

V00133

TUFFlex Performance Handwrap

16.5 Micron / 65 Gauge / 0.65 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES	
Manufacturing Process	Cast	
Thickness (nominal)	16.5 Micron / 65 Gauge / 0.65 Mil	
Color	Clear	
Film Width (inches)	15"	
Length (feet)	1500'	
Net Weight / Roll (lb, nominal)	23.2 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	300%
Elongation at Break (TD)	ASTM D882	600%
Elmendorf Tear Strength (MD)	ASTM D1922	110 g
Elmendorf Tear Strength (TD)	ASTM D1922	650 g
Puncture, lbs	Internal	10.7
Dart Impact F50,g	ASTM D1709A	90

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03/19
TFStetchTDSUS

V00134

TUFFlex Performance Handwrap

16.5 Micron / 65 Gauge / 0.65 Mil

Not intended as limiting specifications.

CHARACTERISTICS

VALUES

Manufacturing Process	Cast
Thickness (nominal)	16.5 Micron / 65 Gauge / 0.65 Mil
Color	Clear
Film Width (inches)	16"
Length (feet)	1500'
Net Weight / Roll (lb, nominal)	24.8 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	300%
Elongation at Break (TD)	ASTM D882	600%
Elmendorf Tear Strength (MD)	ASTM D1922	110 g
Elmendorf Tear Strength (TD)	ASTM D1922	650 g
Puncture, lbs	Internal	10.7
Dart Impact F50,g	ASTM D1709A	90

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V00135

TUFFlex Performance Handwrap

17.8 Micron / 70 Gauge / 0.70 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES	
Manufacturing Process	Cast	
Thickness (nominal)	17.8 Micron / 70 Gauge / 0.70 Mil	
Color	Clear	
Film Width (inches)	18"	
Length (feet)	1500'	
Net Weight / Roll (lb, nominal)	30.4 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	300%
Elongation at Break (TD)	ASTM D882	600%
Elmendorf Tear Strength (MD)	ASTM D1922	110 g
Elmendorf Tear Strength (TD)	ASTM D1922	520 g
Puncture, lbs	Internal	11
Dart Impact F50, g	ASTM D1709A	90

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V00137

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)	12"	
Length (feet)	1500'	
Net Weight / Roll (lb, nominal)	23.2 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 Impact F50, g	ASTM D1709A	100

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V00138

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)	15"
Length (feet)	1500'
Net Weight / Roll (lb, nominal)	28.8 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 Impact F50,g	ASTM D17009A	100

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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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V00140

TUFFlex Performance Handwrap

22.9 Micron / 90 Gauge / 0.90 Mil

Not intended as limiting specifications.

CHARACTERISTICS

VALUES

Manufacturing Process	Cast
Thickness (nominal)	22.9 Micron / 90 Gauge / 0.90 Mil
Color	Clear
Film Width (inches)	18"
Length (feet)	1500'
Net Weight / Roll (lb, nominal)	38.8 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	440%
Elongation at Break (TD)	ASTM D882	600%
Elmendorf Tear Strength (MD)	ASTM D1922	160 g
Elmendorf Tear Strength (TD)	ASTM D1922	640 g
Puncture, lbs	Internal	12
Dart Impact F50, g	ASTM D1709A	110

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03/19
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V00200

TUFFlex Performance Handwrap

15 Micron / 59 Gauge / 0.59 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES
Manufacturing Process	Blown
Thickness (nominal)	15 Micron / 59 Gauge / 0.59 Mil
Color	Clear
Film Width (inches)	18"
Length (feet)	2000'
Net Weight / Roll (lb, nominal)	8.5 lb
Roll Diameter (O.D., inches)	6"
Core I.D.	3"

TESTS	METHODS	VALUES
Haze	ASTM D1003	6%
Gloss	ASTM D2457	80%
Tensile Strength at Break (MD)	ASTM D882	5000 psi
Elongation at Break (MD)	ASTM D882	320%
Elmendorf Tear Strength (MD)	ASTM D1922	35 g
Elmendorf Tear Strength (TD)	ASTM D1922	600 g
Cling	ASTM D5458	180 g

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V00201

TUFFlex Performance Handwrap

16.5 Micron / 65 Gauge / 0.65 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES	
Manufacturing Process	Blown	
Thickness (nominal)	16.5 Micron / 65 Gauge / 0.65 Mil	
Color	Clear	
Film Width (inches)	16"	
Length (feet)	1500'	
Net Weight / Roll (lb, nominal)	6.24 lb	
Roll Diameter (O.D., inches)	6"	
Core I.D.	3"	
TESTS	METHODS	VALUES
Haze	ASTM D1003	6%
Gloss	ASTM D2457	80%
Tensile Strength at Break (MD)	ASTM D882	5000 psi
Elongation at Break (MD)	ASTM D882	335%
Elmendorf Tear Strength (MD)	ASTM D1922	35 g
Elmendorf Tear Strength (TD)	ASTM D1922	610 g
Cling	ASTM D5458	180 g

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V00202

TUFFlex Performance Handwrap

16.5 Micron / 65 Gauge / 0.65 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES	
Manufacturing Process	Blown	
Thickness (nominal)	16.5 Micron / 65 Gauge / 0.65 Mil	
Color	Clear	
Film Width (inches)	18"	
Length (feet)	1500'	
Net Weight / Roll (lb, nominal)	7.02 lb	
Roll Diameter (O.D., inches)	6"	
Core I.D.	3"	
TESTS	METHODS	VALUES
Haze	ASTM D1003	6%
Gloss	ASTM D2457	80%
Tensile Strength at Break (MD)	ASTM D882	5000 psi
Elongation at Break (MD)	ASTM D882	335%
Elmendorf Tear Strength (MD)	ASTM D1922	35 g
Elmendorf Tear Strength (TD)	ASTM D1922	610 g
Cling	ASTM D5458	180 g

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V00203

TUFFlex Performance Handwrap

17.8 Micron / 70 Gauge / 0.70 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES	
Manufacturing Process	Blown	
Thickness (nominal)	17.8 Micron / 70 Gauge / 0.70 Mil	
Color	Clear	
Film Width (inches)	18"	
Length (feet)	1500'	
Net Weight / Roll (lb, nominal)	7.56 lb	
Roll Diameter (O.D., inches)	6"	
Core I.D.	3"	
TESTS	METHODS	VALUES
Haze	ASTM D1003	6%
Gloss	ASTM D2457	80%
Tensile Strength at Break (MD)	ASTM D882	5000 psi
Elongation at Break (MD)	ASTM D882	370%
Elmendorf Tear Strength (MD)	ASTM D1922	38 g
Elmendorf Tear Strength (TD)	ASTM D1922	655 g
Cling	ASTM D5458	180 g

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03/19
TFStetchTDSUS

V00204

TUFFlex Performance Handwrap

20 Micron / 79 Gauge / 0.79 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES
Manufacturing Process	Blown
Thickness (nominal)	20 Micron / 79 Gauge / 0.79 Mil
Color	Clear
Film Width (inches)	12"
Length (feet)	1500'
Net Weight / Roll (lb, nominal)	5.69 lb
Roll Diameter (O.D., inches)	6"
Core I.D.	3"

TESTS	METHODS	VALUES
Haze	ASTM D1003	6%
Gloss	ASTM D2457	80%
Tensile Strength at Break (MD)	ASTM D882	5000 psi
Elongation at Break (MD)	ASTM D882	385%
Elmendorf Tear Strength (MD)	ASTM D1922	40 g
Elmendorf Tear Strength (TD)	ASTM D1922	700 g
Cling	ASTM D5458	180 g

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V00205

TUFFlex Performance Handwrap

20 Micron / 79 Gauge / 0.79 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES
Manufacturing Process	Blown
Thickness (nominal)	20 Micron / 79 Gauge / 0.79 Mil
Color	Clear
Film Width (inches)	14"
Length (feet)	1500'
Net Weight / Roll (lb, nominal)	6.64 lb
Roll Diameter (O.D., inches)	6"
Core I.D.	3"

TESTS	METHODS	VALUES
Haze	ASTM D1003	6%
Gloss	ASTM D2457	80%
Tensile Strength at Break (MD)	ASTM D882	5000 psi
Elongation at Break (MD)	ASTM D882	385%
Elmendorf Tear Strength (MD)	ASTM D1922	40 g
Elmendorf Tear Strength (TD)	ASTM D1922	700 g
Cling	ASTM D5458	180 g

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03/19
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V00206

TUFFlex Performance Handwrap

20 Micron / 79 Gauge / 0.79 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES
Manufacturing Process	Blown
Thickness (nominal)	20 Micron / 79 Gauge / 0.79 Mil
Color	Clear
Film Width (inches)	16"
Length (feet)	1500'
Net Weight / Roll (lb, nominal)	7.58 lb
Roll Diameter (O.D., inches)	6"
Core I.D.	3"

TESTS	METHODS	VALUES
Haze	ASTM D1003	6%
Gloss	ASTM D2457	80%
Tensile Strength at Break (MD)	ASTM D882	5000 psi
Elongation at Break (MD)	ASTM D882	385%
Elmendorf Tear Strength (MD)	ASTM D1922	40 g
Elmendorf Tear Strength (TD)	ASTM D1922	700 g
Cling	ASTM D5458	180 g

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V00207

TUFFlex Performance Handwrap

20 Micron / 79 Gauge / 0.79 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES
Manufacturing Process	Blown
Thickness (nominal)	20 Micron / 79 Gauge / 0.79 Mil
Color	Clear
Film Width (inches)	18"
Length (feet)	1500'
Net Weight / Roll (lb, nominal)	8.53 lb
Roll Diameter (O.D., inches)	6"
Core I.D.	3"

TESTS	METHODS	VALUES
Haze	ASTM D1003	6%
Gloss	ASTM D2457	80%
Tensile Strength at Break (MD)	ASTM D882	5000 psi
Elongation at Break (MD)	ASTM D882	385%
Elmendorf Tear Strength (MD)	ASTM D1922	40 g
Elmendorf Tear Strength (TD)	ASTM D1922	700 g
Cling	ASTM D5458	180 g

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V00208

TUFFlex Performance Handwrap

22.8 Micron / 90 Gauge / 0.90 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES	
Manufacturing Process	Blown	
Thickness (nominal)	22.8 Micron / 90 Gauge / 0.90 Mil	
Color	Clear	
Film Width (inches)	18"	
Length (feet)	1500'	
Net Weight / Roll (lb, nominal)	9.72 lb	
Roll Diameter (O.D., inches)	6"	
Core I.D.	3"	
TESTS	METHODS	VALUES
Haze	ASTM D1003	6%
Gloss	ASTM D2457	80%
Tensile Strength at Break (MD)	ASTM D882	5000 psi
Elongation at Break (MD)	ASTM D882	400%
Elmendorf Tear Strength (MD)	ASTM D1922	42 g
Elmendorf Tear Strength (TD)	ASTM D1922	720 g
Cling	ASTM D5458	180 g

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03/19
TFStetchTDSUS

V00259

TUFFlex Performance Handwrap

17.8 Micron / 70 Gauge / 0.70 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES	
Manufacturing Process	Blown	
Thickness (nominal)	17.8 Micron / 70 Gauge / 0.70 Mil	
Film Width (inches)	18"	
Length (feet)	1500'	
Net Weight / Roll (lb, nominal)	7.55 lb	
Roll Diameter (O.D., inches)	5.3"	
Core I.D.	3"	

TESTS	METHODS	VALUES
Ultimate Tensile MD (PSI)	ASTM D 882	6900 PSI
Ultimate Tensile TD (PSI)	ASTM D 882	4700 PSI
Elongation MD (%)	ASTM D 882	470%
Elongation TD (%)	ASTM D 882	700%
Tear Resistance MD (grams)	ASTM D 1922	140 g/ml
Tear Resistance TD (grams)	ASTM D 1922	750 g/mil
Puncture Resistance (in-lbs.)	ASTM D 4649	14.0 in/lb
Ultimate Prestretch (%)	Mfg. / Highlight	N/A
Cling (in to out, grams)	Mfg. method	150 g/in

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V00260

TUFFlex Performance Handwrap

20.3 Micron / 80 Gauge / 0.80 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES	
Manufacturing Process	Blown	
Thickness (nominal)	20.3 Micron / 80 Gauge / 0.80 Mil	
Film Width (inches)	12"	
Length (feet)	1500'	
Net Weight / Roll (lb, nominal)	5.75 lb	
Roll Diameter (O.D., inches)	5.5"	
Core I.D.	3"	

TESTS	METHODS	VALUES
Ultimate Tensile MD (PSI)	ASTM D 882	6700 PSI
Ultimate Tensile TD (PSI)	ASTM D 882	4500 PSI
Elongation MD (%)	ASTM D 882	460%
Elongation TD (%)	ASTM D 882	750%
Tear Resistance MD (grams)	ASTM D 1922	150 g/ml
Tear Resistance TD (grams)	ASTM D 1922	500 g/mil
Puncture Resistance (in-lbs.)	ASTM D 4649	16.0 in/lb
Ultimate Prestretch (%)	Mfg. / Highlight	N/A
Cling (in to out, grams)	Mfg. method	150 g/in

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V00261

TUFFlex Performance Handwrap

20.3 Micron / 80 Gauge / 0.80 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES	
Manufacturing Process	Blown	
Thickness (nominal)	20.3 Micron / 80 Gauge / 0.80 Mil	
Film Width (inches)	15"	
Length (feet)	1500'	
Net Weight / Roll (lb, nominal)	7.2 lb	
Roll Diameter (O.D., inches)	5.5"	
Core I.D.	3"	

TESTS	METHODS	VALUES
Ultimate Tensile MD (PSI)	ASTM D 882	6700 PSI
Ultimate Tensile TD (PSI)	ASTM D 882	4500 PSI
Elongation MD (%)	ASTM D 882	460%
Elongation TD (%)	ASTM D 882	750%
Tear Resistance MD (grams)	ASTM D 1922	150 g/ml
Tear Resistance TD (grams)	ASTM D 1922	500 g/mil
Puncture Resistance (in-lbs.)	ASTM D 4649	16.0 in/lb
Ultimate Prestretch (%)	Mfg. / Highlight	N/A
Cling (in to out, grams)	Mfg. method	150 g/in

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V00262

TUFFlex Performance Handwrap

20.3 Micron / 80 Gauge / 0.80 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES	
Manufacturing Process	Blown	
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	6700 PSI
Ultimate Tensile TD (PSI)	ASTM D 882	4500 PSI
Elongation MD (%)	ASTM D 882	460%
Elongation TD (%)	ASTM D 882	750%
Tear Resistance MD (grams)	ASTM D 1922	150 g/ml
Tear Resistance TD (grams)	ASTM D 1922	500 g/mil
Puncture Resistance (in-lbs.)	ASTM D 4649	16 in/lb
Ultimate Prestretch (%)	Mfg. / Highlight	N/A
Cling (in to out, grams)	Mfg. method	150 g/in

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