

V00139**TUFFlex Performance Handwrap**

20.3 Micron / 80 Gauge / 0.80 Mil

*Not intended as limiting specifications.***CHARACTERISTICS****VALUES**

Manufacturing Process	Cast
Thickness (nominal)	20.3 Micron / 80 Gauge / 0.80 Mil
Color	Clear
Film Width (inches)	18"
Length (feet)	1500'
Net Weight / Roll (lb, nominal)	34.4 lb
Core I.D.	3"

TESTS**METHODS****VALUES**

Tensile Strength at Break (MD)	ASTM D882	5800 psi
Tensile Strength at Break (TD)	ASTM D882	3200 psi
Elongation at Break (MD)	ASTM D882	380%
Elongation at Break (TD)	ASTM D882	600%
Elmendorf Tear Strength (MD)	ASTM D1922	140 g
Elmendorf Tear Strength (TD)	ASTM D1922	580 g
Puncture, lbs	Internal	11.5
Dart Unoact F50, g	ASTM D1709A	100

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03/19
TFStetchTDSUS

V05110

TUFFlex Performance Handwrap

20.3 Micron / 80 Gauge / 0.80 Mil

Not intended as limiting specifications.

CHARACTERISTICS

VALUES

Manufacturing Process	Cast
Thickness (nominal)	20.3 Micron / 80 Gauge / 0.80 Mil
Film Width (inches)	18"
Length (feet)	1500'
Net Weight / Roll (lb, nominal)	8.65 lb
Roll Diameter (O.D., inches)	5.5"
Core I.D.	3"

TESTS

METHODS

VALUES

Ultimate Tensile MD (PSI)	ASTM D 882	6900 PSI
Ultimate Tensile TD (PSI)	ASTM D 882	4000 PSI
Elongation MD (%)	ASTM D 882	330%
Elongation TD (%)	ASTM D 882	540%
Tear Resistance MD (grams)	ASTM D 1922	330 g/ml
Tear Resistance TD (grams)	ASTM D 1922	540 g/mil
Puncture Resistance (in-lbs.)	ASTM D 4649	23 in/lb
Ultimate Prestretch (%)	Mfg. / Highlight	N/A
Cling (in to out, grams)	Mfg. method	150 g/in

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1/21
TFStetchTDSUS

V03311

TUFFlex Premium Plus Handwrap

11.9 Micron / 47 Gauge / 0.47 Mil

Not intended as limiting specifications.

CHARACTERISTICS

VALUES

Manufacturing Process	Blown
Thickness (nominal)	11.9 Micron / 47 Gauge / 0.47 Mil
Film Width (inches)	18
Length (feet)	1476'
Net Weight / Roll (lbs. – nominal)	20.0
Roll Diameter (O.D., inches)	4.4
Core I.D.	3"

TESTS

METHODS

VALUES

Ultimate Tensile MD (psi)	ASTM D 882	6100 psi
Ultimate Tensile TD (psi)	ASTM D 882	4600 psi
Elongation MD (%)	ASTM D 882	310%
Elongation TD (%)	ASTM D 882	540%
Tear Resistance MD (grams)	ASTM D 1922	230 g/mil
Tear Resistance TD (grams)	ASTM D 1922	650 g/mil
Puncture Resistance (in-lbs.)	ASTM D 4649	25.5 in-lbs
Ultimate Prestretch (%)	Mfg./Highlight	N/A
Cling (in to out, grams)	Mfg. method	130 g/in

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03/19
TFStetchTDSUS

V00210

TUFFlex Premium Plus Handwrap

11.9 Micron / 47 Gauge / 0.47 Mil

Not intended as limiting specifications.

CHARACTERISTICS

VALUES

Manufacturing Process	Cast
Thickness (nominal)	11.9 Micron / 47 Gauge / 0.47 Mil
Color	Clear
Film Width (inches)	18"
Length (feet)	1500'
Net Weight / Roll (lb, nominal)	20.32 lb
Core I.D.	3"

TESTS

METHODS

VALUES

Tensile Strength at Break (MD)	ASTM D882	6000 psi
Tensile Strength at Break (TD)	ASTM D882	2900 psi
Elongation at Break (MD)	ASTM D882	180%
Elongation at Break (TD)	ASTM D882	470%
Elmendorf Tear Strength (MD)	ASTM D1922	40 g
Elmendorf Tear Strength (TD)	ASTM D1922	380 g
Puncture, lbs	Internal	9
Dart Impact F50, g	ASTM D1709A	70

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TFStetchTDSUS

V00252

TUFFlex Pre-stretched Handwrap

7.4 Micron / 29 Gauge / 0.29 Mil

Not intended as limiting specifications.

CHARACTERISTICS

VALUES

Manufacturing Process	Blown
Thickness (nominal)	7.4 Micron / 29 Gauge / 0.29 Mil
Film Width (inches)	15.5"
Length (feet)	2000'
Net Weight / Roll (lb, nominal)	3.6 lb
Roll Diameter (O.D., inches)	6.3"
Core I.D.	3"

TESTS

METHODS

VALUES

Ultimate Tensile MD (PSI)	ASTM D 882	16000 psi
Ultimate Tensile TD (PSI)	ASTM D 882	3300 psi
Elongation MD (%)	ASTM D 882	150%
Elongation TD (%)	ASTM D 882	730%
Tear Resistance MD (grams)	ASTM D 1922	140 g/mil
Tear Resistance TD (grams)	ASTM D 1922	980 g/mil
Puncture Resistance (in-lbs.)	ASTM D 4649	12.1 in-lb
Ultimate Prestretch (%)	Mfg. / Highlight	N/A
Cling (in to out, grams)	Mfg. method	150 g/in

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03/19
TFStetchTDSUS

V00199

TUFFlex Pre-stretched Handwrap

7.4 Micron / 29 Gauge / 0.29 Mil

Not intended as limiting specifications.

CHARACTERISTICS

VALUES

Manufacturing Process	Blown
Thickness (nominal)	7.4 Micron / 29 Gauge / 0.29 Mil
Color	Clear
Film Width (inches)	15.5"
Length (feet)	2000'
Net Weight / Roll (lb, nominal)	3.7 lb
Core I.D.	3"

TESTS

METHODS

VALUES

Haze	ASTM D1003	< 2.5%
Gloss	ASTM D2457	89%
Tensile Strength at Break (MD)	ASTM D882	4200 psi
Tensile Strength at Break (TD)	ASTM D882	3100 psi
Elongation at Break (MD)	ASTM D882	330%
Elongation at Break (TD)	ASTM D882	500%
Elmendorf Tear Strength (MD)	ASTM D1922	200 g
Elmendorf Tear Strength (TD)	ASTM D1922	490 g
Cling	ASTM D5458	130 g

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03/19
TFStetchTDSUS

V03779

TUFFlex Elite Handwrap

7 Micron / 28 Gauge / 0.28 Mil

Not intended as limiting specifications.

CHARACTERISTICS

VALUES

Manufacturing Process	Cast
Thickness (nominal)	7 Micron / 28 Gauge / 0.28 Mil
Color	Clear
Film Width (inches)	14.5"
Length (feet)	2000'
Net Weight / Roll (lb, nominal)	3.25 lb
Core I.D.	3"

TESTS

METHODS

VALUES

Haze	ASTM D1003	< 3 %
Gloss	ASTM D2457	65%
Tensile Strength at Break (MD)	ASTM D882	9350 psi
Tensile Strength at Break (TD)	ASTM D882	2100 psi
Elongation at Break (MD)	ASTM D882	100%
Elongation at Break (TD)	ASTM D882	650%
Elmendorf Tear Strength (MD)	ASTM D1922	400 g
Elmendorf Tear Strength (TD)	ASTM D1922	800 g
Cling	ASTM D5458	175 g

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PKTFELTDSUS

V00147**TUFFlex Performance Machine Film**

20.3 Micron / 80 Gauge / 0.8 Mil

*Not intended as limiting specifications.***CHARACTERISTICS****VALUES**

Manufacturing Process	Cast
Thickness (nominal)	20.3 Micron / 80 Gauge / 0.8 Mil
Color	Clear
Film Width (inches)	20"
Length (feet)	5000'
Net Weight / Roll (lb, nominal)	32 lb
Roll Diameter (O.D., inches)	9.5"
Core I.D.	3"

TESTS**METHODS****VALUES**

Haze	ASTM D1003	2.5%
Gloss	ASTM D2457	76%
Dart Impact Strength	ASTM D1709	155 g
Tensile Strength at Break (MD)	ASTM D882	4800 psi
Tensile Strength at Break (TD)	ASTM D882	3560 psi
Tensile Strength at 200% (MD)	ASTM D882	1500 psi
Tensile Strength at 200% (TD)	ASTM D882	1310 psi
Elongation at Break (MD)	ASTM D882	525%
Elongation at Break (TD)	ASTM D882	695%
Elmendorf Tear Strength (MD)	ASTM D1922	250 g
Elmendorf Tear Strength (TD)	ASTM D1922	400 g
Cling	ASTM D5458	90 g

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03/19
TFStetchTDSUS

V00225

TUFFlex Performance Machine Film

20.3 Micron / 80 Gauge / 0.80 Mil

Not intended as limiting specifications.

CHARACTERISTICS

VALUES

Manufacturing Process	Cast
Thickness (nominal)	20.3 Micron / 80 Gauge / 0.80 Mil
Film Width (inches)	20"
Length (feet)	5000'
Net Weight / Roll (lb, nominal)	32 lb
Roll Diameter (O.D., inches)	8.7"
Core I.D.	3"

TESTS

METHODS

VALUES

Ultimate Tensile MD (PSI)	ASTM D 882	6900 psi
Ultimate Tensile TD (PSI)	ASTM D 882	4000 psi
Elongation MD (%)	ASTM D 882	480%
Elongation TD (%)	ASTM D 882	620%
Tear Resistance MD (grams)	ASTM D 1922	330 g/mil
Tear Resistance TD (grams)	ASTM D 1922	540 g/mil
Puncture Resistance (in-lbs.)	ASTM D 4649	23 in-lb
Ultimate Prestretch (%)	Mfg. / Highlight	370%
Cling (in to out, grams)	Mfg. method	150 g/in

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TFStetchTDSUS

V00235**TUFFlex Premium Plus Machine Film**

16 Micron / 63 Gauge / 0.63 Mil

*Not intended as limiting specifications.***CHARACTERISTICS****VALUES**

Manufacturing Process	Cast
Thickness (nominal)	16 Micron / 63 Gauge / 0.63 Mil
Film Width (inches)	20"
Length (feet)	7250'
Net Weight / Roll (lbs. – nominal)	36.5 lb
Roll Diameter (O.D., inches)	9.2"
Core I.D.	3"

TESTS**METHODS****VALUES**

Ultimate Tensile MD (PSI)	ASTM D 882	6700 psi
Ultimate Tensile TD (PSI)	ASTM D 882	4000 psi
Elongation MD (%)	ASTM D 882	480%
Elongation TD (%)	ASTM D 882	590%
Tear Resistance MD (grams)	ASTM D 1922	300 g/mil
Tear Resistance TD (grams) A	STM D 1922	600 g/mil
Puncture Resistance (in-lbs.)	ASTM D 4649	19.6 in-lb
Ultimate Prestretch (%)	Mfg. / Highlight	350%
Cling (in to out, grams)	Mfg. method	150 g/in

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03/19
TFStetchTDSUS

V00171**TUFFlex Premium Plus Machine Film**

16 Micron / 63 Gauge / 0.63 Mil

*Not intended as limiting specifications.***CHARACTERISTICS****VALUES**

Manufacturing Process	Cast
Thickness (nominal)	16 Micron / 63 Gauge / 0.63 Mil
Color	Clear
Film Width (inches)	20"
Length (feet)	7,250'
Net Weight / Roll (lb, nominal)	36.54 lb
Roll Diameter (O.D., inches)	9.5"
Core I.D.	3"

TESTS**METHODS****VALUES**

Haze	ASTM D1003	2%
Gloss	ASTM D2457	75%
Dart Impact Strength	ASTM D1709	265 g
Tensile Strength at Break (MD)	ASTM D882	5550 psi
Tensile Strength at Break (TD)	ASTM D882	4550 psi
Tensile Strength at 200% (MD)	ASTM D882	2070 psi
Tensile Strength at 200% (TD)	ASTM D882	1370 psi
Elongation at Break (MD)	ASTM D882	510%
Elongation at Break (TD)	ASTM D882	700%
Elmendorf Tear Strength (MD)	ASTM D1922	175 g
Elmendorf Tear Strength (TD)	ASTM D1922	475 g
Cling	ASTM D5458	120 g

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03/19
TFStetchTDSUS

V04744

TUFFlex Ultra Machine Film

11.9 Micron / 47 Gauge / 0.47 Mil

Not intended as limiting specifications.

CHARACTERISTICS

VALUES

Manufacturing Process	Cast
Thickness (nominal)	11.9 Micron / 47 Gauge / 0.47 Mil
Film Width (inches)	19.7"
Length (feet)	9000'
Net Weight / Roll (lb, nominal)	33.3 lb
Roll Diameter (O.D., inches)	8.6"
Core I.D.	3"

TESTS

METHODS

VALUES

Ultimate Tensile MD (psi)	ASTM D 882	4500 psi
Ultimate Tensile TD (psi)	ASTM D 882	4350 psi
Elongation MD (%)	ASTM D 882	370%
Elongation TD (%)	ASTM D 882	575%
Tear Resistance MD (grams)	ASTM D 1922	650 g/mil
Tear Resistance TD (grams)	ASTM D 1922	970 g/mil
Puncture Resistance (in-lbs.)	ASTM D 4649	11.4 in-lbs
Ultimate Prestretch (%)	Mfg./Highlight	
Cling (in to out, grams)	Mfg. method	150 g/in

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03/19
TFStetchTDSUS

V00193

TUFFlex Ultra Machine Film

13 Micron / 51 Gauge / 0.51 Mil

Not intended as limiting specifications.

CHARACTERISTICS

VALUES

Manufacturing Process	Cast
Thickness (nominal)	13 Micron / 51 Gauge / 0.51 Mil
Color	Clear
Film Width (inches)	20"
Length (feet)	9000'
Net Weight / Roll (lbs. – nominal)	36.72 lb
Roll Diameter (O.D., inches)	9.5"
Core I.D.	3"

TESTS

METHODS

VALUES

Haze	ASTM D1003	3%
Gloss	ASTM D2457	69%
Dart Impact Strength	ASTM D1709	210 g
Tensile Strength at Break (MD)	ASTM D882	5500 psi
Tensile Strength at Break (TD)	ASTM D882	4575 psi
Tensile Strength at 200% (MD)	ASTM D882	1960 psi
Tensile Strength at 200% (TD)	ASTM D882	1425 psi
Elongation at Break (MD)	ASTM D882	510%
Elongation at Break (TD)	ASTM D882	655%
Elmendorf Tear Strength (MD)	ASTM D1922	150 g
Elmendorf Tear Strength (TD)	ASTM D1922	395 g
Cling	ASTM D5458	100 g

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03/19
TFStetchTDSUS

V04745**TUFFlex Ultra Machine Film**

13.7 Micron / 54 Gauge / 0.54 Mil

*Not intended as limiting specifications.***CHARACTERISTICS****VALUES**

Manufacturing Process	Cast
Thickness (nominal)	13.7 Micron / 54 Gauge / 0.54 Mil
Film Width (inches)	19.7"
Length (feet)	8000'
Net Weight / Roll (lb, nominal)	34 lb
Roll Diameter (O.D., inches)	8.7"
Core I.D.	3"

TESTS**METHODS****VALUES**

Ultimate Tensile MD (psi)	ASTM D 882	11900 psi
Ultimate Tensile TD (psi)	ASTM D 882	8500 psi
Elongation MD (%)	ASTM D 882	610%
Elongation TD (%)	ASTM D 882	690%
Tear Resistance MD (grams)	ASTM D 1922	650 g/mil
Tear Resistance TD (grams)	ASTM D 1922	970 g/mil
Puncture Resistance (in-lbs.)	ASTM D 4649	16.9 in-lbs
Ultimate Prestretch (%)	Mfg./Highlight	
Cling (in to out, grams)	Mfg. method	150 g/in

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03/19
TFStetchTDSUS

V04840

Elite Machine Film

12 Micron / 47 Gauge / 0.47 Mil

Not intended as limiting specifications.

CHARACTERISTICS

VALUES

Manufacturing Process	Cast
Thickness (nominal)	12 Micron / 47 Gauge / 0.47 Mil
Color	Clear
Film Width (inches)	20"
Length (feet)	9750'
Net Weight / Roll (lb, nominal)	36.66 lb
Roll Diameter (O.D.)	9.12"
Core I.D.	3.055"

TESTS

METHODS

VALUES

Haze	ASTM D1003	< 3%
Gloss	ASTM D2457	69%
Dart Impact Strength	ASTM D1709	210
Tensile Strength at Break (MD)	ASTM D882	5500 psi
Tensile Strength at Break (TD)	ASTM D882	4575 psi
Tensile Strength at 200% (MD)	ASTM D882	1960
Tensile Strength at 200% (TD)	ASTM D882	1425
Elongation at Break (MD)	ASTM D882	510%
Elongation at Break (TD)	ASTM D882	655%
Elmendorf Tear Strength (MD)	ASTM D1922	180 g
Elmendorf Tear Strength (TD)	ASTM D1922	450 g
Cling	ASTM D5458	100 g

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