



## Teslin® Substrate Technical Data

*Teslin*® substrate, from PPG Industries, is a microporous, dimensionally stable, highly filled, single-layer, polyolefin synthetic material. A non-abrasive inorganic filler comprises 60 percent of the weight, and it is 65 percent air by volume. The porous, uncoated nature of *Teslin* substrate allows inks, adhesives, coatings, and laminating films to penetrate into its structure, forming strong interlocking bonds with the substrate.

### Typical Properties<sup>1</sup>

	SP 600	SP 700 <sup>2</sup>	SP 800 <sup>2</sup>	SP 1000 <sup>2</sup>	SPID 1000	SP 1000 Blue	IJ 1000 WP	Digital 1000	SP 1200 <sup>2</sup>	SP 1400 <sup>2</sup>	SPID 1400	HD 1400	SP 1800	Reference
<b>Gauge (mils)</b>	5.7	7.0	8.0	10.0	10.0	10.0	10.0	10.5	12.0	14.0	14.0	14.0	18.0	ASTM D-374
<b>Tolerance (+/- mils)</b>	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.9	0.9	0.9	1.2	
<b>Gauge (microns)</b>	145	178	203	254	254	254	254	267	305	356	356	356	457	
<b>Tolerance (+/- microns)</b>	13.0	17.8	17.8	17.8	17.8	17.8	17.8	17.8	20.3	22.9	22.9	22.9	30.5	
<b>Yield (si/lb)</b>	7,288	6,102	5,242	4,210	4,210	4,210	4,210	3,847	3,414	2,888	2,888	2,426	1,909	ASTM D-3776
<b>Grammage (g/m<sup>2</sup>)</b>	97	115	134	167	167	167	167	183	206	243	243	290	368	
<b>Basis Weight (oz/sq yd)</b>	2.85	3.40	3.96	4.93	4.93	4.93	4.93	5.39	6.07	7.18	7.18	8.55	10.86	
<b>(lbs/500 shts 25x38)</b>	65	77	90	108	108	108	n/a	123	138	163	163	195	249	
<b>Master Roll Configuration</b>														
<b>Mill Roll Length (ft)</b>	7,000	6,000	5,250	5,000	5,000	5,000	n/a	5,000	3,750	3,300	3,300	3,300	2,400	
<b>Mill Roll Length (m)</b>	2,134	1,829	1,601	1,524	1,524	1,524	n/a	1,524	1,143	1,006	1,006	1,006	732	
<b>Roll Weight (lbs)</b>	657	673	685	812	812	812	n/a	812	751	781	781	930	860	
<b>Roll Weight (kg)</b>	298	305	311	368	368	368	n/a	368	341	354	354	422	390	
<b>Tensile Properties</b>														
<b>MD Tensile Strength</b>														
<b>lbf/in</b>	11.1	13.3	15.4	18.3	18.3	18.3	18.3	21.8	19.9	22.6	22.6	26.6	25.0	
<b>N/cm</b>	19.4	23.3	27.0	32.0	32.0	32.0	32.0	38.2	34.8	39.6	39.6	46.6	44.0	ASTM D-882
<b>CD Tensile Strength</b>														
<b>lbf/in</b>	5.3	6.3	7.3	8.6	8.6	8.6	8.6	10.6	9.7	11.2	11.2	12.1	12.0	
<b>N/cm</b>	9.3	11.0	12.8	15.1	15.1	15.1	15.1	18.6	17.0	19.6	19.6	21.2	21.0	
<b>Elmendorf Tear (g)</b>														
<b>MD</b>	77	100	135	198	198	198	198	274	239	292	292	311	416	ASTM D-1922
<b>CD</b>	tore to MD	tore to MD	tore to MD	tore to MD	tore to MD	tore to MD	tore to MD	tore to MD	tore to MD	tore to MD	tore to MD	tore to MD	tore to MD	
<b>Brittleness Temperature</b>	<-70°C	<-70°C	<-70°C	<-70°C	<-70°C	<-70°C	<-70°C	<-70°C	<-70°C	<-70°C	<-70°C	<-70°C	<-70°C	ASTM D-746
<b>Optical Properties</b>														
<b>Brightness %</b>	89	89	90	91	91	91	92	91	92	92	92	92	92	ISO-2470
<b>Whiteness Index</b>	80	80	80	80	80	95	80	88	83	85	85	82	80	ASTM E-313
<b>Opacity (%)</b>	90	92	94	96	96	96	96	95	98	98	98	99	99	ISO-2471
<b>Transmission (%)</b>	17	15	11	8	8	8	8	9	6	5	5	4	3	ASTM D-1003
<b>Sheffield Smoothness</b>														
<b>Top</b>	46	28	32	27	27	27	45	29	29	29	29	49	63	ASTM T-538
<b>Bottom</b>	74	70	74	56	56	56	73	52	52	52	52	99	97	

<sup>1</sup> Specifications are based on English units of measurement. Metric values are provided for convenience and are not to be considered precise values. Standard master roll width is 57"/1447mm and 28"/711mm OD. 40"/1016mm OD rolls available upon request.

<sup>2</sup> The maximum allowable shrinkage for TS grade is 2% (measured at 135 °C for 15 minutes in a forced air oven). All other properties/specifications are the same for TS and SP grades. Custom widths up to 60"/1549mm available upon request. Digital 1000 is available in 12.5"/320mm and 20"/500mm width x 1400'/427m length rolls. Master rolls are put up on 6"/152mm ID cores.

