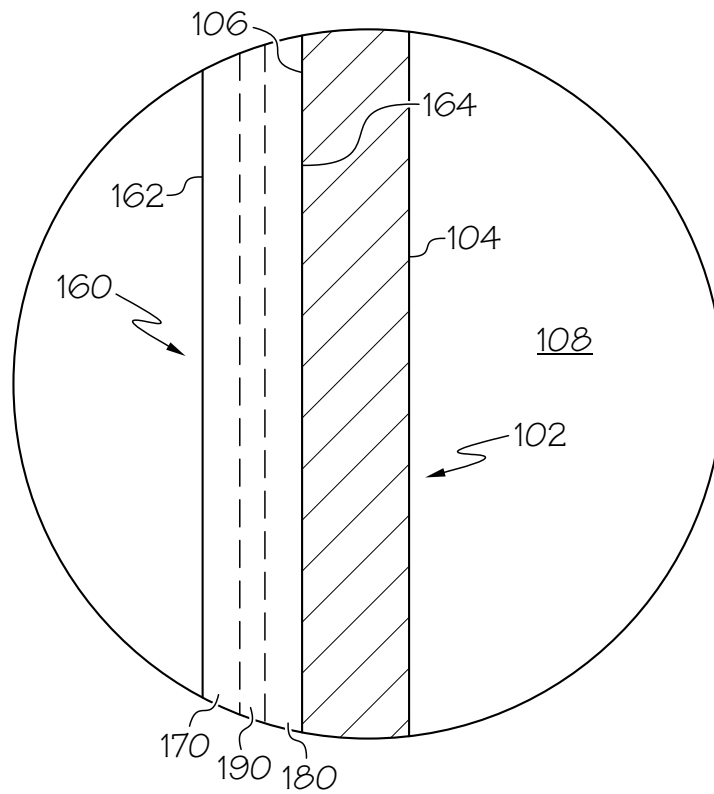


FIG. 12B

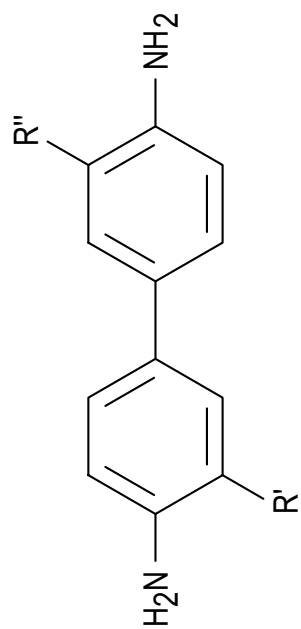


FIG. 13

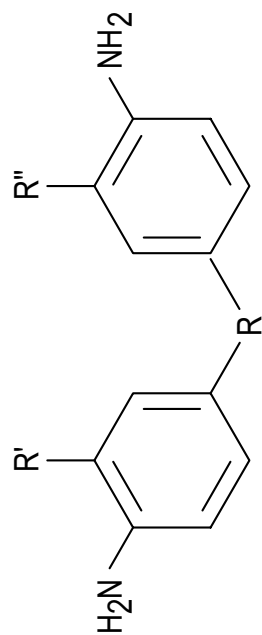


FIG. 14

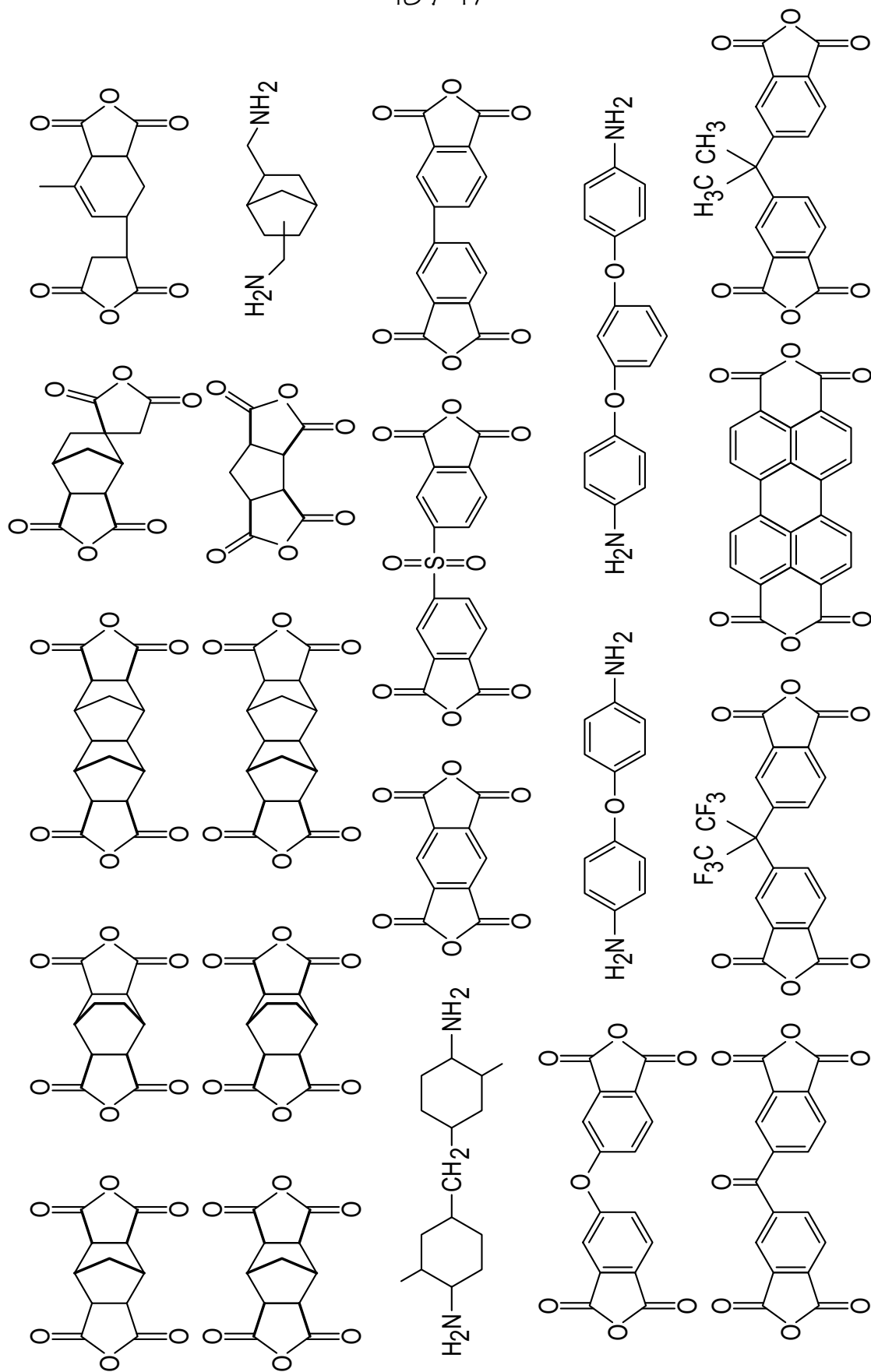


FIG. 15

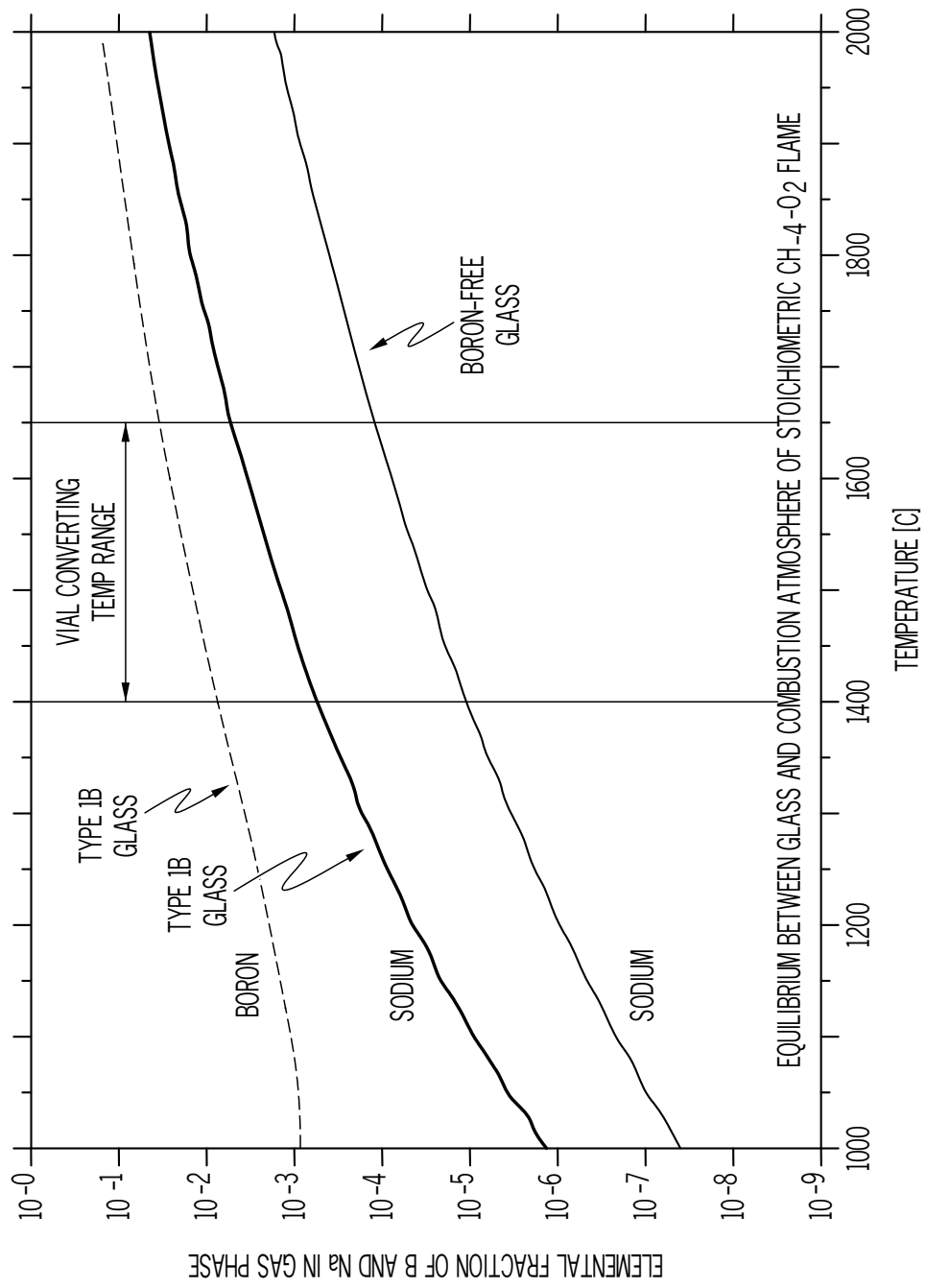


FIG. 16

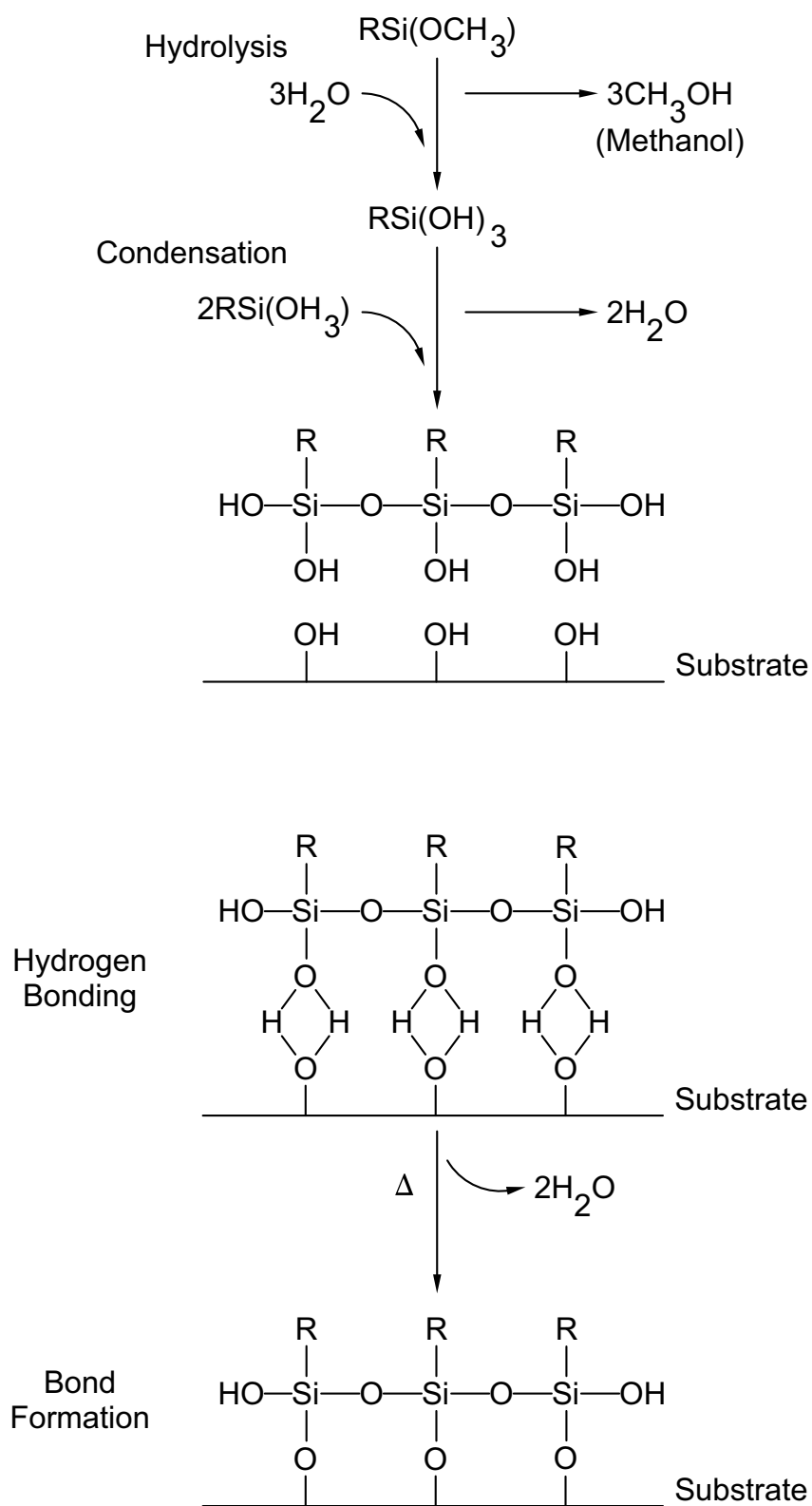


FIG. 17

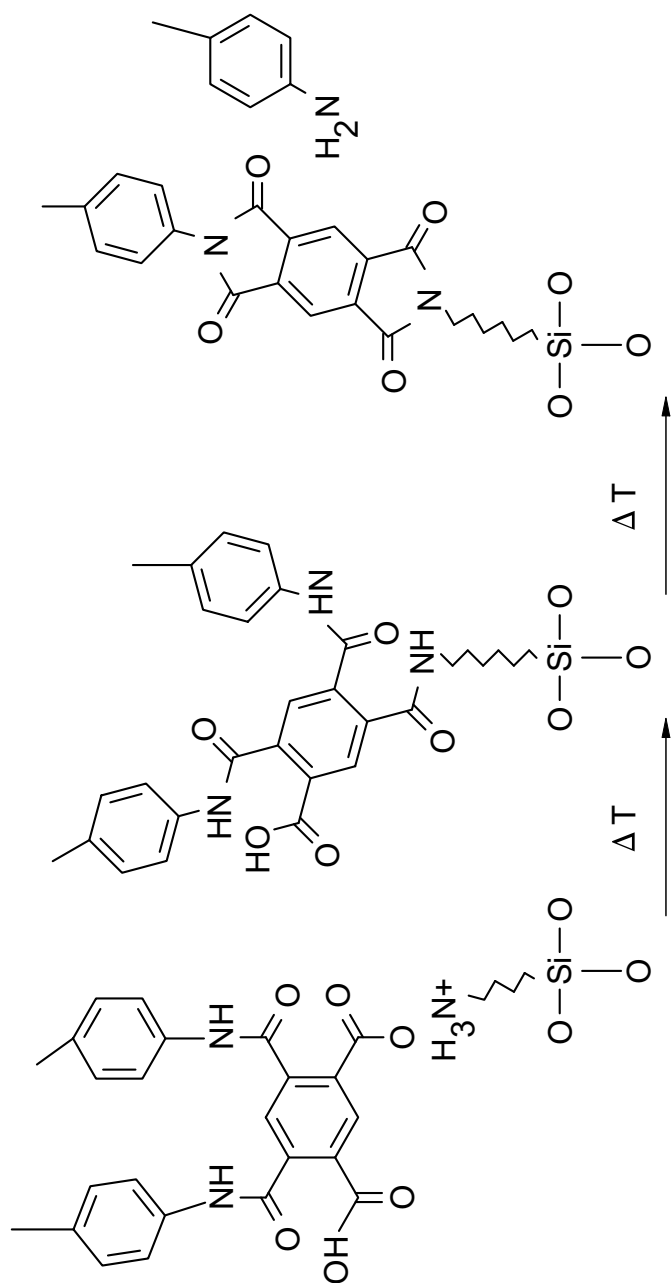


FIG. 18

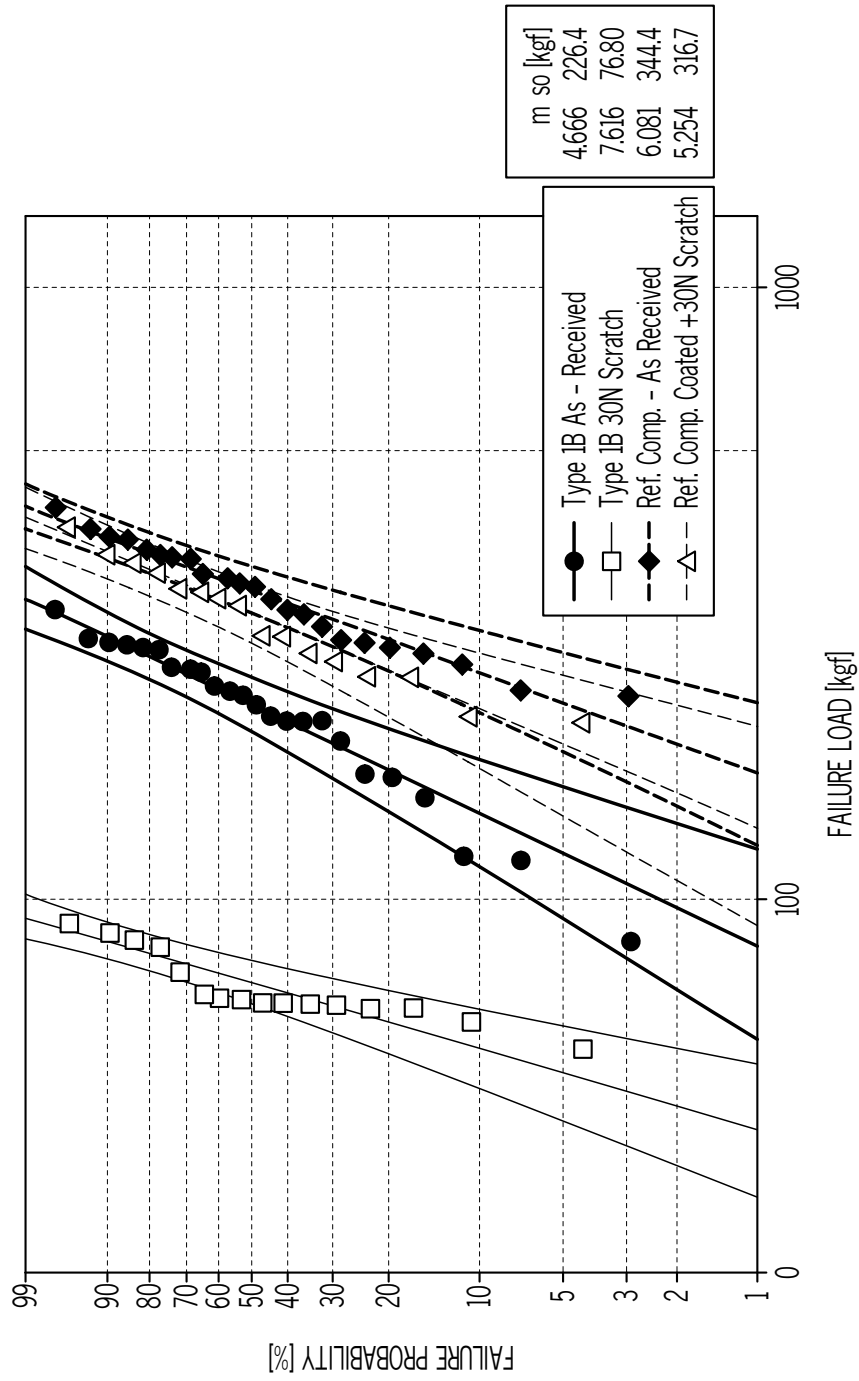


FIG. 19

30N SCRATCH ON TWO VIAL TYPES

SAMPLE TYPE	VIAL #S	NORMAL LOAD (N)			COF	
		AVG	MIN	MAX	AVG	ST. DEV.
UNCOATED TYPE IB	1&2	31	28	34	0.42	0.18
	3&4	31	29	36	0.45	0.18
	5&6	30	28	34	0.45	0.11
	7&8	29	26	32	0.33	0.14
	9&10	30	28	33	0.16	0.15
	11&12	28	25	33	0.16	0.09
	12&14	30	29	33	0.22	0.16
	15&16	31	28	35	0.53	0.11
	AVERAGE	30	28	34	0.38	0.14
REF. COMP. IX@450 COATED 0.1/0.1 APS/NOV800	1&2	30	28	31	0.12	0.04
	3&4	28	24	31	0.16	0.08
	5&6	40	30	44	0.08	0.02
	7&8	30	27	31	0.08	0.05
	9&10	30	28	30	0.08	0.03
	11&12	31	30	33	0.12	0.04
	12&14	30	29	32	0.15	0.07
	15&16	30	28	32	0.09	0.02
	AVERAGE	31	28	33	0.11	0.04

FIG. 20

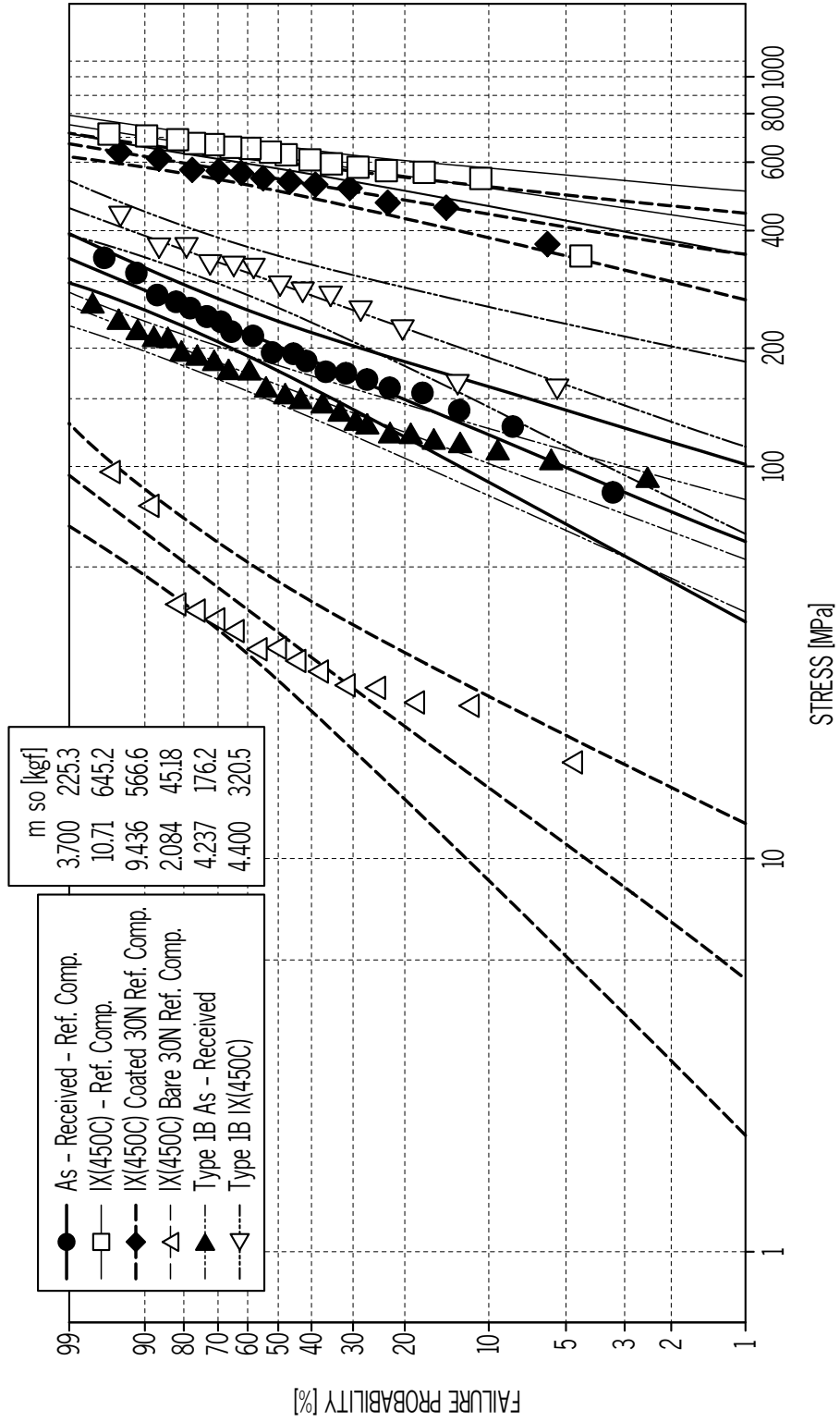


FIG. 21

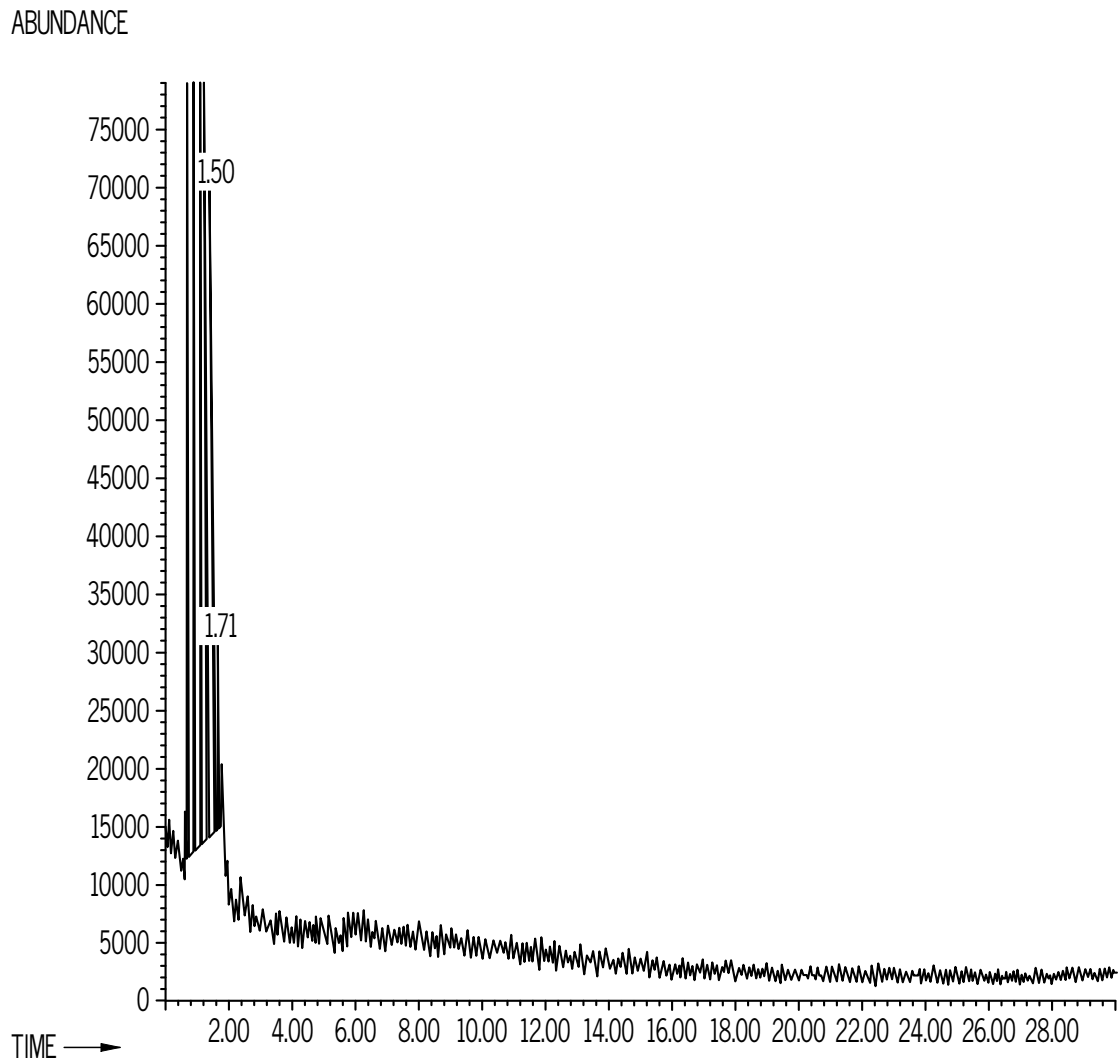


FIG. 22

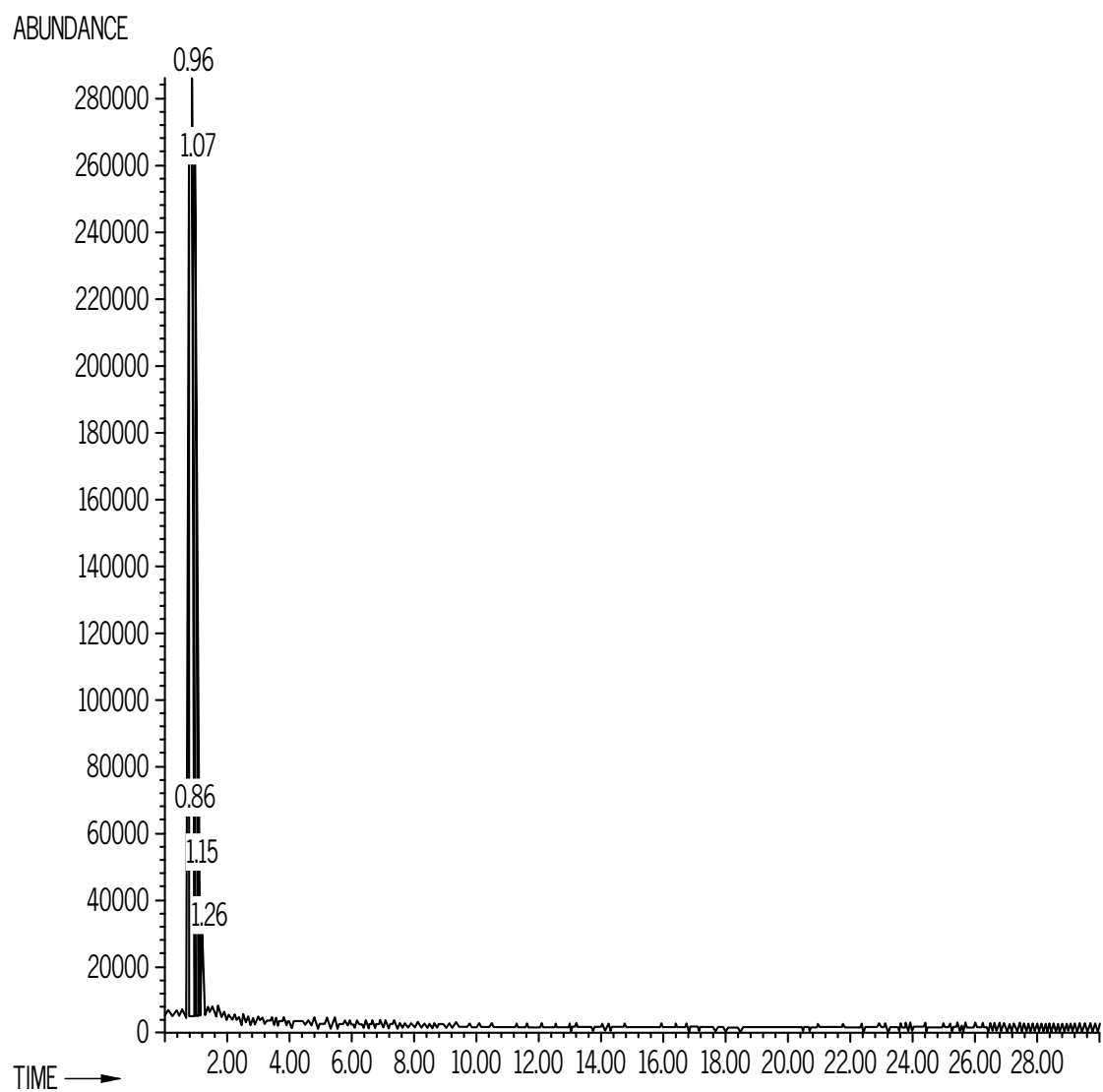


FIG. 23

FORMULATION	RELATIVE THICKNESS	CONDITION
0.1% APS/1.0% KAPTON	10	AS IS
0.1% APS/0.1% KAPTON	1	AS IS
0.1 APS 0.5 DC806A	5	1 H TUMBLE
0.1 APS 0.1 DC806A	1	1 H TUMBLE
0.1 APS 0.1 KAPTON	1	1 H TUMBLE
0.1 APS 0.5 KAPTON	5	1 H TUMBLE
1.0% DC255	10	0.5 H TUMBLE
1.0% DC255	10	1 H TUMBLE
1.0% DC255	10	2 H TUMBLE
1.0% DC255	10	AS IS
1.0% KAPTON	10	DURHAM FILING LINE
0.1 APS 0.1 NOVA800	1	6 MIN TUMBLE
0.1 APS 0.1 NOVA800	1	15 MIN TUMBLE
1.0 GAPS/1.0 DC806A	10	6 MIN TUMBLE
1.0 GAPS/1.0 DC806A	10	15 MIN TUMBLE
1.0 GAPS/1.0 DC806A	10	AS IS
0.1 APS 0.1 NOVA800	1	AS IS
TYPE 1B BARE	0	30N (3), 50N (1)
1.0 GAPS/1.0 DC806A	10	30N SCRATCH 3
1.0 GAPS/1.0 DC806A	10	50N_SCRATCH 1
0.1 APS 0.1 NOVA800	1	30N SCRATCH 3
0.1 APS 0.1 NOVA800	1	50N_SCRATCH 1

FIG. 24

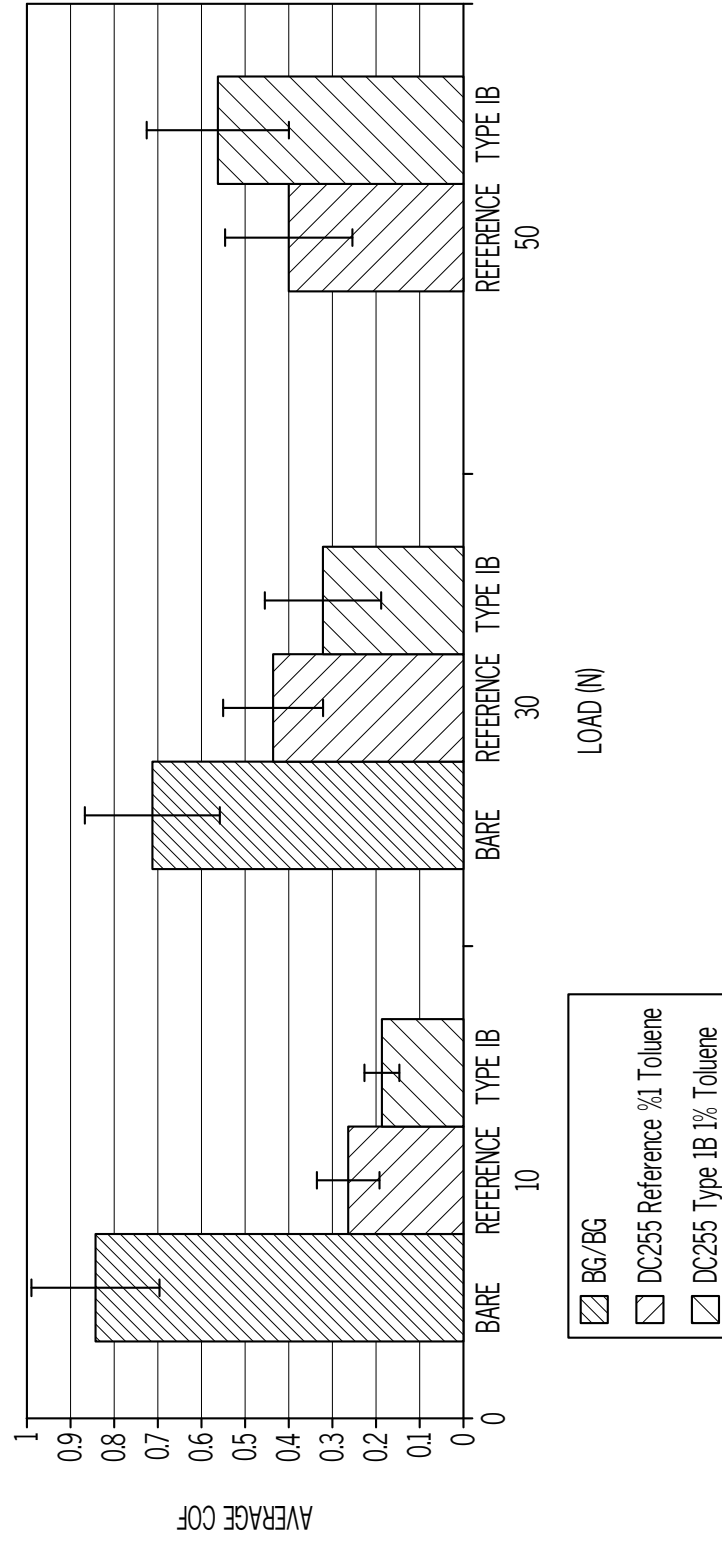


FIG. 25

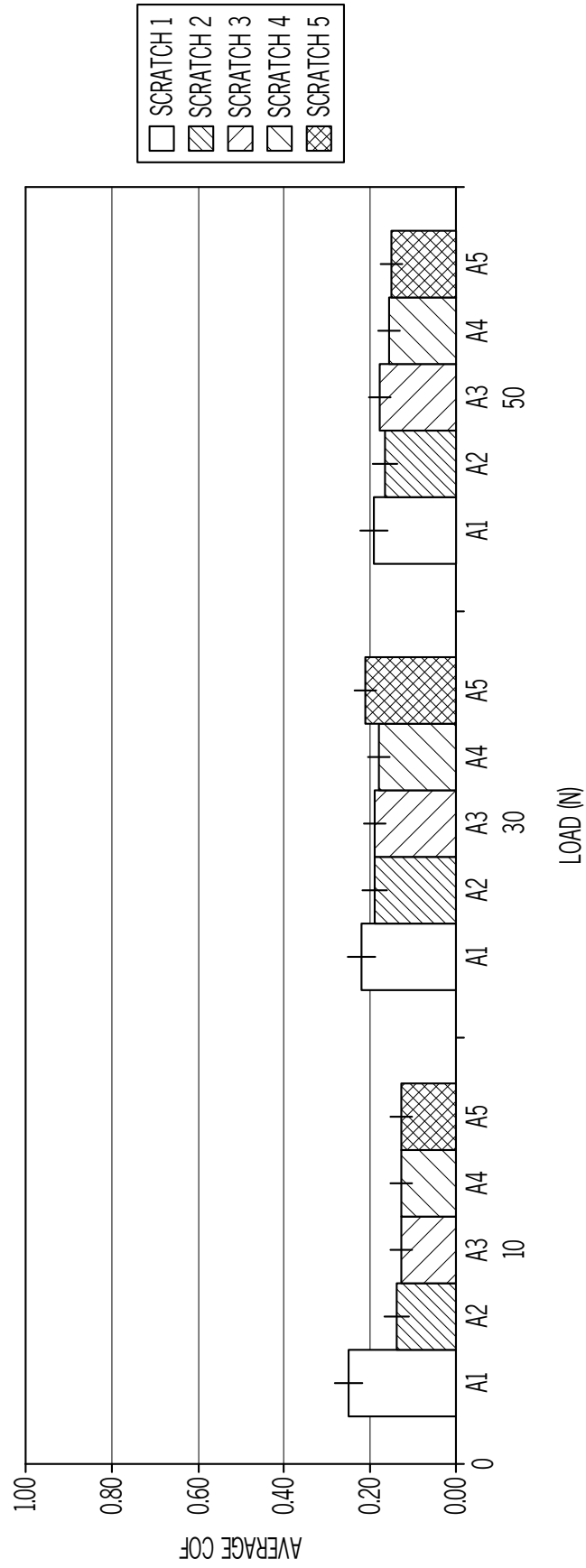


FIG. 26

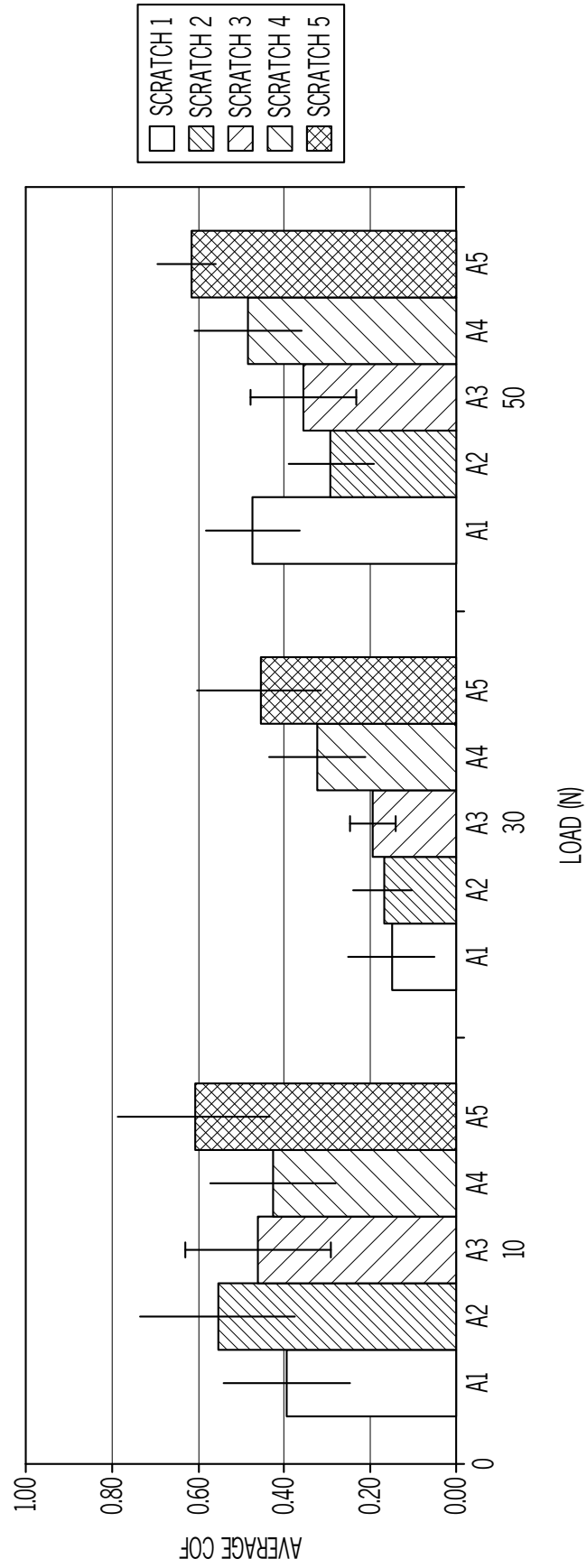


FIG. 27

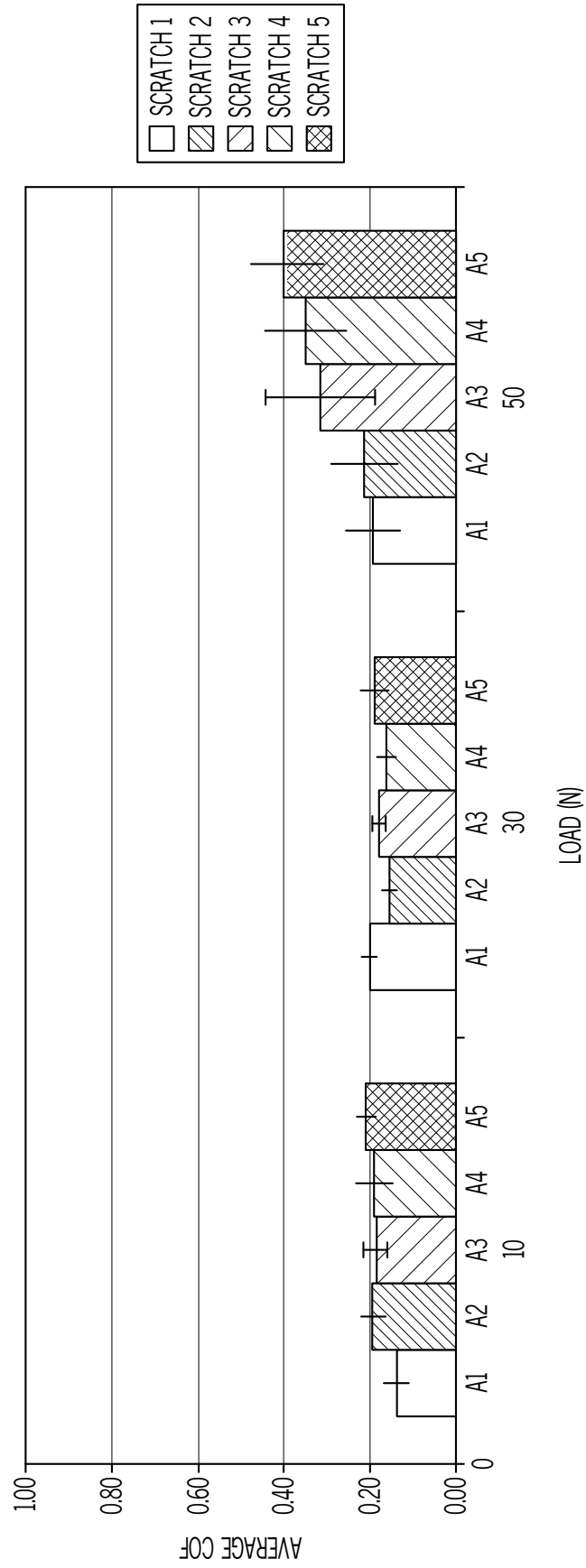


FIG. 28

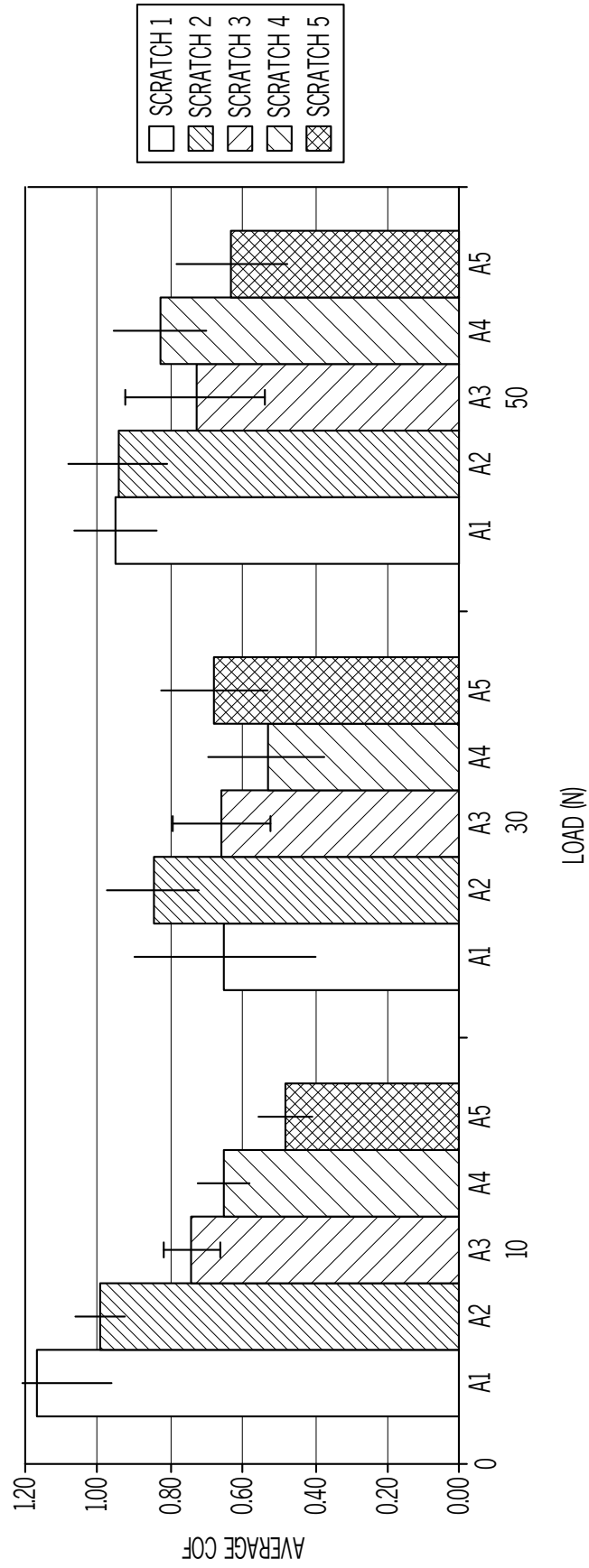


FIG. 29

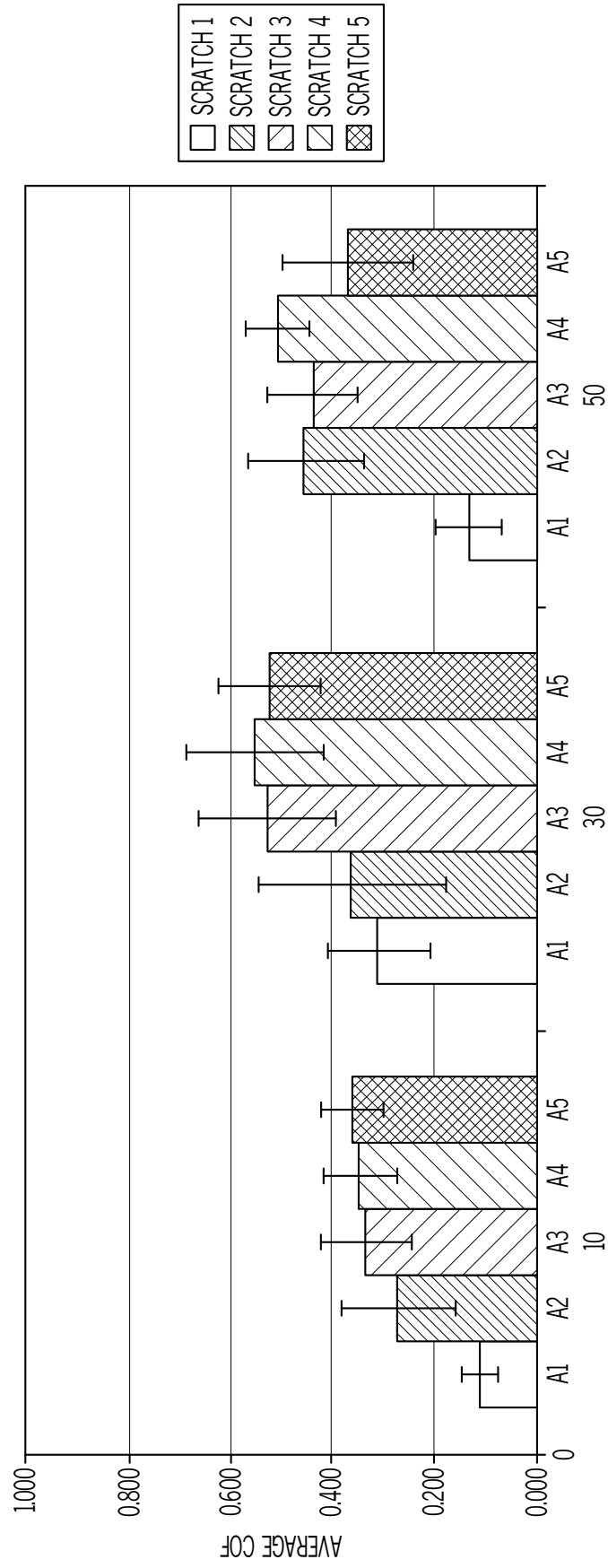


FIG. 30

BEFORE

VIALS	Z-LOAD		COF		FX MAX
	AVG	MAX	AVG	ST. DEV.	MAX
1&2	34	36	0.11	0.03	0.23
3&4	30	32	0.14	0.02	0.18
5&6	34	36	0.09	0.02	0.19
7&8	31	33	0.07	0.01	0.02
9&10	31	33	0.08	0.01	0.14

AFTER

3) APS/NOVA LYOPHILLIZED

VIALS	Z-LOAD		COF		FX MAX
	AVG	MAX	AVG	ST. DEV.	MAX
1&2	37	39	0.06	0.01	0.09
3&4	40	43	0.06	0.01	0.14
5&6	30	31	0.05	0.01	0.09
7&8	30	31	0.05	0.01	0.07
9&10	30	32	0.05	0.01	0.16

FIG. 31

VIALS	Z-LOAD		COF		FX MAX
	AVG	MAX	AVG	ST. DEV.	MAX
1&2	34	36	0.11	0.03	0.23
3&4	30	32	0.14	0.02	0.18
5&6	34	36	0.09	0.02	0.19
7&8	31	33	0.07	0.01	0.02
9&10	31	33	0.08	0.01	0.14

2) APS/NOVA AUTOCLAVED

VIALS	Z-LOAD		COF		FX MAX
	AVG	MAX	AVG	ST. DEV.	MAX
1&2	36	39	0.08	0.02	0.18
3&4	37	40	0.09	0.01	0.16
5&6	30	31	0.06	0.01	0.1
7&8	30	31	0.07	0.01	0.1
9&10	30	31	0.07	0.01	0.14

FIG. 32

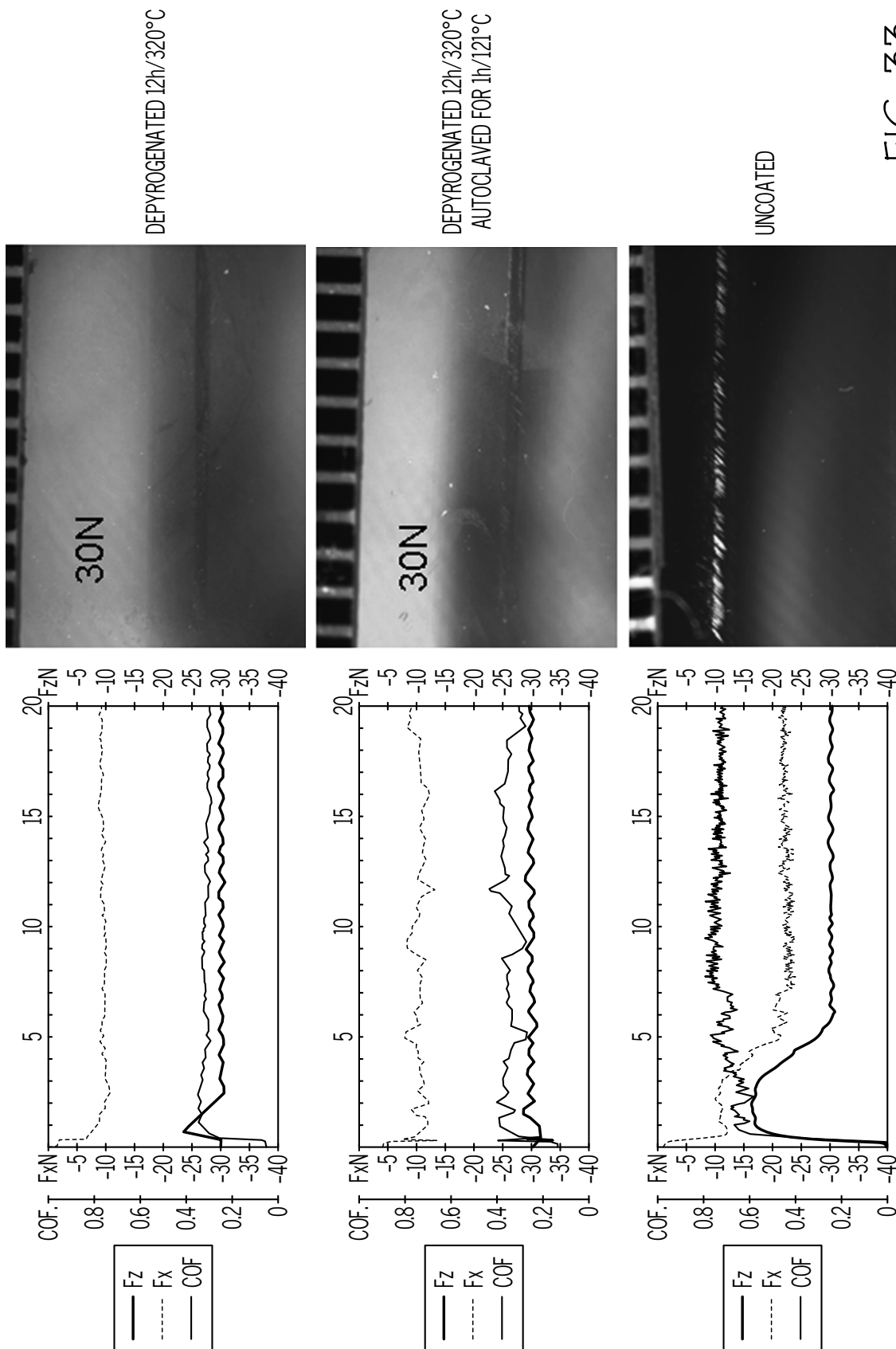


FIG. 33

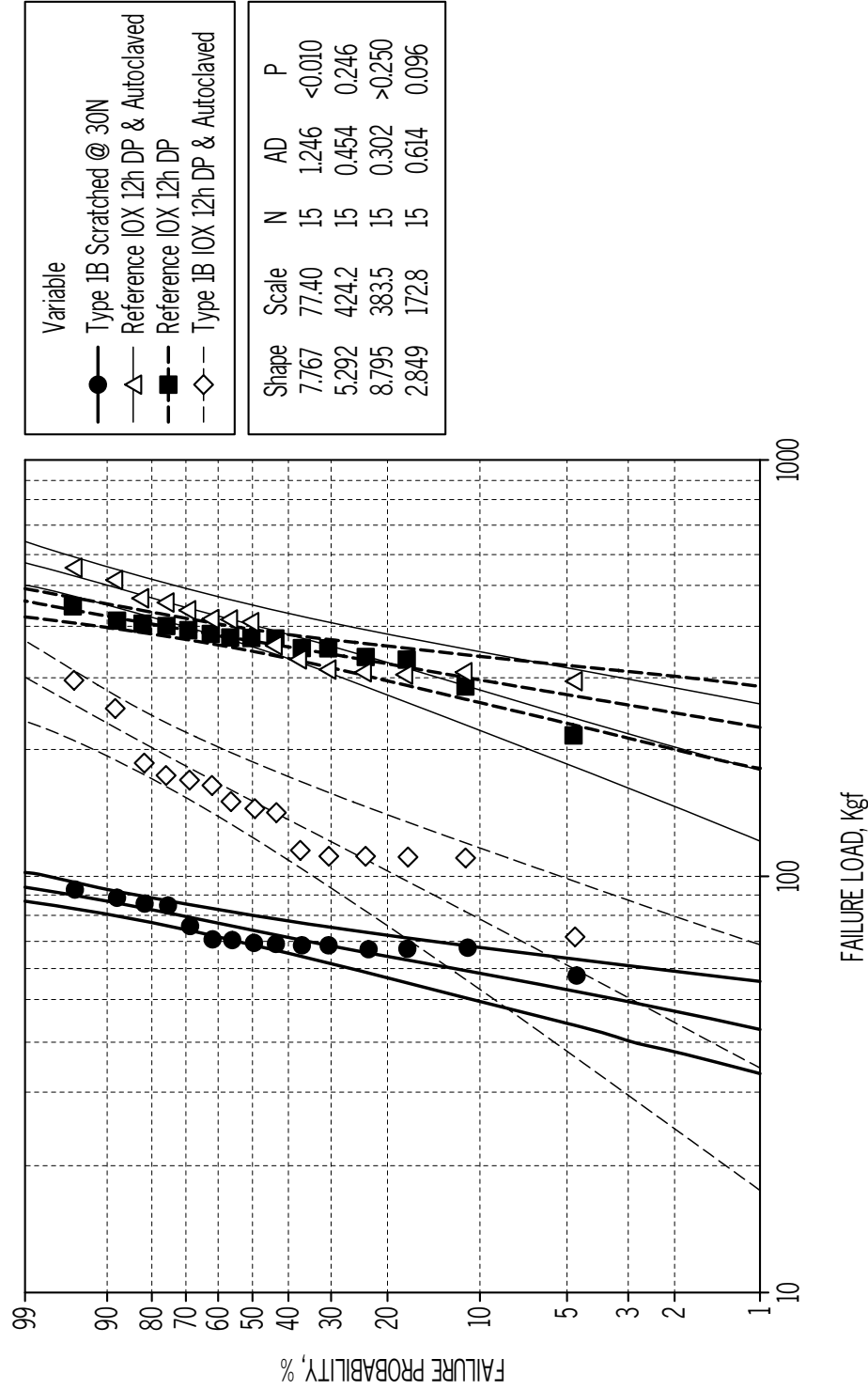
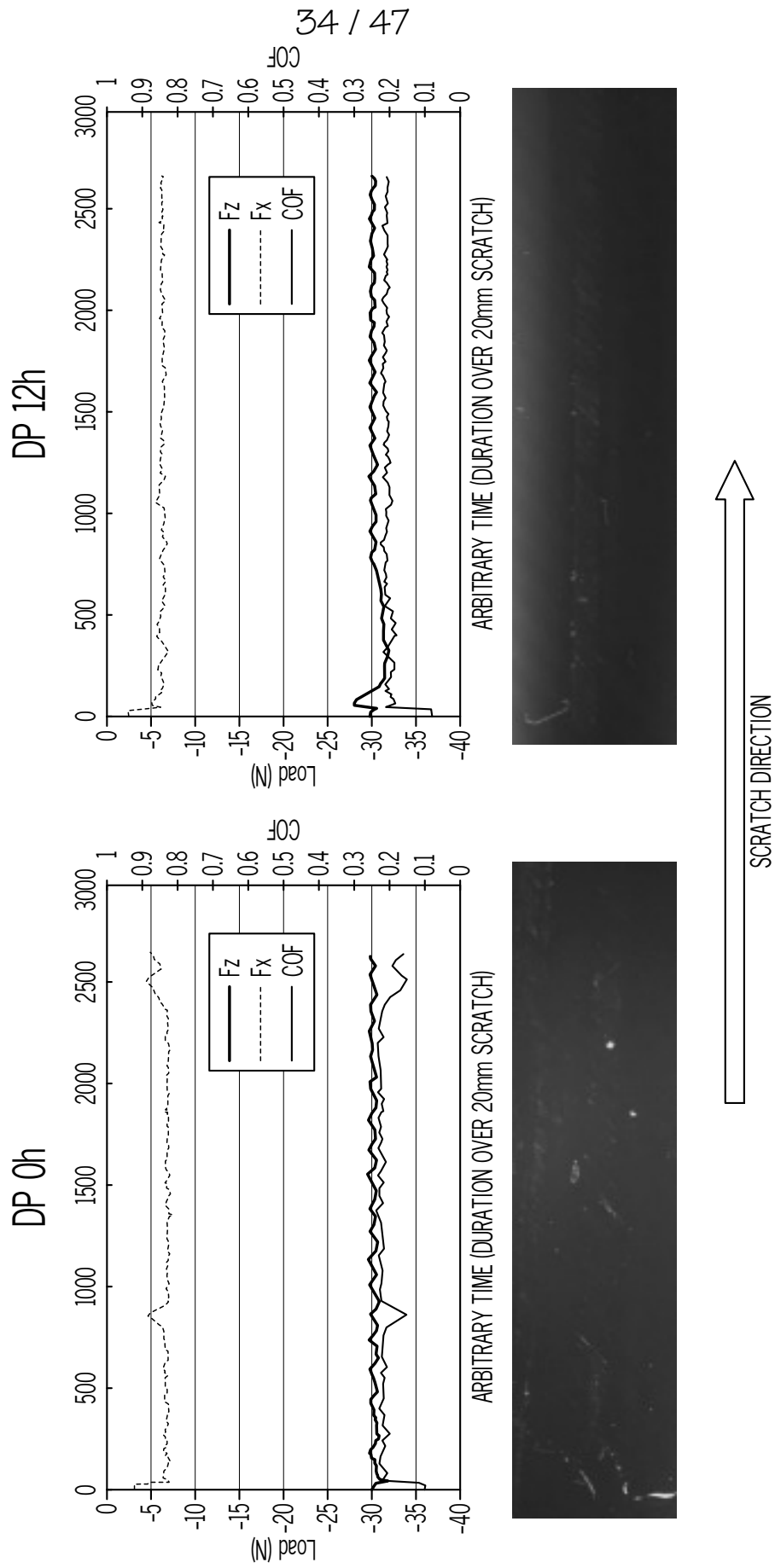


FIG. 34

12h DP Sample	Silanes ratio	Coating composition
540 #1	1:1	0.5 GAP/0.5 Aminophenyltrimethoxysilane + 1.0% Nova
540 #2	1:0.5	0.5 GAP/0.25 Aminophenyltrimethoxysilane + 1.0% Nova
540 #3	1:0.2	0.5 GAP/0.1 Aminophenyltrimethoxysilane + 1.0% Nova

540 Target Load	Vial Set	Fz (N)		COF		Fx (N)	
		Avg	Max	Avg	Std. Dev.	Max	Max
30	1	30	32	0.21	0.02	0.26	8
	2	30	32	0.21	0.04	0.41	13
	3	30	33	0.32	0.1	0.68	19
20	1	20	22	0.21	0.02	0.24	5
	2	20	21	0.22	0.02	0.31	6
	3	21	23	0.29	0.1	0.61	13

FIG. 35



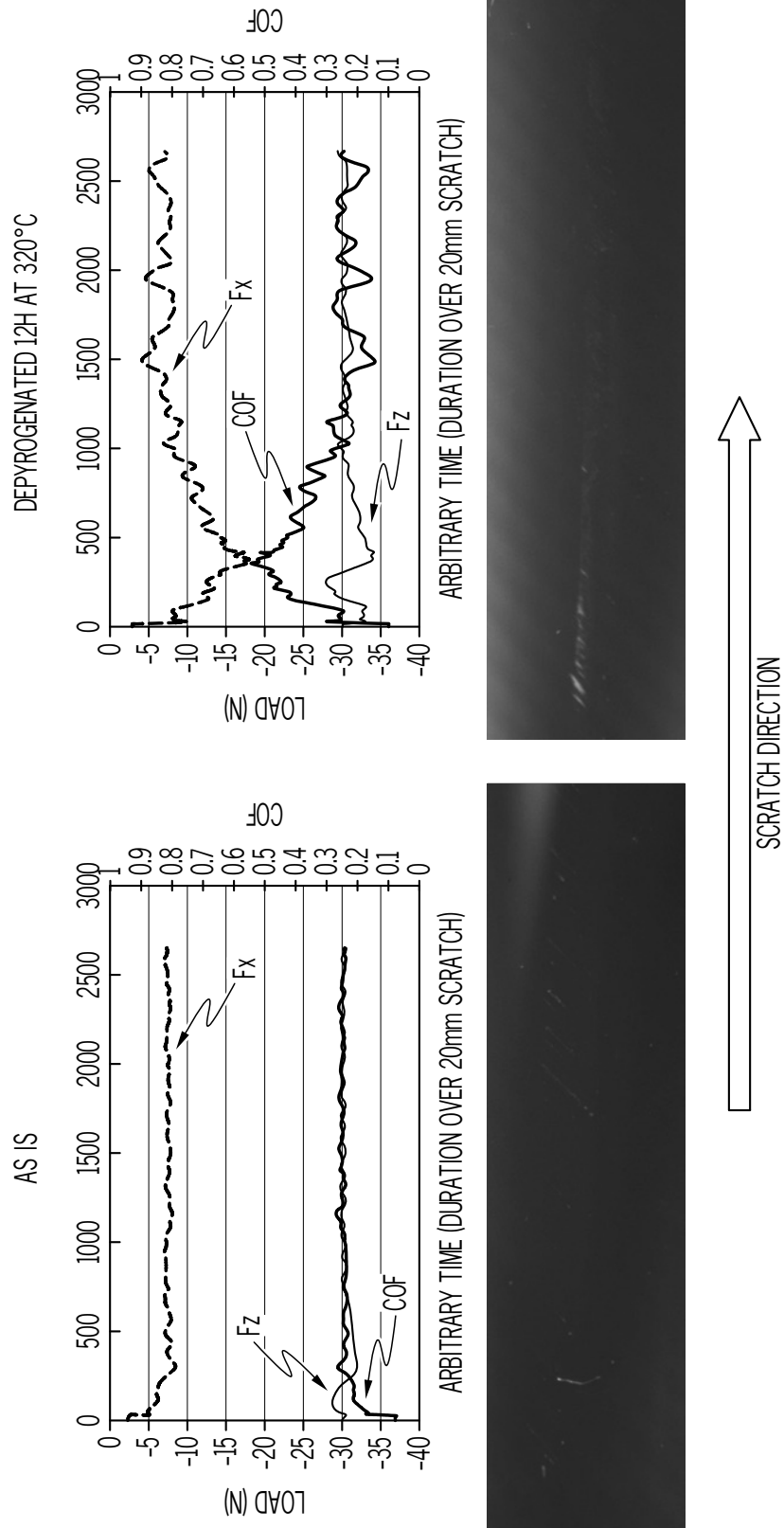


FIG. 37

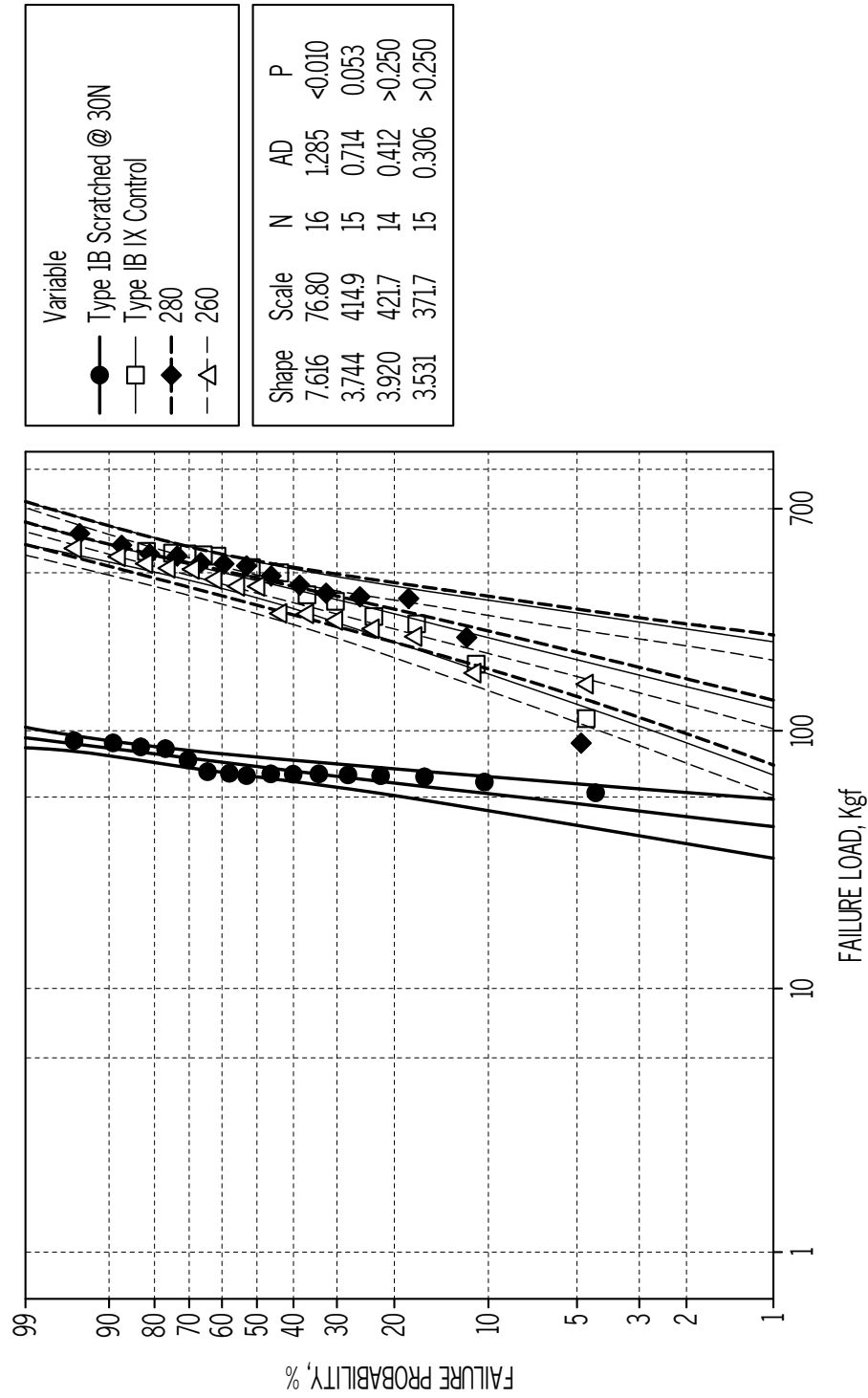


FIG. 38

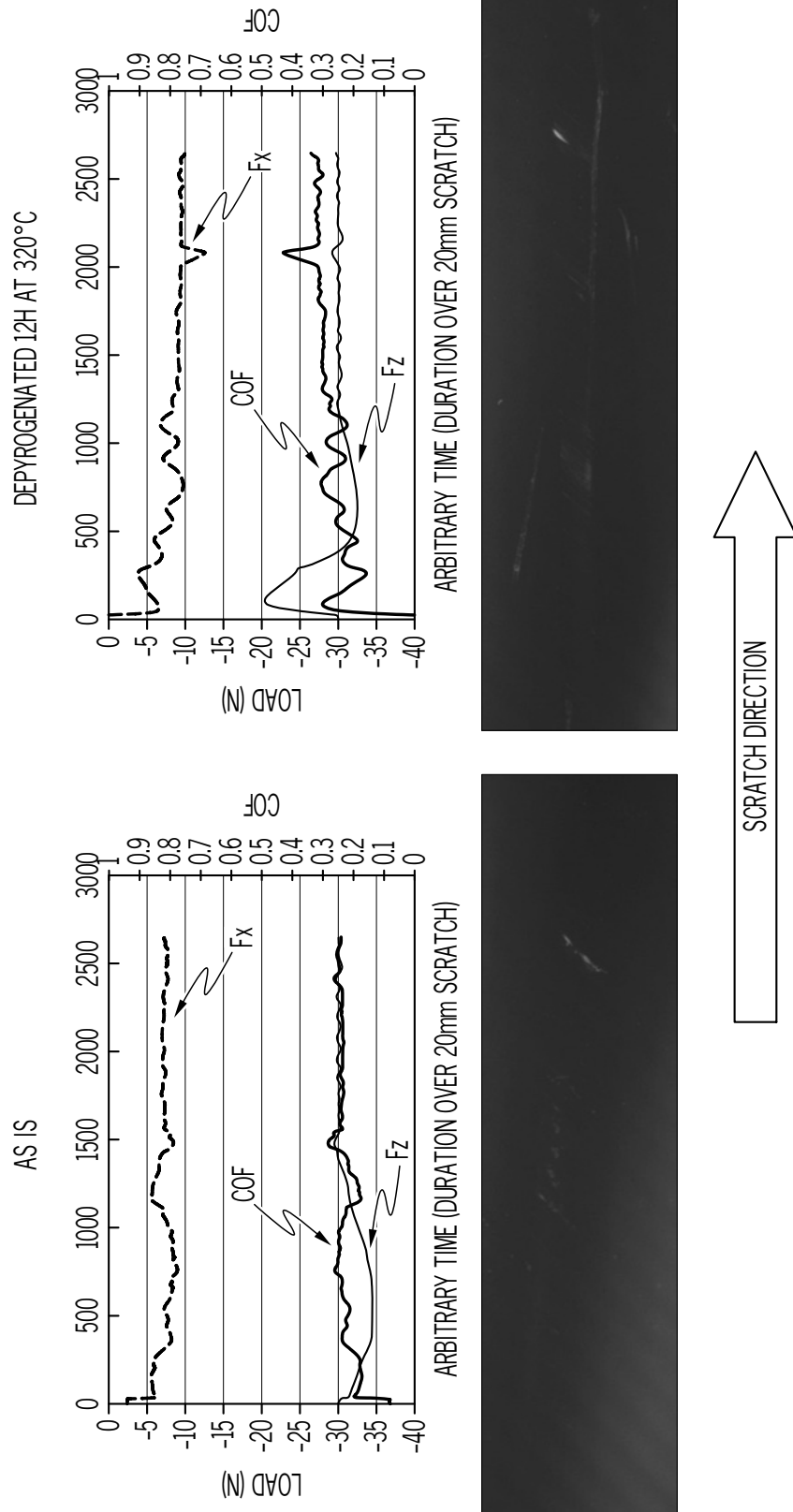


FIG. 39

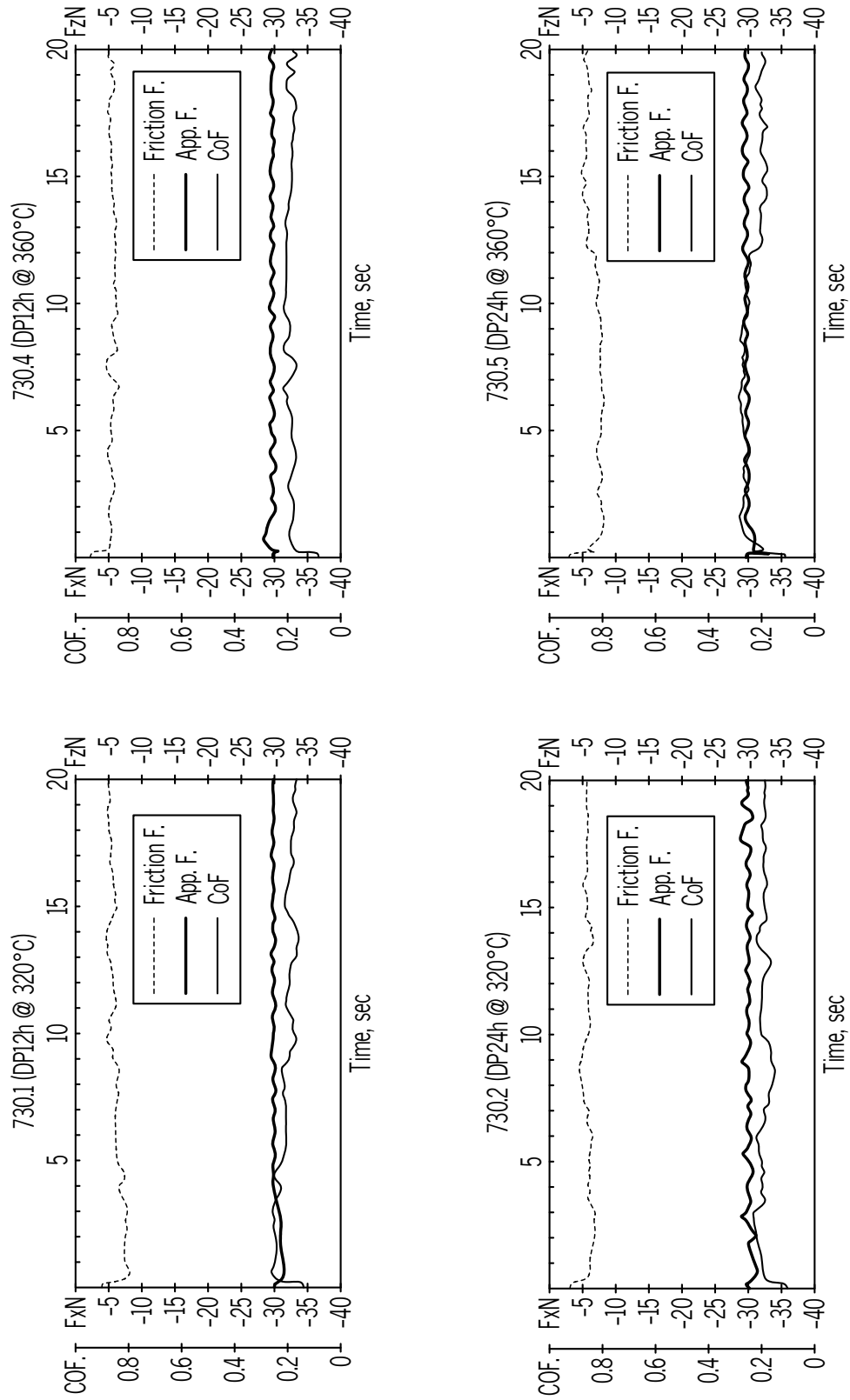


FIG. 40

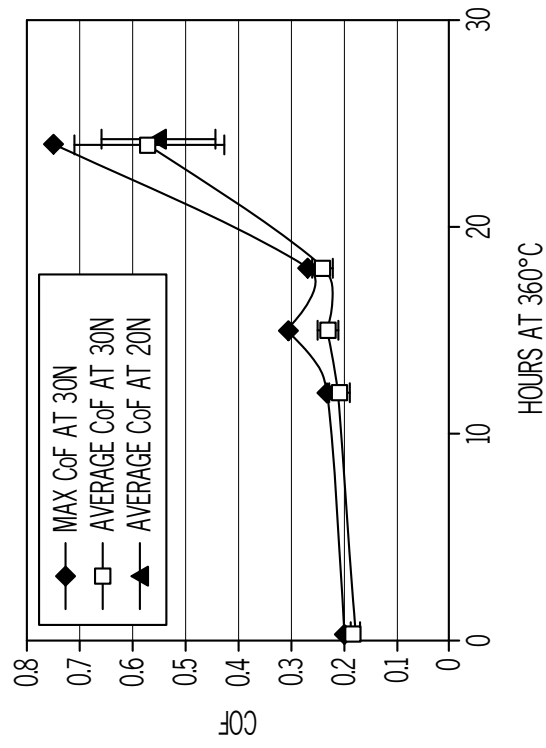
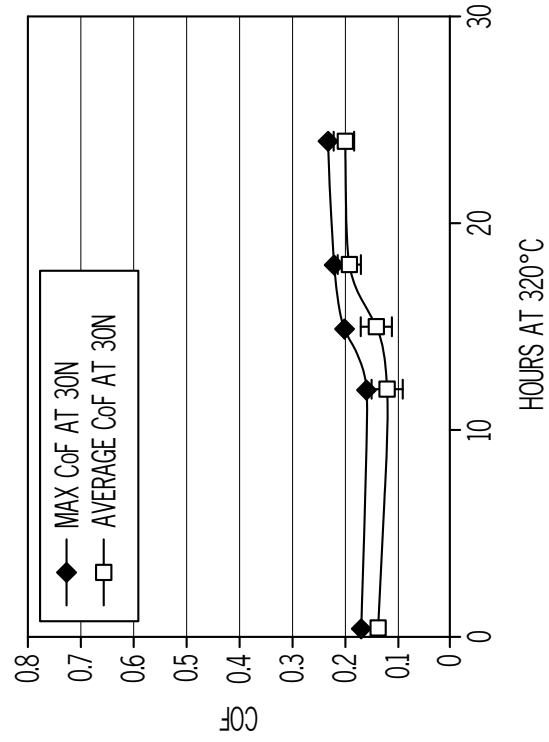


FIG. 41

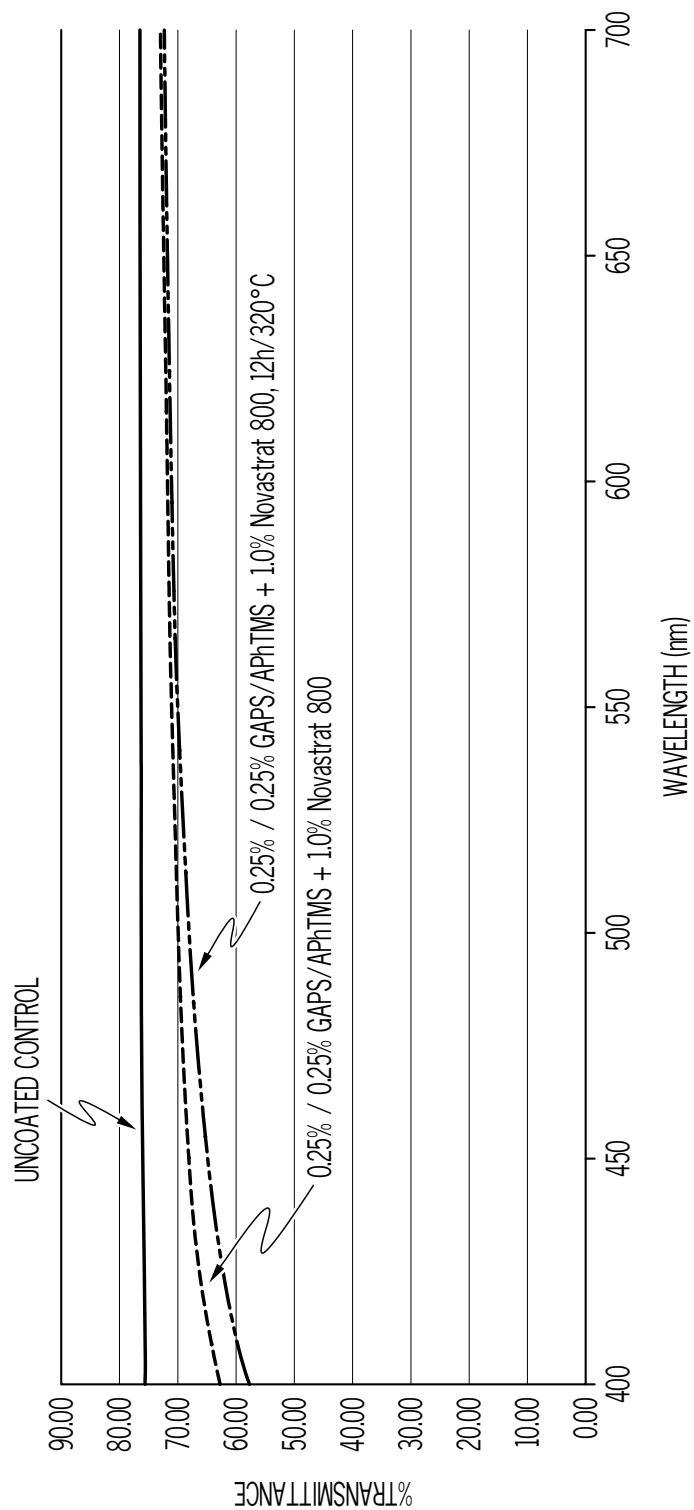


FIG. 42

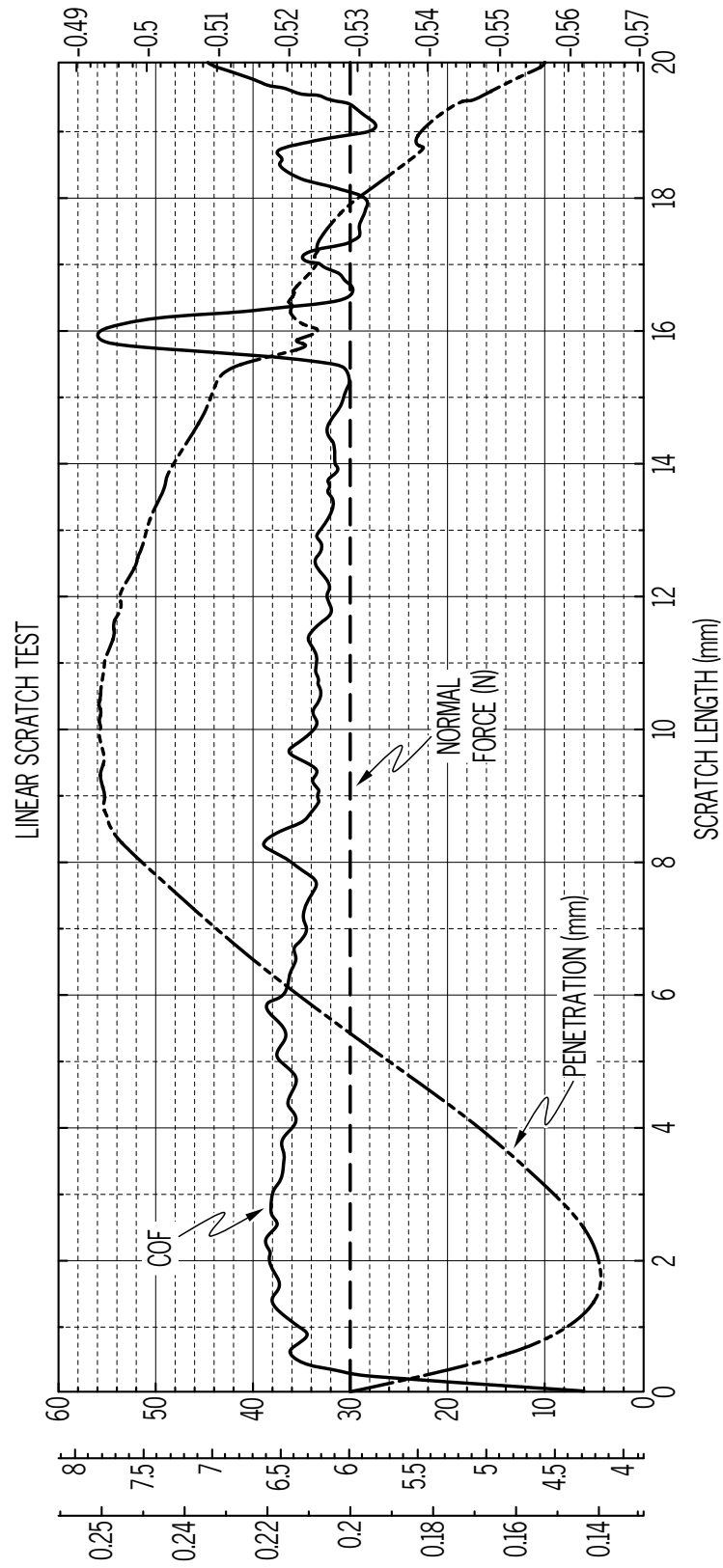


FIG. 43

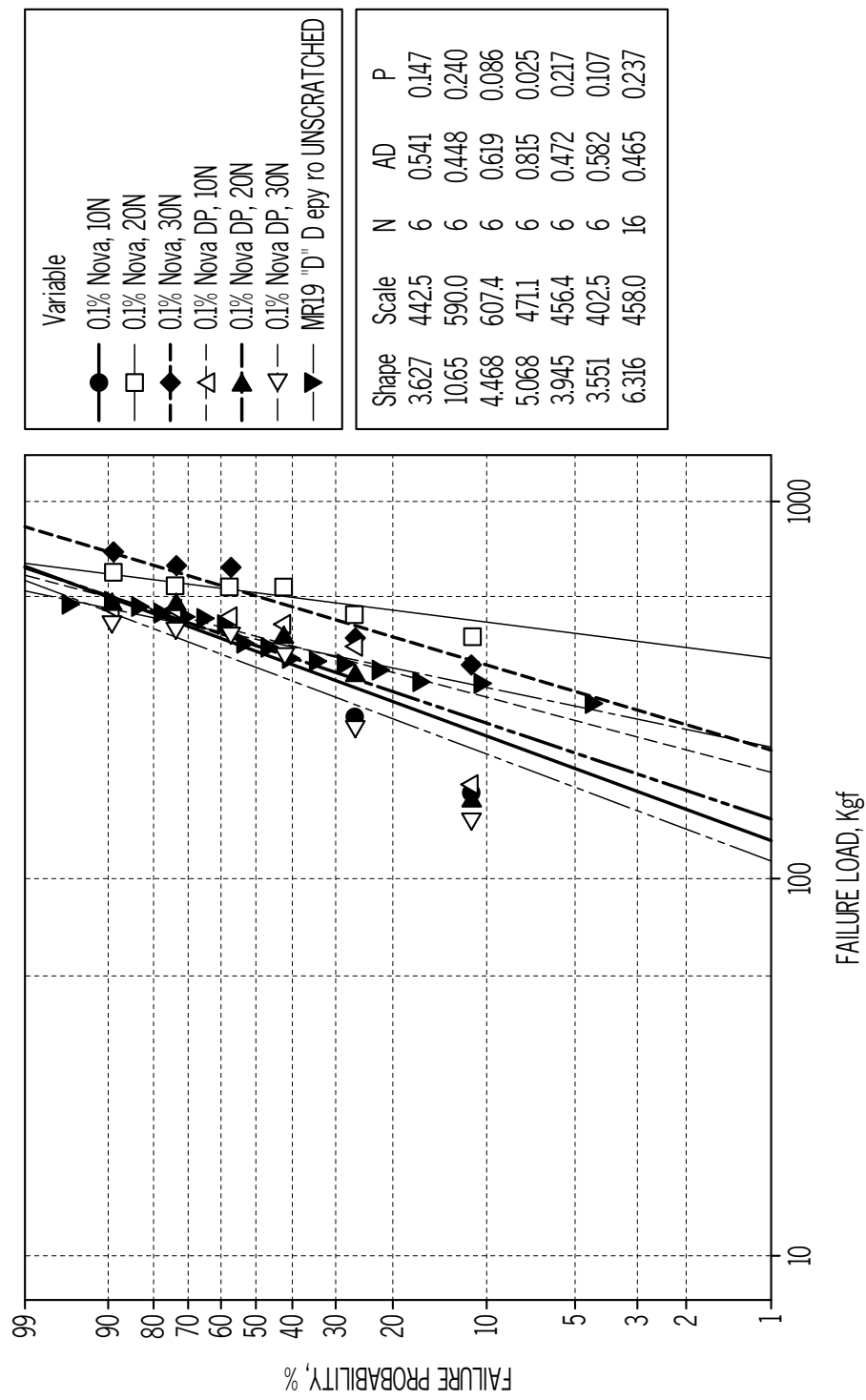


FIG. 44

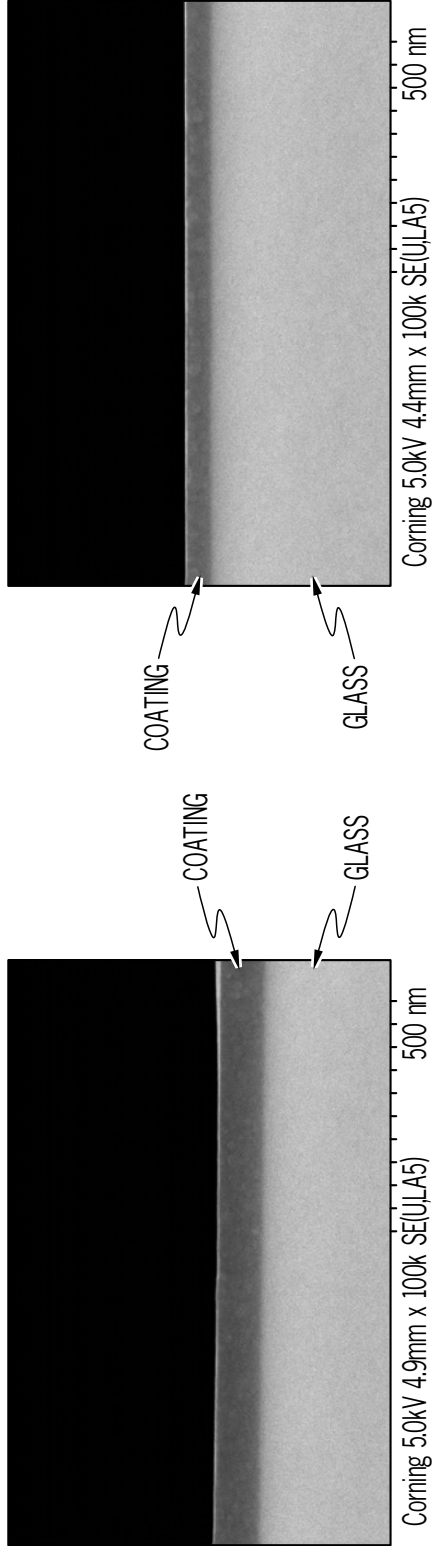


FIG. 45

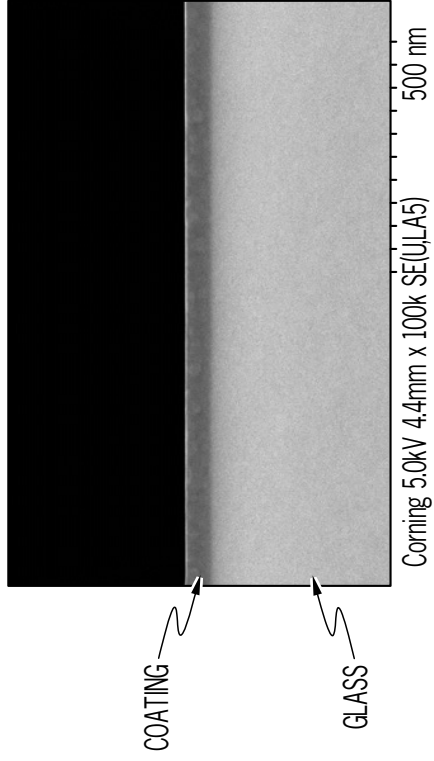


FIG. 46

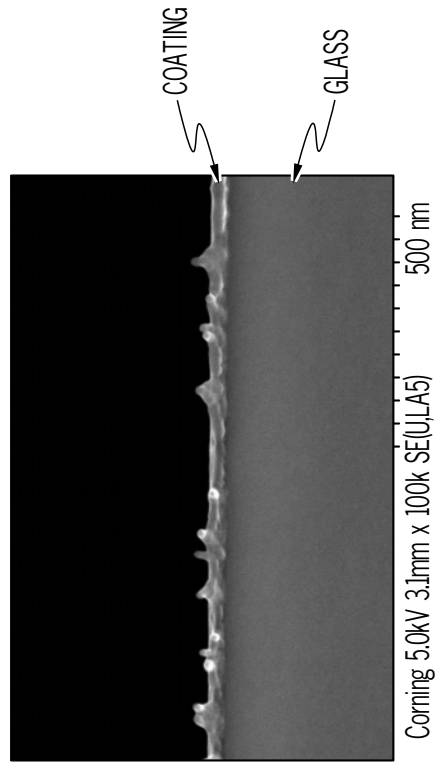


FIG. 47

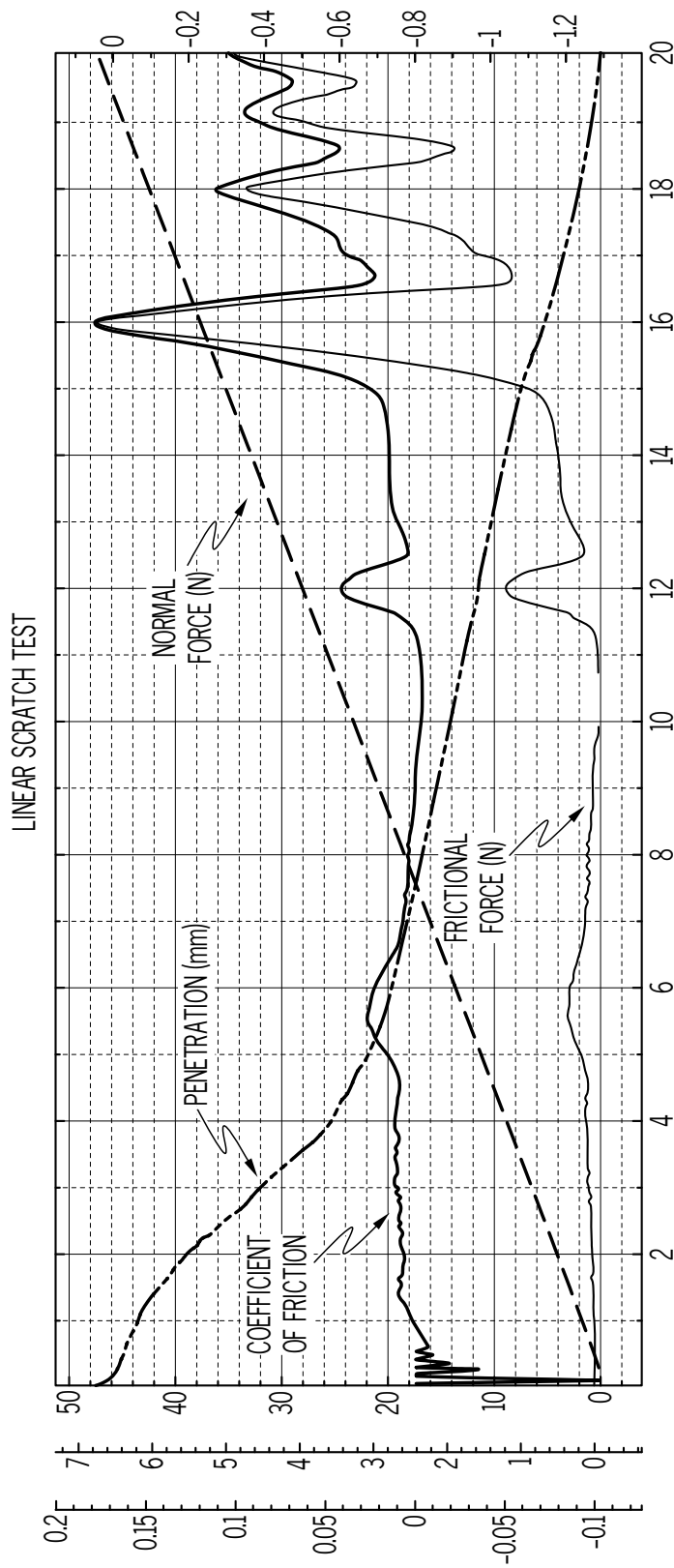
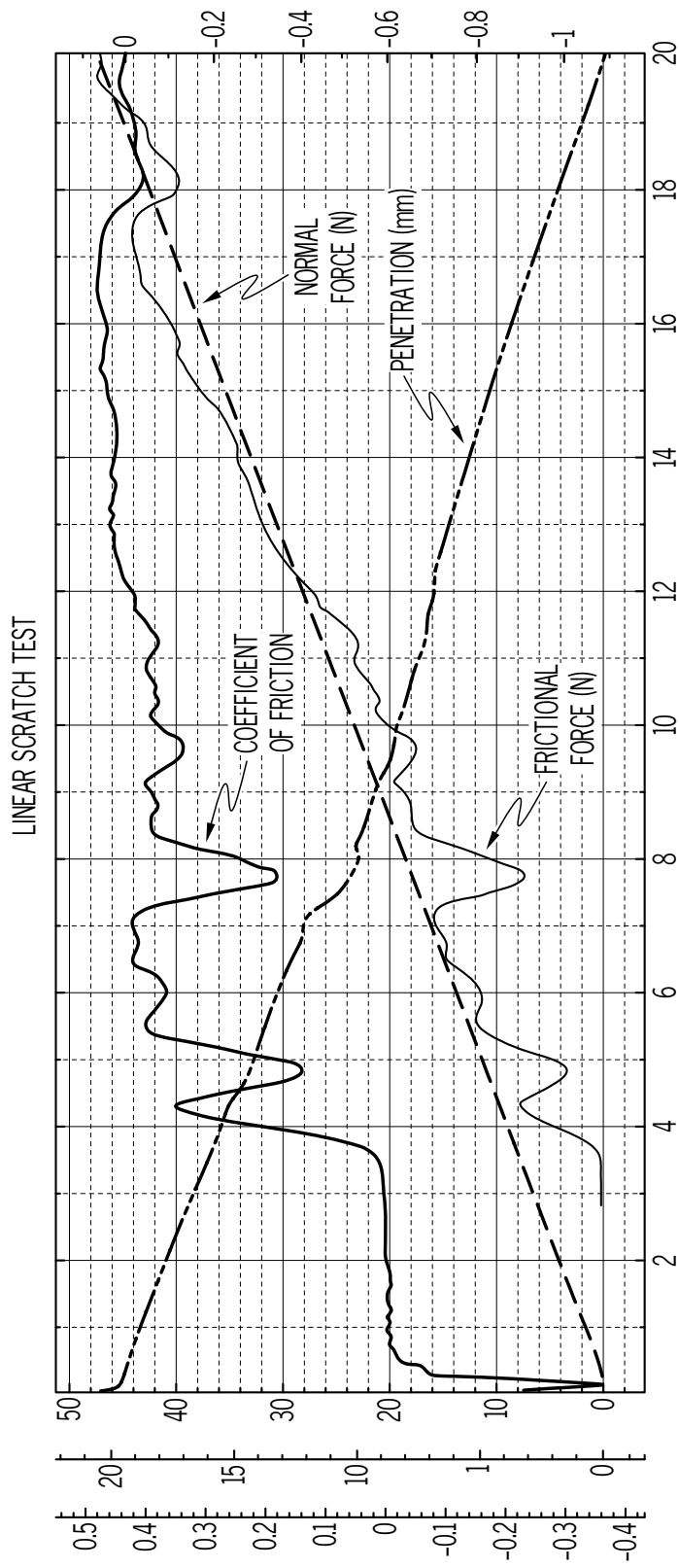


FIG. 48



GLASS CHECKING

FIG. 49

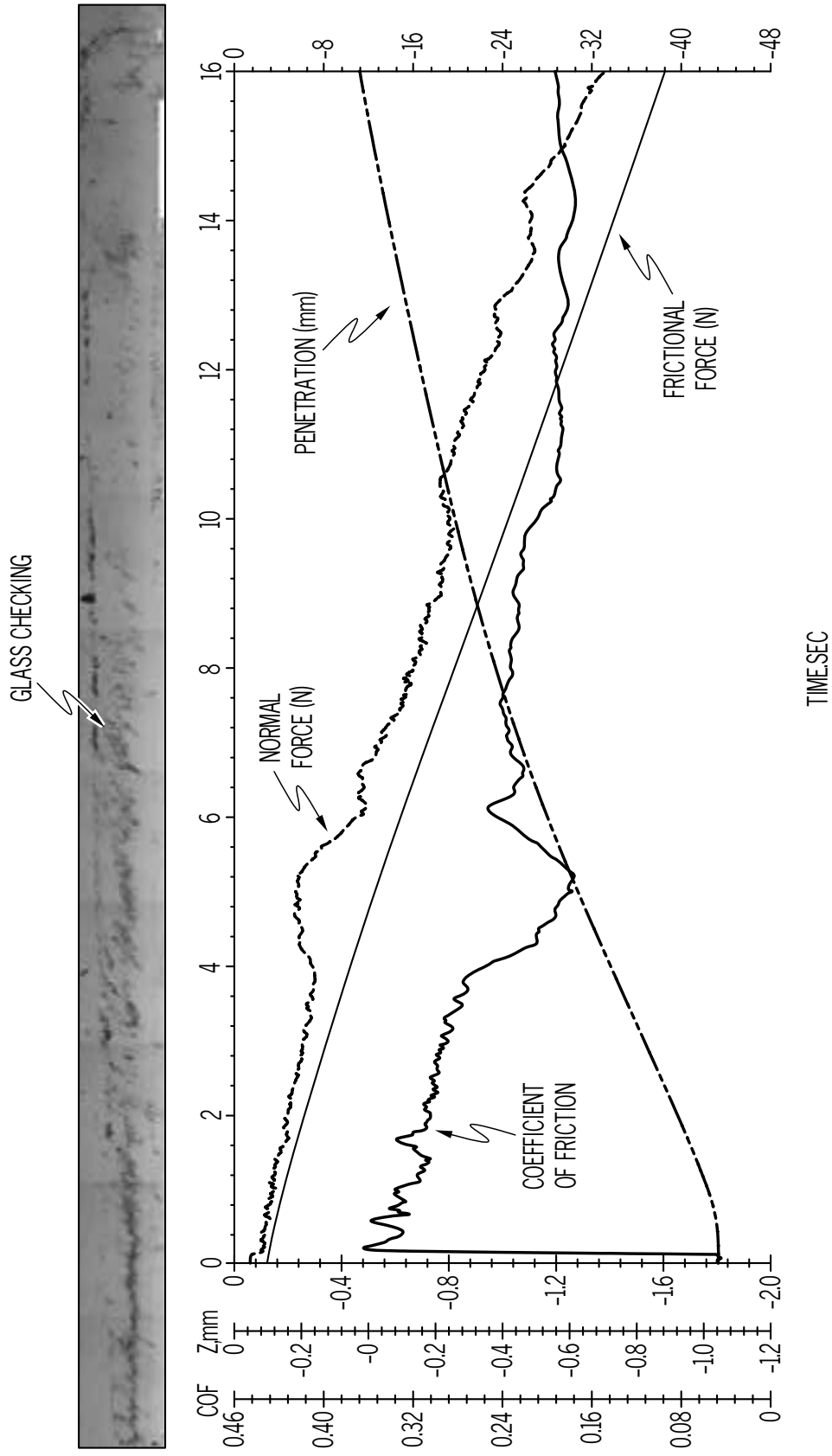


FIG. 50

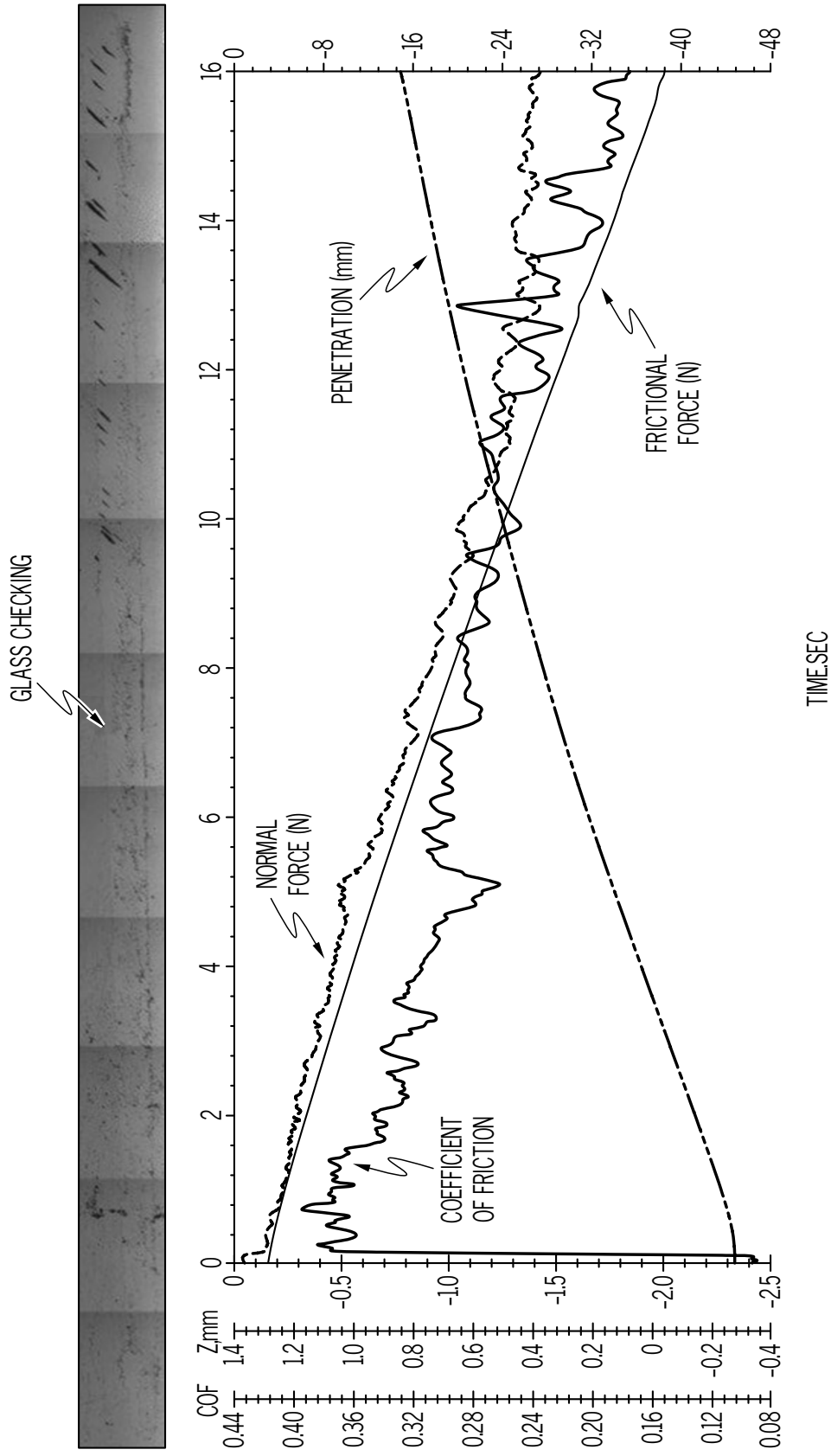


FIG. 51