

Electrical Insulation System Component

E473756

Koshen Insulator Co Ltd

1st Fl 32 Yi 9th Rd, Xinyi District, Keelung 201 TW

System Component

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**System
Designation**
KS-B1**Thermal
Endurance**
130(B)/4000h

report date: 2017-03-29

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Authorization Letter Required for Adoption of this System**Construction Details (Table I)**

The use of this insulation system is limited to the combination of materials specified below. Where more than one item is designated under Insulation Function, they may be used together, unless otherwise indicated, or they may be used as alternates to one another. Functions designated "optional" are not necessarily required for every design. Insulation thicknesses and/or layers indicated below are minimum.

Winding Wire

- Recognized Component - Magnet wire (OBMW2), single build or greater, round or rectangular, copper or aluminum unless stated otherwise for the types listed below
- Recognized Component - Single and Multi-Layer Insulated Winding Wire (OBJT2) listed below
- Recognized Component - Appliance Wiring Material (ALV2) listed below
- Bare conductors wrapped or interleaved with a paper or film listed below need not be a Recognized Component

(unless otherwise noted, winding wire types listed below may be used in combination within a single product)

ANSI Type		Temp(°C)	Basecoat(Topcoat)
MW 28	and	130	Polyurethane (Polyamide)
MW 75	and	130	Polyurethane
MW 79	or	155	Polyurethane
MW 80	or	155	Polyurethane (Polyamide)
MW 82	or	180	Polyurethane
MW 83	or	180	Polyurethane (Polyamide)
MW 85	or	180	Polyurethane

Designation	mils(mm)	comments
Dongguan Koshen Insulator Co Ltd [E365580] - Recognized Component		
TIW-1-(Suffix)	3.9 (0.1)	
TIW-1-LZ	3.9 (0.1)	
FURUKAWA ELECTRIC CO LTD [E206440] - Recognized Component		
TEX-E, TEX-EA	3.3 (0.08)	
TEX-ECEW3	3.3 (0.08)	
TEX-ELZ	3.3 (0.08)	
TOTOKU ELECTRIC CO LTD [E166483] - Recognized Component		
TIW-2LZX+, TIW-2LZXY+	3.5 (0.09)	
TIW-2SLZX+, TIW-2SLZXY+	3.5 (0.09)	
TIW-2SX\$+, TIW-2SXY\$+	3.5 (0.09)	
TIW-2X\$+, TIW-2XY\$+	3.5 (0.09)	
TIW-3LZX@@@%	3.9 (0.1)	
TIW-3X\$	3.9 (0.1)	

Ground & Interwinding Insulations

Any Recognized Component Plastic (QMFZ2), polyethylene terephthalate film (PET) 1 mil (0.02mm)

Designation	mils(mm)	comments
3M COMPANY [E17385] - Recognized Component		
1 (a)		1[ayers]
1181		1[ayers]
1182		1[ayers]
1205		1[ayers]
1218		1[ayers]
1298CR		1[ayers]
1318-1 (a)		1[ayers]
1318-2 (a)		1[ayers]

1318B-1	1[Layers]
1318B-2	1[Layers]
1318MW-1 (a)	1[Layers]
1318MW-2 (a)	1[Layers]
1318W-1	1[Layers]
1318W-2	1[Layers]
1318Y-1 (a)	1[Layers]
1318Y-2 (a)	1[Layers]
1350-1 (b)	1[Layers]
1350-2 (c)	1[Layers]
1350CR-1	1[Layers]
1350CR-2	1[Layers]
1350F-1 (b)	1[Layers]
1350F-2 (c)	1[Layers]
1350FB-1 (b)	1[Layers]
1350FB-2 (c)	1[Layers]
1350FW-1 (b)	1[Layers]
1350FW-2 (c)	1[Layers]
1350FY-1 (b)	1[Layers]
1350FY-2 (c)	1[Layers]
1350T-1 (b)	2[Layers]
1350T-2 (b)	2[Layers]
1350T-3 (b)	1[Layers]
1351-1 (a)	1[Layers]
1351-2 (c)	1[Layers]
1351T-1 (a)	2[Layers]
1351T-2 (a)	2[Layers]
1351T-3 (a)	1[Layers]
1351W-1 (a)	1[Layers]
1351W-2 (c)	1[Layers]
1351Y-1 (a)	1[Layers]
1351Y-2 (c)	1[Layers]
1388B-1 (b)	1[Layers]
1388W-1 (b)	1[Layers]
1388Y-1 (b)	1[Layers]
44 (a)	1[Layers]
44-A (a)	1[Layers]
44-T (a)	1[Layers]
44D (a)	1[Layers]
44D-A (a)	1[Layers]
44T-A (a)	2[Layers]
5	1[Layers]
54 (a)	1[Layers]
55	1[Layers]
56 (a)	2[Layers]
57 (a)	1[Layers]
58 (a)	1[Layers]
74 (a)	2[Layers]
75	1[Layers]
92	1[Layers]
MR 94	1[Layers]
MR 94B (c)	1[Layers]
Super 10 (a)	1[Layers]
Super 20 (a)	1[Layers]
3M TAIWAN LTD [E305006] - Recognized Component	
PIA220	1[Layers]
CHANG CHUN PLASTICS CO LTD [E59481] - Recognized Component	
T200HF	15 (0.38)
T220NA	15 (0.38)
CHANG SHU LIANG YI TAPE INDUSTRY CO LTD [E246820] - Recognized Component	
LY-19-01-15 (c)(d)	1[Layers]
LY-19-01-18 (c)(d)	1[Layers]
LY-19-01-20 (c)(d)	1[Layers]
LY-19-01-25 (c)(d)	1[Layers]
LY-19-01-40 (c)(d)	1[Layers]
LY-19-01-85 (e)(d)	1[Layers]
LY-19-02-15 (c)(d)	1[Layers]
LY-19-02-18 (c)(d)	1[Layers]
LY-19-02-20 (c)(d)	1[Layers]

LY-19-02-25 (c)(d)	1 [layers]
LY-19-02-40 (c)(d)	1 [layers]
LY-19-02-85 (e)(d)	1 [layers]
LY-XX (a)(b)	1 [layers]
LY0-08 (f)(g)	1 [layers]
LY0-XX (f)(g) (except LY0-08)	1 [layers]
E I DUPONT DE NEMOURS & CO INC [E34739] - Recognized Component	
Nomex® 410	2 (0.05)
Nomex® 411	4.5 (0.11)
Nomex® 414	2 (0.05)
Nomex® 416, 416 LAM	2 (0.05)
Nomex® 418, 818, 864 LAM	2 (0.05)
Nomex® 992, 992 PSB	4 (0.1)
Nomex® 993, 993 PSB	3.3 (0.08)
Nomex® 994, 994 PSB	3.3 (0.08)
E I DUPONT DE NEMOURS & CO INC [E39505] - Recognized Component	
Kapton® 100H, 100HN, 100HN-S, 100H-ZT, 100HN-ZT, 100FPC-ZT, 100TAB-ZT, 100PST, 100HA, 100TN, 100V, 100VN, 100FPC, 100FPC-A, 100HPP-ST	1 (0.03)
Kapton® 200H, 200HN, 200HN-S, 200H-ZT, 200HN-ZT, 200FPC-ZT, 200TAB-ZT, 200PST, 200HA, 200TN, 200V, 200VN, 200FPC, 200FPC-A, 200HPP-ST	1 (0.03)
Kapton® 300H, 300HN, 300HN-S, 300H-ZT, 300HN-ZT, 300FPC-ZT, 300TAB-ZT, 300PST, 300HA, 300TN, 300V, 300VN, 300FPC, 300FPC-A, 300HPP-ST	1 (0.03)
E I DUPONT DE NEMOURS & CO INC [E41938] - Recognized Component	
Rynite FR530(I)(+)(f1), FR530L(I)(+)(f1)	15 (0.38)
E. I. Dupont de Nemours & Co.	
Kapton H, V, HN, VN, HA or PST Grades	1 (0.03)
JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD [E165111] - Recognized Component	
CT (b)(g)	2 [layers]
CT* (c)(g)	2 [layers]
PZ* (b)	2 [layers]
WF* (c)(h)	1 [layers]
WFF(f)	1 [layers]
SUMITOMO BAKELITE CO LTD [E41429] - Recognized Component	
Sumikon PM-9630	11.8 (0.3)
Sumikon PM-9750	11.8 (0.3)
Sumikon PM-9820	11.8 (0.3)
PM-9823	11.8 (0.3)
SYMBIO INC [E50292] - Recognized Component	
35660 (a)	1 [layers]
35660Y (e)	1 [layers]
35661 (c)	1 [layers]
MY130 (b)	1 [layers]
MY95AF (h)	1 [layers]
MY9XAF (g)	1 [layers]
MY9YAF (h)	1 [layers]
TERAOKA SEISAKUSHO CO LTD [E56086] - Recognized Component	
630F #25 (a)	1 [layers]
630F #50-1 (a)	1 [layers]
630F2 #50 (i)	1 [layers]
631S #25 (a)	1 [layers]
631S #38 (d)	1 [layers]
631S2 #50 (a)	1 [layers]
632S #25 (a)	1 [layers]
632S2 #50 (a)	1 [layers]

Any sheet insulation or tape described in this table with no minimum thickness requirement may be used as a Minor Sheet Material

Minor Sheet Materials

layer, outer, wrap etc.

minor sheet is optional for this system

Designation

comments

E I DUPONT DE NEMOURS & CO INC [E34739] - employing Recognized materials

Nomex® 410

Nomex® 411

Nomex® 414

Nomex® 416, 416 LAM

Nomex® 418, 818, 864LAM
Nomex® 992, 992PSB
Nomex® 993, 993PSB
Nomex® 994, 994PSB
E. I. Dupont de Nemours & Co.
Kapton H, V, HN, VN, HA or PST Grades
Various Manufacturers
Polyethylene terephthalate film (PET)

Recognized Component Plastics (QMFZ2)

Tapes

tapes are optional for this system

Designation	comments
3M COMPANY [E17385] - Listed or Recognized Component	
1 (a)	
1181	
1182	
1205	
1218	
1298CR	
1318-1 (a)	
1318-2 (a)	
1318B-1	
1318B-2	
1318MW-1 (a)	
1318MW-2 (a)	
1318W-1	
1318W-2	
1318Y-1 (a)	
1318Y-2 (a)	
1350-1 (b)	
1350-2 (c)	
1350CR-1	
1350CR-2	
1350F-1 (b)	
1350F-2 (c)	
1350FB-1 (b)	
1350FB-2 (c)	
1350FW-1 (b)	
1350FW-2 (c)	
1350FY-1 (b)	
1350FY-2 (c)	
1350T-1 (b)	
1350T-2 (b)	
1350T-3 (b)	
1351-1 (a)	
1351-2 (c)	
1351T-1 (a)	
1351T-2 (a)	
1351T-3 (a)	
1351W-1 (a)	
1351W-2 (c)	
1351Y-1 (a)	
1351Y-2 (c)	
1388B-1 (b)	
1388W-1 (b)	
1388Y-1 (b)	
44 (a)	
44-A (a)	
44-T (a)	
44D (a)	
44D-A (a)	
44T-A (a)	
5	
54 (a)	
55	
56 (a)	
57 (a)	
58 (a)	

74 (a)

75

92

MR 94

MR 94B (c)

Super 10 (a)

Super 20 (a)

3M TAIWAN LTD [E305006] - Listed or Recognized Component**PIA220****CHANG SHU LIANG YI TAPE INDUSTRY CO LTD [E246820] - Listed or Recognized Component**

LY-19-01-15 (c)(d)

LY-19-01-18 (c)(d)

LY-19-01-20 (c)(d)

LY-19-01-25 (c)(d)

LY-19-01-40 (c)(d)

LY-19-01-85 (e)(d)

LY-19-02-15 (c)(d)

LY-19-02-18 (c)(d)

LY-19-02-20 (c)(d)

LY-19-02-25 (c)(d)

LY-19-02-40 (c)(d)

LY-19-02-85 (e)(d)

LY-XX (a)(b)

LY0-08 (f)(g)

LY0-XX (f)(g) (except LY0-08)

JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD [E165111] - Listed or Recognized Component

CT (b)(g)

CT* (c)(g)

CT-280B

CT-282F

CT-286F

PF* (d)(g)

PZ* (b)

WF* (c)(h)

WFF(f)

SYMBIO INC [E50292] - Listed or Recognized Component

35660 (a)

35660Y (e)

35661 (c)

KA180K

MY130 (b)

MY95AF (h)

MY9XAF (g)

MY9YAF (h)

TERAOKA SEISAKUSHO CO LTD [E56086] - Listed or Recognized Component

630F #25 (a)

630F #50-1 (a)

630F2 #50 (i)

631S #25 (a)

631S #38 (d)

631S2 #50 (a)

632S #25 (a)

632S2 #50 (a)

Cores, Tubes, Bobbins for mechanical support only

Cores are optional for this system

Designation

comments

CHANG CHUN PLASTICS CO LTD [E59481] - employing Recognized materials**LONGLITE 5630F****T200HF****T200NA****E I DUPONT DE NEMOURS & CO INC [E41938] - employing Recognized materials****Rynite FR530(I)(+)(f1), FR530L(I)(+)(f1)****SUMITOMO BAKELITE CO LTD [E41429] - employing Recognized materials****Sumikon PM-9630****Sumikon PM-9750****Sumikon PM-9820****PM-9823**

SUMITOMO CHEMICAL CO LTD [E54705] - employing Recognized materials
SUMIKASUPER E4008(c4)(c2)(c3)(j)

Sleevings

sleevings are optional for this system

Designation	comments
CHANGYUAN ELECTRONICS GROUP CO LTD [E180908] - Recognized Component	
CB-HFT, CB-HFT(XY), CYG-MT	
CB-TT-L	
CB-TT-S	
CB-TT-T	
CYG-ZHP	
GREAT HOLDING INDUSTRIAL CO LTD [E156256] - Recognized Component	
TFL	
TFS	
TFT	

Varnishes

varnishes are optional for this system

Designation	comments
ELANTAS ELECTRICAL INSULATION ELANTAS PDG INC [E75225] - Recognized Component	
468-2 (d), 468-2FC (d), 468-2-7-xxF (d), 468-2-7FC-xxF (d)	
ELANTAS ZHUHAI CO LTD [E314793] - Recognized Component	
V1630FS, V1630, V1630FS50, V1630FS Black, 80361, 80361FS	
NOROO PAINT & COATINGS CO LTD [E93947] - Recognized Component	
DVB-2085(*)	