HellermannTyton

From: **Quality Assurance HellermannTyton GmbH**

Subject: PPAP Approval signature deadline

Dear customer:

As you are aware the PPAP process is an integral part of our business. With that in mind, we are informing our customers who are requesting a PPAP that there is a 30 day (calendar) deadline to which we are expecting your reply back with a signed copy of the PSW with a disposition regarding it´s validity. It is important that we maintain compliance to the current AIAG PPAP manual.

As a part of compliance a signed and approved PSW is essential for our records.

We reserve the right to consider that PPAP valid and complete, if we do not receive a signed copy of the PSW within 30 days (calendar).

Once you have received our PPAP information please e-mail us a copy of your disposition with the appropriate signatures as soon as possible to the following person:

Laura.Gutke@HellermannTyton.de Quality Assistant phone: +49 (0) 4122 701 4872

Your cooperation is greatly appreciated!

Respecting the procedure as described above, the documentation with HellermannTyton PB-No.: **97200** with submission date 19.04.2022 will be considered as complete and valid automatically on **19.05.2022** unless otherwise disposed!

HellermannTyton

HellermannTyton GmbH internal remarks: PB-No.: **97200**

Part Describtion: T50ROSEC4B GPN 990760

Part Submission Warrant

Part Name **T50ROSEC4B** Cust. Part Number **2M5T-14197-KA**

Shown on Drawing No. **2M5T-14197-KA** Org. Part Number **15076079**

Engineering Change Level **AELE-E-12982958-093** Dated **08-Jan-16**

Additional Engineering Changes **n/a** Dated **n/a**

Safety and/or Government Regulation ☐ Yes ☑ No Purchase Order No. **15076079** Weight (kg) **0,0030**

Checking Aid No. **n/a** Checking Aid Engineering Change Level **n/a** Dated **n/a**

ORGANIZATION MANUFACTURING INFORMATION

HellermannTyton GmbH **DUNS: 315430892**
Organization Name & Supplier/Vendor Code

Großer Moorweg 45
Street Address

Tornesch Region **25436** **Germany**
City Postal Code Country

CUSTOMER SUBMITTAL INFORMATION

Nursan Kablo Donanimlari (**30471**)
Customer Name/Division

Nadiye BARUTÇU
Buyer/Buyer Code

various
Application

MATERIALS REPORTING

Has customer-required Substances of Concern information been reported? ☑ Yes ☐ No ☐ n/a

Submitted by IMDS or other customer format: **5496941**

Are polymeric parts identified with appropriate ISO marking codes? ☐ Yes ☐ No ☑ n/a

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 design record requirements: ☑ Yes ☐ No (If "No" - Explanation Required)

Mold / Cavity / Production Process **injection moulding / serial mold**

DECLARATION

I 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 confidential - pcs / 24 hours.

I also certify that documented evidence of such compliance is on file and available for review. I have noted any deviations from this declaration below.

EXPLANATION/COMMENTS:

Is each Customer Tool properly tagged and numbered? ☐ Yes ☐ No ☑ n/a

Organization Authorized Signature **i.A.** Date 19-Apr-22

Print Name **i.A. L. Gutke** Phone No. +49 (0) 4122 701 4872 Fax No. +49 4122 701 241

Title **Quality Assistant** E-mail Laura.Gutke@HellermannTyton.de

FOR CUSTOMER USE ONLY (IF APPLICABLE)

PPAP Warrant Disposition: ☐ Approved ☐ Rejected ☐ Other

Customer Signature Date

Print Name Customer Tracking Number (optional)

Production Part Approval, Dimensional Results

HellermannTyton

Internal PB-No.: **97200**

Production Part Approval
Dimensional Test Results

ORGANIZATION:	**HellermannTyton GmbH**	PART NUMBER:	**2M5T-14197-KA**
SUPPLIER/VENDOR CODE:	**DUNS: 315430892**	PART NAME:	**T50ROSEC4B**
INSPECTION FACILITY:	**QS-Laboratory**	DESIGN RECORD CHANGE LEVEL:	AELE-E-12982958-093 8-Jan-16
		ENGINEERING CHANGE DOCUMENTS:	
		NAME of LABORATORY:	

ITEM	DIMENSION / SPECIFCATION	SPECIFICATION / LIMITS	TEST DATE	QTY. TESTED	SUPPLIER TEST RESULTS (DATA)			OK	NOT OK
					mean	**min**	**max**		
1	**4,6mm**	**± 0,2**			**4,7**	**4,7**	**4,8**	☑	☐
								☐	☐
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Blanket statements of conformance are unacceptable for any test results.

This letter is done automatically and is valid without signature.

CREATOR	**TITLE**	**DATE**
i.A. L. Gutke	Quality Assistant	19-Apr-22

Production Part Approval, Performance Test Results

HellermannTyton

Internal PB-No.: **97200**

Production Part Approval
Performance Test Results

ORGANIZATION:	**HellermannTyton GmbH**	PART NUMBER:	**2M5T-14197-KA**
SUPPLIER/VENDOR CODE:	**DUNS: 315430892**	PART NAME:	**T50ROSEC4B**
MATERIAL SUPPLIER:		DESIGN RECORD CHANGE LEVEL:	AELE-E-12982958-093 8-Jan-16
*CUSTOMER SPECIFIED SUPPLIER/VENDOR CODE:		ENGINEERING CHANGE DOCUMENTS:	
*If source approval is req`d, include the Supplier (Source) Customer assigned code.			

	MATERIAL SPEC. NO. / REV / DATE	SPECIFICATION / LIMITS	TEST DATE	QTY. TESTED	SUPPLIER TEST RESULTS (DATA) / TEST CONDITIONS	OK	NOT OK
						☐	☐
2	**Part must be free of burrs, flash**				**Part is free of burrs, flash and sharp**	☐	☐
	and sharp edges that may affect				**edges that may affect the function,**	☐	☐
	the function, safe handling,				**safe handling, installation or removal**	☐	☐
	installation or removal of the				**of the part**	☑	☐
	part					☐	☐
						☐	☐
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Blanket statements of conformance are unacceptable for any test results.

This letter is done automatically and is valid without signature.

CREATOR	TITLE	DATE
i.A. L. Gutke	Quality Assistant	19-Apr-22

Production Part Approval, Material Test Results

HellermannTyton

Internal PB-No.: **97200**

Production Part Approval
Material Test Results

ORGANIZATION:	**HellermannTyton GmbH**	PART NUMBER:	**2M5T-14197-KA**
SUPPLIER/VENDOR CODE:	**DUNS: 315430892**	PART NAME:	**T50ROSEC4B**
MATERIAL SUPPLIER:		DESIGN RECORD CHANGE LEVEL: AELE-E-12982958-093	8-Jan-16
*CUSTOMER SPECIFIED SUPPLIER/VENDOR		ENGINEERING CHANGE DOCUMENTS:	
*If source approval is req`d, include the Supplier (Source) Customer assigned code.		NAME of LABORATORY:	

	MATERIAL SPEC. NO. / REV / DATE	SPECIFICATION / LIMITS	TEST DATE	QTY. TESTED	SUPPLIER TEST RESULTS (DATA)	OK	NOT OK
	Material:					☐	☐
3.1	**Edge clip housing: nylon 6/6**				**Material of edge clip housing is nylon**	☐	☐
	(WSS-M4D706-B1), black				**6/6 (WSS-M4D706-B1), black**	☑	☐
						☐	☐
3.2	**Edge clip: spring steel**				**Material of edge clip is spring steel**	☐	☐
	(WSD-M1A283-B50 /				**(WSD-M1D283-B50 / WSD-M21P11-B2)**	☐	☐
	WSD-M21P11-B2), silver				**silver**	☑	☐
						☐	☐
3.3	**Cable tie: nylon 6/6**				**Material of cable tie is nylon 6/6**	☐	☐
	(WSK-M4D648-A), black				**(WSK-M4D648-A), black**	☑	☐
						☐	☐
4	**Part must comply with**				**Part complies with restricted**	☐	☐
	restricted substance				**substance management standard**	☐	☐
	management standard				**WSS-M99P9999-A1 to safeguard**	☐	☐
	WSS-M99P9999-A1 to safe-				**health, safety and the environment**	☑	☐
	guard health, safety and the					☐	☐
	environment					☐	☐
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Blanket statements of conformance are unacceptable for any test results.

This letter is done automatically and is valid without signature.

CREATOR	TITLE	DATE
i.A. L. Gutke	Quality Assistant	19-Apr-22

ASCEND.
PERFORMANCE MATERIALS

HELLERMANN TYTON GMBH
GROSSER MOORWEG 45
TORNESCH, GERMANY 25436
Attention : AXEL LANG

Ascend Performance Materials Operations LLC
Nylon Plastics and Polymers
3000 Chemstrand Road
Cantonment, FL 32533
Telephone : (850)968-7000

Certificate Date : 11-Feb-22
Delivery No : 382604159
Shipped Qty : 47,450.000 Lbs
21,523.320 Kgs
Customer P.O. No: 4500155499/30
Container : 00000000000002085153

Certificate of Analysis

This certifies that Nylon Resin shipped to you from Ascend Performance Materials Operations LLC has been tested and found to meet required specifications.

This material was produced under a Quality System that meets ISO 9001:2015 and IATF 16949:2016 criteria.

If you have questions or concerns about this Certificate of Analysis, please contact Ascend Performance Materials Customer Operations at 1-888-927-2363.

This product meets the requirements of the following specifications: ASTM D4066 PA0121, ASTM D6779 PA0121, WSK-M4D648A (ESF-M4D 82A), MRS # 75, Rev. 7, Date 2-Jan-2019, GMP.PA66.018, CMP NY057 AA, MSDB 41 CPN 1076, MSDB 41 CPN 1899, FMVSS 302*, CPN3490, D4000 PA012, SAE J1639 PA0121, Ford WQ 100A, GMW16036P-PA66.

Material: VYDYNE 22HSP NT **Material No:** 10425537 **Batch No:** JK22VY05 **Date of Mfg:** 22-Nov-2021

Ascend Performance Materials Operations LLC Specification

Lot Data Property	Test Method	Min	Max	Result	Units
Copper	STM 00667	80	100	88	PPM
Flex Modulus	ISO 178;2MM/MIN	2500		3056	MPa
Moisture	ASTM D6869	0.12	0.20	0.13	%
Nom. Str.@ Brk	ISO 527-1,2 / 1A	17.5	35.0	26.9	%
Notched Izod	ISO 180 / 1A	3.5	8.0	4.9	kJ/m^2
Relative Visc.	ASTM D789[9.34]	45.0	48.0	46.0	N/A
Strength @ Yld	ISO 527-1,2 / 1A	78	98	80	MPa
VISCOSITY NUM. SULFURIC	ISO 307	136.9	142.8	138.9	ml/g

ABNAHMEPRÜFZEUGNIS

Nach EN10204 3.1

Von: **Du Pont de Nemours Deutschland GmbH**
DuPont Str 1
D-63263 NEU-ISENBURG

An: **SEAPACK LOGISTRIC GMBH**
ESINGER STRASSE 71
25436 TORNESCH

Ihre Bestellangaben: **4500142231**
Ihre Produkt Ref.: **011-20010 (ZYT105F BK010 25 KG BAG)**

Produkt: **ZYT105F BK010 25 KG BAG**
Lot Nr: **EMAVG4Y301**

Ursprungsland: **Belgium**
Versandort: **GENK CLEARED WHSE 8933 B9** **15 Sep 2021**
Unsere Best.angaben / Versandauftrag: **2500888798 / 7802316276**

Wir bestätigen, dass dieses Material den Standardkriterien von DuPont entspricht.

Die unten aufgelisteten Messwerte sind das Ergebnis repräsentativer Proben, die der oben genannten Charge nacheinem definierten Plan entnommen wurden.

				Grenzwerte	
Produktmerkmale	**Prüfmethode**	**Einheit**	**Wert**	**Min.**	**Max.**
Viskositätszahl - Ameisensäure	ISO 307	cm^3/g	132	123	141
Viscositätszahl - Schwefelsäure	ISO 307	cm^3/g	145	136	154
Feuchtigkeitsgehalt beim Abpacken	ISO 15512	%	0,075		0,180

Bitte ziehen Sie unsere Produktliteratur zu Rate oder setzen Sie sich bei etwaigen Fragen mit Ihrem DuPont Vertreter in Verbindung.
Dieses Zertifikat wurde durch den Computer erstellt und hat keine Unterschrift.

Abteilung Qualitätsmanagement

WAELZHOLZ

Abnahmeprüfzeugnis EN 10204 - 3.1

HAGEN 20.04.2020 Telefon +49 2331 964-2879
Verkäufer Lechtenfeld, Sara
Vertreter
Kommission **0110683301 / 110000**

C. D. Wälzholz GmbH & Co. KG Postfach 60 02 52 58138 HAGEN

KLEINER GmbH
Postfach 900163
Göppinger Str. 2-4

75179 Pforzheim

Artikel 10033813
Kunde 04008052
Betriebsauftrag **7777805557**
Schmelznummer 343371
Abnahmeprüfzeugnis WA00680764
Kundenidentnummer 138
Lieferant 87375

Original

Ihre Bestellung	**4500045660**			
Abmessungen	**0,400 mm x**	**40,00 mm**	Werkstoff nach	EN 10132-4
Toleranz +	0,000 mm	0,20 mm	Toleranz nach	EN 10140
Toleranz -	0,030 mm	0,00 mm		
Werkstoff	C75S			
Ausführung	LC			
Oberfläche	MA-RL (glatt)			
Kante	GK			
Streckgrenze	Max	510 MPa	Ihre Warengruppe 1	10000254
Festigkeit	480 -	640 MPa	Bestellmenge	11000 kg
Dehnung	A 80 minimum	17,0 %	Netto	13410 kg
			Lieferschein	11002774
				27.05.2020
			Lieferversch. 01	TLB 19 5
			Lieferversch. 02	Allgemeine Bemusterungsrichtlinie

Chemische Zusammensetzung

Schmelznummer	% C	% Si	% Mn	% P	% S	% Al
343371	0,7640	0,2120	0,6600	0,0170	0,0050	0,0070

Technologische Prüfwerte siehe Rückseite! =>

Art. Nr.: 10000254
Wkz. Nr.: 30321/001+002
Charge : 15412
Best. Nr.: 4500045660/10
WE- P: Mittwoch, 3 Juni, 2020
Prüfer: Reich/Annahme unter Vorbehalt
Werkstoff C75S

C. D. Wälzholz GmbH & Co. KG
Feldmühlenstr. 55
58093 Hagen

Telefon: +49 (0) 2331 964-0
Telefax: +49 (0) 2331 964-21 00
Internet: www.waelzholz.com
E-Mail: info@waelzholz.com

Handelsregister: Hagen HRA 1920
USt.IdNr.: DE 125144075
Steuernummer: 321/5866/0019

Geschäftsführer Dr.-Ing. Hans-Toni Junius
Dr.-Ing. Heino Buddenberg
Dr. Matthias Gierse

Abnahmeprüfzeugnis EN 10204 - 3.1

Abnahmeprüfzeugnis WA00680764

Original

Technologische Prüfwerte

Pos.	Dicke Bandmitte [mm]	Breite [mm]	Streckgrenze längs RP0,2 [MPa]	Zugfestigkeit längs Rm [MPa]	Dehnung längs A80 [%]
1	0,390	40,060	400	545	21,0

Pos.	Rauheit Ra Kundenvorgabe [µm]	Höhlheit [mm]	Geradheit [mm]	Schneidgrat [mm]	
1	0,18	0,100	0,75	0,010	

Es wird bestätigt, dass die Ergebnisse der Prüfung den vereinbarten Lieferbedingungen entsprechen. Dieses Zeugnis wurde elektronisch erstellt und benötigt keine Unterschrift.

C.D. Wälzholz GmbH
S.Müller
Leiter Qualitätssicherung
Abnahmebeauftragter

dagmar.britsche@kleiner-gmbh.de / stefan.hornig@kleiner-gmbh.de / stefan.Reich@kleiner-gmbh.de

QUALITÄTS-MANAGEMENT
Wir sind zertifiziert
Registrierte freiwillige Überwachung DIN EN ISO 9001

Lohmüller
LODECO
GmbH

Umweltbewusste Beschichtungen
Zink-Lamellen-Beschichtungen
Organische Topcoats/Schmierungen
Microschicht-Systeme

Tel. 07444/51991 · Fax 07444/51992
www.LODECO.de · info@LODECO.de

Lohmüller LODECO GmbH · Im Tropfwiesle 10 · 72275 Alpirsbach-Reutin

Kleiner GmbH
Abteilung QM
Göppinger Str. 2 – 4
75179 Pforzheim

Alpirsbach-Reutin, 23.09.2020
LO-ka

Abnahmeprüfzeugnis nach EN 10204-3.1

Beleg Nr. / Datum	**45000 47960 vom 17.08.2020**
Charge	**15412**

Artikel-Bez.	**Blechklammer gehärt.+besch. (Var.P) W-C-W**
Sach-Nr.	**3000 1026**
Index	**6** /
Zeichn.-Nr.	**TE4-511-000-P**

Hiermit bestätigen wir Ihnen, dass oben aufgeführte Teile, gemäß Ihrer

Anforderung	**Delta-Protekt KL100 + VH 301 GZ beschichtet** /
Norm	**Nach Kundenvorgabe**

beschichtet wurden.

Zudem wird bestätigt, dass die festgestellten Prüfergebnisse die Anforderung aus der Bestellung erfüllen:

Vorgabe Schichtdicke	**8 – 18 µm** /
Prüfergebnis	**14,40 µm / 15,50 µm/ 15,50 µm / 15,50 µm / 17,50 µm** /

Für eventuelle Rückfragen stehen wir Ihnen selbstverständlich jederzeit zur Verfügung und verbleiben

mit freundlichen Grüßen
LODECO GmbH

Abt. QM

Art. Nr.:	30001026
Wkz. Nr.:	303231/001+002
Charge :	15412
Best. Nr.:	4500047960/10
WE- P:	Montag, 5 Oktober, 2020
Prüfer:	Reich/i.O.
Werkstoff	C75S+Zn

dagmar.britsche@kleiner-gmbh.de / stefan.hornig@kleiner-gmbh.de / stefan.Reich@kleiner-gmbh.de

F I S C H E R S C O P E EVALUATION

PART NO. 12.5-9 DATE: 23.09.2020

BATCH NO. DATE PROD. 23.09.2020

BATCH SIZE. SAMPLE SIZE.

OPER.NO. 21660 NAME: Komm. Kleiner GmbH

INTERMEDIATE EVALUATION

d (um)	M E A N	=	15.74
F (%)	ACCURACY	=	8.831
	LOWEST READING	=	14.4
	HIGHEST READING	=	17.5
N	NO. OF MEASUREMENTS	=	5
s (um)	STANDARD DEVIATION	=	1.12
V (%)	COEFF. OF VARIATION	=	7.10

H I S T O G R A M

```
  N
001  14.0 |*
     15.0 |
003       |***
     16.0 |
000  17.0 |
001       |*
     18.0 |
```

CUMULATIVE DISTRIB. FUNCTION

UPPER CLASS LIM.	C. D. F.
15.0	20.0 %
16.0	60.0 %
17.0	80.0 %
18.0	100 %

Schichtdickenmessprotokoll zu Ihrer

Bestellung Nr.	**45000 47960 vom 17.08.2020**
Artikelbez.	**Blechklammer**
Teile Nr.	**3000 1026 / TE4-511-000-P**
Oberfläche	**Zinklamelle + VH301 GZ**

Mit freundlichen Grüßen

LODECO GmbH
Im Tropfwiesle 10
72275 Alpirsbach-Reutin

Abt. QM

* Härterei Aribert Conrad GmbH

SPC / 112 / 001 P R Ü F Z E U G N I S 3.1 Seite: 01
Platz/Firma: 00/01 Datum: 27.08.20

Kunde : Kleiner GmbH
: Stanztechnik
Anschrift/Ort : Stefan.Raich@Kleiner-GmbH 75179 Pforzheim

Auftragsnummer : 00219563
Auftrag vom : 20.08.2020

Artikelnummer : 20001078
Bezeichnung : Blechklammern C75
Zeichnungsnummer :
Abmessungen :

Arbeitsgang : 001 gehärtet u. angelassen
: 1

Prüfmerkmal : 001 Härte HV10 ( )

Prüfart : Variabel, Normalverteilt
Toleranzen : AOT : 500.0 NENM: 475.0 AUT : 450.0
Stichproben-Frequenz : 5 alle 60 min.
Meßmittelbezeichnung : Härteprüfgerät

Grenzen und Prozeßindex: a) Vorbesetzung b) In Prozeß gültig c) Aktuell aus den letzten 10 Werten

	OEG-X/R	UEG-X/R	OEG-R	UEG-R	OEG-X/S	UEG-X/S	OEG-S	UEG-S	CP(Sges)	CPk(Sges)	Zkrt(Sges)
a)	0,0	0,0	0,0	0,0	0,0	0,0	0.0	0,0			
b)	483,2036	470,6145	23,0618	0,0	483,0288	470,7893	8,9587	0,0	1.6980	1.5685	4.7051
c)	482,9114	470,4484	22,8312	0,0	482,7546	470,6953	8,8928	0,0	1,6932	1,5794	4.7383

Basiswerte		für b)	für c)
Stichproben: von - bis		1 - 11 25.08.2020 - 27.08.2020	2 - 11 25.08.2020 - 27.08.2020
Anzahl gesamt	A	11	11
gültig	N	11	10
=> Meßwerte	E	55	50
Summe der Werte	Σx	26230,0	23834.0
Summe der Werte²	Σx²	12510626,0	11362378.0
(Summe der Werte)²	(Σx)²	688012900.0	568059556.0
Mittelwert	Xqq	476.909090	476.68
Mittlere Spannweite	Rq	10,909090	10.8
Mittlere Standard.	Sq	4.268546	4.256966
Standardabweichung	Sges	4.907563	4.921589
Sigmadach (R)	σR	4.690064	4.643164
Sigmadach (S)	σS	4.562283	4.528687

unsere Auftragsnr.: 203766
Ihre Bestellnummer: 4500047959

Art. Nr. 30001024 6,25 Mio/ 2894 Kg
Wkz. Nr. 30321/001+002
Charge 15412
Auftr. Nr. 4500047959/10
Datum Freitag, 28 August, 2020
Prüfer Britsche / i.O.
Material C 75S(gehärtet)

(Unterschrift)

* Härterei Aribert Conrad GmbH

SPC / 110 / 001 E I N Z E L W E R T L I S T E Seite: 02
Platz/Firma: 00/01 Datum: 27.08.20

Nummer	Datum	Zeit	Prüfer-ID	Fehler	Meßwert	GSP?	AUT	AOT
0000001	25.08.20	20:23:28	BETRIEB	0	479.0	/	--.....*....++	
0000002	25.08.20	20:23:30	BETRIEB	0	477.0	/	--.....*....++	
0000003	25.08.20	20:23:31	BETRIEB	0	482.0	/	--.....*....++	
0000004	25.08.20	20:23:32	BETRIEB	0	485.0	/	--.....*...++	
0000005	25.08.20	20:23:34	BETRIEB	0	473.0	/	--.....*.....++	
0000006	25.08.20	23:18:57	BETRIEB	0	469.0	/	--....*.....++	
0000007	25.08.20	23:18:58	BETRIEB	0	474,0	/	--.....*.....++	
0000008	25.08.20	23:19:09	BETRIEB	0	473,0	/	--.....*.....++	
0000009	25.08.20	23:19:23	BETRIEB	0	480.0	/	--.....*....++	
0000010	25.08.20	23:20:17	BETRIEB	0	478.0	/	--.....*....++	
0000011	26.08.20	01:57:45	BETRIEB	0	478.0	/	--.....*....++	
0000012	26.08.20	01:58:12	BETRIEB	0	472.0	/	--....*.....++	
0000013	26.08.20	01:59:06	BETRIEB	0	484.0	/	--.....*...++	
0000014	26.08.20	01:59:57	BETRIEB	0	475.0	/	--.....*.....++	
0000015	26.08.20	02:00:11	BETRIEB	0	472.0	/	--....*.....++	
0000016	26.08.20	05:11:44	BETRIEB	0	476,0	/	--.....*.....++	
0000017	26.08.20	05:11:47	BETRIEB	0	483.0	/	--.....*...++	
0000018	26.08.20	05:11:49	BETRIEB	0	480.0	/	--.....*....++	
0000019	26.08.20	05:11:51	BETRIEB	0	485.0	/	--.....*...++	
0000020	26.08.20	05:11:53	BETRIEB	0	475,0	/	--.....*.....++	
0000021	26.08.20	10:03:49	BETRIEB	0	476.0	/	--.....*.....++	
0000022	26.08.20	10:03:52	BETRIEB	0	480,0	/	--.....*....++	
0000023	26.08.20	10:03:54	BETRIEB	0	468.0	/	--....*.....++	
0000024	26.08.20	10:03:57	BETRIEB	0	477,0	/	--.....*.....++	
0000025	26.08.20	10:03:59	BETRIEB	0	474.0	/	--.....*.....++	
0000026	26.08.20	14:27:13	BETRIEB	0	484,0	/	--.....*...++	
0000027	26.08.20	14:27:14	BETRIEB	0	479,0	/	--.....*....++	
0000028	26.08.20	14:27:15	BETRIEB	0	477,0	/	--.....*.....++	
0000029	26.08.20	14:27:16	BETRIEB	0	474.0	/	--.....*.....++	
0000030	26.08.20	14:27:18	BETRIEB	0	480.0	/	--.....*....++	
0000031	26.08.20	17:04:18	BETRIEB	0	479.0	/	--.....*....++	
0000032	26.08.20	17:04:19	BETRIEB	0	488.0	/	--.....*..++	
0000033	26.08.20	17:04:22	BETRIEB	0	486.0	/	--.....*...++	
0000034	26.08.20	17:04:23	BETRIEB	0	485,0	/	--.....*...++	
0000035	26.08.20	17:04:27	BETRIEB	0	481.0	/	--.....*....++	
0000036	26.08.20	19:56:02	BETRIEB	0	480,0	/	--.....*....++	
0000037	26.08.20	19:56:04	BETRIEB	0	476.0	/	--.....*.....++	
0000038	26.08.20	19:56:07	BETRIEB	0	473,0	/	--.....*.....++	
0000039	26.08.20	19:56:10	BETRIEB	0	466.0	/	--...*.....++	
0000040	26.08.20	19:56:11	BETRIEB	0	474,0	/	--.....*.....++	
0000041	26.08.20	22:43:31	BETRIEB	0	470.0	/	--....*.....++	
0000042	26.08.20	22:43:32	BETRIEB	0	471,0	/	--....*.....++	
0000043	26.08.20	22:43:35	BETRIEB	0	476.0	/	--.....*.....++	
0000044	26.08.20	22:43:36	BETRIEB	0	480,0	/	--.....*....++	
0000045	26.08.20	22:43:38	BETRIEB	0	475.0	/	--.....*.....++	
0000046	27.08.20	01:19:52	BETRIEB	0	480,0	/	--.....*....++	
0000047	27.08.20	01:20:55	BETRIEB	0	473.0	/	--.....*.....++	
0000048	27.08.20	01:21:10	BETRIEB	0	476,0	/	--.....*.....++	
0000049	27.08.20	01:21:45	BETRIEB	0	474.0	/	--.....*.....++	
0000050	27.08.20	01:21:52	BETRIEB	0	471,0	/	--....*.....++	

* Härterei Aribert Conrad GmbH

SPC / 110 / 001 E I N Z E L W E R T L I S T E Seite: 03
Platz/Firma: 00/01 Datum: 27.08.20

Nummer	Datum	Zeit	Prüfer-ID	Fehler	Meßwert	GSP?	AUT	AOT
0000051	27.08.20	03:46:27	BETRIEB	0	476,0	/	--.....*.....++	
0000052	27.08.20	03:47:06	BETRIEB	0	472.0	/	--....*.....++	
0000053	27.08.20	03:47:17	BETRIEB	0	470,0	/	--....*.....++	
0000054	27.08.20	03:47:22	BETRIEB	0	478.0	/	--.....*....++	
0000055	27.08.20	03:47:24	BETRIEB	0	481.0	/	--.....*....++	

HellermannTyton

Prüfprotokoll / Testreport

Parameter:

Prüfung / Test	: Abzugskraft
Artikel / Part-name	: Klammer unsortiert
Artikel-Nr / Part-no	: 019-00522 PL 1-347306
Prüfer / Checker	: F.Freiwald
Datum / Test-date	: 23.10.2020
Temperatur / Temperature in °C	: 22
Prüfgeschwindigkeit / Testspeed	: 100 mm/min
Form-Nr / Mould-no.	: Kleiner
Nest Nr von/bis / Cavities	: n/a
Material	: Federbandstahl (C75S)
Buchse / Hole-size	: 1mm Stahlblech
Fertigungs-Datum / Date of production	: 05.10.2020
Wassergehalt / Moisture content	: n/a

Statistik / Statistic:

Serie n = 20	Fmax N
min	108,98
max	159,20
$\bar{x}$	132,53
s	15,18
$\bar{x}$ - 3s	87,01
$\bar{x}$ + 3s	178,06

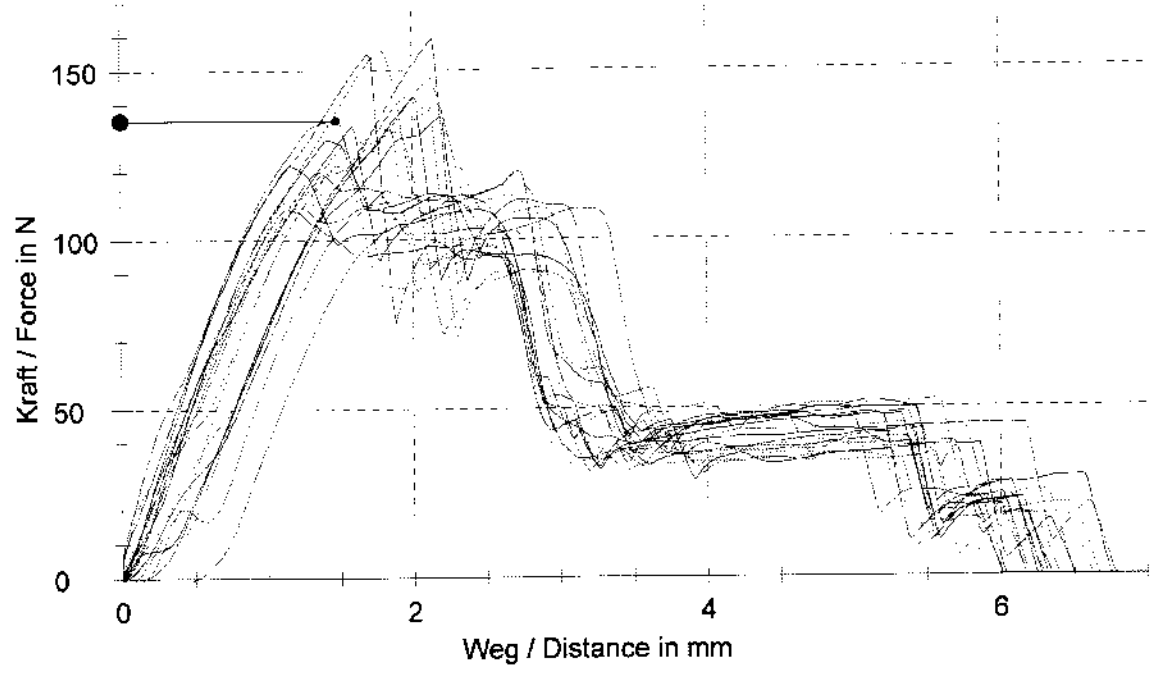
Ergebnisse / Results:

Nr	Fmax N
max	---
min	70,00
1	135,22
2	155,75
3	136,33
4	147,49
5	120,20
6	132,84
7	140,15

Nr	Fmax N
max	---
min	70,00
8	129,25
9	159,20
10	141,72
11	142,04
12	133,66
13	111,64
14	114,31

Nr	Fmax N
max	---
min	70,00
15	154,74
16	111,59
17	121,91
18	121,80
19	108,98
20	131,87

Grafik / Graph:



AKRO-PLASTIC

Abnahmeprüfzeugnis/CoA

nach EN 10204-3.1 / according to EN 10204-3.1

AKRO-PLASTIC GmbH
Ein Unternehmen der Feddersen-Gruppe

PROBENIDENTIFIKATION / DESCRIPTION OF PRODUCT:

Nummer / Item number: 02179-O

Bezeichnung / Material: AKROMID A3 1 S3 schwarz (1139)

PRODUKTIONSDATEN / PRODUCTION DATA:

Charge / LOT: OC03 122395

PRÜFERGEBNISSE / TESTRESULTS:

Prüfung **Testing**	**Norm** **Norm**	**Prüfbedingung** **Testing condition**	**Spezifikation** **Target Value**	**Istwert** **Actual Value**	**Einheit** **Unit**
Water content Restfeuchte	DIN EN ISO 15512 Verf. B		<= 0,15	0.08	%
Tensile modulus Zug-E-Modul	DIN EN ISO 527-2/1A	1 mm/min / RT	2550 +/- 300	2430	MPa
Tensile strain at break Bruchdehnung	DIN EN ISO 527-2/1A	50 mm/min / RT	35,0 +/- 15,0	34.5	%
Tensile strain at yield Streckdehnung	DIN EN ISO 527-2/1A	50 mm/min / RT	>= 4,0	8.5	%
Tensile stress at yield Streckspannung	DIN EN ISO 527-2/1A	50 mm/min / RT	64,0 +/- 5,0	61.5	MPa
Charpy notched impact strength Charpy Kerbschlagzähigkeit	DIN EN ISO 179-1/1eA	23°C	15,0 +/- 3,0	17.3	kJ/m²

Freigabedatum / date of release: 07.09.2021

Zusatzvermerke / remarks:

Niederzissen, 07.09.2021 Gez. Abnahmebeauftragte / Inspection representative: i.V. *Ute Bürger*

Dieses Dokument wurde elektronisch erstellt und ist ohne Unterschrift gültig.
This document is generated electronically and is valid without signature.

Die in diesem Material eingesetzten Rohstoffe entsprechen der Empfehlung der EU-Richtlinie 2000/53 des europäischen Parlamentes vom 18.09.2000 über Altfahrzeuge. Hiermit wird bestätigt, dass die Lieferung den Vereinbarungen bei der Bestellannahme entspricht. Das Abnahmeprüfzeugnis entbindet den Käufer nicht von der ihm obliegenden gesetzlichen Eingangskontrolle und stellt keine Zusicherung bestimmter Eigenschaften dar.
The raw material used in this material complies with the recommendations of the EU-Guideline 2000/53 of the European Parlament dated 18 September 2000 about old vehicles. It is confirmed herewith that the delivery meets the agreements on receipt of order.

HellermannTyton

P-FMEA	D-02	Project- No GPN / NT Nr.	variable	Revision date Überarbeitungsdatum	26.05.2021
Product Group Produkt Gruppe	assembling edge clips (Montage Edge Clips)	Installation location Verbauort des Bauteils		Revision by Überarbeitet durch:	M. Michel
Part No Artikel Nr.	variable	Drawing number Zeichnung Nr.	variable	Review Date Überprüfungsdatum	26.05.2022
Part Description Artikel Bezeichnung	variable	Ind. Of Drwg. /date Zg. Index / Datum	variable	Reviewed by Überprüft durch	M. Michel
Core Team FMEA Team	M.Michel Prod., O.Pracht QS, H.Spieß PE, S.Behrend NT-PM				
Process Responsibility Prozessverantwortung bei	HT-Tornesch	Version of FMEA Version der FMEA	13	This FMEA is generated and administrated electronically. Valid without signature. Diese FMEA ist elektronisch erstellt und verwaltet. Gültig ohne Unterschrift.	
Prepared by Erstellt von	Marco Michel	Original Issue Date Erstausgabe Datum	01.07.2010		

We confirm that we have process FMEA´s available - They are valid for the parts belonging to the Product Group mentioned above.

Due to confidentially reasons all further pages of this Process-FMEA need to remain internally, they should not be distributed to external!

In case of entitled interests this documents can be reviewed upon request and on site.

Process Flow Chart

PART NUMBER:	150-76079	GPN:	99-0760
PART NAME:	T50ROSEC4B-PA66HS/PA66HIRHS-BK		
DRAWING :	141501		
PRODUCT GROUP:	D-02	PRODUCTION PLANT:	HT Tornesch

CORE TEAM:	PE, NTPM, QM, PR
KEY CONTACT PHONE:	+49 4122 701 330
DATE REVIEWED:	16.11.2020
CUSTOMER APPROVAL:	

Process / test procedure			document
100	goods in		
→ 20	incoming inspection		
	010-05040	T50ROS-HS-BK-M1	
	011-20130	PA66 HIR HS BK	
	019-00522	metal clip	
	OK? NO / YES		VA13.1
200	injection moulding		
→ 50	process inspection first / final shot + 1 per shift visual attributes 1-9 by production / for process parameter see EDP-System		
	010-76099	EC4 A	
	OK? NO / YES		VA13.1
101	goods in HT Supplier		
→ 81	final inspection (3 times)		
	150-76079	T50ROSEC4B-PA66HS/PA66HIRHS-BK	
	150-76079	T50ROSEC4B-PA66HS/PA66HIRHS-BK	
	OK? NO / YES		VA13.1
1000	ARTICLE-AUDIT		
→ 100	annual layout		
	150-76079	T50ROSEC4B-PA66HS/PA66HIRHS-BK	
	OK? NO / YES END		VA13.1

Control Plan

rev: 17.07.2020

○ Prototyp ○ Pre-Launch ◉ Production	PART NUMBER: 150-76079 GPN: 99-0760 PART NAME: T50ROSEC4B-PA66HS/PA66HIRHS-BK DRAWING : 141501 PRODUCT GROUP: D-02 PRODUCTION PLANT: HT Tornesch	CORE TEAM: PE, NTPM, QM, PR KEY CONTACT PHONE: +49 4122 701 330 DATE REVIEWED: 16.11.2020 CUSTOMER APPROVAL:	

Part / Prozess No / Characteristic		SC	Part / Prozess Specification / Tolerance	Sample Size	Frequenz	Evaluation / Measurement Technique Control Method		Reaction Plan
20	incoming inspection							VA13.1
010-05040	T50ROS-HS-BK-M1							
116	compare with master sample			1 bag	1 / delivery	420000	sample / visual	
011-20130	PA66 HIR HS BK							
302	COC residual moisture			1 bag	1 / delivery	410000	manual / visual	
304	COC notch impact strength			1 bag	1 / delivery	410000	manual / visual	
305	COC yield stress			1 bag	1 / delivery	410000	manual / visual	
019-00522	metal clip							
40-1	dimension		4,05 ± 0,15 mm	5 pcs	1 / delivery	40000	calliper	
40-2	dimension		0,4 +0,2 / -0,4 mm	5 pcs	1 / delivery	140000	profile projector	
40-3	dimension		6,2 ± 0,25 mm	5 pcs	1 / delivery	40000	calliper	
40-4	dimension		7,95 ± 0,2 mm	5 pcs	1 / delivery	40000	calliper	
54	expanding test			50 pcs	1 / delivery	80243	check gauge	
116	compare with master sample			5 pcs	1 / delivery	500353	Master Samples, visual	
307	COC hardness		410 - 520 HV10	1	1 / delivery	410000	manual / visual	
1007	pull out force		min 70 N / HTQS-Blech	25 pcs	1 / delivery	10000	Tensile tester	
50	process inspection							VA13.1
010-76099	EC4 A							
1	sink marks			1 shot	1 / day			
2	shortage			1 shot	1 / day			
3	Flashes			1 shot	1 / day			

Control Plan

rev: 17.07.2020

○ Prototyp
○ Pre-Launch
◉ Production

PART NUMBER: 150-76079 GPN: 99-0760
PART NAME: T50ROSEC4B-PA66HS/PA66HIRHS-BK
DRAWING : 141501
PRODUCT GROUP: D-02 PRODUCTION PLANT: HT Tornesch

CORE TEAM: PE, NTPM, QM, PR
KEY CONTACT PHONE: +49 4122 701 330
DATE REVIEWED: 16.11.2020
CUSTOMER APPROVAL:

Part / Prozess No / Characteristic	SC	Part / Prozess Specification / Tolerance	Sample Size	Frequenz	Evaluation / Measurement Technique Control Method	Reaction Plan
50 process inspection						VA13.1
010-76099 EC4 A						
4 mould mis alignment			1 shot	1 / day		
5 moulding lines			1 shot	1 / day		
6 burnings			1 shot	1 / day		
7 dirt			1 shot	1 / day		
8 deformation			1 shot	1 / day		
9 inclusions			1 shot	1 / day		
54 expanding test			1 shot	1 / day	80066 check gauge 80136 check gauge	
65 shot weight			1 shot	1 / day	20000 balance	
81 final inspection (3 times)						VA13.1
150-76079 T50ROSEC4B-PA66HS/PA66HIRHS-BK						
18 quantity			1 bag	1 / delivery	430000 scale counter / manual	
45 mixed parts in pack unit			1 bag	1 / delivery	410000 manual / visual	
45 mixed parts in pack unit			1 bag	1 / delivery	410000 manual / visual	
59 assembling			1 bag	1 / delivery		
59 assembling			1 bag	1 / delivery		
118 identification single parts			1 bag	1 / delivery		
118 identification single parts			1 bag	1 / delivery		
146 label			1 bag	1 / delivery		
100 annual layout						VA13.1
150-76079 T50ROSEC4B-PA66HS/PA66HIRHS-BK						

Control Plan

rev: 17.07.2020

○ Prototyp
○ Pre-Launch
◉ Production

PART NUMBER: 150-76079 GPN: 99-0760
PART NAME: T50ROSEC4B-PA66HS/PA66HIRHS-BK
DRAWING : 141501
PRODUCT GROUP: D-02 PRODUCTION PLANT: HT Tornesch

CORE TEAM: PE, NTPM, QM, PR
KEY CONTACT PHONE: +49 4122 701 330
DATE REVIEWED: 16.11.2020
CUSTOMER APPROVAL:

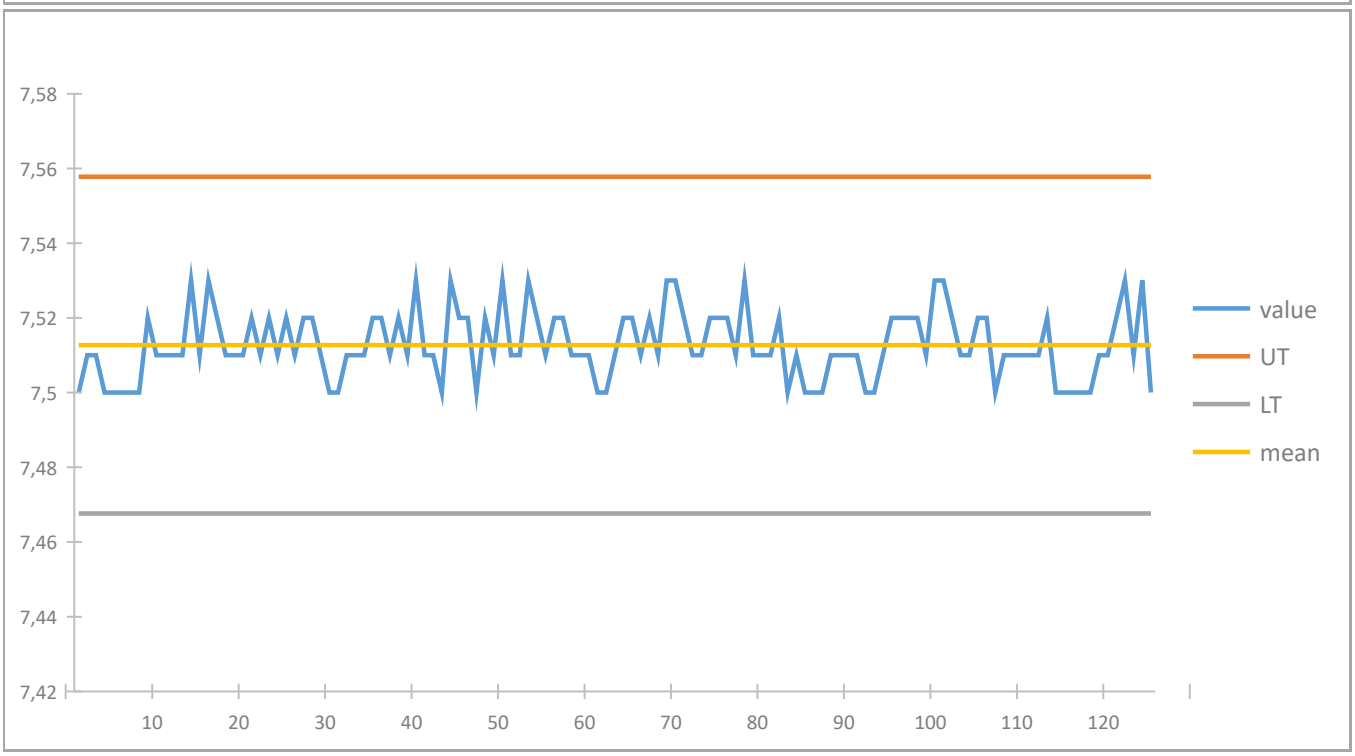
Part / Prozess No / Characteristic	SC	Part / Prozess Specification / Tolerance	Sample Size	Frequenz	Evaluation / Measurement Technique Control Method	Reaction Plan
100 annual layout						VA13.1
150-76079 T50ROSEC4B-PA66HS/PA66HIRHS-BK						
1200 requalification / product audit acc. DRW-spec incl. packageing (1 part-No for mentioned part group)			1 shot	1 acc. AUDITPLAN		

17.02.2021

CAPABILITY STUDY

-shot weight-

gpn:	99-0760				
part name:	EC4			ppk:	1,67
spec (+/- [%])	0,600				
tolerance (+/- [g])	0,045			ppk spec (min):	1,67
min:	7,500	mean:	7,513		
max:	7,530	stddiv:	0,009		



data tab:

no	value															
1	7,500	17	7,520	33	7,510	49	7,510	65	7,520	81	7,510	97	7,520	113	7,520
2	7,510	18	7,510	34	7,510	50	7,530	66	7,510	82	7,520	98	7,520	114	7,500
3	7,510	19	7,510	35	7,520	51	7,510	67	7,520	83	7,500	99	7,510	115	7,500
4	7,500	20	7,510	36	7,520	52	7,510	68	7,510	84	7,510	100	7,530	116	7,500
5	7,500	21	7,520	37	7,510	53	7,530	69	7,530	85	7,500	101	7,530	117	7,500
6	7,500	22	7,510	38	7,520	54	7,520	70	7,530	86	7,500	102	7,520	118	7,500
7	7,500	23	7,520	39	7,510	55	7,510	71	7,520	87	7,500	103	7,510	119	7,510
8	7,500	24	7,510	40	7,530	56	7,520	72	7,510	88	7,510	104	7,510	120	7,510
9	7,520	25	7,520	41	7,510	57	7,520	73	7,510	89	7,510	105	7,520	121	7,520
10	7,510	26	7,510	42	7,510	58	7,510	74	7,520	90	7,510	106	7,520	122	7,530
11	7,510	27	7,520	43	7,500	59	7,510	75	7,520	91	7,510	107	7,500	123	7,510
12	7,510	28	7,520	44	7,530	60	7,510	76	7,520	92	7,500	108	7,510	124	7,530
13	7,510	29	7,510	45	7,520	61	7,500	77	7,510	93	7,500	109	7,510	125	7,500
14	7,530	30	7,500	46	7,520	62	7,500	78	7,530	94	7,510	110	7,510		
15	7,510	31	7,500	47	7,500	63	7,510	79	7,510	95	7,520	111	7,510		
16	7,530	32	7,510	48	7,520	64	7,520	80	7,510	96	7,520	112	7,510		

HellermannTyton

REPEATABILITY AND REPRODUCIBILITY ANALYSIS REPORT

acc. to MSA 4th Edition

NON DESTRUCTIVE TEST

Specimen :	Plastic reference part (GPN20-1304)	Gage type :	Weight scale	Plant :	Tornesch
Part. No. :	01021304	Gage number :	PMN 02-0111	Date :	31.01.2022
Characteristic :	Shot weight (±3,5‰)	performed by:		approved by:	
Tolerance :	0,064 Units gramm	Name:	Tobias Cohrt		Jens Feil
		Signature:			

# of operators:	3	# of trials:	3
# of parts:	10		

OPERATOR	A: Victir Salogin	B: Stefan Specker	C: Frank Werner

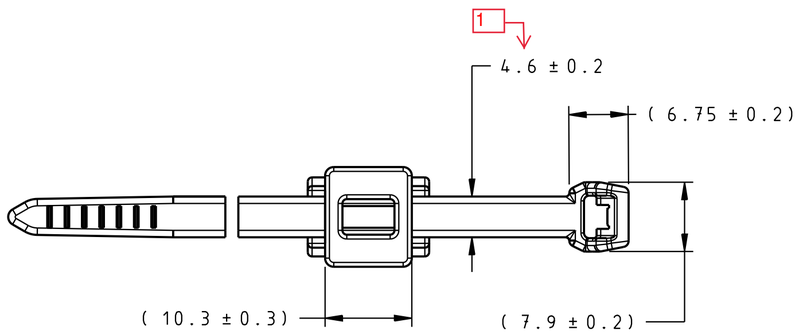
		P		A		R		T				RESULTS	
TRIAL #		1	2	3	4	5	6	7	8	9	10		AVG
A	1	8,086	8,096	8,092	8,094	8,097	8,090	8,088	8,091	8,094	8,093	A_1	
	2	8,087	8,095	8,093	8,094	8,097	8,090	8,088	8,092	8,094	8,093	A_2	
	3	8,086	8,096	8,093	8,095	8,098	8,091	8,089	8,091	8,093	8,095	A_3	
Average		8,086	8,096	8,093	8,094	8,097	8,090	8,088	8,091	8,094	8,094	X_A	**8,0924**
Range		0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,002	R_A	**0,0011**
B	1	8,087	8,096	8,093	8,094	8,097	8,090	8,088	8,091	8,094	8,093	B_1	
	2	8,087	8,097	8,093	8,094	8,097	8,091	8,087	8,092	8,093	8,093	B_2	
	3	8,086	8,098	8,093	8,095	8,097	8,092	8,089	8,090	8,094	8,093	B_3	
Average		8,087	8,097	8,093	8,094	8,097	8,091	8,088	8,091	8,094	8,093	X_B	**8,0925**
Range		0,001	0,002	0,000	0,001	0,000	0,002	0,002	0,002	0,001	0,000	R_B	**0,0011**
C	1	8,087	8,097	8,092	8,095	8,097	8,091	8,089	8,091	8,093	8,093	C_1	
	2	8,086	8,098	8,095	8,095	8,096	8,091	8,089	8,091	8,094	8,094	C_2	
	3	8,088	8,097	8,093	8,094	8,097	8,090	8,088	8,092	8,095	8,093	C_3	
Average		8,087	8,097	8,093	8,095	8,097	8,091	8,089	8,091	8,094	8,093	X_C	**8,0927**
Range		0,002	0,001	0,003	0,001	0,001	0,001	0,001	0,001	0,002	0,001	R_C	**0,0014**
PART		8,0867	8,0967	8,0930	8,0944	8,0970	8,0907	8,0883	8,0912	8,0938	8,0933	R_{PART} =	0,0103

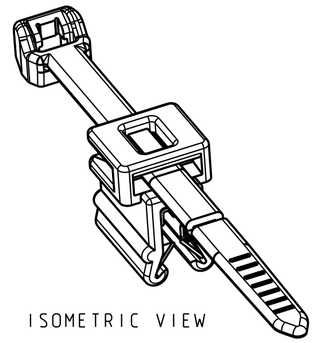
$R = R_A + R_B + R_C$ / No of operators	0,0011	+	0,0011	+	0,0014	/	3	R =	0,0012
X_{DIFF} = [Max $(X)_{ABC}$] - [Min $(X)_{ABC}$] =	8,0927	-	8,0924					X_{DIFF} =	0,0003
UCL_R = R * D_4 =	0,0012	*	2,58					UCL_R =	0,0031
D_4 = 3,27 for 2 trials	2,58 for 3 trials								

Measurement Unit Analysis			Total Variation Method	Tolerance Method
Repeatability : Equipment Variation (EV)				
EV = R * K_1	**Trials**	**K_1**	% EV = 100[EV/TV]	% EV = 100[EV/(tol/6)]
EV = 0,0007	3	0,5908	**% EV = 21,29**	**% EV = 6,65**
Reproducibility : Appraiser Variation (AV)	(n parts, r trials)			
AV = $[(X_{DIFF} * K_2)^2 - (EV^2 / nr)]^{1/2}$	**Oper**	**K_2**	% AV = 100[AV/TV]	% AV = 100[AV/(tol/6)]
AV = 0,0001	3	0,5231	**% AV = 3,51**	**% AV = 1,10**
Repeatability & Reproducibility (GRR)				
GRR = $(EV^2 + AV^2)^{1/2}$			%GRR=100[GRR/TV]	%GRR=100[GRR/(tol/6)]
GRR = 0,0007			**%GRR = 21,58**	**%GRR= 6,74**
Part Variation (PV)				
PV = $R_{PART} * K_3$	**Parts**	**K_3**	% PV = 100[PV/TV]	
PV = 0,0033	10	0,3146	**% PV = 97,64**	
Total Variation (TV)				
TV = $(GRR^2 + PV^2)^{1/2}$			**CONCLUSION:**	
TV = 0,0033				
Number of Distinct Categories (ndc)			**Gage system is satisfactory.**	
ndc = 1.41(PV / GRR)				
ndc = 6,37938				

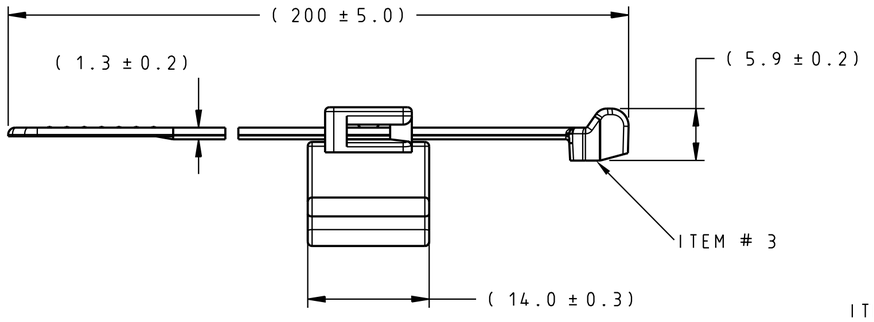
- Under 10% error	Gage system is satisfactory.
- 10% to 30% error	May be acceptable based upon importance of application, cost of gage, cost of repairs, etc.
- Over 30% error	Gage system is not satisfactory. Identify the causes and take corrective action.

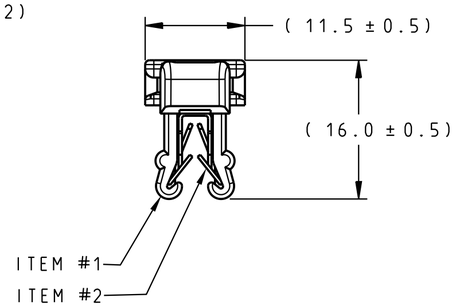
Remarks:





ISOMETRIC VIEW





REFERENCE:
PERFORMANCE REQUIREMENTS AT DRY AS MOLDED:

1. RECOMENDED PANEL THICKNESS RANGE: 1.0mm-3.0mm

2. RECOMMENDED TENSION FORCE: 135N +/- 30N (30lbs +/- 7lbs) BUNDLES COMPRISED OF SOFT OR COMPRESSIBLE MATERIALS SHOULD BE EVALUATED FOR EFFECTS OF VARIOUS TENSION SETTINGS.

3. BUNDLE RANGE 4.0mm TO 50.0mm

UNLESS OTHERWISE SPECIFIED:

2 → PART MUST BE FREE OF BURRS, FLASH AND SHARP EDGES THAT MAY AFFECT THE FUNCTION, SAFE HANDLING, INSTALLATION OR REMOVAL OF THE PART.

PART AS RECEIVED AT THE FORD PLANT OR SERVICE PART PACKAGER/WAREHOUSE SHALL BE FREE OF ANY CORROSION ALIGNED WITH THE FORD CUSTOMER SERVICE DIVISION (FCSD) PACKAGING AND SHIPPING GUIDE. CORROSION INHIBITORS OR FOREIGN MATERIALS DETRIMENTAL TO THE INSTALLATION OR FUNCTION OF THE PART MUST BE REMOVABLE BY INTENDED CLEANING METHOD.

ENGINEERING APPROVAL OF SAMPLES FROM EACH SUPPLIER IS REQUIRED PRIOR TO AUTHORIZATION OF PART PRODUCTION

CHANGES TO DESIGN, COMPOSITION OR PROCESSING OF THE PART PREVIOUSLY APPROVED FOR PRODUCTION REQUIRE PRIOR APPROVAL FROM FORD MOTOR COMPANY PRODUCT ENGINEERING
REFER TO ISO/TS 16949.

FOR CURRENT RELEASE STATUS SEE THE WERS ENGINEERING NOTICE

SOURCES FOR MATERIALS DEFINED BY FORD MATERIAL SPECIFICATIONS SHALL BE SELECTED FROM THE FORD MOTOR COMPANY ENGINEERING MATERIAL APPROVED SOURCE LIST

3 → MATERIAL:
ITEM #1:EDGE CLIP HOUSING-NYLON 6/6 (WSS-M4D706-B1)
COLOR: BLACK
ITEM #2 EDGE CLIP SPRING STEEL-(WSD-M1A283-B50/WSD-M21P11-B2)
COLOR: SILVER
ITEM #3 CABLE TIE-NYLON 6/6 (WSK-M4D648-A)
COLOR: BLACK

LTRS	REVISIONS			
ORIGINATOR	CHECKER	ENGR APP	MATL APP	
RELEASED 2M5T-14197-KA				
AELE-E-12982958-093	20160108			
TPUSILO	EHAFTAR	RVITALI	RVITALI	

HellermannTyton

REFERENCE	T50ROSEC4B-BK		
4 → 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		3RD ANGLE PROJ DIMENSIONS ARE IN MILLIMETERS	
CAD TYPE K-CATIA5	CAD LOC. TCe	CAD FILE 2M5T-14197-K-DWG-01	DTMC IS MASTER
OPER. NO. N/A	UNIT N/A	DRAWING 2M5T-14197-KA	
DESIGN SADAMS	DETAIL TPUSILO	TITLE CLIP WIR	SHT 1 OF 1
CHECKED EHAFTAR	SAFETY		N/A
SCALE 2:1	DATE 20160108	DIVISION N/A	
		PLANT N/A	

FORD MOTOR COMPANY