

YIELD LOCUS OF: Eskal150-0.8kPa

ORDER: HaoShi

Mean normal stress at preshear: SIGMA_{pre,m} = 854 Pa

Raw data:

N_{pre} = 1,8432 kg

No.	Shear cell	m,tot [g]	Dh [mm]	N,sh [kg]	S,pre [kg]	S,sh [kg]
1	1	3490,5	0,210	0,3686	0,7788	0,2305
5	1	3490,5	0,340	0,3686	0,8424	0,2384
2	1	3490,5	0,260	0,7373	0,8106	0,4133
3	1	3490,5	0,270	1,1059	0,8186	0,5802
4	1	3490,5	0,310	1,4746	0,8384	0,7391

Stresses:

Tau_{pre,m} = 572 PaSIGMA_{pre,m} = 854 Pa

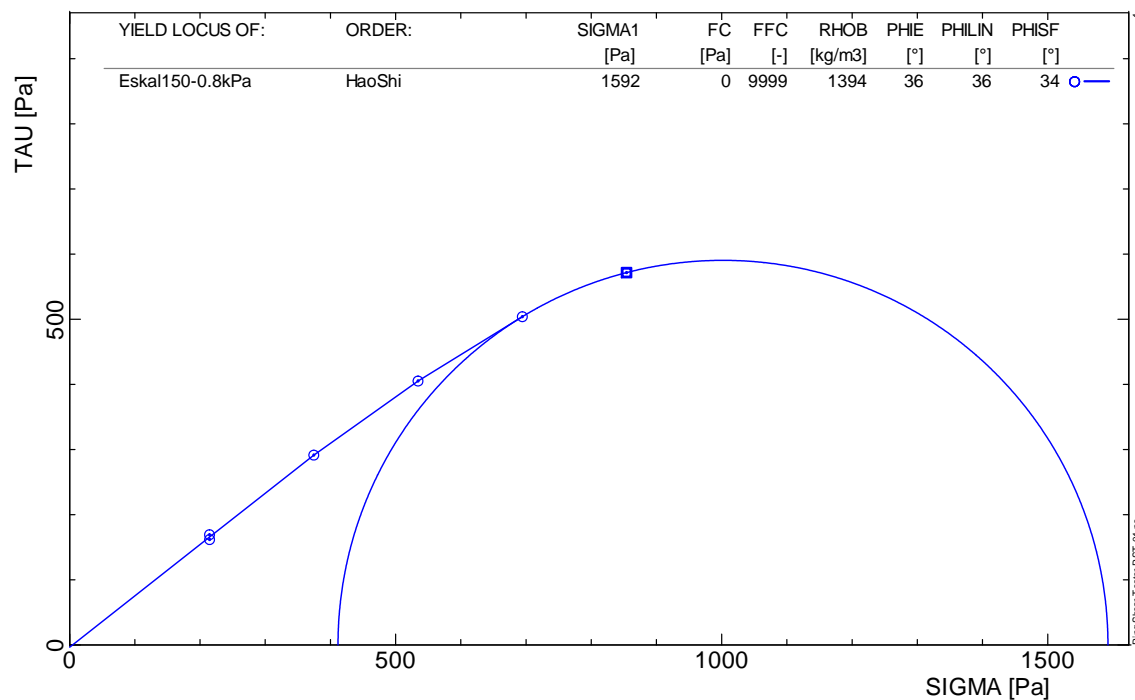
No.	SIGMA _{sh} [Pa]	TAU _{pre} [Pa]	TAU _{sh} [Pa]	TAU _{sh,pr} [Pa]	RHOB [kg/m ³]
1	214	544	161	169	1391
5	215	589	167	162	1396
2	374	567	289	291	1393
3	534	572	406	405	1394
4	694	586	517	504	1395

Parameters of yield locus (flow properties):

SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	TAU _C [Pa]	RHOB [kg/m ³]	PHIE [°]	PHILIN [°]	PHISF [°]
1592	0	9999,00	9999,00	-4	1394	36,1	36,1	33,8

Approximation of the yield locus: Straight sections

Prorating: on



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ORDER: HaoShi

Mean normal stress at preshear: SIGMA_{pre,m} = 854 Pa

Raw data:

N_{pre} = 1,8432 kg

No.	Shear cell	m,tot [g]	Dh [mm]	N,sh [kg]	S,pre [kg]	S,sh [kg]
1	1	3489,4	0,120	0,3686	0,7709	0,2305
5	1	3489,4	0,370	0,3686	0,8146	0,2344
2	1	3489,4	0,210	0,7373	0,7987	0,4053
3	1	3489,4	0,260	1,1059	0,8027	0,5643
4	1	3489,4	0,320	1,4746	0,8027	0,7232

Stresses:

Tau_{pre,m} = 558 PaSIGMA_{pre,m} = 854 Pa

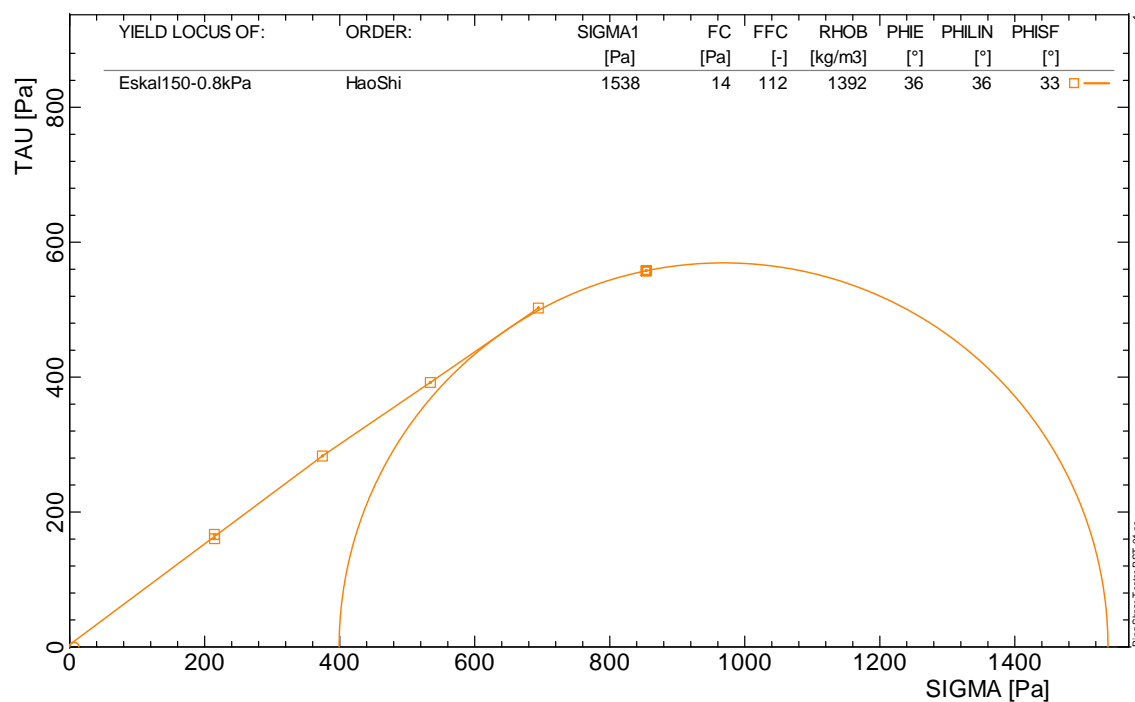
No.	SIGMA _{sh} [Pa]	TAU _{pre} [Pa]	TAU _{sh} [Pa]	TAU _{sh,pr} [Pa]	RHOB [kg/m3]
1	214	539	161	167	1387
5	215	569	164	160	1396
2	374	558	283	283	1390
3	534	561	394	392	1392
4	694	561	505	502	1394

Parameters of yield locus (flow properties):

SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	TAU _C [Pa]	RHOB [kg/m3]	PHIE [°]	PHILIN [°]	PHISF [°]
1538	14	112,08	156,01	3	1392	36,0	35,8	33,1

Approximation of the yield locus: Straight sections

Prorating: on



YIELD LOCUS OF: Eskal150-0.8kPa

ORDER: HaoShi

Mean normal stress at preshear: SIGMA_{pre,m} = 854 Pa

Raw data:

N_{pre} = 1,8432 kg

No.	Shear cell	m,tot [g]	Dh [mm]	N,sh [kg]	S,pre [kg]	S,sh [kg]
1	1	3491,8	0,000	0,3686	0,8583	0,2344
5	1	3491,8	0,160	0,3686	0,8265	0,2305
2	1	3491,8	0,020	0,7373	0,8305	0,4093
3	1	3491,8	0,050	1,1059	0,8265	0,5722
4	1	3491,8	0,100	1,4746	0,8265	0,7272

Stresses:

Tau_{pre,m} = 583 PaSIGMA_{pre,m} = 854 Pa

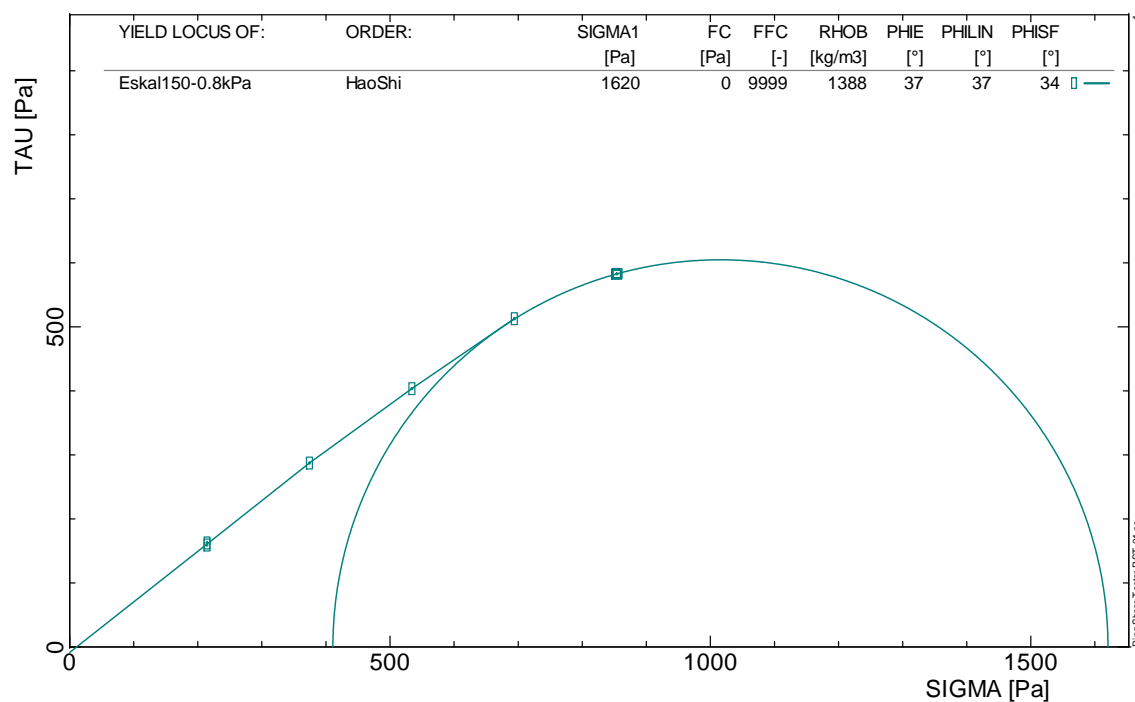
No.	SIGMA _{sh} [Pa]	TAU _{pre} [Pa]	TAU _{sh} [Pa]	TAU _{sh,pr} [Pa]	RHOB [kg/m3]
1	214	600	164	159	1385
5	214	578	161	163	1391
2	374	580	286	287	1386
3	534	578	400	403	1387
4	694	578	508	513	1389

Parameters of yield locus (flow properties):

SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	TAU _C [Pa]	RHOB [kg/m3]	PHIE [°]	PHILIN [°]	PHISF [°]
1620	0	9999,00	9999,00	-9	1388	36,5	36,5	34,3

Approximation of the yield locus: Straight sections

Prorating: on



YIELD LOCUS OF: Eskal150-1kPa

ORDER: HaoShi

Mean normal stress at preshear: SIGMA_{pre,m} = 1056 Pa

Raw data:

N_{pre} = 2,3078 kg

No.	Shear cell	m,tot [g]	Dh [mm]	N,sh [kg]	S,pre [kg]	S,sh [kg]
1	1	3490,5	0,340	0,4595	1,0530	0,2861
5	1	3490,5	0,440	0,4595	1,0093	0,2782
2	1	3490,5	0,360	0,9241	1,0292	0,5086
3	1	3490,5	0,370	1,3837	1,0093	0,6994
4	1	3490,5	0,410	1,8432	1,0053	0,8901

Stresses:

Tau_{pre,m} = 714 PaSIGMA_{pre,m} = 1056 Pa

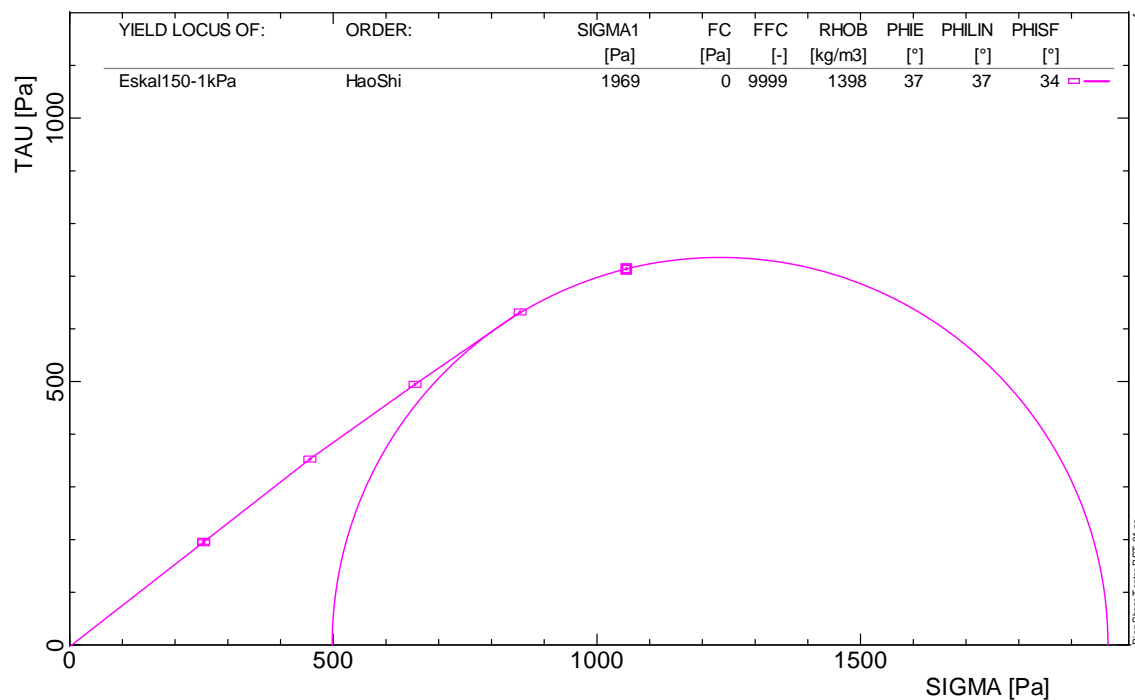
No.	SIGMA _{sh} [Pa]	TAU _{pre} [Pa]	TAU _{sh} [Pa]	TAU _{sh,pr} [Pa]	RHOB [kg/m3]
1	254	736	200	194	1396
5	254	705	194	197	1400
2	456	719	355	353	1397
3	655	705	489	495	1397
4	854	703	622	632	1399

Parameters of yield locus (flow properties):

SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	TAU _C [Pa]	RHOB [kg/m3]	PHIE [°]	PHILIN [°]	PHISF [°]
1969	0	9999,00	9999,00	-3	1398	36,6	36,6	34,1

Approximation of the yield locus: Straight sections

Prorating: on



YIELD LOCUS OF: Eskal150-1kPa

ORDER: HaoShi

Mean normal stress at preshear: SIGMA_{pre,m} = 1056 Pa

Raw data:

N_{pre} = 2,3078 kg

No.	Shear cell	m,tot [g]	Dh [mm]	N,sh [kg]	S,pre [kg]	S,sh [kg]
1	1	3489,4	0,450	0,4595	1,0649	0,2821
5	1	3489,4	0,560	0,4595	1,0252	0,2782
2	1	3489,4	0,470	0,9241	1,0212	0,5047
3	1	3489,4	0,480	1,3837	1,0093	0,6994
4	1	3489,4	0,520	1,8432	1,0173	0,8980

Stresses:

Tau_{pre,m} = 718 PaSIGMA_{pre,m} = 1056 Pa

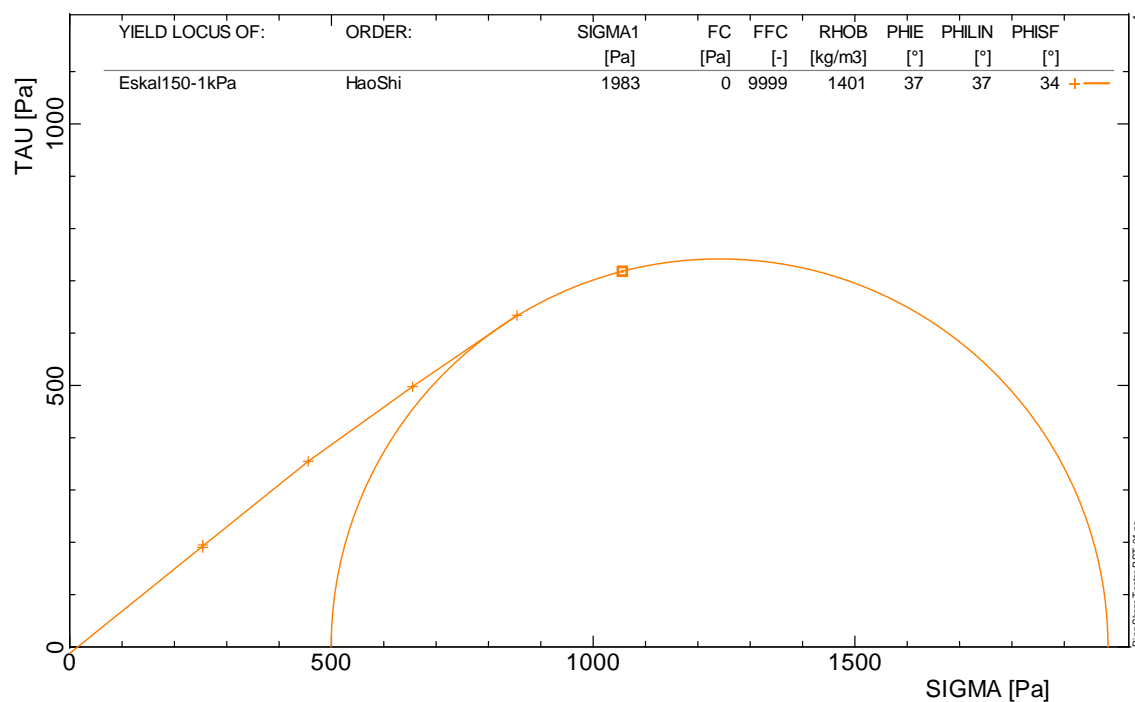
No.	SIGMA _{sh} [Pa]	TAU _{pre} [Pa]	TAU _{sh} [Pa]	TAU _{sh,pr} [Pa]	RHOB [kg/m ³]
1	254	744	197	190	1399
5	254	717	194	195	1403
2	456	714	353	355	1400
3	655	705	489	498	1400
4	854	711	628	634	1402

Parameters of yield locus (flow properties):

SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	TAU _C [Pa]	RHOB [kg/m ³]	PHIE [°]	PHILIN [°]	PHISF [°]
1983	0	9999,00	9999,00	-12	1401	36,7	36,7	34,2

Approximation of the yield locus: Straight sections

Prorating: on



YIELD LOCUS OF: Eskal150-1kPa

ORDER: HaoShi

Mean normal stress at preshear: SIGMA_{pre,m} = 1056 Pa

Raw data:

N_{pre} = 2,3078 kg

No.	Shear cell	m,tot [g]	Dh [mm]	N,sh [kg]	S,pre [kg]	S,sh [kg]
1	1	3491,8	0,240	0,4595	1,0689	0,2782
5	1	3491,8	0,370	0,4595	1,0093	0,2821
2	1	3491,8	0,270	0,9241	1,0332	0,5086
3	1	3491,8	0,300	1,3837	1,0173	0,6994
4	1	3491,8	0,340	1,8432	1,0173	0,8941

Stresses:

Tau_{pre,m} = 719 PaSIGMA_{pre,m} = 1056 Pa

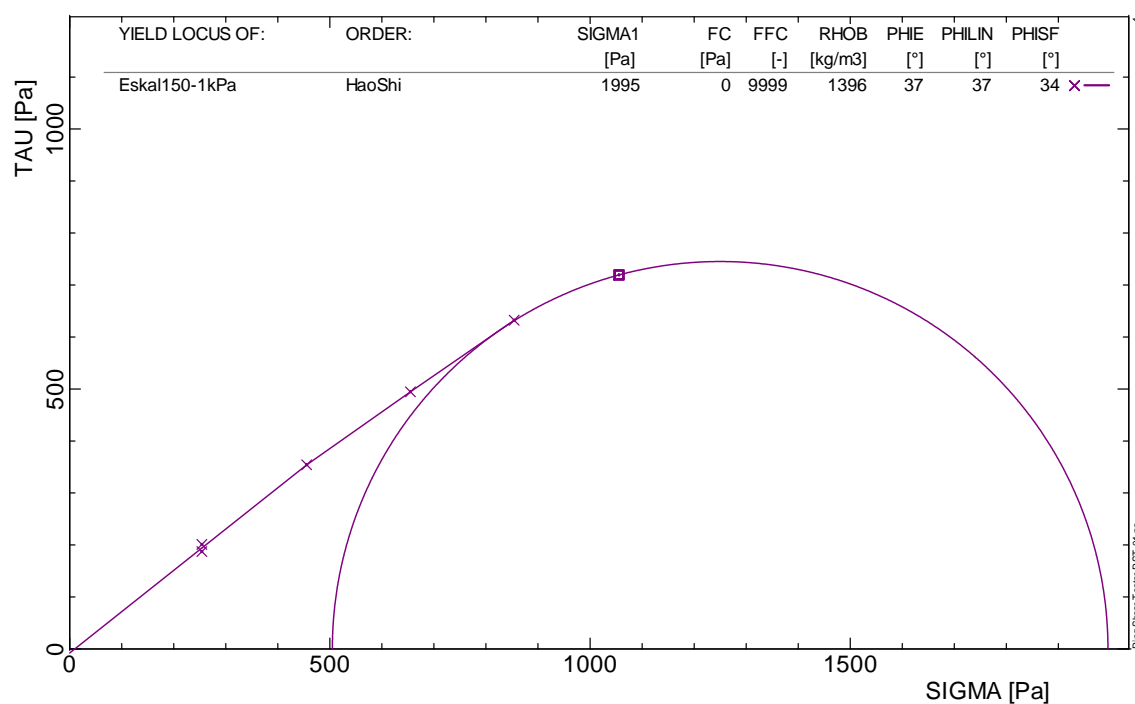
No.	SIGMA _{sh} [Pa]	TAU _{pre} [Pa]	TAU _{sh} [Pa]	TAU _{sh,pr} [Pa]	RHOB [kg/m3]
1	254	747	194	187	1394
5	254	705	197	201	1399
2	456	722	355	354	1395
3	655	711	489	495	1396
4	854	711	625	632	1398

Parameters of yield locus (flow properties):

SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	TAU _C [Pa]	RHOB [kg/m3]	PHIE [°]	PHILIN [°]	PHISF [°]
1995	0	9999,00	9999,00	-8	1396	36,6	36,6	34,3

Approximation of the yield locus: Straight sections

Prorating: on



YIELD LOCUS OF: Eskal150-1.5kPa

ORDER: HaoShi

Mean normal stress at preshear: SIGMA_{pre,m} = 1555 Pa

Raw data:

N_{pre} = 3,4592 kg

No.	Shear cell	m,tot [g]	Dh [mm]	N,sh [kg]	S,pre [kg]	S,sh [kg]
1	1	3490,5	0,460	0,6918	1,4862	0,3934
5	1	3490,5	0,570	0,6918	1,4305	0,3854
2	1	3490,5	0,490	1,3837	1,4703	0,7033
3	1	3490,5	0,510	2,0755	1,4424	0,9815
4	1	3490,5	0,540	2,7674	1,4107	1,2557

Stresses:

Tau_{pre,m} = 1012 PaSIGMA_{pre,m} = 1555 Pa

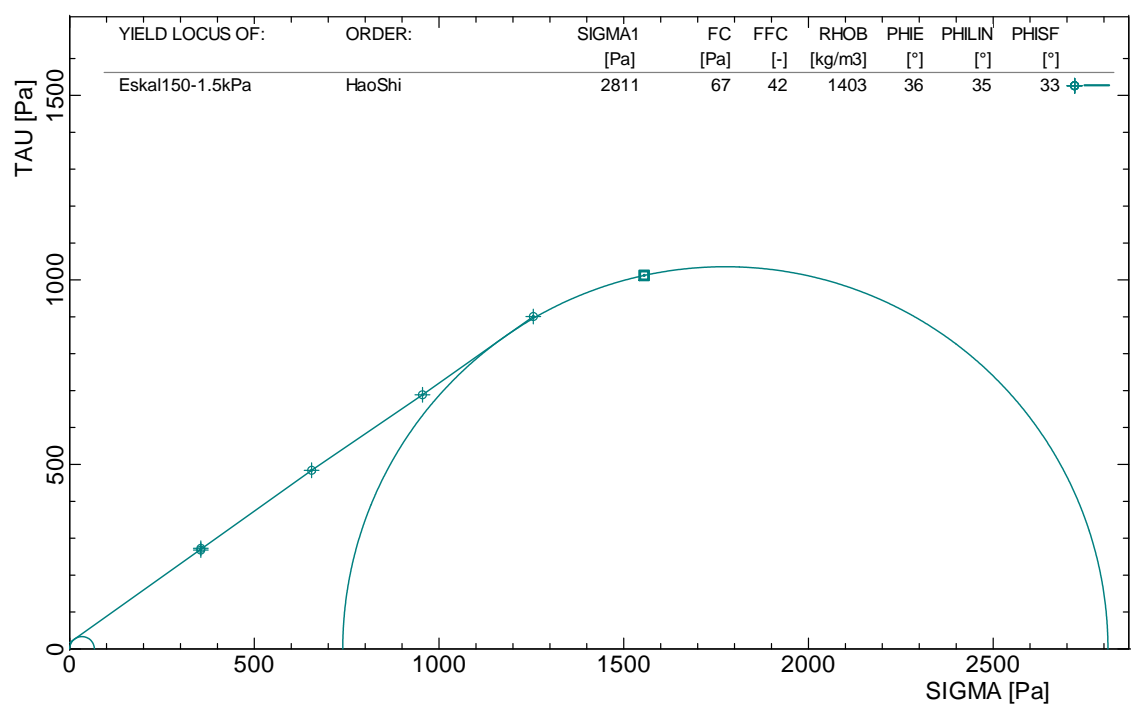
No.	SIGMA _{sh} [Pa]	TAU _{pre} [Pa]	TAU _{sh} [Pa]	TAU _{sh,pr} [Pa]	RHOB [kg/m3]
1	355	1039	275	268	1401
5	355	1000	269	273	1405
2	655	1028	492	484	1402
3	955	1008	686	689	1402
4	1255	986	878	901	1404

Parameters of yield locus (flow properties):

SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	TAU _C [Pa]	RHOB [kg/m3]	PHIE [°]	PHILIN [°]	PHISF [°]
2811	67	42,02	58,93	17	1403	35,7	35,1	33,1

Approximation of the yield locus: Straight sections

Prorating: on



YIELD LOCUS OF: Eskal150-1.5kPa

ORDER: HaoShi

Mean normal stress at preshear: SIGMA_{pre,m} = 1555 Pa

Raw data:

N_{pre} = 3,4592 kg

No.	Shear cell	m,tot [g]	Dh [mm]	N,sh [kg]	S,pre [kg]	S,sh [kg]
1	1	3489,4	0,550	0,6918	1,5497	0,3894
5	1	3489,4	0,670	0,6918	1,4862	0,3854
2	1	3489,4	0,580	1,3837	1,5100	0,7073
3	1	3489,4	0,600	2,0755	1,4782	0,9934
4	1	3489,4	0,640	2,7674	1,4782	1,2875

Stresses:

Tau_{pre,m} = 1049 PaSIGMA_{pre,m} = 1555 Pa

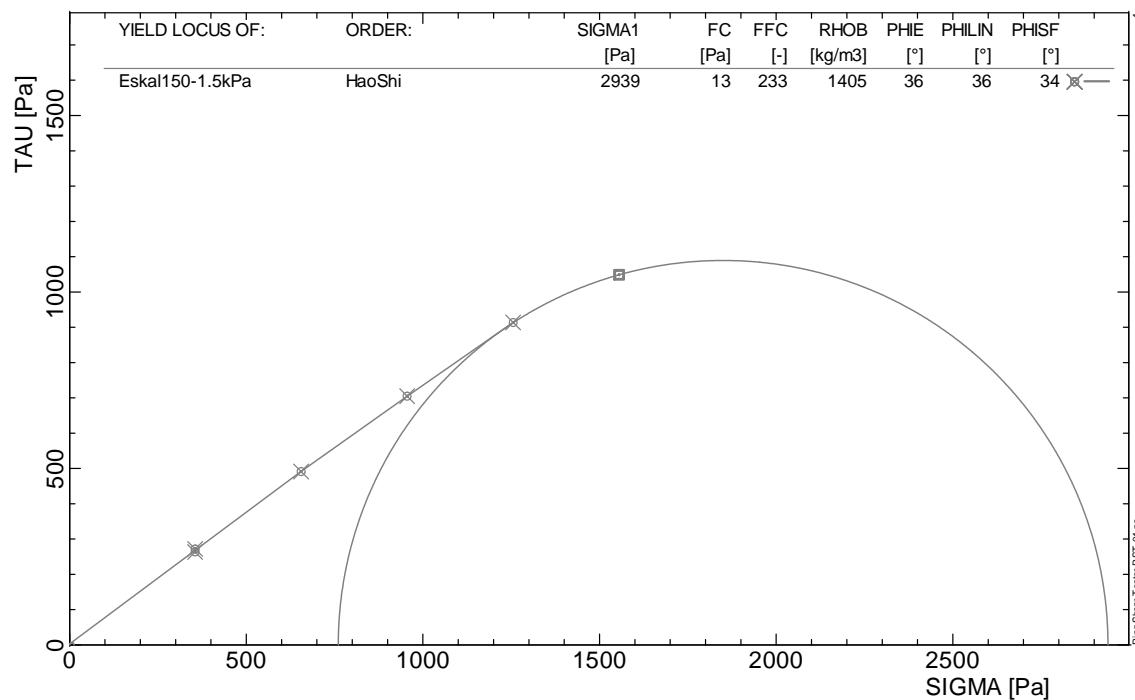
No.	SIGMA _{sh} [Pa]	TAU _{pre} [Pa]	TAU _{sh} [Pa]	TAU _{sh,pr} [Pa]	RHOB [kg/m3]
1	355	1083	272	264	1403
5	355	1039	269	272	1407
2	655	1055	494	491	1404
3	955	1033	694	705	1405
4	1255	1033	900	913	1406

Parameters of yield locus (flow properties):

SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	TAU _C [Pa]	RHOB [kg/m3]	PHIE [°]	PHILIN [°]	PHISF [°]
2939	13	232,54	326,67	3	1405	36,1	36,0	34,0

Approximation of the yield locus: Straight sections

Prorating: on



YIELD LOCUS OF: Eskal150-1.5kPa

ORDER: HaoShi

Mean normal stress at preshear: SIGMA_{pre,m} = 1555 Pa

Raw data:

N_{pre} = 3,4592 kg

No.	Shear cell	m,tot [g]	Dh [mm]	N,sh [kg]	S,pre [kg]	S,sh [kg]
1	1	3491,8	0,400	0,6918	1,5418	0,3974
5	1	3491,8	0,540	0,6918	1,4742	0,3894
2	1	3491,8	0,440	1,3837	1,5020	0,7232
3	1	3491,8	0,470	2,0755	1,4742	1,0053
4	1	3491,8	0,510	2,7674	1,4782	1,2954

Stresses:

Tau_{pre,m} = 1044 PaSIGMA_{pre,m} = 1555 Pa

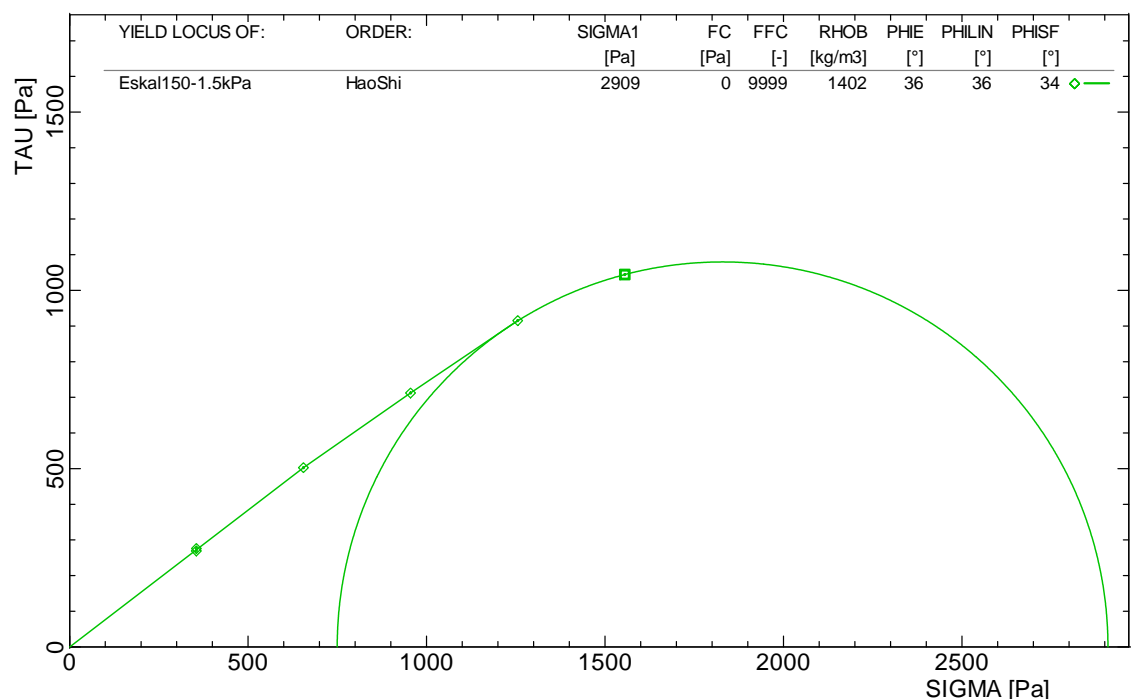
No.	SIGMA _{sh} [Pa]	TAU _{pre} [Pa]	TAU _{sh} [Pa]	TAU _{sh,pr} [Pa]	RHOB [kg/m3]
1	355	1078	278	269	1400
5	355	1030	272	276	1405
2	655	1050	505	503	1401
3	955	1030	703	712	1402
4	1255	1033	905	915	1404

Parameters of yield locus (flow properties):

SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	TAU _C [Pa]	RHOB [kg/m3]	PHIE [°]	PHILIN [°]	PHISF [°]
2909	0	9999,00	9999,00	0	1402	36,2	36,2	33,9

Approximation of the yield locus: Straight sections

Prorating: on



Flowability (summary of test results for yield loci)

Bulk solid	Order	SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	RHOB [kg/m3]
Eskal150-0.8kPa	HaoShi	1592	0	9999,00	9999,00	1394
Eskal150-0.8kPa	HaoShi	1538	14	112,08	156,01	1392
Eskal150-0.8kPa	HaoShi	1620	0	9999,00	9999,00	1388
Eskal150-1kPa	HaoShi	1969	0	9999,00	9999,00	1398
Eskal150-1kPa	HaoShi	1983	0	9999,00	9999,00	1401
Eskal150-1kPa	HaoShi	1995	0	9999,00	9999,00	1396
Eskal150-1.5kPa	HaoShi	2811	67	42,02	58,93	1403
Eskal150-1.5kPa	HaoShi	2939	13	232,54	326,67	1405
Eskal150-1.5kPa	HaoShi	2909	0	9999,00	9999,00	1402

Approximation of the yield loci: Straight sections

Prorating: on

