

II HANBELL 漢鐘精機股份有限公司

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2012/12/20

TB-20121202

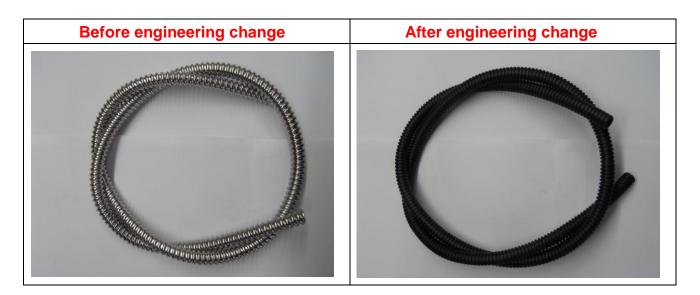
Subject: Oil level switch conduit change

Description:

This technical bulletin is to explain the upcoming engineering change on conduit of oil level switch wires. In the past we used the stainless steel corrugated tube to protect the wires for some customers and we plan to replace the tube by plastic conduit. After consulting with our customers, we learned that the most concerns were temperature and UV resistance for new plastic tubes.

The new plastic corrugated tubing is Nylon PA6 with UL, CE and RoHS compliant. Its flammability is UL 94V-2 and has passed UV (Irradiance 340 nm) exposure for 1000 hours. Its working temperature is from -40°C to 105°C. Therefore we are confident that with this new PA6 corrugated tubing, it can perform the same function like what stainless steel tubing does.

Difference before and after engineering change:



In conclusion, this engineering change will not bring any negative effect on protection of the wires and we plan to start with the plastic tube from January 2013. If you have any concern about it please let us know at your convenience. Thank you for your understanding and continuously support on Hanbell. We will keep providing the high quality compressors to your esteemed company as always.

E48133

UBE INDUSTRIES LTD

SEAVANS NORTH BLDG, 2-1 SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8449 JP

1022B

Polyamide 6 (PA6), furnished as pellets

	Min Thk	Flame			RTI	RTI	RTI
Color	(mm)	Class	HWI	HAI	Elec	Imp	Str
ALL	0.79	НВ	-	-	65	65	65
NC, WT, RD	1.47	HB	4	0	65	65	65
	3.0	V-2	3	0	65	65	65
	6.0	V-2	3	0	65	65	65
Comparative Tracking I	ndex (CTI): 0			Dimensi	onal Stabil	ity (%): 0	
High-Voltage Arc Tra	acking Rate (HVTR): 0	Hig	h Volt, Low	/ Current	Arc Resis ((D495): 6	
Dielectric Strengt	th (kV/mm): 29		Volum	e Resistiv	rity (10 ^x oh	m-cm): 1 0	0

ANSI/UL 94 small-scale test data does not pertain to building materials, furnishings and related contents. ANSI/UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

Report Date: 1971-06-15 Last Revised: 2009-08-25

Underwriters Laboratories Inc®



IEC and ISO Test Methods

			Thickness	
Test Name	Test Method	Units	Tested (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	0.79	HB75 (ALL)
			1.47	HB75 (NC, WT, RD)
			3.0	V-2 (NC, WT, RD)
			6.0	V-2 (NC, WT, RD)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	С	-	-
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	С	-	-
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
IEC Ball Pressure	IEC 60695-10-2	С	-	-
ISO Heat Deflection (1.80 MPa)	ISO 75-2	С	-	-
ISO Tensile Strength	ISO 527-2	MPa	-	-
ISO Flexural Strength	ISO 178	MPa	-	-
ISO Tensile Impact	ISO 8256	kJ/m ²	-	-
ISO Izod Impact	ISO 180	kJ/m ²	-	-
ISO Charpy Impact	ISO 179-2	kJ/m ²	-	-

Underwriters Laboratories Inc®



The Falme Retardant Test for the material of NGN/NAN series 耐燃材質測試通過報告(NAN/NGN同材質)

TEST REPORT

Mechanical & Hardgoods Lab

Report No.: HLO0423/2008 Page: 1 of

OCT. 30, 2008 Date:

AVC INDUSTRIAL CORP.

122, WUKUNG ROAD, WUKU INDUSTRIAL PARK, TAIPEI HSIEN, TAIWAN 24886

The following merchandise was submitted and identified by the applicant as:

Product Description: Split Plastic Corrugated Tubings

Style/Item No.: **NAN Series**

Manufacturer/Vendor: **AVC** Country of Origin: **TAIWAN**

We have tested the submitted sample(s) as requested and the following results were obtained:

Test Requested:

For compliance with Federal Motor Vehicles Safety Standard No. 302 Flammability of interior materials.

Test Results: Pass

Sam	ple

	Char Length	After Flame	Burn Rate_
	(mm.)	(sec.)	(mm/min)
1.	-	-	D.N.I.
2.	-	-	D.N.I.
3.	-	-	D.N.I.
4.	-	-	D.N.I.
5.	-	-	D.N.I.
6.	-	_	D.N.I.

Note: SE/B = Self Extinguish with a burn rate in mm/minute Flame

extinguish with a burn rate in film/filling that is extinguishes itself before reaching the 38 mm point from the clamped end of the specimen.

SE/NBR = Self Extinguishing/No Burn Rate. The material stops burning before it has burned for 60 seconds from the start of timing and has not burned more than 51 mm from the point where timing was started.

D.N.I. = Does not ignite. The material does not support combustion during or following the 15 second ignition period.

Test Requirements:

The burn rate shall not exceed 102 mm per minute.

Conclusion:

In our opinion, the submitted sample(s) complies with Federal Motor Vehicle Safety Standard No. 302 Flammability of interior materials (49 CFR 571.302 10-1-07 Edition).

Testing Period: OCT. 24, 2008 ~ OCT. 30, 2008

Signed for and on behalf of SGS Taiwan Ltd.

Owen Cheng Manager

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SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

, No.125, No.127, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 125 號, 127 號



TEST REPORT

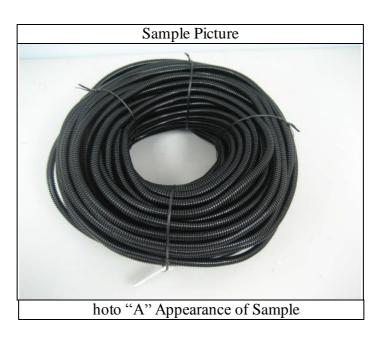
Mechanical & Hardgoods Lab

Report No.: HLO0423/2008

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--End of Report--

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尼龍浪管耐候通過報告



Analysis/Test Report

Assignment No: 94A11-F110140R1

Sampler:

AVC INDUSTRIAL CORP.

Articles:

N-Series Nylon Conduit Fittings (Including Conduits)

Date Received:

(3)Relative Humidity:50±5 % (4)Dry Bulb Temperature:42±3 °C (5)Cycle: 102 min light,18 min spray.

(6)Exposure Time: 1000 hrs

2005/03/28

Date Tested:

2005/03/31

DUSTRIA

(Irgina

Item(s)	Method(s)	Result(s)
Weather Resistance	ASTM G155	Inspect the structural of Specimen: 1.Structural of Nylon material 2.Structural of Rubber material 3. Structural of Nylon Conduit material Whitening on the sample surface is observed with the naked eye, but no deformation, damage and crack are occurred on the sample.
Remark(s): 1.Specimen Preparation Meth Provided By Customer 2.Apparatus: Atlas Weather - ometer Ci40 3.Test Condition: (1)Irradiance: 0.35 W/m^2 a (2)Black Standard Temperat	000 nt 340 nm	4.Specimen: 1 piece

Authorized by

Hui-Min Hsu Group Leader

For Test Report of first revision

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