

Energising Lives  
Through Speciality  
Compounds



Leading Manufacturer of Compounds



Ddev Plastiks Industries Limited



## About Ddev Group



**Narrindra Suranna**  
Chairman & Managing Director



**Ddev Surana**  
CEO & Director

**DPIL (Ddev Group)** came into existence on the demerger of Kkalpana Industries (India) Limited. Group's flagship company - Ddev Plastiks Industries Limited, having inherited the compounding business of Kkalpana Industries continues to service its rich and diversified portfolio of products comprising of PVC Compounds for building wires, power cable insulation and sheathing to speciality compounds like flexible grades, oil resistant and RoHS grades. Ddev Group is has been in the fore front of manufacture and supply of XLPE compounds for Low Voltage, Medium Voltage and high Voltage applications- 66 KV and 132 KV.

Today, Ddev Group, is a most sought-after name in the vast Indian market and is consistently exporting to users in fifty overseas destinations. All this has been made possible due to keen interest in customer's ever-changing requirements, and periodic investments in state- of- the- art R&D setup and world class manufacturing facilities, we are able to deliver to varied requirements of customers. Besides, nurturing human talent has been in the forefront of company's HR practices. This combination of men and machinery has delivered best in class products for various applications in field of Wire and Cables, Footwear, Pipes , Automobiles , Consumer Durables , Electrical Appliances, Light Fittings.

We are a customer centric organisation and aim to use world class technology for innovative and betterment of products, packing and delivery.

Towards improving environment and sustainable use of resources, we have commissioned solar power plant at our premises and plan to augment its capacity. We are also doing rainwater harvesting at our plant site.

As responsible corporate citizen, we started Covid-19 inoculation drive for our workers, employees and their families and opened the facilities for the local community at large.

We are confident that with the resources available with us and our overall capabilities, we will continue to meet and exceed the expectation of our customers, shareholders, business associates and society at large.



Surangi Plant

# Product Range

## PE Compounds

- Silane Grafted XLPE Compound upto 1. 1KV. [LT / LT ABC / FR / AMBIENT CURE]
- Silane Grafted XLPE Compound for MV upto 36KV.
- XLPE Compound for CCV Line upto 66KV.
- PE Sheathing and Insulation
- Semi-Conductive Compounds
- HFFR Compounds

## PVC Compounds

- Insulation ● Sheathing ● Speciality Grades : FRLS | Anti Termite | Anti Rodent | Oil Resistant Grades ● Auto Harness Cable Grades ● Data and Communication Cable Grades ● ROHS & REACH Compliant Grades

## Filled Compounds

- Calcium Carbonate | Talc filled in PE, PP and HDPE

## Master Batches

- Colour Master Batches - 1000 shades to choose from
- Speciality Master Batches - UV | Antioxidant | Processing Aid | Optical Brightner etc.

## Footwear Compounds

- PVC ● TPR ● NBR ● EVA Cross linkable Foam

## Pipe Compounds

- HDPE - RT ● PEX - b

## Engineering Plastics

- Nylon - Glass & Mineral Filled ● PP - Glass & Mineral Filled
- ABS Compound ● PC Compound



# Low Voltage XLPE Compounds

## Power Cable PE Insulation for Low Voltage

Properties												
Hot Set at 200°C Heat Ageing 135°C 168Hrs												
Grade	Description	Density Grafted Polymer (gm.cm <sup>3</sup> ) ASTM-D-792	MFI (gm/10 minutes) at 190°C 2.16kgs	Tensile Strength (Mpa)	Elongation (%) Load	After 15 min. (%) Under	Permanent set after 5 min. (%)	Tensile Variance (%)	Elongation Variance (%)	Volume Resistivity @25°C (Ohm-cm)	Dissipation factor (50Hz) @250 V 25°C	Dielectric Constant (50Hz) @250 V 25°C
KI - XL - 03 & KI - XL - 04 (KI - XL - 04 MD for Copper Conductor)	Silane Grafted Moisture Curable PE Insulation. Grafted Polymer and Catalyst to be mixed in the ratio of 95:05 before use.	0.923 - 0.925	0.6-2.00	16-19	500-600	60-90	±5	±15	±15	1x10 <sup>16</sup>	0.0004	2.3
KI - XL - 03HS & KI - XL - 04FX (for Copper Conductor)	Silane Grafted Moisture Curable PE Insulation suitable for thin wall and very high line speed application. Grafted Polymer and Catalyst to be mixed in the ratio of 95:05 before use.	0.923 - 0.925	0.6-2.00	16-19	500-600	60-90	±5	±15	±15	1x10 <sup>16</sup>	0.0004	2.3
KI - XL - 03SC & KI - SC - 10	Silane Grafted Moisture Curable PE Insulation for curing at ambient temperature and humidity. Grafted Polymer and Catalyst to be mixed in the ratio of 95:05 before use.	0.923 - 0.925	0.6-2.00	16-19	500-600	<60	±5	±15	±15	1x10 <sup>16</sup>	0.0004	2.3
KI - XL - 03FX & KI-SC-10FX	Silane Grafted Moisture Curable PE Insulation for curing at ambient temperature and humidity with high line speed. Grafted Polymer and Catalyst to be mixed in the ratio of 95:05.	0.922 - 0.925	0.6-1.50	17-19	500-600	<60	±5	±15	±15	1x10 <sup>16</sup>	0.0004	2.3
KI - XL - 03 HS & KI - SC - 10 HS	Silane Grafted Moisture Curable PE Insulation specially designed for High Speed extrusion. It is suitable for curing at ambient temperature and humidity. Grafted Polymer and Catalyst to be mixed in the ratio of 95:05	0.922 - 0.925	0.6 - 1.5	14-16	400 - 600	80-100	±5	±15	±15	1x10 <sup>16</sup>	0.0004	2.3
KI - XL - 03 & KI - XL - 04 & KI - XL - ABC	Silane Grafted Moisture Curable PE Insulation. Suitable for LV Aerial Bundled Cable. Grafted Polymer, Catalyst and Master Batch to be mixed in the ratio of 90:05:05 before use.	0.923 - 0.925	0.6 - 2.00	16-19	500-600	60-90	±5	±15	±15	1x10 <sup>15</sup>	0.007	2.6
KI - XL - 03 & KI - XL - 04 ABC - SC	Silane Grafted UV resistant ambient – curable PE insulation. Suitable for LV Aerial Bundled Cable. Grafted Polymer and special Catalyst to be mixed in the ratio 93:07 before use. Delivers 2.5 ± 0.50 Carbon	0.923 - 0.925	0.6 - 2.00	16-19	500-600	60-90	±5	±15	±15	1x10 <sup>15</sup>	<0.007	2.6
KI-XL- 03 MT & KI-XL 04 ABC- SC	Silane Grafted UV Resistant Moisture curable insulation suitable for LV Aerial Bundled Cables. Specially designed to meet specification NFC-33-209. Grafted Polymer and Catalyst to be mixed in ratio of 93:07 Delivers 2.5 ± 0.50 Carbon	0.928 - 0.933	1 - 2	16-19	500-600	60-90	±5	±25	±25	1x10 <sup>15</sup>	<0.007	2.6
KI - XL - 01 & KI - XL - 02	Silane Grafted Unfilled Polyolefin Elastomeric Compound for low voltage Control cables for curing at ambient temperature and humidity.	0.900 - 0.910	0.6 -1.50	> 18	450 -550	50 - 90	±5	±15	±15	1 X 10 <sup>16</sup>	0.0004	2.2 Shore D Hardness, 35
KI-XL- 03 /03FR / XL-04	Silane Grafted Moisture curable PE insulation three component grade is suitable for incorporating some FR properties in insulation. Used for some specially designed cables. Grafted Polymer and special FR grade KI-03 FR & catalyst to be mixed in the ratio of 75:25:05	0.923 - 0.925	0.6 - 2.00	13 - 15	300 -400	<100	±5	<±25	<±25	1x10 <sup>15</sup>	0.004	>2.3 (Limiting Oxygen Index 23-24%)
KI-XL- 03HS / 03FRUV / XL-04	UL recognized compound for Moisture curable XL insulation for use in Types XHHW-2, XHHW, XHH, RHH, RHW-2, RHW, SIS rated 900C dry and wet for 600V and suitable up to -40°C	0.923 - 0.925	0.6 -2.00	13 - 15	300 - 400	<100	±5	<±25	<±25	1x10 <sup>15</sup>	0.004	>2.3 (Limiting Oxygen Index 23-24%)

Hot set at 150 °C, 20N Load <100

\* Oil ageing at 75°C, 60 Days  
Tensile variation (%), ± 35  
Elongation Variation (%), ± 35

The information given in the document is believed to be reliable and is given in the good faith but without warranty. The user should test the product to ascertain the suitability for the intended use. Product specification or the whole document is subject to change without any prior notice.

## Medium Voltage (Upto 36 KV) & High Voltage (Upto 72 KV)

Properties												
Hot Set at 200°C      Oven Ageing 135°C 168Hrs												
Grade	Description	Density Grafted Polymer (gm.cm <sup>3</sup> )	MF (gm/10 minutes) at 190°C 2.16kgs	Tensile Strength (Mpa)	Elongation (%)	After 15 min. (%) Under Load	Permanent set after 5 min. (%)	Tensile Variance (%)	Elongation Variance (%)	Volume Resistivity @25°C (Ohm-cm)	Dissipation factor (50Hz) @250V 25°C	Dielectric Constant (50Hz) @250V 25°C
KI-XL-09 & KI-XL-10 (Upto 11KV)	Silane Grafted Moisture curable PE - Insulation. Superior grade with special attention on cleanliness of base polymer; compounding process and work environment. Special tests routinely conducted to detect contamination level in raw material and finished product. Compound is suitable upto 11KV  Grafted Polymer and Catalyst to be mixed in the ratio of 95:05 before use.	0.923	0.5-1.0	14-17	400-450	60-90	±5	±15	±15	1x10 <sup>16</sup>	0.0004	2.3 - 2.4  Contamination (No./500g, granules) <200µ<500µ>500µ 10-40
KI-XL-09-33 & KI-XL-10 (Upto 36KV)	Silane Grafted Moisture curable PE - Insulation. Superior grade with special attention on cleanliness of base polymer; compounding process and work environment. Grafted Polymer and Catalyst to be mixed in the ratio of 95:05 before use.	0.923	0.5-1.0	14-17	400-450	60-90	±5	±15	±15	1x10 <sup>16</sup>	0.0004	2.3 - 2.4  Contamination (No./500g, granules) <200µ<500µ>500µ 10-20
KI-XL-09 ME & KI-XL-10BK	Silane Grafted Moisture Curable PE Insulation. Superior grade with special attention to cleanliness of base polymer; compounding process & work environment. Special test routinely conducted to detect contamination level in raw material, finish products. It is designed for use as Track Resistance Insulation for the outer layer of Spacer Ariel Cables and Insulation for Partial Insulated Cables. The compound is suitable upto 36 KV.  It passes track resistance (2.75 KV, 1hr as per ASTM - D - 2303)  The Grafted Polymer & Catalyst to be mixed in the ratio of 90:10	0.936	1.0 -1.5	14 - 17	400 - 450	60 - 90	± 5	±15	± 15	1 x 10 <sup>16</sup>	<0.007	2.6
KI-XL-8503	Peroxide based XLPE Grade Suitable for CCV lines. Made from clean grades of LDPE with special attention on compounding process and work environment. Suitable upto 36 KV  Special tests routinely conducted to detect contamination level in raw material and finished product.	0.920	-	>15	>500	>100	0	<20	<20	1x10 <sup>16</sup>	0.0004	2.3
KI-XL-8503 TR	Peroxide based long life, water tree retardant xlpe for CCV line, made with polymer modified LDPE suitable upto 36 KV  Special tests routinely conducted to detect contamination level in raw material and finished product.	0.920	-	>15	>500	<100	0	<20	<20	1x10 <sup>16</sup>	0.0005	2.3
KI-XL-8503 S	Peroxide based clean XLPE grade suitable for CCV line, made from clean grades of LDPE suitable upto 72 KV	0.920	-	>15	>500	<100	0	<20	<20	1x10 <sup>16</sup>	0.0004	2.3

# PVC Compounds for various Application

Grade	Maximum Cable operating Temperature , °C	Classification as per IS 5831 [Type]	Classification as per BS 7655 [Type]	Specific Gravity at 27°C	Hardness, Shore A	Thermal Stability, @200°C, mins	Volume Resistivity @27°C, Ohm-cm	Tensile Strength, Mpa	Elongation at Break,%	Heat ageing 80°C 168 Hrs.	Heat ageing 80°C 168 Hrs.Variation of EB (±) %	Loss of Mass ,mg/cm2	Limiting Oxygen Index (LOI),(%)	Temp. Index °c	Smoke Density Rating (%)	Remarks (Extra Properties)
<b>Building Wire Insulation</b>																
KI-06	70	A	TI-1	1.48±0.03	92±3	≥110	≥1X10 <sup>14</sup>	≥15	≥250	±20	±20	<1.5	NA	NA	NA	
KI-04 FR	70	A (FR)	TI-1	1.48±0.03	87±2	≥120	≥1X10 <sup>14</sup>	≥15	≥200	±20	±20	<1.5	≥29	≥250	NA	RoHS & REACH Compliance, Anti-termite & Anti-Rodent, Low Temperature (-25°C), UV Resistant. <b>Customized compound properties</b> are also available on customer requirements.
KI-11SB	70	A	TI-1	1.48±0.03	88±3	≥110	≥1X10 <sup>14</sup>	≥15	≥250	±20	±20	<1.5	NA	NA	NA	
KI-13K (RoHS)	70	A	T1-1	1.34±0.03	91±2	≥120	≥5X10 <sup>14</sup>	≥17	≥250	±15	±15	<1.5	NA	NA	NA	RoHS Compliance
KI-14FR	70	A (FR)	TI-1	1.42±0.03	90±2	≥150	≥1X10 <sup>14</sup>	≥16	≥250	±15	±15	<1.5	≥29	≥250	NA	
KI-14 K (HV)	70	A	TI-1	1.54±0.03	92±3	≥100	≥1X10 <sup>15</sup>	≥15	≥250	±20	±20	<1.5	NA	NA	NA	High Volume Resistivity
KI-14 B (SPL) Skin	70	A	TI-1	1.31±0.03	90±2	≥100	≥1X10 <sup>14</sup>	≥16	≥250	±20	±20	<1.5	NA	NA'	NA	RoHS & REACH Compliance, Anti-termite & Anti-Rodent, Low Temperature (-25°C), UV Resistant. <b>Customized compound properties</b> are also available on customer requirements.
KI-15 SWB (Salt water Resistant)	70	A	TI-1	1.30±0.03	87±3	≥110	≥1X10 <sup>14</sup>	≥16	≥230	±20	±20	<1.5	NA	NA'	NA	Salt water Resistant
KI-20	70	A	TI-1	1.45±0.03	89±2	≥100	≥1X10 <sup>14</sup>	≥17	≥250	±15	±15	<1.5	NA	NA	NA	
KI-31(HCL 15)	70	A	TI-1	1.45±0.03	90±3	≥100	≥5X10 <sup>13</sup>	≥14	≥200	±20	±20	<1.5	NA	NA	NA	Low Halogen gas generation (15 % Max.)
KI-74R[IS]	70	A	TI-1	1.27±0.03	86±3	≥90	≥5X10 <sup>13</sup>	≥16	≥275	±20	±20	<1.5	NA	NA	NA	Transparent
<b>Heat Resistant Insulation</b>																
KI-22	85	C	TI-1	1.37±0.03	92±2	≥150	≥4X10 <sup>14</sup>	≥15	≥200	±25 (135°C)	±35 (135°C)	NA	NA	NA	NA	
KI-90	90	-	TI-3	1.34±0.03	92±2	≥240	≥1X10 <sup>14</sup>	≥15	≥200	±25 (135°C 336 Hrs)	±35 (135°C 336 Hrs)	<1.5	NA	NA	NA	
KI-90FR	90	-	TI-3	1.39±0.03	92±2	≥240	≥1X10 <sup>14</sup>	≥15	≥200	±25 (135°C 336 Hrs.)	±35 (135°C 336 Hrs.)	<1.5	≥29	≥250	NA	RoHS Compliance
<b>Flexible Insulation</b>																
KI-751S	70	A	TI-2	1.43±0.03	82±2	≥80	≥1X10 <sup>14</sup>	≥14	≥275	±15	±15	<1.5	NA	NA	NA	RoHS Compliance
KI-65D	70	D	TI-2	1.34±0.03	75±2	≥85	≥1X10 <sup>12</sup>	≥14	≥275	±15	±15	<1.5	NA	NA	NA	Lift Cable Insulation
KI-741S	70	A	TI-2	1.22±0.03	74±2	≥80	≥1X10 <sup>13</sup>	≥15	≥250	±20	±20	<1.5	NA	NA	NA	Transparent Insulation [RoHS]
<b>Flat Cable Insulation</b>																
KI-14	70	A	TI-1	1.44±0.03	89±2	≥100	≥1X10 <sup>14</sup>	≥16	≥250	±15	±15	<1.5	NA	NA	NA	
<b>Power Cable Insulation</b>																
KI-041S	70	A	TI-1	1.43±0.03	89±2	≥110	≥1X10 <sup>14</sup>	≥15	≥250	±15	±15	<1.5	NA	NA	NA	
KI-09	70	A	TI-1	1.48±0.03	92±2	≥110	≥4X10 <sup>14</sup>	≥15	≥250	±15	±15	<1.5	NA	NA	NA	
<b>Railway Insulation</b>																
KI-15 SC RDSO	70	B	TI-1	1.34±0.03	93±2	≥120	≥2X10 <sup>15</sup>	≥20	≥250	±25 (100°C)	±25 (100°C)	NA	NA	NA	NA	
KI-15 SC/E	70	B	TI-1	1.36±0.03	93±2	≥110	≥1X10 <sup>15</sup>	≥20	≥250	±25 (100°C)	±25 (100°C)	NA	NA	NA	NA	
<b>Insulation for Data Cables</b>																
K1-16	70	TIA/E1A-568-B-2	-	1.43±0.03	92±2	≥100	≥4X10 <sup>14</sup>	≥17	≥250	±15	±15	<1.2	NA	NA	NA	
		CAT-6														
KI-13 (RoHS)	70	CAT-6	-	1.34±0.03	91±2	≥120	≥5X10 <sup>14</sup>	≥17	≥250	±18	±18	<1.2	NA	NA	NA	RoHS Compliance
<b>Sheathing Compound</b>																
KI-05 FMB	70	ST1	TM-1	1.46±0.03	87±2	≥70	NA	≥14	≥250	±15	±15	<1.5	NA	NA	NA	Submersible sheathing
KI-06	70	ST1	TM-1	1.55±0.03	91±2	≥60	NA	≥14	≥250	±20	±20	<1.5	NA	NA	NA	
KI-05 FR	70	ST1(FR)	TM-1	1.54±0.03	91±3	≥60	NA	≥14	≥250	±20	±20	<1.5	≥29	≥250	NA	
KI-40	70	ST3	TM-2	1.42±0.03	80±2	≥80	NA	≥14	≥275	±15	±15	<1.5	NA	NA	NA	For Lift Cable
KI-31	90	ST2 (FR)	T9(BS6746)	1.53±0.03	92±2	≥110	≥1X10 <sup>12</sup>	≥15	≥250	±15 (100°C)	±15 (100°C)	<1.5	≥31	≥270	NA	
KI-42	90	ST2	T9(BS6746)	1.48±0.03	92±2	≥120	≥1X10 <sup>12</sup>	≥15	≥250	±15 (100°C)	±15 (100°C)	<1.5	NA	NA	NA	
KI-33 E-7	90	ST2(FRLS)	T9(BS6746)	1.56±0.03	93±2	≥150	≥1X10 <sup>12</sup>	≥14	≥200	±20 (100°C)	±20 (100°C)	<1.5	≥32	≥270	≥58	Halogen Acid gas -20%

The information given in the document is believed to be reliable and is given in the good faith but without warranty. The user should test the product to ascertain the suitability for the intended use. Product specification or the whole document is subject to change without any prior notice.

## PVC Compounds for various Application

Grade	Maximum Cable operating Temperature , °C	Classification as per IS 5831 [Type]	Classification as per BS 7655 [Type]	Specific Gravity at 27°C	Hardness, Shore A	Thermal Stability, @200°C, mins	Volume Resistivity @27°C, Ohm-cm	Tensile Strength, Mpa	Elongation at Break,%	Heat ageing 80°C 168 Hrs.	Heat ageing 80°C 168 Hrs.Variation of EB (±) %	Loss of Mass ,mg/cm2	Limiting Oxygen Index (LOI),(%)	Temp. Index °c	Smoke Density Rating (%)	Remarks (Extra Properties)
<b>Sheathing Compound for communication cables</b>																
KI-05	70	ST-1	(BS EN 50290) TM-52	1.46±0.03	87±2	≥70	NA	≥14	≥250	±15	±15	<1.5	NA	NA	NA	
KI-26	90	ST-2	TM-51	1.46±0.03	90±2	≥100	NA	≥14	≥250	±18	±18	<1.5	NA	NA	NA	
KI-42 A(FR)	90	-	TM-53(FR)	1.49±0.03	92±3	≥240	NA	≥15	≥200	±25	±25	<1.5	≥29	≥270	NA	Fire Retardant
<b>Sheathing Compound for Data Cables</b>																
KI-05 FR (RoHS)	70	CAT-5	-	1.49±0.03	91±2	≥80	NA	≥14	≥250	±15	±15	<1.8	≥29.5	≥250	NA	RoHS Compliance
<b>Low Temperature Application (Insulation/Sheathing)</b>																
K1-13K (LT) -30°C	70	-	T1-4	1.33±0.03	85±2	≥100	≥5X10 <sup>13</sup>	≥14	≥250	±15	±15	<1.2	NA	NA	NA	For Insulation up to [-]30°C
K1-42 (LT) -30°C	70	-	TM-4	1.33±0.03	82±2	≥100	NA	≥13	≥250	±18	±18	<1.5	NA	NA	NA	For sheathing up to [-]30°C
KI-33(85) -40°C	70-90	ST-2 (FRLS)	TM-4	1.50±0.03	85±3	≥100	NA	≥14	≥200	±20	±20	<1.5	≥30	≥250	≥58	For sheathing up to [-]40°C
<b>Transparent Application (Insulation/Sheathing)</b>																
KI-73	70	ST1(FR)	TM-2	1.22±0.03	74±2	≥45	NA	≥15	≥250	±20	±20	<1.5	NA	NA	NA	
KI-74R[IS] UV	70	A	TI-1	1.27±0.03	86±3	≥90	≥5X10 <sup>13</sup>	≥16	≥275	±20	±20	<1.5	NA	NA	NA	UV Resistant
<b>Oil Resistant Application (Insulation/Sheathing)</b>																
KI-05 (OR) (RoHS)	70	-	TM-5	1.40±0.03	83±2	≥100	≥4X10 <sup>12</sup>	≥15	≥200	±20	±20	<1.25	<b>Oil Ageing 90°C at 168 Hrs.</b>		NA	No phthalate
													TS % Var.	EB % Var.		
KI-33 (OR)	90	-	Sheathing	1.52±0.03	93±2	≥100	NA	≥13	≥200	±20 (100°C)	±20 (100°C)	<1.25	±30	±30	LOI ≥31%, HCL <20	
KI - 04 FR [HR] OR INS	70	A	JIS C 3307	1.45±0.03	86±2	≥150	≥1X10 <sup>14</sup>	≥16	≥250	±15 (100°C)	±15 (100°C)	<1.5	±15	±15	NA	Oil ageing 70°C for 4 Hrs.
<b>Speciality (Insulation/Sheathing)</b>																
KI-WW	85	C	Winding Wire	1.33±0.03	95±2	≥160	≥5X10 <sup>14</sup>	≥22	≥250	±25 (135°C)	±35 (135°C)	NA	NA	NA	NA	Winding Wire Compound
KI-33 INS-A	70	A, FRLS	-	1.52±0.03	93±2	≥200	≥5X10 <sup>14</sup>	≥16	≥200	±20	±20	<1.5	≥32	≥270	≥56	HCL <20,Also available RoHS Compliance
KI-90 (RoHS)TM-3	90	-	TM-3	1.39±0.03	91 ±2	≥240	-	≥15	≥200	±25 (135°C 336 Hrs.)	±25 (135°C 336 Hrs)	<1.5	NA	NA	NA	Heat Resistant Sheathing,RoHS Compliance
K1-08 BED	-	-	Type-6, BS 7655	1.60 -1.70	82±2	≥50	-	≥06	≥200	-	-	NA	NA	NA	NA	Bedding Application
<b>Automotive Cable Application (Insulation)</b>																
KI-ARV -85	85	-	Class A, ISO 6722	1.35	91	≥160	≥1X10 <sup>14</sup>	≥18	≥250	±20 (135°C)	±20 (135°C)	NA	NA	NA	NA	Class T1
KI-ARV -105	105	-	Class B, ISO 6722	1.35	93	≥250	≥1X10 <sup>14</sup>	≥18	≥220	±20 (135°C)	±20 (135°C)	NA	NA	NA	NA	Class T2
KI-ARV -125	125	-	Class C, ISO 6722	1.33	94	≥500	≥1X10 <sup>14</sup>	≥16	≥240	±20 (150°C 240 Hrs)	±20 (150°C 240 Hrs)	-	NA	NA	NA	Class T3
<b>Automotive Moulding</b>																
KI-150AT	-	-	-	1.35 - 1.44	50	≥60	-	≥04	≥250	NA	NA	NA	NA	NA	NA	Handle Grip, Footrest
KI-165AT	-	-	-	1.29	65	≥50	-	≥07	≥200	NA	NA	NA	NA	NA	NA	Footrest, Pillion Step
KI-170AT	-	-	-	1.35	70	≥50	-	≥10	≥240	NA	NA	NA	NA	NA	NA	Pad Brake
<b>Rigid Application</b>																
KI-1313 TN	-	-	-	1.32±0.03	70±3(D)	≥30	-	≥35	≥30	NA	NA	NA	NA	NA	NA	
KI-1323 TY	-	-	-	1.33±0.03	71±3(D)	≥30	-	≥35	≥30	NA	NA	NA	NA	NA	NA	
<b>Roofing Appliaction</b>																
KI-180	-	-	-	1.34±0.03	80±3	≥50	-	≥17	≥300	NA	NA	NA	NA	NA	NA	RoHS Compliance
<b>Shoe /Footwear Application</b>																
KI-50	-	-	-	1.16±0.03	50±3	≥50	-	≥8	≥250	NA	NA	NA	NA	NA	NA	
KI-60	-	-	-	1.18±0.03	60±3	≥50	-	≥10	≥250		NA	NA	NA	NA	NA	
<b>Colour Materbatch for Wires &amp; Cable</b>																
KI-800	-	-	-	1.55±0.03	80±3	≥50	-	≥10	≥250	NA	NA	NA	NA	NA	NA	
KI-500 RoRE	-	-	-	1.40±0.03	90±3	≥80	-	≥12	≥250	NA	NA	NA	NA	NA	NA	RoHS & REACH Compliance,Anti-termite & Anti-Rodent,UV Resistant. <b>Customized COLOURS</b> are also available on customer requirements.

## Power Cable (Shielding / Semiconducting upto 72KV)

Grade	Description	Properties										
		Density (gm/cm <sup>3</sup> )	Hardness (Shore D)	Tensile Strength (Mpa)	Elongation(%)	Heat Ageing at 135°C for 168 Hrs		Hot Elongation % at 200°C	DC Volume Resistivity (ohm-cm)		Moisture Content (ppm)	Striping Force (N/cm)
						Tensile variation(%)	Elongation Variation(%)		at 25°C	at 90°C		
KI - XLC - 09	Cross Linkable Semiconducting Black (Bondable) Compound for Shielding of Conductor and Insulation. This grade is Suitable for Cables upto 36 KV Special tests routinely conducted to detect contamination level in raw material and finished product	1.10	55	16	200	<20	<20	45	<100	<500	<300	NA
KI - XLC - 09 -66	Cross Linkable Semiconducting Black (Bondable) Compound for Shielding of Conductor and Insulation. This grade is Suitable for Cables upto 72 KV. Special tests routinely conducted to detect contamination level in raw material and finished product	1.10	55	16	200	<20	<20	45	<100	<500	<300	NA
KI - XLC - 09S	Cross Linkable Semiconducting Black (Strippable) Compound for Insulation Screening / Shielding. Suitable for Cables upto 36KV for both tandem and triple common head extrusion process using steam or dry curing process	1.17	50	14	>250	<20	<20	45	<100	<500	<300	10.0-20.0
KI - XLC - 09ES	Cross Linkable Semiconducting Black (Easy Strippable) Compound for Insulation Screening / Shielding. Suitable for Cables upto 36KV for both tandem and triple common head extrusion process using steam or dry curing process	1.18	50	14	>350	<20	<20	45	<500	<1000	<300	5.00-15.00
KI - TPC - 08	Thermoplastic Semiconducting Black Compound for conductor and insulation Shielding (Sioplas). Suitable for moisture curable cables upto 36KV	1.10	-	11	210	-	-	N.A.	<100	<500	<300	N.A.
KI - TPC - 08S	Thermoplastic Semiconducting Black Strippable Compound for Shielding of Conductor and Insulation (Sioplas). Suitable for moisture curable cables upto 36KV	1.14	-	10	150	-	-	N.A.	<100	<500	<300	10.0-20.0
KI - TPC - 07	KI-TPC-07 is thermoplastic semi conductive material for Jacketing over HDPE sheath of medium, high & extra high voltage power cables. It can be used as conductor and insulation shield for Sioplas cables. The base polymer is copolymer modified LLDPE suitable for 90°C continuous service temperature	1.11	-	12	200	-	-	N.A.	<50	<1000	<300	N.A.

## HDPE - RT Pipe Compound

Grade	Description	Density (gm.cm <sup>3</sup> )	MFI at 190°C 2.16kgs load (gm/10min.)	Hardness (Shore D) Time (min.)	Oxidation Induction Time (Minutes)	Carbon Black Content (%)	Tensile Strength (Mpa)	Elongation at Break (%)	ESCR (Hrs)
KI-PC- 0345NT	KI-PC-0345NT is natural bimodal High density polyethylene (HDPE-RT) compound for pipe extrusion having excellent stress crack resistance & tensile properties. It contains UV-additive to ensure excellent resistance to outdoor weathering.	0.944	0.35	59 - 60	>30	-	>26	>600	>5000
KI-PC-0345 BK	KI-PC-0345 BK is black High density polyethylene (HDPE) compound for top coat of 3 layer steel pipe extrusion coating. It has excellent stress crack resistance and tensile properties. It contains well dispersed UV grade carbon black to ensure excellent resistance to outdoor weathering	0.952	0.5	59-61	>30	2.5	>26	>600	> 1000

## Silane Grafted HDPE Pipe Compound (PEX -b)

Grade	Description	Density Grafted Polymer (gm.cm <sup>3</sup> )	MFI (gm/10 minutes) at 190°C 2.16kgs	Tensile Strength (Mpa)	Elongation at Break (%)	After 15 min. Under Load (%)	Permanenet set after 5 min. (%)	Gel Content (%)	Vicat Softening point °C	Specific heat at 23°C J/(g*K)	Linear Expansion Coefficient 1/°K	MFI (gm/10 minutes) at 190°C 5.0kgs
KI - XL - HWP / KI - XL - 212A	Two component moisture curable HDPE Compound for hot and cold water pipes. Mixed at 130°C at 95:5 parts and conditioned for 3 hours at 95°C	0.945	0.50	21	400	50	0	> 70	126	1.90	1.40 x10 <sup>-4</sup>	2.0

The Information given in the document is believed to be reliable and is given in the good faith but without warranty. The user should test the product to ascertain the suitability for the intended use. Product specification or the whole document is subject to change without any prior notice.



## PE Insulation / Sheath (Natural)

Grade	Description	Density of Compound (gm/cm <sup>3</sup> )	MFI @ 190°C 2.16kg (gm/10min.)	Oxidation Induction Time (min.)	Volume Resistivity	Tensile Strength (Mpa)	Elongation at Break (%)	*Retention of TS & EB after Ageing	ESCR @25°C (No failure Hrs)
KI-SC 0366	KI-SC-0366 is a natural, UV- Stabilised colourable High Density Polyethylene (HDPE) Jacketing Compound and is well suited for communication and energy cables.	0.945	0.50	>100	1X10 <sup>14</sup>	>20	>800	>80%	>1000
KHN- 0366	KHN-0366 is a natural, Colourable High Density Polyethylene (HDPE) Insulation Compound and is well suited for communication and energy cables.	0.954	0.50	> 50	1X10 <sup>15</sup>	>20	>800	>80%	-
KI-SC- 0477	KI-SC-0477 is high molecular weight, Medium density based Sheathing compound in natural colour specially formulated for Polyethylene insulated cables.	0.938	0.60	>100	1X10 <sup>14</sup>	>18	>700	>80%	>500
KHN- 0477	KHN-0477 is a natural High Molecular weight, Medium density based Insulation Compound. Specially formulated for Polyethylene insulated cables.	0.938	0.60	> 50	1X10 <sup>15</sup>	>18	>700	>80%	-
KI-SC- 0699	KI-SC- 0699 is a high molecular weight, Linear low density Polyethylene based Sheathing compound with proper UV additives.	0.923	0.70-0.85	> 100	1X10 <sup>14</sup>	>20	> 800	>80%	> 500
KHN- 0699	KHN-0699 is a natural High Molecular weight, Linear low density Polyethylene based Insulation Compound. An enriched additive package ensures its thermal stability and copper conductor application.	0.925	0.60-0.80	> 50	1X10 <sup>15</sup>	>18	> 800	>80%	-
KI-SC- 0588	KI-SC-0588 is a Low density Polyethylene (LDPE) based colourable sheathing / Jacketing compound. An enriched additive ensures its thermal stability during processing.	0.920	0.30	>40	1X10 <sup>14</sup>	>15	> 800	>80%	> 48
KHN- 0588	KHN-0588 is a natural LDPE based Insulation compound specially formulated for Polyethylene insulated cables : An enriched additive package of antioxidant and Metal deactivator ensures its thermal stability during extrusion and thermal ageing of Insulated core with copper conductor.	0.920	2.0	> 45	1X10 <sup>15</sup>	> 15	> 600	80%	-

## PE Jacketing (Black/Coloured)

Properties									
Grade	Description	Density of Compound (gm/cm <sup>3</sup> )	MFI @ 190°C 2.16kg (gm/10min.)	Oxidation Induction Time (min.)	Carbon Black Content (%)	Tensile Strength (Mpa)	Elongation (%)	Oven ageing at 110°C, 14 days variation TS / EB (%)	ESCR (Hrs)
KI—BS—0366	KI—BS—0366 is black, high density Polyethylene (HDPE) Sheathing Jacketing compound is well suited for communication, control and power cables.	0.955	0.40 — 0.80	> 100	2.5	> 20	> 800	±20 / ±20	>1000
KI—YSC-0366	KI—YSC-0366 is a Yellow high density Polyethylene (HDPE) Sheathing/Jacketing Compound is well suited for control and power cables.	0.945	0.5	> 100	—	20	> 800	±20 / ±20	>1000
KI—BS—0477	KI—BS—0477 is black, high molecular weight, medium density jacketing formulated for PE Insulated Jelly filled communication cable. An enriched additive packaged ensure its thermal stability during processing. It has got excellent stress crack resistance and tensile properties.	0.948	0.50 — 0.70	> 100	2.5	> 18	> 700	±20 / ±20	>500
KI - BS - 0699	KI-BS-0699 is a black high molecular weight, linear low density Polyethylene (LLDPE) Sheathing /Jacketing Compound is well suited for communication, control & Power Cables.	0.934	0.60 - 0.80	>100	2.5	>18.0	>800	±20 / ±20 (Oven ageing at 100°C, 10 days)	>500
KI—BS—0588	KI—BS—0588 is black, high molecular weight, low density polyethylene based sheathing/jacketing compound. An enriched additive package ensures its thermal stability during processing.	0.930	0.20 — 0.30	> 45	2.5	> 15	> 600	±20 / ±20 (Oven ageing at 100°C, 10 days)	>48

The information given in the document is believed to be reliable and is given in the good faith but without warranty. The user should test the product to ascertain the suitability for the intended use. Product specification or the whole document is subject to change without any prior notice.

## Thermosetting HFFR Compound for Wire & Cable Application

HFFR Thermosetting (Silane cross-linkable) grade are Halogen Free Fire Retardant compounds, mainly used for Wire and Cable insulation and sheathing application. XL HFFR grades allow fast curing in ambient moisture and forced curing & can be processed on conventional thermoplastic extruder lines. They are suited for various applications & wide working temperature range with high flame retardant properties and ROHS compliance.

### Key Features Thermosetting (XL) HFFR

- Halogen Free Fire Retardant
- RoHS Compliance
- High Line speed
- Ambient curing
- Improved electrical properties
- Suitable for working temperatures ( $\geq 90^{\circ}\text{C}$ ) and very severe short-circuit temperatures ( $\geq 250^{\circ}\text{C}$ )
- Enhanced mechanical performance at high temperature
- Resistance to oil and fluid
- Customization on specific requirements through Catalyst medium
- Long Life
- Weather proofing suitability in Solar Cable application

### Applications

- Wire & Cable Insulation and Sheathing
- Specialty Building wire
- Industrial wire
- Automotive wiring
- Railway, shipboard and defense cable
- Oil Gas cable
- Safety cable
- Fire resistant cable
- Heat resistant cable
- Solar PV Cable
- Telecom and Optical Fiber cable

## HFFR Insulation grades XL

Grade Name	Cable Description				Category	Standard Classification				Others	Test Parameters												
						IS 17048	BS 7211	VDE '0207	IEC 60092		Density, gm/cc	Melt Flow Index at 21.6 kg @150°C, gm/10 minutes	Hardness, Shore-D	Hot Set Test at 200°C, 20 N Load		TS, Mpa (min.)	EB, % (min.)	Heat Aging @ 135°C 168 Hrs		Oxygen Index % (Min.)	Smoke Density transmittance %	Acid gas emission test (% HCL Emission) (Max)	Volume Resistivity, $\Omega\text{-cm}$
														Elongation(%)	Permanent set after 5 min, %			Var.TS, %	Var.EB, %				
						ASTM-D-792	ASTM D-1238	ASTM-D-2240	IEC 60811-507		ASTM D-638		IEC 60811		ASTM-D-2863	EN-61034	IEC 60754-1	ASTM D 257					
KI-HF-3301 XL GP	Thermoset	Insulation	70°C	General purpose	03	HFI XL 70	EI 5	HJ 1, HJ 3	HF 70	IS 10810	1.50	5	48	<100	<10	13	200	±25	±25	30	> 80	Nil	$5 \times 10^{14}$
KI-HF-3301 XL HT	Thermoset	Insulation	90°C	General purpose	04	HFI XL 90	EI 5	HJ 1, HJ 3	HF 90	IS 10810	1.50	5	50	<100	<10	13	200	±25	±25	30	> 80	Nil	$5 \times 10^{14}$
KI-HF-3301 XL FLX	Thermoset	Insulation	70°C	General purpose Flexible	03	HFI XL 70	EI 5	HJ 1, HJ 3	HF 90	IS 10810, HXJ1, HXM1	1.40	6	44	<100	<10	11	300	±25	±25	31	> 80	Nil	$5 \times 10^{14}$
KI-HF-3301 XL HT ATAR	Thermoset	Insulation	90°C	General purpose Antitermite & Antirodent	04	HFI XL 90	EI 5	HJ 1, HJ 3	HF 90	IS 10810	1.50	5	50	<100	<10	13	200	±25	±25	30	> 80	Nil	$5 \times 10^{14}$
KI-HF-3301 XL ATAR	Thermoset	Insulation	70°C	General purpose Antitermite & Antirodent	03	HFI XL 70	EI 5	HJ 1, HJ 3	HF 70	IS 10810	1.50	5	48	<100	<10	13	200	±25	±25	30	8	Nil	$5 \times 10^{14}$
KI-HF-3301 XL OR	Thermoset	Insulation/Sheath	90°C	General purpose Oil Resistance Insulation & Sheath	04	HFI XL 90	EI 5	HJ 1, HJ 3	HF 90	IS 10810	1.46	2	50	<100	<10	12	180	±25	±25	34	8	Nil	$1 \times 10^{14}$

## HFFR Sheathing/Insulation Grades XL

Grade Name	Cable Description				Category	Standard Classification		Others	Test Parameters												
						IS 17048	BS 7211		Density, gm/cc	Melt Flow Index at 21.6 kg @150°C, gm/10 minutes	Hardness, Shore-D	Hot Set Test at 250°C, 20 N Load		TS, Mpa (min.)	EB, % (min.)	Heat Aging @ 150°C 168 Hrs		Oxygen Index % (Min.)	Smoke Density transmittance %	Acid gas emission test (% HCL Emission) (Max)	Volume Resistivity, $\Omega\text{-cm}$
												Elongation(%)	Permanent set after 5 min, %			Var.TS, %	Var.EB, %				
						ASTM-D-792	ASTM D-1238		ASTM-D-2240	IEC 60811-507		ASTM D-638		IEC 60811		ASTM-D-2863	EN-61034	IEC 60754-1	ASTM D 257		
KI-HF-3301 XL PV	Thermoset	Insulation/Sheath	90°C	HFFR Moisture curable system for LV Cables specially for Photovoltaic application	04	HFI XL 90	EI 5	IS 10810 EN 50618:2014 TUV2Pfg1169:2007	1.46	5	50	<100	<10	12	180	±40	±40	32	> 80	Nil	$1 \times 10^{14}$

# Thermoplastic HFFR Compound for Wire & Cable Industries

Thermoplastic Halogen free flame retardant Compound are mainly used in Wire & Cable insulation and sheathing. HFFR Compound are available in wide range of grades covering demanding applications requiring high thermo-mechanical along with flame retardant proprieties.

## Key Features Thermoplastics (TP) HFFR

- Halogen Free Fire Retardant
- RoHS Compliance
- High Line speed
- Enhanced electrical properties
- Also Suitable for working temperatures (70-90°C)
- Enhanced mechanical performance at high temperature
- Resistance to oil and fluid
- High extrusion speed suitable for low thickness extrusion
- Very good mineral oil and fluid resistance
- Long Life

## Applications

- Wire & Cable Insulation and Sheathing
- Shipboard Safety cable
- Fire resistant cable
- Specialty cable
- LV and MV armored cable sheathing
- Telecom and Optical Fiber cable
- Building Wires

## HFFR Insulation (TP) Grades

Grade Name	Cable Description				Category as per BIS	Applicable Specification			Others	Test Parameters									
										IS 17048	EN 50363	Density, gm/cc	Melt Flow Index at 21.6 kg @150°C, gm/10 minutes	Hardness, Shore-D	TS, Mpa (min.)	EB, % (min.)	Heat Aging @ 100 °C 168 Hrs		Oxygen Index % (Min.)
						ASTM-D-792	ASTM D-1238	ASTM-D-2240		ASTM D-638	Var.TS, %	Var.EB,%	ASTM-D-2863	EN-61034	IEC 60754-1	ASTM D 257			
						Heat Aging @ 80 °C 168 Hrs													
KI- HF-3401-IS TP GP	Thermoplastic	Insulation	70°C	General purpose	01	HFI -TP 70	TI 6 TI 7	IS 10810 IEC 332-1 IEC-332-2	1.46	6	50	12	200	±20	±20	34	> 80	Nil	3 x 10 <sup>14</sup>
KI-HF-3401-IS TP-HS	Thermoplastic	Insulation	70°C	General purpose High Speed	01	HFI -TP 70	TI 6 TI 7	IS 10810 IEC 332-1 IEC-332-2	1.45	10	50	12	200	±20	±20	34	> 80	Nil	3 x 10 <sup>14</sup>
KI-HF-3401-IS TP HF	Thermoplastic	Insulation	70°C	High Flexibility	01	HFI -TP 70	TI 6	IS 10810 IEC 332-1 IEC-332-2	1.38	13	41	11	250	±20	±20	33	> 80	Nil	3 x 10 <sup>14</sup>
KI- HF-3403-TP UV	Thermoplastic	Insulation	70°C	High Oxygen Index, Good mechanical properties & Good UV Stability	01	HFI -TP 70	TI 6 TI 7	IS 10810 IEC 332-1 IEC-332-2	1.46	8	50	12	200	±20	±20	34	> 80	Nil	3 x 10 <sup>14</sup>
KI- HF-3401-IS TP ATAR	Thermoplastic	Insulation	70°C	General purpose Anti Termite & Anti Rodent	01	HFI -TP 70	TI 6 TI 7	IS 10810 IEC 332-1 IEC-332-2	1.46	8	50	12	200	±20	±20	34	> 80	Nil	3 x 10 <sup>14</sup>
KI- HF-3401-IS TP LT	Thermoplastic	Insulation	70°C	General purpose Low Temperature -40°C	01	HFI -TP 70	TI 6 TI 7	IS 10810 IEC 332-1 IEC-332-2	1.44	3	36	9	240	±20	±20	30	-	Nil	1 x 10 <sup>14</sup>

## HFFR Sheathing (TP) Grades

Grade Name	Cable Description				Category	Applicable Specification			Others	Test Parameters										
										IS 17048	EN 50363	IEC 60092	Density, gm/cc	Melt Flow Index at 21.6 kg @150°C, gm/10	Hardness, Shore-D	TS, Mpa (min.)	EB, % (min.)	Heat Aging @ 100 °C 168		Oxygen Index % (Min.)
						ASTM-D-792	ASTM D-1238	ASTM-D-2240		ASTM D-638	Var.TS, %	Var.EB,%	ASTM-D-2863	IEC 60754-1	EN-61034	IEC 60811				
						Heat Aging @ 80 °C 168 Hrs														
KI- HF-3402 TP	Thermoplastic	Sheathing	70°C	General purpose	01	HFSTP-70	M16	SHF 1	IS 10810 IEC 332-1 IEC-332-2	1.50	4	53	12	200	±20	±20	36	0.5	> 80	20
KI-HF-3402 TP ATAR	Thermoplastic	Sheathing	70°C	General purpose Anti-Rodent & Termite	01	HFSTP-70	M16	SHF 1	IS 10810 IEC 332-1 IEC-332-2	1.50	6	53	12	200	±20	±20	36	0.5	> 80	20
KI-HF-3402 TP 90	Thermoplastic	Sheathing	90°C	General purpose	02	HFSTP-90	M16, TM7	SHF 1	IS 10810 IEC 332-1 IEC-332-2	1.50	5	54	11	200	±20	±20	36	0.5	> 80	20
KI-HF-3404 TP	Thermoplastic	Sheathing	70°C	Crack resistance/Armoured Cable	01	HFSTP-70	M1, M16	SHF 1	IS 10810 IEC 332-1 IEC-332-2	1.49	6	52	12	200	±20	±20	35	0.5	> 80	35
KI-LSHF-3404 ATAR	Thermoplastic	Sheathing	70°C	Crack resistance AntiRodent and Antitermite/Armored cable	01	HFSTP-70	M1, M16	SHF 1	IS 10810 IEC 332-1 IEC-332-2	1.49	6	52	12	200	±20	±20	35	0.5	> 80	35
KI- HF-3402 TP OR	Thermoplastic	Sheathing	70°C	General purpose Oil Resistance	01	HFSTP-70	M1, M16	SHF 1	IS 10810 IEC 332-1 IEC-332-2	1.44	5	53	11	200	±30	±30	34	0.5	> 80	50
KI- HF-3402 TP LT	Thermoplastic	Sheathing	70°C	General purpose Low temp. -40 Deg.	01	HFSTP-70	M1, M16, TM7	SHF 1	IS 10810 IEC 332-1 IEC-332-2	1.42	5	53	11	200	±30	±30	34	0.5	> 80	50

## HFFR Bedding (TP) Grade

Grade Name	Cable Description				Category	BS	Test Parameters			
							Density, gm/cc	Melt Flow Index at 21.6 kg @150°C, gm	Hardness, Shore-D	Oxygen Index % (Min.)
							ASTM-D-792	ASTM D-1238	ASTM-D-2240	ASTM-D-2863
KI-HF-3400 BD	Thermoplastic	Bedding	-	-	-	BS 7846	1.65	10	52	35
KI-HF-3400 BD FX	Thermoplastic	Bedding	-	-	-	BS 7846	1.90	>20	31	50
KI- HF-3400 BD SH	Thermoplastic	Sheathing	70°C	General purpose	01	BS 7846	1.52	5	54	36



XLPE Plant and Machinery at Surangi

**BUREAU VERITAS**

**DDEV PLASTIKS INDUSTRIES LIMITED**

**Ddev PlastikS Industries Limited**

**SURANGI: SURVEY NO:320/1/1/2/2, VILLAGE - SURANGI, CHIKHALI ROAD, SILVASSA - 396 240, U. T. DADRA & NAGAR HAVELI, INDIA.**

This is a multi-site certificate, additional site(s) are listed on the next page(s)

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organization has been audited and found to be in accordance with the requirements of the Management System Standard detailed below.

**Standard**

**ISO 9001:2015**

*Scope of certification*

**DESIGN, DEVELOPMENT, MARKETING, MANUFACTURING AND DISPATCH OF COMPOUNDS BASED ON POLYOLEFIN**

Original cycle start date: **16 November 2008**  
 Recertification cycle start date: **16 November 2020**

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: **16 November 2023**

Certificate No. **IND.20.4332/QM/U** Version: 2 Revision date: **27 May 2022**

Signed on behalf of BVCH SAS UK Branch  
 Jagdishesh N. MANJAV  
 Director – CERTIFICATION, South Asia  
 Commodities, Industry & Facilities Division

Certification body address: 8th Floor, 66 Prescott Street, London, E1 8AS, United Kingdom  
 Local office: Bureau Veritas (India) Private Limited (Certification Business)  
 72 Business Park, Marol Industrial Area, MIDC Cross Road "C", Andheri (East), Mumbai – 400 055, India

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organization. To check this certificate validity please call + 91 22 6274 2000.

**Bureau Veritas Certification**

**BUREAU VERITAS**

**DDEV PLASTIKS INDUSTRIES LIMITED**

**Ddev PlastikS Industries Limited**

**SURVEY NO-24/3, DEMNI ROAD, VILLAGE-DEMNI, DADRA, DADRA AND NAGAR HAVELI – 396 193, U. T. INDIA.**

This is a multi-site certificate, additional site(s) are listed on the next page(s)

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organization has been audited and found to be in accordance with the requirements of the Management System Standards detailed below.

**Standards**

**ISO 9001:2015, ISO 14001:2015 & ISO 45001:2018**

*Scope of certification*

**DEVELOPMENT, MANUFACTURING, MARKETING & SUPPLY OF PVC, POLYOLEFIN BASED COMPOUND & MASTER BATCHES**

Original cycle start date for ISO 9001: **04 December 2009**  
 Original cycle start date for ISO 14001 & ISO 45001: **30 December 2021**  
 Expiry date of previous cycle for ISO 9001: **03 December 2021**  
 Expiry date of previous cycle for ISO 14001 & ISO 45001: **Not Applicable**  
 Recertification Audit date for ISO 9001: **22 October 2021**  
 Certification Audit date for ISO 14001 & ISO 45001: **22 October 2021**  
 Recertification cycle start date for ISO 9001: **30 December 2021**  
 Certification cycle start date for ISO 14001 & ISO 45001: **30 December 2021**

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: **03 December 2024**

Certificate No. **IND.21.2197/IM/U** Version: 2 Revision date: **20 May 2022**

Signed on behalf of BVCH SAS UK Branch  
 Jagdishesh N. MANJAV  
 Director – CERTIFICATION, South Asia  
 Commodities, Industry & Facilities Division

Certification body address: 8th Floor, 66 Prescott Street, London, E1 8AS, United Kingdom  
 Local office: Bureau Veritas (India) Private Limited (Certification Business)  
 72 Business Park, Marol Industrial Area, MIDC Cross Road "C", Andheri (East), Mumbai – 400 055, India

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organization. To check this certificate validity please call + 91 22 6274 2000.

**Bureau Veritas Certification**

**BUREAU VERITAS**

**DDEV PLASTIKS INDUSTRIES LIMITED**

**Ddev PlastikS Industries Limited**

**Standard**

**ISO 9001:2015**

*Scope of certification*

**DESIGN, DEVELOPMENT, MARKETING, MANUFACTURING AND DISPATCH OF COMPOUNDS BASED ON POLYOLEFIN**

SITE	ADDRESS	SCOPE
<b>SURANGI SITE</b>	SURVEY NO-320/1/1/2/2, VILLAGE-SURANGI, CHIKHALI ROAD, SILVASSA - 396 240, U.T.DADRA & NAGAR HAVELI, INDIA.	DESIGN, DEVELOPMENT, MANUFACTURE AND DISPATCH OF COMPOUNDS BASED ON POLYOLEFIN
<b>MUMBAI</b>	106, LAXMI PLAZA, LAXMI INDUSTRIAL ESTATE, NEW LINK ROAD, ANDHERI (WEST), MUMBAI - 400 053, MAHARASHTRA, INDIA.	MARKETING OF COMPOUNDS BASED ON POLYOLEFIN

Certificate No. **IND.20.4332/QM/U** Version: 2 Revision date: **27 May 2022**

Signed on behalf of BVCH SAS UK Branch  
 Jagdishesh N. MANJAV  
 Director – CERTIFICATION, South Asia  
 Commodities, Industry & Facilities Division

Certification body address: 8th Floor, 66 Prescott Street, London, E1 8AS, United Kingdom  
 Local office: Bureau Veritas (India) Private Limited (Certification Business)  
 72 Business Park, Marol Industrial Area, MIDC Cross Road "C", Andheri (East), Mumbai – 400 055, India

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organization. To check this certificate validity please call + 91 22 6274 2000.

**Bureau Veritas Certification**

**L C I E**

**TEST REPORT N° 114901 - 628815**

Issued to : **KALPENA INDUSTRIES LIMITED**  
 106, Laxmi Plaza,  
 Laxmi Industrial Estate  
 New Link Road, Andheri (West),  
 Mumbai - 400 053, India

Item tested : **Dumb-bell specimens of compound**

Reference : **LT-XLPE GRADE :**  
 1/ KI-XL 03/04 ABC-SC  
 2/ KI-XL 03MT / 04 ABC-SC-1  
 3/ KI-XL 03/XL04/ABC-MB

Date of receipt : **July 25<sup>th</sup> 2012**

Purpose of the tests : **Tests according to the requirements of NF C 33-209: 1996 - 2<sup>nd</sup> publication September 2005, clause 6.2.**

Date or period of test : **August – October 2012**

Fontenay-Aux-Roses, October 29, 2012  
 The Technical Manager,

**LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES**  
 S.A.S au capital de 15 743 384 €  
 RCS Nanterre B 438 363 174  
 33 avenue du Général Leclerc  
 F - 92266 FONTENAY-AUX-ROSES

This document shall not be reproduced, except in full, without the written approval of the LCIE. This document contains results related only to the item tested. It does not imply the conformity of the whole production to the item tested. Unless otherwise specified, the decision of conformity takes into account the uncertainty of measures.

LCIE 33, av du Général Leclerc Tël : +33 1 40 95 60 60 SiteWeb: www.lcie.fr  
 Laboratoire Central 92 018 Fax : +33 1 40 95 86 36 au capital de 15 743 384 €  
 des Industries Electriques 92266 Fontenay-aux-Roses cedex commercial@lcie.fr RCS Nanterre B 438 363 174  
 Use société de Bureau Veritas France: www.bv.com www.lcie.fr

**KEMA**

**TIC 1002-14**

**TYPE TEST CERTIFICATE OF COMPLETE TYPE TESTS**

OBJECT : **Single-core power cable**

TYPE : **A2XS(FL)2Y**

Rated voltage, U<sub>0</sub>/U (U<sub>m</sub>) : **18/30 (36) kV** Conductor material : **AL**  
 Conductor cross-section : **1x185 mm<sup>2</sup>** Insulation material : **XLPE**

MANUFACTURER : **FKN DOEL, Negotino, Macedonia**

CLIENT : **FKN DOEL, Negotino, Macedonia**

TESTED BY : **KEMA Nederland B.V., Arnhem, The Netherlands**

DATE(S) OF TESTS : **13 January to 27 February 2014**

The object, constructed in accordance with the description, drawings and photographs incorporated in this Certificate, has been subjected to the series of proving tests in accordance with

**IEC 60502-2 (2005)**

This Type Test Certificate has been issued by KEMA following exclusively the STL Guides. The results are shown in the record of Proving Tests and the oscillograms attached hereto. The values obtained and the general performance are considered to comply with the above Standard and to justify the ratings assigned by the manufacturer as listed on page 4.

This Certificate applies only to the object tested. The responsibility for conformity of any object having the same type references as that tested rests with the manufacturer.

This Certificate consists of 38 pages in total.

Copyright: Only integral reproduction of this Certificate is permitted without written permission from KEMA. Electronic copies in e.g. PDF-format or scanned version of this Certificate may be available and have the status "for information only". The sealed and bound version of the Certificate is the only valid version.

**KEMA Nederland B.V.**  
 S.A.M. Verhoeven  
 Director Testing, Inspections & Certification The Netherlands  
 Arnhem, 26 March 2014

**KEMA**

**TIC 1002-14**

**Insulation**

- material : **XLPE**
- nominal thickness : **8,0 mm**
- material designation : **KI-XL-8503**
- manufacturer of the material : **Kalpena Industries Limited-India**

**Conductor screen**

- material : **Semi-conducting XLPE**
- nominal thickness : **0,6 mm**
- material designation : **KI-XLC-09**
- manufacturer of the material : **Kalpena Industries Limited-India**

**Insulation (core) screen**

- material : **Semi-conducting XLPE**
- strippable : **No**
- nominal thickness : **0,7 mm**
- material designation : **KI-XLC-09**
- manufacturer of the material : **Kalpena Industries Limited-India**

**Metal foil or tape, longitudinally applied, bonded to the oversheath**, **Yes**

- material : **Aluminium**
- nominal thickness : **0,3 mm**

**Oversheath**

- material : **PE, type ST<sub>7</sub>**
- nominal thickness : **3,0 mm**
- nominal overall diameter of the cable (D)<sub>44,5 mm</sub> : **KT-BSC-0368**
- manufacturer of the material : **Kalpena Industries Limited-India**
- colour : **Black**
- graphite coating applied : **No**

**Fire retardant (according to IEC 60332-1)** : **No**

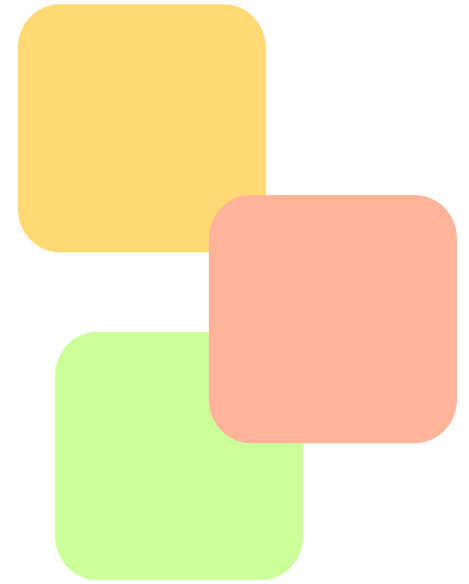
**Manufacturing details insulation system**

- location of manufacturing : **Negotino, Macedonia**
- type of extrusion line : **CCV**
- type of extrusion : **Triple common extrusion**
- factory identification of extrusion line : **130199**
- manufacturer of the extrusion line : **Royley Systems Group**
- curing means : **Dry cure (nitrogen)**
- cooling means : **Water**
- manufacturing length (where cable sample for testing has been taken from) : **3000 m**
- length markings on cable sample sent to KEMA : **Begin: 0088 m, end: 0148m**

## Colour Master Batches from Ddev

Our master batches are suitable in application with LDPE, LLDPE, HDPE, PPH, PPR, PVC, HIPS, ABS, GPPS, Nylon and other Engg. Thermoplastics. The master batches are meant for use in various processes like :

- Injection Moulded products : Furniture, Fans, Crates, Dustbins etc.
- Raffia / Woven Sacks.
- Multi layer films : Flexible Packaging.
- Monolayer films : Packing Bags, Milk Pouches etc.
- Blow moulded products : Drums, Barrels, Containers etc.
- Rotomoulded products : Water Tanks, Loft Tanks etc.
- Irrigation and Telecom Pipes.
- Wire & Cable.



**Regd. Office** : 2B, Pretoria Street, Kolkata - 700 071, Tel. : +91-33-2282 3744/45/3671/99, E-mail : [kolkata@ddevgroup.in](mailto:kolkata@ddevgroup.in)

**Mumbai Office** : 106, Laxmi Plaza, Laxmi Industrial Estate, New Link Road, Andheri (West), Mumbai - 400 053, India  
Tel. : +91-22-67021470/71/72, E-mail : [mumbai@ddevgroup.in](mailto:mumbai@ddevgroup.in)

**Daman Works** : 168/151-158, Dabhel Industrial Co-operative Society Ltd, Dabhel, Daman – 396210, Tel: +91 9909006407

**Dadra Works** : Survey No – 24/3, Village : Demni, Demni Road Dadra, Silvassa – 396193, Dadra & Nagar Haveli, Tel : +91 9909006426

**Surangi Works** : Survey No .– 320/1/1/2/2, Village – Surangi, Chikhali Road, Silvassa – 396240, Dadra & Nagar Haveli  
Tel : +91 9909006402

**Kolkata Works** : Vill. & P.O. : Chaturbhujkathi, Kandua, P.S. Sankrail, Howrah - 711313

**Website : [www.ddevgroup.in](http://www.ddevgroup.in)**

Follow us     

June 2022