Test Report
Tensile & Elongation
Insulation

Abstract

The purpose of this test is to measure the material strength of Natural High Molecular Weight Low Density Polyethylene (HMWPE) Insulation material used in the insulation layer of the aerial cable construction.

Tensile Testing Procedure

Samples were produced from materials used in the production of the customers product. .075" thick tensile bars were die cut and tested per ASTM D 638, except a tensile width of .100" was used. Samples were pulled at a rate of 2" / minute until failure.

Results

Blend	Test	***Tensile (psi)***	***(MPa)***	***Elongation (%)***
MI58031653				
	1	2300	15.86	680
	2	2325	16.03	670
	3	2350	16.20	690
	Average	2325	16.03	680

Hendrix Requirement: 1800 psi Tensile and 500 % Elongation

Tested by Gary Grenier

Signature

Title Aerial Operations Manager

Date 5/1/2008

Test Report
Tensile & Elongation
Grey HDPE
(per ANSI/ICEA S-70-547-2000)

Abstract

The purpose of this test was to measure the material strength of Gray High Density Polyethylene (GHDPE) material used in the Hendrix Insulators, Spacers and other molded products.

Tensile Testing Procedure

Samples were produced from materials used in the production of the customer's product. Seventy-five (75) mil thick tensile bars were die cut and tested per ASTM D 638, except a tensile width of .100" was used. Samples were pulled at a rate of 2" / minute until failure.

Results

Unaged

2889 PEC Lot Number	*Test*	*Tensile (psi)*	*(MPa)*	*Elongation (%)*
3801801	1	3525	24.31	700
	2	3600	24.83	670
	3	3550	24.48	700
	Average	3892	26.84	690

Hendrix Requirement: (Unaged) 2800 psi tensile strength and 400 percent elongation

Tested and reported by: Gary Grenier

Date: 5/1/2008

Test Report
Tensile & Elongation
Black HDPE
(per ANSI/ICEA S-70-547-2000)

Abstract

The purpose of this test is to measure the material strength of Black High Density Polyethylene (BHDPE) Insulation material used in the Hendrix cable outer insulation layer.

Tensile Testing Procedure

Samples were produced from materials used in the production of the customers product. .075" thick tensile bars were die cut and tested per ASTM D 638, except a tensile width of .100" were used. Samples were pulled at a rate of 2" / minute until failure.

Results

2188 PEC Blend	*Test*	*Tensile (psi)*	*(MPa)*	*Elongation (%)*
3692696	1	3475	23.96	690
	2	3550	24.48	700
	3	3300	22.76	670
	Average	3442	23.74	687

Hendrix Requirement: 2800 psi Tensile and 400 % Elongation

Conclusion

Test results meet and exceed the Hendrix and ANDE requirement when used as a jacketing material.

Tested by: Gary Grenier

Title: Aerial Operation Engineer

Date: 5/1/2008

Weatherometer (UV) Test Report

Abstract
The purpose of this test is to demonstrate the Ultraviolet (UV) stability of the Gray High Density Polyethylene material when used in an outdoor application.
This is demonstrated by measuring the percent retention of tensile strength and elongation after 3000 hours of weathering.

Procedure
Three (3) tensile samples of each were measured at each 1000 hour weathering interval and compared to original unaged results.
Weatherometer aging was performed to ASTM G 155-00A specifications, Cycle 1 Test Method (continuous light, intermittent water spray), Optical filter type borosilicate or Daylight filter, Irradiance setting .35 W/m sq. @ 340 nm.

Results

Blend Number	*Tensile Original, psi*	*Elongation Original, %*	*Tensile After 3000 Hrs % Retention*	*Elongation After 3000 Hrs % Retention*
2269072	3508	823	89	77

Hendrix Requirement: Minimum Retention 50% through 3000 hours.

Conclusion
Results are Stable through 3000 hours of weathering.

Tensile Testing Procedure
Testing was conducted using a .075" thick tensile bars and a tensile width of .100".

Tested and Reported by: Gary Grenier
Aerial Process Engineer
Test Date: December 2007

HENDRIX

Environmental Stress Cracking Test
Gray High Density Polyethylene
(per ASTM D 1693)

Abstract
The purpose of this test was to evaluate the Gray High Density Polyethylene insulation used for the outer layer of our cable constructions.

Procedure
75 mil plaque samples were prepared from pellets. Tests were conducted following condition B of the specification.

Equipment
VWR Scientific oven set at 50° C for 48 hours and a test solution composed of 10% Igepal and 90% water.

Results
10 of the 10 samples tested passed with no cracking.
Color Gray masterbatch Lot: 3840200

Conclusion
Test results indicate that the material examined has environmental stress crack resistance.

Tested by: Dave Palmer
Date: 1/16/2009
Reported by: Gary Grenier
Aerial Operations Manager

HENDRIX

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Gray High Density Polyethylene
(per ASTM D 1693)

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Color Gray masterbatch Lot: 3840200

Conclusion
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Tested by: Dave Palmer
Date: 1/16/2009
Reported by: Gary Grenier
Aerial Operations Manager

Test Report

Liquid Contaminant, Inclined-PlaneTracking and Erosion Test Report
(Per ASTM D 2303)

Abstract

The purpose of this test is to demonstrate the Resistance to Tracking of the Black High Density Polyethylene (BHDPE) material when used in an outdoor application.

This is determined by measuring the material's "Time to Track" in an Incline Plane test fixture.

Procedure

Five (5), 125 mil thick plaque specimen were produced and tested as specified by the ASTM standard. Continuous voltage was applied for a duration of the test. The test was stopped at 1500 minutes.

Incline Plane Testing was performed in accordance to ASTM D 2303 specifications, "Time to Track Method". Specific test settings were; Voltage = 2.5 kV, Resistance = 10 k-ohms, Contaminant Flow Rate = .15 ml/min.

Equipment

Beckman Industrial Test Unit.

Model Number TERT 1A-10

Serial Number 41978

Results

Material	*Blend No.*	*Specimen No.*	*Time Under Test (minutes)*
Hendrix Black	2936129	1	1000
		2	1000
		3	1000
		4	1000
		5	1000
		Average	1000

Note: No tracking, melting, or burning was present on any of the test specimens.

Hendrix Requirement: The samples must meet or exceed 1000 minutes with no tracking, melting, or burning present.

Conclusion

Results are stable through 1000 minutes of track testing.

Tested by: Gary Grenier

Title: Aerial Process Engineer

Date: 11/17/2005

Test Report
Liquid Contaminant, Inclined-PlaneTracking and Erosion Test Report
(Per ASTM D 2303)

Abstract
The purpose of this test is to demonstrate the Resistance to Tracking of the Gray High Density Polyethylene (GHDPE) material which is used in an outdoor application. This is determined by measuring the material's "Time to Track" in an Incline Plane test fixture.

Procedure

Five (5), 125 mil thick plaque specimen were produced and tested as specified by the ASTM standard. Continuous voltage was applied for the duration of the test. The test was stopped at 1500 minutes.

Incline Plane Testing was performed in accordance to ASTM D 2303 specifications, "Time to Track Method". Specific test settings were; Voltage = 2.5 kV, Resistance = 10 k-ohms, Contaminant Flow Rate = .15 ml/min.

Equipment

Beckman Industrial Test Unit.

Model Number TERT 1A-10

Serial Number 41978

Calibrated: 6/19/2007 and is due 6/19/2008

Results

Material	Blend No.	*Specimen No.*	*Time Under Test*
Hendrix Gray	3689366	1	1540
		2	1540
		3	1540
		4	1540
		5	1540
		Average	1540

Note: No tracking, melting, or burning was present on any of the test specimens.
Hendrix Requirement: The test average must be 1500 minutes or greater with no tracking, melting, or burning present.

Conclusion
Results are stable through 1500 minutes of track testing.

Tested by: Chris Asselin

Reported by: Gary Grenier

Aerial Operations Manager

Reported: December 11, 2007

JOSLYN MFG. and SUPPLY CO. HARDWARE DIVISION PRODUCT ENGINEERING

No. ZJ 222

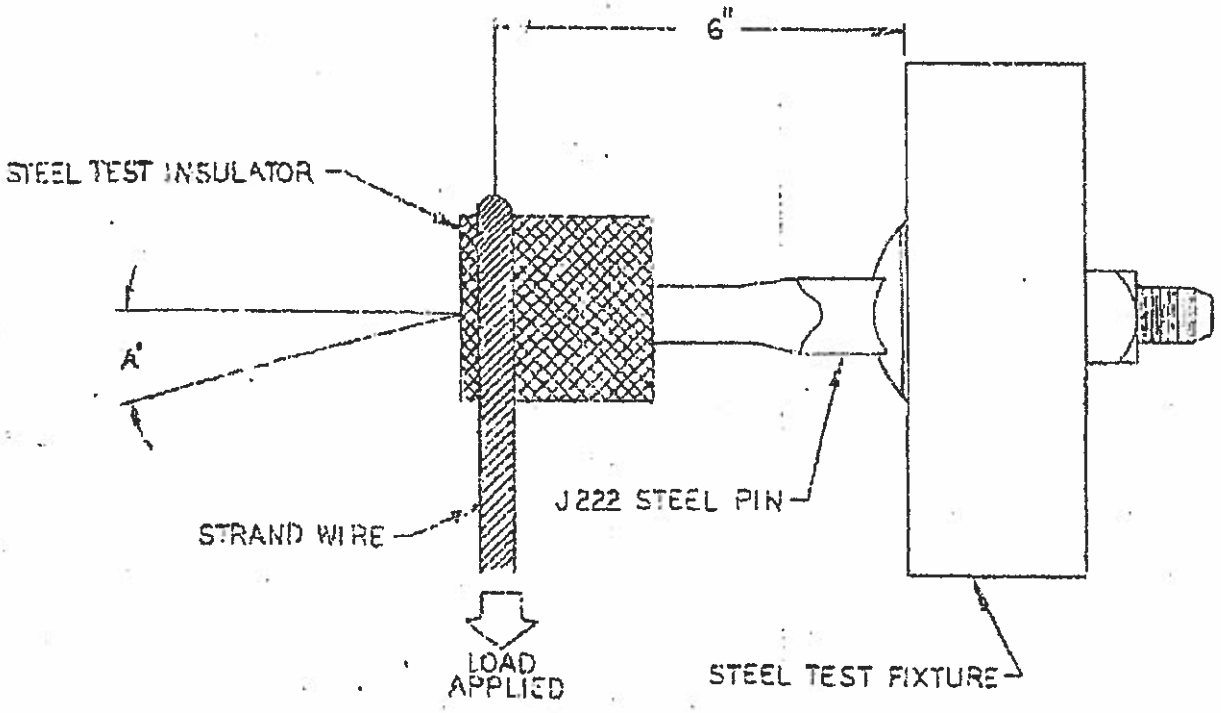
SHEET 1 OF 3

TEST REPORT

SUBJECT TEST ON J222 STEEL INSULATOR PIN PER DRAWING 1027 A-2

DATED 5-18-73

DATE April 13, 1978



ATTN:
GARY
(3-PAGES)

MAY-02-2003 15:46 17735271225 96%

JOSLYN MFG. and SUPPLY CO. HARDWARE DIVISION PRODUCT ENGINEERING

No. TJ 222

SHEET 2 OF 3

TEST REPORT

SUBJECT TEST ON J222 STEEL INSULATOR PIN PER DRAWING 1027 A-2 DATED 5-18-73

DATE April 13, 1978

PURPOSE:

To determine the ultimate strength of the J222 steel insulator pin and to satisfy the NEMA Standard PH-17 which states that this pin must develop a load of 800 lbs. without exceeding 10° angular deflection.

EQUIPMENT USED:

1. Tinius Olsen Hydraulic Test Machine.
2. Steel Test Fixture.

PROCEDURE:

All samples used for testing were taken directly from stock. The steel pin was mounted to a steel test fixture and placed on the moveable crosshead of the Tinius Olsen Hydraulic Test Machine. A steel thimble was turned onto the lead threads of the pin. 1/4" diameter strand was then looped over the thimble to accommodate a 6" moment arm. Load was applied and deflection was measured and recorded for each loading increment listed.

RESULTS:

Test No. 1		Test No. 2		Test No. 3	
Load(lbs.)	Def(degrees)	Load(lbs.)	Def(degrees)	Load(lbs.)	Def(degrees)
0	0	0	0	0	0
200	30'	200	45'	200	45'
400	1°-30'	400	1°-30'	400	1°-15'
600	2°-30'	600	2°-30'	600	2°
800	3°-30'	800	3°-30'	800	2°-30'
1000	7°-45'	1000	8°-30'	1000	5°
1100	10°	1100	10°	1130	10°
0	7°-30'	0	7°-30'	0	7°-30'
1330	20°	1315	20°	1375	20°
0	15°	0	15°-30'	0	16°

CONCLUSION:

In each of the coupons tested, the test was discontinued at the highest load shown because of excessive angular deflection.

MAY-06-2003 16:46 17739271225 96%

JOSLYN MFG. and SUPPLY CO. HARDWARE DIVISION PRODUCT ENGINEERING

No. TJ 222

SHEET 3 OF 3

TEST REPORT

SUBJECT TEST ON J222 STEEL INSULATOR PIN PER DRAWING 1027 A-2

DATED 5-18-73 DATE April 13, 1978

The results of this test concludes that the J222 steel pin satisfies the strength requirement of NEMA PH-17.

Michael T. Dildine

Michael T. Dildine

53 Old Wilton Road
Milford, New Hampshire 03055-3119
Telephone: (603) 673-2040
Fax: (603) 673-1497

Tap Wire Material Testing

		ANDE Requirement		
Tensile & Elongation		*Tensile*	*Elongation*	
Covering	ICEA S61402	10.3 Mpa or 1494 psi	400 %	1 per Production run
Results:		**2245 psi**	**570 %**	

Tested and Reported by: Gary Grenier
Date: 5/5/2008

53 Old Wilton Road
Milford, New Hampshire 03055-3119
Telephone: (603) 673-2040
Fax: (603) 673-1497

Tap Wire

Hendrix Specification	Min. Average	Min. Point	Min. O.D.	Max. O.D.
	.150"	.135"	.573"	.603"
Production Date				
Reel (H5DM02) XCSZ01	.158"	.144"	.580"	.592
Reel (H5DR05) XCSZ02	.154"	.148"	.585"	.592"
Reel (H5DR01) XCSZ03	.159"	.148"	.582"	.594"

Reported by: Gary Grenier
Date: 5/5/2008

HENDRIX

CERTIFIED TEST REPORT NUMBER 31454
INSULATED POWER CABLE RATED 5 TO 35 KV

PURCHASER	**ING. Gustavo Aquino Alfieri**
PURCHASER'S ORDER #	**16/2011-LPI703/2011**
PURCHASER'S SPECIFICATION #	
PURCHASER'S PART #	**ANDE LPI No. 703/2011**
CABLE DESCRIPTION	**Al 185mm2 19X PACT 25kV 75 3LYR 0.38 3.183.18 BTRHDPEBLK**
CABLE QUANTITY	**135,781 Meters**
NUMBER OF REELS	**96**
DOCUMENT ID	**938885000634000**
MARMON ORDER NUMBER	**041858**
REPORT DATE	**January 16th, 2012**

CERTIFICATION OF TESTS

Gordon D. Estabrook Jr. Mgr. QA & Prod. Eng.
Typewritten Name and Title

Sam DeGraffenried 01/16/2012

Aerial Cable Metric									
Reel #	Cond OD (mm)	Bonding layers	Concentricity (%)	SS Wall Avg (mm)	Ins Wall Avg (mm)	Jacket Wall Avg (mm)	Jacket OD (mm)	Spark (KV)	DC Resistance 1K 20 (O1K)
Specs	Min=15.95		Min=85 Max=100	Min=.254	Min=2.38	Min=2.38	Min=29.31		Max=.0483
LN7GIB01	16.0020	Pass	96.30	.6299	3.0175	3.0963	29.7942	Pass	.0470
LN7GIB02	16.0528	Pass	97.30	.5715	3.1928	3.1420	29.6164	Pass	
LN7GIB03	16.0528	Pass	95.70	.6477	3.2029	3.1471	29.6418	Pass	
LN7GIB04	16.0020	Pass	94.50	.6096	3.1674	3.1471	29.7180	Pass	
LN7GIB05	16.0020	Pass	97.50	.6096	3.1471	3.1013	29.7688	Pass	
LN7GIB06	16.0528	Pass	94.50	.6553	3.2233	3.0683	29.7688	Pass	
LN7GIB07	16.0528	Pass	97.50	.6172	3.1572	3.1496	29.7434	Pass	
LN7GIB08	16.0528	Pass	97.10	.6248	3.1750	3.1217	29.6926	Pass	
LN7GIB09	16.0528	Pass	96.10	.6502	3.1979	3.1217	29.6672	Pass	
LN7GIB10	16.0528	Pass	95.40	.5994	3.2080	3.1267	29.6926	Pass	
LN7GIB11	16.0528	Pass	96.70	.6299	3.1648	3.1115	29.7180	Pass	
LN7GIB12	16.0274	Pass	94.50	.6020	3.1318	3.1852	29.6418	Pass	
LN7GIB13	16.0274	Pass	95.80	.6147	3.1394	3.1471	29.7180	Pass	
LN7GIB14	16.0528	Pass	97.30	.6045	3.1852	3.1623	29.6926	Pass	
LN7GIB15	16.0528	Pass	96.20	.5359	3.1267	3.1648	29.6672	Pass	
LN7GIB16	16.0528	Pass	98.10	.5639	3.1699	3.1572	29.6672	Pass	
LN7GIB17	16.0782	Pass	97.10	.5740	3.1775	3.1471	29.7180	Pass	
LN7GIB18	16.0528	Pass	98.00	.5588	3.1598	3.1547	29.6926	Pass	
LN7GIB19	16.1036	Pass	97.00	.6299	3.3223	3.1496	29.7688	Pass	
LN7GIB21	16.1036	Pass	98.00	.6172	3.2588	3.0937	29.7180	Pass	
LN7GIB22	16.1036	Pass	97.00	.6299	3.3223	3.1496	29.7180	Pass	
LN7GIB23	16.1036	Pass	96.00	.6299	3.1572	3.0683	29.6672	Pass	
LN7GIB24	16.1036	Pass	99.60	.6045	3.1496	3.0861	29.6164	Pass	
LN7GIB25	16.1036	Pass	96.00	.5283	3.1242	3.1623	29.6418	Pass	
LN7GIB26	16.1036	Pass	99.20	.6172	3.1953	3.0480	29.6164	Pass	
LN7GIB27	16.0274	Pass	95.80	.6833	3.1902	3.0759	29.8450	Pass	
LN7GIB28	16.0782	Pass	95.90	.6528	3.2283	3.0607	29.7434	Pass	
LN7GIB29	16.0782	Pass	97.10	.6375	3.2309	3.1547	29.7688	Pass	
LN7GIB30	16.0782	Pass	95.00	.6452	3.2360	3.0759	29.7180	Pass	
LN7GIB31	16.0782	Pass	95.10	.6680	3.2436	3.0404	29.6672	Pass	
LN7GIB32	16.0782	Pass	96.80	.6299	3.4493	3.0556	29.7434	Pass	
LN7GIB33	16.0274	Pass	98.80	.6528	3.2283	3.0531	29.7434	Pass	
LN7GIB34	16.0274	Pass	98.20	.6680	3.2309	3.0505	29.7434	Pass	
LN7GIB35	16.0528	Pass	97.80	.6782	3.1852	3.1013	29.6418	Pass	

LN7GIB36	16.0528	Pass	98.30	.6502	3.2512	3.0277	29.6164	Pass	
LN7GIB37	16.0274	Pass	95.70	.6731	3.2385	3.0658	29.6672	Pass	
LN7GIB38	16.0274	Pass	97.50	.6172	3.2156	3.0836	29.6672	Pass	
LN7GIB39	16.0020	Pass	97.60	.6096	3.2055	3.0455	29.6418	Pass	
LN7GIB40	16.0528	Pass	94.30	.6045	3.2410	3.1242	29.6164	Pass	
LN7GIB41	16.0020	Pass	97.50	.6071	3.2233	3.0556	29.5910	Pass	
LN7GIB42	16.0020	Pass	97.50	.5944	3.2487	3.0810	29.7180	Pass	
LN7GIB43	16.0020	Pass	95.40	.6172	3.1648	3.1242	29.7180	Pass	
LN7GIB44	16.0020	Pass	97.50	.5893	3.2156	3.1242	29.7180	Pass	
LN7GIB45	16.0020	Pass	97.50	.5994	3.2004	3.0886	29.7434	Pass	
LN7GIB46	16.0274	Pass	94.50	.6020	3.2080	3.1166	29.7434	Pass	
LN7GIB47	16.0274	Pass	97.30	.6375	3.2156	3.1369	29.7434	Pass	
LN7GIB48	16.0274	Pass	98.90	.5969	3.1725	3.1572	29.7434	Pass	
LN7GIB49	16.0274	Pass	97.00	.6248	3.1598	3.1242	29.7434	Pass	
LN7GIB50	16.0274	Pass	97.20	.6223	3.1521	3.0531	29.7688	Pass	
LN7GIB51	16.0274	Pass	96.50	.6502	3.1420	3.2334	29.7434	Pass	
LN7GIB52	16.0274	Pass	95.40	.6375	3.0582	3.2055	29.6926	Pass	
LN7GIB53	16.0274	Pass	95.20	.6731	3.1344	3.1623	29.7180	Pass	
LN7GIB54	16.0274	Pass	97.40	.6172	3.1775	3.1445	29.7180	Pass	
LN7GIB55	16.0274	Pass	95.20	.6299	3.1115	3.1725	29.7434	Pass	
LN7GIB56	16.0020	Pass	97.90	.6121	3.1496	3.1140	29.6164	Pass	
LN7GIB57	16.0020	Pass	97.10	.6401	3.1217	3.1217	29.7180	Pass	
LN7GIB58	16.0020	Pass	97.50	.6325	3.1572	3.1420	29.7180	Pass	
LN7GIB59	16.0020	Pass	97.50	.6299	3.1598	3.1344	29.6672	Pass	
LN7GIB60	16.0020	Pass	97.00	.5969	3.1750	3.1471	29.7180	Pass	
LN7GIB61	16.0274	Pass	96.10	.5893	3.1699	3.1623	29.7180	Pass	
LN7GIB62	16.0020	Pass	97.60	.5893	3.1598	3.1267	29.6672	Pass	
LN7GIB63	16.0274	Pass	97.80	.6147	3.1902	3.1115	29.6926	Pass	
LN7GIB64	16.0274	Pass	96.50	.5893	3.1725	3.1572	29.7688	Pass	
LN7GIB65	16.0020	Pass	95.40	.5791	3.1877	3.1547	29.6926	Pass	
LN7GIB66	16.0274	Pass	97.20	.5893	3.1471	3.1877	29.7180	Pass	
LN7GIB67	16.0274	Pass	96.30	.6502	3.1902	3.1420	29.7942	Pass	
LN7GIB68	16.0274	Pass	97.50	.6096	3.2334	3.0709	29.7434	Pass	
LN7GIB69	16.0274	Pass	98.80	.6401	3.1623	3.1344	29.6926	Pass	
LN7GIB70	16.0274	Pass	94.70	.6147	3.1699	3.1572	29.7180	Pass	
LN7GIB71	16.0274	Pass	98.30	.5969	3.1979	3.1039	29.7434	Pass	
LN7GIB72	16.0274	Pass	96.00	.6528	3.1648	3.1318	29.7180	Pass	
LN7GIB73	16.0274	Pass	96.10	.6350	3.1445	3.1699	29.7434	Pass	
LN7GIB74	16.0274	Pass	96.50	.6883	3.2004	3.1090	29.7434	Pass	
LN7GIB75	16.0274	Pass	98.00	.6452	3.4976	3.1369	29.7180	Pass	

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LN7GIB76	16.0274	Pass	97.00	.6147	3.2106	3.1293	29.7180	Pass	
LN7GIB77	16.0274	Pass	98.10	.6096	3.1394	3.2004	29.6926	Pass	
LN7GIB78	16.0020	Pass	96.50	.5766	3.1674	3.1217	29.6672	Pass	
LN7GIB79	16.0020	Pass	96.10	.5969	3.2029	3.1267	29.6926	Pass	
LN7GIB80	16.0020	Pass	97.50	.5664	3.1318	3.1623	29.6926	Pass	
LN7GIB81	16.0020	Pass	97.80	.6045	3.2055	3.1217	29.6672	Pass	
LN7GIB82	16.0274	Pass	96.40	.6198	3.1699	3.1369	29.7180	Pass	
LN7GIB83	16.0020	Pass	98.20	.5944	3.2055	3.1064	29.6672	Pass	
LN7GIB84	16.0020	Pass	94.00	.6121	3.2080	3.1344	29.7180	Pass	
LN7GIB85	16.0274	Pass	97.50	.5944	3.1648	3.2106	29.7180	Pass	
LN7GIB86	16.0020	Pass	97.30	.5969	3.1953	3.1623	29.7434	Pass	
LN7GIB87	16.0020	Pass	97.00	.5715	3.2334	3.1064	29.7434	Pass	
LN7GIB88	16.0020	Pass	97.50	.6121	3.2182	3.1521	29.7434	Pass	
LN7GIB89	16.0274	Pass	97.60	.6071	3.1699	3.1775	29.5910	Pass	
LN7GIB90	16.0274	Pass	98.90	.5944	3.1826	3.1699	29.7434	Pass	
LN7GIB91	16.0274	Pass	98.50	.5639	3.1623	3.2563	29.6926	Pass	
LN7GIB92	16.0274	Pass	96.70	.6147	3.1623	3.1699	29.6926	Pass	
LN7GIB93	16.0274	Pass	98.70	.6020	3.2106	3.1572	29.7434	Pass	
LN7GIB94	16.0274	Pass	97.80	.5664	3.1572	3.2487	29.7434	Pass	
LN7GIB95	16.0274	Pass	99.00	.5994	3.1928	3.1648	29.6926	Pass	
LN7GIB96	16.0020	Pass	94.60	.6071	3.2283	3.1547	29.6672	Pass	
LN7GIB97	16.0020	Pass	94.80	.5690	3.2080	3.1598	29.6672	Pass	

VR and T&E							
Reel #	Tensile Cond Shield (MPa)	Elongation Cond Shield (%)	Tensile Unaged Insulation (MPa)	Elongation Unaged Insulation (%)	Ten Unaged Jacket (MPa)	Elong Unaged Jacket (MPa)	VRCS - Room Temp (Ocm)
Specs	Min=9.65	Min=200	Min=12.41	Min=500	Min=19.31	Min=400	Max=500
LN7GIB01	14.5	375	15.79	730	23.8	614	2

Inventory Report			
Reel #	Total Meters	Top	Drum
LN7GIB01	1415	68295	66880
LN7GIB02	1415	69721	68306
LN7GIB03	1415	71137	69722
LN7GIB04	1415	72553	71138
LN7GIB05	1415	73976	72561
LN7GIB06	1415	75392	73977
LN7GIB07	1415	76822	75407
LN7GIB08	1415	78238	76823
LN7GIB09	1415	79654	78239
LN7GIB10	1415	81080	79665
LN7GIB11	1415	82496	81081
LN7GIB12	1415	83912	82497
LN7GIB13	1415	85346	83931
LN7GIB14	1415	86762	85347
LN7GIB15	1415	88178	86763
LN7GIB16	1415	89594	88179
LN7GIB17	1415	91010	89595
LN7GIB18	1415	92426	91011
LN7GIB19	1415	95141	93726
LN7GIB21	1415	97976	96561
LN7GIB22	1415	97976	96561
LN7GIB23	1415	99392	97977
LN7GIB24	1415	100808	99393
LN7GIB25	1415	102224	100809
LN7GIB26	1415	103644	102229
LN7GIB27	1415	105060	103645
LN7GIB28	1411	209835	208424
LN7GIB29	1415	208404	206989
LN7GIB30	1415	109261	107846
LN7GIB31	1415	110677	109262
LN7GIB32	1412	112090	110678
LN7GIB33	1415	113508	112093
LN7GIB34	1415	114924	113509
LN7GIB35	1415	116348	114933
LN7GIB36	1415	117764	116349
LN7GIB37	1415	119180	117765

LN7GIB38	1415	120600	119185
LN7GIB39	1434	122035	120601
LN7GIB40	1415	124890	123475
LN7GIB41	1415	124890	123475
LN7GIB42	1415	126321	124906
LN7GIB43	1415	127747	126332
LN7GIB44	1415	129163	127748
LN7GIB45	1415	130589	129174
LN7GIB46	1415	132005	130590
LN7GIB47	1415	133421	132006
LN7GIB48	1415	134837	133422
LN7GIB49	1415	136253	134838
LN7GIB50	1356	137610	136254
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LN7GIB52	1408	140734	139326
LN7GIB53	1408	142143	140735
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LN7GIB55	1408	144961	143553
LN7GIB56	1415	146389	144974
LN7GIB57	1415	147805	146390
LN7GIB58	1415	149221	147806
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LN7GIB65	1415	159154	157739
LN7GIB66	1415	160579	159164
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LN7GIB68	1415	163411	161996
LN7GIB69	1415	164840	163425
LN7GIB70	1415	166256	164841
LN7GIB71	1415	167672	166257
LN7GIB72	1415	169088	167673
LN7GIB73	1415	170524	169109
LN7GIB74	1415	171940	170525
LN7GIB75	1415	173356	171941
LN7GIB76	1415	174785	173370
LN7GIB77	1415	176201	174786

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LN7GIB78	1415	177617	176202
LN7GIB79	1415	179047	177632
LN7GIB80	1415	180463	179048
LN7GIB81	1415	181889	180474
LN7GIB82	1415	183305	181890
LN7GIB83	1415	184721	183306
LN7GIB84	1415	186137	184722
LN7GIB85	1415	187553	186138
LN7GIB86	1415	188973	187558
LN7GIB87	1415	190389	188974
LN7GIB88	1415	205540	204125
LN7GIB89	1438	206986	205548
LN7GIB90	1415	193928	192513
LN7GIB91	1415	195347	193932
LN7GIB92	1415	196976	195561
LN7GIB93	1415	198392	196977
LN7GIB94	1415	199825	198410
LN7GIB95	1415	201241	199826
LN7GIB96	1415	202657	201242
LN7GIB97	1415	204075	202660

PRODUCT ENGINEERING

TEST REPORT

ED LAUGHLIN (5-PAGES)

ENGINEERING REPORT NUMBER J555

J555 CLEVIS ASSEMBLY (Hendrix TC)

TEST DATE: MARCH 1, 1994

Prepared by:

John C. Hendrickson
Associate Engineer

Approved by:

Frederick W. Burtelson
Engineering Manager

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FEB-05-2003 08:48 17739291223 95%

TEST REPORT

SUBJECT: J555 CLEVIS ASSEMBLY

PURPOSE

To determine the ultimate strength of the J555 Clevis Assembly.

EQUIPMENT

1. Baldwin-Tate Hydraulic Test Machine.
2. High Strength "U" Bolt.
3. 3/8" Strand Wire.

PROCEDURE

The J555 Clevis was attached to the "U" bolt and secured in the stationary crosshead of the test machine. A 3/8" strand wire was placed through the clevis and attached to the movable crosshead (**See Test Set-up Illustration**). Load was applied to failure.

RESULTS

Sample Number	Ultimate Strength (lbs.)
1	12,500
2	12,200
3	12,400

NOTE: In each of the samples tested, failure was due to the fracturing of the steel near the 11/16" diameter hole.

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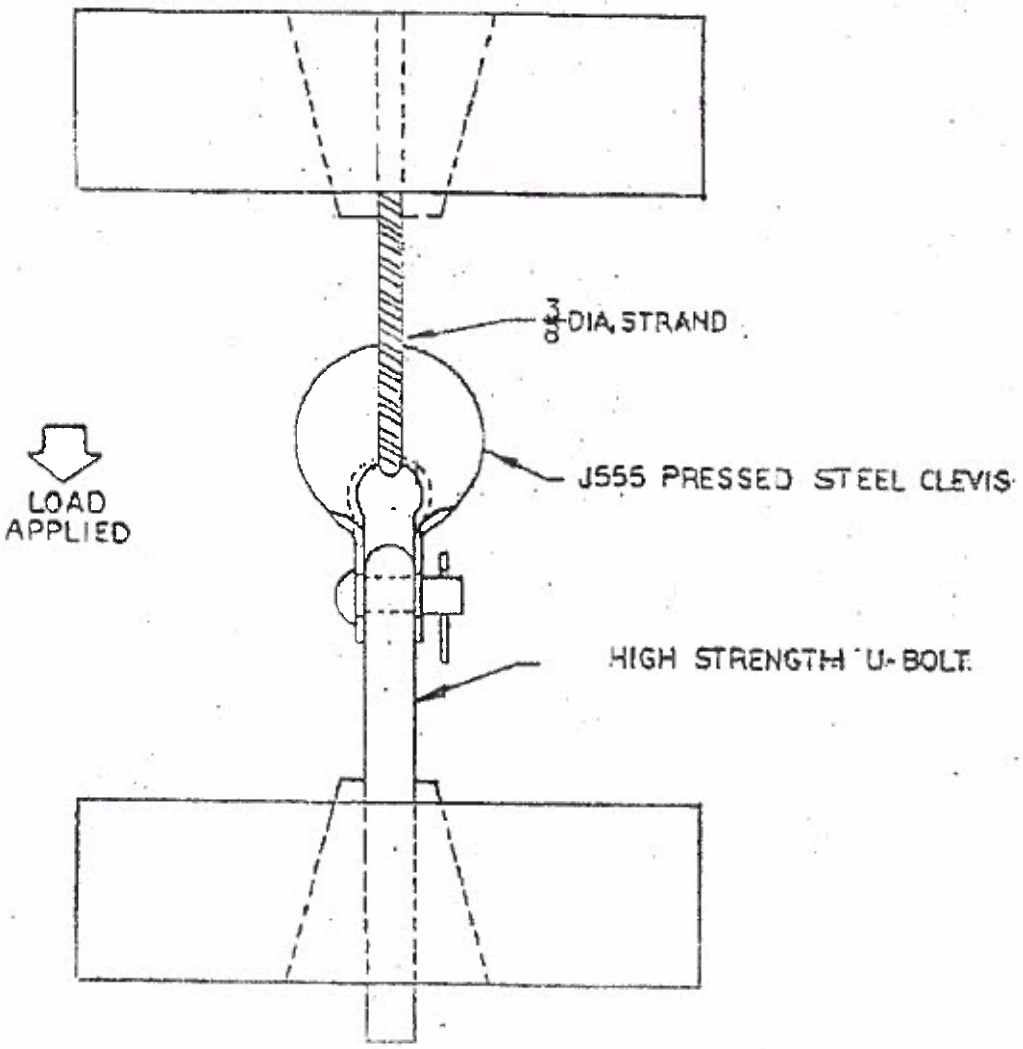
FEB-06-2003 08:43 17735271225 97%

TEST REPORT

SUBJECT: J555 CLEVIS ASSEMBLY

TEST SET-UP ILLUSTRATION



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FEB-06-2023 08:49 1073527223 97%

CON-O-LINE CONTINENTAL ELECTRIC COMPANY

P.O. BOX 635 / TRUSSVILLE, ALABAMA 35173
TELEPHONE: (205) 655-7400
TWX #810-726-5644
ANSWER BACK #CELECTRICO BHM

TEST REPORT

January 20, 1986

TEST REPORT NO.: TR-900

TEST MATERIAL: FAC90-75 Angle Clamp (Ductile Iron)

TEST PERFORMED: Ultimate Strength: Rated 11,000 Lbs. Minimum

TEST PROCEDURE: To simulate field conditions, a flexible steel cable was placed in the groove of each test clamp and set for an 120 degree maximum turn angle. Each clamp was placed in a hydraulic test machine and load was applied at a constant ram speed of 1/2 inch per minute.

TEST RESULTS:

Test No.	Max. Test Load Lbs.	Results
1.	16,000	Casting failed.
2.	17,000	Casting failed.
3.	16,000	Casting failed.
4.	16,500	Casting failed.
5.	16,750	Casting failed.

CONTINENTAL ELECTRIC COMPANY

Jeff Grantham
Engineering

200 pcs

REC'D JAN 18 2000

Molded Products Division

Hendrix Molded Products
53 Old Wilton Road
Milford, NH 03055-3119
603-673-2040

Hendrix Molded Products

Test Report Package

For the

HPI-25-01

ANSI Class 55-5

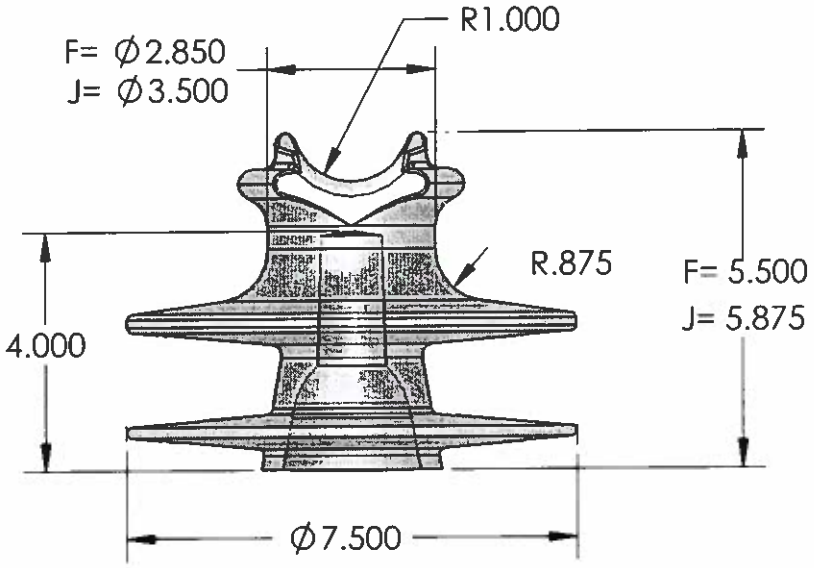
A member of The Marmon Group of companies

Table of Contents:

- HPI-25-01 Drawing
- Leakage & Dry Arc
- Cantilever Report
- Electrical Reports (performed at Mississippi State Independent lab)
- Puncture Report

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	INITIAL RELEASE	7/26/2005	MC

NECK TYPE	HPI-25F	HPI-25J
PIN HOLE DIAMETER	HPI-25F-01 (1" PIN DIA)	HPI-25J-01 (1" PIN DIA)
	HPI-25F-02 (1 3/8" PIN DIA)	HPI-25J-02 (1 3/8" PIN DIA)



- 227 -Doscientos veintisiete -

UNLESS OTHERWISE SPECIFIED		DATE	NAME
DIMENSIONS ARE IN INCHES	DRAWN	7/26/2005	M. CHO
TOLERANCES: ANGULAR ±2° .XXX ±.005	ENG APPR.	7/26/2005	M. CHO
	MFG APPR.		
	Q.A.		

HENDRIX

53 OLD WILTON ROAD, MILFORD, NH 03055-3119

PROPRIETARY AND CONFIDENTIAL

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MATERIAL –

FINISH –

DO NOT SCALE DRAWING

COMMENTS:

TITLE: HPI-25 FJ

SIZE	DWG. NO.	REV.
A	HPI-25 FJ	1

SCALE:1:3 | WEIGHT: | SHEET 1 OF 1

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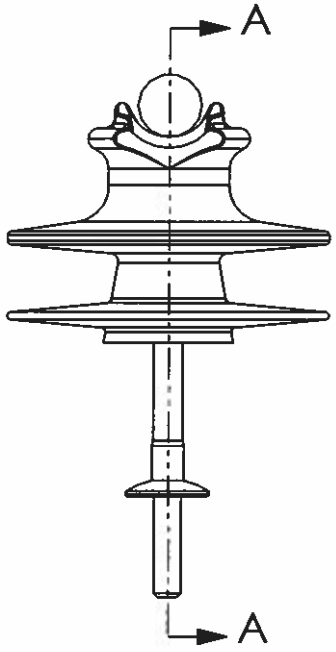
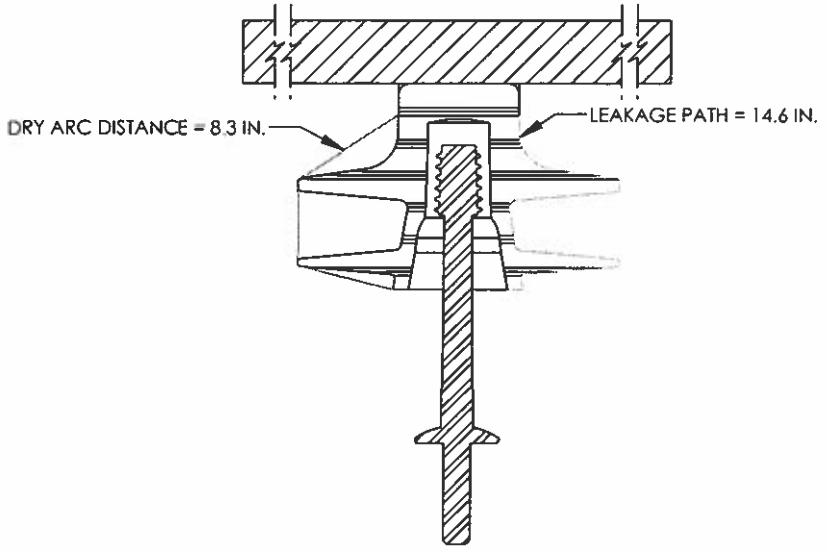




SECTION A-A
SCALE 1 : 3

CAD GENERATED DRAWING
DO NOT MANUALLY UPDATE

APPROVALS	DATE
DRAWN B. BOISCLAIR	12/22/05
DESIGN ENG B. BOISCLAIR	12/20/05

DO NOT SCALE DRAWING

HENDRIX

53 OLD WILTON RD., MILFORD, NH 03055-3119

NAME HPI-25F-01 ELECTRICAL DATA

SIZE A | DWG NO | REV

SCALE 1:1 | CAD FILE: SOLID WORKS | SHEET 1 OF 1

HENDRIX
Molded Products Division

Test Report:	HPI25F01 Cantilever Test
Testing Done By:	Norm McCollough
Testing Date:	11/19/2007

Cantilever Strength
Per ANSI C29.1 Class 55-5
HPI 25 F Neck

Objective:
To meet requirements found in ANSI C29.1-1988, section 5.1.3. The radio-freed minimum requirement is 2550 pounds cantilever.

Test Location:
Testing was performed at Hendrix Wire & Cable, Inc. The testing and reporting occurred in November 2007.

Test Procedure:
Five samples of each insulator were tested. A large shank 8" high, 1 " diameter pin was used for the testing. This pin has a similar geometry of the core used to create the internal shape of the insulator and threads. This base was secured and the test insulator mounted in the horizontal position. The test force was applied to the neck in a downward motion. Contact was made with the insulator neck by a rounded edge wedge connected to the load cell of the machine. The force was applied at a slow rate (1 inch/ min) of speed.

Equipment used was the Tinius Olson model Admet Digital Universal Testing Machine, Serial number PDC 0305301.

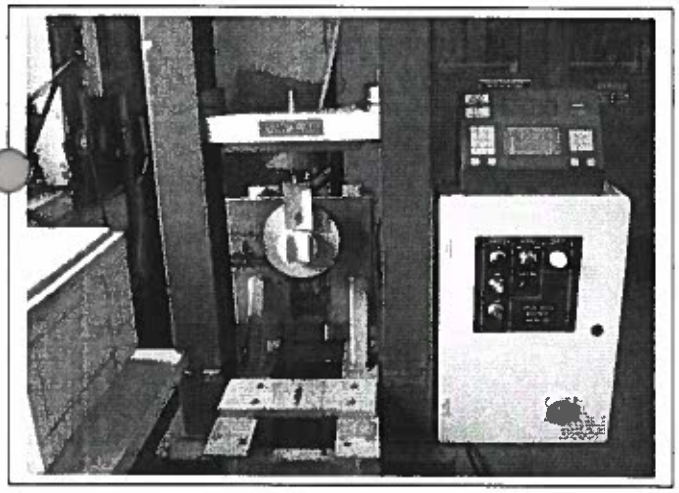
Results must equal or exceed 85% of the rated value or 2550 pounds min. ANSI Class 55-5
Test Results: **PASS** All insulators exceeded the requirement. Testing was stopped upon reaching >3000 pounds.

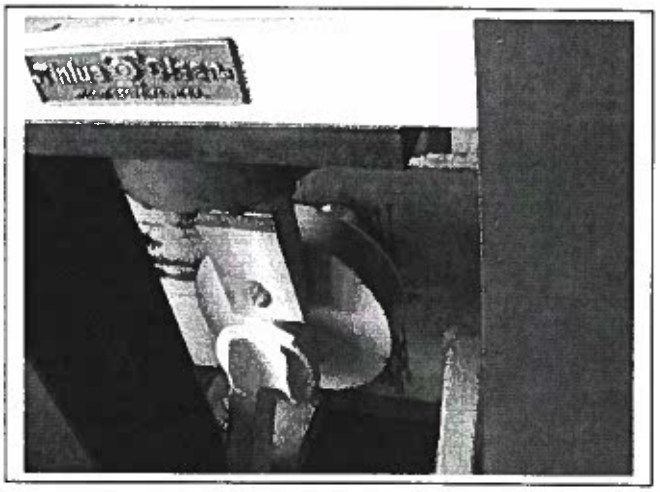
Reported by: Norman McCollough
Engineering Manager, Hendrix Molded Products
Date: 11/19/2007

Test Results

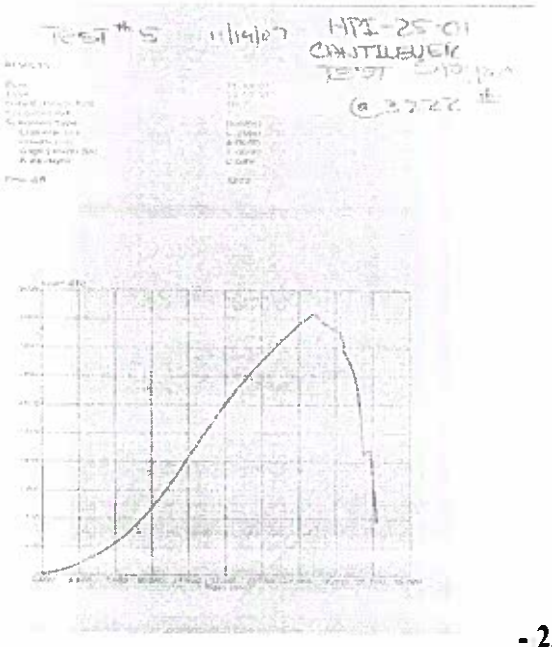
Number	Required	Actual	Result
1	2550	3206	**PASS**
2	2550	3215	**PASS**
3	2550	3190	**PASS**
4	2550	3199	**PASS**
5	2550	3222	**PASS**

Test Setup





Typical Test Curve



Mississippi State UNIVERSITY

HIGH VOLTAGE LABORATORY
DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
MISSISSIPPI STATE, MS 39762

Research Report

EVALUATION OF AC AND LIGHTNING ELECTRICAL STRENGTH OF PIN PROTOYPE POLYMER INSULATORS

Investigation performed
for
Hendrix Wire & Cable Inc.
53 Old Wilton Road
Milford, NH 03055

Principal Investigator

S. Grzybowski, Dr. Hab., Ph.D., FIEEE
Professor, Director of High Voltage Lab
E-mail: stangrzy@ece.msstate.edu

Measurements and Report by:
S. Grzybowski
B. Rodriguez-Medina
C. D. Taylor

March 2005