

SPECIFICATION

FOR

UL RECOGNIZED AND CSA CERTIFIED HEAT-RESISTANT LEAD FREE PVC INSULATED WIRES

P/N ; UL1015 TEW LF
UL1283 TEW LF
UL1284 TEW LF

Quantity

Your Ref. No.

Our Ref. No.

Signed by



Noriyuki Imai

Manager

Engineering Dept.

Hitachi Cable, Ltd.
Hitachi Cable Fine Tech, Ltd.

1.Scope

This specification covers UL recognized and CSA certified heat-resistant lead free PVC insulated wires used for internal wiring of electric and electronic equipments.

[UL style 1284 / 105°C, 600V : CSA type TEW / 105°C, 600V]

[UL style 1283 / 105°C, 600V : CSA type TEW / 105°C, 600V]

[UL style 1015 / 105°C, 600V : CSA type TEW / 105°C, 600V]

2. Applicable standards

- (1) UL 758 [Latest version]
- (2) CSA C22.2 No.127 [Latest version]
- (3) Japan Electrical Appliance and Material Safety Law (DENAN-Law) [Latest version]

3. Construction and materials

3.1 Conductor

- (1)Material ; stranded tinned annealed copper
- (2)AWG size ; 8 ~ 2AWG : UL1283 TEW
1 ~ 4/0AWG : UL1284 TEW
22 ~ 10AWG : UL1015 TEW
- (3)Stranding ; shown in the Table 2,3,4
- (4)Diameter ; shown in the Table 2,3,4

3.2 Insulation

- (1)Material ; heat-resistant lead free PVC
- (2)Thickness ; UL1283 TEW
minimum average ; 1.52mm(60mils)
minimum at any point ; 1.37mm(54mils)
UL1284 TEW
minimum average ; 2.03mm(80mils)
minimum at any point ; 1.82mm(72mils)
UL1015 TEW
minimum average ; 0.76mm(30mils)
minimum at any point ; 0.69mm(27mils)
- (3)Diameter ; shown in the Table 2,3,4

3.3 Color

- ; insulation color : green
- ; straight mark : yellow
- ; coverage : 40~60%

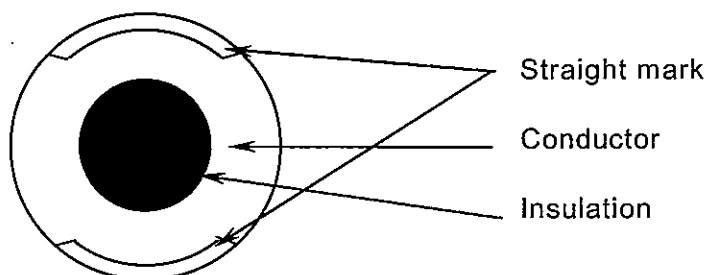


Fig.1

4. Properties

The properties of wires are shown in the Table 2,3,4

5. Marking

The completed wires shall be printed following marking format on the surface throughout entire length by regular interval.

For UL1015

AWM E41447 STYLE 1015 20AWG 105C VW-1 HITACHI -F-
(HITACHI-T)
(HITACHI-I)

CSA LL24713 TYPE TEW 105C 600V FT1 LF
(LL48469)
(LL46119)

For UL1283

AWM E41447 STYLE 1283 8AWG 105C VW-1 HITACHI -F-
(HITACHI-T)
(HITACHI-I)

CSA LL24713 TYPE TEW 105C 600V FT1 LF
(LL48469)
(LL46119)

For UL1284

AWM E41447 STYLE 1284 4/0AWG 105C VW-1 HITACHI -F-
(HITACHI-T)
(HITACHI-I)

CSA LL24713 TYPE TEW 105C 600V FT1 LF
(LL48469)
(LL46119)

[Note ; Marking format subject to change without notice]

6. Packing**6.1 Packing**

- (1) Unit length ; shown in the Table 1
 (2) Package style ; shown in the Table 1

6.2 Marking on the tag

Each package shall be tagged to show the following information with UL and CSA stamp.

- | | |
|----------------------|--------------------------|
| 1) UL style/CSA type | 8) Rating temperature |
| 2) Conductor size | 9) Rating voltage |
| 3) No. of conductors | 10) Date of manufacture |
| 4) Color | 11) Insulation thickness |
| 5) Lot No. | 12) Kind of insulation |
| 6) Length | 13) Use |
| 7) File No. | 14) Name of manufacturer |

7. Recognized data

- (1)UL file No. : E41447
 (2)CSA file No. : LL24713, LL48469,LL46119
 (3)DENAN-Law approval No.: F-HDH1-003, F-HDT1-003, F-TND1-002(UL1015)
 F-HDH1-004, F-HDT1-027, F-TND1-003(UL1283,1284)

8. Product description

UL1283 TEW 1 × 8AWG (7 /24/ 0.26) LF
 ① ② ③ ④ ⑤ ⑥

- ① UL Style No.
 ② CSA type
 ③ No. of Core
 ④ Conductor size
 ⑤ Conductor stranding
 ⑥ Lead Free

9. Control of Chemical Substances

Control of Chemical Substances in this product shall be controlled as below.

9.1 6 substances of RoHS Directive

(1) Applicable standard and statute

(a) Directive of 2002/95/EC

(Directive 2002/95/EC of the European Parliament and of the Council on the Restriction of the use of certain Hazardous Substances in electrical and electronic equipment)

(b) 2005/618/EC COMMISSION DECISION of 18 August 2005

(amending Directive 2002/95/EC of the European Parliament and of the Council for the purpose of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment)

(c) JIS C 0950:2008

(The marking for presence of the specific chemical substances for electrical and electronic equipment)

(2) The maximum concentration values for certain hazardous substances.

	Chemical Substances	Concentration value	
		Resin, a paint, and ink	Others
1	Cadmium and Cadmium Compounds	Max. 75ppm	
2	Hexavalent Chromium Compounds	Max. 1000ppm	
3	Laed and Lead Compounds	Max. 100ppm	Max. 1000ppm
4	Mercury and Mercury Compounds	Max. 1000ppm	
5	Polybrominated Biphenyls(PBBs)	Max. 1000ppm	
6	Polybrominated Diphenyl ethers(PBDEs)	Max. 1000ppm	

9.2 15 substances of JGPSSI Level A

(1) Applicable Standard

JGPSSI Manual for Survey of Chemical Substances Contained in Parts and Materials(ver.2:04.04.19)

(2) Maximum concentration value

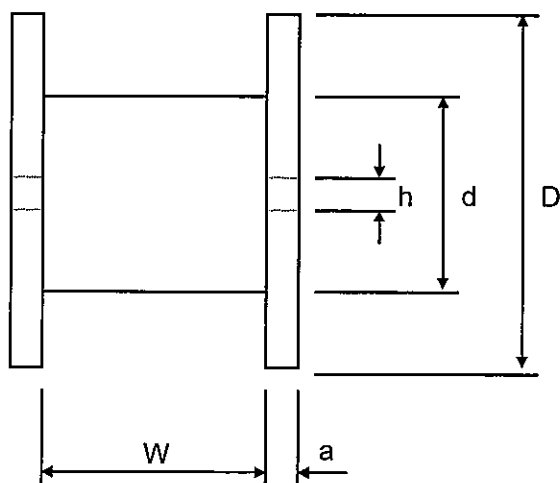
Not Intentionally added.

6 substances of the clause 9.1 shall be controlled as clause 9.1 (2).

Japan Green Procurement Survey Standardization Initiative (JGPSSI)

Table 1 Unit length of wires

AWG size	coil	plastic spool (P-30K)	drum
22	305m	915m	-
20	305m	610m	-
18	305m	-	-
16	305m	-	-
14	305m	-	-
12	305m	-	-
10	305m	-	-
8	153m	-	-
6	153m	-	-
4	-	-	153m
2	-	-	153m
1	-	-	153m
1/0	-	-	153m
2/0	-	-	153m
3/0	-	-	153m
4/0	-	-	153m



Type	D (mm)	d (mm)	W (mm)	a (mm)	h (mm)
P-30K	300	130	130	15	30

Fig.2 Plastic spool

Table 2 (UL 1015 TEW)

Conductor		Insulation			Conductor resistance (at 20°C) ohm/km	Insulation resistance* (at 20°C) Mohm-km	Test Voltage* V/5min.	Ampacity** A	Approx Weight kg/km
Size AWG	Costruction No./mm	Diam. mm	Thick. mm	Diam. mm					
22	7/0.26	0.78	0.81	2.40±0.12	54.7	15	A.C.2,000	10.6	9.2
	17/0.16	0.76	0.81	2.38±0.12	58.1	15		10.0	8.7
20	7/0.32	0.96	0.81	2.58±0.12	34.1	15	A.C.2,000	13.6	11.7
	26/0.16	0.94	0.81	2.56±0.12	38.3	15		12.8	11.1
18	19/0.26	1.30	0.81	2.94±0.12	20.4	15	A.C.2,000	19.3	16.5
	43/0.16	1.21	0.81	2.83±0.12	23.4	15		17.3	14.9
16	19/0.287	1.44	0.81	3.06±0.12	15.8	15	A.C.2,000	21.9	19.0
	54/0.18	1.53	0.81	3.15±0.12	14.6	15		23.1	20.7
14	41/0.26	1.92	0.81	3.54±0.12	9.64	15	A.C.2,000	30.1	29.3
12	65/0.26	2.42	0.81	4.04±0.12	6.06	15	A.C.2,000	40.5	42.6
10	104/0.26	3.07	0.81	4.69±0.12	3.80	15	A.C.2,000	55.0	63.7

* The spark test may be substituted in a production line.

** These ampacities are calculated for 1 wire in air, based on conductor temperature of 105°C, ambient temperature of 40°C.

Table3 (UL 1283 TEW)

Conductor		Insulation			Conductor resistance (at 20°C) ohm/km	Insulation resistance* (at 20°C) Mohm-km	Test Voltage* V/5min.	Ampacity** A	Approx Weight kg/km	
Size AWG	Costruction No./mm	Diam. mm	Thick. mm	Diam. mm						Max.Dia mm
8	7/24/0.26	4.30	1.62	7.54	8.2	2.370	15	A.C.2,000	83	124
6	7/38/0.26	5.30	1.62	8.54	9.2	1.490	15	A.C.2,000	111	178
4	7/60/0.26	6.80	1.62	10.04	10.7	0.948	15	A.C.2,000	150	268
2	19/35/0.26	8.70	1.62	11.94	12.6	0.600	15	A.C.2,000	203	397

Table 4 (UL 1284 TEW)

Conductor		Insulation			Conductor resistance (at 20°C) ohm/km	Insulation resistance* (at 20°C) Mohm-km	Test Voltage* V/5min.	Ampacity** A	Approx Weight kg/km	
Size AWG	Costruction No./mm	Diam. mm	Thick. mm	Diam. mm						Max.Dia mm
1	19/44/0.26	9.74	2.15	14.04	14.9	0.475	15	A.C.2,500	238	520
1/0	19/55/0.26	10.90	2.15	15.20	16.1	0.380	15	A.C.2,500	276	632
2/0	19/70/0.26	12.27	2.15	16.57	17.5	0.299	15	A.C.2,500	322	785
3/0	19/88/0.26	13.75	2.15	18.05	19.0	0.238	15	A.C.2,500	374	965
4/0	37/57/0.26	15.44	2.15	19.74	20.6	0.188	15	A.C.2,500	436	1200

* The spark test may be substituted in a production line.

** These ampacities are calculated for 1 wire in air, based on conductor temperature of 105°C, ambient temperature of 40°C.