## **TUFflex Premium Machine Film** 12.7 Micron / 50 Gauge / 0.50 Mil

Not intended as limiting specifications.

**CHARACTERISTICS** VALUES Manufacturing Process Cast Thickness (nominal) 12.7 Micron / 50 Gauge / 0.50 Mil 20" Film Width (inches) 9000' Length (feet) Net Weight / Roll (lbs. – nominal) 36 lb Roll Diameter (O.D., inches) 9.5" 3" Core I.D.

TESTS	METHODS	VALUES
Haze	ASTM D1003	2%
Gloss	ASTM D2457	76%
Dart Impact Strength	ASTM D1709	225 g
Tensile Strength at Break (MD)	ASTM D882	5000 psi
Tensile Strength at Break (TD)	ASTM D882	4080 psi
Tensile Strength at 200% (MD)	ASTM D882	1860 psi
Tensile Strength at 200% (TD)	ASTM D882	1300 psi
Elongation at Break (MD)	ASTM D882	450%
Elongation at Break (TD)	ASTM D882	660%
Elemdorf Tear Strength (MD)	ASTM D1922	140 g
Elemdorf Tear Strength (TD)	ASTM D1922	375 g
Cling	ASTM D5458	95 g



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## **TUFflex Premium Machine Film** 12.7 Micron / 50 Gauge / 0.50 Mil

Not intended as limiting specifications.

VALUES	
Cast 12.7 Micron / 50 Gauge / 0.50 Mil Clear 30" 9000' 54 lb 9.5" 3"	
METHODS	VALUES
ASTM D2457 ASTM D2457 ASTM D1709 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D1922 ASTM D1922 ASTM D5458	2% 76% 225 g 5000 psi 4080 psi 1860 psi 1300 psi 450% 660% 140 g 375 g 95 g
	Cast 12.7 Micron / 50 Gauge / 0. Clear 30" 9000' 54 lb 9.5" 3" <b>METHODS</b> ASTM D2457 ASTM D2457 ASTM D2457 ASTM D2457 ASTM D1709 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882



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## **TUFflex** Premium Machine Film

15.2 Micron / 60 Gauge / 0.60 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES	
Manufacturing Process Thickness (nominal) Color Film Width (inches) Length (feet) Net Weight / Roll (lbs. – nominal) Roll Diameter (O.D., inches) Core I.D.	Cast 15.2 Micron / 60 Gauge / 0.60 Mil Clear 20" 8000' 38.4 lb 9.5" 3"	
TESTS	METHODS	VALUES
Haze Gloss Dart Impact Strength Tensile Strength at Break (MD) Tensile Strength at Break (TD) Tensile Strength at 200% (MD) Tensile Strength at 200% (TD) Elongation at Break (MD) Elongation at Break (TD) Elemdorf Tear Strength (MD) Elemdorf Tear Strength (TD) Cling	ASTM D2457 ASTM D2457 ASTM D1709 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D1922 ASTM D1922 ASTM D5458	2% 76% 235 g 5000 psi 4080 psi 1860 psi 1300 psi 475% 670% 160 g 400 g 95 g



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## **TUFflex Premium Machine Film** 15.2 Micron / 60 Gauge / 0.60 Mil

Not intended as limiting specifications.

VALUES	
Cast 15.2 Micron / 60 Gauge / 0.60 Mil Clear 30" 8000' 57.6 lb 9.5" 3"	
METHODS	VALUES
ASTM D2457 ASTM D2457 ASTM D1709 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D1922 ASTM D1922	2% 76% 235 g 5000 psi 4080 psi 1860 psi 1300 psi 475% 670% 160 g 400 g 95 g
	Cast 15.2 Micron / 60 Gauge / 0. Clear 30" 8000' 57.6 lb 9.5" 3" METHODS ASTM D2457 ASTM D2457 ASTM D2457 ASTM D2457 ASTM D1709 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882



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## **TUFflex Premium Machine Film** 16 Micron / 63 Gauge / 0.63 Mil

Not intended as limiting specifications.

Cast 16 Micron / 63 Gauge / 0.63	R Mil
Clear 20" 7250' 36.54 lb 9.5" 3"	, 1411
METHODS	VALUES
ASTM D2457 ASTM D2457 ASTM D1709 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D1922 ASTM D1922	2% 76% 240 g 5000 psi 4080 psi 1860 psi 1300 psi 485% 675% 165 g 410 g 95 g
	Clear 20" 2250' 36.54 lb 2.5" 36" METHODS ASTM D2457 ASTM D2457 ASTM D2457 ASTM D2457 ASTM D882 ASTM D882



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## TUFflex Premium Machine Film

16 Micron / 63 Gauge / 0.63 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES	
Manufacturing Process Thickness (nominal) Color Film Width (inches) Length (feet) Net Weight / Roll (lbs. – nominal) Roll Diameter (O.D., inches) Core I.D.	Cast 16 Micron / 63 Gauge / 0.63 Clear 30" 7250' 54.8 lb 9.5" 3"	3 Mil
TESTS	METHODS	VALUES
Haze Gloss Dart Impact Strength Tensile Strength at Break (MD) Tensile Strength at Break (TD) Tensile Strength at 200% (MD) Tensile Strength at 200% (TD) Elongation at Break (MD) Elongation at Break (MD) Elemdorf Tear Strength (MD) Elemdorf Tear Strength (TD) Cling	ASTM D2457 ASTM D2457 ASTM D1709 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D1922 ASTM D1922 ASTM D5458	2% 76% 240 g 5000 psi 4080 psi 1860 psi 1300 psi 485% 675% 165 g 410 g 95 g



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## **TUFflex Premium Machine Film** 16.5 Micron / 65 Gauge / 0.65 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES	
Manufacturing Process Thickness (nominal) Color Film Width (inches) Length (feet) Net Weight / Roll (lbs. – nominal) Roll Diameter (O.D., inches) Core I.D.	Cast 16.5 Micron / 65 Gauge / 0.65 Mil Clear 20" 6500' 33.8 lb 9.5" 3"	
TESTS	METHODS	VALUES
Haze Gloss Dart Impact Strength Tensile Strength at Break (MD) Tensile Strength at Break (TD) Tensile Strength at 200% (MD) Tensile Strength at 200% (TD) Elongation at Break (MD) Elongation at Break (TD) Elemdorf Tear Strength (MD) Elemdorf Tear Strength (TD) Cling	ASTM D2457 ASTM D2457 ASTM D1709 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D1922 ASTM D1922 ASTM D5458	2% 76% 240 g 5000 psi 4080 psi 1860 psi 1300 psi 485% 675% 165 g 410 g 95 g



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## **TUFflex Premium Machine Film** 17.8 Micron / 70 Gauge / 0.70 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES	
Manufacturing Process Thickness (nominal) Color Film Width (inches) Length (feet) Net Weight / Roll (lbs. – nominal) Roll Diameter (O.D., inches) Core I.D.	Cast 17.8 Micron / 70 Gauge / 0.70 Mil Clear 20" 6500' 36.4 lb 9.5" 3"	
TESTS	METHODS	VALUES
Haze Gloss Dart Impact Strength Tensile Strength at Break (MD) Tensile Strength at Break (TD) Tensile Strength at 200% (MD) Tensile Strength at 200% (TD) Elongation at Break (MD) Elongation at Break (TD) Elemdorf Tear Strength (MD) Elemdorf Tear Strength (TD)	ASTM D2457 ASTM D2457 ASTM D1709 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D1922 ASTM D1922	2% 76% 245 g 5000 psi 4080 psi 1860 psi 1300 psi 500% 680% 175 g 425 g
Cling	ASTM D5458	95 g



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## **TUFflex Premium Machine Film** 17.8 Micron / 70 Gauge / 0.70 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES	
Manufacturing Process Thickness (nominal) Color Film Width (inches) Length (feet) Net Weight / Roll (lbs. – nominal) Roll Diameter (O.D., inches) Core I.D.	Cast 17.8 Micron / 70 Gauge / 0.70 Mil Clear 30" 6500' 54.6 lb 9.5" 3"	
TESTS	METHODS	VALUES
Haze	ASTM D2457	2%
Gloss	ASTM D2457	76%
Dart Impact Strength	ASTM D1709	245 g
Tensile Strength at Break (MD)	ASTM D882	5000 psi
Tensile Strength at Break (TD)	ASTM D882	4080 psi
Tensile Strength at 200% (MD)	ASTM D882	1860 psi
Tensile Strength at 200% (TD)	ASTM D882	1300 psi
Elongation at Break (MD)	ASTM D882	500%
Elongation at Break (TD)	ASTM D882	680%
Elemdorf Tear Strength (MD)	ASTM D1922	175 g
Elemdorf Tear Strength (TD)	ASTM D1922	425 g
Cling	ASTM D5458	95 g



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## **TUFflex Premium Machine Film** 20.3 Micron / 80 Gauge / 0.80 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES	
Manufacturing Process Thickness (nominal) Color Film Width (inches) Length (feet) Net Weight / Roll (lbs. – nominal) Roll Diameter (O.D., inches) Core I.D.	Cast 20.3 Micron / 80 Gauge / 0.80 Mil Clear 20" 6000' 38.4 lb 9.5" 3"	
TESTS	METHODS	VALUES
Haze Gloss Dart Impact Strength Tensile Strength at Break (MD) Tensile Strength at Break (TD) Tensile Strength at 200% (MD) Tensile Strength at 200% (TD) Elongation at Break (MD) Elongation at Break (TD) Elemdorf Tear Strength (MD) Elemdorf Tear Strength (TD) Cling	ASTM D2457 ASTM D2457 ASTM D1709 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D1922 ASTM D1922 ASTM D5458	2% 76% 255 g 5000 psi 4080 psi 1860 psi 1300 psi 530% 700% 190 g 455 g 95 g



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## TUFflex Premium 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	
Color	Clear	
Film Width (inches)	30"	
Length (feet)	6000'	
Net Weight / Roll (lbs. – nominal)	57.6 lb	
Roll Diameter (O.D., inches)	9.5"	
Core I.D.	3"	
TESTS	METHODS	VALUES
Haze	ASTM D2457	2%
Gloss	ASTM D2457	76%
Dart Impact Strength	ASTM D1709	255 g
Tensile Strength at Break (MD)	ASTM D882	5000 psi
Tensile Strength at Break (TD)	ASTM D882	4080 psi
Tensile Strength at 200% (MD)	ASTM D882	1860 psi
Tensile Strength at 200% (TD)	ASTM D882	1300 psi
Elongation at Break (MD)	ASTM D882	530%
Elongation at Break (MD)	ASTM D882	700%
Elemdorf Tear Strength (MD)	ASTM D1922	190 g
Elemdorf Tear Strength (TD)	ASTM D1922	455 g
Cling	ASTM D5458	95 g



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## **TUFflex Premium Machine Film** 25.4 Micron / 100 Gauge / 1.0 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES	
Manufacturing Process Thickness (nominal) Color Film Width (inches) Length (feet) Net Weight / Roll (lbs. – nominal) Roll Diameter (O.D., inches) Core I.D.	Cast 25.4 Micron / 100 Gauge / Clear 20" 4750' 38 lb 9.5" 3"	1.0 Mil
TESTS	METHODS	VALUES
Haze Gloss Dart Impact Strength Tensile Strength at Break (MD) Tensile Strength at Break (TD) Tensile Strength at 200% (MD) Tensile Strength at 200% (TD) Elongation at Break (MD) Elongation at Break (TD) Elemdorf Tear Strength (MD) Elemdorf Tear Strength (TD) Cling	ASTM D2457 ASTM D2457 ASTM D1709 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D1922 ASTM D1922 ASTM D5458	2% 76% 290 g 5750 psi 4080 psi 2100 psi 1400 psi 575% 750% 275 g 550 g 95 g



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## **TUFflex Premium Machine Film** 25.4 Micron / 100 Gauge / 1.0 Mil

Not intended as limiting specifications.

VALUES	
Cast 25.4 Micron / 100 Gauge / <sup>-</sup> Clear 30" 4750' 57 lb 9.5" 3"	1.0 Mil
METHODS	VALUES
ASTM D2457	2%
ASTM D2457	76%
ASTM D1709	290 g
ASTM D882	5750 psi
ASTM D882	4800 psi
ASTM D882	2100 psi
ASTM D882	1400 psi
ASTM D882	575%
ASTM D882	750%
	275 g
ASTM D1922	550 g
ASTM D5458	95 g
	Cast 25.4 Micron / 100 Gauge / 7 Clear 30" 4750' 57 lb 9.5" 3" <b>METHODS</b> ASTM D2457 ASTM D2457 ASTM D1709 ASTM D882 ASTM D1922



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## **TUFflex Premium Machine Film** 29.2 Micron / 115 Gauge / 1.15 Mil

Not intended as limiting specifications.

VALUES	
Cast 29.2 Micron / 115 Gauge / 1.15 Mil Clear 20" 4000' 36.8 lb 9.5" 3"	
METHODS	VALUES
ASTM D2457 ASTM D2457 ASTM D1709 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D1922 ASTM D1922	2.5% 76% 310 g 6100 psi 5200 psi 2200 psi 1500 psi 650% 800% 325 g 625 g 95 g
	Cast 29.2 Micron / 115 Gauge / Clear 20" 4000' 36.8 lb 9.5" 3" <b>METHODS</b> ASTM D2457 ASTM D2457 ASTM D2457 ASTM D2457 ASTM D1709 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882 ASTM D882



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## **TUFflex Premium Machine Film** 17.8 Micron / 70 Gauge / 0.70 Mil

Not intended as limiting specifications.

CHARACTERISTICS	VALUES	
Manufacturing Process Feature Thickness (nominal) Color Film Width (inches) Length (feet) Net Weight / Roll (lbs. – nominal) Roll Diameter (O.D., inches) Core I.D.	Cast Heat Treated Pallet 17.8 Micron / 70 Gauge / 0 Clear 20" 6500' 36.4 lb 9.5" 3"	.70 Mil
TESTS	METHODS	VALUES
Haze Gloss Dart Impact Strength Tensile Strength at Break (MD) Tensile Strength at Break (TD) Tensile Strength at 200% (MD) Tensile Strength at 200% (TD)	ASTM D2457 ASTM D2457 ASTM D1709 ASTM D882 ASTM D882 ASTM D882 ASTM D882	2.5% 76% 155 g 5600 psi
Elongation at Break (MD) Elongation at Break (TD)	ASTM D882 ASTM D882	490%
Elemdorf Tear Strength (MD) Elemdorf Tear Strength (TD) Cling	ASTM D1922 ASTM D1922 ASTM D5458	160 g 580 g 220 g



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## **TUFflex Premium 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)	6000'
Net Weight / Roll (lbs. – nominal)	38.4
Roll Diameter (O.D., inches)	9.1
Core I.D.	3"

TESTS	METHODS	VALUES
Ultimate Tensile MD (psi)	ASTM D 882	4700 psi
Ultimate Tensile TD (psi)	ASTM D 882	3100 psi
Elongation MD (%)	ASTM D 882	530%
Elongation TD (%)	ASTM D 882	650%
Tear Resistance MD (grams)	ASTM D 1922	270 g/mil
Tear Resistance TD (grams)	ASTM D 1922	670 g/mil
Puncture Resistance (in-lbs.)	ASTM D 4649	33 in-lbs
Ultimate Prestretch (%)	Mfg. / Highlight	
Cling (in to out, grams)	Mfg. method	150 g/in



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## **TUFflex Premium Machine Film** 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
Film Width (inches)	20"
Length (feet)	6000'
Net Weight / Roll (lbs. – nominal)	33.6
Roll Diameter (O.D., inches)	8.6
Core I.D.	3"

TESTS	METHODS	VALUES
Ultimate Tensile MD (psi)	ASTM D 882	4700 psi
Ultimate Tensile TD (psi)	ASTM D 882	3100 psi
Elongation MD (%)	ASTM D 882	510%
Elongation TD (%)	ASTM D 882	630%
Tear Resistance MD (grams)	ASTM D 1922	270 g/mil
Tear Resistance TD (grams)	ASTM D 1922	670 g/mil
Puncture Resistance (in-lbs.)	ASTM D 4649	23.3 in-lbs
Ultimate Prestretch (%)	Mfg. / Highlight	
Cling (in to out, grams)	Mfg. method	150 g/in



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## **TUFflex Premium 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
Roll Diameter (O.D., inches)	8.9
Core I.D.	3"

METHODS	VALUES
ASTM D 882	4800 psi
ASTM D 882	3100 psi
ASTM D 882	490%
ASTM D 882	610%
ASTM D 1922	280 g/mil
ASTM D 1922	690 g/mil
ASTM D 4649	20.2 in-lbs
Mfg. / Highlight	
Mfg. method	150 g/in
	ASTM D 882 ASTM D 882 ASTM D 882 ASTM D 882 ASTM D 1922 ASTM D 1922 ASTM D 4649 Mfg. / Highlight



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