MARCH 30,2007

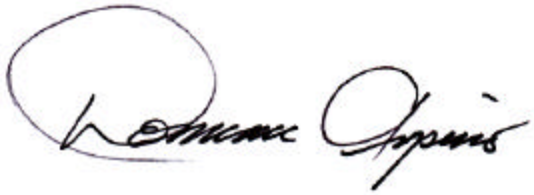
TEST REPORT #207177, REV1.1

THERMAL TESTING

UL1581 TEST PLAN

PO# E-12880-1

SAMTEC, INC.



APPROVED BY: DOMINIC ARPINO
PROGRAM MANAGER
CONTECH RESEARCH, INC.

ilac-MRA 1478 - 01 ACCREDITED Test Laboratory 1478 - 02

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An Independent Test and Research Laboratory

REVISION HISTORY

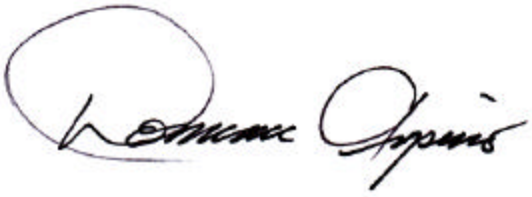
DATE	REV. NO.	DESCRIPTION	ENG.
3/30/2007	1.0	Initial Issue	DA
5/15/2007	1.1	Editorial change on page 8 and added test results on pages 9 and 10.	

CERTIFICATION

This is to certify that the evaluation described herein was designed and executed by personnel of Contech Research, Inc. It was performed with the concurrence of Samtec, Inc. of New Albany, IN who was the test sponsor.

All equipment and measuring instruments used during testing were calibrated and traceable to NIST according to ISO 10012-1 and ANSI/NCSL Z540-1 and MIL-STD-45662 as applicable.

All data, raw and summarized, analysis and conclusions presented herein are the property of the test sponsor. No copy of this report, except in full, shall be forwarded to any agency, customer, etc., without the written approval of the test sponsor and Contech Research.



Dominic Arpino
Program Manager
Contech Research, Inc.

DA:cm

SCOPE

To perform Heat testing and Cold testing on cables that were submitted by the test sponsor Samtec, Inc.

APPLICABLE DOCUMENTS

2. Unless otherwise specified, the following documents of issue in effect at the time of testing performed form a part of this report to the extent as specified herein. The requirements of sub-tier specifications and/or standards apply only when specifically referenced in this report.

2. UL 1581 Test Plan (03-1-07)

3. UL 1581 December 16, 1991 paragraph 580 and 540.1

TEST SAMPLES AND PREPARATION

1. The following cable samples were submitted by the test sponsor, Samtec, Inc., for the evaluation to be performed by Contech Research, Inc.

   Part Number

   a) RCC-20-01-025
   b) TTS-08-01-080
   c) TTF-30100-08-01
   d) TCF-3850-20-01
   e) TCF-2620-15-01 with PVC
   f) TCF-2620-15-01 with noryal jacket

2. Four different size mandrels were used for test as described below:

   a) 0.125″
   b) 0.250″
   c) 0.350″
   d) 0.875″

3. The test samples were tested in their ‘as received’ condition.

4. Unless otherwise specified in the test procedures used, no further preparation was used.

TEST SELECTION

1. All samples were exposed to the Heat Test and the Cold Test per UL 1581 paragraph 520 and 580, except the temperature was changed to +105?C by the test sponsor.

2. Test set ups and/or procedures which are standard or common are not detailed or documented herein provided they are certified as being performed in accordance with the applicable (industry or military) test methods, standards and/or drawings as specified in the detail specification.

EQUIPMENT LIST

ID#	Next Cal	Last Cal	Equipment Name	Manufacturer	Model #	Serial #	Accuracy	Freq.Cal
18			Bench Oven	Blue M Co.	POM7-256C	P38-1452	N/A	Ea Test
527	10/6/2007	10/6/2006	Digital Thermometer	Omega Co.	DP116	4301400	±1.1DegC	12mon
626			Temp Humid Chamber	Cincinnati Sub-Zero	ZH-8-1-1-H/AX	2F9642519	See Cal. Cert	Ea Test
1314	1/24/2008	1/24/2007	Multiplexer card	Keithley Co.	7708	0862544	See CERT	12mon
1315	1/24/2008	1/24/2007	Data Aquisition Multimeter	Keithley Co.	2700	0862680	See CERT	12mon
1361	1/24/2008	1/24/2007	Multiplexer Card	Keithley	7708	1067661	See Cal Cert	12mon
1363	5/6/2007	5/6/2006	Temp Humid Chamber	Blue M	BTH-4 100-C	BTH-140	See Cert	12mon

TEST RESULTS

PROJECT NO.: 207177	SPECIFICATION: UP254345
PART NO.: see page 4	PART DESCRIPTION: see page 4
SAMPLE SIZE: 6	TECHNICIAN: DAM
START DATE: 3/22/07	COMPLETE DATE: 3/22/07
ROOM AMBIENT: 23?C	RELATIVE HUMIDITY: 32%
EQUIPMENT ID#: 18, 527, 626, 1314, 1315, 1361, 1363	

SAMPLE PREPARATION

PROCEDURE:

All samples were cut into approximately 10-inch lengths and coded. Coding was performed in a manner, which remained legible for the test duration.

Heat Shock Test

Each specimen is to be tightly wound for six complete turns around the specified diameter. Successive turns are to be made in contact with one another, and both ends of the specimen are to be securely held in place by means of friction tape.

Cold Test

After a period of four hours in a cold chamber at the specified low temperature, and while at that temperature, each specimen is to be tightly wound for six complete turns onto a mandrel having specified diameter. The winding is to be done at a rate of about 3 seconds per turn and successive turns are to be in contact with one another. Internal cracks in the compound can be indicated by cicumferential depressions in the outer surface.

REQUIREMENTS:

1. Visual inspect cables for cracks in the insulation.

2. Photographs are to be taken after the test exposures.

RESULTS:

Heat Test at +105?C

	Part Number	Mandrel Unit: inches
Group A	RCC-20-01-025	0.125 Dia.
Group B	TCF-3850-20-01	0.250 Dia.
Group C	TTF-30100-08-01	0.875 Dia.
Group D	TTS-08-01-080	0.350 Dia.
Group E	TCF-2620-15-01 w/noryal jacket	0.250 Dia.
Group F	TCF-2620-15-01 with PVC	0.250 Dia.

All samples passed the Heat Test requirement at +105?C.

Cold Test at -20?C

	Part Number	Mandrel Unit: inches
Group A	RCC-20-01-025	0.125 Dia.
Group B	TCF-3850-20-01	0.250 Dia.
Group C	TTF-30100-08-01	0.875 Dia.
Group D	TTS-08-01-080	0.350 Dia.
Group E	TCF-2620-15-01 w/noryal jacket	0.250 Dia.
Group F	TCF-2620-15-01 with PVC	0.250 Dia.

All samples passed the Cold Test requirement at -20?C.

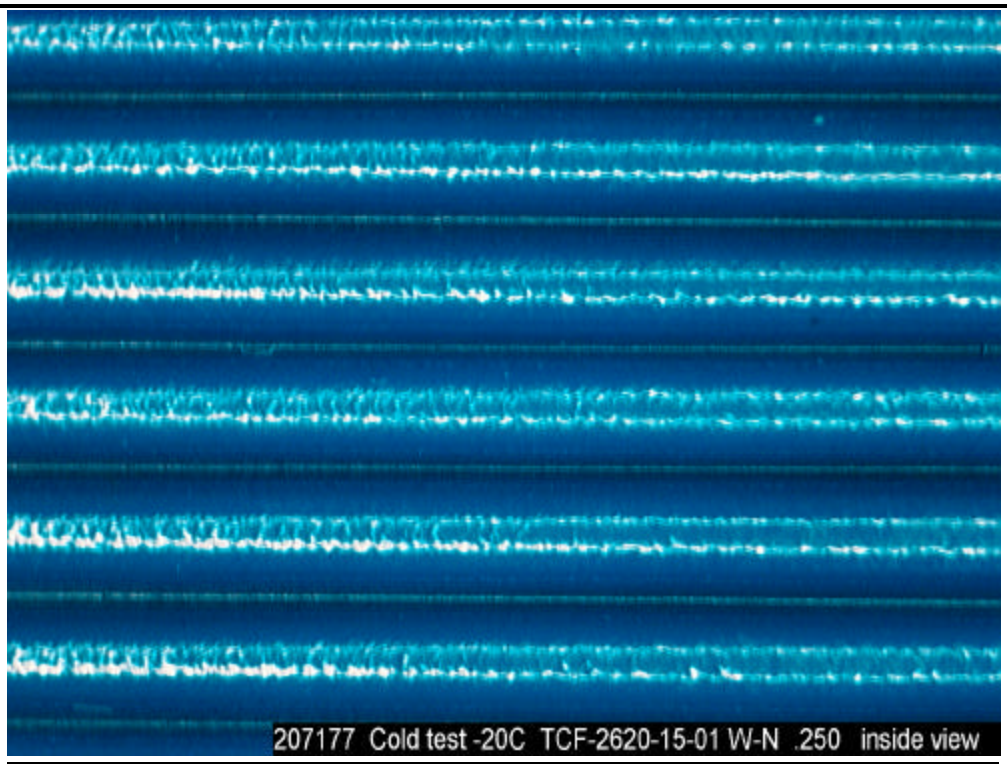
RESULTS: -continued

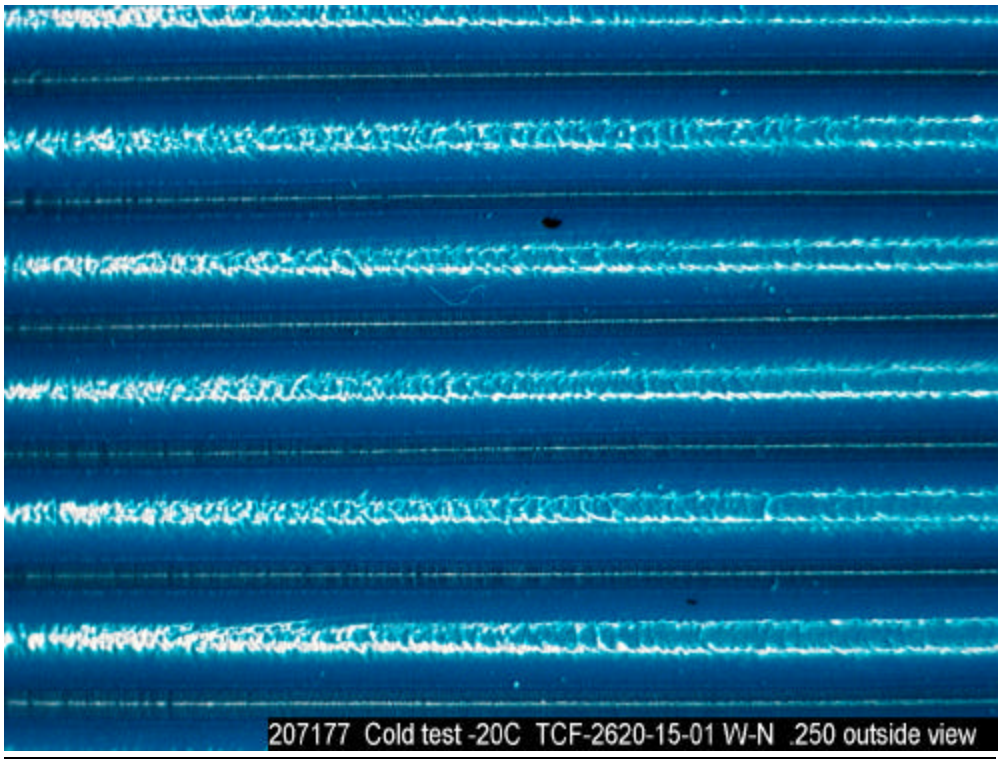
Cold Test at –40?C

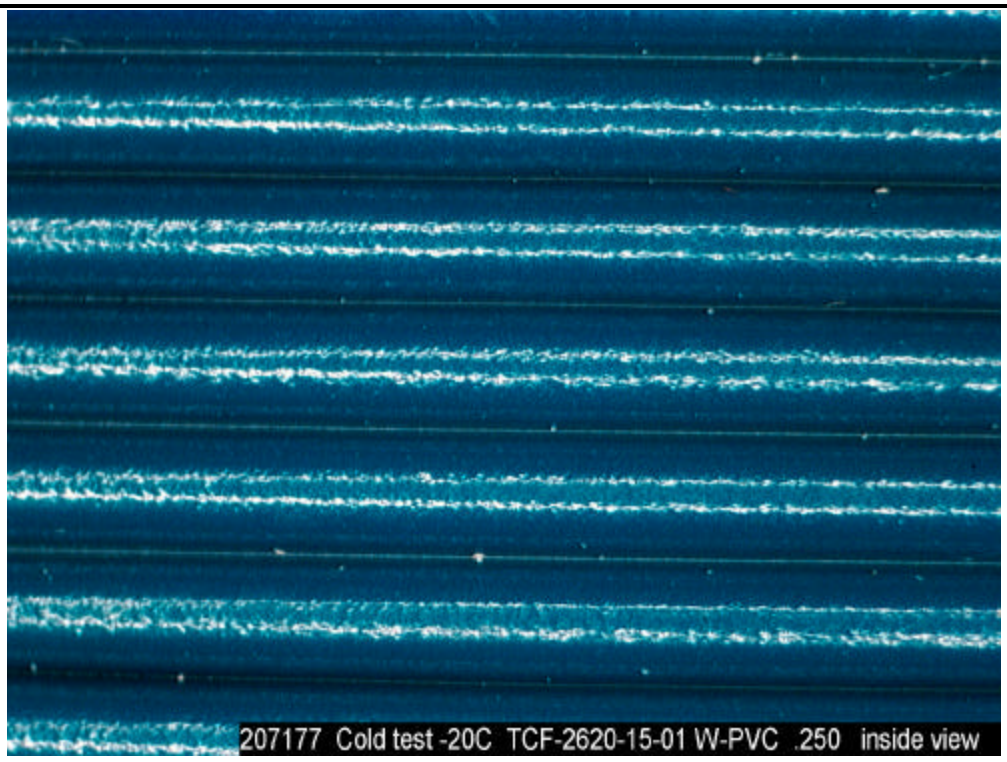
	Part Number	Mandrel Unit: inches
Group A	RCC-20-01-025	0.125 Dia.
Group B	TCF-3850-20-01	0.250 Dia.
Group C	TTF-30100-08-01	0.875 Dia.
Group D	TTS-08-01-080	0.350 Dia.
Group E	TCF-2620-15-01 w/noryal jacket	0.250 Dia.
Group F	TCF-2620-15-01 with PVC	0.250 Dia.

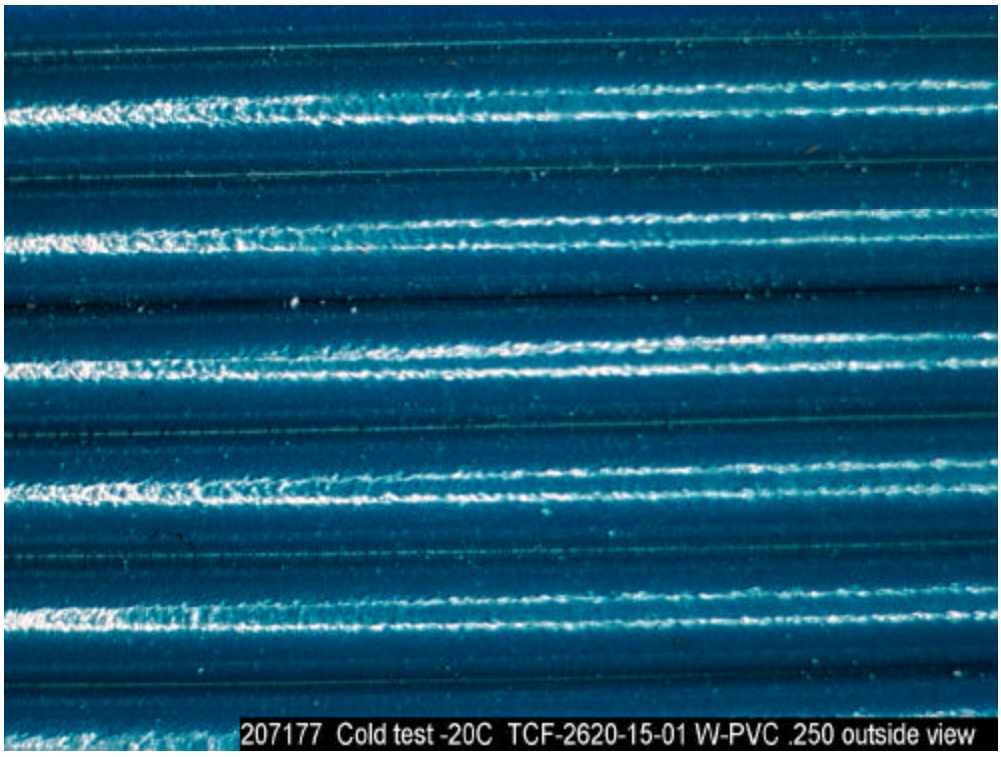
All samples passed the Cold Test requirement at -40?C.

The following photographs were taken after each exposure, see photographs on pages 11 through 27.






207177 Cold test -20C TCF-2620-15-01 W-PVC .250 inside view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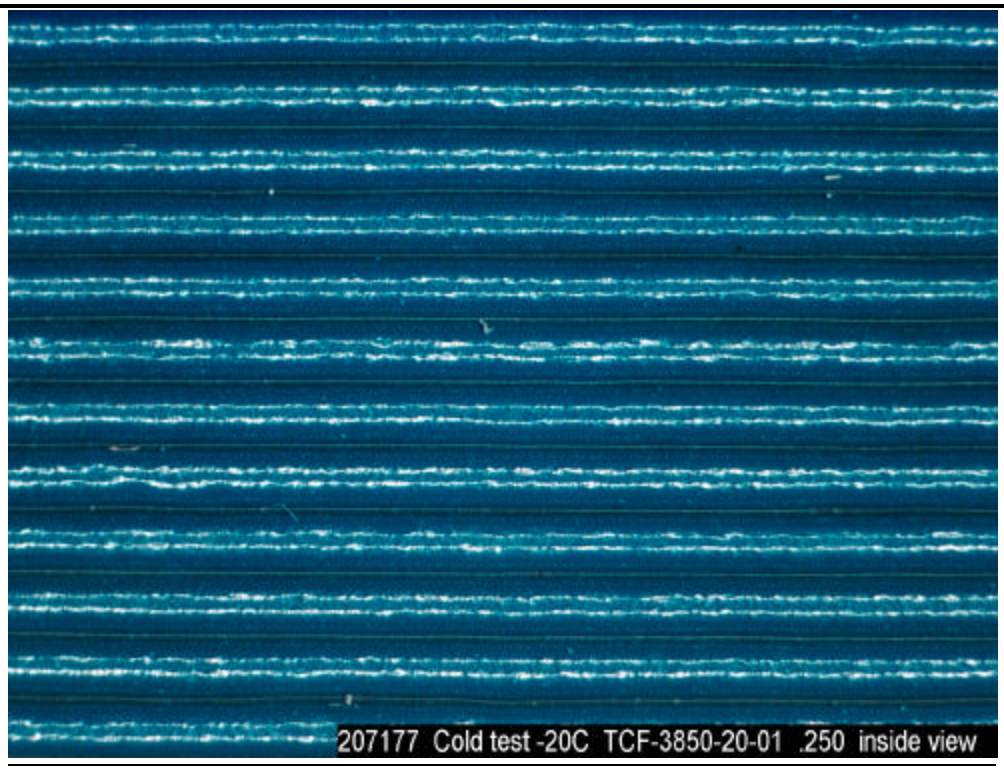
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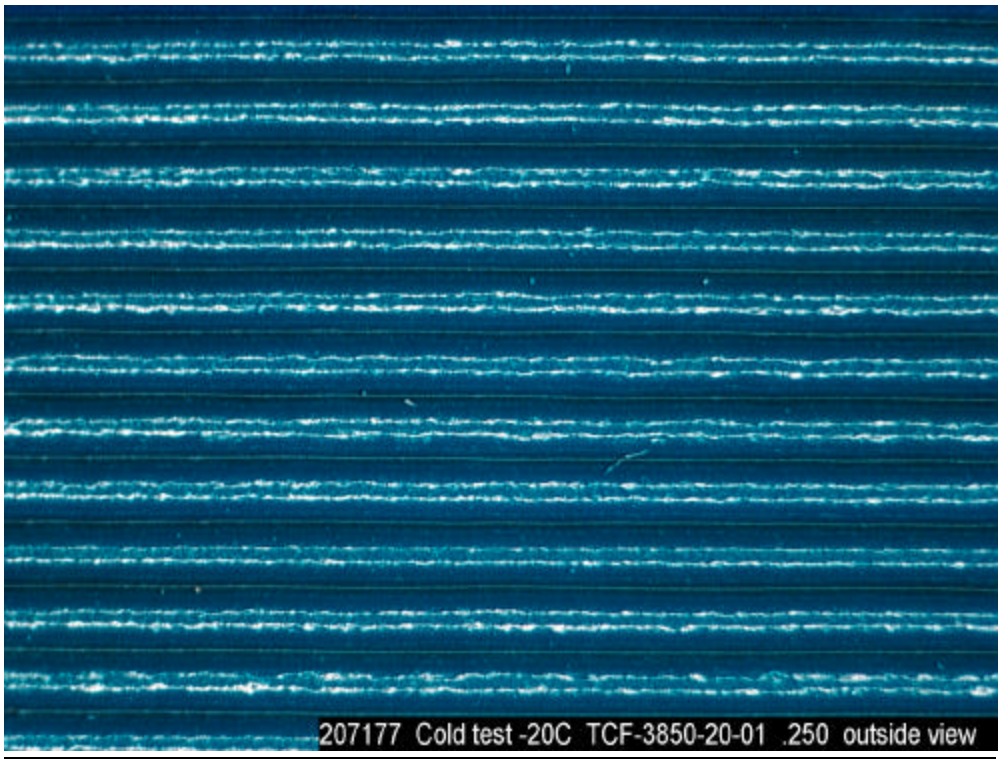
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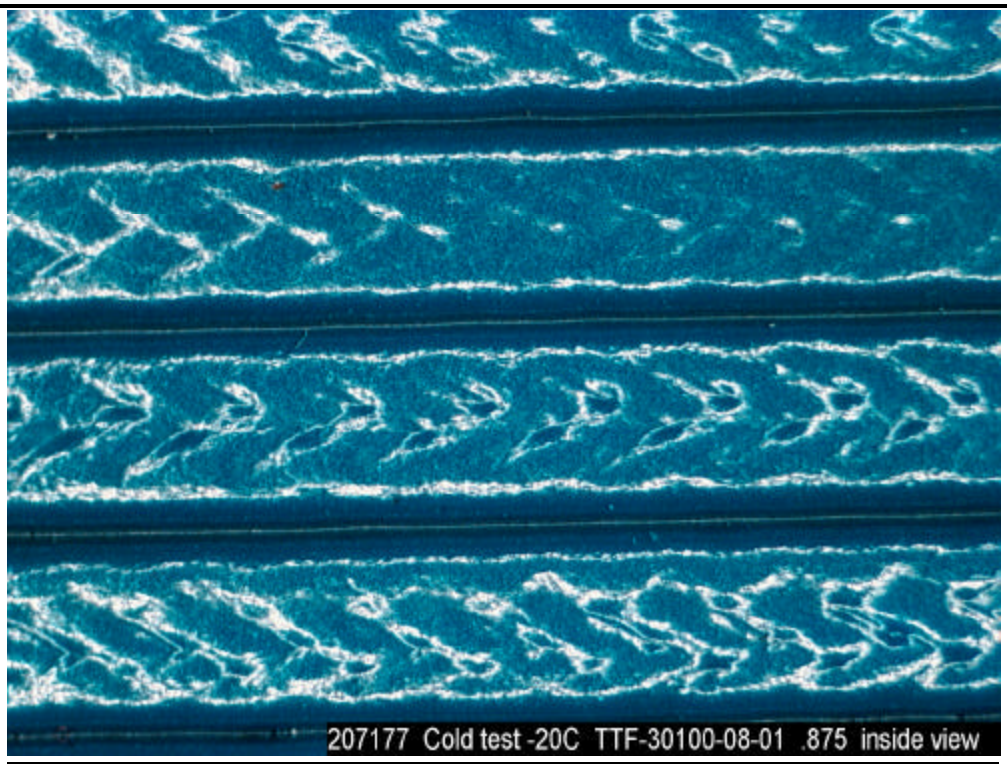

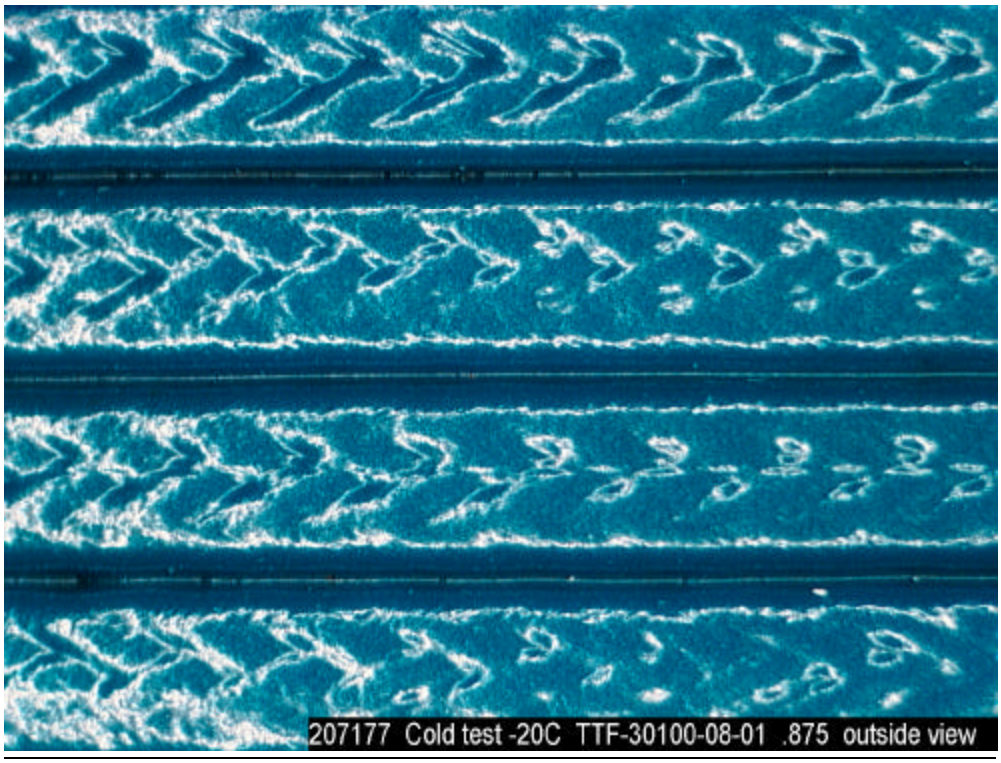

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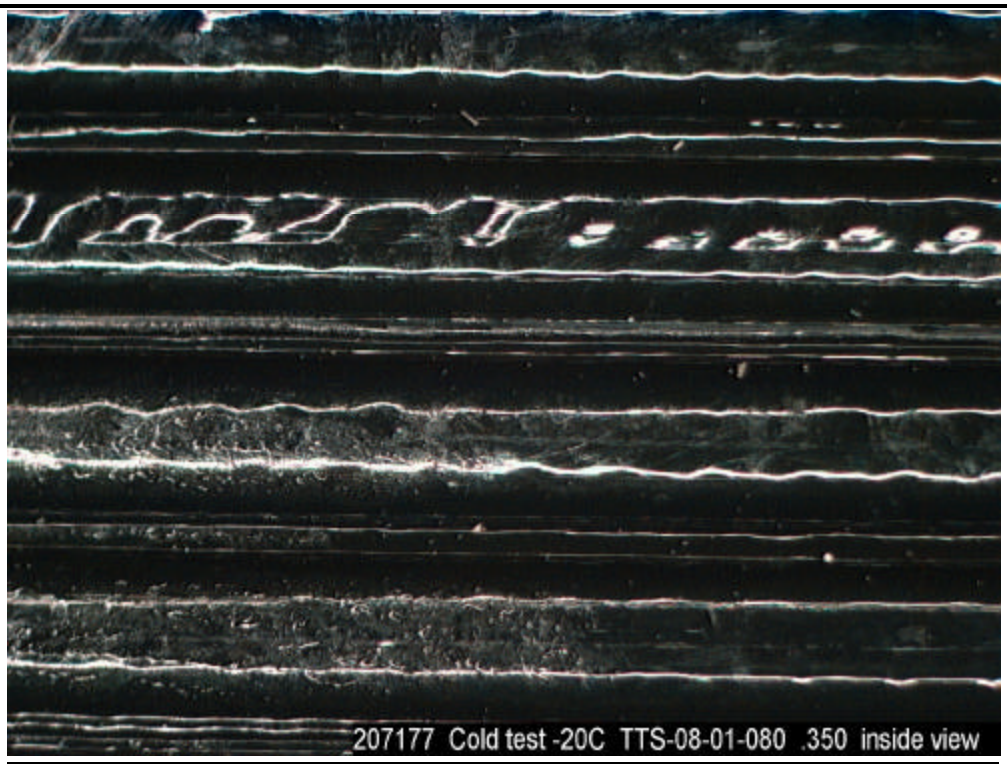

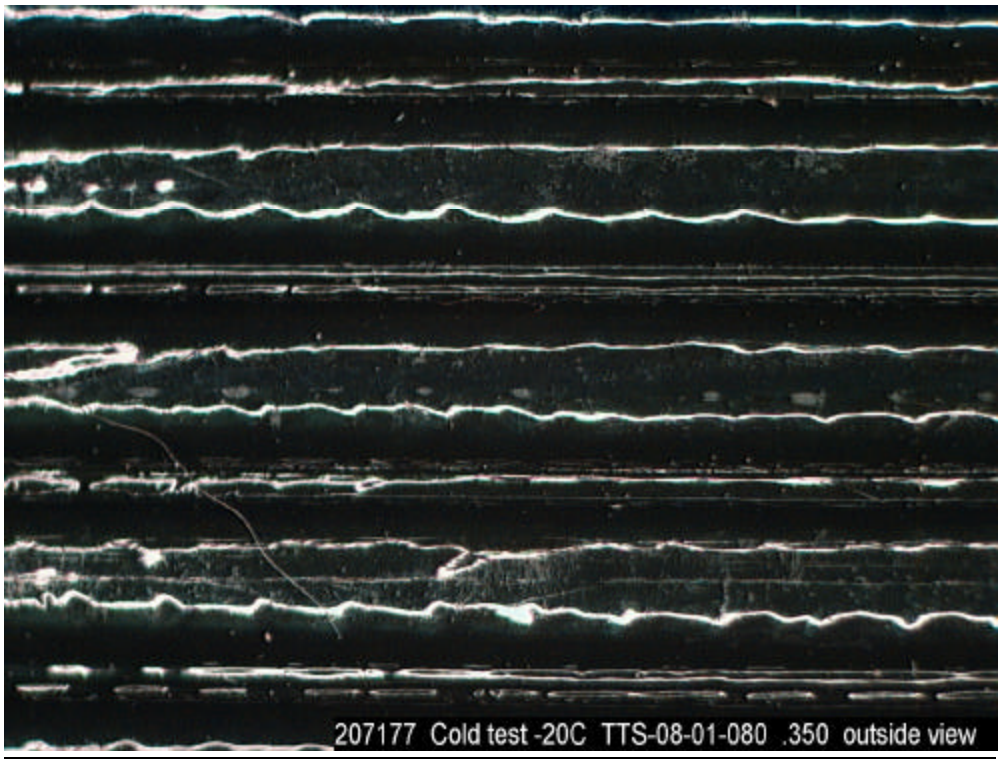

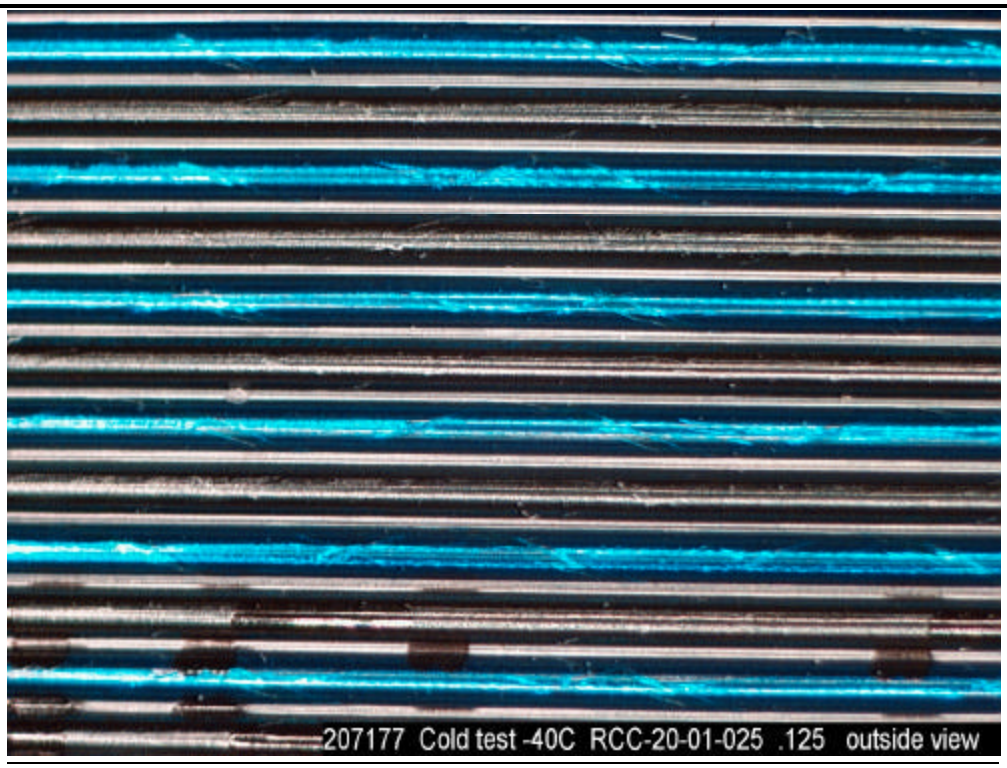
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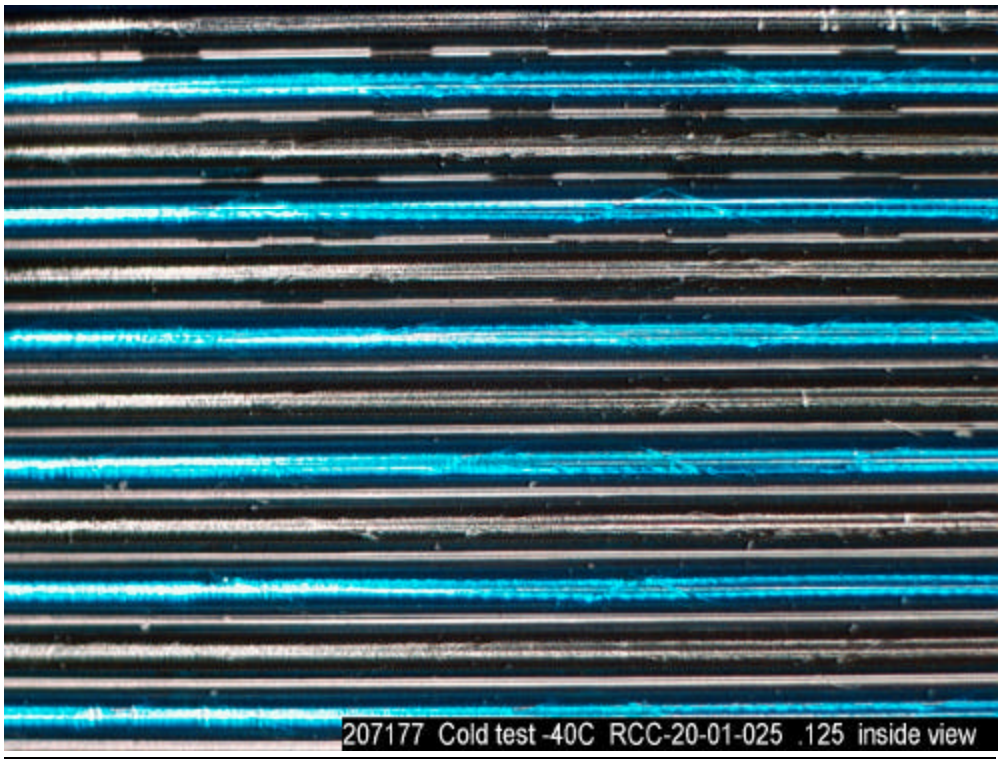
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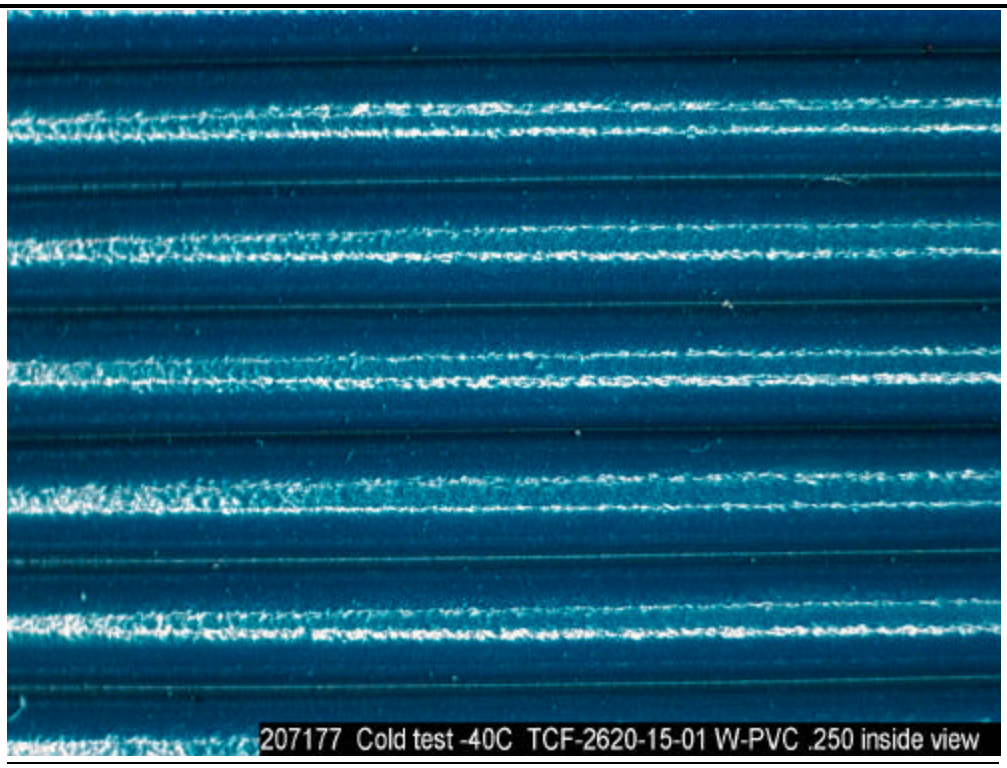
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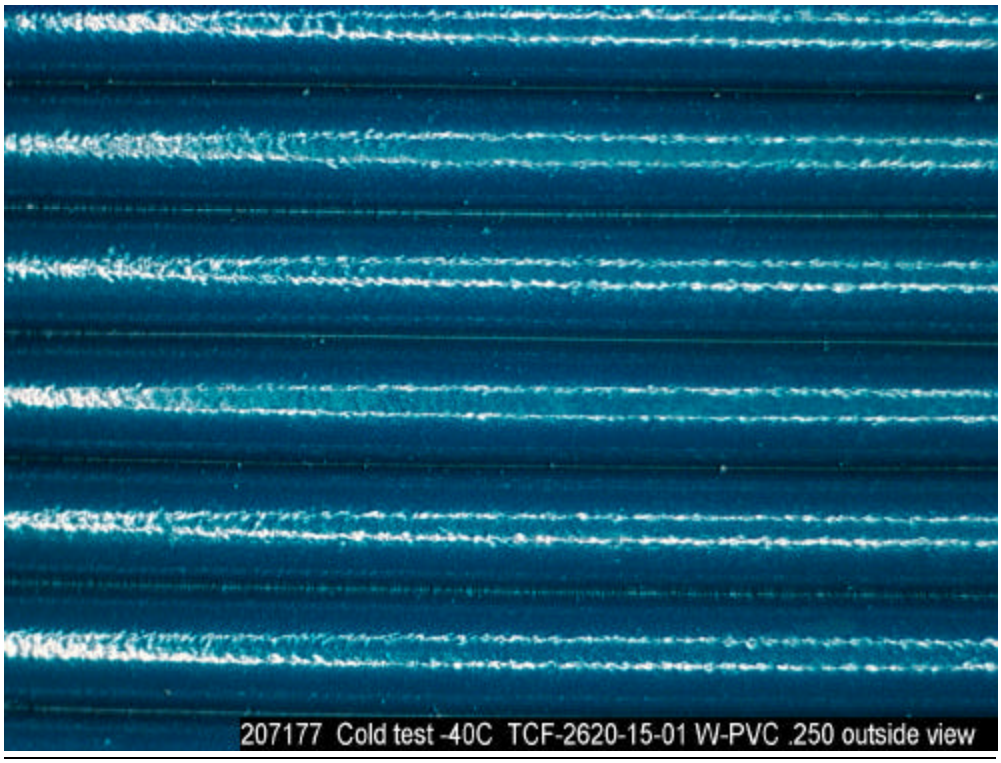
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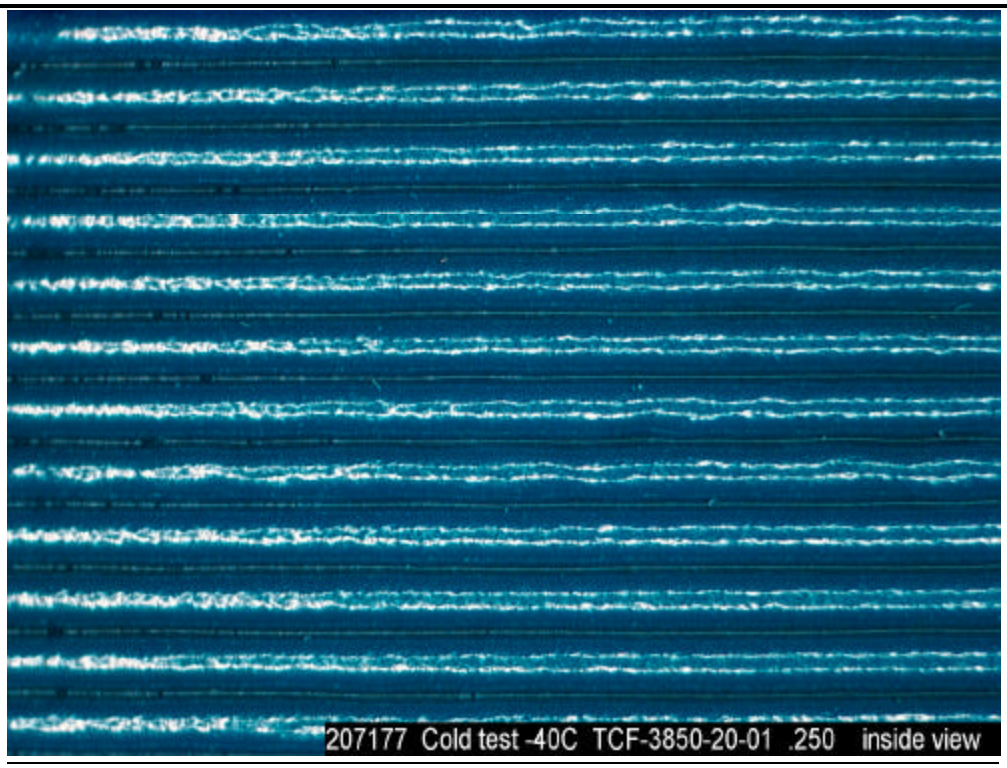

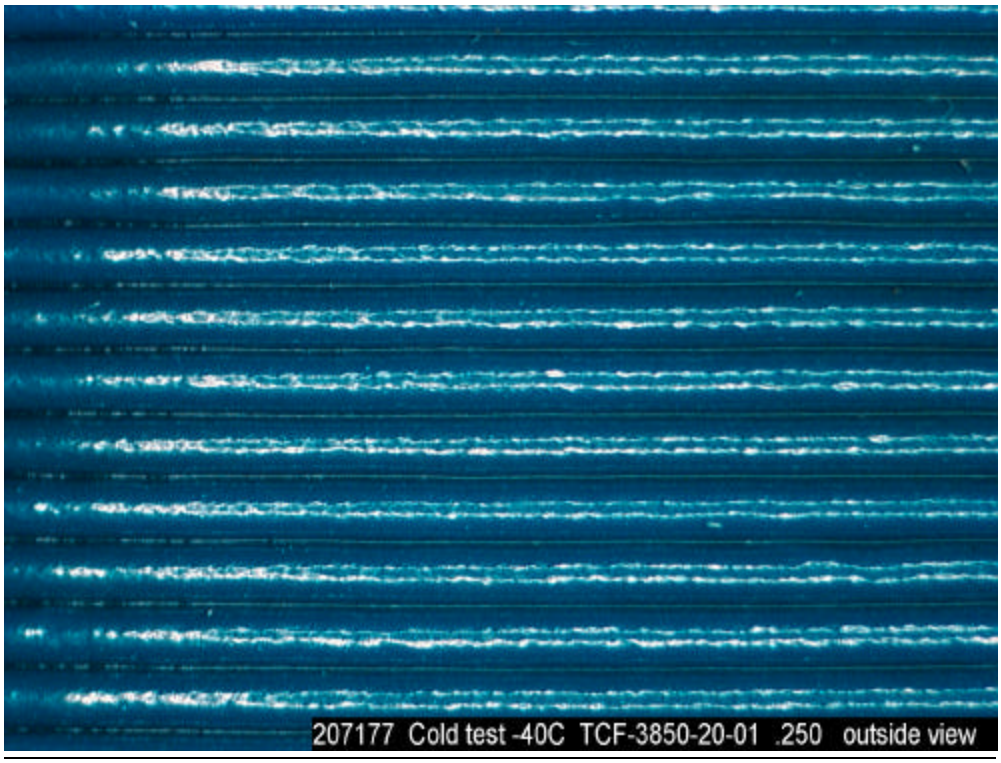

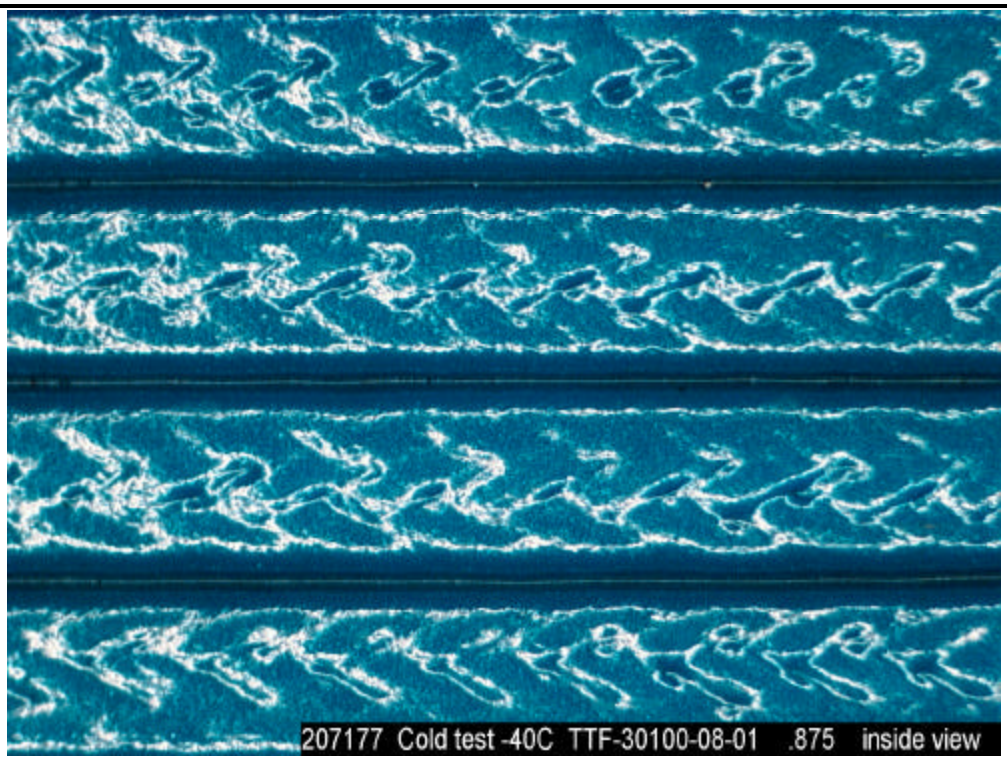

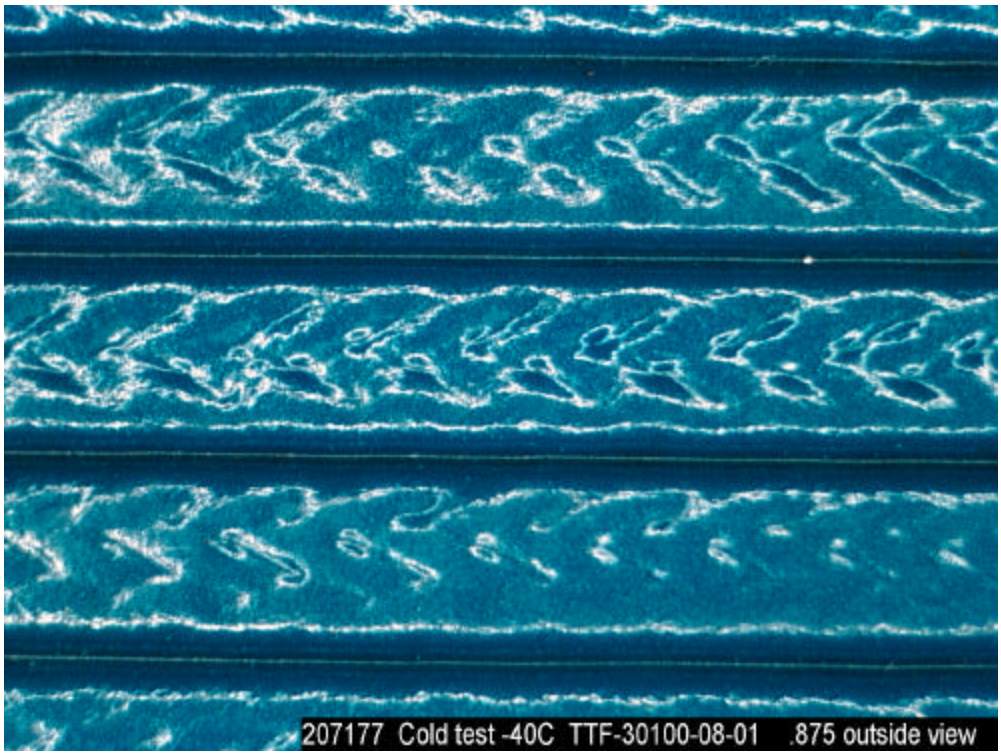

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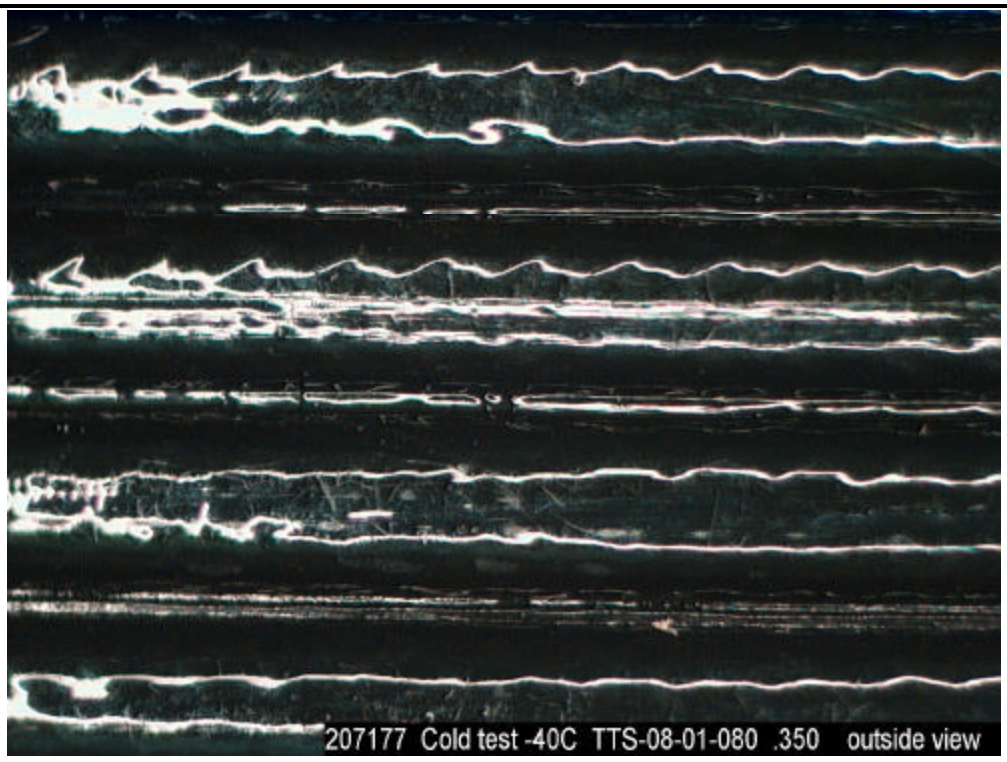

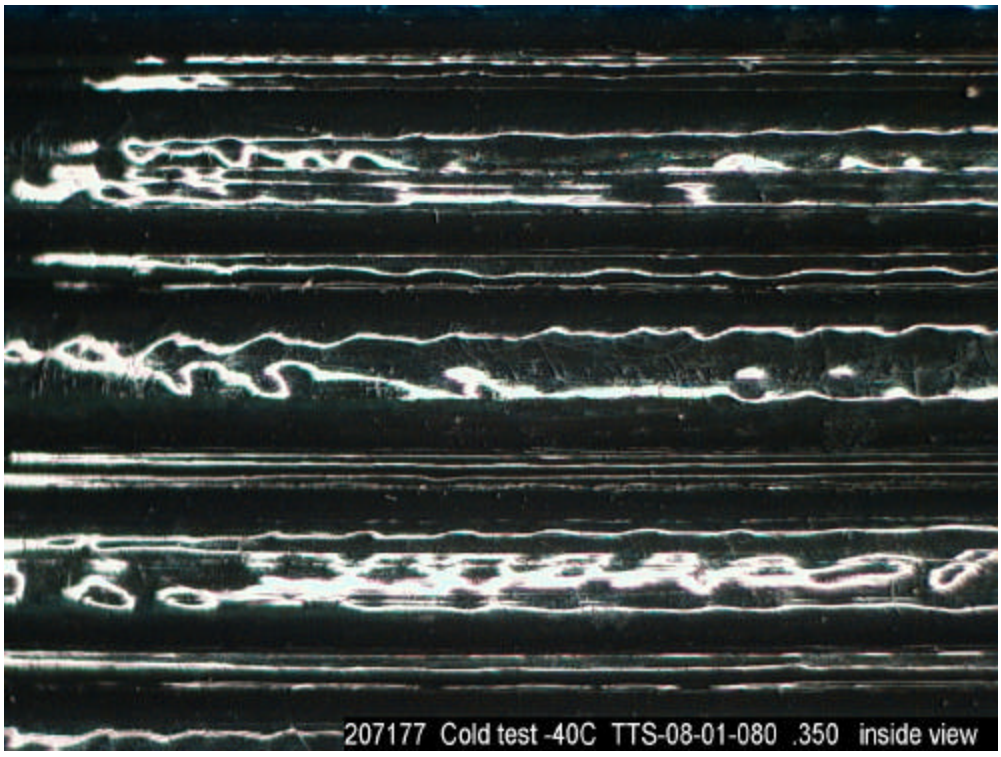

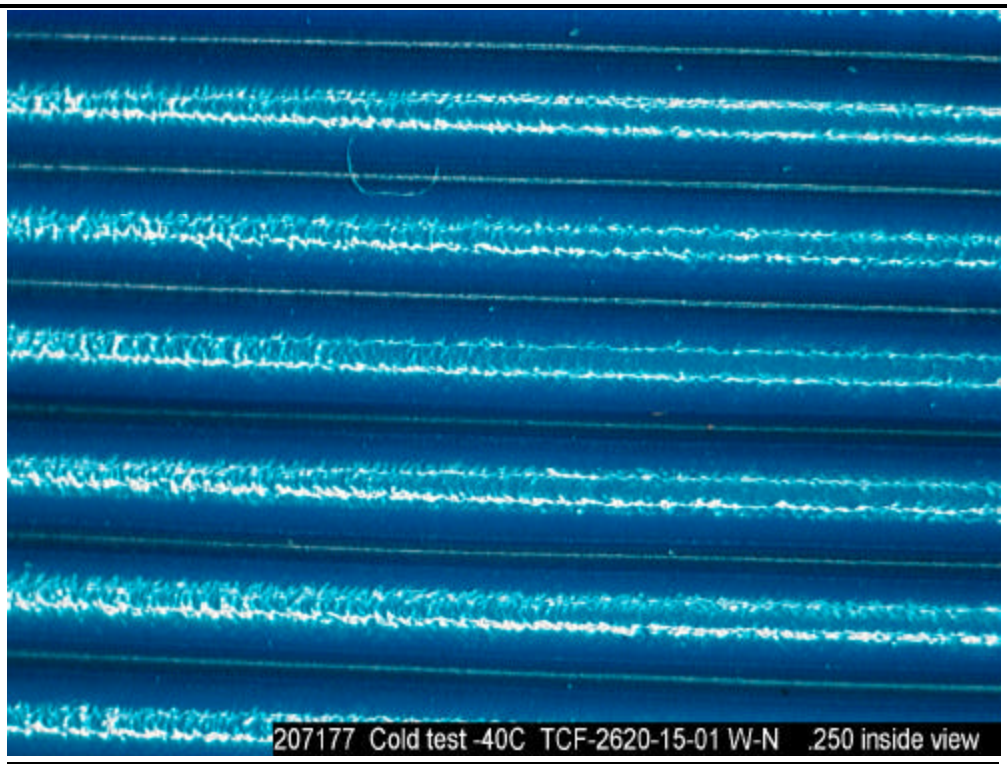
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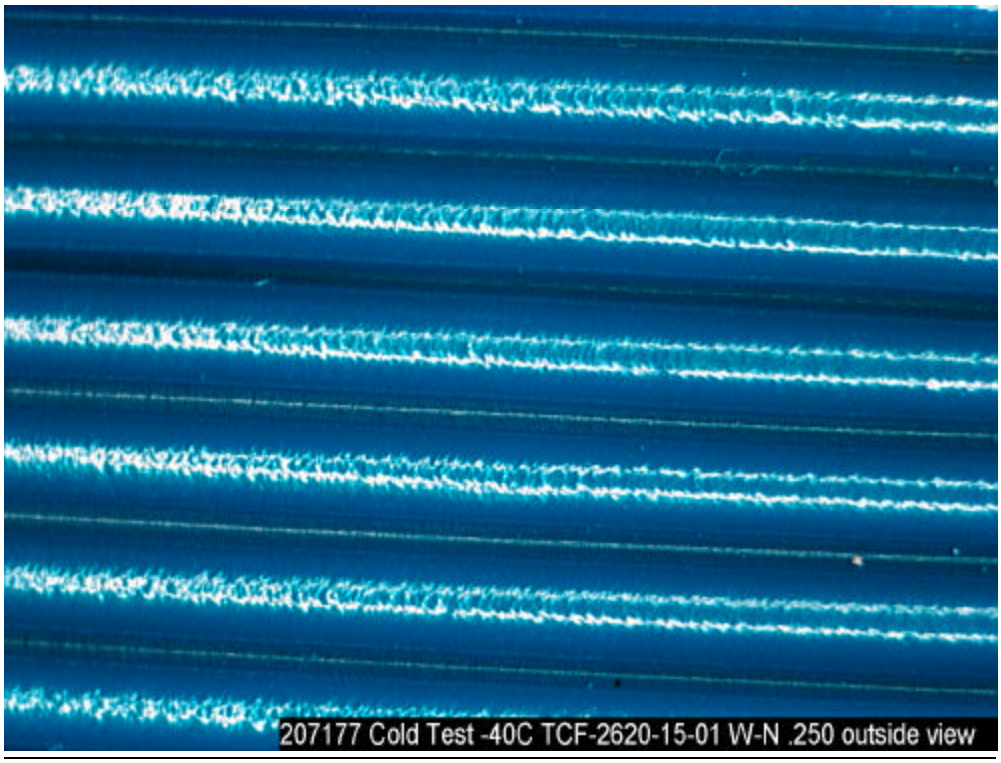
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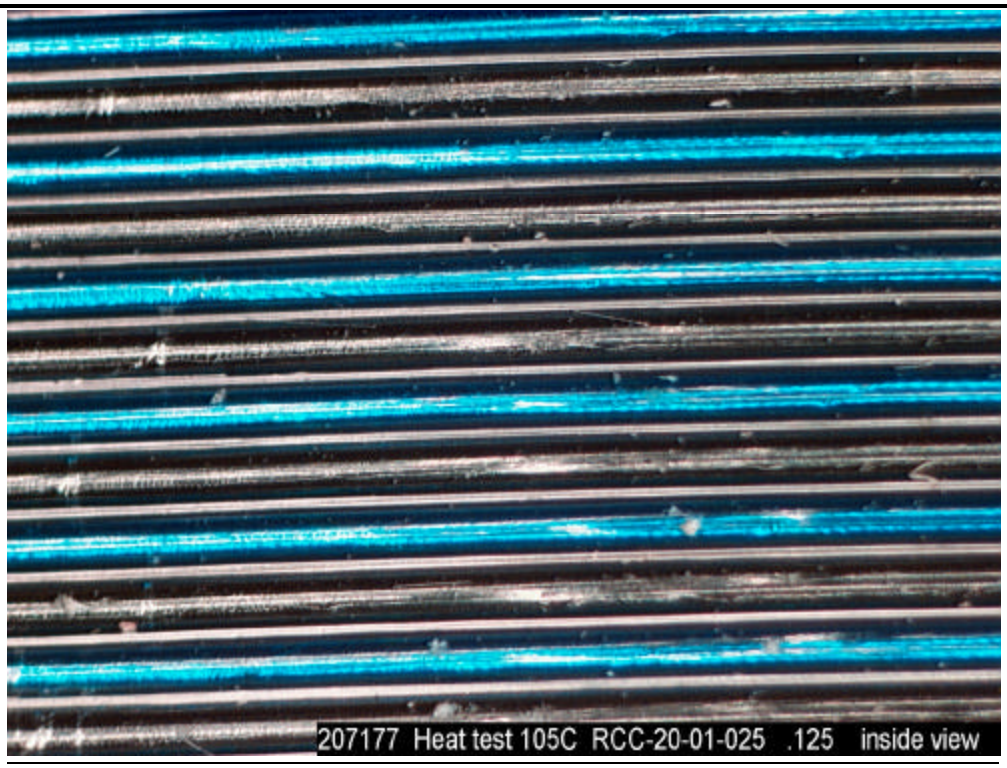
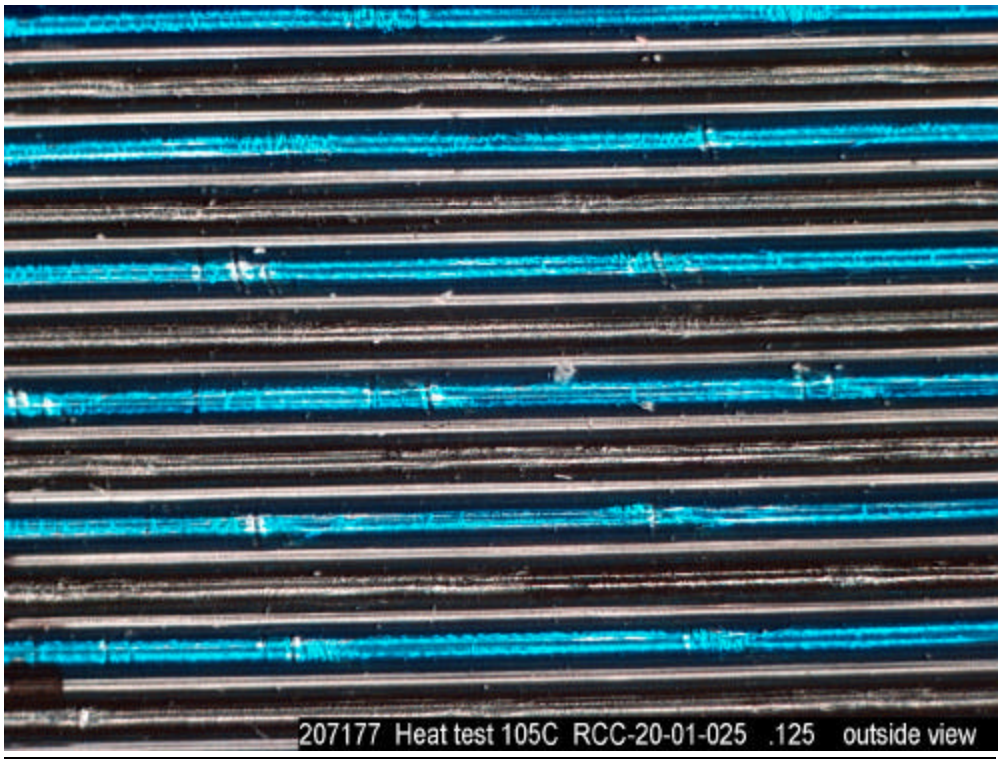

207177 Heat test 105C RCC-20-01-025 .125 inside view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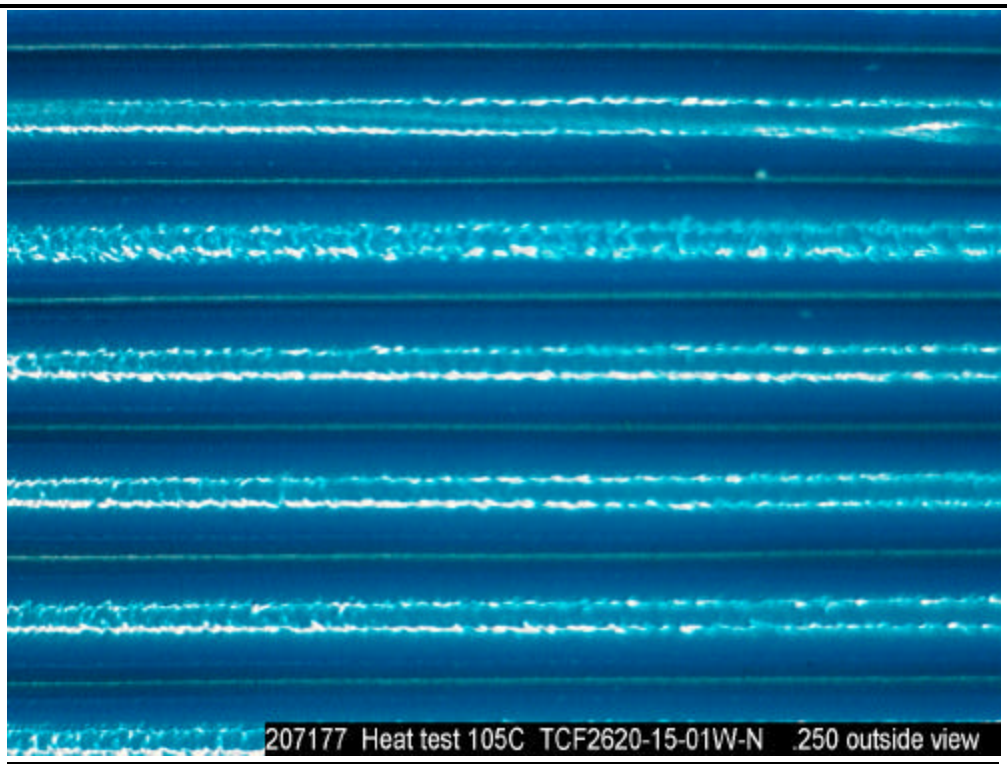

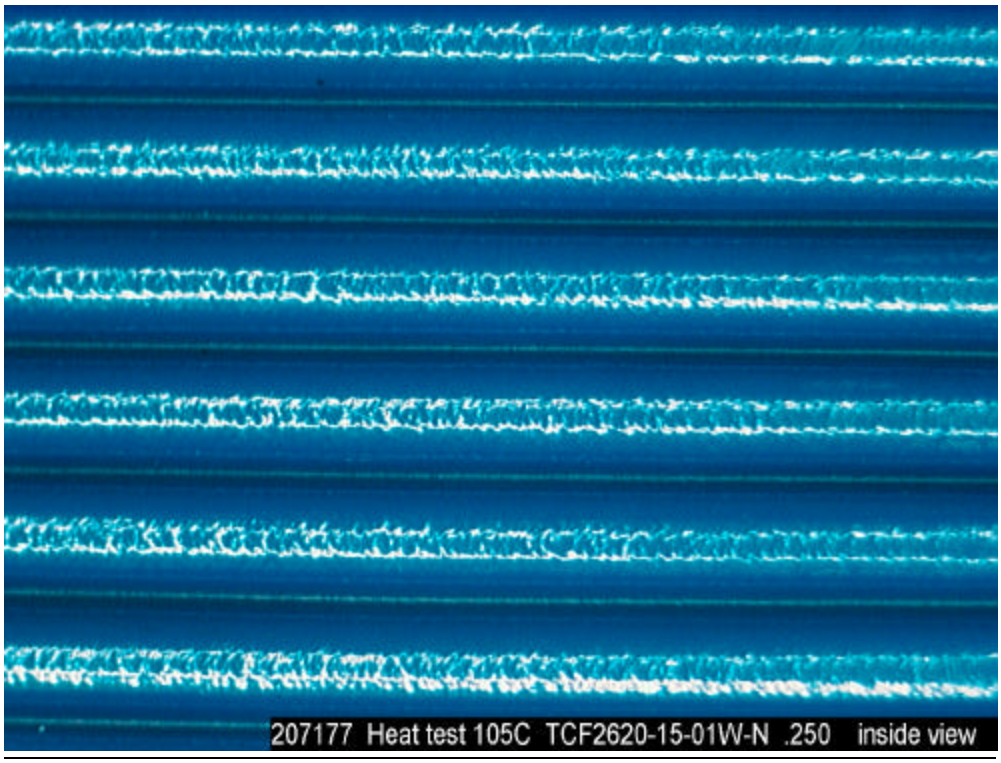

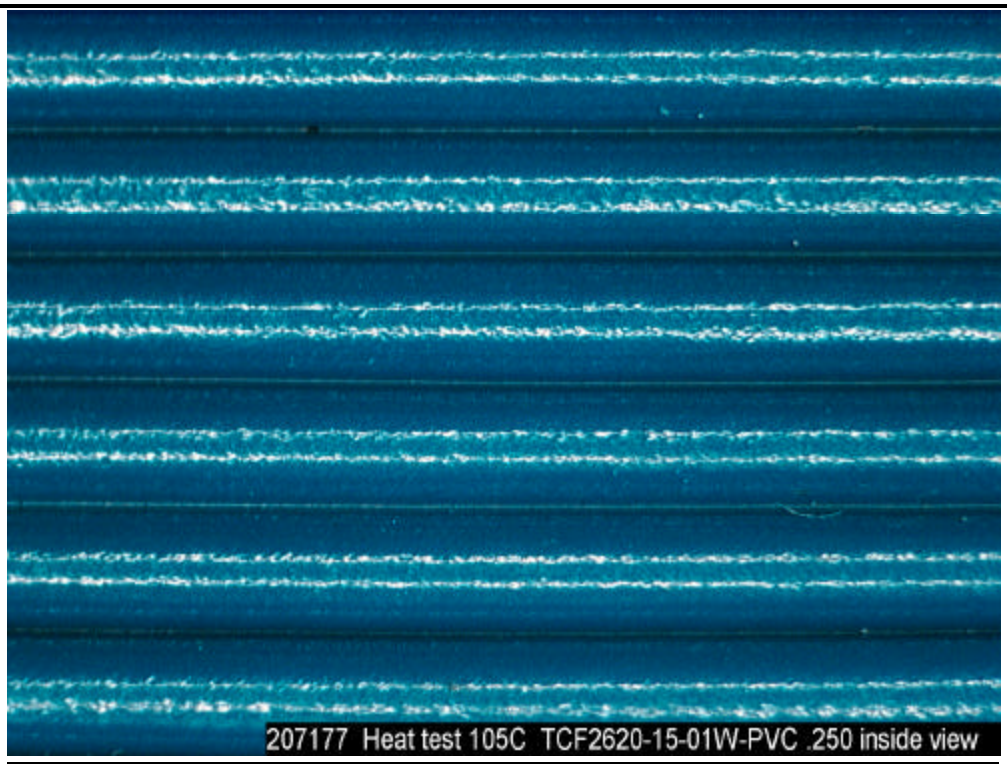

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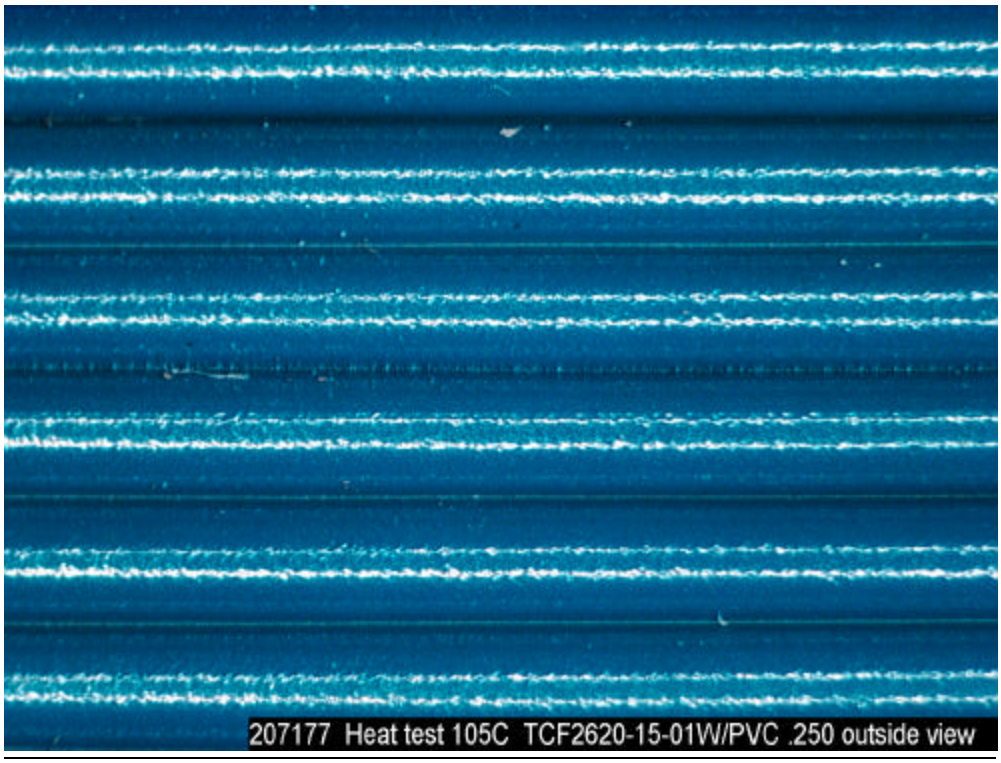

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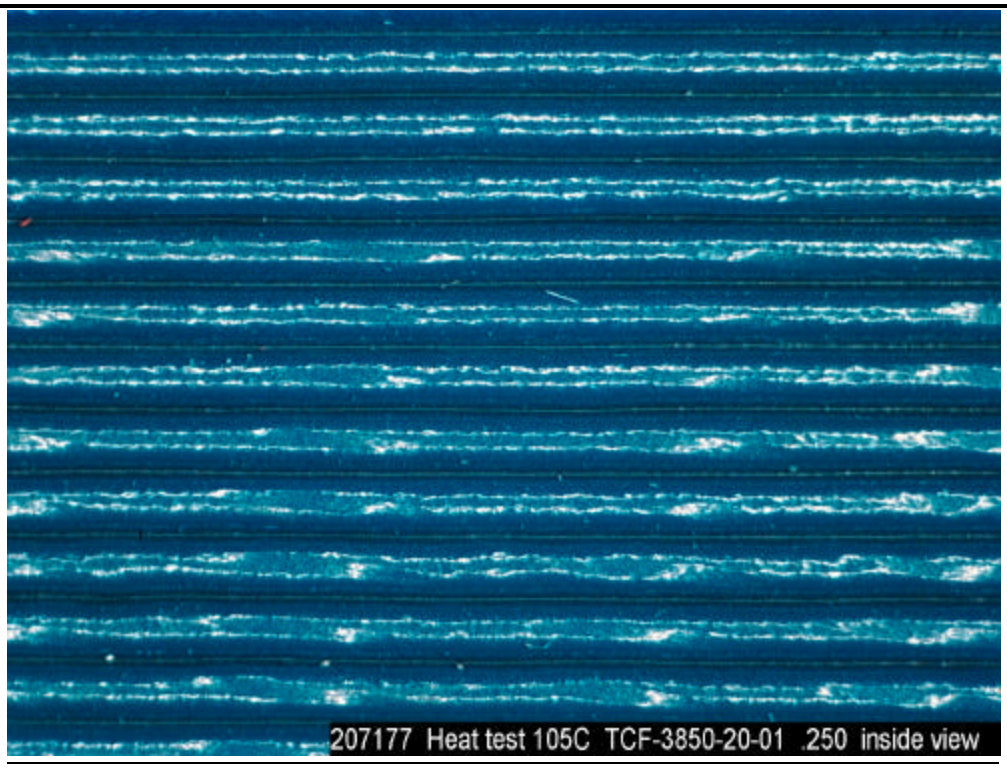
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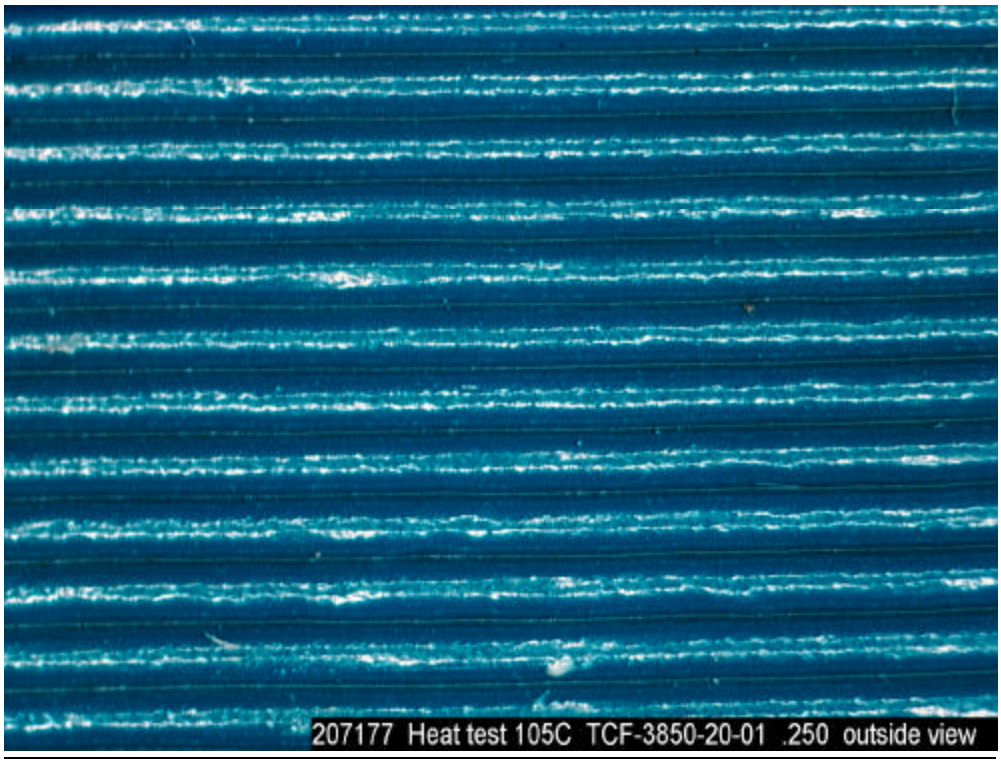
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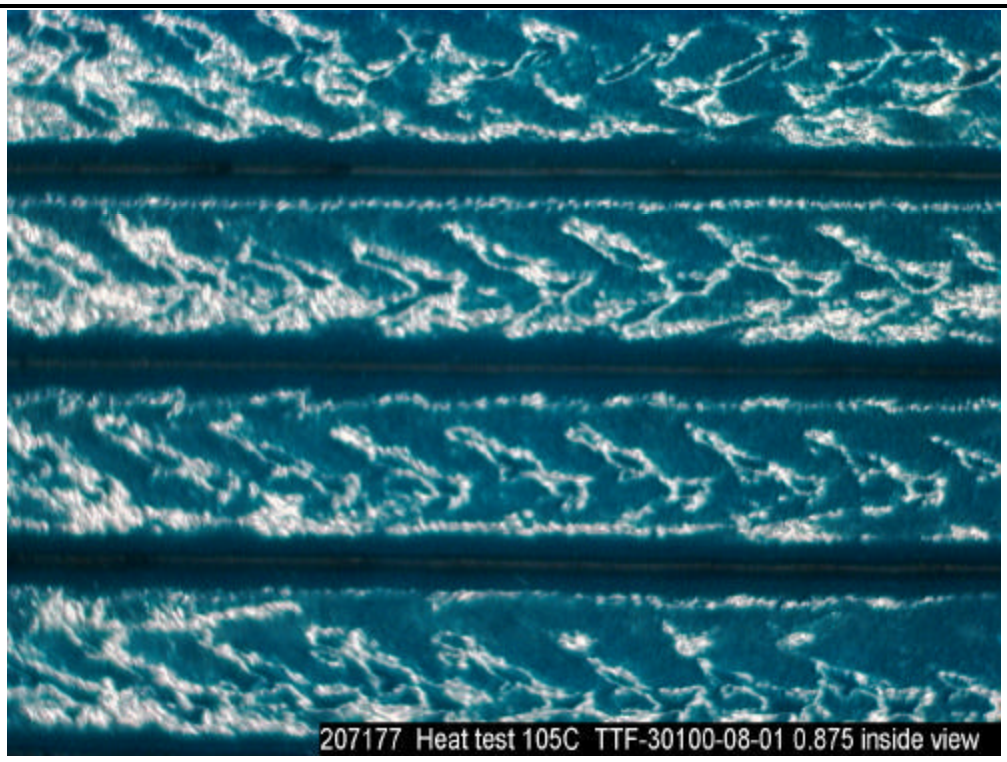
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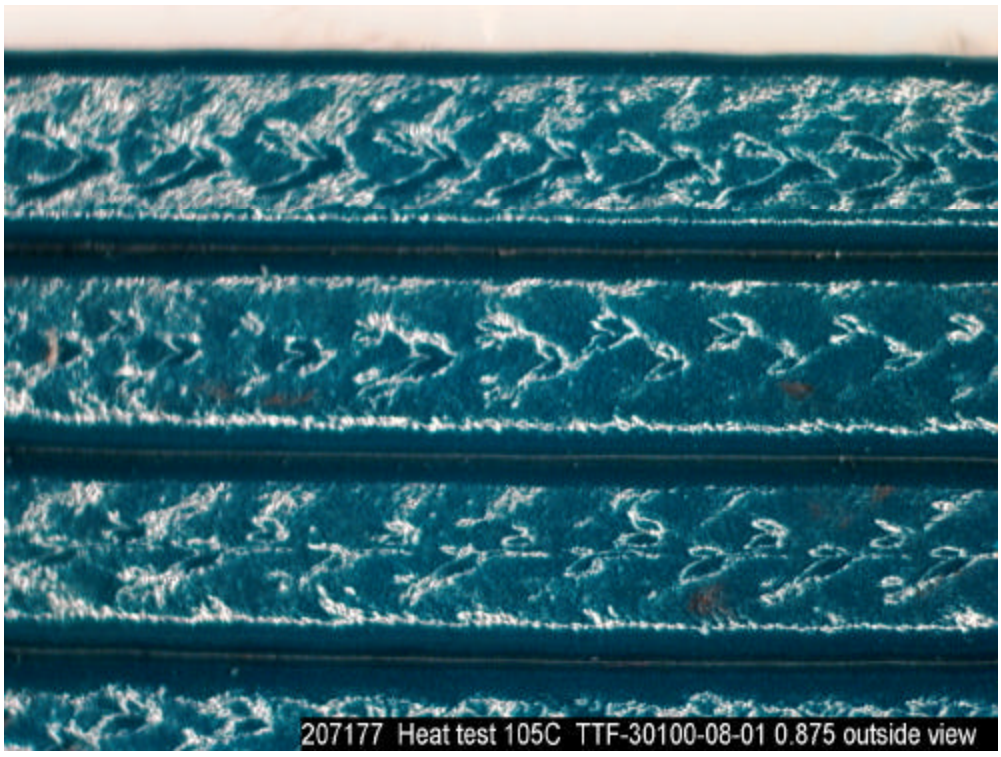
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