



寧波太平洋電纜有限公司

(太平洋電線電纜股份有限公司集團企業)

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NO. 103, SI-MING EAST ROAD, YINJIANG TOWN, YINZHOU ZONE, NINGBO, ZHEJIANG, CHINA (315151)



## 規格承認書 Specification

Purchaser	
Products Name	UL1007 PVC Insulated Wire LF
Spec. No.	
Reference Standard	UL Sub.758 / CSA AWM
Date	2013.04.12

Authorized By	Approved by	Designed By

Purchaser Recognition

## Description

UL1007 PVC INSULATED WIRE LF (LEAD FREE)	
Conductor Size	30AWG ~ 16AWG
Rating Temperature (°C)	80°C
Conductor	Tinned Stranded Annealed Copper
Rating Voltage (V)	300V
Packing	The wire shall be delivered on coiled in specified length.

## Construction

Conductor		Nominal Insulation Thickness	Overall Diameter (mm)	Maximum ( @20°C ) Conductor Resistance
AWG	No./mm			
30	7/0.102	0.40	1.10±0.08	381.0
28	7/0.127	0.40	1.18±0.08	239.0
26	7/0.16	0.40	1.28±0.08	150.0
24	7/0.203	0.40	1.41±0.08	94.2
24	11/0.16	0.40	1.41±0.08	94.2
22	7/0.254	0.40	1.56±0.08	59.4
22	17/0.16	0.40	1.56±0.08	59.4
20	7/0.32	0.40	1.76±0.08	36.7
20	21/0.18	0.40	1.75±0.08	36.7
18	7/0.404	0.40	2.00±0.08	23.2
18	34/0.18	0.40	2.00±0.08	23.2
16	26/.254	0.45	2.40±0.10	14.6

## Physical & Electrical Properties

Comply with Standard		UL Sub.758 CSA AWM		
Flamability Test		Pass UL Sub.758 VW-1		
Insulation	Tensile Strength	1500PSI min.	121°C/168hrs Aged Reserve	70%min.
	Elongation	100% min.		65%min.
Spark Test		3.0KV/0.15sec No breakdown		
Dielectric Strength		2.0KV/1min. No breakdown		
Deformation Test		121°C/1hr 250g · (400g for 20AWG~16AWG) max:50%		
Flexibility Test		121°C/168HRs, Twice the diameter of the insulation 6 adjacent turns No cracks		

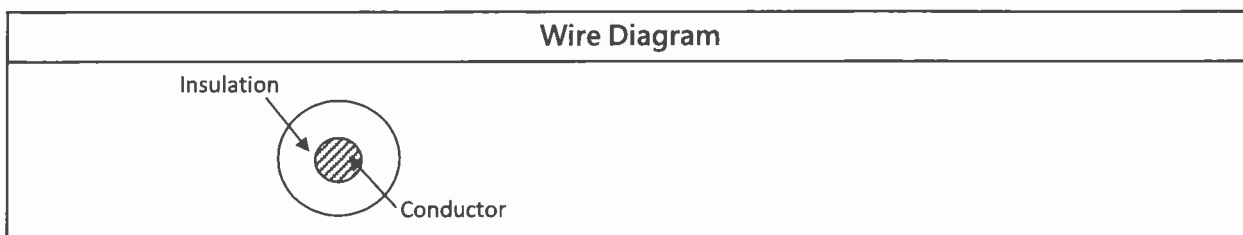
Heat Shock Test	121°C/1HR, Twice the diameter of the insulation 6 adjacent turns No cracks
Cold Bend	-10°C/4HRs, Twice the diameter of the insulation 6 adjacent turns No cracks

## Marking

1007 E357645 AWM VW-1 80°C 300V PACIFIC(NINGBO) AWM I A/B FT1 90°C XX AWG LF

## Colour

Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray, White, Dark Blue, Dark Green



# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20120827-E357645  
**Report Reference** E354177-20120824A  
**Issue Date** 2012-AUGUST-27


**Issued to:** NINGBO PACIFIC CABLE CO LTD  
NO 103 SI-MING EAST ROAD  
YIN-JIANG TOWN YING-ZHOU BOROUGH  
NINGBO  
ZHEJIANG 315151 CHINA

**This is to certify that** COMPONENT - APPLIANCE WIRING MATERIAL  
**representative samples of** PLEASE NEXT PAGE FOR MODELS/STYLES

Have been investigated by UL in accordance with the  
Standard(s) indicated on this Certificate.

**Standard(s) for Safety:** UL 758- Appliance Wiring Material  
**Additional Information:** See the UL Online Certifications Directory at  
[www.ul.com/database](http://www.ul.com/database) for additional information

Only those products bearing the UL Recognized Component Mark should be considered as being covered by UL's Recognition and Follow-Up Service.

The UL Recognized Component Mark generally consists of the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark: , may be used in conjunction with the required Recognized Marks. The Recognized Component Mark is required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual recognitions.

The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Recognized Component Mark on the product.



William R. Carney, Director, North American Certification Programs

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at [www.ul.com/contact-us](http://www.ul.com/contact-us)



# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20120827-E357645  
**Report Reference** E354177-20120824A  
**Issue Date** 2012-AUGUST-27

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

**Product:** SINGLE-CONDUCTOR THERMOPLASTIC-INSULATED WIRE

**Models/ Styles:** 1007, 1015, 1032, 1061, 1095, 1429, 1430, 1431, 1533,  
1569, 1571, 1617, 1618, 1672, 1691, 10064, 10097, 10183, 10368,  
10369, 10625, 11352, 11353



William R. Carney, Director, North American Certification Programs

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# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20120827-E357645  
**Report Reference** E354177-20120824B  
**Issue Date** 2012-AUGUST-27


**Issued to:** NINGBO PACIFIC CABLE CO LTD  
NO 103 SI-MING EAST ROAD  
YIN-JIANG TOWN YING-ZHOU BOROUGH  
NINGBO  
ZHEJIANG 315151 CHINA

**This is to certify that**  
**representative samples of** COMPONENT - APPLIANCE WIRING MATERIAL  
PLEASE NEXT PAGE FOR MODELS/STYLES

Have been investigated by UL in accordance with the  
Standard(s) indicated on this Certificate.

**Standard(s) for Safety:** UL 758- Appliance Wiring Material  
**Additional Information:** See the UL Online Certifications Directory at  
[www.ul.com/database](http://www.ul.com/database) for additional information

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# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20120827-E357645  
**Report Reference** E354177-20120824B  
**Issue Date** 2012-AUGUST-27

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

**PRODUCT:** MULTI-CONDUCTOR THERMOPLASTIC-INSULATED WIRE

**MODELS/STYLES:** 2464, 2468, 2547, 2552, 2725, 2851, 2854, 20276



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# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20120827-E357645  
**Report Reference** E354177-20120804C  
**Issue Date** 2012-AUGUST-27


**Issued to:** NINGBO PACIFIC CABLE CO LTD  
NO 103 SI-MING EAST ROAD  
YIN-JIANG TOWN YING-ZHOU BOROUGH  
NINGBO  
ZHEJIANG 315151 CHINA

**This is to certify that** COMPONENT - APPLIANCE WIRING MATERIAL  
**representative samples of** PLEASE NEXT PAGE FOR MODELS/STYLES

Have been investigated by UL in accordance with the  
Standard(s) indicated on this Certificate.

**Standard(s) for Safety:** UL 758- Appliance Wiring Material  
**Additional Information:** See the UL Online Certifications Directory at  
[www.ul.com/database](http://www.ul.com/database) for additional information

Only those products bearing the UL Recognized Component Mark should be considered as being covered by UL's Recognition and Follow-Up Service.

The UL Recognized Component Mark generally consists of the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark: , may be used in conjunction with the required Recognized Marks. The Recognized Component Mark is required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual recognitions.

The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Recognized Component Mark on the product.



William R. Carney, Director, North American Certification Programs  
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# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20120827-E357645  
**Report Reference** E354177-20120804C  
**Issue Date** 2012-AUGUST-27

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

**PRODUCT: SINGLE-CONDUCTOR THERMOSETTING-INSULATED WIRE**  
**MODEL/STYLES: 3265, 3266, 3271, 3289, 3302, 3317, 3321, 3385, 3386, 3398,**  
**3443, 3613, 3633, 3688.**



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# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20120827-E357645  
**Report Reference** E354177-20120825  
**Issue Date** 2012-AUGUST-27


**Issued to:** NINGBO PACIFIC CABLE CO LTD  
NO 103 SI-MING EAST ROAD  
YIN-JIANG TOWN YING-ZHOU BOROUGH  
NINGBO  
ZHEJIANG 315151 CHINA

**This is to certify that** COMPONENT - APPLIANCE WIRING MATERIAL  
**representative samples of** PLEASE REFER NEXT PAGE FOR MODELS/STYLES

Have been investigated by UL in accordance with the  
Standard(s) indicated on this Certificate.

**Standard(s) for Safety:** C22.2 No. 210 - Appliance Wiring Material Products  
**Additional Information:** See the UL Online Certifications Directory at  
[www.ul.com/database](http://www.ul.com/database) for additional information

Only those products bearing the UL Recognized Component Mark for Canada should be considered as being covered by UL's Recognition and Follow-Up Service meeting the appropriate Canadian requirements.

The UL Recognized Component Mark for Canada consists of the UL Recognized Mark for Canada:  and the manufacturer's identification and catalog number, model number, or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory.

The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Recognized Component Mark on the product.



William R. Carney, Director, North American Certification Programs  
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# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20120827-E357645  
**Report Reference** E354177-20120825  
**Issue Date** 2012-AUGUST-27

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Appliance Wire, Extruded PVC, Insulated Singles, Class I, Group A, B, or A/B.

Appliance Wire, Extruded PVC, Multiconductor Flat Ribbon Cable, Class I, Group A, B, or A/B.

Appliance Wire, Extruded SRPVC, Insulated Singles, Class I, Group A, B, or A/B.

Appliance Wire, Extruded FEP, Insulated Singles, Class I, Group A, B, or A/B.

Appliance Wire, Extruded XLPVC, Insulated Singles, Class I, Group A, B, or A/B.

Appliance Wire, Extruded XLPE, Insulated Singles, Class I, Group A, B, or A/B.

Appliance Wire, Extruded TPE, Insulated Singles, Class I, Group A, B, or A/B.

Appliance Wire, Extruded HDPE, Insulated Singles, For further processing as insulated singles in jacketed cable, Class I, Group A, B, or A/B

Appliance Wire, Single or Multiconductor Cable with non-integral PVC jacket, Class I, II, or I/II, Group A, B, or A/B



William R. Carney, Director, North American Certification Programs

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# HAMBURG INDUSTRIES CO.,LTD

6FL, No.12, Lane 270, Sec.3, Pei Shen Rd., Shen Keng Hsiang, Taipei Hsien, Taiwan 222

## PRODUCT SPECIFICATION

### HAMBURG H-2 環保阻燃熱收縮套管(無鹵)

Halogen free, environmentally friendly, flexible, flame-retardant polyolefin tubing

#### ■ 應用

HAMBURG H-2 系柔軟、無鹵阻燃、輻照交聯聚烯烴復合物制成之優質環保型熱收縮套管，通過 UL 及 CSA 認證。該產品不含任何鹵素阻燃劑，不含氯化合物 PCBs、PCPs 及多溴聯苯 PBBs、多溴氧化聯苯 PBBOs、多溴聯苯醚 PBBEs、PBDEs 等危害環境的物質，符合歐洲 RoHS 環保指令及 SONY SS00259 標準的環保要求。廣泛應用於線纜絕緣保護、末端或連接處的絕緣處理或應力解除，線材加工的被覆與絕緣保護，焊點保護、電子元器件的包覆，電阻、電容的絕緣保護、金屬產品的防鏽、防腐蝕處理，電線標示或標色等。

#### ■ 特點

- ◎收縮比 2 : 1
- ◎低溫收縮
- ◎柔軟、高阻燃
- ◎優異的物理、化學及電學性能
- ◎不含鹵素阻燃劑，不含氯化合物 PCBs、PCPs 及多溴聯苯 PBBs、多溴氧化聯苯 PBBOs、多溴聯苯醚 PBBEs、PBDEs 等對環境有害的物質，符合歐洲 RoHS 環保指令及 SONY SS00259 標準的環保要求。
- ◎可提供多種規格及顏色

#### ■ 熱收縮性能

- ◎ 連續使用的環境溫度：-55℃~125℃
- ◎ 起始收縮溫度：70℃
- ◎ 完全收縮溫度：125℃
- ◎ 縱向收縮率：≤5%

#### ■ 認證 / 符合標準

- ◎ UL224 E255394 125℃ 600V VW-1
- ◎ CSA C22.2 238014 125℃ 600V VW-1

#### ■ Application

HAMBURG H-2 is halogen free, environmentally friendly, flexible, flame-retardant, irradiated crosslinking heat-shrinkable modified polyolefin tubing. It contains no added halogens, and is free of PCBs, PCBs, polybrominated biphenyls (PBBs), polybrominated biphenyl oxides and others (PBBOs, PBBEs and PBDEs) and toxic heavy metal (Pb, Cd, Hg, Cr<sup>6+</sup>) compounds, which are classified as environmentally hazardous substances. This high-reliability product is widely used for insulation or jacketing of wire harness, strain relief of wire terminations and connections, bundling of wire harness, protection of soldered points, insulation and capsule of electronic components, anti-corrosive protection, identification and color coding, etc.

#### ■ Features/Benefits

- ◎Shrink ration:2:1
- ◎Low shrink temperature
- ◎Very flexible, flame-retardant
- ◎Good thermal stability
- ◎Excellent physical, chemical and electrical properties
- ◎No added halogens, free of PCBs, PCBs, polybrominated biphenyls (PBBs), polybrominated biphenyl oxides and others (PBBOs, PBBEs, and PBDEs) and toxic heavy metal (Pb, Cd, Hg, Cr<sup>6+</sup>) compounds, which are classified as environmentally hazardous substances, Conforms to European RoHS environmental directive.
- ◎Wide range of sizes and colors

#### ■ Heat shrinking property

- ◎Temperature range: -55℃~125℃
- ◎Shrinking temperature: 70℃
- ◎Full recovery temperature: 125℃
- ◎Longitudinal shrinking: ≤5%

#### ■ Standards/Approvals

- ◎UL224 E255394 125℃ 600V VW-1
- ◎CSA C22.2 238014 125℃ 600V VW-1

HAMBURG H-2

V1.5

For further information, please contact:

Tel: 886 2 2662 8882 Fax: 886 2 2662 7201~2 E-mail: [Taipei@hamburg.com.tw](mailto:Taipei@hamburg.com.tw) URL: <http://www.hamburg.com.tw>



# HAMBURG INDUSTRIES CO.,LTD

6FL, No.12, Lane 270, Sec.3, Pei Shen Rd., Shen Keng Hsiang, Taipei Hsien, Taiwan 222

## ■ 性能特性 Property

	性能 Property	單位 Unit	測試方法 Test method	性能指標 Standard
物理性能 Physical	拉伸強度 Tensile strength	Mpa	GB/T1040	$\geq 10.4$
	斷裂伸長率 Elongation	%	GB/T1040	$\geq 200$
	熱老化後拉伸強度 Tensile strength after aging	Mpa	UL224 158°Cx168hr	$\geq 7.3$
	熱老化後斷裂伸長率 Elongation after aging	%	UL224 158°Cx168hr	$\geq 100$
	耐熱沖擊 Heat Resistance	-	UL224 250°Cx4hr	不發粘, 不龜裂 No viscosity, No cracking
	抗冷彎曲 Cold blend	-	UL224 -30°Cx4hr	不龜裂 No cracking
電氣性能 Electrical	擊穿強度 Dielectric strength	KV/mm	GB/T1408	$\geq 15$
	耐壓 Dielectric withstand	V	UL224	2500V 不擊穿 No breaking for 2500V
	體積電阻率 Volume resistance	$\Omega \cdot \text{cm}$	GB/T1410	$\geq 1 \times 10^{14}$
化學性能 Chemical	抗腐蝕性 Anti Corrosion	-	UL224 158°Cx168hr	通過 Pass
	銅安定性 Copper stability	-	UL224 158°Cx168hr	通過 Pass
	阻燃性 Flammability	-	UL224	VW-1

HAMBURG H-2

V1.5

For further information, please contact:

Tel: 886 2 2662 8882 Fax: 886 2 2662 7201-2 E-mail: [Taipei@hamburg.com.tw](mailto:Taipei@hamburg.com.tw) URL: <http://www.hamburg.com.tw>



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## 規格尺寸 Product sizes

規格 Size(mm)	收縮前(mm) As supplied		收縮後(mm) After recovery		包裝(米/捲) Packing (M/Spool)	適用範圍 Application (mm)
	內徑(I.D.) Inside diameter	壁厚(W.T.) Wall thickness	內徑(I.D.) Inside diameter	壁厚(W.T.) Wall Thickness		
Φ0.5	0.8 ± 0.2	0.15 ± 0.05	≤0.30	0.22 ± 0.10	400	0.4~0.7
Φ0.6	0.9 ± 0.2	0.15 ± 0.05	≤0.40	0.22 ± 0.10	400	0.5~0.7
Φ0.8	1.1 ± 0.2	0.15 ± 0.05	≤0.50	0.22 ± 0.10	400	0.6~0.8
Φ1.0	1.5 ± 0.2	0.15 ± 0.05	≤0.65	0.28 ± 0.10	400	0.75~0.9
Φ1.5	2.0 ± 0.2	0.18 ± 0.05	≤0.90	0.32 ± 0.10	400	0.95~1.4
Φ2.0	2.5 ± 0.2	0.18 ± 0.05	≤1.00	0.35 ± 0.10	400	1.1~1.8
Φ2.5	3.0 ± 0.2	0.18 ± 0.05	≤1.30	0.38 ± 0.10	400	1.35~2.3
Φ3.0	3.5 ± 0.2	0.18 ± 0.05	≤1.50	0.40 ± 0.10	400	1.6~2.7
Φ3.5	4.0 ± 0.2	0.22 ± 0.05	≤1.80	0.42 ± 0.10	400	1.85~3.2
Φ4.0	4.5 ± 0.2	0.25 ± 0.05	≤2.00	0.45 ± 0.10	400	2.1~3.6
Φ4.5	5.0 ± 0.2	0.25 ± 0.05	≤2.30	0.50 ± 0.10	200	2.35~4.0
Φ5.0	5.5 ± 0.2	0.25 ± 0.05	≤2.50	0.55 ± 0.10	200	2.6~4.5
Φ6.0	6.5 ± 0.2	0.28 ± 0.05	≤3.00	0.55 ± 0.10	200	3.1~5.4
Φ7.0	7.5 ± 0.3	0.28 ± 0.05	≤3.50	0.55 ± 0.10	100	3.7~6.3
Φ8.0	8.5 ± 0.3	0.28 ± 0.05	≤4.00	0.60 ± 0.10	100	4.2~7.2
Φ9.0	9.5 ± 0.3	0.30 ± 0.08	≤4.50	0.60 ± 0.10	100	4.7~8.0
Φ10.0	10.5 ± 0.3	0.30 ± 0.08	≤5.00	0.60 ± 0.10	100	5.2~9.0
Φ11.0	11.5 ± 0.3	0.30 ± 0.08	≤5.50	0.60 ± 0.10	100	5.7~10.0
Φ12.0	12.5 ± 0.3	0.30 ± 0.08	≤6.00	0.60 ± 0.10	100	6.2~11.0
Φ13.0	13.5 ± 0.3	0.35 ± 0.10	≤6.50	0.65 ± 0.10	100	6.7~12.0
Φ14.0	14.5 ± 0.3	0.35 ± 0.10	≤7.00	0.65 ± 0.10	100	7.3~13.0
Φ15.0	15.5 ± 0.4	0.40 ± 0.12	≤7.50	0.70 ± 0.10	100	7.8~14.0
Φ16.0	16.5 ± 0.4	0.40 ± 0.12	≤8.00	0.70 ± 0.10	100	8.3~15.0
Φ17.0	17.5 ± 0.4	0.40 ± 0.12	≤8.50	0.70 ± 0.10	100	8.8~16.0
Φ18.0	19.0 ± 0.5	0.40 ± 0.15	≤9.00	0.80 ± 0.15	100	9.3~17.0
Φ20.0	22.0 ± 0.5	0.40 ± 0.15	≤10.00	0.80 ± 0.15	100	10.4~19.0
Φ22.0	24.0 ± 0.5	0.40 ± 0.15	≤11.00	0.80 ± 0.15	100	11.4~21.0
Φ25.0	26.0 ± 0.5	0.50 ± 0.15	≤12.50	0.90 ± 0.15	50	12.8~24.0
Φ28.0	29.0 ± 0.5	0.50 ± 0.15	≤14.00	0.90 ± 0.15	50	14.4~29.0
Φ30.0	31.5 ± 1.0	0.50 ± 0.15	≤15.00	0.95 ± 0.15	50	16.0~29.0
Φ35.0	36.5 ± 1.0	0.50 ± 0.15	≤17.50	1.00 ± 0.15	50	18.0~34.0
Φ40.0	41.5 ± 1.0	0.55 ± 0.15	≤20.00	1.00 ± 0.15	50	21.0~39.0
Φ45.0	46.5 ± 1.0	0.55 ± 0.15	≤22.50	1.00 ± 0.15	25	23.5~44.0
Φ50.0	≥50	0.55 ± 0.15	≤25.00	1.00 ± 0.15	25	26.0~49.0

HAMBURG H-2

V1.5

## Ordering Information

◎Color: Black.

other colors are available upon request.

◎Nonstandard size: Special sizes are available upon request.

◎Standard packaging: On spools, Cut pieces are available upon request.

◎Ordering description: Specify product type, size (mm or inch) and color.

For further information, please contact:

Tel: 886 2 2662 8882 Fax: 886 2 2662 7201~2 E-mail: [Taipei@hamburg.com.tw](mailto:Taipei@hamburg.com.tw) URL: <http://www.hamburg.com.tw>



# HAMBURG INDUSTRIES CO.,LTD

6FL, No.12, Lane 270, Sec.3, Pei Shen Rd., Shen Keng Hsiang, Taipei Hsien, Taiwan 222

## PRODUCT SPECIFICATION

### HAMBURG H-2(CB) 環保阻燃薄壁熱收縮套管(無鹵)

Halogen free, environmentally friendly, ultra thin-wall, flame-retardant polyolefin tubing

#### ■ 應用

HAMBURG H-2(CB)系柔軟、無鹵阻燃、輻照交聯聚烯烴復合物制成之環保超薄型熱收縮套管，通過UL及CSA認證。H-2(CB)系超薄設計，快速收縮，特別適用於空間緊張和對溫度敏感的場合。例如，高密度連接器的應力解除，輕、薄、小、熱敏元件的絕緣保護等。H-2(CB)不含鹵素阻燃劑，不含PCBs、PCPs、PBBs、PBBOs、PBBEs、PBDEs等對環境有害的物質、符合環保要求。

#### ■ 特點

- ◎收縮比 2 : 1
- ◎低溫收縮、快速收縮
- ◎柔軟、高阻燃
- ◎優異的物理、化學及電學性能
- ◎不含鹵素阻燃劑，不含 PCBs、PCPs、PBBs、PBBOs、PBBEs、PBDEs 等對環境有害的物質，符合歐洲 RoHS 環保指令及 SONY SS00259 標準的要求。
- ◎可提供多種規格及顏色

#### ■ 熱收縮性能

- ◎ 連續使用環境溫度：-55℃~125℃
- ◎ 起始收縮溫度：70℃
- ◎ 完全收縮溫度：125℃
- ◎ 縱向收縮率：≤5%

#### ■ 認證 / 符合標準

- ◎UL224 E255394 125℃ 300V VW-1
- ◎CSA C22.2 238014 125℃ 150V VW-1

#### ■ Application

HAMBURG H-2(CB) is halogen free, environmentally friendly, flexible, ultra thin-wall, flexible, flame-retardant, irradiated cross-linking heat-shrinkable modified polyolefin tubing. It is designed for applications that require an ultra thin wall for rapid shrinking and space saving. Low shrink temperature further reduces installation time and the risk of damage to temperature-sensitive components.

#### ■ Features/Benefits

- ◎Shrink ration:2:1
- ◎Low shrink temperature
- ◎Ultra thin-wall, rapid shrinking.
- ◎Very flexible, flame-retardant
- ◎No added halogens, free of PCBs, PCPs, polybrominated biphenyls (PBBs), polybrominated biphenyl oxides and others (PBBOs, PBBEs, and PBDEs) and toxic heavy metal (Pb, Cd, Hg, Cr6+) compounds, which are classified as environmentally hazardous substances. Conforms to European RoHS environmental directive.
- ◎Wide range of sizes and colors

#### ■ Heat shrinking property

- ◎Temperature range: -55℃~125℃
- ◎Shrink temperature: 70℃
- ◎Full recovery temperature: 125℃
- ◎Longitudinal shrinking: ≤5%

#### ■ Standards/Approvals

- ◎UL224 E255394 125℃ 300V VW-1
- ◎CSA C22.2 238014 125℃ 150V VW-1

HAMBURG H-2(CB)

V1.5

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## ■ 性能特性 Property

性能 Property		單位 Unit	測試方法 Test method	性能指標 Typical data
物理性能 Physical	拉伸強度 Tensile strength	Mpa	GB/T1040	$\geq 10.4$
	斷裂伸長率 Elongation	%	GB/T1040	$\geq 200$
	熱老化後拉伸強度 Tensile strength after aging	Mpa	UL224 158°Cx168hr	$\geq 7.3$
	熱老化後斷裂伸長率 Elongation after aging	%	UL224 158°Cx168hr	$\geq 100$
	耐熱沖擊 Heat Resistance	-	UL224 250°Cx4hr	不發粘,不龜裂 No viscosity, No cracking
	抗冷彎曲 Cold bend	-	UL224 -30°Cx4hr	不龜裂 No cracking
電氣性能 Electrical	擊穿強度 Dielectric strength	KV/mm	GB/T1408	$\geq 15$
	耐壓 Dielectric withstand	V	UL224	1500V 不擊穿 No breaking for 1500V
	體積電阻率 Volume resistance	$\Omega \cdot \text{cm}$	GB/T1410	$\geq 1 \times 10^{14}$
化學性能 Chemical	抗腐蝕性 Anti Corrosion	-	UL224 158°Cx168hr	通過 Pass
	銅安定性 Copper stability	-	UL224 158°Cx168hr	通過 Pass
	阻燃性 Flammability	-	UL224	VW-1

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## 規格尺寸 Product sizes

規格 Size(mm)	收縮前(mm) As supplied		收縮後(mm) After recovery		包裝(米/捲) Packing (M/Spool)	適用範圍 Application (mm)
	內徑(I.D.) Inside diameter	壁厚(W.T.) Wall thickness	內徑(I.D.) Inside diameter	壁厚(W.T.) Wall thickness		
Φ0.6	0.9 ± 0.2	0.13 ± 0.05	≤0.40	0.20 ± 0.10	400	0.4~0.7
Φ0.8	1.1 ± 0.2	0.13 ± 0.05	≤0.50	0.20 ± 0.10	400	0.6~0.8
Φ1.0	1.4 ± 0.2	0.13 ± 0.05	≤0.65	0.20 ± 0.10	400	0.7~1.0
Φ1.5	1.9 ± 0.2	0.13 ± 0.05	≤0.90	0.20 ± 0.10	400	0.9~1.4
Φ2.0	2.4 ± 0.2	0.13 ± 0.05	≤1.00	0.22 ± 0.10	400	1.1~1.8
Φ2.5	2.9 ± 0.2	0.13 ± 0.05	≤1.30	0.25 ± 0.10	400	1.4~2.3
Φ3.0	3.4 ± 0.2	0.13 ± 0.05	≤1.50	0.28 ± 0.10	400	1.6~2.7
Φ3.5	3.9 ± 0.2	0.13 ± 0.05	≤1.80	0.28 ± 0.10	400	1.9~3.2
Φ4.0	4.4 ± 0.2	0.15 ± 0.05	≤2.00	0.30 ± 0.10	400	2.1~3.6
Φ4.5	4.9 ± 0.2	0.15 ± 0.05	≤2.30	0.30 ± 0.10	200	2.4~4.0
Φ5.0	5.5 ± 0.2	0.15 ± 0.05	≤2.50	0.32 ± 0.10	200	2.6~4.5
Φ6.0	6.5 ± 0.2	0.15 ± 0.05	≤3.00	0.32 ± 0.10	200	3.1~5.4
Φ7.0	7.5 ± 0.3	0.15 ± 0.05	≤3.50	0.32 ± 0.10	200	3.7~6.3
Φ8.0	8.5 ± 0.3	0.15 ± 0.05	≤4.00	0.32 ± 0.10	200	4.2~7.2
Φ9.0	9.5 ± 0.3	0.15 ± 0.05	≤4.50	0.35 ± 0.10	200	4.7~8.0
Φ10.0	10.5 ± 0.3	0.15 ± 0.05	≤5.00	0.35 ± 0.10	200	5.2~9.0
Φ11.0	11.5 ± 0.3	0.18 ± 0.05	≤5.50	0.40 ± 0.10	200	5.7~10.0
Φ12.0	12.5 ± 0.3	0.20 ± 0.05	≤6.00	0.40 ± 0.10	200	6.2~11.0
Φ13.0	13.5 ± 0.3	0.20 ± 0.05	≤6.50	0.40 ± 0.10	200	6.7~12.0
Φ14.0	14.5 ± 0.3	0.20 ± 0.05	≤7.00	0.40 ± 0.10	200	7.3~13.0
Φ15.0	15.5 ± 0.4	0.20 ± 0.05	≤7.50	0.40 ± 0.10	200	7.8~14.0
Φ16.0	16.5 ± 0.4	0.22 ± 0.05	≤8.00	0.40 ± 0.10	200	8.3~15.0
Φ17.0	17.5 ± 0.4	0.22 ± 0.05	≤8.50	0.40 ± 0.10	200	8.8~16.0
Φ18.0	18.5 ± 0.4	0.22 ± 0.05	≤9.00	0.42 ± 0.10	200	9.3~17.0
Φ20.0	20.5 ± 0.5	0.25 ± 0.05	≤10.00	0.45 ± 0.10	200	10.5~19.0
Φ22.0	22.5 ± 0.5	0.25 ± 0.05	≤11.00	0.45 ± 0.10	200	11.5~20.5
Φ25.0	25.5 ± 0.5	0.25 ± 0.05	≤12.50	0.45 ± 0.10	100	13.0~24.0

HAMBURG H-2(CB)

V1.5

## Ordering Information

◎Color: Black

Other colors are available upon request.

◎Nonstandard size: Special sizes are available upon request.

◎Standard packaging: On spools, Cut pieces are available upon request.

◎Ordering description: Specify product type, size (mm or inch) and color.

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