

## Kraft Paper Product Specifications

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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.

### Fibre Source

SPK is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern boreal slow growing woods have exceptionally high strength potential. Canadian Kraft Paper (CKP) 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 management system registered to ISO 9001 and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. CKP manufactures kraft papers in compliance with FDA as per 21 CFR 176.170 and 176.180, CONEG heavy metals and toxics, German recommendation XXXVI, 94/62/EEC certifications and is Kosher certified. This paper meets the requirements for packaging recoverable by composting and degradation ISO 17088 (2008) and EN 13432 2000. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

### Typical Values SI (ISO 1924-3)

Properties	Units						Test Standard
Basis Weight	gsm		80	90	100	115	T410 os-68(1968)
Tensile	kN/m	MD	7.9	9.1	9.9	11.6	ISO 1924-3
		CD	4.5	5.1	5.5	6.0	
Tensile Index	Nm/g	MD	100	100	100	103	ISO 1924-3
		CD	57	57	57	52	
Stretch	%	MD	2.5	2.7	2.7	3.0	ISO 1924-3
		CD	8.9	8.9	8.7	8.7	
TEA	J/m <sup>2</sup>	MD	140	170	185	235	ISO 1924-3
		CD	255	285	300	340	
TEA Index	J/g	MD	1.8	1.9	1.9	2.0	ISO 1924-3
		CD	3.2	3.2	3.2	3.0	
Tear	mN	MD	1125	1325	1390	1695	T414 om-88(1988)
		CD	1185	1345	1480	1875	
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	%		7.5	7.5	7.5	7.5	T412 om-90(1990)

Product specifications in effect as of July 1, 2018

MD – Machine Direction CD – Cross Direction

Paper Laboratory Conditions: Temperature = 23+/-1°C Relative Humidity = 50%+/-2%



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## Kraft Unbleached SPK® Product Specifications



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### Typical Values Imperial (ISO 1924-3)

Properties	Units						Test Standard
Basis Weight	lbs/3000ft <sup>2</sup>		50	55	60	70	T410 os-68(1968)
Tensile	lbs/in	MD	45.1	52.0	56.5	66.2	ISO 1924-3
		CD	25.7	29.1	31.4	34.3	
Tensile Index	Nm/g	MD	100	100	100	103	ISO 1924-3
		CD	57	57	57	52	
Stretch	%	MD	2.5	2.7	2.7	3.0	ISO 1924-3
		CD	8.9	8.9	8.7	8.7	
TEA	ft lb/ft <sup>2</sup>	MD	9.6	11.6	12.7	16.1	ISO 1924-3
		CD	17.5	19.5	20.5	23.3	
TEA Index	J/g	MD	1.8	1.9	1.9	2.0	ISO 1924-3
		CD	3.2	3.2	3.2	3.0	
Tear	g	MD	115	135	145	175	T414 om-88(1988)
		CD	120	140	150	190	
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	%		7.5	7.5	7.5	7.5	T412 om-90(1990)

Product specifications in effect as of July 1, 2018

MD – Machine Direction CD – Cross Direction

Paper Laboratory Conditions: Temperature = 73.4+/-1.8°F Relative Humidity = 50%+/-2%



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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.

### Fibre Source

SPX is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern boreal slow growing woods have exceptionally high strength potential. Canadian Kraft Paper (CKP) 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 management system registered to ISO 9001 and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. CKP manufactures kraft papers in compliance with FDA as per 21 CFR 176.170 and 176.180, CONEG heavy metals and toxics, German recommendation XXXVI, 94/62/EEC certifications and is Kosher certified. This paper meets the requirements for packaging recoverable by composting and degradation ISO 17088 (2008) and EN 13432 2000. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

### Typical Values SI (ISO 1924-3)

Properties	Units						Test Standard
Basis Weight	gsm		80	85	90	95	T410 os-68(1968)
Tensile	kN/m	MD	7.1	7.6	7.9	8.5	ISO 1924-3
		CD	5.1	5.5	5.7	5.9	
Tensile Index	Nm/g	MD	90	90	90	90	ISO 1924-3
		CD	65	65	65	63	
Stretch	%	MD	6.8	6.8	6.8	6.8	ISO 1924-3
		CD	8.9	8.9	8.9	8.9	
TEA	J/m <sup>2</sup>	MD	260	280	295	315	ISO 1924-3
		CD	280	300	310	325	
TEA Index	J/g	MD	3.3	3.3	3.3	3.3	ISO 1924-3
		CD	3.5	3.5	3.5	3.4	
Tear	mN	MD	950	1050	1150	1190	T414 om-88(1988)
		CD	1050	1150	1250	1285	
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	%		7.5	7.5	7.5	7.5	T412 om-90(1990)

Product specifications in effect as of July 1, 2018

MD – Machine Direction CD – Cross Direction

Paper Laboratory Conditions: Temperature = 23+/-1°C Relative Humidity = 50% +/- 2%





## 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.

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SPX is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern boreal slow growing woods have exceptionally high strength potential. Canadian Kraft Paper (CKP) 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 management system registered to ISO 9001 and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. CKP manufactures kraft papers in compliance with FDA as per 21 CFR 176.170 and 176.180, CONEG heavy metals and toxics, German recommendation XXXVI, 94/62/EEC certifications and is Kosher certified. This paper meets the requirements for packaging recoverable by composting and degradation ISO 17088 (2008) and EN 13432 2000. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

### Typical Values Imperial (ISO 1924-3)

Properties	Units						Test Standard
Basis Weight	lbs/3000ft <sup>2</sup>		50	52	55	58	T410 os-68(1968)
Tensile	lbs/in	MD	40.5	43.4	45.1	48.5	ISO 1924-3
		CD	29.1	31.4	32.5	33.7	
Tensile Index	Nm/g	MD	90	90	90	90	ISO 1924-3
		CD	65	65	65	63	
Stretch	%	MD	6.8	6.8	6.8	6.8	ISO 1924-3
		CD	8.9	8.9	8.9	8.9	
TEA	ft lb/ft <sup>2</sup>	MD	17.8	19.2	20.2	21.6	ISO 1924-3
		CD	19.2	20.5	21.2	22.3	
TEA Index	J/g	MD	3.3	3.3	3.3	3.3	ISO 1924-3
		CD	3.5	3.5	3.5	3.4	
Tear	g	MD	95	105	115	120	T414 om-88(1988)
		CD	105	115	125	130	
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	%		7.5	7.5	7.5	7.5	T412 om-90(1990)

Product specifications in effect as of July 1, 2018

MD – Machine Direction CD – Cross Direction

Paper Laboratory Conditions: Temperature = 73.4+/-1.8°F Relative Humidity = 50%+/-2%



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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.

#### Fibre Source

SPX-Velocity is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern boreal slow growing woods have exceptionally high strength potential. Canadian Kraft Paper (CKP) 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 management system registered to ISO 9001 and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. CKP manufactures kraft papers in compliance with FDA as per 21 CFR 176.170 and 176.180, CONEG heavy metals and toxics, German recommendation XXXVI, 94/62/EEC certifications and is Kosher certified. This paper meets the requirements for packaging recoverable by composting and degradation ISO 17088 (2008) and EN 13432 2000. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

#### Typical Values SI (ISO 1924-3)

Properties	Units				Test Standard	
Basis Weight	gsm		80	90	100	T410 os-68(1968)
Tensile	kN/m	MD	6.5	7.4	8.0	ISO 1924-3
		CD	4.8	5.2	5.6	
Tensile Index	Nm/g	MD	82	82	82	ISO 1924-3
		CD	60	60	60	
Stretch	%	MD	6.8	6.8	6.8	ISO 1924-3
		CD	8.9	8.9	8.9	
TEA	J/m <sup>2</sup>	MD	240	280	310	ISO 1924-3
		CD	260	290	320	
TEA Index	J/g	MD	3.1	3.1	3.1	ISO 1924-3
		CD	3.2	3.2	3.2	
Tear	mN	MD	1050	1200	1350	T414 om-88(1988)
		CD	1100	1350	1500	
Porosity	Sec/100cc		5	5	5	T460 om-88(1988)
Cobb	g/m <sup>2</sup> /min		30	30	30	T441 om-90(1990)
Moisture	%		7.5	7.5	7.5	T412 om-90(1990)

Product specifications in effect as of July 1, 2018

MD – Machine Direction CD – Cross Direction

Paper Laboratory Conditions: Temperature = 23+/-1°C Relative Humidity = 50%+/-2%





# 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.

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

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### Typical Values Imperial (ISO 1924-3)

Properties	Units				Test Standard	
Basis Weight	lbs/3000ft <sup>2</sup>		50	55	60	T410 os-68(1968)
Tensile	lbs/in	MD	37.1	42.3	45.7	ISO 1924-3
		CD	27.4	29.7	32.0	
Tensile Index	Nm/g	MD	82	82	82	ISO 1924-3
		CD	60	60	60	
Stretch	%	MD	6.8	6.8	6.8	ISO 1924-3
		CD	8.9	8.9	8.9	
TEA	ft lb/ft <sup>2</sup>	MD	16.4	19.2	21.2	ISO 1924-3
		CD	17.8	19.9	21.9	
TEA Index	J/g	MD	3.1	3.1	3.1	ISO 1924-3
		CD	3.2	3.2	3.2	
Tear	g	MD	105	120	140	T414 om-88(1988)
		CD	110	145	155	
Porosity	sec/100cc		5	5	5	T460 om-88(1988)
Cobb	g/m <sup>2</sup> /min		30	30	30	T441 om-90(1990)
Moisture	%		7.5	7.5	7.5	T412 om-90(1990)

Product specifications in effect as of July 1, 2018

MD – Machine Direction CD – Cross Direction

Paper Laboratory Conditions: Temperature = 73.4 +/- 1.8°F Relative Humidity = 50% +/- 2%



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## Kraft Unbleached SPX® - Velocity Premier

### Product Specifications



#### End Uses

SPX-Velocity Premier high performance kraft paper has exceptionally high tensile energy absorption (TEA) in both the cross and machine direction. Combined with high porosity and very good runnability, this paper is ideal for pasted valve sacks for powdered material. Without the need for perforations, where faster filling and cleaner packaging is required, the result is a more cost effective packaging solution.

#### Fibre Source

SPX-Velocity Premier is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern boreal slow growing woods have exceptionally high strength potential. Canadian Kraft Paper (CKP) 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 Premier quality is controlled with a comprehensive management system registered to ISO 9001 and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. CKP manufactures kraft papers in compliance with FDA as per 21 CFR 176.170 and 176.180, CONEG heavy metals and toxics, German recommendation XXXVI, 94/62/EEC certifications and is Kosher certified. This paper meets the requirements for packaging recoverable by composting and degradation ISO 17088 (2008) and EN 13432 2000. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

#### Typical Values SI (ISO 1924-3)

Properties	Units				Test Standard	
Basis Weight	gsm		80	85	90	T410 os-68(1968)
Tensile	kN/m	MD	6.5	6.9	7.3	ISO 1924-3
		CD	5.6	6.0	6.4	
Tensile Index	Nm/g	MD	81	81	81	ISO 1924-3
		CD	70	70	70	
Stretch	%	MD	8.0	8.0	8.0	ISO 1924-3
		CD	8.6	8.6	8.6	
TEA	J/m <sup>2</sup>	MD	275	290	310	ISO 1924-3
		CD	280	300	315	
TEA Index	J/g	MD	3.4	3.4	3.4	ISO 1924-3
		CD	3.5	3.5	3.5	
Tear	mN	MD	1020	1100	1200	T414 om-88(1988)
		CD	1020	1100	1200	
Porosity	Sec/100cc		5	5	5	T460 om-88(1988)
Cobb	g/m <sup>2</sup> /min		30	30	30	T441 om-90(1990)
Moisture	%		7.5	7.5	7.5	T412 om-90(1990)

Product specifications in effect as of July 1, 2018

MD – Machine Direction CD – Cross Direction

Paper Laboratory Conditions: Temperature = 73.4+/-1.8°F Relative Humidity = 50%+/-2%







# Kraft Unbleached SPX® - Velocity Premier

## Product Specifications



### End Uses

SPX-Velocity Premier high performance kraft paper has exceptionally high tensile energy absorption (TEA) in both the cross and machine direction. Combined with high porosity and very good runnability, this paper is ideal for pasted valve sacks for powdered material. Without the need for perforations, where faster filling and cleaner packaging is required, the result is a more cost effective packaging solution.

### Fibre Source

SPX-Velocity Premier is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern boreal slow growing woods have exceptionally high strength potential. Canadian Kraft Paper (CKP) 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 Premier quality is controlled with a comprehensive management system registered to ISO 9001 and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. CKP manufactures kraft papers in compliance with FDA as per 21 CFR 176.170 and 176.180, CONEG heavy metals and toxics, German recommendation XXXVI, 94/62/EEC certifications and is Kosher certified. This paper meets the requirements for packaging recoverable by composting and degradation ISO 17088 (2008) and EN 13432 2000. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

### Typical Values Imperial (ISO 1924-3)

Properties	Units				Test Standard	
Basis Weight	lbs/3000ft <sup>2</sup>		50	52	55	T410 os-68(1968)
Tensile	lbs/in	MD	37.1	39.4	41.7	ISO 1924-3
		CD	32.0	34.3	36.5	
Tensile Index	Nm/g	MD	81	81	81	ISO 1924-3
		CD	70	70	70	
Stretch	%	MD	8.0	8.0	8.0	ISO 1924-3
		CD	8.6	8.6	8.6	
TEA	ft lb/ft <sup>2</sup>	MD	18.8	19.9	21.2	ISO 1924-3
		CD	19.2	20.5	21.6	
TEA Index	J/g	MD	3.4	3.4	3.4	ISO 1924-3
		CD	3.5	3.5	3.5	
Tear	g	MD	105	110	120	T414 om-88(1988)
		CD	105	110	120	
Porosity	sec/100cc		5	5	5	T460 om-88(1988)
Cobb	g/m <sup>2</sup> /min		30	30	30	T441 om-90(1990)
Moisture	%		7.5	7.5	7.5	T412 om-90(1990)

Product specifications in effect as of July 1, 2018

MD – Machine Direction CD – Cross Direction

Paper Laboratory Conditions: Temperature = 73.4+/-1.8°F Relative Humidity = 50%+/-2%



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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.

### Fibre Source

SPX-Vector is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern boreal slow growing woods have exceptionally high strength potential. Canadian Kraft Paper (CKP) 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 management system registered to ISO 9001 and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. CKP manufactures kraft papers in compliance with FDA as per 21 CFR 176.170 and 176.180, CONEG heavy metals and toxics, German recommendation XXXVI, 94/62/EEC certifications and is Kosher certified. This paper meets the requirements for packaging recoverable by composting and degradation ISO 17088 (2008) and EN 13432 2000. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

### Typical Values SI (ISO 1924-3)

Properties	Units		Test Standard		
Basis Weight	gsm		120	130	T410 os-68(1968)
Tensile	kN/m	MD	10.2	11.1	ISO 1924-3
		CD	7.8	8.4	
Tensile Index	Nm/g	MD	85	85	ISO 1924-3
		CD	65	65	
Stretch	%	MD	9.0	9.0	ISO 1924-3
		CD	9.0	9.0	
TEA	J/m <sup>2</sup>	MD	450	495	ISO 1924-3
		CD	420	455	
TEA Index	J/g	MD	3.8	3.8	ISO 1924-3
		CD	3.5	3.5	
Tear	mN	MD	1560	1690	T414 om-88(1988)
		CD	1800	1950	
Porosity	Sec/100cc		12	12	T460 om-88(1988)
Cobb	g/m <sup>2</sup> /min		30	30	T441 om-90(1990)
Moisture	%		7.5	7.5	T412 om-90(1990)

Product specifications in effect as of July 1, 2018

MD – Machine Direction CD – Cross Direction

Paper Laboratory Conditions: Temperature = 23+/-1°C Relative Humidity = 50%+/-2%



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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.

#### Fibre Source

SPX-Vector is manufactured with a blend of virgin fibre from Black Spruce and Jack Pine. These northern boreal slow growing woods have exceptionally high strength potential. Canadian Kraft Paper (CKP) 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 management system registered to ISO 9001 and incorporating elements of environmental (ISO 14001) and employee health and safety (OHAS 18001) management systems. CKP manufactures kraft papers in compliance with FDA as per 21 CFR 176.170 and 176.180, CONEG heavy metals and toxics, German recommendation XXXVI, 94/62/EEC certifications and is Kosher certified. This paper meets the requirements for packaging recoverable by composting and degradation ISO 17088 (2008) and EN 13432 2000. Certificates of compliance to all applicable regulatory requirements will be supplied upon request.

#### Typical Values Imperial (ISO 1924-3)

Properties	Units				Test Standard
Basis Weight	lbs/3000ft <sup>2</sup>		74	80	T410 os-68(1968)
Tensile	lbs/in	MD	58.2	63.4	ISO 1924-3
		CD	44.5	48.0	
Tensile Index	Nm/g	MD	85	85	ISO 1924-3
		CD	65	65	
Stretch	%	MD	9.0	9.0	ISO 1924-3
		CD	9.0	9.0	
TEA	ft lb/ft <sup>2</sup>	MD	30.8	33.9	ISO 1924-3
		CD	28.8	31.2	
TEA Index	J/g	MD	3.8	3.8	ISO 1924-3
		CD	3.5	3.5	
Tear	g	MD	160	170	T414 om-88(1988)
		CD	185	200	
Porosity	sec/100cc		12	12	T460 om-88(1988)
Cobb	g/m <sup>2</sup> /min		30	30	T441 om-90(1990)
Moisture	%		7.5	7.5	T412 om-90(1990)

Product specifications in effect as of July 10, 2018

MD – Machine Direction CD – Cross Direction

Paper Laboratory Conditions: Temperature = 23+/-1°C Relative Humidity = 50%+/-2%

