

پروژه تحقیقاتی مواد اولیه

HEX 4460 PE80+



آزمایشگاه اکرودیته
پلی اتیلن سمنان

شرکت پلیمر آریاساسول

لوله سایز 110mm SDR11 در تاریخ ۹۸/۰۹/۰۲ از ساعت ۱۰:۰۰ الی ۱۵ تولید گردید

NACI
مرکز ملی تحقیقات و توسعه ایران

آزمایشگاه اکرودیته
پلی اتیلن سمنان



HEX 4460 PE80+



آزمون مواد اولیه



آزمایشگاه اکرودیتته
پلی اتیلن سمنان



MFR

OIT

DENSITY

NACI
National Accreditation Center of Iran
مرکز ملی تأیید صلاحیت ایران

آزمایشگاه اکرودیته
پلی اتیلن سمنان



MFER

MFI

Material characteristics	Sample description	Grade Name	Lot No.
	HDPE- PE80	HEX 4460 PE80+	H9806081642

NO	Test Standard	Test Parameter	Accept Value	Result	Test status
1	ISO1133	Temp.=190c Time = 10min Weight = 5kg	0.15 ≤ MFR ≤ 0.7 g/10 min	0.334	OK
2				0.339	OK
3				0.331	OK
1		Temp.=190c Time = 10min Weight = 21.6kg	---	6.58	OK
2				6.65	OK
3				6.47	OK

NACI
National Accreditation Center of Iran
مرکز ملی تأیید صلاحیت ایران

آزمایشگاه اکرودیته
پلی اتیلن سمنان

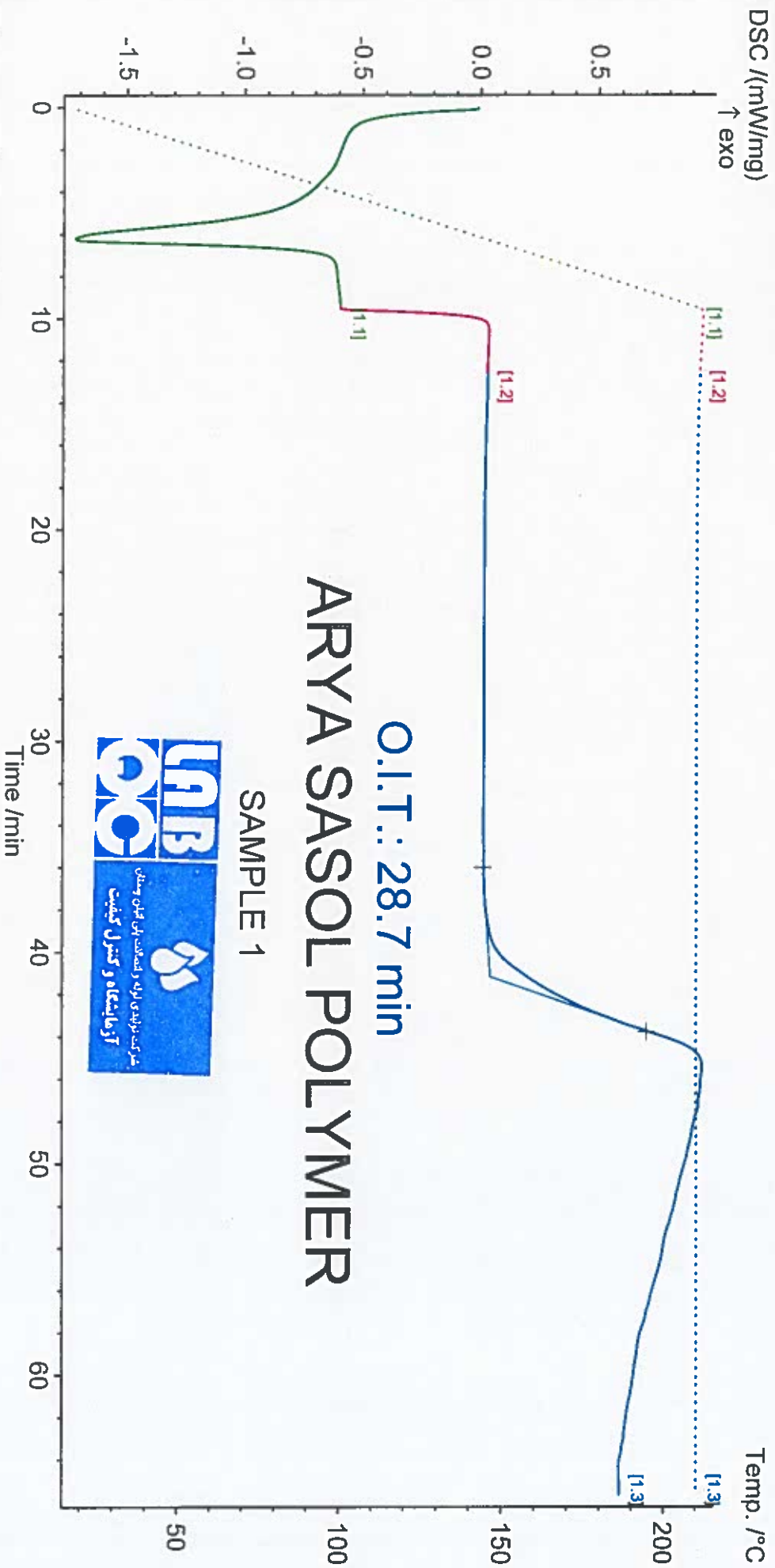


OIT

OIT

Material characteristics	Sample description	Grade Name	Lot No.
	HDPE- PE80	HEX 4460 PE80+	H19806081642

NO	Test Standard	Test Parameter	Accept Value	Type of.	Result	Test status
1	ISO11357-6	Temp.=210c	> 20 min	Raw Material	28.7	OK
2				Raw Material	31.2	OK
3				Raw Material	30.8	OK

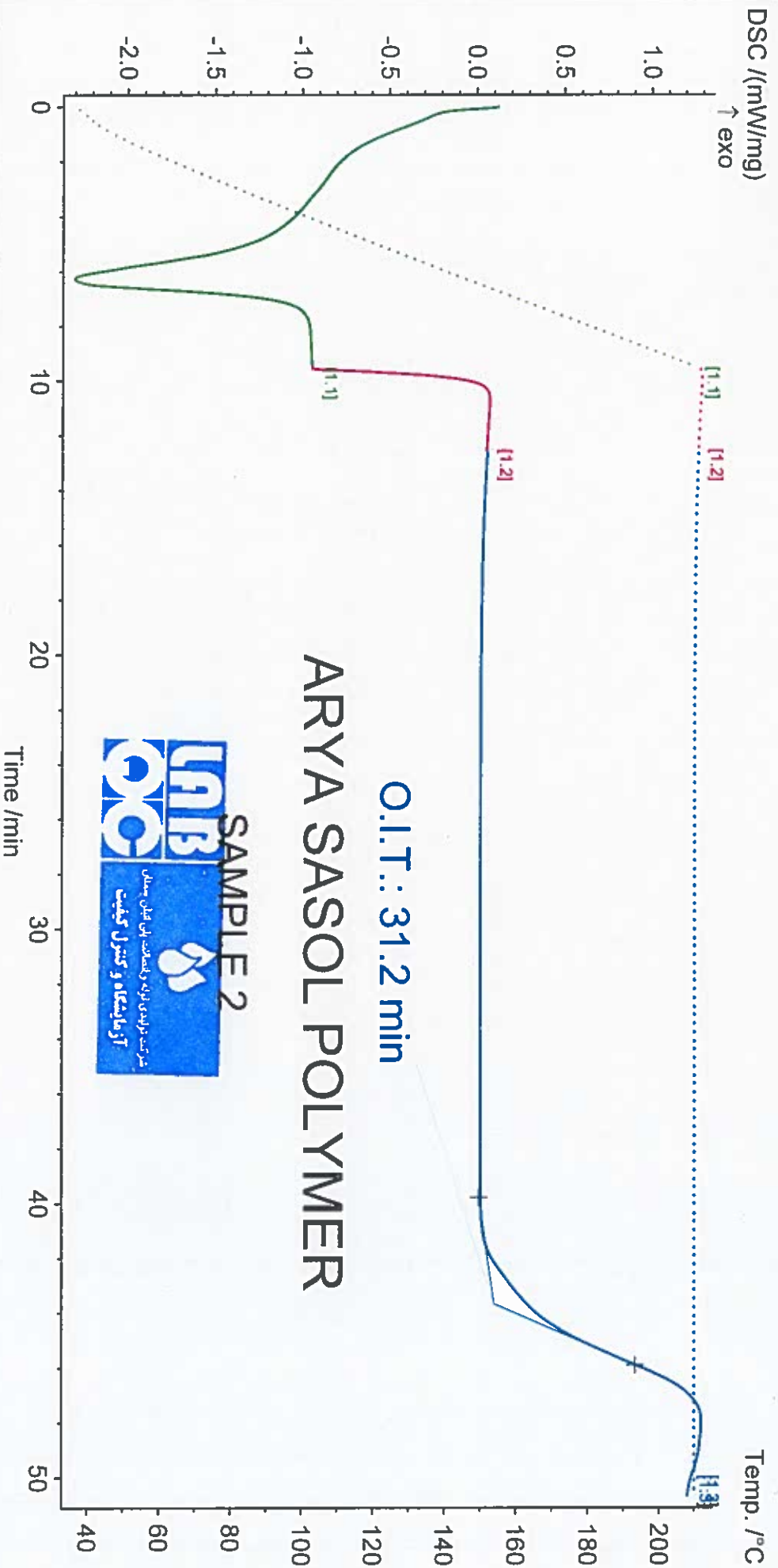


Main: 2020-03-17 10:46 User: Administrator
 Instrument: NETZSCH DSC 200 F3 File: D:\OIT\98\Original\2\ARYA SASOL POLYMER\SAMPLE 1.sds Remark: 1398/12/27
 Project: ARYA SASOL POLYMER
 Identity: H9806081642
 Date/time: 2020/03/17 09:38:27 P.U
 Laboratory: SEMNAN POLYETHYLENE
 Operator: TAIEBAN
 Sample: HBM4265 17.000 mg

Reference: HDPE-SAMPLE 1
 Material: / 240 20 437 L.tds
 Corr./temp.cal: 240 20 437 L.tds
 Sens.file: DSC 200F3 1-sensor / E
 Sample car./TC: DSC / Sample
 Model/type of meas.: DSC / Sample

[#] Type	Range	Acq.Rate	STC	Co	OIT	P1:O2	P2:N2	PG:--	Corr.
[1 1] Dynamic	20/20 0(K/min)/210	200.00	1	0	0	0.0	50.0	0.0	--
[1 2] Isothermal	210/00 03/210	33.33	1	0	0	0.0	50.0	0.0	--
[1 3] Isothermal	210/01 00/210	33.33	1	0	0	50.0	0.0	0.0	--

Segments: 3
 Crucible: Pan Al, pierced lid
 Atmosphere: N2, 50 0ml/min
 M. range: 5000 pV



ARYA SASOL POLYMER

O.I.T.: 31.2 min



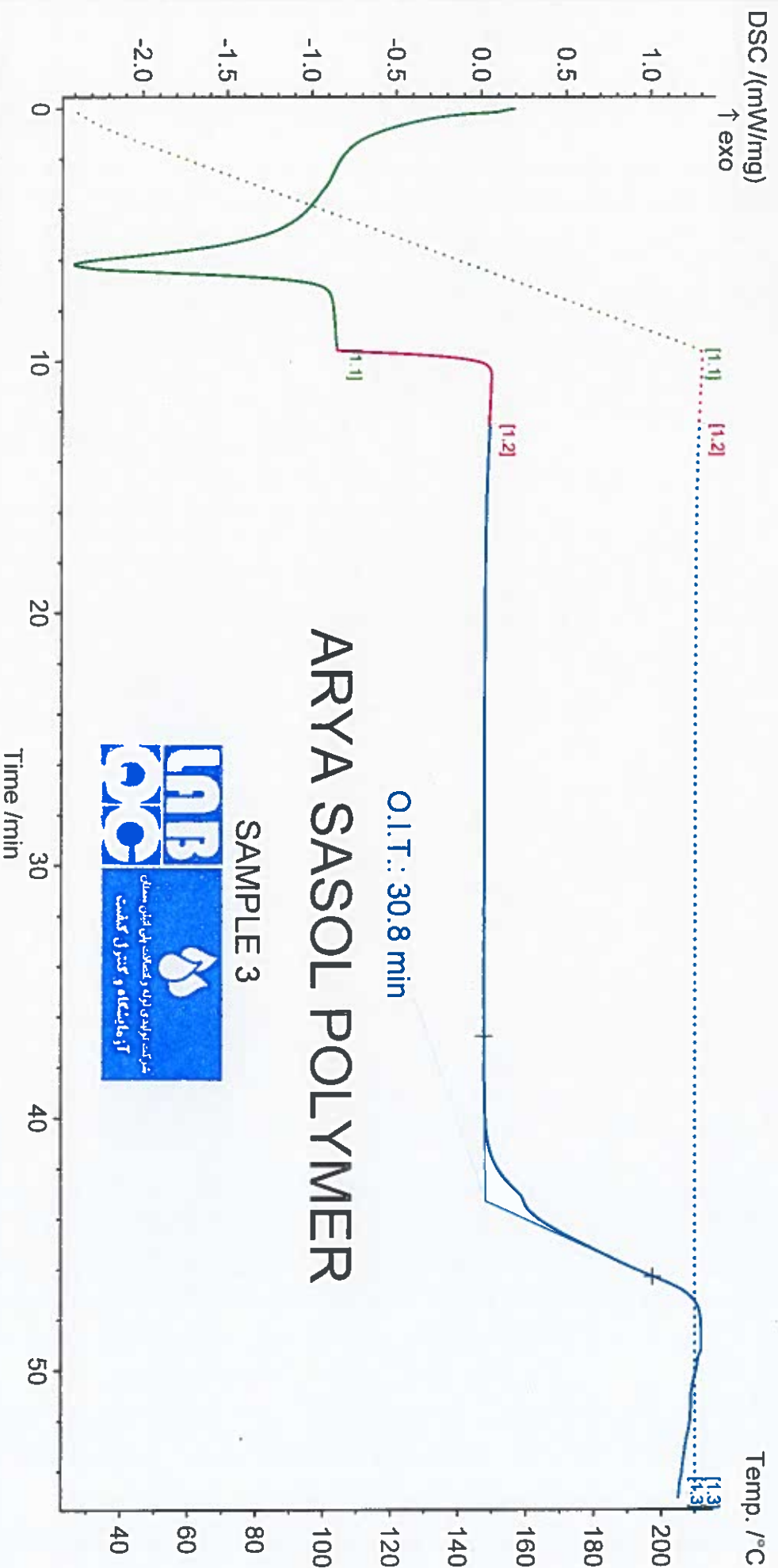
Main 2020-03-17 11:48 User Administrator
 Instrument : NETZSCH DSC 200 F3 File : C:\ngbw\lqb\temp\Snapshol_1.sds Remark : 1398/12/27

Project : ARYA SASOL POLYMER
 Identity : H9806081642
 Date/time : 2020/03/17 10:56:12 p.U
 Laboratory : SEMNAN POL.YETHYLENE
 Operator : TAIEBAN
 Sample : HBM4265, 15.000 mg

Reference :
 Material : HDPE-SAMPLE 2
 Corr./temp.cal : / 240 20 437 L.id5
 Sens.file : 240 20 437 L.ed5
 Sample car./TC : DSC 200F3 l-sensor / E
 Model/type of meas. : DSC / Sample

Segments : 3
 Crucible : Pan Al, pierced lid
 Atmosphere : N2, 50.0ml/min
 M. range : 5000 µV

[#] Type	Range	Acq.Rate	STC	Co	OIT	P1:O2	P2:N2	PG:--	Corr.
[1.1] Dynamic	20/20 0(K/min)/210	200.00	1	0	0	0.0	50.0	0.0	--
[1.2] Isothermal	210/00 03/210	33.33	1	0	0	0.0	50.0	0.0	--
[1.3] Isothermal	210/01 00/210	33.33	1	0	0	50.0	0.0	0.0	--



Main 2020-03-17 13:05 User Administrator
 Instrument : NETZSCH DSC 200 F3 File : C:\ngbw\mha\temp\Snapshot_1.sds
 Project : ARYA SASOL POLYMER
 Identity : H9806081642
 Date/time : 2020/03/17 12:09:17 E U
 Laboratory : SEMNAN POLYETHYLENE
 Operator : TALEBAN
 Sample : HBMA265 14.000 mg

Reference :
 Material : HDPE-SAMPLE 3
 Corr./temp.cal : / 240 20 437 L,ld5
 Sens.file : 240 20 437 L,ed5
 Sample car./TC : DSC 200F3 1-sensor / E
 Model/type of meas. : DSC / Sample

Segments : 3
 Crucible : Pan Al, pierced lid
 Atmosphere : N2, 50.0ml/min
 M. range : 5000 µV

[#]	Type	Range	Acq.Rate	STC	Co	OIT	P1:O2	P2:N2	PG:-	Corr.
[1.1]	Dynamic	20/20 Q(K/min)/2/10	200.00	1	0	0	0.0	50.0	0.0	-
[1.2]	Isothermal	210/00 03/2/10	33.33	1	0	0	0.0	50.0	0.0	-
[1.3]	Isothermal	210/01 00/2/10	33.33	1	0	0	50.0	0.0	0.0	-

Remark : 1398/12/27



DENSITY

DENSITY

Material characteristics	Sample description	Grade Name	Lot No.
	HDPE- PE80	HEX 4460 PE80+	H9806081642

NO	Test Standard	Test Parameter	Accept Value	Type of.	Result	Test status
1	ISO1183-1	Test Temperature: 23°C	≥ 0.941 gr/cm ³	Raw Material	0.9427	OK
2				Raw Material	0.9424	OK
3				Raw Material	0.9429	OK



آزمون لوله



RCP

**Hydrostatic
Strength**

**Tensile strength
for
butt-fusion**

SCG

NACI
National Accreditation Center of Iran
مرکز ملی تأیید صلاحیت ایران

آزمایشگاه اکرو دیته
پلی اتیلن سمنان



**Tensile strength
for
butt-fusion**

Tensile strength for butt-fusion

Material characteristics	Sample description	Grade Name	Lot No.
	HDPE- PE80	HEX 4460 PE80+	H9806081642
Product characteristics	Sample description	Size	SDR
	Single wall pipe	110*10mm	11

NO	Test Standard	Test Parameter	Accept Value	Result	Test status
1	ISO 13953	Test Speed: 5 mm/min	Ductile — Pass Brittle — Fail	Ductile	OK
2				Ductile	OK
3				Ductile	OK

TEST REPORT

INSO17304

Sample Size: : 110-SDR 11

Operator: : TAIEBAN

Material: : HDPE- SAMPLE 1

Date: : 98/12/27

COMPANY: SEMNAN POLYETHYLENE :

Client: : ARYA SASOL POLYMER

Test Name : Type 3

Test Type : Tensile

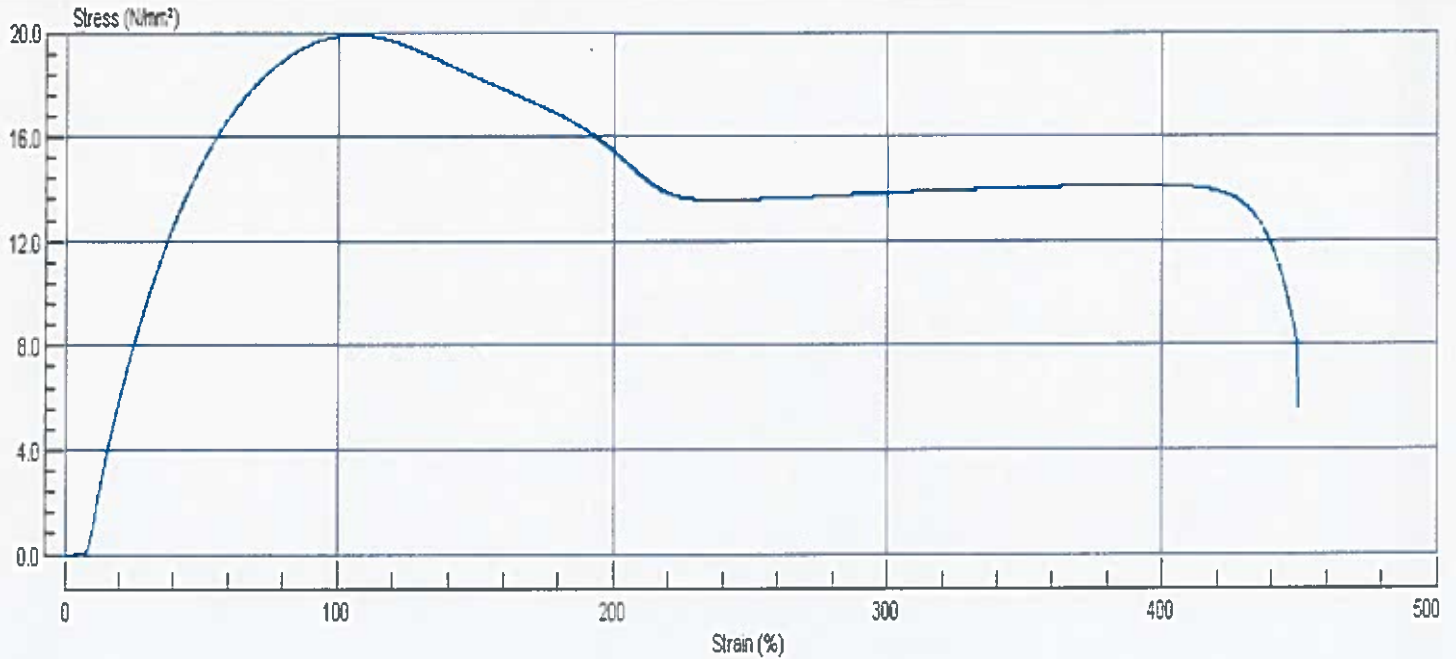
Test Date : 17/03/2003 02:24

Test Speed : 5.000 mm/min

Pretension : Off

Sample Length : 25.000 mm

Test No	Stress @ Yield (MPa)	Strain @ Yield (%)	Stress @ Break (MPa)	Strain @ Break (%)	Elong @ Yield (mm)	Elong @ Break (mm)	Force @ Yield (N)	Force @ Break (N)	Thickness (mm)
1	19.516	89.520	5.595	450.088	22.380	112.522	5028.850	1441.578	10.340
Test No	Width (mm)	Area (mm ²)	Youngs Modulus (MPa)						
1	24.920	257.673	48.101						



■ Test 1

Filter Level = 4



TEST REPORT INSO17304

Sample Size : 110-SDR 11

Operator : TAIEBAN

Material : HDPE- SAMPLE 2

Date : 98/12/27

COMPANY: SEMNAN POLYETHYLENE :

Client : ARYA SASOL POLYMER

Test Name : Type 3

Test Type : Tensile

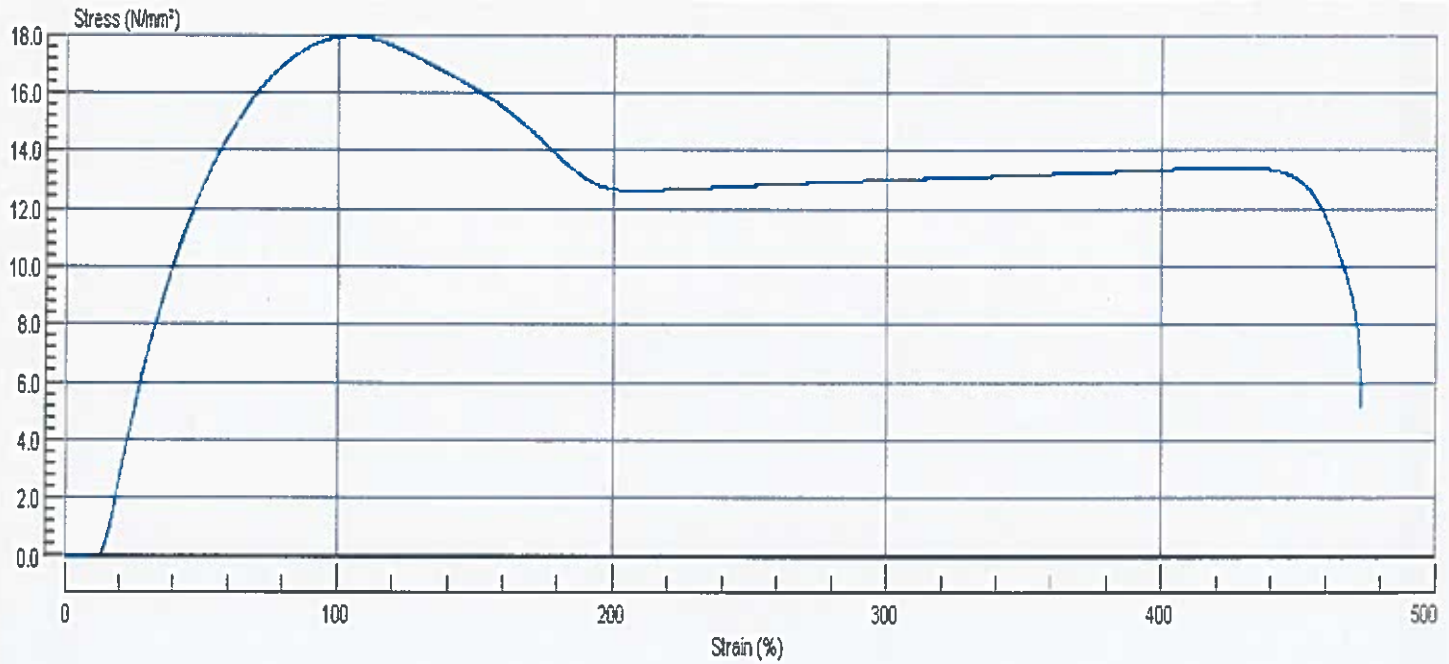
Test Date : 17/03/2003 02:51

Test Speed : 5.000 mm/min

Pretension : Off

Sample Length : 25.000 mm

Test No	Stress @ Yield (MPa)	Strain @ Yield (%)	Stress @ Break (MPa)	Strain @ Break (%)	Elong. @ Yield (mm)	Elong. @ Break (mm)	Force @ Yield (N)	Force @ Break (N)	Thickness (mm)
1	17.697	92.164	5.168	472.940	23.041	118.235	4577.744	1336.843	10.380
Test No	Width (mm)	Area (mm ²)	Youngs Modulus (MPa)						
1	24.920	258.670	44.753						



■ Test 1

Filter Level = 4

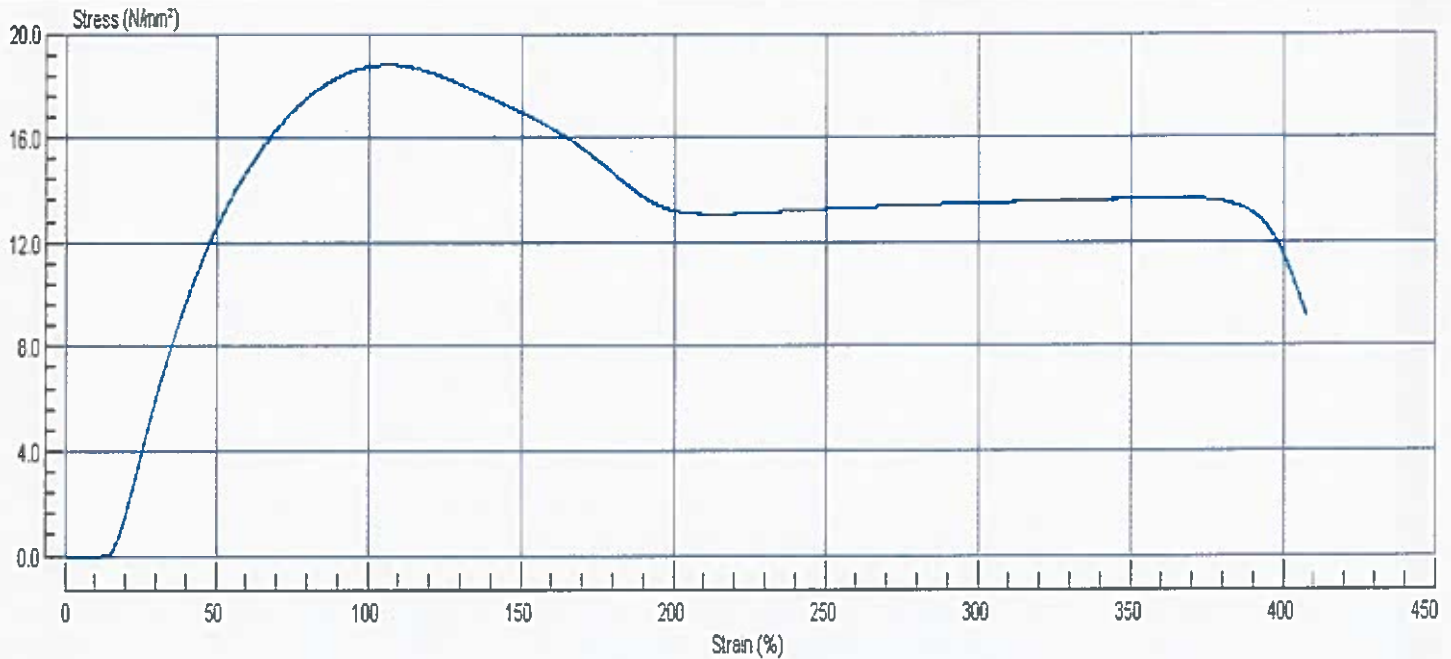


TEST REPORT INSO17304

Sample Size: : 110-SDR 11
 Operator: : TAIEBAN
 Material: : HDPE- SAMPLE 3
 Date: : 98/12/27
 COMPANY: SEMNAN POLYETHYLENE :
 Client: : ARYA SASOL POLYMER

Test Name : Type 3
 Test Type : Tensile
 Test Date : 17/03/2003 03:19
 Test Speed : 5.000 mm/min
 Pretension : Off
 Sample Length : 25.000 mm

Test No	Stress @ Yield (MPa)	Strain @ Yield (%)	Stress @ Break (MPa)	Strain @ Break (%)	Elong. @ Yield (mm)	Elong. @ Break (mm)	Force @ Yield (N)	Force @ Break (N)	Thickness (mm)
1	18.441	92.316	9.134	407.352	23.079	101.838	4715.037	2335.454	10.260
Test No	Width (mm)	Area (mm ²)	Youngs Modulus (MPa)						
1	24.920	255.679	44.671						



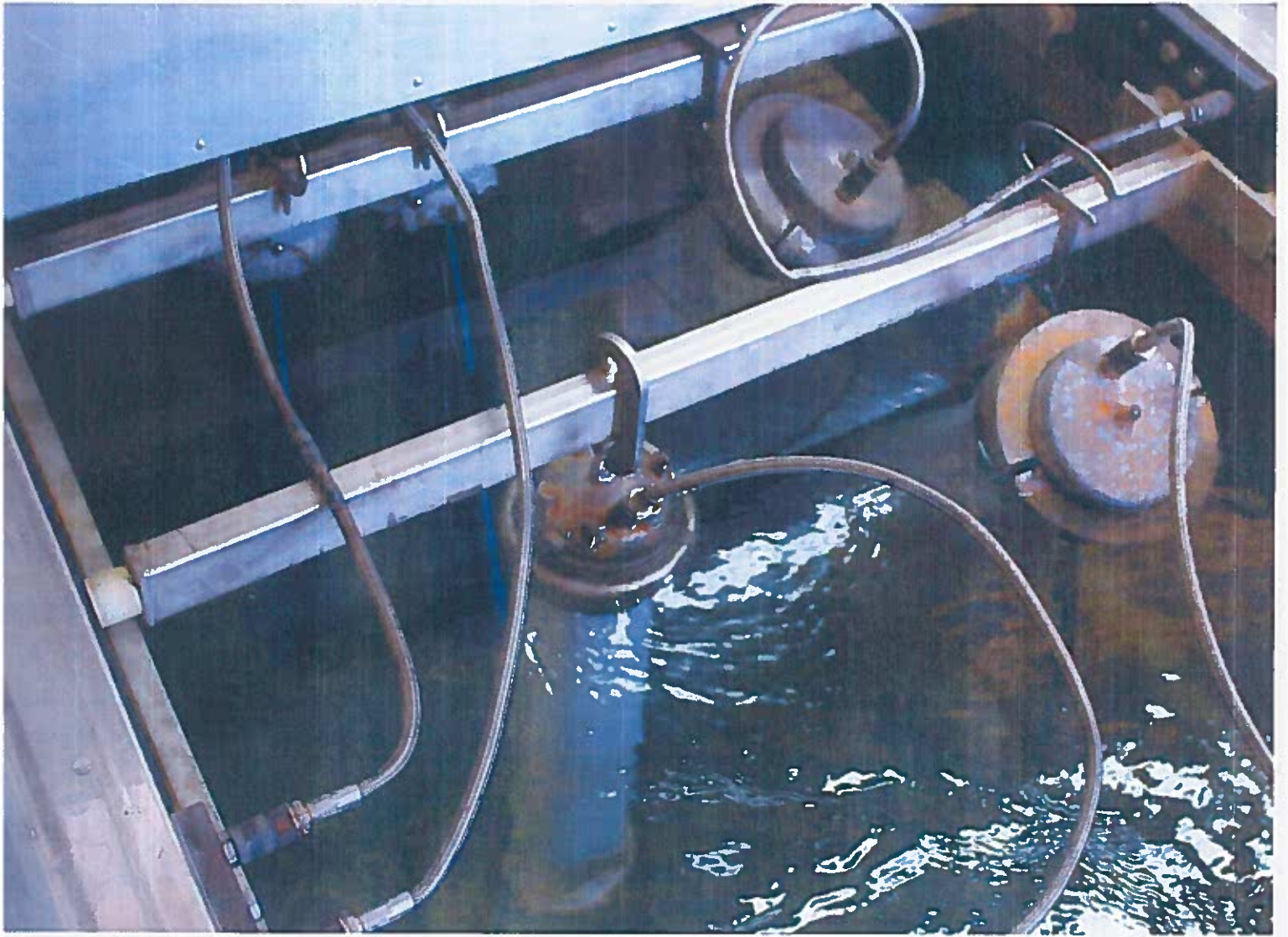
Test 1

Filter Level = 4





آزمایشگاه اکرودیته
پلی اتیلن سمنان



Hydrostatic

Hydrostatic Strength

Material characteristics	Sample description	Grade Name	Lot No.
	HDPE- PE80	HEX 4460 PE80+	H9806081642
Product characteristics	Sample description	Size	SDR
	Single wall pipe	110*10mm	11

NO	Test Standard	Test Parameter	Accept Value	Result	Test status
1	ISO 1167	80 °C. 1000 h Hoop Stress = 4Mpa	No failure during the test period of any test piece	1000 h	OK
2				1000 h	OK
3				1000 h	OK

Test (no test storatation) 0000001167Description:

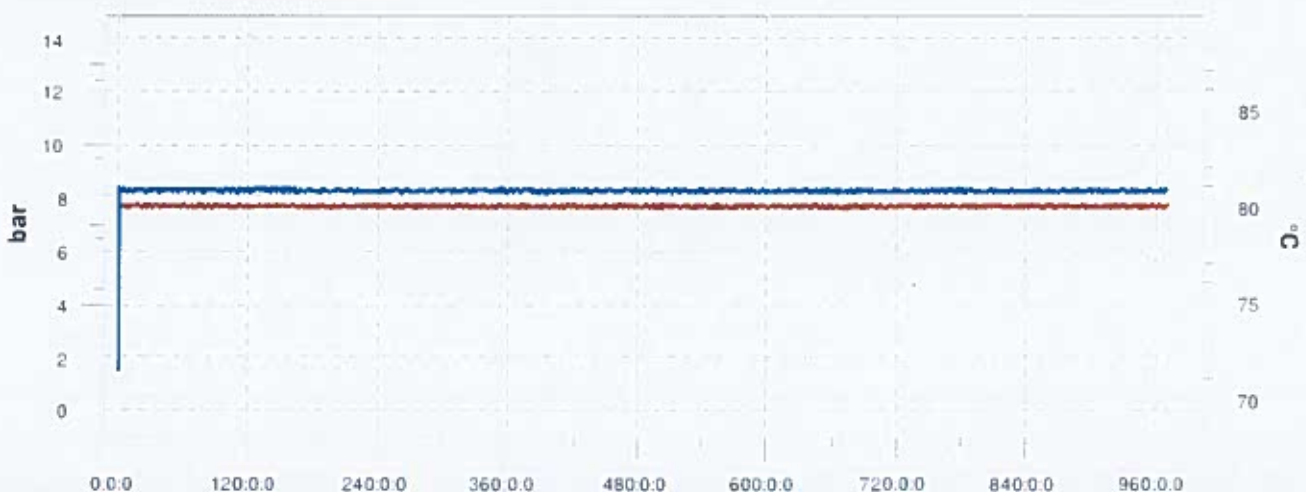
start date: 1398/09/05
 Pipe size: 110-SDR11
 Material: PE80
 COMPANY: SEMNAN POLYETHYLENE
 Client: PET ARYA SASOL
 SAMPLE: SAMPLE 1

Parameter:

Connection: 002
 Test-Id: 0000001167
 Set pressure: 8.24 bar
 min. Pressure: 1 %
 max. Pressure: 2 %
 Duration: 1000.00 ih
 Temperature: 80 °C
 Conditioning time: 0.0 ih

Results:

Status: End
 Timecounter (Start): 0.0 ih
 Timer reading: 1000 ih
 Start date: 25/11/19 10:46:32 am
 End date: 06/01/20 02:03:40 am
 Burst type:
 Burst time: 0.00 sec
 Burst Pressure: 0.00 bar

Pressure / Temperature

Test (no test storatoin) 0000001168Description:

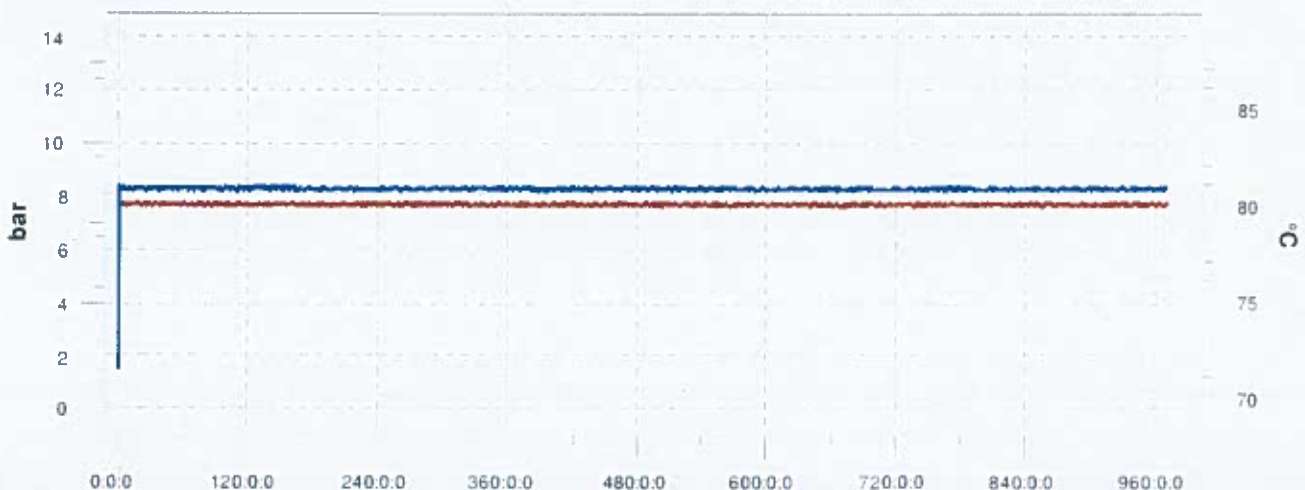
start date: 1398/09/05
 Pipe size: 110-SDR11
 Material: PE80
 COMPANY: SEMNAN POLYETHYLENE
 Client: PET ARYA SASOL
 SAMPLE: SAMPLE 2

Parameter:

Connection: 002
 Test-Id: 0000001168
 Set pressure: 8.24 bar
 min. Pressure: 1 %
 max. Pressure: 2 %
 Duration: 1000.00 ih
 Temperature: 80 °C
 Conditioning time: 0.0 ih

Results:

Status: End
 Timecounter (Start): 0.0 ih
 Timer reading: 1000 ih
 Start date: 25/11/19 10:46:32 am
 End date: 06/01/20 02:03:40 am
 Burst type:
 Burst time: 0.00 sec
 Burst Pressure: 0.00 bar

Pressure / Temperature

Test (no test storatoin) 0000001169Description:

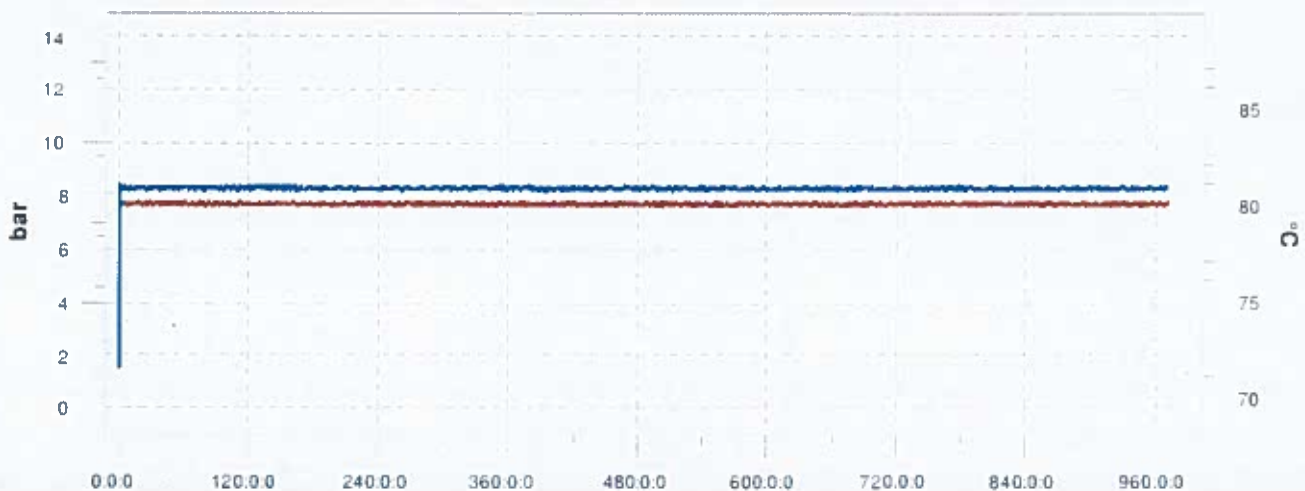
start date: 1398/09/05
 Pipe size: 110-SDR11
 Material: PE80
 COMPANY: SEMNAN POLYETHYLENE
 Client: PET ARYA SASOL
 SAMPLE: SAMPLE 3

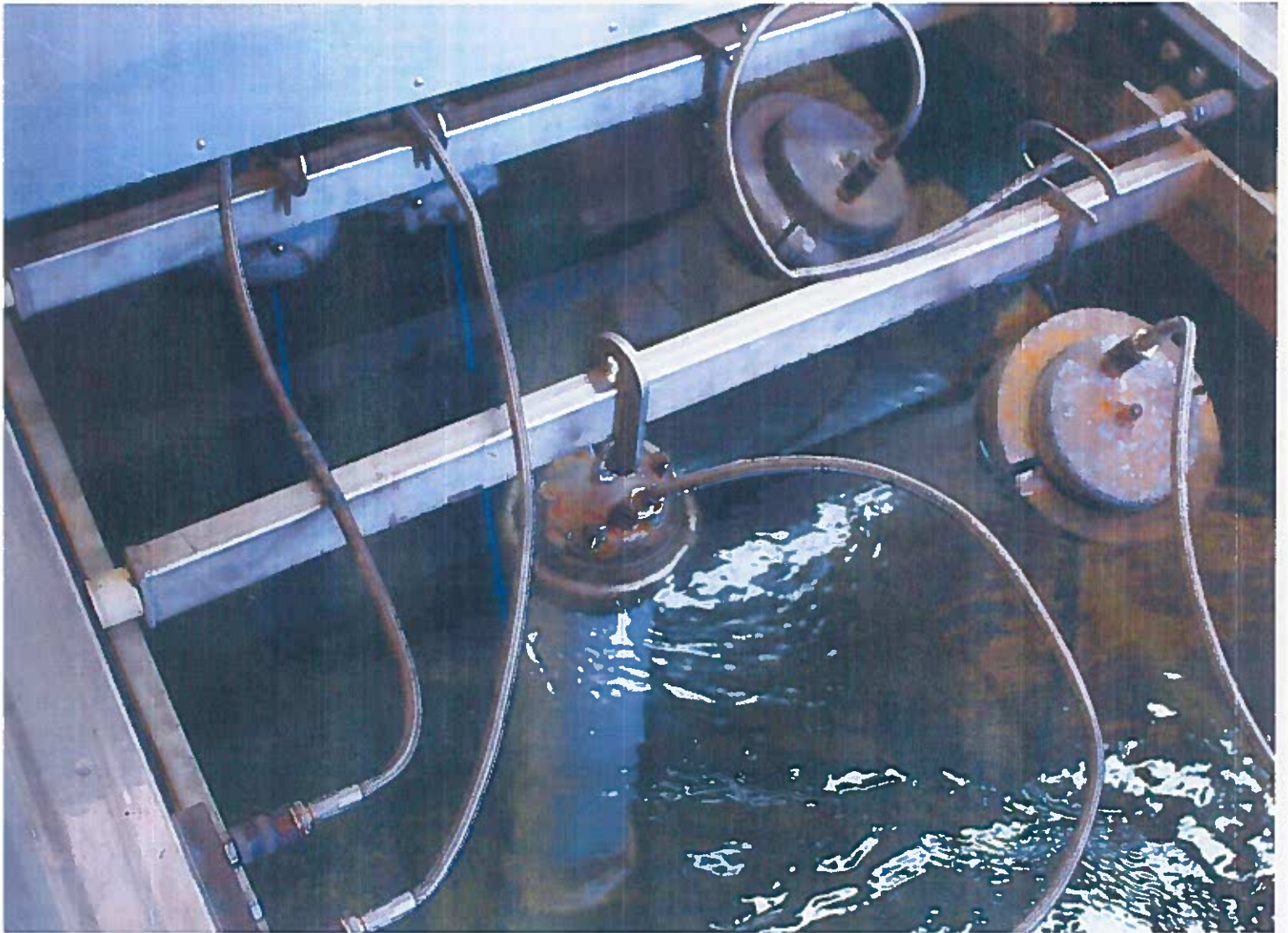
Parameter:

Connection: 002
 Test-Id: 0000001169
 Set pressure: 8.24 bar
 min. Pressure: 1 %
 max. Pressure: 2 %
 Duration: 1000.00 ih
 Temperature: 80 °C
 Conditioning time: 0.0 ih

Results:

Status: End
 Timecounter (Start): 0.0 ih
 Timer reading: 1000 ih
 Start date: 25/11/19 10:46:32 am
 End date: 06/01/20 02:03:40 am
 Burst type:
 Burst time: 0.00 sec
 Burst Pressure: 0.00 bar

Pressure / Temperature



Hydrostatic

Hydrostatic Strength

Material characteristics	Sample description	Grade Name	Lot No.
	HDPE- PE80	HEX 4460 PE80+	H9806081642
Product characteristics	Sample description	Size	SDR
	Single wall pipe	110*10mm	11

NO	Test Standard	Test Parameter	Accept Value	Result	Test status
1	ISO 1167	20 °C, 1000 h Hoop Stress = 9.43Mpa	No failure during the test period of any test piece	1000 h	OK
2				1000 h	OK
3				1000 h	OK

Test (no test storatation) 0000001202Description:

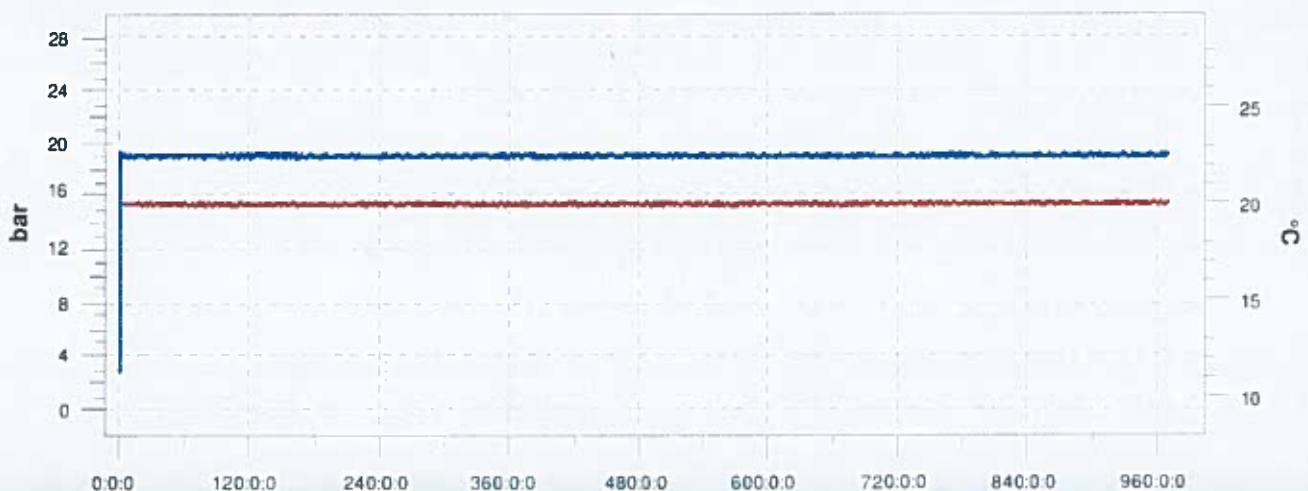
start date: 1398/12/11
 Pipe size: 110-SDR11
 Material: PE80
 COMPANY: SEMNAN POLYETHYLENE
 Client: PET ARYA SASOL
 SAMPLE: SAMPLE 1

Parameter:

Connection: 002
 Test-Id: 0000001202
 Set pressure: 19.00 bar
 min. Pressure: 1 %
 max. Pressure: 2 %
 Duration: 1000.00 ih
 Temperature: 20 °C
 Conditioning time: 0.0 ih

Results:

Status: End
 Timecounter (Start): 0.0 ih
 Timer reading: 1000 ih
 Start date: 01/03/20 09:34:36 am
 End date: 12/04/20 01:05:02 am
 Burst type:
 Burst time: 0.00 sec
 Burst Pressure: 0.00 bar

Pressure / Temperature

Test (no test storatoin) 0000001203Description:

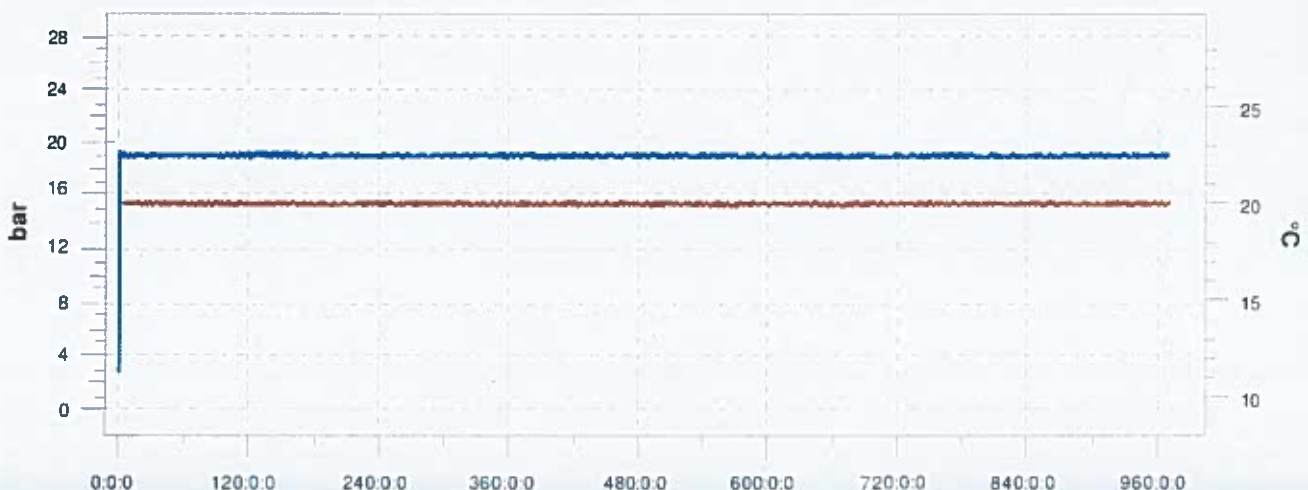
start date: 1398/12/11
 Pipe size: 110-SDR11
 Material: PE80
 COMPANY: SEMNAN POLYETHYLENE
 Client: PET ARYA SASOL
 SAMPLE: SAMPLE 2

Parameter:

Connection: 002
 Test-Id: 0000001203
 Set pressure: 19.00 bar
 min. Pressure: 1 %
 max. Pressure: 2 %
 Duration: 1000.00 ih
 Temperature: 20 °C
 Conditioning time: 0.0 ih

Results:

Status: End
 Timecounter (Start): 0.0 ih
 Timer reading: 1000 ih
 Start date: 01/03/20 09:34:36 am
 End date: 12/04/20 01:05:02 am
 Burst type:
 Burst time: 0.00 sec
 Burst Pressure: 0.00 bar

Pressure / Temperature

Test (no test storatoin) 0000001204Description:

start date: 1398/12/11
Pipe size: 110-SDR11
Material: PE80
COMPANY: SEMNAN POLYETHYLENE
Client: PET ARYA SASOL
SAMPLE: SAMPLE 3

Parameter:

Connection: 002
Test-Id: 0000001204
Set pressure: 19.00 bar
min. Pressure: 1 %
max. Pressure: 2 %
Duration: 1000.00 ih
Temperature: 20 °C
Conditioning time: 0.0 ih

Results:

Status: End
Timecounter (Start): 0.0 ih
Timer reading: 1000 ih
Start date: 01/03/20 09:34:36 am
End date: 12/04/20 01:05:02 am
Burst type:
Burst time: 0.00 sec
Burst Pressure: 0.00 bar

Pressure / Temperature



SCCG

Resistance to slow crack growth (SCG)

Material characteristics	Sample description	Grade Name	Lot No.
	HDPE-PE80	HEX 4460 PE80+	H9806081642
Product characteristics	Sample description	Size	SDR
	Single wall pipe	110*10mm	11

NO	Test Standard	Test Parameter	Accept Value	Result	Test status
1	ISO 13479	80°C. 500 h	No failure during the test period	1024 h	ok
2				1042 h	ok
3				1035 h	ok

Test (no test storatoin) 0000001175Description:

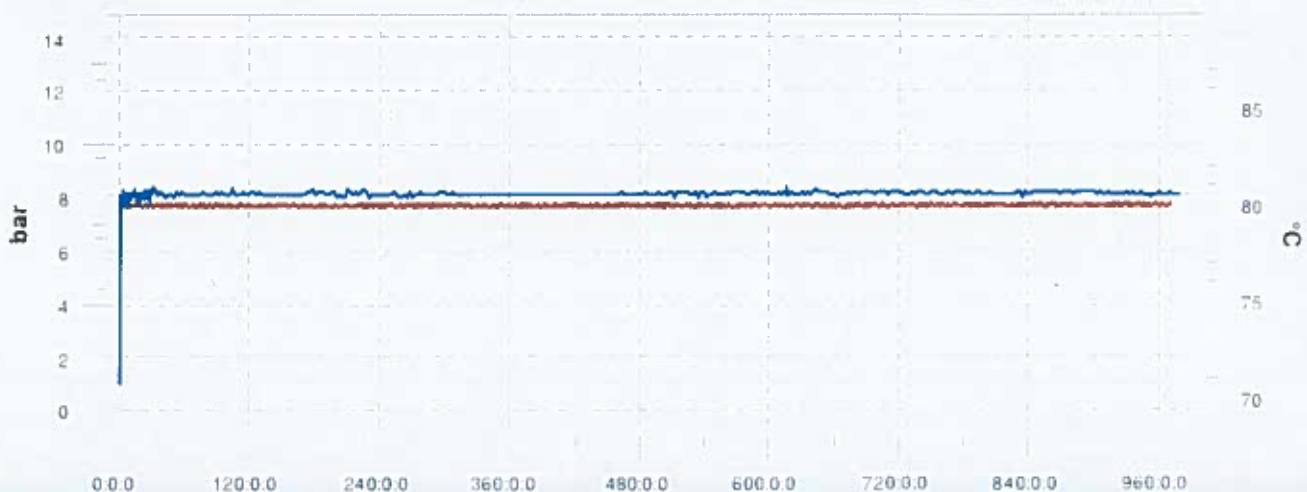
start date: 1398/09/10
 pipe size: 110-SDR11
 Material: PE80
 COMPANY: SEMNAN POLYETHYLENE
 Client: PET ARYA SASOL
 SAMPLE: SCG - SAMPLE 1

Parameter:

Connection: 003
 Test-Id: 0000001175
 Set pressure: 8 bar
 min. Pressure: 1 %
 max. Pressure: 2 %
 Duration: 1500.00 ih
 Temperature: 80 °C
 Conditioning time: 0.0 ih

Results:

Status: Broken
 Timecounter (Start): 0.0 ih
 Timer reading: 1024.05 ih
 Start date: 01/12/19 03:06:25 pm
 End date: 13/01/20 07:10:00 pm
 Burst type: Ductile
 Burst time: 0.00 sec
 Burst Pressure: 0.00 bar

Pressure / Temperature

Test (no test storatoin) 0000001176Description:

start date: 1398/09/10
 pipe size: 110-SDR11
 Material: PE80
 COMPANY: SEMNAN POLYETHYLENE
 Client: PET ARYA SASOL
 SAMPLE: SCG - SAMPLE 2

Parameter:

Connection: 003
 Test-Id: 0000001176
 Set pressure: 8 bar
 min. Pressure: 1 %
 max. Pressure: 2 %
 Duration: 1500.00 ih
 Temperature: 80 °C
 Conditioning time: 0.0 ih

Results:

Status: Broken
 Timecounter (Start): 0.0 ih
 Timer reading: 1042.16 ih
 Start date: 01/12/19 03:06:25 pm
 End date: 14/01/20 01:08:30 am
 Burst type: Ductile
 Burst time: 0.00 sec
 Burst Pressure: 0.00 bar

Pressure / Temperature

Test (no test storatoin) 0000001177Description:

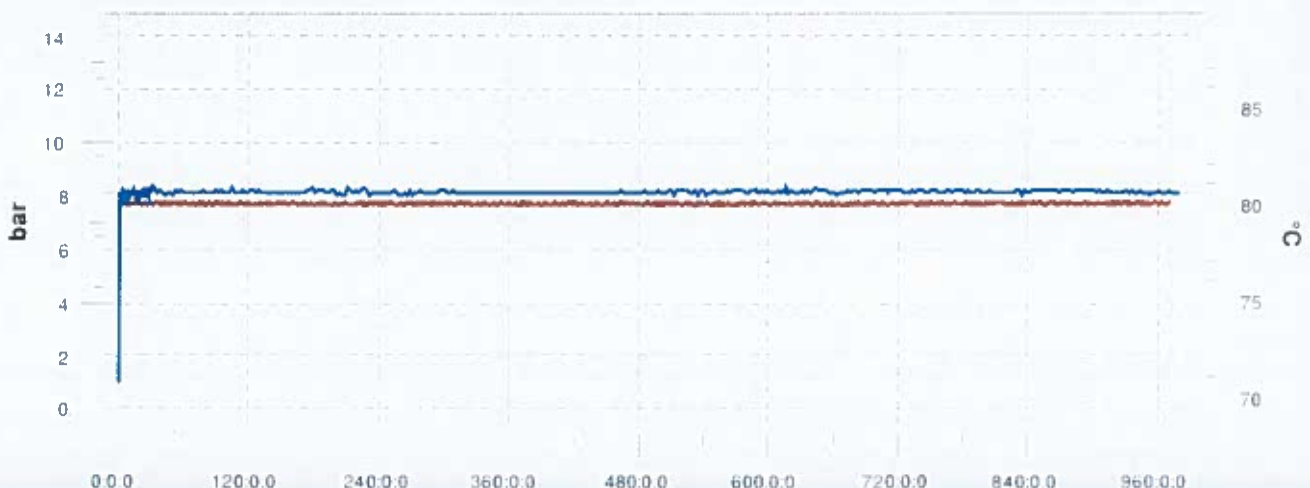
start date: 1398/09/10
 pipe size: 110-SDR11
 Material: PE80
 COMPANY: SEMNAN POLYETHYLENE
 Client: PET ARYA SASOL
 SAMPLE: SCG - SAMPLE 3

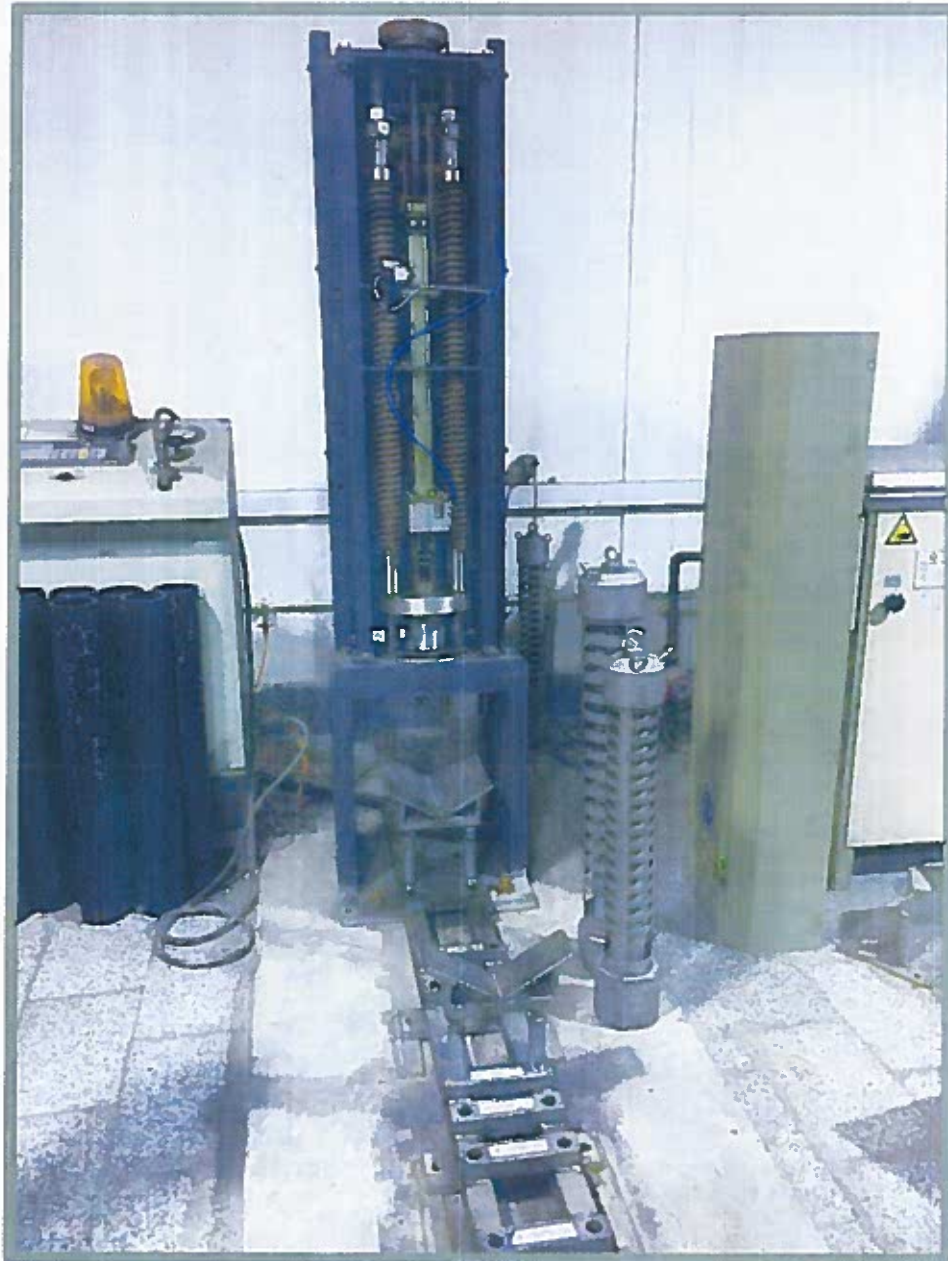
Parameter:

Connection: 003
 Test-Id: 0000001177
 Set pressure: 8 bar
 min. Pressure: 1 %
 max. Pressure: 2 %
 Duration: 1500.00 ih
 Temperature: 80 °C
 Conditioning time: 0.0 ih

Results:

Status: Broken
 Timecounter (Start): 0.0 ih
 Timer reading: 1035.02 ih
 Start date: 01/12/19 03:06:25 pm
 End date: 13/01/20 06:13:20 pm
 Burst type: Ductile
 Burst time: 0.00 sec
 Burst Pressure: 0.00 bar

Pressure / Temperature



RCP

RCP

Material characteristics	Sample description	Grade Name	Lot No.
	HDPE- PE80	HEX 4460 PE80+	H9806081642
Product characteristics	Sample description	Size	SDR
	Single wall pipe	110*10mm	11

NO	Test Standard	Test Parameter		Accept Value	Length of Crack (mm)	Test status
1	ISO 13477	Test Pressure	6.0 bar	Arrest Length of Crack	0 mm	OK
2		Conditioning Temperature	0 °C		Lower than	0 mm
3		Conditioning Time	6 h	4.7 × d _n		0 mm
		Speed of blade	15 m/s	< 517m		
		Gauge Length	> 5 d _n			

