

PART SUBMISSION WARRANT

Part Name <u>34 W/M Hybrid Sealed Connector Assembly</u>		Customer Part Number <u>FU5T-14A624-CC(000)</u>	
Shown on Drawing No. <u>FU5T-14A624-CC</u>		Supplier Part Number <u>60013512A01C(000)</u>	
Engineering Change Level <u>AF3 Ford Release AELE E 12035198 371</u>		Dated <u>29-Mar-2016</u>	
Additional Engineering Changes <u>Na</u>		Dated <u>Na</u>	
Safety and/or Government Regulation <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Purchase Order No. <u>Na</u> Weight (kg) <u>0.0581</u>	
Checking Aid No. <u>Na</u> Checking Aid Engineering Change Level <u>Na</u>		Dated <u>Na</u>	

SUPPLIER MANUFACTURING INFORMATION Western Diversified Plastics / 609123190 <hr/> Supplier Name & Supplier/Vendor Code <hr/> 53150 N. Main St. <hr/> Street Address <hr/> Mattawan MI 49071 USA <hr/> City State Postal Code Country	CUSTOMER SUBMITTAL INFORMATION Nursan <hr/> Customer Name/Division <hr/> Buyer/Buyer Code <hr/> Various <hr/> Application <hr/> <div style="display: flex; justify-content: space-between;"> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable </div> <hr/> IMDS -504617055 / 2 <hr/> <div style="display: flex; justify-content: space-between;"> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable </div>
---	---

MATERIALS REPORTING
 Has customer-required Substances of Concern information been reported?

 Are polymeric parts identified with appropriate ISO marking codes?

REASON FOR SUBMISSION (Check at least one)

☐ Initial Submission
☐ Engineering Change(s)
☐ Tooling: Transfer, Replacement, Refurbishment, or additional
☐ Correction of Discrepancy
☐ Tooling Inactive > than 1 year

☐ Change to Optional Construction or Material
☐ Supplier or Material Source Change
☐ Change in Part Processing
☐ Parts Produced at Additional Location
☒ Other - please specify below

REQUESTED SUBMISSION LEVEL (Check one)
☐ Level 1 - Warrant only (and for designated appearance items, an Appearance Approval Report) submitted to customer.
☐ Level 2 - Warrant with product samples and limited supporting data submitted to customer.
☐ Level 3 - Warrant with product samples and complete supporting data submitted to customer.
☒ Level 4 - Warrant and other requirements as defined by customer.
☐ Level 5 - Warrant with product samples and complete supporting data reviewed at organization's manufacturing location.

SUBMISSION RESULTS
 The results for ☒ dimensional measurements ☒ material and functional tests ☐ appearance criteria ☐ statistical process package
 These results meet all drawing and specification requirements: ☒ Yes ☐ No (If "No" - Explanation Required)
 Mold / Cavity / Production Process Assembly

DECLARATION
 I hereby affirm that the samples represented by this warrant are representative of our parts which were made by a process that meets all Production Part Approval Process Manual 4th Edition Requirements. I further affirm that these samples were produced at the production rate of 10000 / 8 hours.
 I also certify that documented evidence of such compliance is on file and available for review. I have noted any deviations from the declaration below.
 EXPLANATION / COMMENTS: Customer requested revalidation

 Is each Customer Tool properly tagged and numbered? ☐ Yes ☐ No ☒ n/a
 Supplier Authorized Signature Alice Lossie Date 05-May-16
 Print Name Alice Lossie Phone No. 269-668-3393 Fax No. 269-668-7143
 Title Quality Engineer E-mail Alice.Lossie@westerndp.com
 Part Warrant Disposition: ☐ Approved ☐ Rejected ☐ Other
 Customer Signature _____ Date _____
 Print Name _____ Customer Tracking Number (optional) _____

Dimensional Layout Inspection Report

W-No. **W-3512**
Part No. **See below**
Part Name **34-Way Male Hybrid Assembly**

Run Date **06/17/15**
Print No. **FU5T-14A624-CC**
Revision / Date **V2 (AELE-E-12035198-335) 6/1/15**

Material **PBT-GF30**
Insp. Date **07/01/15**
Insp. By **Stephanie Leonard**

					Sample Number									
Dim.	Specification	Tol. ±	Lo Lim	Hi Lim	1	2	3	4	5					
	FU5T-14A624-CC, 60013512A01C (A-Pol)													
1	(84.0)	---	---	---	84.01	83.99	83.98	84.02	83.99					
2	(45.4)	---	---	---	45.53	45.50	45.52	45.51	45.50					
3	(67.5)	---	---	---	67.52	67.55	67.53	67.55	67.54					
4	(66.1)	---	---	---	66.20	66.18	66.21	66.22	66.19					
5	(3.7)	---	---	---	3.51	3.48	3.52	3.51	3.52					
6	(35.5)	---	---	---	34.80	34.84	34.85	34.82	34.83					
7	Material ID Note	---	---	---	Conforms	Conforms	Conforms	Conforms	Conforms					
8	R0.3 Max	---	---	---	0.30	0.30	0.30	0.30	0.30					
9	R0.5	0.3	---	---	0.50	0.50	0.50	0.50	0.50					
10	Parts free of imperfection	---	---	---	Conforms	Conforms	Conforms	Conforms	Conforms					
	FU5T-14A624-DC, 60013512B01C (B-Pol)													
1	(84.0)	---	---	---	84.03	84.03	84.00	83.98	83.96					
2	(45.4)	---	---	---	45.51	45.50	45.52	45.48	45.49					
3	(67.5)	---	---	---	67.50	67.56	67.55	67.52	67.53					
4	(66.1)	---	---	---	66.18	66.15	66.20	66.23	66.20					
5	(3.7)	---	---	---	3.55	3.52	3.51	3.53	3.52					
6	(35.5)	---	---	---	34.82	34.83	34.82	34.85	34.81					
7	Material ID Note	---	---	---	Conforms	Conforms	Conforms	Conforms	Conforms					
8	R0.3 Max	---	---	---	0.30	0.30	0.30	0.30	0.30					
9	R0.5	0.3	---	---	0.50	0.50	0.50	0.50	0.50					
10	Parts free of imperfection	---	---	---	Conforms	Conforms	Conforms	Conforms	Conforms					
	FU5T-14A624-BC, 60013512C01C (C-Pol)													
1	(84.0)	---	---	---	83.98	83.97	94.01	84.00	84.00					
2	(45.4)	---	---	---	45.52	45.50	45.48	45.50	45.47					
3	(67.5)	---	---	---	67.52	67.51	67.53	67.54	67.56					
4	(66.1)	---	---	---	66.17	66.19	66.22	66.18	66.17					
5	(3.7)	---	---	---	3.53	3.50	3.51	3.55	3.50					
6	(35.5)	---	---	---	34.82	34.83	34.86	34.81	34.82					
7	Material ID Note	---	---	---	Conforms	Conforms	Conforms	Conforms	Conforms					
8	R0.3 Max	---	---	---	0.30	0.30	0.30	0.30	0.30					
9	R0.5	0.3	---	---	0.50	0.50	0.50	0.50	0.50					
10	Parts free of imperfection	---	---	---	Conforms	Conforms	Conforms	Conforms	Conforms					
	HU5T-14A624-AB, 60013512D01B (D-Pol)													
1	(84.0)	---	---	---	83.97	83.97	83.99	84.04	84.08					

Dimensional Layout Inspection Report

W-No. **W-3512**
 Part No. **See below**
 Part Name **34-Way Male Hybrid Assembly**

Run Date **06/17/15**
 Print No. **FU5T-14A624-CC**
 Revision / Date **V2 (AELE-E-12035198-335) 6/1/15**

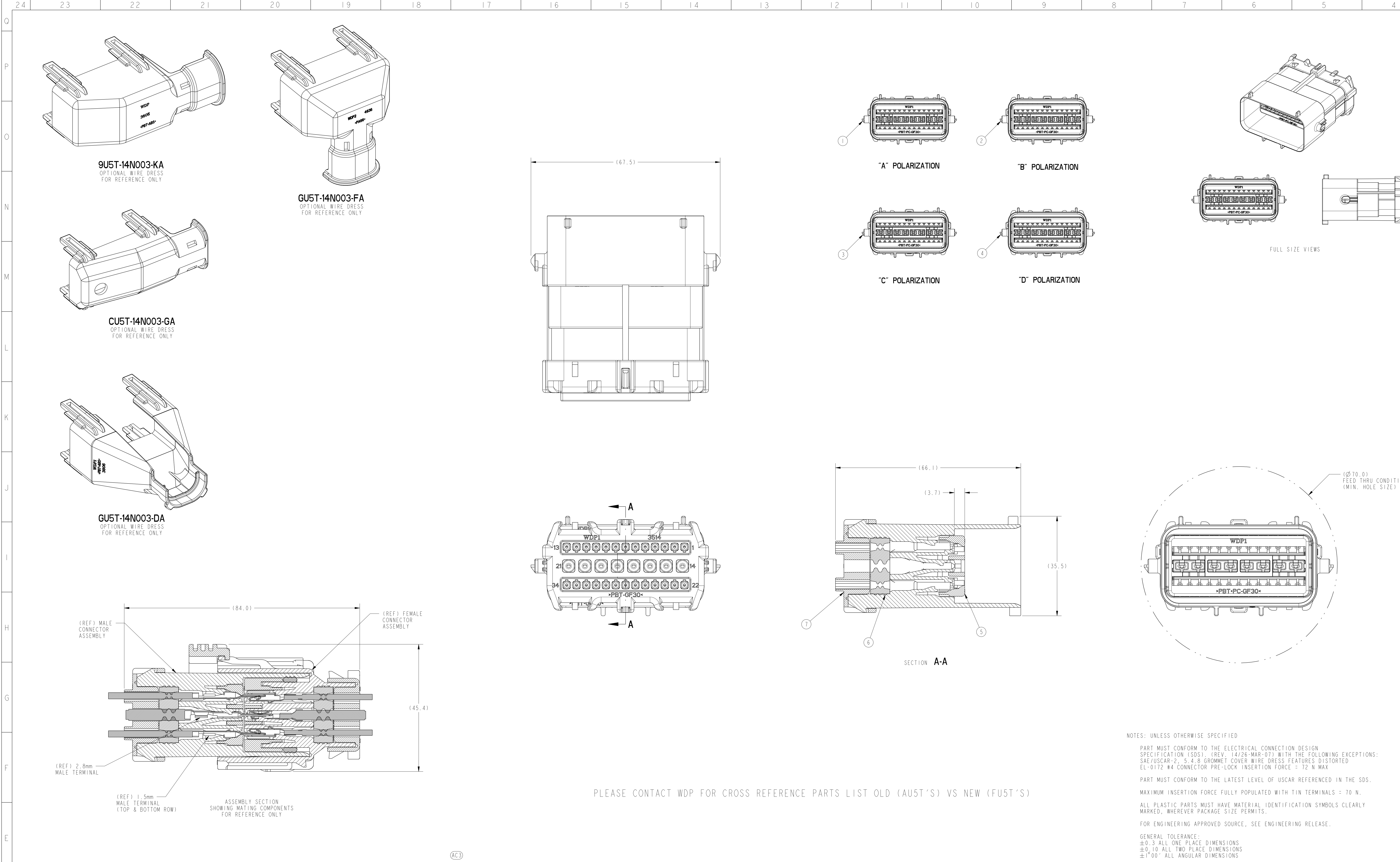
Material **PBT-GF30**
 Insp. Date **07/01/15**
 Insp. By **Stephanie Leonard**

Dim.	Specification	Tol. ±	Lo Lim	Hi Lim	Sample Number									
					1	2	3	4	5					
2	(45.4)	---	---	---	45.53	45.50	45.52	45.51	45.50					
3	(67.5)	---	---	---	67.52	67.55	67.53	67.55	67.54					
4	(66.1)	---	---	---	66.20	66.18	66.21	66.22	66.19					
5	(3.7)	---	---	---	3.51	3.48	3.52	3.51	3.52					
6	(35.5)	---	---	---	34.80	34.84	34.85	34.82	34.83					
7	Material ID Note	---	---	---	Conforms	Conforms	Conforms	Conforms	Conforms					
8	R0.3 Max	---	---	---	0.30	0.30	0.30	0.30	0.30					
9	R0.5	0.3	---	---	0.50	0.50	0.50	0.50	0.50					
10	Parts free of imperfection	---	---	---	Conforms	Conforms	Conforms	Conforms	Conforms					
AU5T-14A459-AD, 60023512A01D (A-Pol)														
1	(84.0)	---	---	---	84.01	83.99	83.98	84.02	83.99					
2	(45.4)	---	---	---	45.53	45.50	45.52	45.51	45.50					
3	(67.5)	---	---	---	67.52	67.55	67.53	67.55	67.54					
4	(66.1)	---	---	---	66.20	66.18	66.21	66.22	66.19					
5	(3.7)	---	---	---	3.51	3.48	3.52	3.51	3.52					
6	(35.5)	---	---	---	34.80	34.84	34.85	34.82	34.83					
7	Material ID Note	---	---	---	Conforms	Conforms	Conforms	Conforms	Conforms					
8	R0.3 Max	---	---	---	0.30	0.30	0.30	0.30	0.30					
9	R0.5	0.3	---	---	0.50	0.50	0.50	0.50	0.50					
10	Parts free of imperfection	---	---	---	Conforms	Conforms	Conforms	Conforms	Conforms					
AU5T-14A459-BD, 60023512B01D (B-Pol)														
1	(84.0)	---	---	---	84.03	84.03	84.00	83.98	83.96					
2	(45.4)	---	---	---	45.51	45.50	45.52	45.48	45.49					
3	(67.5)	---	---	---	67.50	67.56	67.55	67.52	67.53					
4	(66.1)	---	---	---	66.18	66.15	66.20	66.23	66.20					
5	(3.7)	---	---	---	3.55	3.52	3.51	3.53	3.52					
6	(35.5)	---	---	---	34.82	34.83	34.82	34.85	34.81					
7	Material ID Note	---	---	---	Conforms	Conforms	Conforms	Conforms	Conforms					
8	R0.3 Max	---	---	---	0.30	0.30	0.30	0.30	0.30					
9	R0.5	0.3	---	---	0.50	0.50	0.50	0.50	0.50					
10	Parts free of imperfection	---	---	---	Conforms	Conforms	Conforms	Conforms	Conforms					

Layout Rev Level

Note: Print revisions after current layout were part number related. Does not effect dimensional data.

Note: This print shows the location of the ballooned dimensions.



PLEASE CONTACT WDP FOR CROSS REFERENCE PARTS LIST OLD (AU5T'S) VS NEW (FU5T'S)

REFERENCE - APPLICABLE COMPONENTS

DESCRIPTION	FORD COMPONENT PART NUMBER	SUPPLIER	SUPPLIER COMPONENT PART NUMBER	MATERIAL / SPECIFICATION	APPLICABLE WIRE SIZES	FINISHED WIRE DIAMETER	FORD COMPONENT MATING PART NUMBER	SUPPLIER COMPONENT PART NUMBER
TERMINAL - MALE (Sn) - 2.8mm	8U5T-14421-BA	DELPHI	10762774	COPPER ALLOY / TIN PLATE	10 - 12 AWG 3.0 - 4.0 mm	1.90 - 4.20	XF2T-14474-BA	10762802
TERMINAL - MALE (Sn) - 2.8mm	8U5T-14421-CA	DELPHI	10757692	COPPER ALLOY / TIN PLATE	14 - 16 AWG 1.5 - 2.5 mm		F8VB-14474-AA	10762803
TERMINAL - MALE (Sn) - 2.8mm	8U5T-14421-DA	DELPHI	10762775	COPPER ALLOY / TIN PLATE	18 AWG 1.0 mm		F8VB-14474-BA	10757690
TERMINAL - MALE (Sn) - 1.5mm	2L1T-14421-CA	MOLEX	33000-1002	COPPER ALLOY / TIN PLATE	16 AWG 1.0 mm	1.40 - 2.34	7C3T-14474-EA	33012-3001
TERMINAL - MALE (Sn) - 1.5mm	2L1T-14421-BA	MOLEX	33000-1003	COPPER ALLOY / TIN PLATE	14 - 20 AWG 0.5 mm		7C3T-14474-DA	33012-3002
TERMINAL - MALE (Sn) - 1.5mm	BU5T-14421-HA	MOLEX	34781-1004	COPPER ALLOY / TIN PLATE	22 AWG 0.5 mm	1.20 - 1.40	7C3T-14474-CA	33012-3003
TERMINAL - MALE (Au) - 1.5mm	2L1T-14421-FA	MOLEX	33011-0004	COPPER ALLOY / GOLD PLATE	0.35 mm		BU5T-14474-UA	34780-1004
TERMINAL - MALE (Au) - 1.5mm	2L1T-14421-EA	MOLEX	33011-0006	COPPER ALLOY / GOLD PLATE	16 AWG 1.0 mm	1.40 - 2.34	7C3T-14474-HA	33001-3003
TERMINAL - MALE (Ag) - 1.5mm	7U5T-14421-BA	MOLEX	33011-3002	COPPER ALLOY / SILVER PLATE	18 - 20 AWG 0.5 mm		7C3T-14474-FA	33001-3004
TERMINAL - MALE (Ag) - 1.5mm	7U5T-14421-AA	MOLEX	33011-3001	COPPER ALLOY / SILVER PLATE	22 AWG 0.5 mm	1.40 - 2.34	7C3T-14474-GA	33001-3005
TERMINAL - MALE (Ag) - 1.5mm	7U5T-14421-BA	MOLEX	33011-3002	COPPER ALLOY / SILVER PLATE	16 AWG 1.0 mm		7C3T-14474-UA	33001-5001
TERMINAL - MALE (Ag) - 1.5mm	7U5T-14421-AA	MOLEX	33011-3001	COPPER ALLOY / SILVER PLATE	18 - 20 AWG 0.5 mm	1.40 - 2.34	7C3T-14474-TA	33001-5002
TERMINAL - MALE (Ag) - 1.5mm	7U5T-14421-AA	MOLEX	33011-3001	COPPER ALLOY / SILVER PLATE	22 AWG 0.5 mm		7C3T-14474-SA	33001-5003
WIRE DRESS (LEFT OR RIGHT ROUTE)	9U5T-14N003-KA	WDP	3605-02-001	>PBT>ABS<	N/A	N/A	N/A	N/A
WIRE DRESS (LEFT OR RIGHT ROUTE)	CU5T-14N003-GA	WDP	4018-02-001	>PBT>ABS<	N/A	N/A	N/A	N/A
WIRE DRESS (STRAIGHT ROUTE)	GU5T-14N003-DA	WDP	3806-02-001	>PBT>ABS<	N/A	N/A	N/A	N/A
WIRE DRESS (UP OR DOWN ROUTE)	GU5T-14N003-FA	WDP	4836-02-001	>PBT>ABS<	N/A	N/A	N/A	N/A

TEMPERATURE RANGE -40°C TO 125°C (CLASS #3)					FORD ASSEMBLY NUMBER		WDP ASSEMBLY NUMBER		FORD MATING COMPONENT		WDP MATING COMPONENT	
ITEM	DESCRIPTION	COLOR	WDP COMPONENT PART NUMBER	MATERIAL I.D. SYMBOL	NUMBER OF ITEMS REQUIRED							
1	HOUSING (A POL.)	BLACK	3512A-00-001	>PBT-GF30<	I							
2	HOUSING (B POL.)	GRAY	3512B-00-001	>PBT-GF30<	I							
3	HOUSING (C POL.)	BROWN	3512C-00-001	>PBT-GF30<		I						
4	HOUSING (D POL.)	GREEN	3512D-00-001	>PBT-GF30<			I					
5	SPACER	NATURAL	3513-00-002	>PBT+PC-GF30<	I	I	I	I	I	I	I	I
6	GROMMET	RED	3512-51-002	>VMC<	I	I	I	I	I	I	I	I
7	GROMMET COVER	GRAY	3514B-00-001	>PBT-GF30<	I	I	I	I	I	I	I	I

NOTES: UNLESS OTHERWISE SPECIFIED

PART MUST CONFORM TO THE ELECTRICAL CONNECTION DESIGN SPECIFICATION (SDS) (REV. 14/26-MAR-07) WITH THE FOLLOWING EXCEPTIONS:
SAE/J595-2-2, 4 & 8 GROMMET COVER WIRE DRESS FEATURES DISTORTED
EL-0172 #4 CONNECTOR PRE-LOCK INSERTION FORCE = 72 N MAX

PART MUST CONFORM TO THE LATEST LEVEL OF USCAR REFERENCED IN THE SDS.

MAXIMUM INSERTION FORCE FULLY POPULATED WITH TIN TERMINALS = 70 N.

ALL PLASTIC PARTS MUST HAVE MATERIAL IDENTIFICATION SYMBOLS CLEARLY MARKED, WHEREVER PACKAGE SIZE PERMITS.

FOR ENGINEERING APPROVED SOURCE, SEE ENGINEERING RELEASE.

GENERAL TOLERANCE:
±0.3 ALL ONE PLACE DIMENSIONS
±0.10 ALL TWO PLACE DIMENSIONS
±1° 00' ALL ANGULAR DIMENSIONS

FEED THROUGH CONDITION (I.E. MIN HOLE SIZE) TO GIVE 2MM TOTAL CLEARANCE ACROSS THE MAXIMUM DIAMETER.

0.3mm MAXIMUM RADIUS PERMISSIBLE ON EDGES SHOWN AS SHARP FOR PLASTIC PARTS.

ALL RADIUS R0.5.

PARTS ARE TO BE FREE OF SCRATCHES, DISCOLORATION, SALT RESIDUE OR OTHER IMPERFECTIONS THAT MAY AFFECT FUNCTION OR FIT OF PART.

DRAWING CONFORMS TO AXP-(1404/T406)-001 REVISION C DATED 8-8-03.



WDP

Western Diversified Plastics

Phone: (269) 668-3393

REFERENCE

PART MUST COMPLY WITH RESTRICTED SUBSTANCE MANAGEMENT STANDARD WSS-M99P9999-A1 TO SAFEGUARD HEALTH, SAFETY AND THE ENVIRONMENT

DRAFTED IN ACCORDANCE WITH FORD MOTOR COMPANY ENGINEERING CAD AND DRAFTING STANDARDS VERSION 28.1

CAD TYPE: X-PROE
OPER. NO.:
DESIGN: FINSTROM
CHECKED: ENSING
SCALE: 2:1

CAD LOC.: TCE
UNIT:
DETAIL: FINSTROM
SAFETY:
DATE: 20130114

CAD FILE:
DRAWING: FU5T-14A624-CC
TITLE: SLV ASY WIR CONN MLE
DIVISION: PLANT

DTMC IS MASTER

SHT 1 OF 5

FORD MOTOR COMPANY

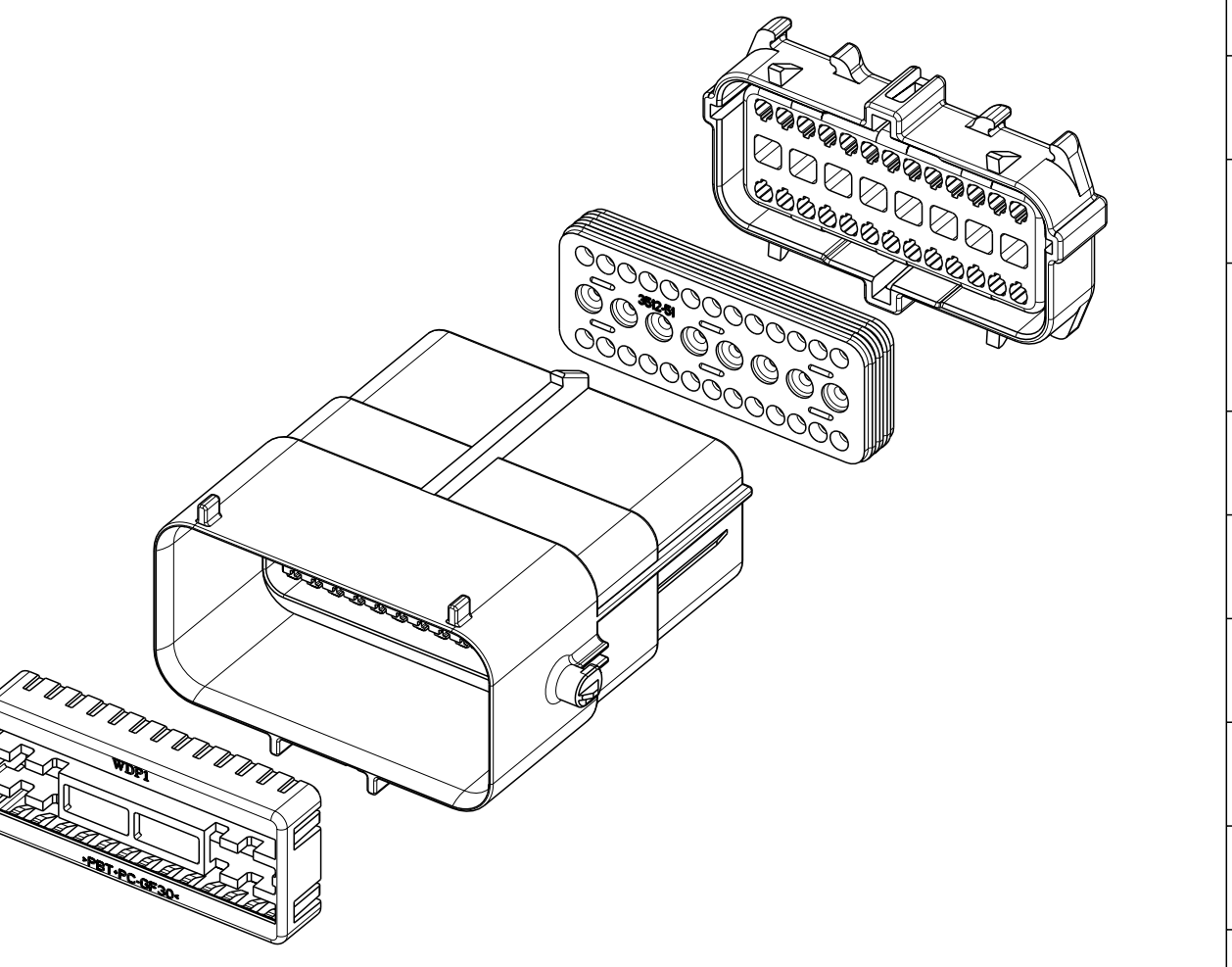
3RD ANGLE PROJ

DIMENSIONS ARE IN MILLIMETERS

PRINTED COPIES ARE UNCONTROLLED

[illegible]

Western Diversified Plastics Phone: (269) 668-3393					
REFERENCE					
PART MUST COMPLY WITH RESTRICTED SUBSTANCE MANAGEMENT STANDARD WSS-M999999-AT TO SAFEGUARD HEALTH, SAFETY AND THE ENVIRONMENT					
DRAFTED IN ACCORDANCE WITH FORD MOTOR COMPANY ENGINEERING CAD AND DRAFTING STANDARDS VERSION 28.1		3RD ANGLE PROJ DIMENSIONS ARE IN MILLIMETERS			
CAD TYPE X-PROE	CAD LOC. TCE	CAD FILE	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">DTMC</td> </tr> <tr> <td style="text-align: center;">IS MASTER</td> </tr> </table>	DTMC	IS MASTER
DTMC					
IS MASTER					
OFR. NO.	UNIT	DRAWING			
		FU5T-14A624-CC			
DESIGN FINSTRM	DETAIL FINSTRM	TITLE	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">SHT 5</td> </tr> <tr> <td style="text-align: center;">OF 5</td> </tr> </table>	SHT 5	OF 5
SHT 5					
OF 5					
CHECKED ENSG	SAFETY	SLV ASY WIR CONN MLE			
SCALE	DATE	DIVISION			
1:1	20130114	PLANT			
FORD MOTOR COMPANY					



Product Quality Documentation

LETTER OF CERTIFICATION

Customer Order Number	Customer Part Number	Sales Order Number	Material,Grade and Color	
10204.04	MAT-009-BLK-BT	4917899-001	VALOX	K4560 BK1066
Lot Number	Shipped From	Date Shipped	Shippers Number	
CV9FB7	SABIC IP - MT VERNON	05/02/16		

It is hereby certified that the product indicated above conforms to the specification listed herein for the designated material. This certification is subject to our standard conditions of sale applying to products sold by SABIC Innovative Plastics. This document shall not be reproduced except in full without written approval.	Specification
	WSK-M4D725-A2
	Specification Originator
	FORD
	Specification-Comments

TEST	REFERENCE	REV	REQUIREMENT	(ENGLISH)	(METRIC)
LOT DATA(CONDITIONING TIME MAY BE SHORTER THAN ASTM/ISO REQUIREMENTS):					
MELT VOLUME RATE	ISO 1133		27.3-53.7 CC/10 MIN		34.8 CC/10 MIN
GLASS PERCENT			26.6-32.2 %	30.6 %	
ASH CONTENT - ISO	ISO 3451/2		26.6-32.2 %	30.6 %	
DATE OF LAST AUDIT: 01/15					
PRODUCT AUDIT DATA(COMPLIANT WITH ASTM/ISO CONDITIONING REQUIREMENTS):					
CHARPY IMPACT @ 23 C	ISO 179		1.9 K-J/METER 2 MINIMUM		9.1 K-J/METER
DENSITY	ISO 1183		1.47-1.51 G/CC		1.50 G/CC
	WATER BATH 23 +/- 2 C				
HEAT DEFLECTION 1.82MPA	ISO 75		193 DEG C MINIMUM	398 DEG F	203 DEG C
TENSILE STRENGTH @BREAK	ISO 527		84.0 MPA MINIMUM	15,809 PSI	109.0 MPA
TENSILE MODULUS	ISO R527		8,446 MPA MINIMUM	1,234,145 PSI	8,509 MPA

WOODIE PUNTNEY

Quality Manager

JESSICA ZIRKELBACH

Manufacturing Manager

If you have any questions concerning this, please contact:

SABIC INNOVATIVE PLASTICS

1-800-PLASTIC

CUST FAX NUMBER: 2694887374

BONNIE NICHOLS
WESTERN DIVERSIFIED PLAST
53150 NORTH MAIN STREET
MATTAWAN MI 49071

Product Quality Documentation

CERTIFICATE OF COMPLIANCE

Customer Order Number	Customer Part Number	Sales Order Number	Material,Grade and Color	
10204.04	MAT-009-BLK-BT	4917899-001	VALOX	K4560 BK1066
Lot Number	Shipped From	Date Shipped	Shippers Number	
CV9FB7	SABIC IP - MT VERNON	05/02/16		

<div>It is hereby certified that the product indicated above conforms to our standard internal specifications for the designated material. This certification is subject to our standard conditions of sale applying to products sold by SABIC Innovative Plastics.</div> <div>This document shall not be reproduced except in full without written approval.</div>	Specification
	Specification Originator
	Specification-Comments

TEST	REFERENCE	REV	REQUIREMENT	(ENGLISH)	(METRIC)
LOT DATA(CONDITIONING TIME MAY BE SHORTER THAN ASTM/ISO REQUIREMENTS):					
MELT VOLUME RATE	ISO 1133		27.3-53.7 CC/10 MIN		34.8 CC/10 MIN
GLASS PERCENT			28.0-32.0 %	30.6 %	

WOODIE PUNTNEY

Quality Manager

JESSICA ZIRKELBACH

Manufacturing Manager

If you have any questions concerning this, please contact:

SABIC INNOVATIVE PLASTICS

1-800-PLASTIC

CUST FAX NUMBER: 2694887374

BONNIE NICHOLS
WESTERN DIVERSIFIED PLAST
53150 NORTH MAIN STREET
MATTAWAN MI 49071

Product Quality Documentation

LETTER OF CERTIFICATION

Customer Order Number	Customer Part Number	Sales Order Number	Material,Grade and Color	
10666.01	MAT-003-NAT-VIR	4943300-001	VALOX	508 1001
Lot Number	Shipped From	Date Shipped	Shippers Number	
CV9DR7	SABIC IP - MT VERNON	04/28/16		

It is hereby certified that the product indicated above conforms to the specification listed herein for the designated material. This certification is subject to our standard conditions of sale applying to products sold by SABIC Innovative Plastics. This document shall not be reproduced except in full without written approval.	Specification
	WSK-M4D790-A
	Specification Originator
	FORD
	Specification-Comments

TEST	REFERENCE	REV	REQUIREMENT	(ENGLISH)	(METRIC)
LOT DATA(CONDITIONING TIME MAY BE SHORTER THAN ASTM/ISO REQUIREMENTS):					
GLASS PERCENT			28.0-32.0 %	30.3 %	
MELT FLOW INDEX	ASTM D1238		7.5-14.0 G/10 MIN		11.6 G/10 MIN
DATE OF LAST AUDIT: 01/15					
PRODUCT AUDIT DATA(COMPLIANT WITH ASTM/ISO CONDITIONING REQUIREMENTS):					
IZOD IMPACT @ -40C	ISO 180		3.40 K-J/METER 2 MINIMUM	1.45 FT-LB/IN	9.70 K-J/METER
IZOD IMPACT @ 23C	ISO 180		4.40 K-J/METER 2 MINIMUM	1.56 FT-LB/IN	10.40 K-J/METER
DENSITY	ISO 1183		1.47-1.53 G/CC		1.48 G/CC
	WATER BATH 23 +/- 2 C				
FLEXURAL MODULUS - ISO	ISO 178		841,000 PSI MINIMUM	1,252,887 PSI	8.641 GPA
HEAT DEFLECTION 1.82MPA	ISO 75		145 DEG C MINIMUM	338 DEG F	170 DEG C
TENSILE STRENGTH @BREAK	ISO 527		95.0 MPA MINIMUM	19,885 PSI	137.1 MPA

WOODIE PUNTNEY

Quality Manager

JESSICA ZIRKELBACH

Manufacturing Manager

If you have any questions concerning this, please contact:

SABIC INNOVATIVE PLASTICS

1-800-PLASTIC

CUST FAX NUMBER: 2694887374

BONNIE NICHOLS
WESTERN DIVERSIFIED PLAST
53150 NORTH MAIN STREET
MATTAWAN MI 49071

Product Quality Documentation

LETTER OF CERTIFICATION

Customer Order Number	Customer Part Number	Sales Order Number	Material,Grade and Color	
10666.01	MAT-003-NAT-VIR	4943300-001	VALOX	508 1001
Lot Number	Shipped From	Date Shipped	Shippers Number	
CV9DR7	SABIC IP - MT VERNON	04/28/16		

It is hereby certified that the product indicated above conforms to the specification listed herein for the designated material. This certification is subject to our standard conditions of sale applying to products sold by SABIC Innovative Plastics. This document shall not be reproduced except in full without written approval.	Specification
	MS-DB400 CPN2892 BK1066, CPN2965 NON-MATCHED COLOR
	Specification Originator
	DIAMLER/CHRYSLER
	Specification-Comments
	ASTM D5927 TPES051 G30

TEST	REFERENCE	REV	REQUIREMENT	(ENGLISH)	(METRIC)
LOT DATA(CONDITIONING TIME MAY BE SHORTER THAN ASTM/ISO REQUIREMENTS):					
GLASS PERCENT			28.0-32.0 %	30.3 %	
DATE OF LAST AUDIT: 01/15					
PRODUCT AUDIT DATA(COMPLIANT WITH ASTM/ISO CONDITIONING REQUIREMENTS):					
CHARPY IMPACT @ 23 C	ISO 179		6.0 K-J/METER 2 MINIMUM		11.5 K-J/METER
DENSITY	ISO 1183		1.46-1.54 G/CC		1.48 G/CC
	WATER BATH 23 +/- 2 C				
HEAT DEFLECTION 1.82MPA	ISO 75		140 DEG C MINIMUM	338 DEG F	170 DEG C
TENSILE STRENGTH @BREAK	ISO 527		95.0 MPA MINIMUM	19,885 PSI	137.1 MPA
TENSILE MODULUS	ISO R527		8,000 MPA MINIMUM	1,324,650 PSI	9,133 MPA

WOODIE PUNTNEY
Quality Manager

JESSICA ZIRKELBACH
Manufacturing Manager

If you have any questions concerning this, please contact:

SABIC INNOVATIVE PLASTICS
1-800-PLASTIC

CUST FAX NUMBER: 2694887374
BONNIE NICHOLS
WESTERN DIVERSIFIED PLAST
53150 NORTH MAIN STREET
MATTAWAN MI 49071

Product Quality Documentation

LETTER OF CERTIFICATION

Customer Order Number	Customer Part Number	Sales Order Number	Material,Grade and Color	
10666.01	MAT-003-NAT-VIR	4943300-001	VALOX	508 1001
Lot Number	Shipped From	Date Shipped	Shippers Number	
CV9DR7	SABIC IP - MT VERNON	04/28/16		

It is hereby certified that the product indicated above conforms to the specification listed herein for the designated material. This certification is subject to our standard conditions of sale applying to products sold by SABIC Innovative Plastics. This document shall not be reproduced except in full without written approval.	Specification
	GMP.PBT.009
	Specification Originator
	GENERAL MOTORS
	Specification-Comments

TEST	REFERENCE	REV	REQUIREMENT	(ENGLISH)	(METRIC)
LOT DATA(CONDITIONING TIME MAY BE SHORTER THAN ASTM/ISO REQUIREMENTS):					
GLASS PERCENT			28.0-32.0 %	30.3 %	
MELT FLOW INDEX	ASTM D1238		8.0-13.0 G/10 MIN		11.6 G/10 MIN
				DATE OF LAST AUDIT: 01/15	
PRODUCT AUDIT DATA(COMPLIANT WITH ASTM/ISO CONDITIONING REQUIREMENTS):					
CHARPY IMPACT @ 23 C	ISO 179		10.1 K-J/METER 2 MINIMUM		11.5 K-J/METER
DENSITY	ISO 1183		1.44-1.54 G/CC		1.48 G/CC
WATER BATH 23 +/- 2 C					
HEAT DEFLECTION 1.82MPA	ISO 75		143-192 DEG C	338 DEG F	170 DEG C
TENSILE STRENGTH @BREAK	ISO 527		93.0-145.0 MPA	19,885 PSI	137.1 MPA
TENSILE MODULUS	ISO R527		8,154-10,885 MPA	1,324,650 PSI	9,133 MPA

WOODIE PUNTNEY

Quality Manager

JESSICA ZIRKELBACH

Manufacturing Manager

If you have any questions concerning this, please contact:

SABIC INNOVATIVE PLASTICS

1-800-PLASTIC

CUST FAX NUMBER: 2694887374

BONNIE NICHOLS
WESTERN DIVERSIFIED PLAST
53150 NORTH MAIN STREET
MATTAWAN MI 49071

Product Quality Documentation

CERTIFICATE OF COMPLIANCE

Customer Order Number	Customer Part Number	Sales Order Number	Material,Grade and Color	
10666.01	MAT-003-NAT-VIR	4943300-001	VALOX	508 1001
Lot Number	Shipped From	Date Shipped	Shippers Number	
CV9DR7	SABIC IP - MT VERNON	04/28/16		

<div>It is hereby certified that the product indicated above conforms to our standard internal specifications for the designated material. This certification is subject to our standard conditions of sale applying to products sold by SABIC Innovative Plastics.</div> <div>This document shall not be reproduced except in full without written approval.</div>	Specification
	Specification Originator
	Specification-Comments

TEST	REFERENCE	REV	REQUIREMENT	(ENGLISH)	(METRIC)
LOT DATA(CONDITIONING TIME MAY BE SHORTER THAN ASTM/ISO REQUIREMENTS):					
MELT VOLUME RATE	ISO 1133		6.0-9.7 CC/10 MIN		7.5 CC/10 MIN
GLASS PERCENT			28.0-32.0 %	30.3 %	
DATE OF LAST AUDIT: 04/16					
PRODUCT AUDIT DATA(COMPLIANT WITH ASTM/ISO CONDITIONING REQUIREMENTS):					
NOTCHED IZOD (RT)	ASTM D256		1.3 FT-LB/IN MINIMUM	1.4 FT-LB/IN	75 J/M
SPECIFIC GRAVITY	ASTM D792		INFORMATION ONLY	1.51	
ADDITIONAL SPECIFICATION COMMENTS:					

WOODIE PUNTNEY

Quality Manager

JESSICA ZIRKELBACH

Manufacturing Manager

If you have any questions concerning this, please contact:

SABIC INNOVATIVE PLASTICS

1-800-PLASTIC

CUST FAX NUMBER: 2694887374

BONNIE NICHOLS
WESTERN DIVERSIFIED PLAST
53150 NORTH MAIN STREET
MATTAWAN MI 49071

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005SABIC INNOVATIVE PLASTICS MT VERNON, LLC¹

MC & AT

1 Lexan Lane, Building 1

Mount Vernon, IN 47620

Kim Bailey Phone: (812) 831-5213

MECHANICAL

Valid To: July 31, 2017

Certificate Number: 0956.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on plastics:

Test Method(s):Test Name:

ASTM D256; ISO 180

Pendulum Impact Resistance (Notched Izod)

ASTM D618

Conditioning of Plastic Specimens

ASTM D638; ISO 527-1, 2

Tensile Properties

ASTM D648; ISO 75-1, 2

Deflection Temperature Under Flexural Load

ASTM D790; ISO 178

Flexural Properties

ASTM D792; ISO 1183-1 (Method A)

Density and Specific Gravity (Relative Density) by Displacement

ASTM D1238; ISO 1133

Flow Rates of Thermoplastics by Extrusion Plastometer

ASTM D1525; ISO 306

Vicat Softening Temperature

ASTM D3418; ISO 11357-1, 2, 3

Transition Temperatures of Polymers by Thermal Analysis

ASTM D3763

High-Speed Puncture Properties

ASTM D5630 (Procedure B)

Ash Content

ASTM E168

Practice for General Techniques of Infrared Qualitative Analysis

ASTM E831; ISO 11359-1, 2

Linear Thermal Expansion by TMA

ISO 179-1

Charpy Impact

Test Method(s):

ISO 3795

ISO 11358

Test Name:

Flammability

Thermogravimetry (TG) of Polymers

¹This accreditation covers testing performed at the main laboratory listed above, and the following satellite laboratory listed below:

SABIC INNOVATIVE PLASTICS LLC
Ultem QA Lab
1 Lexan Lane, Building 62
Mount Vernon, IN 47620-9367
Kim Bailey Phone: (812) 831-4714

Test Method(s):

ASTM D256

ASTM D618

ASTM D638

ASTM D648

ASTM D790

ASTM D792

ASTM D1238

ASTM D5630 (Procedure B)

Test Name:

Pendulum Impact Resistance (Notched Izod)

Conditioning of Plastic Specimens

Tensile Properties

Deflection Temperature Under Flexural Load

Flexural Properties

Density and Specific Gravity (Relative Density) by Displacement

Flow Rates of Thermoplastics by Extrusion Plastometer

Ash Content



Accredited Laboratory

A2LA has accredited

SABIC INNOVATIVE PLASTICS MT VERNON, LLC

Mount Vernon, IN

for technical competence in the field of

Mechanical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).



Presented this 25th day of August 2015.

A handwritten signature in black ink, reading 'Peter M. Meyer'.

President & CEO
For the Accreditation Council
Certificate Number 0956.01
Valid to July 31, 2017

For the tests to which this accreditation applies, please refer to the laboratory's Mechanical Scope of Accreditation.

Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2008

This is to certify that:

Sabic Innovative Plastics LLC
One Lexan Lane
Mount Vernon
Indiana
47620-9364
USA

Holds Certificate No:

FM 93268

and operates a Quality Management System which complies with the requirements of ISO 9001:2008 for the following scope:

The design and development of new or modified processes and thermoplastic products, the manufacture and supply of commercialized thermoplastic resins and compounds produced at the Mt. Vernon Sabic site sold under the following trade names: Lexan, Cycloy, Valox, Xenoy, Ultem, Xylex and Extem. Each of these products/resins are produced in various colors and various properties and are supplied against internal and/or customer agreed specifications.

For and on behalf of BSI:



Gary Fenton, Global Assurance Director

Originally registered: 01/19/2005

Latest Issue: 11/13/2013

Expiry Date: 12/12/2016



Page: 1 of 1

...making excellence a habit.™

Polyram Plastic Industries LTD

Moshav Ram On

M.P. Gilboa 1920500

Israel

Tel.: 972-4-6599900, Fax: 972-4-6499763

Company Number: 515251593

VAT Number: 515251593

Withheld Tax File: 902248582

URL: <http://www.polyram-group.com>E-mail: mail@polyram-group.com

Certificate of Analysis

Grade Name: RAMSTER PF312G6GR285
Customer PN#: MAT-095-GRY
Description: PBT GF30 GREY
LOT Number: 16010430
LOT Date: 02/20/16
Color: GREY 285
Customer: WESTERN DIVERSIFIED PLASTICS

Properties	Test Method	Units	Designated Min	Designated Max	AVG RESULTS
Determination of ASH	ISO 3451-1	%	28.000	32.000	29.443
MFI (250/2, 16kg)	ISO 1133	g/10mi	13.000	28.000	17.975
NOTCHED IZOD IMPACT	ISO 180	kJ/m ²	5.000	---	8.100
TENSILE STRENGTH	ISO 527-1-2	MPa	115.000	---	120.857
TENSILE MODULUS	ISO 527-1-2	MPa	7,500.000	---	9,371.429

Please note that specifications are re-evaluated on a regular basis.

No. 86 Version A

We therefore reserve the right to modify any specification, results and tolerances.

The test values reported are means of individual test values determined on samples taken in accordance with the testing plan of the day of production.

Thank you for deciding on Polyram product.

Sagit Gal
Polyram Plastic Industries LTD



Certificate of Registration

This certificate has been awarded to

Polyram Ram-On Industries

Ram -On, 1920500, Israel

in recognition of the organization's Quality Management System which complies with

ISO/TS 16949:2009

The scope of activities covered by this certificate is defined below

Design and Manufacture of Thermoplastic Raw Material Compounds

Certificate Number:

61487/A/0001/SM/En

Issue No:

1

Date of Issue:

16 July 2014

Expiry Date:

15 July 2017


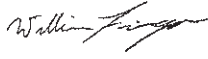
IATF No:


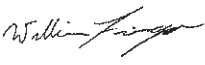
0188612


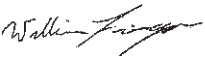
Issued by:


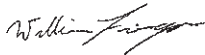
On behalf of the Schemes Manager



 Dow Corning Corporation 2200 W. Salzburg Rd. PO Box 994 MIDLAND MI 48686-0994 Telephone: (800) 248-2481 Fax: (989) 496-6974	Certificate of Analysis		Page 2 of 5		
	Fax(Ship-to: 1162656)		Date Generated 18Aug2015		
	Delivery Number 8610834650	Item Number 000010	Delivery Date 20Aug2015		
	Sales Order Number 7112851	Item Number 000010	Sales Order Date 31Jul2015		
	Purchase Order Number 0034308		PO Date		
Ship-to: 1162656 Quality Assurance Department FOREST CITY TECHNOLOGIES 232 MAPLE STREET WELLINGTON OH 44090	Our Material 4124271 SILASTIC(R) HCM 18-1265 SL RED				
	Customer Material				
	Batch 0008382260		Shelf Life Expiration Date 13Feb2016		
	Delivery Quantity 2051.403 lb		Date of Manufacture 17Aug2015		
Characteristic		Value	Unit of Measure	Lower Limit	Upper Limit
APPEARANCE		Pass			
RHEOMETER CONDITIONS		MDR, 1°, 6 MIN, 350°F			
MOVING DIE RHEOMETER, S' MAX.	5.22	LbInch	0.00	50.00	
MOVING DIE RHEOMETER, S' MIN.	0.79	LbInch	0.00	10.00	
MOVING DIE RHEOMETER, TC-50	0.65	min	0.00	10.00	
MOVING DIE RHEOMETER, TC-90	1.14	min	0.00	10.00	
MOVING DIE RHEOMETER, TS-2	0.62	min	0.00	5.00	
PRESS CURE		10 MINUTES @ 350°F			
SPECIAL INSTRUCTIONS		RUN DUROMETER ON CONVELOADER			
COLOUR		Pass			
LUBRICANT BLEED		Pass			
SPECIFIC GRAVITY	1.051		1.040	1.100	
DUROMETER SHORE A (GENERAL)	18.0	Shore A	13.0	22.0	
TENSILE STRENGTH (GENERAL)	3.7	MPa	2.0		
ELONGATION (GENERAL)	838	%	500		
MODULUS 100% (GENERAL MPA)	0.4	MPa	0.2	0.6	
TEAR DIE C (GENERAL KNM)	14.18	kN/m	3.00		
This is to certify that the above designated material has been tested and did comply with the listed specifications (with listed exceptions) when supplied in original container. It is our best technical judgement that the material will meet the specification number (if listed above) but additional testing and verification has not been completed. The material is subject to the conditions listed on the Dow Corning STI invoice. The above is a copy of information on file. The lot acceptance data are available for examination.					
 William Fiengo Quality Lab Manager					

 <p>Dow Corning Corporation 2200 W. Salzburg Rd. PO Box 994 MIDLAND MI 48686-0994</p> <p>Telephone: (800) 248-2481 Fax: (989) 496-6974</p>	Certificate of Analysis		Page 3 of 5		
	Fax(Ship-to: 1162656)		Date Generated 18Aug2015		
	Delivery Number 8610834650	Item Number 000010	Delivery Date 20Aug2015		
	Sales Order Number 7112851	Item Number 000010	Sales Order Date 31Jul2015		
	Purchase Order Number 0034308		PO Date		
Ship-to: 1162656 Quality Assurance Department FOREST CITY TECHNOLOGIES 232 MAPLE STREET WELLINGTON OH 44090	Our Material 4124271 SILASTIC(R) HCM 18-1265 SL RED				
	Customer Material				
	Batch 0008382263		Shelf Life Expiration Date 13Feb2016		
	Delivery Quantity 2051.403 lb		Date of Manufacture 17Aug2015		
Characteristic		Value	Unit of Measure	Lower Limit	Upper Limit
APPEARANCE		Pass			
RHEOMETER CONDITIONS		MDR, 1°, 6 MIN, 350°F			
MOVING DIE RHEOMETER, S' MAX.	5.99	LbInch	0.00	50.00	
MOVING DIE RHEOMETER, S' MIN.	1.04	LbInch	0.00	10.00	
MOVING DIE RHEOMETER, TC-50	0.62	min	0.00	10.00	
MOVING DIE RHEOMETER, TC-90	1.19	min	0.00	10.00	
MOVING DIE RHEOMETER, TS-2	0.57	min	0.00	5.00	
PRESS CURE	10 MINUTES @ 350°F				
SPECIAL INSTRUCTIONS	RUN DUROMETER ON CONVELOADER				
COLOUR	Pass				
LUBRICANT BLEED	Pass				
SPECIFIC GRAVITY	1.044		1.040	1.100	
DUROMETER SHORE A (GENERAL)	17.0	Shore A	13.0	22.0	
TENSILE STRENGTH (GENERAL)	4.4	MPa	2.0		
ELONGATION (GENERAL)	908	%	500		
MODULUS 100% (GENERAL MPA)	0.4	MPa	0.2	0.6	
TEAR DIE C (GENERAL KNM)	15.43	kN/m	3.00		
<p>This is to certify that the above designated material has been tested and did comply with the listed specifications (with listed exceptions) when supplied in original container. It is our best technical judgement that the material will meet the specification number (if listed above) but additional testing and verification has not been completed. The material is subject to the conditions listed on the Dow Corning STI invoice. The above is a copy of information on file. The lot acceptance data are available for examination.</p>					
 William Fiengo Quality Lab Manager					

 Dow Corning Corporation 2200 W. Salzburg Rd. PO Box 994 MIDLAND MI 48686-0994 Telephone: (800) 248-2481 Fax: (989) 496-6974	Certificate of Analysis		Page 4 of 5	
Ship-to: 1162656 Quality Assurance Department FOREST CITY TECHNOLOGIES 232 MAPLE STREET WELLINGTON OH 44090	Fax(Ship-to: 1162656)		Date Generated 18Aug2015	
	Delivery Number 8610834650	Item Number 000010	Delivery Date 20Aug2015	
	Sales Order Number 7112851	Item Number 000010	Sales Order Date 31Jul2015	
	Purchase Order Number 0034308		PO Date	
	Our Material 4124271 SILASTIC(R) HCM 18-1265 SL RED			
Customer Material				
Batch 0008382264		Shelf Life Expiration Date 13Feb2016		
Delivery Quantity 2076.756 lb		Date of Manufacture 17Aug2015		
Characteristic	Value	Unit of Measure	Lower Limit	Upper Limit
APPEARANCE	Pass			
RHEOMETER CONDITIONS	MDR, 1°, 6 MIN, 350°F			
MOVING DIE RHEOMETER, S' MAX.	4.67	LbInch	0.00	50.00
MOVING DIE RHEOMETER, S' MIN.	0.73	LbInch	0.00	10.00
MOVING DIE RHEOMETER, TC-50	0.63	min	0.00	10.00
MOVING DIE RHEOMETER, TC-90	0.93	min	0.00	10.00
MOVING DIE RHEOMETER, TS-2	0.63	min	0.00	5.00
PRESS CURE	10 MINUTES @ 350°F			
SPECIAL INSTRUCTIONS	RUN DUROMETER ON CONVELOADER			
COLOUR	Pass			
LUBRICANT BLEED	Pass			
SPECIFIC GRAVITY	1.050		1.040	1.100
DUROMETER SHORE A (GENERAL)	18.0	Shore A	13.0	22.0
TENSILE STRENGTH (GENERAL)	4.8	MPa	2.0	
ELONGATION (GENERAL)	929	%	500	
MODULUS 100% (GENERAL MPA)	0.4	MPa	0.2	0.6
TEAR DIE C (GENERAL KNM)	14.49	kN/m	3.00	
This is to certify that the above designated material has been tested and did comply with the listed specifications (with listed exceptions) when supplied in original container. It is our best technical judgement that the material will meet the specification number (if listed above) but additional testing and verification has not been completed. The material is subject to the conditions listed on the Dow Corning STI invoice. The above is a copy of information on file. The lot acceptance data are available for examination.				
 William Fiengo Quality Lab Manager				

 Dow Corning Corporation 2200 W. Salzburg Rd. PO Box 994 MIDLAND MI 48686-0994 Telephone: (800) 248-2481 Fax: (989) 496-6974	Certificate of Analysis		Page 5 of 5	
Ship-to: 1162656 Quality Assurance Department FOREST CITY TECHNOLOGIES 232 MAPLE STREET WELLINGTON OH 44090	Fax(Ship-to: 1162656)		Date Generated 18Aug2015	
	Delivery Number 8610834650	Item Number 000010	Delivery Date 20Aug2015	
	Sales Order Number 7112851	Item Number 000010	Sales Order Date 31Jul2015	
	Purchase Order Number 0034308		PO Date	
	Our Material 4124271 SILASTIC(R) HCM 18-1265 SL RED			
	Customer Material			
	Batch 0008382265		Shelf Life Expiration Date 13Feb2016	
	Delivery Quantity 2101.007 lb		Date of Manufacture 17Aug2015	
Characteristic	Value	Unit of Measure	Lower Limit	Upper Limit
APPEARANCE	Pass			
RHEOMETER CONDITIONS	MDR, 1°, 6 MIN, 350°F			
MOVING DIE RHEOMETER, S' MAX.	6.11	LbInch	0.00	50.00
MOVING DIE RHEOMETER, S' MIN.	1.10	LbInch	0.00	10.00
MOVING DIE RHEOMETER, TC-50	0.65	min	0.00	10.00
MOVING DIE RHEOMETER, TC-90	1.16	min	0.00	10.00
MOVING DIE RHEOMETER, TS-2	0.60	min	0.00	5.00
PRESS CURE	10 MINUTES @ 350°F			
SPECIAL INSTRUCTIONS	RUN DUROMETER ON CONVELOADER			
COLOUR	Pass			
LUBRICANT BLEED	Pass			
SPECIFIC GRAVITY	1.051		1.040	1.100
DUROMETER SHORE A (GENERAL)	17.0	Shore A	13.0	22.0
TENSILE STRENGTH (GENERAL)	4.5	MPa	2.0	
ELONGATION (GENERAL)	901	%	500	
MODULUS 100% (GENERAL MPA)	0.4	MPa	0.2	0.6
TEAR DIE C (GENERAL KNM)	15.85	kN/m	3.00	
This is to certify that the above designated material has been tested and did comply with the listed specifications (with listed exceptions) when supplied in original container. It is our best technical judgement that the material will meet the specification number (if listed above) but additional testing and verification has not been completed. The material is subject to the conditions listed on the Dow Corning STI invoice. The above is a copy of information on file. The lot acceptance data are available for examination.				
 William Fiengo Quality Lab Manager				



SMITHERS
QUALITY ASSESSMENTS

CERTIFICATE OF APPROVAL

This is to Certify that the Quality Management System of:

Forest City Technologies, Inc.

299 Clay Street
Wellington, OH 44090

(Page 1 of 2; see Appendix)

has been assessed and approved by Smithers Quality Assessments, Inc., to
the following quality management system standards and requirements:

ISO 9001:2008 without Design

The Quality Management System is Applicable to:

The manufacture of sealing devices and molded products and the application of
sealants, coatings tapes and related services to both such as sorting/packing, and
delivery for the fastener, automotive, infant care and other industries.

Approval
Certificate Number: 97.127.1

Original Approval: May 7, 1997

Current Certificate: April 27, 2015

Certificate Expires: April 26, 2018



*The use of the accreditation mark indicates
accreditation in respect of those activities
covered by the above certificate number.*


on behalf of SQA - J. Michael Hochschwender, CEO

The approval is subject to the company maintaining its system to the required standards which will be monitored by
Smithers Quality Assessments, Inc., 425 W. Market St., Akron, Ohio 44303-2099, USA



APPENDIX A
TO THE CERTIFICATE
OF REGISTRATION NO. 97.127.1



Page 2 of 2

SMITHERS QUALITY ASSESSMENTS, INC.

Forest City Technologies, Inc.

299 Clay Street
Wellington, OH 44090

is certified by Smithers Quality Assessments, Inc. with regard to ISO 9001:2008 without design

In addition to the corporate office in Wellington, OH, the following sites have been assessed and found to be in compliance with the applicable requirements of ISO 9001:2008 without design utilizing a multi-site sampling approach.

Locations:

Forest City Technologies, Inc.
401 Magyar Street
Wellington, OH 44090

Forest City Technologies, Inc.
232 Maple Street
Wellington, OH 44090

Forest City Technologies, Inc.
22069 Fairgrounds Road
Wellington, OH 44090

Forest City Technologies, Inc.
892 Southrock Drive
Rockford, IL 61102

This appendix applies only to those sites listed above. As other sites are assessed and approved, or as sites already approved are removed from active services, this appendix will be amended to show the current status. Sites not listed on this appendix shall not be viewed as approved.





SMITHERS
QUALITY ASSESSMENTS

CERTIFICATE OF APPROVAL

This is to Certify that the Quality Management System of:

Forest City Technologies

299 Clay Street
Wellington, OH

(Page 1 of 2; see Appendix)

has been assessed and approved by Smithers Quality Assessments, Inc., to
the following quality management system standards and requirements:

ISO 14001:2004

The Environmental Management System is Applicable to:

The manufacture of sealing devices and molded products and the
application of sealants, coatings and related services to both such as
sorting/packing, and delivery for the fastener, automotive, infant care and
other industries.

Approval
Certificate Number: 10.328.2

Original Approval: November 24, 2010

Current Certificate: April 3, 2013

Certificate Expires: April 2, 2016



*The use of the accreditation mark indicates
accreditation in respect of those activities
covered by the above certificate number.*


on behalf of SQA - J. Michael Hochschwender, CEO

The approval is subject to the company maintaining its system to the required standards which will be monitored by
Smithers Quality Assessments, Inc., 425 W. Market St., Akron, Ohio 44303-2099, USA



APPENDIX A
TO THE CERTIFICATE
OF REGISTRATION NO. 10.328.2



Page 2 of 2

SMITHERS QUALITY ASSESSMENTS, INC.

Forest City Technologies
299 Clay Street
Wellington, OH 44090

is certified by Smithers Quality Assessments, Inc. with regard to ISO 14001:2004.

In addition to the corporate office in Wellington, OH, the following sites have been assessed and found to be in compliance with the applicable requirements of ISO 14001:2004 utilizing a multi-site sampling approach.

Locations:

Forest City Technologies
401 Magyar Street
Wellington, OH 44090

Forest City Technologies
232 Maple Street
Wellington, OH 44090

Forest City Technologies
22069 Fairgrounds Road
Wellington, OH 44090

This appendix applies only to those sites listed above. As other sites are assessed and approved, or as sites already approved are removed from active services, this appendix will be amended to show the current status. Sites not listed on this appendix shall not be viewed as approved.





FOREST CITY TECHNOLOGIES
INNOVATION BY DESIGN

Forest City Technologies, Inc. -Laboratory Scope

06/05/2014

In-House Testing of FCT product or application to verify compliance to customer specifications and/or requirements.

Test	Test Method
Salt Spray	ASTM B117
Torque Tension-Schatz Analysis	SAE J174; GM 9084P
Prevailing Torque	ANSI/ASME B18.16.1M
Hardness	ASTM D2240
Tensile	ASTM D412, D624
Flammability	SAE J369
Compression Set	ASTM D395
Density	ASTM D792 & SQP-TMC-081
Various Conformance Verifications	See: Lab Library of Standards

Dimensional Inspection:

Parameter:	Measurement Technique:	Range:	Uncertainty:	Standards:
Linear	Micrometer	0-4"	+/- .0016"	MIL-STD-120
Linear	Caliper	0-4"	+/- .0024"	MIL-STD-120
Linear	Ring & Thread Gages	10/32-9/16" M4-M14	N/A	MIL-STD-120
Linear	Micro-Vu Quantum	14X14 X-Y 14X14 Z	+/- .00012" +/- .0004"	MIL-STD-120
Angle	Optical Comparator	0-360°	+/- .0068°	MIL-STD-120
Radii	Optical Comparator	0-3"	+/- .0004"	MIL-STD-120

Calibration/ Verification:

Calibration/ Verification:	Equipment:
Measurement devices and gages used at FCT	NIST Traceable Standards

Note: The FCT Lab and Lab Procedure Manuals were revised to comply with the ISO/IEC 17025:2005 Standard.

Michael J. Deeks
Quality Manager

299 Clay Street, P.O. Box 86, Wellington, OH 44090
ph: 440.647.2115 fax: 440.647.2644 www.forestcitytech.com

Certificate of Registration



Intertek

This is to certify that the quality management system of

WESTERN DIVERSIFIED PLASTICS, LLC

53150 North Main Street, Mattawan, MI, 49071, USA

has been assessed and registered by Intertek as conforming to the requirements of

ISO/TS 16949:2009

The quality management system is applicable to

Design and Manufacture of Plastic Components and Assemblies

Having been audited in accordance with the "Rules for achieving IATF recognition 3rd Edition for ISO/TS 16949:2009"
Permissible exclusions include: None



IATF Certificate Number: 0165781
Certificate Number: 2007-0124
Initial Certification Date: 31 July 2007
Certificate Issue Date: 27 June 2013
Certificate Expiry Date: 26 June 2016



Calin Moldoveanu, President

Intertek – 4700 Broadmoor, Suite 200, Kentwood MI 49512, USA



In the issuance of this certificate, Intertek assumes no liability to any party other than to the Client, and then only in accordance with the agreed upon Certification Agreement. This certificate's validity is subject to the organization maintaining their system in accordance with Intertek's requirements for systems certification. Validity may be confirmed via email at certificate.validation@intertek.com or by scanning the code to the right with a Smartphone.

The certificate remains the property of Intertek, to whom it must be returned upon request.

Certificate of Registration

Intertek

This is to certify that the quality management system of

WESTERN DIVERSIFIED PLASTICS, LLC

53150 North Main Street, Mattawan, MI, 49071, USA

has been assessed and registered by Intertek as conforming to the requirements of

ISO/TS 16949:2009

Including the Following Support Functions:

None

Including the Following Site Extensions:

1347 East M 89, Otsego, MI, 49078, USA

Manufacturing, Inspection, Packaging, Shipping

IATF Certificate Number: 0165781
Certificate Number: 2007-0124
Initial Certification Date: 31 July 2007
Certificate Issue Date: 27 June 2013
Certificate Expiry Date: 26 June 2016



Calin Moldoveanu, President

Intertek – 4700 Broadmoor, Suite 200, Kentwood MI 49512, USA

In the issuance of this certificate, Intertek assumes no liability to any party other than to the Client, and then only in accordance with the agreed upon Certification Agreement. This certificate's validity is subject to the organization maintaining their system in accordance with Intertek's requirements for systems certification. Validity may be confirmed via email at certificate.validation@intertek.com or by scanning the code to the right with a Smartphone.

The certificate remains the property of Intertek, to whom it must be returned upon request.



INTERNAL TEST LAB SCOPE

Field of Test	Products or Items Tested	Specified Tests or Properties Measured	Specification, Standard, or Method Used	Equipment / Range
Mechanical	Electrical and Mechanical Components	Force - Tension & Compression	ES-5L1T-14A067-AA ES-GU5T-14A067-AB Ford Connector SDS SAE/USCAR-2 WDP PS-001	Instron 3342 5 to 500N Instron 3366 5 to 10KN
Mechanical	Electrical and Mechanical Components	Torque	ES-5L1T-14A067-AA ES-GU5T-14A067-AB Ford Connector SDS WDP PS-001	Jetco ED-2501 Stanley E231b-16 Stanley E33LA18-46 .5 to 46 Nm
Mechanical	Electrical and Mechanical Components	Environmental Exposure – Temperature, Humidity Salt Fog Dust	ES-5L1T-14A067-AA ES-GU5T-14A067-AB Ford Connector SDS SAE/USCAR-2, 20, 21 CETP 00.00L/E-412 WDP PS-001	Humboldt H30135E Thermotron SM-32 Thermotron SE-600 Singleton SCCH 22 ESPEC EDC-27 Fluke 54 T/C Monitor -40C to 500C
Mechanical	Electrical and Mechanical Components	Environmental Exposure - Vibration – Sine, Random, Sine on Random, & Transient	ES-5L1T-14A067-AA ES-GU5T-14A067-AB Ford Connector SDS SAE/USCAR-2 SAE/USCAR-20 WDP PS-001	Thermotron DSX-8000 Vib 5 to 3000 Hz, 8000 force lb 11ms 100g half sine shock 2.54 mps, 3" displacement Endevco 7251A Accel ±500g max
Mechanical	Electrical and Mechanical Components	Environmental Exposure - Thermal Shock	ES-5L1T-14A067-AA ES-GU5T-14A067-AB Ford Connector SDS SAE/USCAR-2, 20, 21 WDP PS-001	Thermotron ATS-320 Fluke 54 T/C Meter -60C to 175C
Mechanical	Electrical and Mechanical Components	Sealing Integrity	ES-5L1T-14A067-AA ES-GU5T-14A067-AB Ford Connector SDS SAE/USCAR-2	Fluke PV 350 transducer 29.9 in Hg to 350 psi ESPEC ETH-37 Water Test Chamber Up to 1500 psi 4 gpm Stopwatch - 1/100 th sec
Temperature	Electrical Components	Thermal Imaging	ES-5L1T-14A067-AA ES-GU5T-14A067-AB WDP PS-001	FLIR T620 Up to 500°C

Distribution List:	Quality Director, Test Lab Manager, Test Lab Technicians, Quality Engineering, Program Managers, Manufacturing Engineer		
TLI002 Internal Test Lab Scope		Page 1 of 3	Revision Date 01/26/16
Printed Copies are for Reference Only			

Field of Test	Products or Items Tested	Specified Tests or Properties Measured	Specification, Standard, or Method Used	Equipment / Range
Sound	Mechanical Components	Sound Level Audible noise	Ford Connector SDS SAE/USCAR-2	Extech 407768 dB A&C scale to 140dB
AC Electrical	Electrical and Mechanical Components	Dielectric	ES-5L1T-14A067-AA ES-GU5T-14A067-AB WDP PS-001	Vitrek V63 100V to 5KV AC
Dimensional	Electrical and Mechanical Components	General Inspection Distance / Length Height/Width	ES-5L1T-14A067-AA ES-GU5T-14A067-AB Ford Connector SDS SAE/USCAR-2 SAE/USCAR-20	Mitutoyo CD 6" ASX
DC Electrical	Electrical and Mechanical Components	Insulation Resistance Dielectric Resistance	ES-5L1T-14A067-AA ES-GU5T-14A067-AB Ford Connector SDS SAE/USCAR-2 WDP PS-001	Vitrek V63 IR from 1 to 10Gohm Dielectric 100V to 6KV DC
DC Electrical	Electrical and Mechanical Components	Amperage	ES-5L1T-14A067-AA ES-GU5T-14A067-AB Ford Connector SDS SAE/USCAR-2, 20, 21 WDP PS-001	Fluke 87, 287, 289 Extech 380941, 380947 .01 micro to 400A DC
DC Electrical	Electrical and Mechanical Components	Voltage	ES-5L1T-14A067-AA ES-GU5T-14A067-AB Ford Connector SDS SAE/USCAR-2, 20, 21 WDP PS-001	Fluke 87, 287, 289 HP 44701A Rigol DS1104Z 1 micro to 1000 Volts DC
DC Electrical	Electrical and Mechanical Components	Resistance	ES-5L1T-14A067-AA ES-GU5T-14A067-AB Ford Connector SDS SAE/USCAR-2, 20, 21 WDP PS-001	Keithley 580 10micro to 200Kohm
Mechanical / DC Electrical	Electrical and Mechanical Components	Combined Environment Durability/Life Test	Various as Listed Above	Various as Listed Above

1.1 WDP test lab performs testing relative to the internal scope using the Test Request, DVP&R, and the Test Specification.

1.2 Capabilities may include tests related to the test technologies listed which utilize equipment and properties listed.

Distribution List:	Quality Director, Test Lab Manager, Test Lab Technicians, Quality Engineering, Program Managers, Manufacturing Engineer		
TLI002 Internal Test Lab Scope		Page 2 of 3	Revision Date 01/26/16
Printed Copies are for Reference Only			

- 1.3** Any required conditions, or deviations, are communicated to the customer as identified in the Test data sheet and/or DVP&R.

Distribution List:	Quality Director, Test Lab Manager, Test Lab Technicians, Quality Engineering, Program Managers, Manufacturing Engineer	
TLI002 Internal Test Lab Scope	Page 3 of 3	Revision Date 01/26/16
Printed Copies are for Reference Only		