

## HFFR CPR BEDDING

HFFR CPR BEDDING			HFFR-85ST	HFFR-F30	HFFR-T20	HF-EPM08	HFFR-80F
PROCESS TYPE/BASIC PRODUCT SPECIFIC			Co-extrusion Tandem	Flexible	Co-extrusion Tandem	Flexible	Flexible
Property	Test Method	Unit					
<b>Physical Properties</b>							
Melt Flow Rate (150°C-21,6 kg)	ASTM D 1238	g/10 min	75±10	160±10	4±2	80±5	70±10
Density (23°C)	ASTM D-792	gr/cm <sup>3</sup>	1,86±0,02	1,60±0,03	1,86±0,03	1,81±0,05	1,82±0,03
<b>Mechanical Properties</b>							
Tensile Strength	ISO 527	MPa		4	-	-	-
Elongation at Break	ISO 527	%		120	-	-	-
LOI	ISO 4589	%	67	48	75	>55	60
<b>Chemical Properties</b>							
Halogen Content	EN 60754-1	%	<0,5 Max.	<0,5 Max.	<0,5Max.	0	<0,5 Max.

HFFR BEDDING			HFFR-D3	HFFR-D40	HF-PE75	HF-EPR	HF-RS
PROCESS TYPE/BASIC PRODUCT SPECIFIC			Flexible	Flexible	Tandem	Tandem	Flexible/Tandem
Property	Specification	Unit					
<b>Physical Properties</b>							
Melt Flow Rate (150°C-21,6 kg)	ASTM D 1238	gr/10 min	90±10	80±10	120±20	200±20	125±10
Melt Flow Rate (190°C-5 kg)*							
Specific Weight (23°C)	ASTM D-792	gr/cm <sup>3</sup>	1,70±0,05	1,69±0,05	1,98±0,04	1,90±0,05	1,90±0,05
<b>Mechanical Properties</b>							
Tensile Strength	ISO 527	MPa	3	6,5	-	-	-
Elongation at Break	ISO 527	%	350	360	-	-	-
LOI	ISO 4589	%	33	33	-	-	-
<b>Chemical Properties</b>							
Halogen Content	EN 60754-1	%	<0,5 Max.	<0,5 Max.	<0,5 Max.	<0,5 Max.	-

SPECIAL COMPOUNDS			SC-FRB1	SC-FRA2	KK-F	SC-DBFR
PROCESS TYPE/BASIC PRODUCT SPECIFIC			Al.Composite Panel Compound	Al.Composite Panel Compound	HFFR Injection Compound	HFFR Pipe Compound
Property	Test Method	Unit				
<b>Physical Properties</b>						
Carrier Resin	-		PE	EVA	-	-
Color	ASTM E 1164		Light Grey	Light Grey	-	-
MDH Content	-	%	80	90-92	-	-
MFI (150°C-21,6 kg)	ASTM D 1238	g/10 min	4±2	20±2	50±5	7
Density	ASTM D 792	g/cm <sup>3</sup>	1,86±0,03	2,0±0,02	1,18±0,01	1,50
LOI	ISO 4589	%	>62	-	-	53

## ADDITIVE MASTERBATCHES

<b>KK-ABSORB</b>	Desiccant Masterbatch, It is a polyethylene resin based dehumidifier.
<b>KK-ABSORB15</b>	Odor Absorber Masterbatch, It is produced to eliminate bad odors without using any fragrance.
<b>KK-AOX6810</b>	Synergistic Antioxidant Masterbatch, It is a long-term thermal stabilizer.
<b>KK-AOX1024</b>	Metal Deactivator and Antioxidant Masterbatch, It is a phenolic metal deactivator that does not change color.
<b>KK-CHAR</b>	Drip Resistance Masterbatch, It is a masterbatch that improves dripping behavior and crust formation.
<b>KK-FRH</b>	Flame Retardant Masterbatch, Used in flame retardant applications.
<b>KK-FRH1</b>	Flame Retardant Synergist, It is a flame retardant synergist material for PVC applications.
<b>KK-FRHC</b>	Flame Retardant Masterbatch, It is based on a synergistic brominated flame retardant compound.
<b>KK-FRMB</b>	Flame Retardant Compound for Solar Cables, It is based on a synergistic brominated flame retardant compound.
<b>KK-FRUK</b>	Flame Retardant Masterbatch, Used in flame retardant applications.
<b>KK-IMP</b>	Mukavemet Arttırıcı Masterbatch, It is a main group of use as pulse modifier.
<b>KK-STAB44</b>	Water Repellent Masterbatch, It is often used to pass Thermal Aging tests under water conditions.
<b>KK-SV8</b>	Cracking Resistance Enhancing Masterbatch, Provides high resistance to environmental factors.
<b>KK-UV9462</b>	UV Stabilizer Masterbatch, Provides resistance to direct sunlight.
<b>KK-VHM2</b>	HM2 Masterbatch
<b>KK-VHM4</b>	HM4 Masterbatch
<b>KK-VB1</b>	CPR Masterbatch
<b>SC-CLR40P</b>	P Type Black Masterbatch, Injection molding, casting extrusion and thermoforming offer good covering power and dispersion.

"We sign your cable"

## CABLE COMPOUNDS



- **CROSSLINKABLE COMPOUNDS**
- **SOLAR CABLE COMPOUNDS**
- **POLYETHYLENE HFFR COMPOUNDS**
- **POLYMER COMPOUNDS**
- **HFFR INSULATION AND SHEATING COMPOUNDS**
- **HFFR RADIATION COMPOUNDS**
- **HFFR CPR BEDDING**
- **HFFR BEDDING**
- **SPECIAL COMPOUNDS**
- **ADDITIVE MASTERBATCHES**

POLYOLEFIN HFFR COMPOUNDS			POLYOLEFIN HFFR COMPOUNDS FOR LV, MV & HV CABLES					
			KK-SICO481	KK-SICO482	KK-SICO483	KK-SICO487	KK-SICO682	KK-SICO683
<b>Property</b>	<b>Test Method</b>	<b>Unit</b>						
<b>Physical Properties</b>								
Melt Flow Rate (190°C-2,16 kg) (150°C-21,6 kg)*	ASTM D 1238	g/10 min	10,5*	0,9	0,7	0,9	0,4	0,5
Density (23°C)	ASTM D-792	gr/cm <sup>3</sup>	1,28	1,15	1,15	1,15	1,22	1,17
Hardness	ASTM D 2240	Shore D	51	42	48	45	54	50
Carbon Black Content	ASTM D1603	wt%	2,6	-	-	-	2,5	-
<b>Mechanical Properties</b>								
Tensile Strength	ISO 527	N/mm <sup>2</sup>	14,5	15	16	16	14	15
Elongation at Break	ISO 527	%	450	550	600	650	500	550
Heat Ageing (110°C, 240 h)	IEC 60811							
Heat Ageing (100°C, 168 h)*								
Δ Elongation		%	< 20	≤ 20	≤ 20*	≤ 20	≤ 25	≤ 25
Δ Retention of Tensile Elongation		%	< 20	≤ 20	≤ 20*	≤ 20	≤ 25	≤ 25
Tear Strength	ASTM D 1938	N/mm	14	15	20	15	20	20
UV Ageing	-	%	-	20	20	20	-	-
Brittleness temperature	ISO 974	°C	-	< -60	-	-	-	-
Hot Pressure Test at 90 °C, Hot Pressure Test at 80 °C* Hot Pressure (Test at 110 °C, 6 h)**	IEC 60811	%	<50	<50	<20	<50	<10**	<10**
Cold Flex	ISO 458-2	°C	-40±2	-40±2	-40±2	-40±2	-40±2	-40±2
Cold Bend (-35 °C±2 °C)	IEC 60811-504	-	No Cracks	No Cracks	No Cracks	No Cracks	No Cracks	No Cracks
Cold Elongation (-35 °C±2 °C)	IEC 60811-505	-	30 Min.	-	-	-	-	-
Cold Impact (-35 °C±2 °C)	IEC 60811-506	-	Pass	Pass	Pass	Pass	Pass	Pass
<b>Electrical Properties</b>								
Environmental Stress Crack Resistance (50°C)	IEC 60811-406	h	>1.000	-	-	-	-	-
Halogen Content	EN 60754-1	%	<0,5 Max.	<0,5 Max.	<0,5 Max.	<0,5 Max.	<0,5 Max.	<0,5 Max.
pH	IEC 60754-2	-	>4.3	>4.3	>4.3	>4.3	>4.3	>4.3
Conductivity	IEC 60754-2	μS/mm	<10	<10	<10	<10	<10	<10
Water Absorption	IEC 60811	mg/cm <sup>2</sup>	<5	<1	<1	<1	<1	<1
LOI	ISO 4589	%	34	28	28	29	26	26
Smoke Density	EN-61034	% transmittance	>80	>80	>80	>80	>80	>80
Volume Resistivity 20 °C	ASTM D257 Electrodes	Ω.cm PΩ.cm*	1	10*	45*	6*	17*	-
<b>Other Properties</b>								
Oil IRM 902 (70 °C, 4 h)	IEC 60811-404							
Δ Strength		%	10	10	10	10	10	10
Δ Elongation		%	9	9	9	9	9	9



