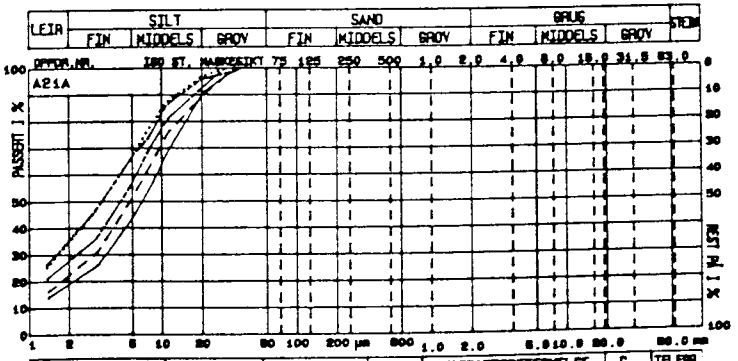
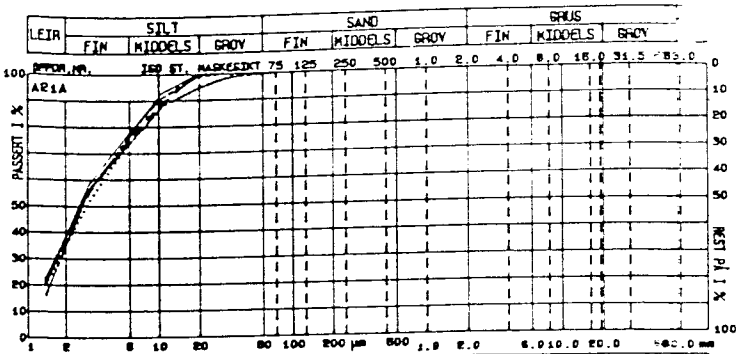
Oppdr.nr. : A21A
Prøveserie: HULL9 0 Analyseår: 1996 Prøvetaker: NGI 54MM

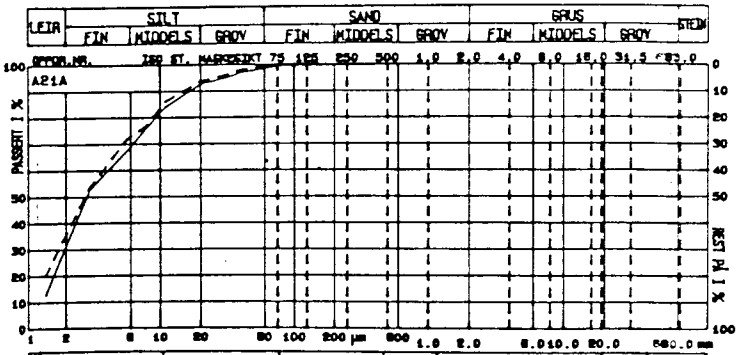
Dybde i m	Materiale	Prøve nr.	Vanninnhold % (20 40 60)	γ kN/m³	S_t	Skjærstyrke kN/m² (20 40 60 80 100)	Gl. %
1	SILTIG LEIRE org. materiale	642		17.1	5		3.2
2	SILTIG LEIRE krakkelert	643		17.0	6		3.5
3	SILTIG LEIRE noe forstyrret	644		16.9	4		3.6
4	SILTIG LEIRE skjellrester	645		16.7	7		3.7
5	SILTIG LEIRE	646		17.7	4		3.3
6	SILTIG LEIRE	647		17.7	4		2.8
7	SILTIG LEIRE	648		17.8	5		3.7
8	SILTIG LEIRE sandkorn	649		17.7	5		3.8
9	LEIRE	650		17.8	4		3.2
10	LEIRE	651		18.0	5		2.8
11	LEIRE	652		18.4	5		3.7
12	LEIRE	653		18.6	5		2.7
13	LEIRE	654		18.9	3		
14	LEIRE	655		18.6	4		2.6
15	LEIRE	674		18.9	5		2.5
16	LEIRE	675		18.9	5		
17	LEIRE gruskorn	676		18.1	4		
18	LEIRE	677		17.9	4		
19	LEIRE skjellrester	678		17.8	8		2.8
20	LEIRE krakkelert	679		18.7	5		
21	LEIRE forstyrret	680		17.2			2.5
22	LEIRE oppsprukket overflate	681		18.8	8		2.3
23	LEIRE sandlag	682		18.8	8		



STATENS VEGVESEN	PROFIL NR.	DYBDE	LAB.NR.	KURVE	JORDARTSBETEGNELSE	C_v	TELEBR.
	HULL9	2.70	644F	——	SILTIG LEIRE	4.0	T4
	HULL9	4.50	648C	— —	SILTIG LEIRE	4.3	T4
	HULL9	5.50	647D	—·—	SILTIG LEIRE	4.9	T4
	HULL9	8.30	650B	----	LEIRE	–	T4
	HULL9	9.40	651C	·····	LEIRE	5.4	T4



STATENS VEGVESEN	PROFIL NR.	DYBDE	LAB.NR.	KURVE	JORDARTSBETEGNELSE	C_v	TELEBR.
	HULL9	12.50	654D	——	LEIRE	2.9	T4
	HULL9	13.30	655B	— —	LEIRE	3.9	T4
	HULL9	13.60	655E	—·—	LEIRE	3.7	T4
	HULL9	16.20	676A	—··—	LEIRE	3.9	T4
	HULL9	17.80	677E	·····	LEIRE	3.9	T4



STATENS VEGVESEN	PROFIL NR.	DYBDE	LAB.NR.	KURVE	JORDARTSBETEGNELSE	C_v	TELEBR.
	HULL9	21.60	681E	——	LEIRE	4.1	T4
	HULL9	22.60	682E	— —	LEIRE	4.1	T4
				—·—			
				—··—			
				·····			

430 A

Tegningsgrunnlag 430 A

Vedlegg til rapport A-21A nr 2 av 20 08 96

HULL NR. 9-BJ,
CPT, TOTALSONDERING OG PRØVE-SERIE, BJØRVIKA

Målestokk 1:200

Boret: nov.-95
Tegn.: 110696 AØI
Saksb.: FRF

GRUNNUNDERSØKELSE:

E18 MELLOM EKEBERGTUNNELEN OG OSLOTUNNELEN

Tegning nr.
A-21A - 18

VEGDIREKTORATET
VEGLABORATORIET – GEOLOGI– OG GEOTEKNIKKONTORET

Bjørvika. Tolkningsparametre fra treaksialforsøk, effektivpenningsbasis

Hull 9-BJ: 430A

Dybde [m]	Type forsøk	p_o' [kPa]	$\sigma_{v\,konsa}'$ [kPa]	K_0	u_0 [kPa]	w [%]	ΔV [cm³]	a [kPa]	ϕ [°]	D	Materiale	Bilag
5,30	CIUA1	40	50	1,0	50	45	9,0			-0,4→-0,65	siltig leire	
* 5,40	CIUA1	41	40	1,0	50	45	11,0	10	23	-0,6	siltig leire	23
5,50	CIUA1	41	30	1,0	50	45	3,0			-0,3→-0,45	siltig leire	
* 5,40	CIUA1	41	40	1,0	50	45	11,0			-0,4→-0,65	siltig leire	
8,30	CIUA1	62	62	1,0	83	45	10,5	10	23	-0,2→-0,6	leire	24
13,30	CIUA1	103	100	1,0	133	34	13,3			-0,25→-0,8	leire	
21,60	CIUA1	174	174	1,0	300	43	15,0			-0,4→-0,95	leire	
9,50	CAUA1	71	71	0,6	95	41	7,5	10	26	-0,1→-0,65	leire	25
13,50	CAUA1	105	101	0,6	225	34	9,5			-0,25→-0,85	leire	
8,50	CIUP3	64	63	1,0	85	44	8,0			-0,3→-0,85	leire	
13,40	CIUP3	104	101	1,0	134	34	13,0	10	20	-0,75	leire	26
17,50	CIUP3	139	139	1,0	265	42	12,5			-0,3→-0,9	leire	
21,50	CIUP3	173	172	1,0	305	32	10,0			-0,1→-0,6	leire	
9,40	CAUP3	71	70	0,6	94	43	10,0	0	23	+0,1→-0,35	leire	27
13,60	CAUP3	106	102	0,6	226	35	13,0			-0,5→-1,25	leire	

* samme forsøk

Bjørvika. Tolkningsparametre fra treaksialforsøk, totalspenningsbasis

Hull 9-BJ: 430 A

Dybde [m]	Type forsøk	p_o' [kPa]	$\sigma_{v'\,kons}$ [kPa]	K_0	u_0 [kPa]	w [%]	ΔV [cm³]	s_u [kPa]	s_u/p_o'	s_u [kPa]	s_u/p_o'	Materiale	Bilag
								ϵ_v = 2%		ϵ_v = 10%			
5,30	CIUA1	40	50	1,0	50	45	9,0	18	0,45	20	0,50	siltig leire	
* 5,40	CIUA1	41	40	1,0	50	45	11,0	13	0,32	15,5	0,38	siltig leire	23
5,50	CIUA1	41	30	1,0	50	45	3,0	14,5	0,35	16,5	0,40	siltig leire	
* 5,40	CIUA1	41	40	1,0	50	45	11,0	13	0,32	15,5	0,38	siltig leire	
8,30	CIUA1	62	62	1,0	83	45	10,5	22,5	0,36	24	0,39	leire	24
13,30	CIUA1	103	100	1,0	133	34	13,3	28	0,27	33	0,32	leire	
21,60	CIUA1	174	174	1,0	300	43	15,0	46,5	0,27	45	0,26	leire	
9,50	CAUA1	71	71	0,6	95	41	7,5	23	0,32	23,5	0,33	leire	25
13,50	CAUA1	105	101	0,6	225	34	9,5	28,5	0,27	31	0,30	leire	
8,50	CIUP3	64	63	1,0	85	44	8,0	18	0,28	21	0,33	leire	
13,40	CIUP3	104	101	1,0	134	34	13,0	27,5	0,26	32	0,31	leire	26
17,50	CIUP3	139	139	1,0	265	42	12,5	35	0,25	35	0,25	leire	
21,50	CIUP3	173	172	1,0	305	32	10,0	44	0,25	55	0,32	leire	
9,40	CAUP3	71	70	0,6	94	43	10,0	17	0,24	23	0,32	leire	27
13,60	CAUP3	106	102	0,6	226	35	13,0	13	0,12	22	0,21	leire	

* samme forsøk

Bjørvika. Tolkningsparametre fra ødometerforsøk

Hull 9-BJ: 430 A

Dybde [m]	p_o' [kPa]	p_c' * [kPa]	M [MPa]	m	c_{vl} [m²/år]	c_{vd} [m²/år]	w [%]	Materiale	Bilag
3,4 / 3,6	26	50	1,5	17	~10	~5	54 / 52	siltig leire	32
4,3 / 4,5	33	60	1,5	17	~7	~7	51 / 25	siltig leire	33
8,4 / 8,5	63	80	2	15	~7	~5	45 / 71	leire	34
12,4 / 12,4	95	95	2	20	5	5	39 / 40	leire	35
16,3 / 16,4	129	140 !	3,5	18,5	7	7	39 / 39	leire	36
21,4	172	170 !	3	17,5	7	7	42	leire	37
22,4	180	180 !	3	18,8	7	7	38	leire	38

* p_c' kan ikke angis eksakt, men ligger grovt sett innenfor 0,8 - 1,2 ganger oppgitt verdi. Verdier med utropstegn bak er usikre. Sannsynligvis er det prøveforstyrrelse som gjør det vanskelig å bestemme forkonsolideringstrykket for disse forsøkene.

VEGLABORATORIET

TREAKSIALFORSØK

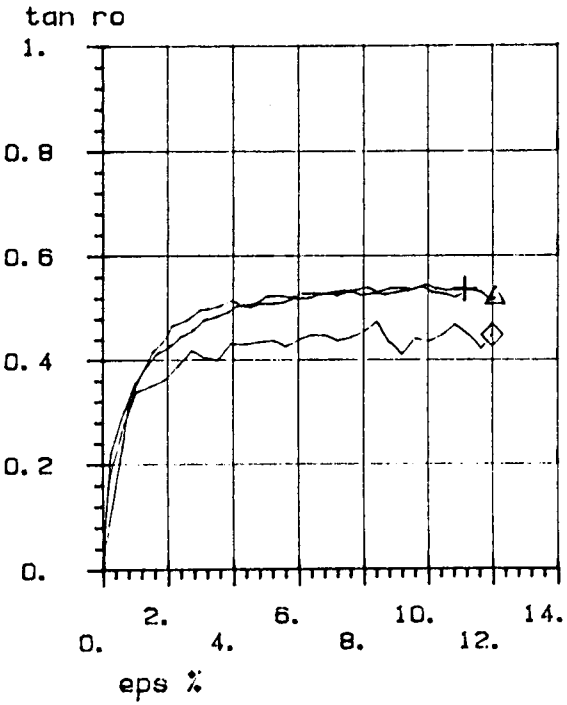
Hull 9-BJ

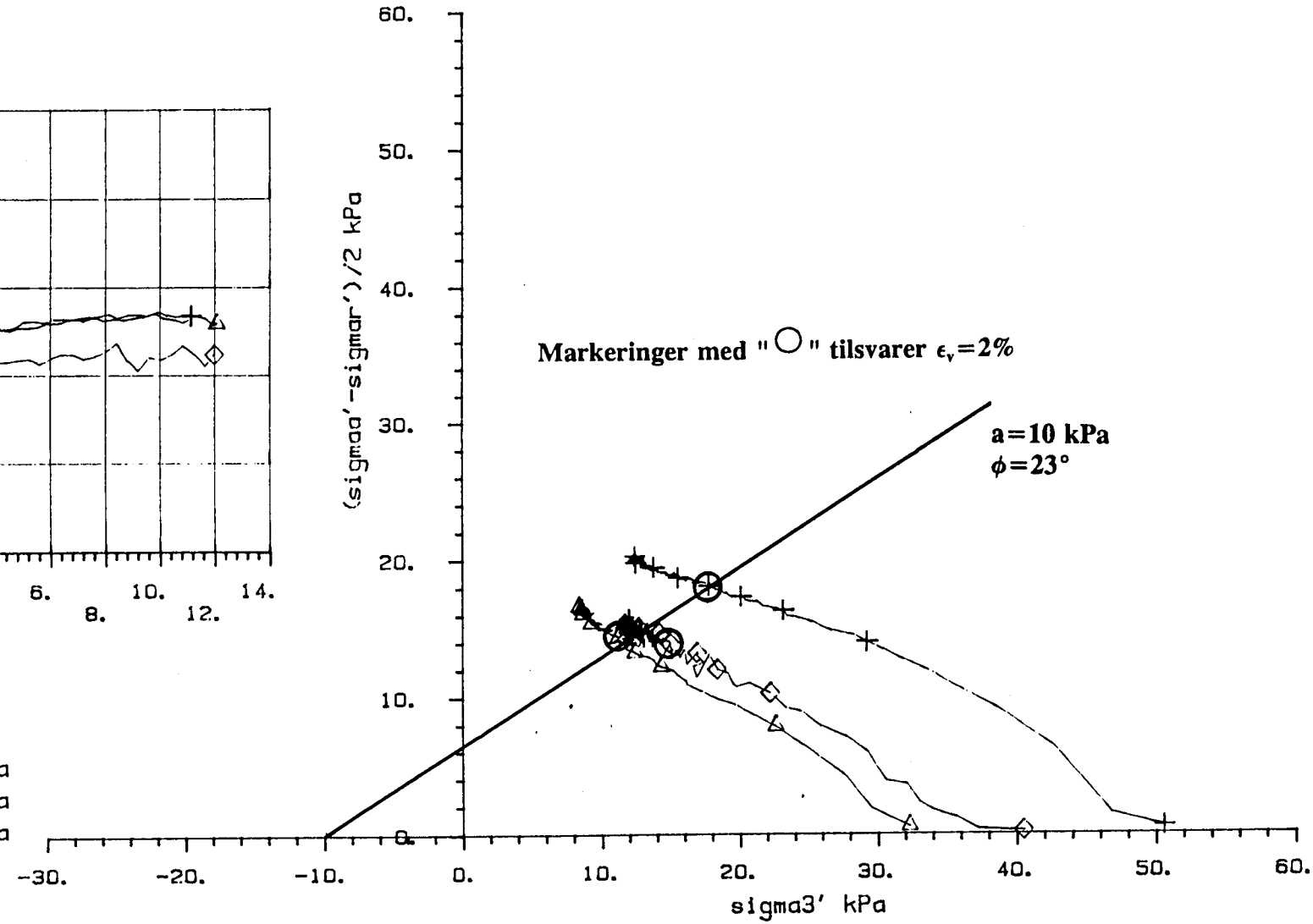
OPD. A21A

DATO 951129

BILAG 23a

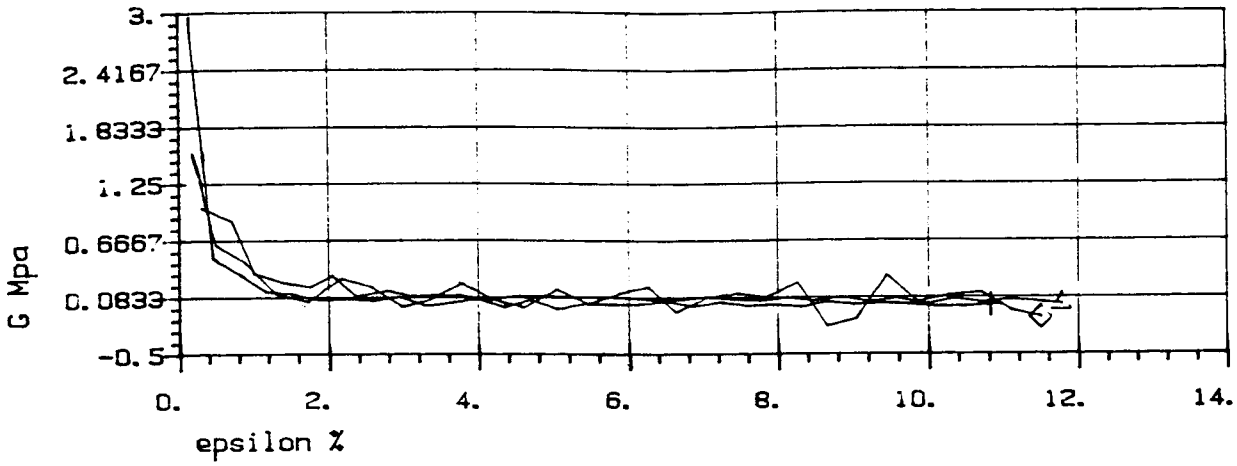
SYMB	PROFIL	Dybde, m	Labnr.	Forsøktype	dW, cm3	Korr. modell
+	9	5.30	647B	CIUA1	9.00	1, 2, 4,
△	9	5.50	647D	CIUA1	3.00	1, 2, 4,
◇	9	5.40	647C	CIUA1	11.00	1, 2, 4,

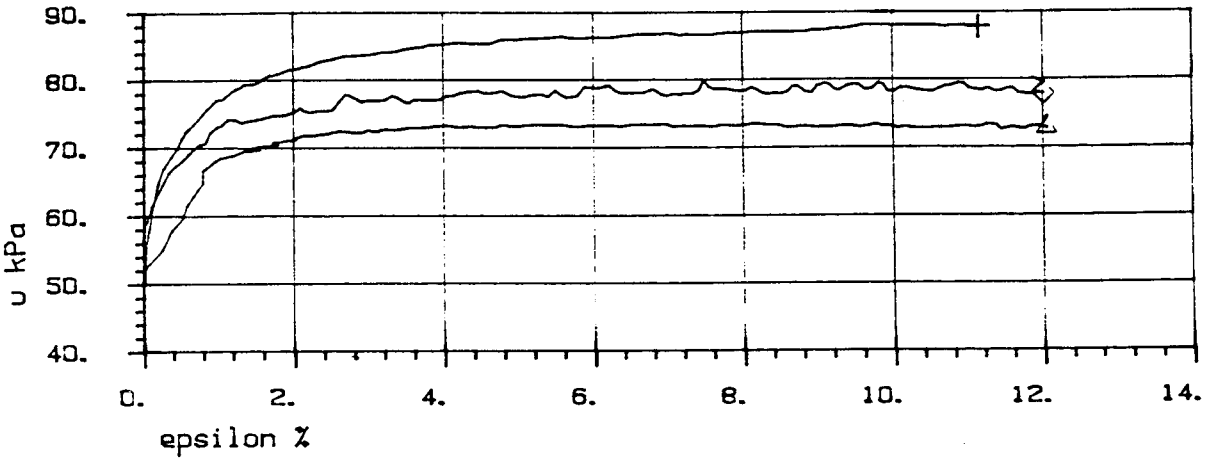


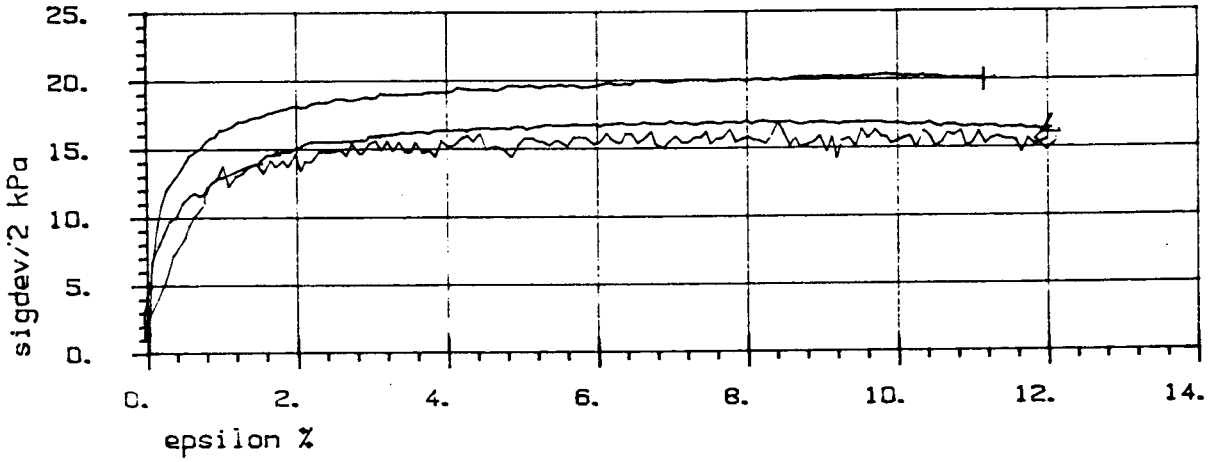


+ a= 10.0 kPa
△ a= 10.0 kPa
◇ a= 10.0 kPa

43e A







SYMB	PROFIL	Dybde, m	Labnr.	Forsøktype	dW, cm3
+	9	5.30	6478	CIUA1	9.00
◁	9	5.50	647D	CIUA1	3.00
◇	9	5.40	647C	CIUA1	11.00

TREAKSIALFORSØK

VEGLABORATORIET

Hull 9-BJ

GPD. A21A

DATO 951129

BILAG 23b

VEGLABORATORIET

TREAKSIALFORSØK

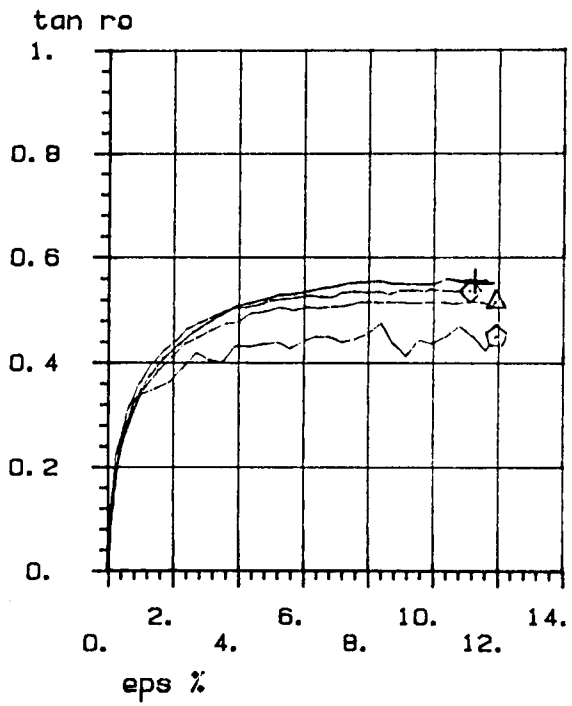
Hull 9-BJ

OPD. A21A

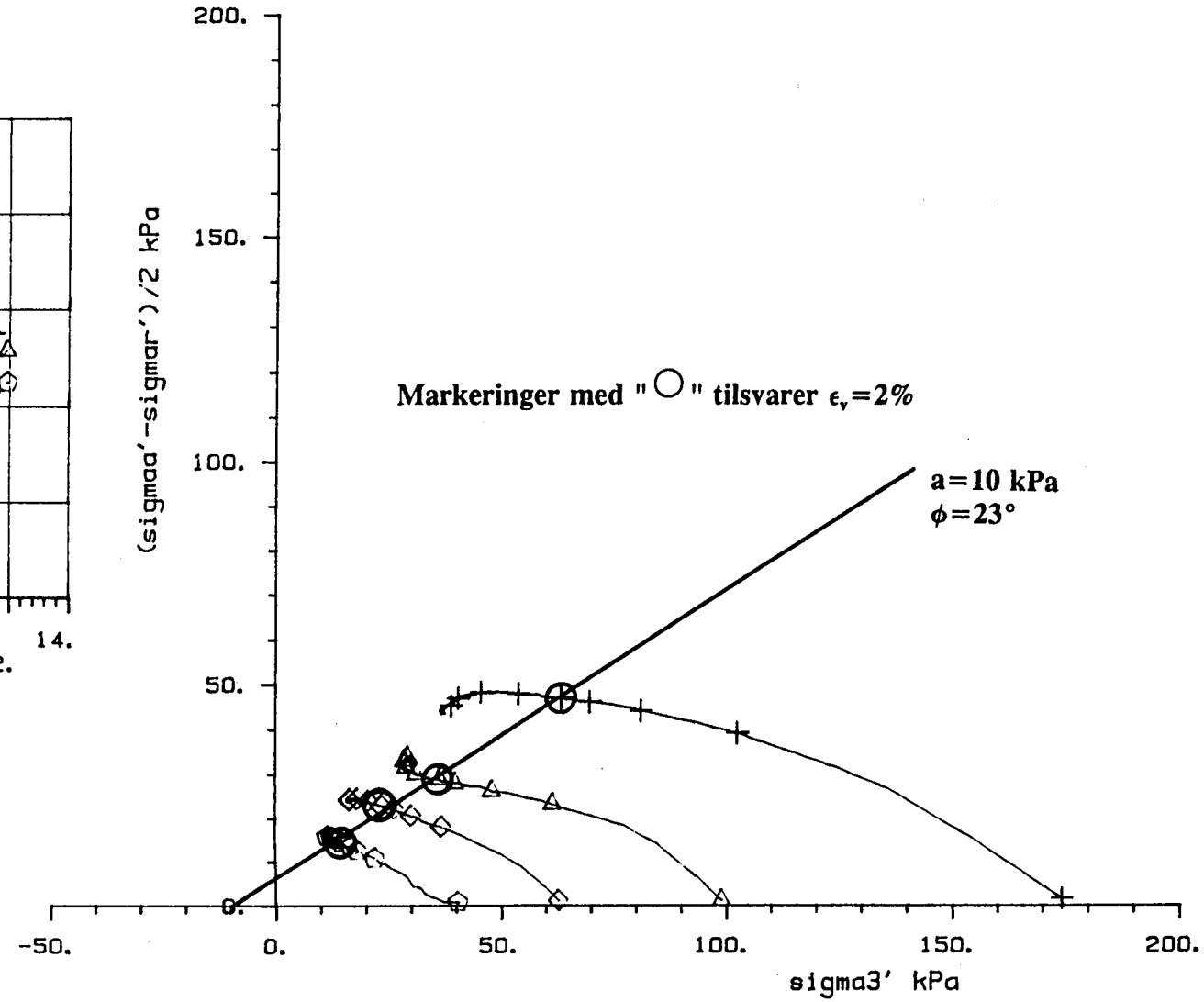
DATO 960112

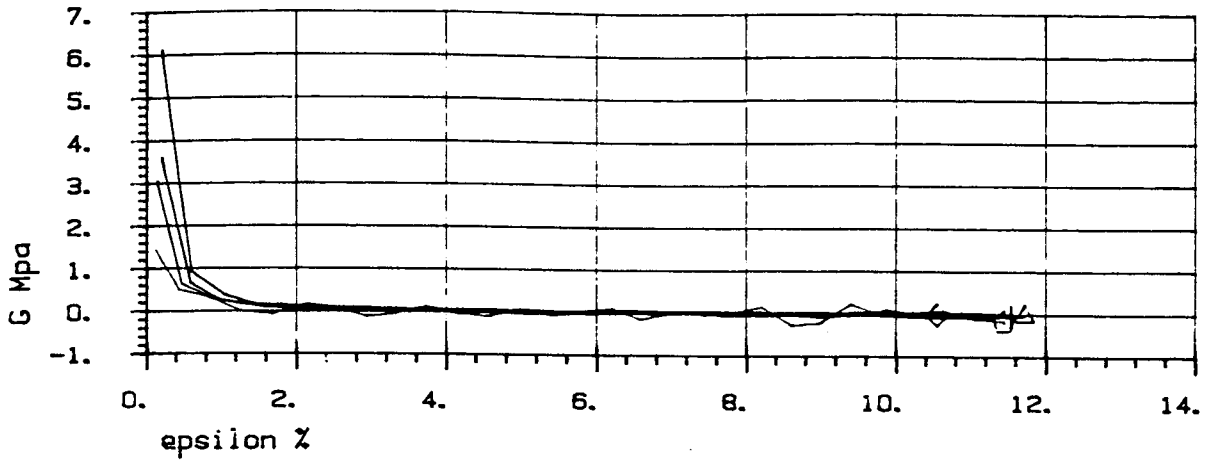
BILAG 24a

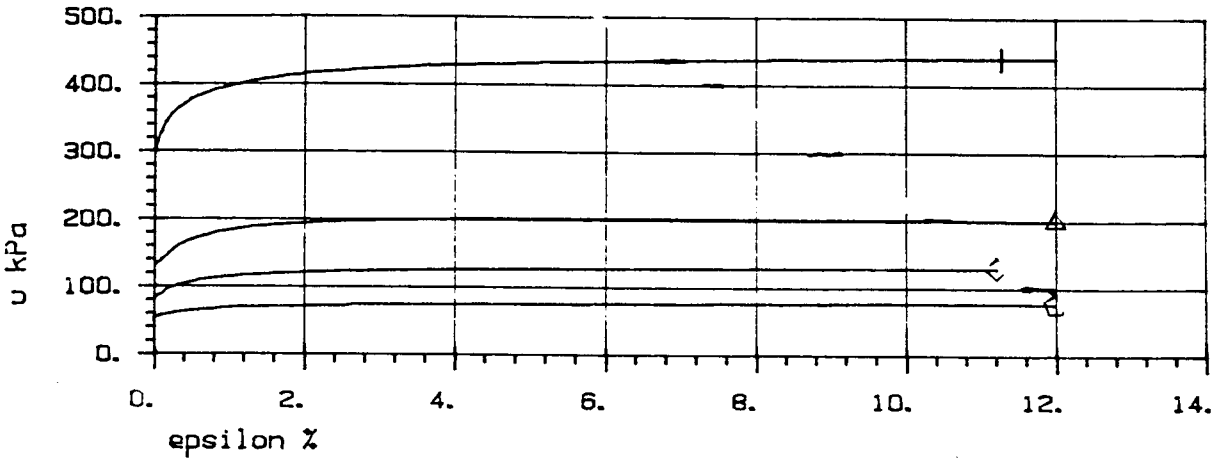
SYMB	PROFIL	Dybde, m	Labnr.	Forsøktype	dW, cm3	Korr. modell
+	9	21.60	681E	CIUA1	10.00	1, 2, 4,
△	9	13.30	655B	CIUA1	13.00	1, 2, 4,
◇	9	8.30	650B	CIUA1	10.50	1, 2, 4,
⬠	9	5.40	647C	CIUA1	11.00	1, 2, 4,

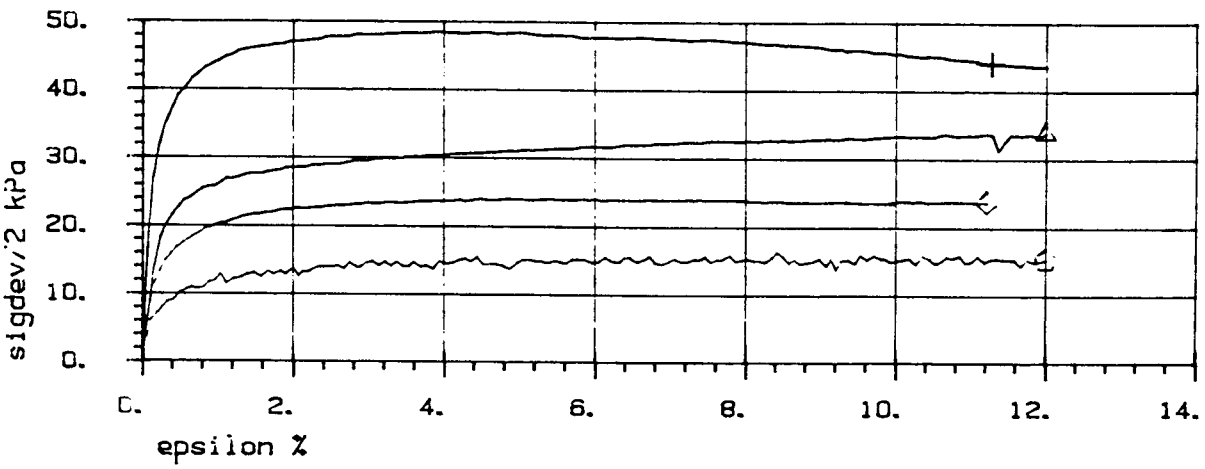


+ a= 10.0 kPa
△ a= 10.0 kPa
◇ a= 10.0 kPa
⬠ a= 10.0 kPa









SYMB	PROFIL	Dybde, m	Labnr.	Forsøktype	dW, cm3
+	9	21.60	681E	CIUA1	10.00
◁	9	13.30	655B	CIUA1	13.00
◇	9	8.30	650B	CIUA1	10.50
○	9	5.40	647C	CIUA1	11.00

TREAKSIALFORSØK

VEGLABORATORIET

Hull 9-BJ

OPD. A21A

DATO 960112

BILAG 24b

VEGLABORATORIET

TREAKSIALFORSØK

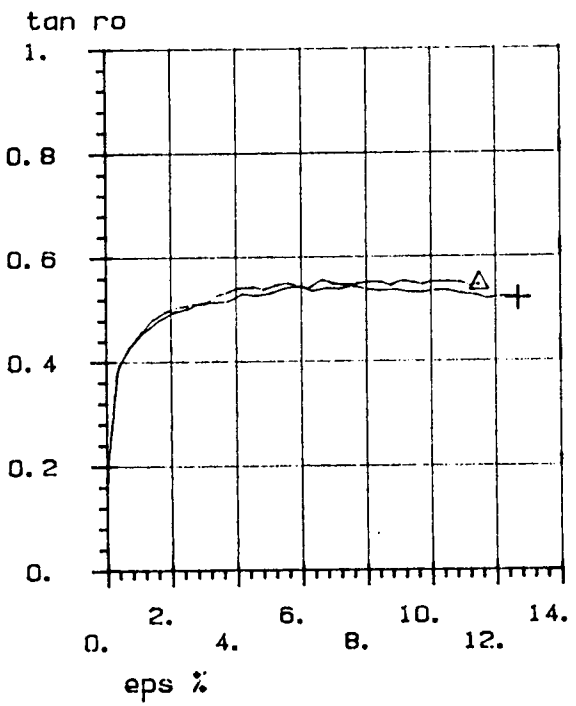
Hull 9-BJ

OPD. A21A

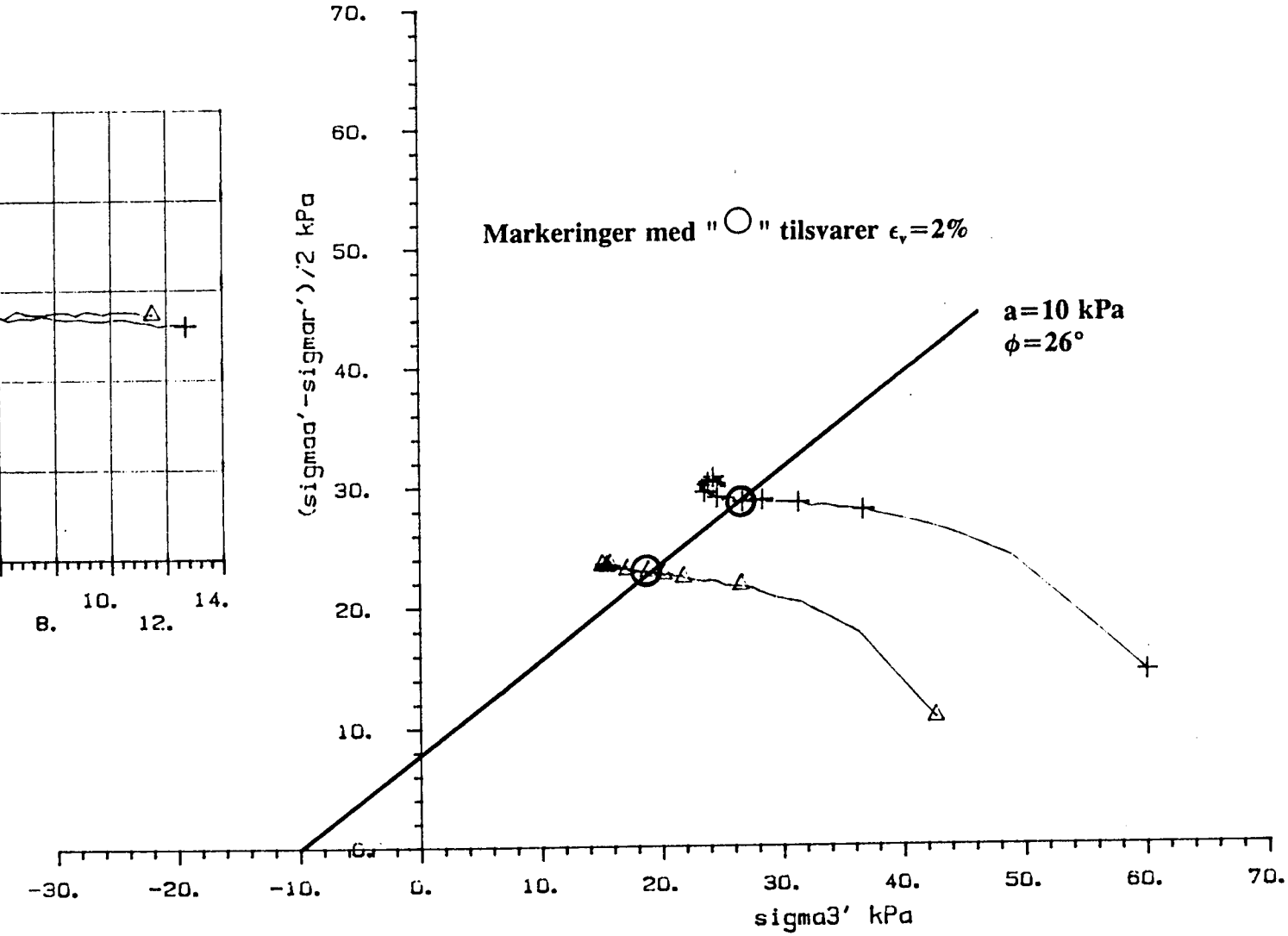
DATO 951207

BILAG 25a

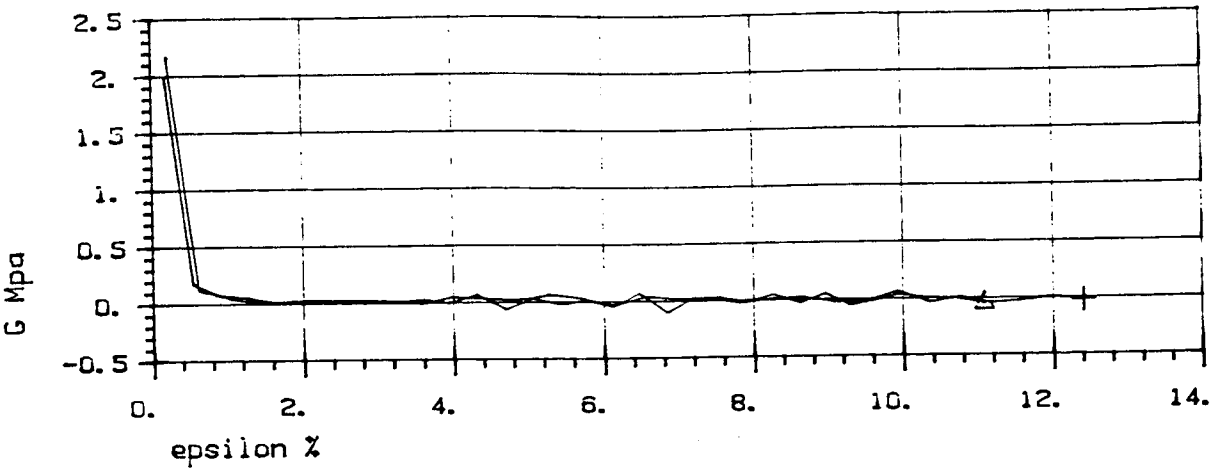
SYMB	PROFIL	Dybde, m	Labnr.	Forsøktype	dW, cm3	Korr. modell
+	9	13.50	655D	CAUA1	9.50	1, 2, 4,
Δ	9	9.50	651D	CAUA1	7.50	1, 2, 4,

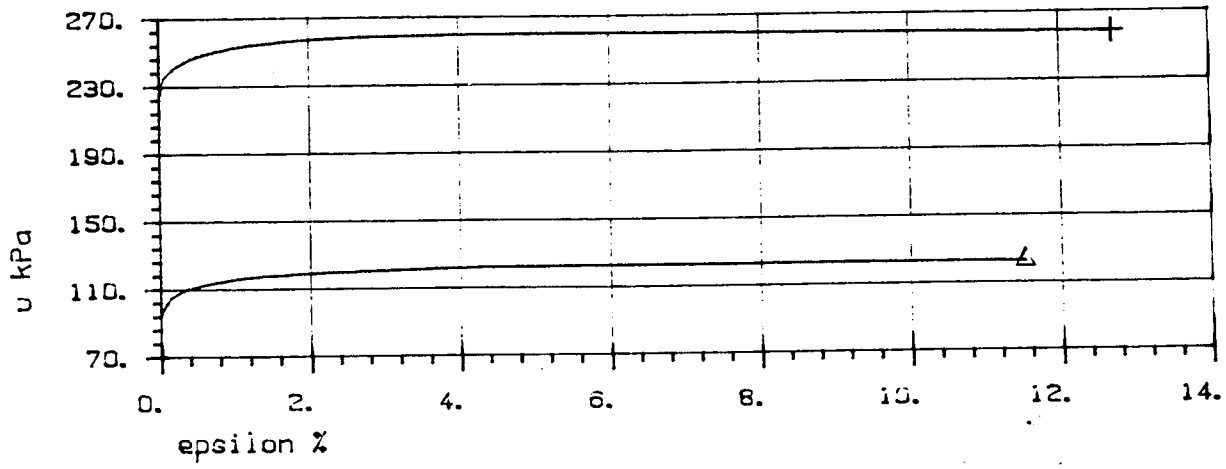


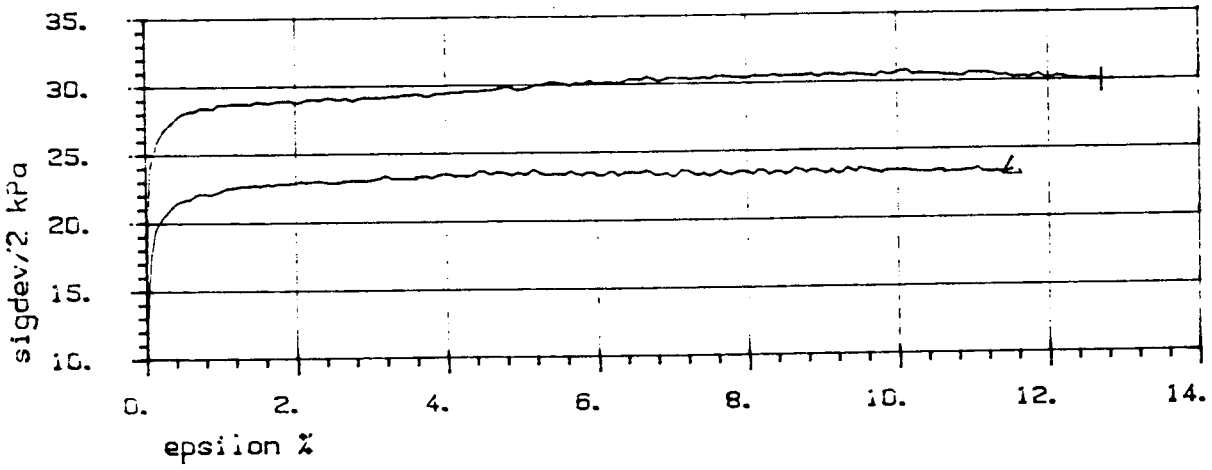
+ a= 10.0 kPa
Δ a= 10.0 kPa



43A







SYMB	PROFIL	Dybde, m	Labnr.	Forsøktype	dW, cm3
+	9	13.50	655D	CAUA1	9.50
<	9	9.50	651D	CAUA1	7.50

TREAKSIALFORSØK	**Hull 9-BJ**	SPD. A21A
VEGLABORATORIET		DATO 951207
		BILAG 25b

VEGLABORATORIET

TREAKSIALFORSØK

Hull 9-BJ

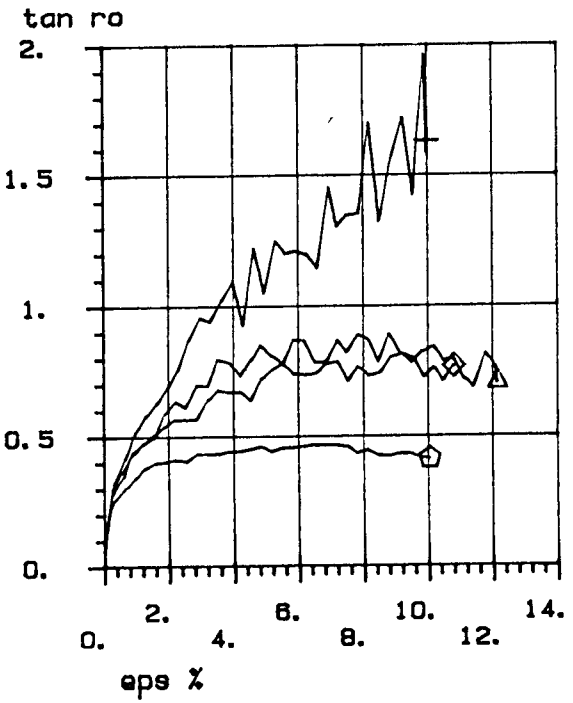
OPD. A21A

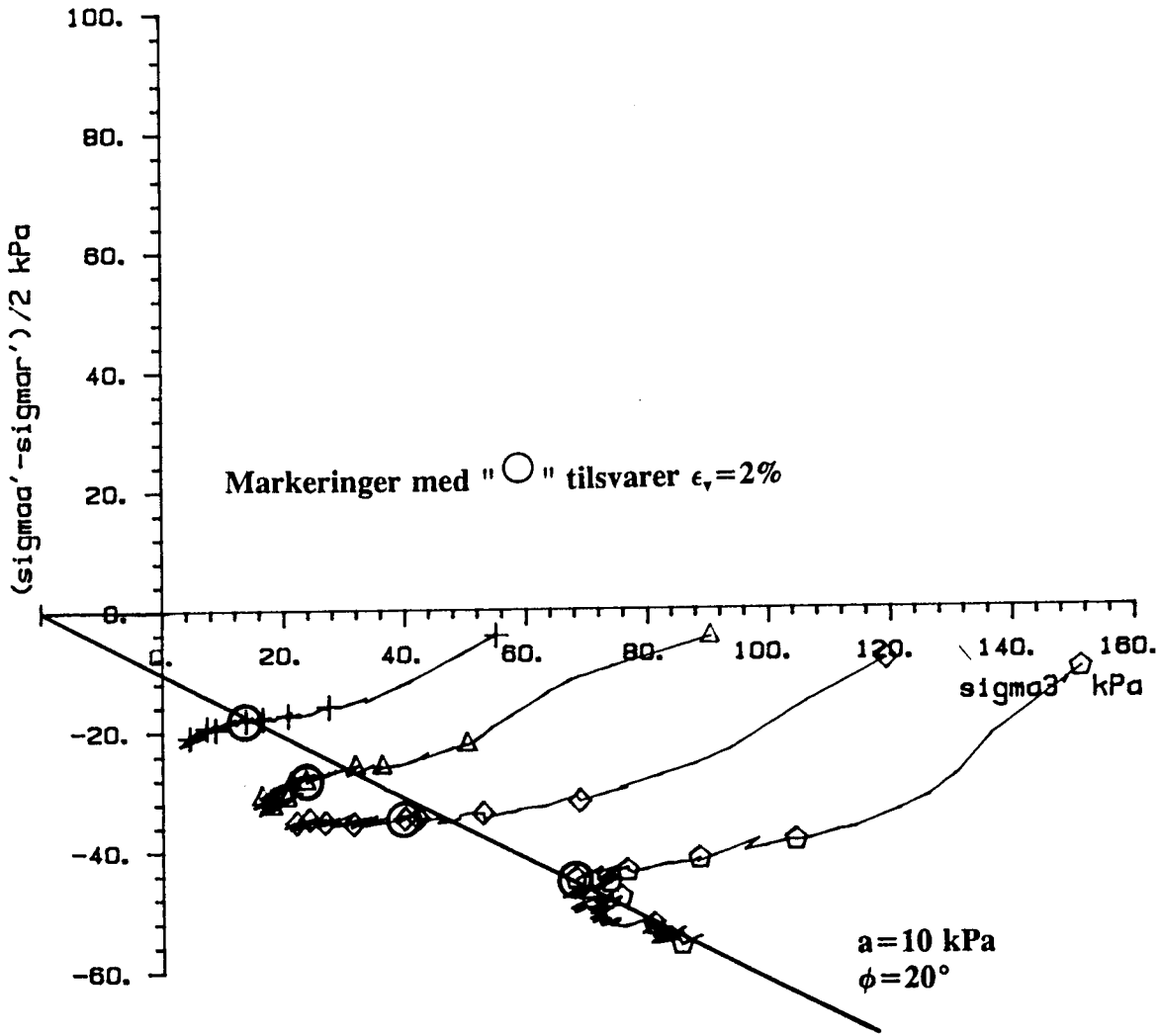
DATO 951202

BILAG 26a

Korr. modell

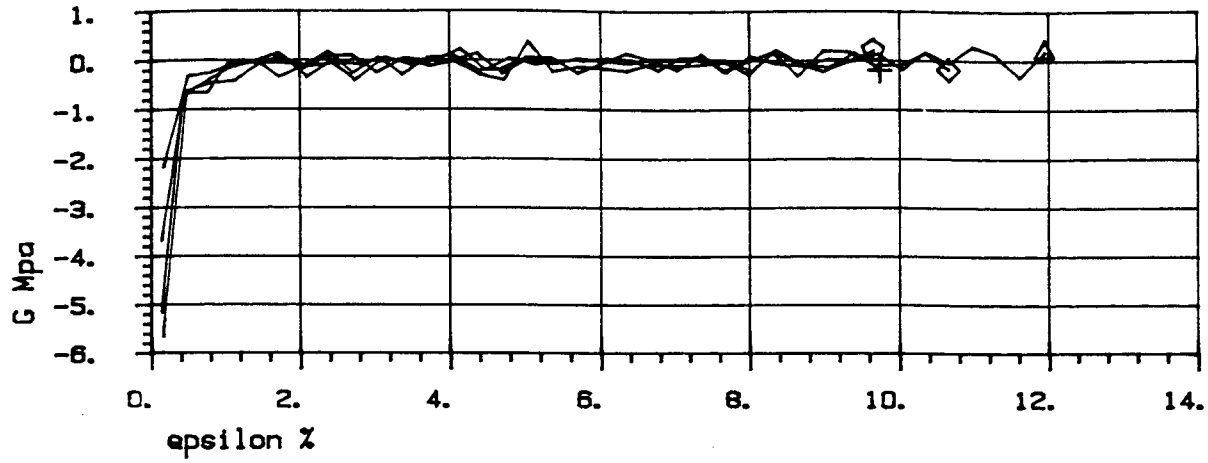
SYMB	PROFIL	Dybde, m	Labnr.	Forsøktype	dW, cm3
+	9	8.50	650D	CIUP3	8.00
△	9	13.40	655C	CIUP3	13.00
◇	9	17.50	677D	CIUP3	12.50
⬠	9	21.50	681D	CIUP3	10.00

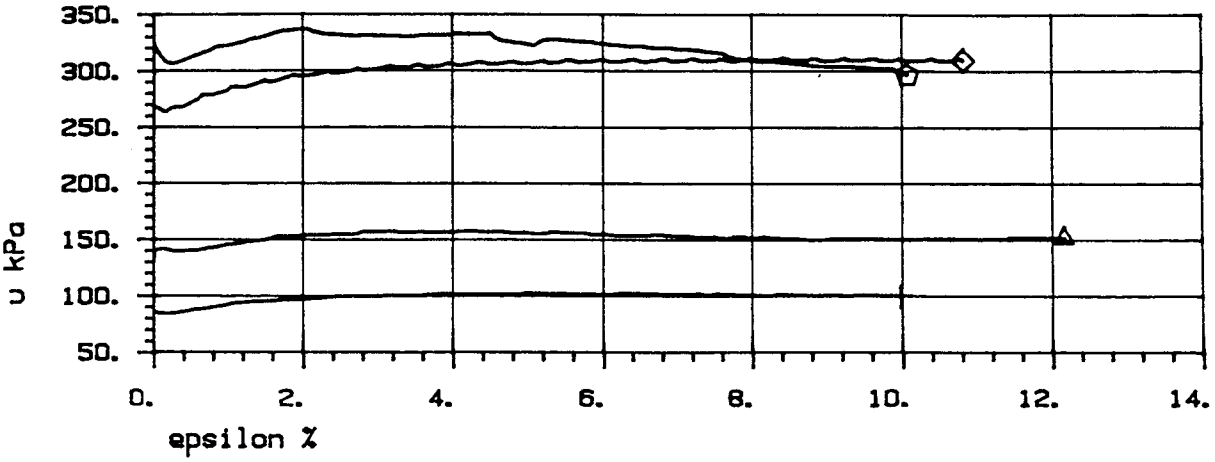


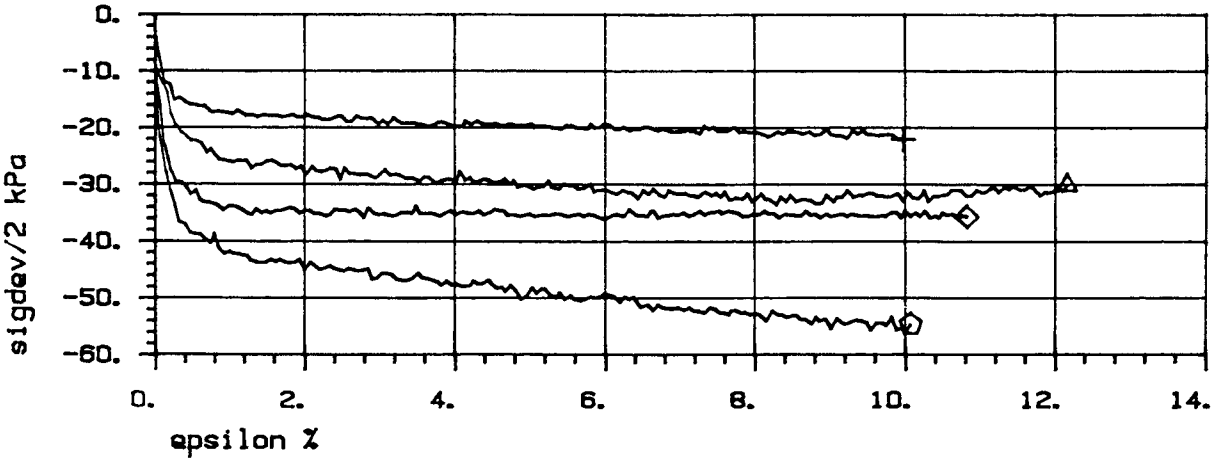


+	a=	0.0 kPa
△	a=	0.0 kPa
◇	a=	0.0 kPa
⬠	a=	0.0 kPa

4.30.A







SYMB	PROFIL	Dybde, m	Labnr.	Forsøktype	dW, cm3
+	9	8.50	650D	CIUP3	8.00
◁	9	13.40	655C	CIUP3	13.00
◇	9	17.50	677D	CIUP3	12.50
⬡	9	21.50	681D	CIUP3	10.00

TREAKSIALFORSØK

VEGLABORATORIET

Hull 9-BJ

OPD. A21A

DATO 951202

BILAG 26b

VEGLABORATORIET

TREAKSIALFORSØK

Hull 9-BJ

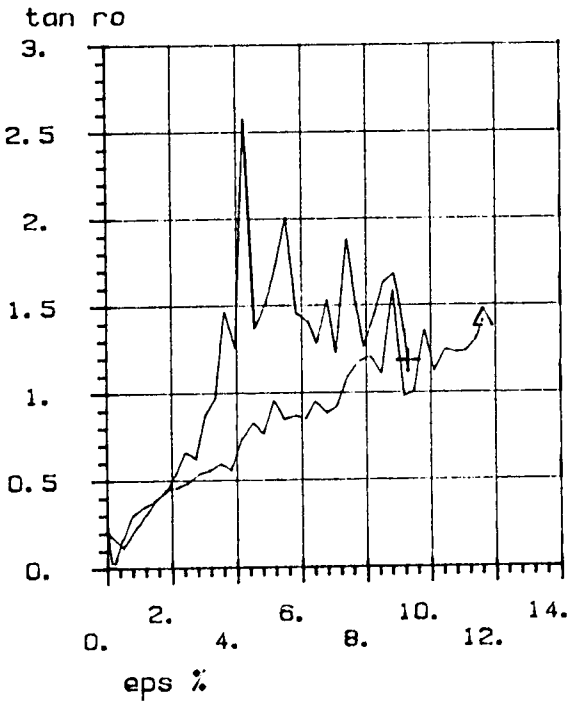
OPD. A21A

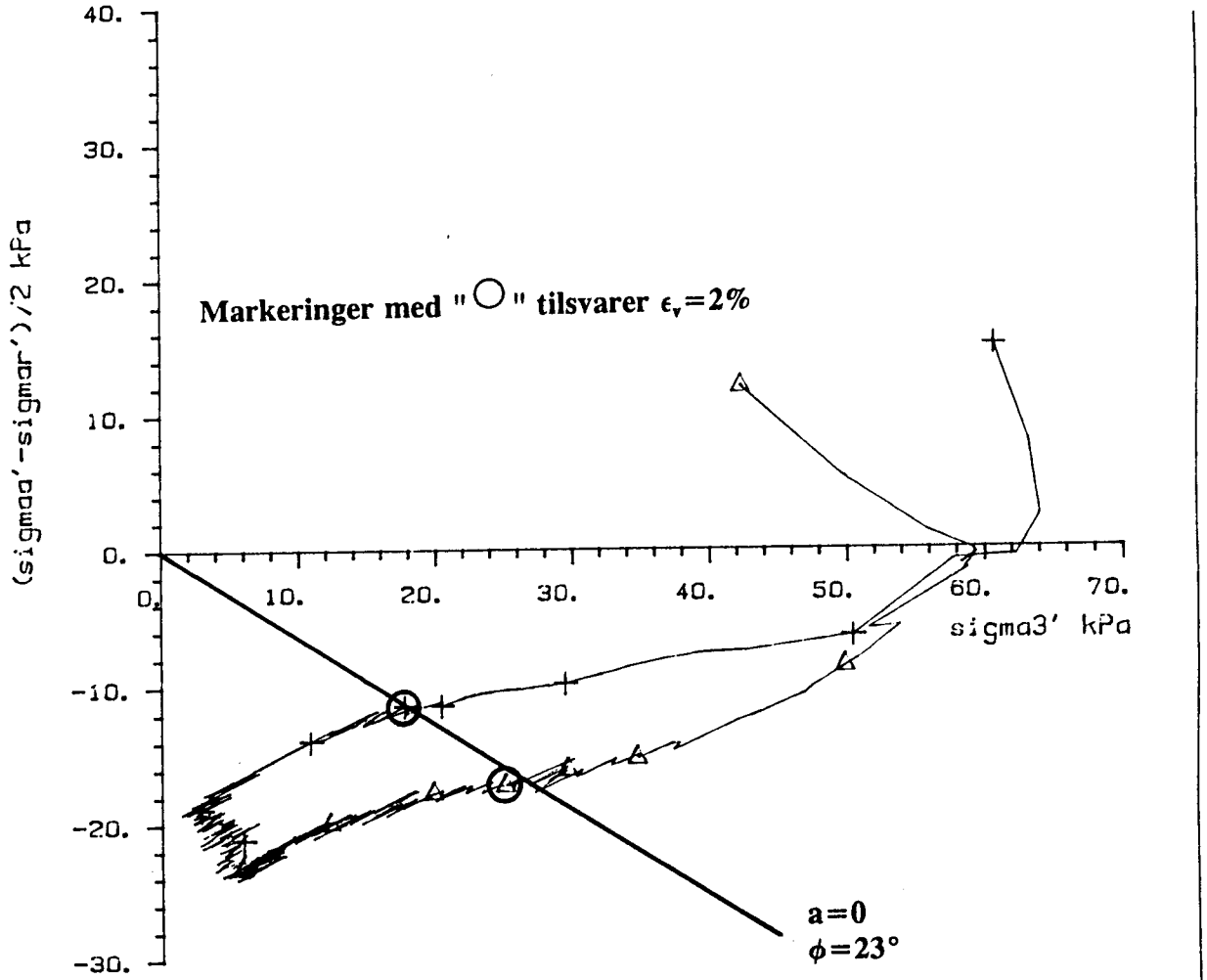
DATO 951207

BILAG 27a

Korr. modell

SYMB	PROFIL	Dybde, m	Labnr.	Forsøktype	dW, cm3
+	9	13.60	655E	CAUP3	13.00
Δ	9	9.40	651C	CAUP3	10.00

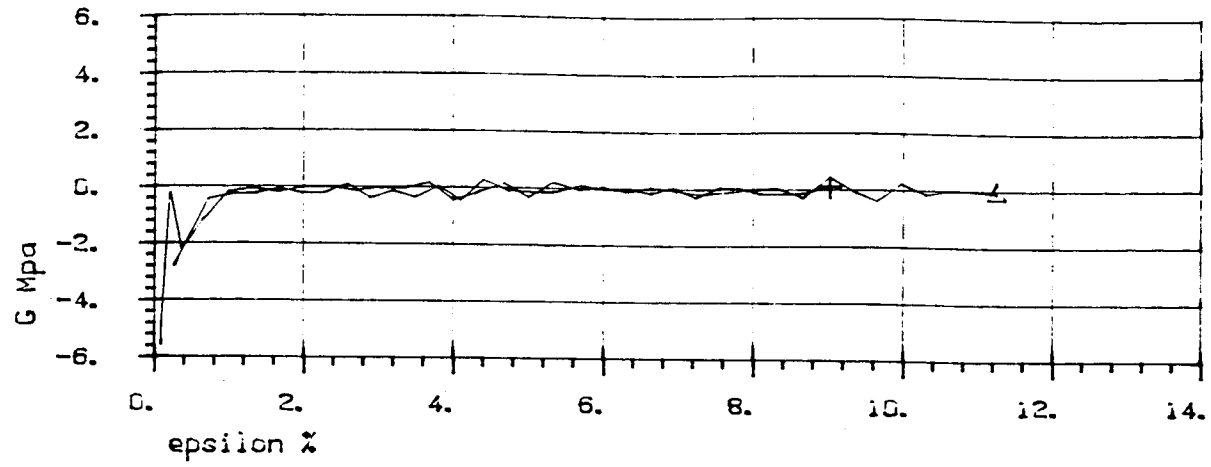


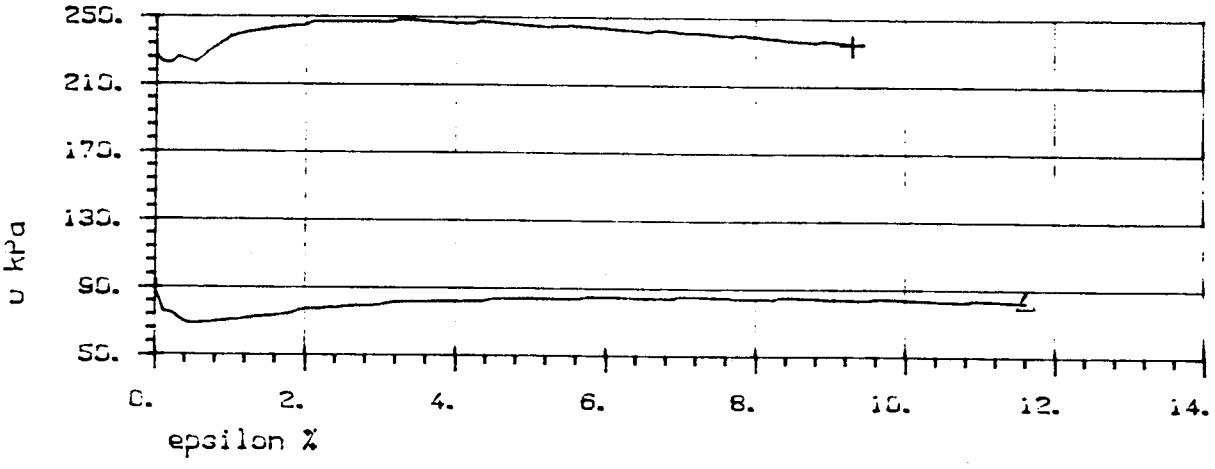


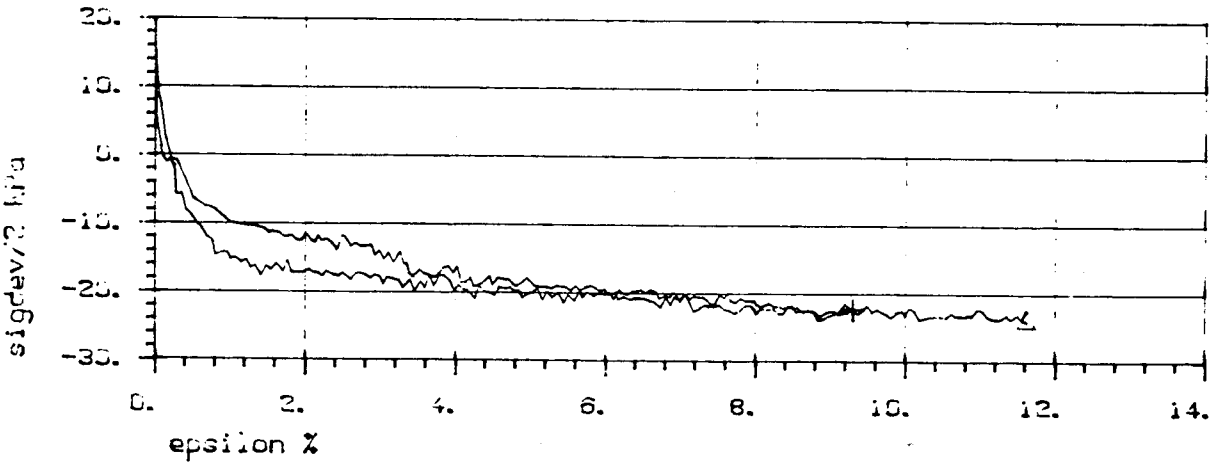
+ a= 0.0 kPa

Δ a= 0.0 kPa

436 4







SYMB	PROFIL	Dybde, m	Labnr.	Forsøktype	dW, cm3
+	S	13.60	655E	CAUP3	13.00
<	S	9.40	651C	CAUP3	10.00

TREAKSIALFORSØK
VEGLABORATORIET

Hull 9-BJ

OPD. A21A

DATO 951207

BILAG 27b