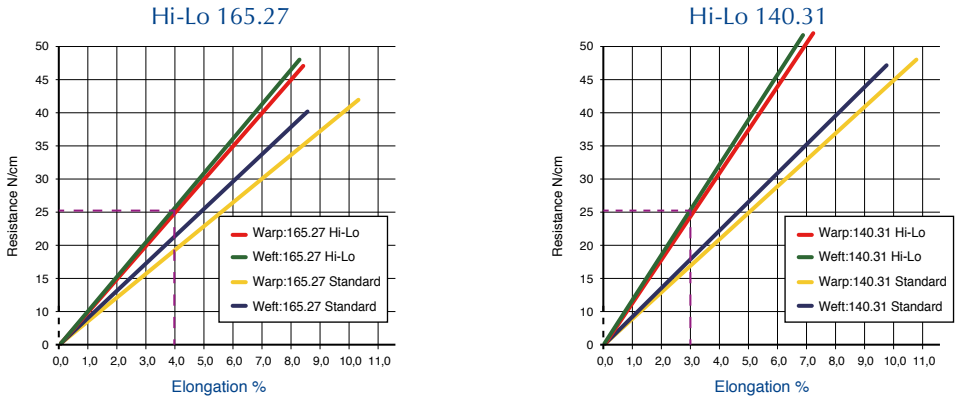
Fabrics for Consumer Electronics - Screen Printing

Printed Electronics

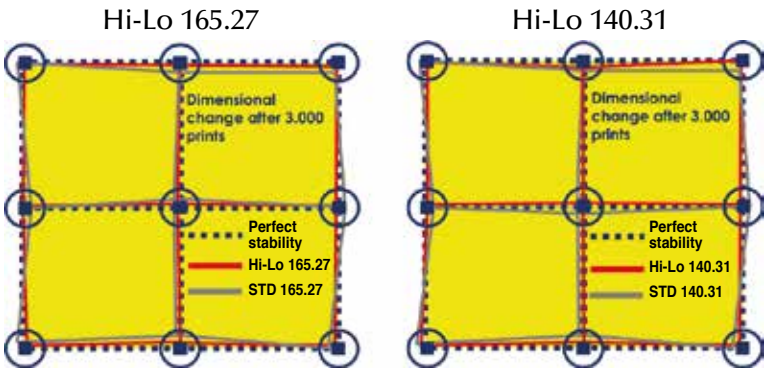
Saatilene Hi-Lo

Saatilene Hi-Lo (Hibond Low Elongation) is a super high modulus monofilament polyester mesh especially developed for the TSP market, which requires a very high image precision.
Saati uses a special fiber whose polymeric structure gives extraordinary physical & mechanical properties to the product:



1) The extremely low and balanced elongation between warp and weft grants a higher dimensional stability. The Hi-Lo warp & weft overlapping is almost perfect. At 25N tension level the Hi-Lo 140.31 elongation percentage is around 3%, whereas the Hi-Lo 165.27 is around 4%.

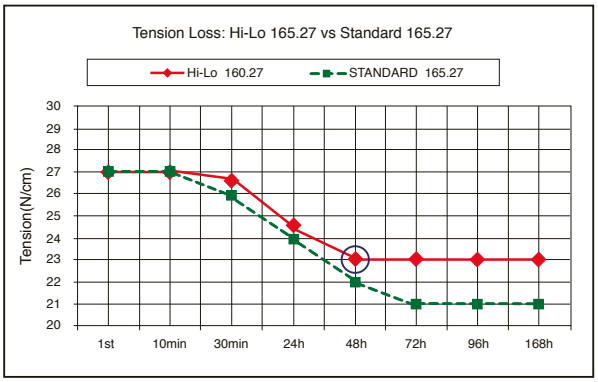
Graph: dimensional stability



2) The extremely low mesh relaxation, which guarantees:

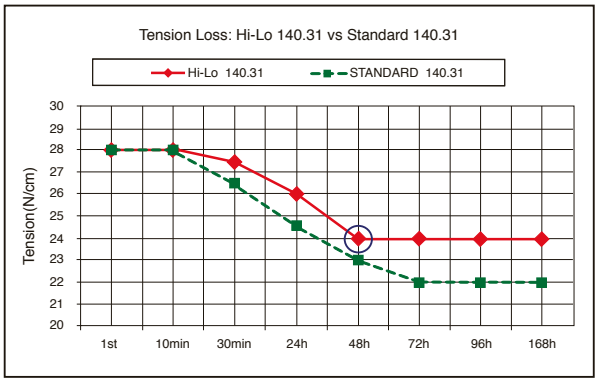
- Low tension loss after stretching.
- Mesh ready to use in less time, as it can be brought up to the required tension quicker.
- Printing Quality consistency and improved ink flow during all production run.

TENSION LOSS: HI-LO 165.27 & STANDARD 165.27



Hi-Lo 165.27 final tension after relaxation is around 23N/cm with 4N tension loss.

TENSION LOSS: HI-LO 140.31 & STANDARD 140.31



Hi-Lo 140.31 final tension after relaxation is around 24N/cm with 4N tension loss.

3) The exclusive plasma treatment is able to modify the mesh surface. As a result, the mesh's hydrophilic behaviour eases the emulsion adhesion on its surface.

ADVANTAGE

- A longer printing life of the stencil and a higher printing quality in terms of resolution and definition.
- The degreasing process is no longer needed: better manufacturing efficiency and lower costs.

Technical Data

Saatilene Hi-Lo is our premium product line and represents the Saati specialty for the TP market.
The Hi-Lo product range is made up by Hi-Lo 165.27, Hi-Lo 150.27, Hi-Lo 150.33, Hi-Lo 140.31 and Hi-Lo 120.34.
Our Key product in the TP market is the Hi-Lo 165.27.

Article	Mesh count	Mesh count	Nominal thread diameter	Mesh opening	Open Area	Fabric thickness	Theoretical ink volume	Specific cross-section	Typical tension after relaxation
	n°/cm	n°/inch	µm	µm	%	µm	cm^3/m^2	mm^2/cm	N/cm
PE AM 120.34 PW	120	305	34	45	29	54	16	0,109	23
PE AM 140.31 PW	140	356	31	35	25	45	11	0,106	24
PE AM 150.27 PW	150	380	27	36	29	42	12	0,086	21
PE AM 150.33 PW	150	380	33	25	14	50	7	0,128	24
PE AM 165.27 PW	165	420	27	29	23	42	10	0,094	23

The above data are average values measured on piece-good in relaxed state, manufactured with yarns of a perfect nominal diameter (cfr. international standards), under normal hygrometric conditions (20°C=68°F, 65% relative humidity). They are subject to normal variations up to 7% if conditions vary from those stated above. The listed technical specifications, exception made for the thread diameter indicated with its nominal value, are referred to the arithmetic mean value of production samples and are subject to change, in accordance with our policy of continuously improving our products.
PW: Plain Weave (1:1).

Saatilene HI-R

Saatilene HI-R is a high modulus, low elongation monofilament polyester screen printing fabric with a proprietary surface treatment ideal for all traditional applications.

BENEFITS:

- Ready to use: the degreasing pre-treatment can be eliminated.
- Superior stencil adhesion, resulting in less stencil breakdown on press, delivering longer print runs far beyond other conventional treated fabrics
- Better resolution of fine details.
- Improved wettabililty and optimum stencil surface.

THE ATMOSPHERIC PLASMA PROCESS:

It is a plasma technology, that is highly innovative in the field of textiles surface treatments. It is based on a DBD electric discharge (Dielectric Barrier Discharge) where an electrical discharge between two electrodes ionizes the air surrounding the electrodes. This kind of process modifies the fabric surface at a nano scale.

WHAT MAKES HI-R SO DIFFERENT?

The surface modification treatment is applied to all our fabrics, also for wide widths (up to 4 meters).

OTHER ADVANTAGES:

- Safe under exposure with all emulsion types, Photopolymer, Dual-Cure, Diazo and Capillary Films
- Holds finer detail with no compromise in stencil durability (halftones, fine lines etc.)
- Excellent for use with abrasive printing conditions, inks and pastes
- Good mechanical behavior
- Friendly use
- Helps reduce ghost imaging
- Good anti-static properties

Saatilene HI-R - Technical Data

Article	Mesh count		Nominal thread diameter	Mesh opening	Open Area	Fabric thickness	Theoretical ink volume	Specific cross-section	Maximum recommended tension from-to
	n°/cm	n°/inch	µm	µm	%	µm	cm^3/m^2	mm^2/cm	N/cm
PE AM 34.100 PW	34	86	100	185	41	173	71	0,267	35-40
PE AM 36.90 PW	36	91	90	190	45	150	68	0,229	35-40
PE AM 36.100 PW	36	91	100	175	38	170	65	0,283	35-40
PE AM 38.90 PW	38	97	90	170	42	161	68	0,242	35-40
PE AM 40.80 PW	40	102	80	170	44	135	59	0,201	35-40
PE AM 40.90 PW	40	102	90	160	40	148	59	0,254	35-40
PE AM 43.80 PW	43	110	80	150	43	138	59	0,216	35-37
PE AM 45.70 PW	45	114	70	148	47	115	54	0,173	30-34
PE AM 48.55 PW	48	122	55	153	55	90	50	0,114	24-26
PE AM 49.70 PW	49	125	70	130	40	116	46	0,188	30-34
PE AM 49.80 PW	49	125	80	120	35	138	48	0,246	37-40
PE AM 51.70 PW	51	130	70	120	38	118	45	0,196	30-35
PE AM 55.64 PW	55	140	64	120	41	105	43	0,177	26-31
PE AM 55.70 PW	55	140	70	105	33	114	38	0,212	30-34
PE AM 62.64 PW	62	158	64	90	32	106	34	0,199	30-34
PE AM 68.55 PW	68	173	55	89	36	89	32	0,161	25-30
PE AM 71.55 PW	71	180	55	80	33	93	31	0,169	23-30
PE AM 77.48 PW	77	196	48	73	36	78	28	0,139	24-26
PE AM 77.55 PW	77	196	55	70	28	90	25	0,183	27-32
PE AM 90.40 PW	90	230	40	68	38	62	24	0,113	20-24
PE AM 90.48 PW	90	230	48	55	27	81	22	0,163	27-29
PE AM 100.40 PW	100	255	40	55	31	63	20	0,126	26-28
PE AM 100.48 PW	100	255	48	40	16	81	13	0,181	30-34
PE AM 110.34 PW	110	280	34	53	35	56	20	0,100	22-24
PE AM 110.40 PW	110	280	40	47	26	64	17	0,138	25-30
PE AM 120.31 PW	120	305	31	53	40	48	19	0,091	21-24
PE AM 120.34 PW	120	305	34	45	29	54	16	0,109	24-26
PE AM 120.40 PW	120	305	40	38	20	67	13	0,151	27-32
PE AM 130.34 PW	130	330	34	39	26	55	14	0,118	24-27
PE AM 140.31 PW	140	355	31	38	28	48	13	0,106	20-22
PE AM 140.34 PW	140	355	34	29	16	56	9	0,127	23-26
PE AM 150.27 PW	150	380	27	35	27	44	12	0,086	17-20
PE AM 150.31 PW	150	380	31	29	20	49	10	0,113	22-24
PE AM 150.34 PW	150	380	34	25	13	56	7	0,136	25-27
PE AM 165.27 PW	165	420	27	30	25	46	12	0,094	17-21
PE AM 165.31 PW	165	420	31	23	17	49	8	0,124	24-26
PE AM 165.34 TW	165	420	34	25	16	66	11	0,150	24-28
PE AM 180.27 PW	180	460	27	24	18	43	8	0,103	18-22
PE AM 180.31 TW	180	460	31	23	17	56	10	0,136	23-27
PE AM 200.31 TW	200	508	31	18	13	60	8	0,151	23-27

The above data are average values measured on piece-good in relaxed state, manufactured with yarns of a perfect nominal diameter (cfr. international standards), under normal hygrometric conditions (20°C=68°F, 65% relative humidity). They are subject to normal variations up to 7% if conditions vary from those stated above.
The listed technical specifications, exception made for the thread diameter indicated with its nominal value, are referred to the arithmetic mean value of production samples and are subject to change, in accordance with our policy of continuously improving our products.
The tension tests are realised with TOP12 series clamp system and appropriate frames at our laboratories.
Fabrics with mesh count from 15 to 32 (n/cm) may be available under request; PE 150.34 TW and PE 140.034 TW may be available under request.
PW: Plain Weave (1:1), TW: Twill Weave (1:2 - 2:2).