



Georgia-Pacific

Containerboard

Linerboard and Corrugating Medium Specifications

English Units

June 1, 2011



Containerboard Specifications

Date: June 1, 2011

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East Coast Linerboard Specifications (English Units)
Date: June 1, 2011

Natural Kraft Linerboard

Grade (lbs/msf)	Conditioned Weight (lbs/msf)			Moisture (percent)		Mullen (psi)	HST ¹ (seconds)	Porosity (sec/100 ml)	Slide Angle (degrees)	
	Nominal	Target	Min.	Max.	Min.				Max.	Min.
26.0	26.0	24.7	27.3	4.5	8.0	59	15	8	20	40
31.0	31.0	29.5	32.6	4.5	8.0	67	15	8	20	40
33.0	33.0	31.4	34.7	4.5	8.0	71	15	8	20	40
38.0	38.0	36.1	39.9	4.5	8.0	82	30	8	20	40
42.0	42.0	39.9	44.1	5.0	8.5	90	30	8	20	40
47.0	47.0	44.7	49.4	5.0	8.5	97	45	8	20	40
57.0	57.0	54.2	59.9	5.0	8.5	110	45	8	20	40
61.5	61.5	58.4	64.6	5.0	9.0	114	45	8	20	40
69.0	69.0	65.6	72.5	5.0	9.0	124	45	8	20	40
90.0	90.0	85.5	94.5	5.0	9.0	152	45	8	20	40

Recycled Linerboard

Grade (lbs/msf)	Conditioned Weight (lbs/msf)			Moisture (percent)		Mullen (psi)	HST ¹ (seconds)	Porosity (sec/100 ml)	Slide Angle (degrees)		Top Cobb (GSM)	Base Cobb (GSM)		
	Nominal	Target	Min.	Max.	Min.				Max.	Min.		Max.	Min.	Max.
26.0	26.0	24.7	31.0	6.0	9.5	59	15	8	20	40	30	90	40	90
33.0	33.0	31.4	36.0	6.0	9.5	71	30	8	20	40	30	90	40	90
42.0	42.0	39.9	47.0	6.0	9.5	90	30	8	20	40	30	90	40	90

All Tests are Based on TAPPI Test Methods Performed Under TAPPI Standard Conditions.
¹ Hercules Size Test is performed using 20% formic acid.



East Coast Linerboard Specifications (English Units)
Date: June 1, 2011

UltraStak Plus[®] Linerboard

USP Grade	Conditioned Weight (lbs/msf)		Moisture (percent)		CD Ring Crush (lb/6 inch)	HST ¹ (seconds)	Porosity (sec/100 ml)	Slide Angle (degrees)	
	Nominal	Min.	Min.	Max.				Min.	Max.
USP 60	31.0	29.5	5.5	8.5	60	30	8	20	40
USP 70	35.0	33.0	5.5	8.5	70	30	8	20	40
USP 90	42.0	40.0	5.5	8.5	90	30	8	20	40
USP 120	55.0	52.0	5.5	8.5	120	45	8	20	40
USP 150	74.0	70.0	5.5	8.5	150	45	8	20	40
USP 170	85.0	82.0	5.5	8.5	170	45	8	20	40

UltraCycle Plus[®] Linerboard

UCP Grade	Conditioned Weight (lbs/msf)		Moisture (percent)		CD Ring Crush (lb/6 inch)	HST ¹ (seconds)	Porosity (sec/100 ml)	Slide Angle (degrees)		Top Cobb (GSM)		Base Cobb (GSM)	
	Nominal	Min.	Min.	Max.				Min.	Max.	Min.	Max.	Min.	Max.
UCP 60	31.0	29.5	6.0	9.5	60	30	8	20	40	30	90	40	90
UCP 70	35.0	33.0	6.0	9.5	70	30	8	20	40	30	90	40	90
UCP 90	42.0	39.5	6.0	9.5	90	30	8	20	40	30	90	40	90
UCP 104	52.0	49.4	6.0	9.5	104	30	8	20	40	30	90	40	90
UCP 120	55.0	52.0	6.0	9.5	120	30	8	20	40	30	90	40	90

All Tests are Based on TAPPI Test Methods Performed Under TAPPI Standard Conditions.
¹ Hercules Size Test is performed using 20% formic acid.



East Coast Corrugating Medium Specifications (English Units)

Date: June 1, 2011

Corrugating Medium

Grade (lbs/msf)	Conditioned Weight (lbs/msf)			Moisture (percent)		**Concora (lbf/10 flutes)	*Water Drop (seconds)	
	Nominal	Target	Min.	Max.	Min.	Max.	Min.	Max. 90 Days
23.0	23.0		21.9	24.2	7.0	12.0	45	200
26.0	26.0		24.7	27.3	7.0	12.0	50	200
30.0	30.0		28.5	31.5	7.0	12.0	55	200
33.0	33.0		31.4	34.7	7.0	12.0	55	200
36.0	36.0		34.2	37.8	7.0	12.0	60	200
40.0	40.0		38.0	42.0	7.0	12.0	60	200
45.0	45.0		42.8	47.3	8.0	12.0	85	200

Recycled Corrugating Medium

Grade (lbs/msf)	Conditioned Weight (lbs/msf)			Moisture (percent)		**Concora (lbf/10 flutes)	*Water Drop (seconds)	
	Nominal	Target	Min.	Max.	Min.	Max.	Min.	Max. 90 Days
30.0	30.0		28.5	31.5	7.0	12.0	55	200
33.0	33.0		31.4	34.7	7.0	12.0	55	200

All Tests are Based on TAPPI Test Methods Performed Under TAPPI Standard Conditions.

* Off machine specification. Due to aging effects (increase of sizing), medium rollstock should be converted as soon as possible.

** Concora value is predicted.



East Coast Corrugating Medium Specifications (English Units)

Date: June 1, 2011

UltraStak Plus® Corrugating Medium

USP Grade	Conditioned Weight (lbs/msf)		Moisture (percent)		CD Ring CD Ring Crush (lbf/6 inch)	**Concora (lbf/10 flutes)	*Water Drop (seconds)
	Nominal	Min.	Min.	Max.	Min.	Min.	Max. 90 Days
USP 66	33.0	31.0	6	11	66	55	200
USP 85	41.0	41.0	5	9	85	60	200

UltraCycle Plus® Corrugating Medium

UCP Grade	Conditioned Weight (lbs/msf)		Moisture (percent)		CD Ring CD Ring Crush (lbf/6 inch)	**Concora (lbf/10 flutes)	*Water Drop (seconds)
	Nominal	Min.	Min.	Max.	Min.	Min.	Max. 90 Days
UCP 66	33.0	31.0	7.0	12.0	66	55	200

All Tests are Based on TAPPI Test Methods Performed Under TAPPI Standard Conditions.

* Off machine specification. Due to aging effects (increase of sizing), medium rollstock should be converted as soon as possible.

** Concora value is predicted.



West Coast Linerboard Specifications (English Units)

Date: June 1, 2011

Natural Kraft Linerboard

Grade (lbs/msf)	Conditioned Weight (lbs/msf)			Moisture (percent)		Mullen (psi)	HST' (seconds)	Porosity (sec/100 ml)	Slide Angle (degrees)	
	Nominal	Target	Min.	Max.	Min.				Max.	Min.
26.0	26.0	24.7	30.0	6.0	9.5	59	15	8	18	40
33.0	33.0	31.4	37.0	6.0	9.5	71	20	8	18	40
42.0	42.0	39.9	46.0	6.0	9.5	90	20	8	18	40
69.0	69.0	65.6	73.0	6.0	9.5	124	20	10	18	40

Wet Strength Linerboard

Grade (lbs/msf)	Conditioned Weight (lbs/msf)			Moisture (percent)		Mullen (psi)	HST' (seconds)	Porosity (sec/100 ml)	Slide Angle (degrees)	
	Nominal	Target	Min.	Max.	Min.				Max.	Min.
42.0	42.0	39.9	46.0	6.0	9.5	90	100	8	18	40
69.0	69.0	65.6	73.0	6.0	9.5	124	450	10	18	40
76.0	76.0	72.2	80.0	6.0	9.5	133	500	10	18	40

All Tests are Based on TAPPI Test Methods Performed Under TAPPI Standard Conditions.

* Hercules Size Test is performed using 20% formic acid.



West Coast Linerboard Specifications (English Units)

Date: June 1, 2011

UltraStak Plus® Linerboard

USP Grade	Conditioned Weight (lbs/msf)		Moisture (percent)		CD Ring Crush (lb/6 inch)	HST' (seconds)	Porosity (sec/100 ml)	Slide Angle (degrees)	
	Nominal	Min.	Min.	Max.				Min.	Max.
USP 70	35.0	33.0	5.5	9.0	70	20	8	18	40
USP 90	42.0	40.0	5.5	9.0	90	20	8	18	40
USP 120	55.0	52.0	5.5	9.0	120	20	8	18	40
USP 150	74.0	70.0	5.5	9.0	150	20	8	18	40
USP 170	85.0	81.0	5.5	9.0	170	20	8	18	40

Wet Strength UltraStak Plus® Linerboard

USP Grade	Conditioned Weight (lbs/msf)		Moisture (percent)		CD Ring Crush (lb/6 inch)	HST' (seconds)	Porosity (sec/100 ml)	Slide Angle (degrees)	
	Nominal	Min.	Min.	Max.				Min.	Max.
W/S USP 120	55.0	52.0	5.5	9.0	120	375	8	18	40
W/S USP 150	74.0	70.0	5.5	9.0	150	500	10	18	40
W/S USP 170	85.0	81.0	5.5	9.0	170	550	12	18	40

All Tests are Based on TAPPI Test Methods Performed Under TAPPI Standard Conditions.

* Hercules Size Test is performed using 20% formic acid.



West Coast Corrugating Medium Specifications (English Units)

Date: June 1, 2011

Corrugating Medium

Grade (lbs/msf)	Conditioned Weight (lbs/msf)			Moisture (percent)		**Concora (lbf/10 flutes)	*Water Drop (seconds)
	Nominal	Target	Min.	Max.	Min.	Max.	Min.
23.0	23.0	21.9	23.9	6.5	11.0	45	200
26.0	26.0	24.7	27.0	6.5	11.0	50	200
30.0	30.0	28.5	31.2	6.5	11.0	60	200
33.0	33.0	31.4	34.3	6.5	11.0	65	200
40.0	40.0	38.0	41.6	6.5	11.0	75	200

UltraStak Plus® Corrugating Medium

USP Grade	Conditioned Weight (lbs/msf)		Moisture (percent)		CD Ring Crush (lbf/6 inch)	**Concora (lbf/10 flutes)	*Water Drop (seconds)
	Nominal	Min.	Min.	Max.	Min.	Min.	Max. 90 Days
USP 66	33.0	31.4	5.0	9.0	66	60	200
USP 85	41.0	38.0	5.0	9.0	85	60	200

Wet Strength UltraStak Plus® Corrugating Medium

USP Grade	Conditioned Weight (lbs/msf)		Moisture (percent)		CD Ring Crush (lbf/6 inch)	**Concora (lbf/10 flutes)	*Water Drop (seconds)
	Nominal	Min.	Min.	Max.	Min.	Min.	Max. 90 Days
W/S USP 35	26.0	24.7	5.0	9.0	35	50	--
W/S USP 85	41.0	38.0	5.0	9.0	85	85	--

All Tests are Based on TAPPI Test Methods Performed Under TAPPI Standard Conditions.

* Off machine specification. Due to aging effects (increase of sizing), medium rollstock should be converted as soon as possible.

** Concora value is predicted.

**Roll Stock Guidelines for Linerboard and
Corrugating Medium**

Date: June 1, 2011

Specification	Description
Roll Diameter	58 1/4 inches +/- 1/4 inch
Roll Width	As specified by order: -0.0 inch to + 1/8 inch
Cores	4 inch (102 mm) inside diameter, plugged tightly
Core Thickness	Liner 0.125 inch, Medium: Cedar Springs 0.215 inch, Big Island 0.200 inch
Core Length	-1/8 or + 1/16 inch
Labels	One (1) large label or stencil on roll side (belly) with all pertinent information. One (1) small label on roll end near the core or inside the core with roll number, grade, width, order number, and customer name.
Strapping	Two (2) straps to be 0.375 inch metal bands located 1 1/4 inch +/- 1/4 inch from roll edge
Joins (Splices)	Double-backed tape at splice. Splices clearly indicated on both roll ends by red flagging or black marks. Maximum two (2) splices per roll.
Outside Tail	Glued or taped
Inside Tail	Taped to core
Winding	Rolls to be tightly and evenly wound.
Roll Hardness	Target: Liner - 38 minimum and a range no greater than 15 across the roll.

East Coast is based on the following mills: Big Island, Brewton, Cedar Springs, & Monticello
West Coast is based on the following mill: Toledo