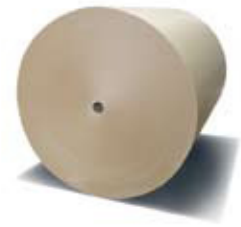


## Kraft Paper Product Specifications Contents

Kraft Unbleached SPK	SI	2
	SI (1924-3)	3
	Imperial	4
Kraft Unbleached SPX	SI	5
	SI (1924-3)	6
	Imperial	7
Kraft Unbleached SPX-Velocity	SI	8
	SI (1924-3)	9
	Imperial	10
Kraft Unbleached SPX-Vector	SI	11
	SI (1924-3)	12
	Imperial	13

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# Kraft Unbleached SPK Product Specifications

## End Uses

SPK high performance kraft paper is recommended for use in applications demanding high CD strength and superior converting runnability.

SPK is used in multiwall shipping sacks; flour, sugar, seed, feed, potatoes, etc; air filled dunnage bags and other specialty uses. SPK has proven to perform exceptionally in industrial applications and high strength laminated paper products.

## Available Basis Weights

65 - 130 gsm basis weights

## Options

Also available in wet strength and unsized.

## Fibre Source

SPK is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern slow growing woods have exceptionally high strength potential. Tolko fibre is harvested and replanted in accordance with sustainable forest management practices under CSA, PEFC, and ISO 14001 environmental quality control standards.

## Quality Systems

SPK quality is controlled with a comprehensive quality management system registered to the ISO 9001-2000 standard and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. All Tolko papers are manufactured in compliance with FDA as per 21 CFR 176.170 and 176.180 and are certified Kosher. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

## Typical Values - SI

Properties	Units							Test Standard
Basis Weight		gsm	65	80	100	115	130	T410 os-68(1968)
Tensile	MD	kN/m	5.9	7.0	9.1	11.0	13.6	T494 om-88(1988)
	CD	kN/m	3.3	3.9	4.5	4.9	5.6	
Stretch	MD	%	2.3	2.3	2.7	2.9	2.9	T494 om-88(1988)
	CD	%	8.0	8.0	8.0	8.0	7.7	
TEA	MD	J/m <sup>2</sup>	79	104	151	199	246	T494 om-88(1988)
	CD	J/m <sup>2</sup>	183	210	252	277	306	
Tear	MD	mN	824	1099	1442	1667	1942	T414 om-88(1988)
	CD	mN	863	1224	1648	1922	2206	
Porosity		sec/100cc	15	15	15	15	15	T460 om-88(1988)
Cobb		g/m <sup>2</sup> /min.	30	30	30	30	30	T441 om-90(1990)
Moisture		%	7.2	7.2	7.2	7.2	7.2	T412 om-90(1990)

Paper Laboratory Conditions:  
23.0 +/-1.0 Degree C  
(73.4 +/- 1.8 Degree F)  
Relative Humidity (RH) - 50% +/-2.0%

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# Kraft Unbleached SPK Product Specifications

## End Uses

SPK high performance kraft paper is recommended for use in applications demanding high CD strength and superior converting runnability.

SPK is used in multiwall shipping sacks; flour, sugar, seed, feed, potatoes, etc; air filled dunnage bags and other specialty uses. SPK has proven to perform exceptionally in industrial applications and high strength laminated paper products.

## Available Basis Weights

65 - 130 gsm basis weights

## Options

Also available in wet strength and unsized.

## Fibre Source

SPK is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern slow growing woods have exceptionally high strength potential. Tolko fibre is harvested and replanted in accordance with sustainable forest management practices under CSA, PEFC, and ISO 14001 environmental quality control standards.

## Quality Systems

SPK quality is controlled with a comprehensive quality management system registered to the ISO 9001-2000 standard and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. All Tolko papers are manufactured in compliance with FDA as per 21 CFR 176.170 and 176.180 and are certified Kosher. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

## Typical Values - SI (1924-3)

Properties	Units							Test Standard
Basis Weight		gsm	65	80	100	115	130	T410 os-68( 1968)
Tensile	MD	kN/m	6.5	7.7	10.1	12.1	15.0	ISO 1924-3*
	CD	kN/m	3.6	4.3	5.0	5.4	6.1	
Stretch	MD	%	2.4	2.4	2.8	3.0	3.0	ISO 1924-3*
	CD	%	8.4	8.4	8.4	8.4	8.1	
TEA	MD	J/m <sup>2</sup>	91	120	174	229	283	ISO 1924-3*
	CD	J/m <sup>2</sup>	210	241	290	319	352	
Tear	MD	mN	824	1099	1442	1667	1942	T414 om-88(1988)
	CD	mN	863	1224	1648	1922	2206	
Porosity		sec/100cc	15	15	15	15	15	T460 om-88(1988)
Cobb		g/m <sup>2</sup> /min.	30	30	30	30	30	T441 om-90(1990)
Moisture		%	7.2	7.2	7.2	7.2	7.2	T412 om-90(1990)

Paper Laboratory Conditions:  
23.0 +/-1.0 Degree C  
(73.4 +/- 1.8 Degree F)  
Relative Humidity (RH) - 50% +/-2.0%

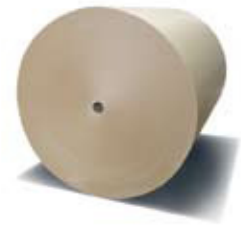
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\*Values converted to ISO-1924-3 equivalence

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# Kraft Unbleached SPK Product Specifications

## End Uses

SPK high performance kraft paper is recommended for use in applications demanding high CD strength and superior converting runnability.

SPK is used in multiwall shipping sacks; flour, sugar, seed, feed, potatoes, etc; air filled dunnage bags and other specialty uses. SPK has proven to perform exceptionally in industrial applications and high strength laminated paper products.

## Available Basis Weights

40 - 80 lbs basis weights

## Options

Also available in wet strength and unsized.

## Fibre Source

SPK is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern slow growing woods have exceptionally high strength potential. Tolko fibre is harvested and replanted in accordance with sustainable forest management practices under CSA, PEFC, and ISO 14001 environmental quality control standards.

## Quality Systems

SPK quality is controlled with a comprehensive quality management system registered to the ISO 9001-2000 standard and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. All Tolko papers are manufactured in compliance with FDA as per 21 CFR 176.170 and 176.180 and are certified Kosher. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

## Typical Values - Imperial

Properties	Units							Test Standard
Basis Weight	lbs		40	50	60	70	80	T410 os-68(1968)
Tensile	MD CD	lbs/in.	33.6	40.0	51.9	62.6	77.6	T494 om-88(1988)
			18.6	22.2	26.0	28.6	32.2	
Stretch	MD CD	%	2.3	2.3	2.7	2.9	2.9	T494 om-88(1988)
			8.2	8.2	8.0	8.0	8.0	
TEA	MD CD	ft lb/sq. ft.	5.4	7.1	10.3	13.6	16.8	T494 om-88(1988)
			12.6	14.7	17.2	20.1	20.9	
Tear	MD CD	g	84	112	144	168	198	T414 om-88(1988)
			95	125	168	206	250	
Porosity		sec/100cc	15	15	15	15	15	T460 om-88(1988)
Cobb		g/m <sup>2</sup> /min.	30	30	30	30	30	T441 om-90(1990)
Moisture		%	7.2	7.2	7.2	7.2	7.2	T412 om-90(1990)

Paper Laboratory Conditions:  
23.0 +/-1.0 Degree C  
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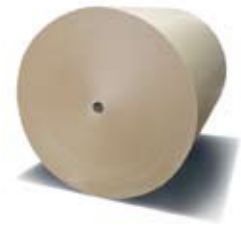
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## Kraft Unbleached SPX Product Specifications



### End Uses

SPX extensible high performance kraft paper has superior Tensile Energy Absorption (TEA) and balanced strength characteristics in both the machine and cross direction.

Even stronger than SPK™, multiwall shipping sacks made from SPX™ use less paper in demanding applications for a variety of products such as cement and other construction materials. Typically used in pasted valve sacks.

### Available Basis Weights

70 – 100 gsm basis weights

### Fibre Source

SPX is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern slow growing woods have exceptionally high strength potential. Tolko fibre is harvested and replanted in accordance with sustainable forest management practices under CSA, PEFC, and ISO 14001 environmental quality control standards.

### Quality Systems

SPX quality is controlled with a comprehensive quality management system registered to the ISO 9001-2000 standard and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. All Tolko papers are manufactured in compliance with FDA as per 21 CFR 176.170 and 176.180 and are certified Kosher. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

### Typical Values - SI

Properties	Units						Test Standard
Basis Weight	gsm		70	80	90	100	T410 os-68(1968)
Tensile	MD	kN/m	5.5	6.5	7.0	7.6	T494 om-88(1988)
	CD	kN/m	3.9	4.4	4.7	5.1	
Stretch	MD	%	6.5	6.5	6.5	6.5	T494 om-88(1988)
	CD	%	8.5	8.5	8.0	8.0	
TEA	MD	J/m <sup>2</sup>	209	238	251	273	T494 om-88(1988)
	CD	J/m <sup>2</sup>	231	263	270	295	
Tear	MD	mN	824	941	1147	1255	T414 om-88(1988)
	CD	mN	922	1059	1265	1412	
Porosity	sec/100cc		15	15	15	15	T460 om-88(1988)
Cobb	g/m <sup>2</sup> /min.		30	30	30	30	T441 om-90(1990)
Moisture	%		7.2	7.2	7.2	7.2	T412 om-90(1990)

Paper Laboratory  
Conditions:  
23.0 +/-1.0 Degree C  
(73.4 +/- 1.8 Degree F)  
Relative Humidity  
(RH) - 50% +/-2.0%

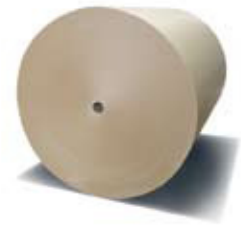
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# Kraft Unbleached SPX Product Specifications

## End Uses

SPX extensible high performance kraft paper has superior Tensile Energy Absorption (TEA) and balanced strength characteristics in both the machine and cross direction.

Even stronger than SPK<sup>®</sup>, multiwall shipping sacks made from SPX<sup>®</sup> use less paper in demanding applications for a variety of products such as cement and other construction materials. Typically used in pasted valve sacks.

## Available Basis Weights

70 - 100 gsm basis weights

## Fibre Source

SPX is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern slow growing woods have exceptionally high strength potential. Tolko fibre is harvested and replanted in accordance with sustainable forest management practices under CSA, PEFC, and ISO 14001 environmental quality control standards.

## Quality Systems

SPX quality is controlled with a comprehensive quality management system registered to the ISO 9001-2000 standard and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. All Tolko papers are manufactured in compliance with FDA as per 21 CFR 176.170 and 176.180 and are certified Kosher. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

## Typical Values - SI (1924-3)

Properties	Units						Test Standard
Basis Weight		gsm	70	80	90	100	T410 os-68( 1968)
Tensile	MD	kN/m	6.1	7.2	7.7	8.4	ISO 1924-3*
	CD	kN/m	4.3	4.8	5.2	5.6	
Stretch	MD	%	6.8	6.8	6.8	6.8	ISO 1924-3*
	CD	%	8.9	8.9	8.8	8.8	
TEA	MD	J/m <sup>2</sup>	240	274	289	314	ISO 1924-3*
	CD	J/m <sup>2</sup>	266	302	310	339	
Tear	MD	mN	824	941	1147	1255	T414 om-88(1988)
	CD	mN	922	1059	1265	1412	
Porosity		sec/100cc	15	15	15	15	T460 om-88(1988)
Cobb		g/m <sup>2</sup> /min.	30	30	30	30	T441 om-90(1990)
Moisture		%	7.2	7.2	7.2	7.2	T412 om-90(1990)

Paper Laboratory Conditions:  
23.0 +/-1.0 Degree C  
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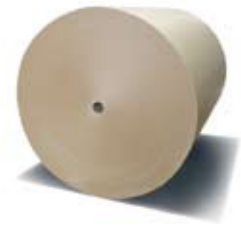
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## Kraft Unbleached SPX Product Specifications

### End Uses

SPX extensible high performance kraft paper has superior Tensile Energy Absorption (TEA) and balanced strength characteristics in both the machine and cross direction.

Even stronger than SPK™, multiwall shipping sacks made from SPX™ use less paper in demanding applications for a variety of products such as cement and other construction materials. Typically used in pasted valve sacks.

### Available Basis Weights

43 - 60 lbs basis weights

### Fibre Source

SPX is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern slow growing woods have exceptionally high strength potential. Tolko fibre is harvested and replanted in accordance with sustainable forest management practices under CSA, PEFC, and ISO 14001 environmental quality control standards.

### Quality Systems

SPX quality is controlled with a comprehensive quality management system registered to the ISO 9001-2000 standard and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. All Tolko papers are manufactured in compliance with FDA as per 21 CFR 176.170 and 176.180 and are certified Kosher. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

### Typical Values - Imperial

Properties	Units						Test Standard
Basis Weight	lbs		43	50	55	60	T410 os-68(1968)
Tensile	MD	lbs/in.	32.6	37.2	39.8	43.4	T494 om-88(1988)
	CD		22.2	25.3	26.8	29.2	
Stretch	MD	%	6.5	6.5	6.5	6.5	T494 om-88(1988)
	CD		8.5	8.5	8.0	8.0	
TEA	MD	ft lb/sq. ft.	14.3	16.3	17.2	18.7	T494 om-88(1988)
	CD		15.8	18.0	18.5	20.2	
Tear	MD	g	84	96	117	128	T414 om-88(1988)
	CD		94	108	129	144	
Porosity		sec/100cc	15	15	15	15	T460 om-88(1988)
Cobb		g/m <sup>2</sup> /min.	30	30	30	30	T441 om-90(1990)
Moisture		%	7.2	7.2	7.2	7.2	T412 om-90(1990)

Paper Laboratory  
Conditions:  
23.0 +/-1.0 Degree C  
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Relative Humidity  
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# Kraft Unbleached SPX-Velocity Product Specifications

## End Uses

SPX-Velocity high performance extensible kraft paper is characterized by balanced high strength in both the machine and cross direction with a high degree of air permeability (porosity).

Porous paper is used mainly for pasted valve sacks when no perforations are used. Porous paper is growing in demand where there is a need for faster filling and cleaner packaging. It is a more cost effective packaging solution.

## Available Basis Weights

70 – 100 gsm basis weights

## Fibre Source

SPX-Velocity is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern slow growing woods have exceptionally high strength potential. Tolko fibre is harvested and replanted in accordance with sustainable forest management practices under CSA, PEFC, and ISO 14001 environmental quality control standards.

## Quality Systems

SPX-Velocity quality is controlled with a comprehensive quality management system registered to the ISO 9001-2000 standard and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. All Tolko papers are manufactured in compliance with FDA as per 21 CFR 176.170 and 176.180 and are certified Kosher. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

## Typical Values - SI

Properties	Units		70				80				90				100				Test Standard
Basis Weight	gsm		70				80				90				100				T410 os-68(1968)
Tensile	MD	kN/m	5.3				5.9				6.7				7.4				T494 om-88(1988)
	CD	kN/m	3.9				4.3				4.6				4.8				
Stretch	MD	%	6.5				6.5				6.5				6.5				T494 om-88(1988)
	CD	%	8.5				8.5				8.0				8.0				
TEA	MD	J/m <sup>2</sup>	193				215				244				270				T494 om-88(1988)
	CD	J/m <sup>2</sup>	221				245				263				275				
Tear	MD	mN	892				1020				1255				1373				T414 om-88(1988)
	CD	mN	1010				1147				1422				1559				
Porosity	sec/100cc		5				5				5				5				T460 om-88(1988)
Cobb	g/m <sup>2</sup> /min.		30				30				30				30				T441 om-90(1990)
Moisture	%		7.2				7.2				7.2				7.2				T412 om-90(1990)

Paper Laboratory Conditions:  
23.0 +/-1.0 Degree C  
(73.4 +/- 1.8 Degree F)  
Relative Humidity (RH) - 50% +/-2.0%

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# Kraft Unbleached SPX-Velocity Product Specifications

## End Uses

SPX-Velocity high performance extensible kraft paper is characterized by balanced high strength in both the machine and cross direction with a high degree of air permeability (porosity).

Porous paper is used mainly for pasted valve sacks when no perforations are used. Porous paper is growing in demand where there is a need for faster filling and cleaner packaging. It is a more cost effective packaging solution.

## Available Basis Weights

70 - 100 gsm basis weights

## Fibre Source

SPX-Velocity is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern slow growing woods have exceptionally high strength potential. Tolko fibre is harvested and replanted in accordance with sustainable forest management practices under CSA, PEFC, and ISO 14001 environmental quality control standards.

## Quality Systems

SPX-Velocity quality is controlled with a comprehensive quality management system registered to the ISO 9001-2000 standard and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. All Tolko papers are manufactured in compliance with FDA as per 21 CFR 176.170 and 176.180 and are certified Kosher. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

## Typical Values - SI (1924-3)

Properties	Units						Test Standard
Basis Weight	gsm		70	80	90	100	T410 os-68( 1968)
Tensile	MD	kN/m	5.8	6.5	7.4	8.1	ISO 1924-3*
	CD	kN/m	4.3	4.7	5.1	5.3	
Stretch	MD	%	6.8	6.8	6.8	6.8	ISO 1924-3*
	CD	%	8.9	8.9	8.4	8.4	
TEA	MD	J/m <sup>2</sup>	222	247	281	311	ISO 1924-3*
	CD	J/m <sup>2</sup>	254	282	302	316	
Tear	MD	mN	892	1020	1255	1373	T414 om-88(1988)
	CD	mN	1010	1147	1422	1559	
Porosity	sec/100cc		5	5	5	5	T460 om-88(1988)
Cobb	g/m <sup>2</sup> /min.		30	30	30	30	T441 om-90(1990)
Moisture	%		7.2	7.2	7.2	7.2	T412 om-90(1990)

Paper Laboratory Conditions:  
23.0 +/-1.0 Degree C  
(73.4 +/- 1.8 Degree F)  
Relative Humidity (RH) - 50% +/-2.0%

Specifications valid until 2009/12/31

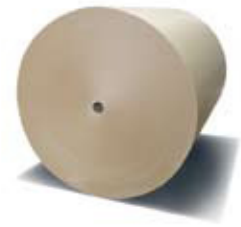
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# Kraft Unbleached SPX-Velocity Product Specifications

## End Uses

SPX-Velocity high performance extensible kraft paper is characterized by balanced high strength in both the machine and cross direction with a high degree of air permeability (porosity).

Porous paper is used mainly for pasted valve sacks when no perforations are used. Porous paper is growing in demand where there is a need for faster filling and cleaner packaging. It is a more cost effective packaging solution.

## Available Basis Weights

43 - 60 lbs basis weights

## Fibre Source

SPX-Velocity is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern slow growing woods have exceptionally high strength potential. Tolko fibre is harvested and replanted in accordance with sustainable forest management practices under CSA, PEFC, and ISO 14001 environmental quality control standards.

## Quality Systems

SPX-Velocity quality is controlled with a comprehensive quality management system registered to the ISO 9001-2000 standard and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. All Tolko papers are manufactured in compliance with FDA as per 21 CFR 176.170 and 176.180 and are certified Kosher. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

## Typical Values - Imperial

Properties	Units						Test Standard
Basis Weight	lbs		43	50	55	60	T410 os-68(1968)
Tensile	MD	lbs/in.	30.5	33.9	38.0	42.0	T494 om-88(1988)
	CD		22.1	24.4	26.0	27.5	
Stretch	MD	%	6.5	6.5	6.5	6.5	T494 om-88(1988)
	CD		8.5	8.5	8.0	8.0	
TEA	MD	ft lb/sq. ft.	13.3	14.8	16.6	19.0	T494 om-88(1988)
	CD		15.1	16.7	17.8	18.8	
Tear	MD	g	91	104	128	140	T414 om-88(1988)
	CD		103	117	145	159	
Porosity	sec/100cc		5	5	5	5	T460 om-88(1988)
Cobb	g/m <sup>2</sup> /min.		30	30	30	30	T441 om-90(1990)
Moisture	%		7.2	7.2	7.2	7.2	T412 om-90(1990)

Paper Laboratory Conditions:  
23.0 +/-1.0 Degree C  
(73.4 +/- 1.8 Degree F)  
Relative Humidity (RH) - 50% +/-2.0%

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# Kraft Unbleached SPX-Vector Product Specifications

## End Uses

SPX-Vector extensible high performance kraft paper has superior strength and stiffness with a high degree of air permeability.

SPX-Vector is used mainly for pneumatic filled sacks with no perforations. This paper is intended for single ply sack construction where the basis weight is higher and stiffness is increased. When used in this application, Vector will provide more economical and efficient sack construction and filling.

## Available Basis Weights

120 & 130 gsm basis weights

## Fibre Source

SPX-Vector is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern slow growing woods have exceptionally high strength potential. Tolko fibre is harvested and replanted in accordance with sustainable forest management practices under CSA, PEFC, and ISO 14001 environmental quality control standards.

## Quality Systems

SPX-Vector quality is controlled with a comprehensive quality management system registered to the ISO 9001-2000 standard and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. All Tolko papers are manufactured in compliance with FDA as per 21 CFR 176.170 and 176.180 and are certified Kosher. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

## Typical Values - SI

Properties	Units				Test Standard
Basis Weight	gsm		120	130	T410 os-68(1968)
Tensile	MD	kN/m	9.4	10.2	T494 om-88(1988)
	CD	kN/m	6.3	6.5	
Stretch	MD	%	7.0	7.0	T494 om-88(1988)
	CD	%	8.0	8.0	
TEA	MD	J/m <sup>2</sup>	365	394	T494 om-88(1988)
	CD	J/m <sup>2</sup>	321	343	
Porosity	sec/100cc		12	12	T460 om-88(1988)
Cobb	g/m <sup>2</sup> /min.		30	30	T441 om-90(1990)
Moisture	%		7.2	7.2	T412 om-90(1990)

Paper Laboratory Conditions:  
23.0 +/-1.0 Degree C  
(73.4 +/- 1.8 Degree F)  
Relative Humidity (RH) - 50% +/-2.0%

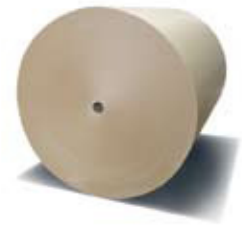
Specifications valid until 2009/12/31

\*Values converted to ISO-1924-3 equivalence

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# Kraft Unbleached SPX-Vector Product Specifications

## End Uses

SPX-Vector extensible high performance kraft paper has superior strength and stiffness with a high degree of air permeability.

SPX-Vector is used mainly for pneumatic filled sacks with no perforations. This paper is intended for single ply sack construction where the basis weight is higher and stiffness is increased. When used in this application, Vector will provide more economical and efficient sack construction and filling.

## Available Basis Weights

120 & 130 gsm basis weights

## Fibre Source

SPX-Vector is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern slow growing woods have exceptionally high strength potential. Tolko fibre is harvested and replanted in accordance with sustainable forest management practices under CSA, PEFC, and ISO 14001 environmental quality control standards.

## Quality Systems

SPX-Vector quality is controlled with a comprehensive quality management system registered to the ISO 9001-2000 standard and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. All Tolko papers are manufactured in compliance with FDA as per 21 CFR 176.170 and 176.180 and are certified Kosher. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

## Typical Values - SI (1924-3)

Properties	Units				Test Standard
Basis Weight	gsm		120	130	T410 os-68( 1968)
Tensile	MD	kN/m	10.3	11.2	ISO 1924-3*
	CD	kN/m	6.9	7.2	
Stretch	MD	%	7.4	7.4	ISO 1924-3*
	CD	%	8.4	8.4	
TEA	MD	J/m <sup>2</sup>	420	453	ISO 1924-3*
	CD	J/m <sup>2</sup>	369	394	
Porosity	sec/100cc		12	12	T460 om-88(1988)
Cobb	g/m <sup>2</sup> /min.		30	30	T441 om-90(1990)
Moisture	%		7.2	7.2	T412 om-90(1990)

Paper Laboratory Conditions:  
23.0 +/-1.0 Degree C  
(73.4 +/- 1.8 Degree F)  
Relative Humidity (RH) - 50% +/-2.0%

Specifications valid until 2009/12/31

\*Values converted to ISO-1924-3 equivalence

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# Kraft Unbleached SPX-Vector Product Specifications

## End Uses

SPX-Vector extensible high performance kraft paper has superior strength and stiffness with a high degree of air permeability.

SPX-Vector is used mainly for pneumatic filled sacks with no perforations. This paper is intended for single ply sack construction where the basis weight is higher and stiffness is increased. When used in this application, Vector will provide more economical and efficient sack construction and filling.

## Available Basis Weights

75 & 80 lbs basis weights

## Fibre Source

SPX-Vector is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern slow growing woods have exceptionally high strength potential. Tolko fibre is harvested and replanted in accordance with sustainable forest management practices under CSA, PEFC, and ISO 14001 environmental quality control standards.

## Quality Systems

SPX-Vector quality is controlled with a comprehensive quality management system registered to the ISO 9001-2000 standard and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. All Tolko papers are manufactured in compliance with FDA as per 21 CFR 176.170 and 176.180 and are certified Kosher. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

## Typical Values - Imperial

Properties	Units		Test Standard		
Basis Weight	lbs	75	80	T410 os-68(1968)	
Tensile	MD	lbs/in	53.5	58.0	T494 om-88(1988)
	CD		36.0	37.0	
Stretch	MD	%	7.0	7.0	T494 om-88(1988)
	CD		8.0	8.0	
TEA	MD	ft lb/sq. ft.	25.0	27.0	T494 om-88(1988)
	CD		22.0	23.5	
Porosity		sec/100cc	12	12	T460 om-88(1988)
Cobb		g/m <sup>2</sup> /min.	30	30	T441 om-90(1990)
Moisture		%	7.2	7.2	T412 om-90(1990)

Paper Laboratory Conditions:  
23.0 +/-1.0 Degree C  
(73.4 +/- 1.8 Degree F)  
Relative Humidity (RH) - 50% +/-2.0%

Specifications valid until 2009/12/31

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