

# Miragrid<sup>®</sup> 2XT

Miragrid<sup>®</sup> 2XT biaxial geogrid is composed of high molecular weight, high tenacity polyester multifilament yarns are woven in tension and finished with a PVC coating. Miragrid<sup>®</sup> 2XT biaxial geogrid is inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids.

Miragrid<sup>®</sup> 2XT geogrid is used as soil reinforcement in MSE structures such as; segmental retaining walls, precast modular block walls, wire faced walls, geosynthetic wrapped faced walls and steepened slopes. Miragrid<sup>®</sup> 2XT is also used in MSE stabilized platforms for voids bridging, embankments on soft soils, landfill veneer stability, reducing differential settlement and for foundation seismic stability.

TenCate Geosynthetics Americas is accredited by Geosynthetic Accreditation Institute – Laboratory Accreditation Program ([GAI-LAP](#)).

Mechanical Properties	Test Method	Unit	Value	
			MD	CD
Tensile Strength @ Ultimate (MARV <sup>1</sup> )	ASTM D6637 (Method B)	lbs/ft (kN/m)	2000 (29.2)	2000 (29.2)
Creep Rupture Strength <sup>2</sup>	ASTM D5262/D6992	lbs/ft (kN/m)	1379 (20.1)	
Long Term Design Strength <sup>3</sup>		lbs/ft (kN/m)	1194 (17.4)	

<sup>1</sup> Minimum Average Roll Values (MARV) shown above are based on QC Testing per a defined lot not to exceed 12 months. Testing Frequency follows ASTM D4354, Table 1.

<sup>2</sup> 75-year design life based on NTPEP Report [REGEO-2011-01-001](#) and [REGEO-2015-01-002](#).

<sup>3</sup> Long Term Design Strength for sand, silt, clay.  $RF_{CR} = 1.45$ ;  $RF_{ID} = 1.05$ ;  $RF_D = 1.1$  (Installation damage reduction factor for other soils available upon request).

Physical Properties	Unit	Roll Characteristic
Mass/Unit Area (ASTM D5261)	oz/yd <sup>2</sup> (g/m <sup>2</sup> )	7.1 (241)
Roll Dimensions <sup>4</sup> (width x length)	ft (m)	4 x 50 (1.2 x 15) 6 x 150 (1.8 x 46) 12 x 150 (3.6 x 46)
Roll Area	yd <sup>2</sup> (m <sup>2</sup> )	22 (18) 100 (84) 200 (167)
Estimated Roll Weight	lbs (kg)	25 (11) 50 (23) 109 (49)

<sup>4</sup> Special order roll lengths are available upon request.

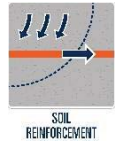
Miragrid<sup>®</sup> 2XT is continuously printed in white on the edge of the roll.

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# Miragrid<sup>®</sup> 3XT

Miragrid<sup>®</sup> 3XT geogrid is composed of high molecular weight, high tenacity polyester multifilament yarns woven in tension and finished with a PVC coating. Miragrid<sup>®</sup> 3XT geogrid is inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids.

Miragrid<sup>®</sup> 3XT geogrid is used as soil reinforcement in MSE structures such as; segmental retaining walls, precast modular block walls, wire faced walls, geosynthetic wrapped faced walls and steepened slopes. Miragrid<sup>®</sup> 3XT is also used in MSE stabilized platforms for voids bridging, embankments on soft soils, landfill veneer stability, reducing differential settlement and for foundation seismic stability.

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Mechanical Properties	Test Method	Unit	Machine Direction Value
Tensile Strength @ Ultimate (MARV <sup>1</sup> )	ASTM D6637 (Method B)	lbs/ft (kN/m)	3500 (51.1)
Tensile Strength @ 5% strain (MARV <sup>1</sup> )	ASTM D6637 (Method B)	lbs/ft (kN/m)	1056 (15.4)
Creep Rupture Strength <sup>2</sup>	ASTM D5262/D6992	lbs/ft (kN/m)	2414 (35.2)
Long Term Design Strength <sup>3</sup>		lbs/ft (kN/m)	2090 (30.5)

<sup>1</sup> Minimum Average Roll Values (MARV) shown above are based on QC Testing per a defined lot not to exceed 12 months. Testing Frequency follows ASTM D4354, Table 1.

<sup>2</sup> 75-year design life based on NTPEP Report [REGE0-2011-01-001](#) and [REGE0-2015-01-002](#).

<sup>3</sup> Long Term Design Strength for sand, silt, clay.  $RF_{CR} = 1.45$ ;  $RF_{ID} = 1.05$ ;  $RF_D = 1.1$  (Installation damage reduction factor for other soils available upon request).

Physical Properties	Unit	Roll Characteristic
Mass/Unit Area (ASTM D5261)	oz/yd <sup>2</sup> (g/m <sup>2</sup> )	7.4 (251)
Roll Dimensions <sup>4</sup> (width x length)	ft (m)	6 x 300 (1.8 x 91) 12 x 150 (3.6 x 46) 12 X 1000 (3.6 x 305)
Roll Area	yd <sup>2</sup> (m <sup>2</sup> )	200 (167) 200 (167) 1333 (1114)
Estimated Roll Weight	lbs (kg)	115 (52) 115 (52) 670 (304)

<sup>4</sup> Special order roll lengths are available upon request.

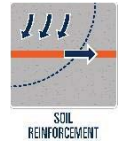
Miragrid<sup>®</sup> 3XT and Tensile Strength direction are continuously printed in white on the edge of the roll.

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# Miragrid<sup>®</sup> 5XT

Miragrid<sup>®</sup> 5XT geogrid is composed of high molecular weight, high tenacity polyester multifilament yarns woven in tension and finished with a PVC coating. Miragrid<sup>®</sup> 5XT geogrid is inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids.

Miragrid<sup>®</sup> 5XT geogrid is used as soil reinforcement in MSE structures such as; segmental retaining walls, precast modular block walls, wire faced walls, geosynthetic wrapped faced walls and steepened slopes. Miragrid<sup>®</sup> 5XT is also used in MSE stabilized platforms for voids bridging, embankments on soft soils, landfill veneer stability, reducing differential settlement and for foundation seismic stability.

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Mechanical Properties	Test Method	Unit	Machine Direction Value
Tensile Strength @ Ultimate (MARV <sup>1</sup> )	ASTM D6637 (Method B)	lbs/ft (kN/m)	4700 (68.6)
Tensile Strength @ 5% strain (MARV <sup>1</sup> )	ASTM D6637 (Method B)	lbs/ft (kN/m)	1740 (25.4)
Creep Rupture Strength <sup>2</sup>	ASTM D5262/D6992	lbs/ft (kN/m)	3241 (47.3)
Long Term Design Strength <sup>3</sup>		lbs/ft (kN/m)	2806 (40.9)

<sup>1</sup> Minimum Average Roll Values (MARV) shown above are based on QC Testing per a defined lot not to exceed 12 months. Testing Frequency follows ASTM D4354, Table 1.

<sup>2</sup> 75-year design life based on NTPEP Report [REGEO-2011-01-001](#) and [REGEO-2015-01-002](#).

<sup>3</sup> Long Term Design Strength for sand, silt, clay.  $RF_{CR} = 1.45$ ;  $RF_{ID} = 1.05$ ;  $RF_D = 1.1$  (Installation damage reduction factor for other soils available upon request).

Physical Properties	Unit	Roll Characteristic
Mass/Unit Area (ASTM D5261)	oz/yd <sup>2</sup> (g/m <sup>2</sup> )	9.3 (315)
Roll Dimensions <sup>4</sup> (width x length)	ft (m)	6 x 300 (1.8 x 91) 12 x 150 (3.6 x 46) 12 X 1000 (3.6 x 305)
Roll Area	yd <sup>2</sup> (m <sup>2</sup> )	200 (167) 200 (167) 1333 (1114)
Estimated Roll Weight	lbs (kg)	135 (61) 135 (61) 831 (376)

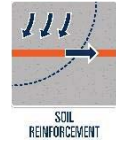
<sup>4</sup> Special order roll lengths are available upon request.

Miragrid<sup>®</sup> 5XT and Tensile Strength direction are continuously printed in white on the edge of the roll.

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# Miragrid<sup>®</sup> 7XT

Miragrid<sup>®</sup> 7XT geogrid is composed of high molecular weight, high tenacity polyester multifilament yarns woven in tension and finished with a PVC coating. Miragrid<sup>®</sup> 7XT geogrid is inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids.

Miragrid<sup>®</sup> 7XT geogrid is used as soil reinforcement in MSE structures such as; segmental retaining walls, precast modular block walls, wire faced walls, geosynthetic wrapped faced walls and steepened slopes. Miragrid<sup>®</sup> 7XT is also used in MSE stabilized platforms for voids bridging, embankments on soft soils, landfill veneer stability, reducing differential settlement and for foundation seismic stability.

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Mechanical Properties	Test Method	Unit	Machine Direction Value
Tensile Strength @ Ultimate (MARV <sup>1</sup> )	ASTM D6637 (Method B)	lbs/ft (kN/m)	5900 (86.1)
Tensile Strength @ 5% strain (MARV <sup>1</sup> )	ASTM D6637 (Method B)	lbs/ft (kN/m)	2160 (31.5)
Creep Rupture Strength <sup>2</sup>	ASTM D5262/D6992	lbs/ft (kN/m)	4069 (59.4)
Long Term Design Strength <sup>3</sup>		lbs/ft (kN/m)	3523 (51.4)

<sup>1</sup> Minimum Average Roll Values (MARV) shown above are based on QC Testing per a defined lot not to exceed 12 months. Testing Frequency follows ASTM D4354, Table 1.

<sup>2</sup> 75-year design life based on NTPEP Report [REGEO-2011-01-001](#) and [REGEO-2015-01-002](#).

<sup>3</sup> Long Term Design Strength for sand, silt, clay. RF<sub>CR</sub> = 1.45; RF<sub>ID</sub> = 1.05; RF<sub>D</sub> = 1.1 (Installation damage reduction factor for other soils available upon request).

Physical Properties	Unit	Roll Characteristic
Mass/Unit Area (ASTM D5261)	oz/yd <sup>2</sup> (g/m <sup>2</sup> )	9.4 (346)
Roll Dimensions <sup>4</sup> (width x length)	ft (m)	6 x 300 (1.8 x 91) 12 x 200 (3.6 x 61) 12 X 1000 (3.6 x 305)
Roll Area	yd <sup>2</sup> (m <sup>2</sup> )	200 (168) 267 (220) 1333 (1114)
Estimated Roll Weight	lbs (kg)	130 (58) 179 (81) 846 (383)

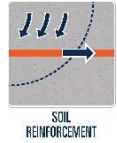
<sup>4</sup> Special order roll lengths are available upon request.

Miragrid<sup>®</sup> 7XT and Tensile Strength direction are continuously printed in white on the edge of the roll.

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# Miragrid<sup>®</sup> 8XT

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Mechanical Properties	Test Method	Unit	Machine Direction Value
Tensile Strength @ Ultimate (MARV <sup>1</sup> )	ASTM D6637 (Method B)	lbs/ft (kN/m)	7400 (108.0)
Tensile Strength @ 5% strain (MARV <sup>1</sup> )	ASTM D6637 (Method B)	lbs/ft (kN/m)	2520 (36.8)
Creep Rupture Strength <sup>2</sup>	ASTM D5262/D6992	lbs/ft (kN/m)	5103 (74.5)
Long Term Design Strength <sup>3</sup>		lbs/ft (kN/m)	4419 (64.5)

<sup>1</sup> Minimum Average Roll Values (MARV) shown above are based on QC Testing per a defined lot not to exceed 12 months. Testing Frequency follows ASTM D4354, Table 1.

<sup>2</sup> 75-year design life based on NTPEP Report [REGEO-2011-01-001](#) and [REGEO-2015-01-002](#).

<sup>3</sup> Long Term Design Strength for sand, silt, clay.  $RF_{CR} = 1.45$ ;  $RF_{ID} = 1.05$ ;  $RF_D = 1.1$  (Installation damage reduction factor for other soils available upon request).

Physical Properties	Unit	Roll Characteristic
Mass/Unit Area (ASTM D5261)	oz/yd <sup>2</sup> (g/m <sup>2</sup> )	10.8 (366)
Roll Dimensions <sup>4</sup> (width x length)	ft (m)	6 x 300 (1.8 x 91) 12 x 200 (3.6 x 61) 12 X 1000 (3.6 x 305)
Roll Area	yd <sup>2</sup> (m <sup>2</sup> )	200 (168) 267 (220) 1333 (1114)
Estimated Roll Weight	lbs (kg)	140 (64) 205 (93) 975 (442)

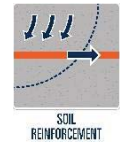
<sup>4</sup> Special order roll lengths are available upon request.

Miragrid<sup>®</sup> 8XT and Tensile Strength direction are continuously printed in white on the edge of the roll.

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# Miragrid<sup>®</sup> 10XT

Miragrid<sup>®</sup> 10XT geogrid is composed of high molecular weight, high tenacity polyester multifilament yarns woven in tension and finished with a PVC coating. Miragrid<sup>®</sup> 10XT geogrid is inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids.

Miragrid<sup>®</sup> 10XT geogrid is used as soil reinforcement in MSE structures such as; segmental retaining walls, precast modular block walls, wire faced walls, geosynthetic wrapped faced walls and steepened slopes. Miragrid<sup>®</sup> 10XT is also used in MSE stabilized platforms for voids bridging, embankments on soft soils, landfill veneer stability, reducing differential settlement and for foundation seismic stability.

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Mechanical Properties	Test Method	Unit	Machine Direction Value
Tensile Strength @ Ultimate (MARV <sup>1</sup> )	ASTM D6637 (Method B)	lbs/ft (kN/m)	9500 (138.6)
Tensile Strength @ 5% strain (MARV <sup>1</sup> )	ASTM D6637 (Method B)	lbs/ft (kN/m)	3120 (45.5)
Creep Rupture Strength <sup>2</sup>	ASTM D5262/D6992	lbs/ft (kN/m)	6552 (95.6)
Long Term Design Strength <sup>3</sup>		lbs/ft (kN/m)	5672 (82.8)

<sup>1</sup> Minimum Average Roll Values (MARV) shown above are based on QC Testing per a defined lot not to exceed 12 months. Testing Frequency follows ASTM D4354, Table 1.

<sup>2</sup> 75-year design life based on NTPEP Report [REGEO-2011-01-001](#) and [REGEO-2015-01-002](#).

<sup>3</sup> Long Term Design Strength for sand, silt, clay. RF<sub>CR</sub> = 1.45; RF<sub>ID</sub> = 1.05; RF<sub>D</sub> = 1.1 (Installation damage reduction factor for other soils available upon request).

Physical Properties	Unit	Roll Characteristic
Mass/Unit Area (ASTM D5261)	oz/yd <sup>2</sup> (g/m <sup>2</sup> )	13.4 (454)
Roll Dimensions <sup>4</sup> (width x length)	ft (m)	12 x 200 (3.6 x 61) 12 X 1000 (3.6 x 305)
Roll Area	yd <sup>2</sup> (m <sup>2</sup> )	267 (220) 1333 (1114)
Estimated Roll Weight	lbs (kg)	255 (116) 1235 (559)

<sup>4</sup> Special order roll lengths are available upon request.

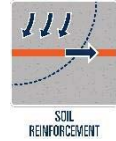
Miragrid<sup>®</sup> 10XT and Tensile Strength direction are continuously printed in white on the edge of the roll.

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# Miragrid<sup>®</sup> 20XT

Miragrid<sup>®</sup> 20XT geogrid is composed of high molecular weight, high tenacity polyester multifilament yarns woven in tension and finished with a PVC coating. Miragrid<sup>®</sup> 20XT geogrid is inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids.

Miragrid<sup>®</sup> 20XT geogrid is used as soil reinforcement in MSE structures such as; segmental retaining walls, precast modular block walls, wire faced walls, geosynthetic wrapped faced walls and steepened slopes. Miragrid<sup>®</sup> 20XT is also used in MSE stabilized platforms for voids bridging, embankments on soft soils, landfill veneer stability, reducing differential settlement and for foundation seismic stability.

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Mechanical Properties	Test Method	Unit	Machine Direction Value
Tensile Strength @ Ultimate (MARV <sup>1</sup> )	ASTM D6637 (Method B)	lbs/ft (kN/m)	13705 (200.0)
Tensile Strength @ 5% strain (MARV <sup>1</sup> )	ASTM D6637 (Method B)	lbs/ft (kN/m)	5340 (77.9)
Creep Rupture Strength <sup>2</sup>	ASTM D5262/D6992	lbs/ft (kN/m)	9452 (137.9)
Long Term Design Strength <sup>3</sup>		lbs/ft (kN/m)	8183 (119.4)

<sup>1</sup> Minimum Average Roll Values (MARV) shown above are based on QC Testing per a defined lot not to exceed 12 months. Testing Frequency follows ASTM D4354, Table 1.

<sup>2</sup> 75-year design life based on NTPEP Report [REGE0-2011-01-001](#) and [REGE0-2015-01-002](#).

<sup>3</sup> Long Term Design Strength for sand, silt, clay.  $RF_{CR} = 1.45$ ;  $RF_{ID} = 1.05$ ;  $RF_D = 1.1$   
(Installation damage reduction factor for other soils available upon request).

Physical Properties	Unit	Roll Characteristic
Mass/Unit Area (ASTM D5261)	oz/yd <sup>2</sup> (g/m <sup>2</sup> )	19.6 (664)
Roll Dimensions <sup>4</sup> (width x length)	ft (m)	12 x 200 (3.6 x 61) 12 x 1000 (3.6 x 305)
Roll Area	yd <sup>2</sup> (m <sup>2</sup> )	267 (220) 1333 (1114)
Estimated Roll Weight	lbs (kg)	360 (163) 1725 (781)

<sup>4</sup> Special order roll lengths are available upon request.

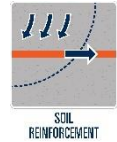
Miragrid<sup>®</sup> 20XT and Tensile Strength direction are continuously printed in white on the edge of the roll.

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# Miragrid<sup>®</sup> 22XT

Miragrid<sup>®</sup> 22XT geogrid is composed of high molecular weight, high tenacity polyester multifilament yarns woven in tension and finished with a PVC coating. Miragrid<sup>®</sup> 22XT geogrid is inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids.

Miragrid 22XT geogrid is used as soil reinforcement in MSE structures such as; segmental retaining walls, precast modular block walls, wire faced walls, geosynthetic wrapped faced walls and steepened slopes. Miragrid 22XT is also used in MSE stabilized platforms for voids bridging, embankments on soft soils, landfill veneer stability, reducing differential settlement and for foundation seismic stability.

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Mechanical Properties	Test Method	Unit	Machine Direction Value
Tensile Strength @ Ultimate (MARV <sup>1</sup> )	ASTM D6637 (Method B)	lbs/ft (kN/m)	20559 (300.0)
Tensile Strength @ 5% strain (MARV <sup>1</sup> )	ASTM D6637 (Method B)	lbs/ft (kN/m)	6700 (97.8)
Creep Rupture Strength <sup>2</sup>	ASTM D5262/D6992	lbs/ft (kN/m)	14179 (206.9)
Long Term Design Strength <sup>3</sup>		lbs/ft (kN/m)	12276 (179.1)

<sup>1</sup> Minimum Average Roll Values (MARV) shown above are based on QC Testing per a defined lot not to exceed 12 months. Testing Frequency follows ASTM D4354, Table 1.

<sup>2</sup> 75-year design life based on NTPEP Report [REGEO-2011-01-001](#) and [REGEO-2015-01-002](#).

<sup>3</sup> Long Term Design Strength for sand, silt, clay.  $RF_{CR} = 1.45$ ;  $RF_{ID} = 1.05$ ;  $RF_D = 1.1$  (Installation damage reduction factor for other soils available upon request).

Physical Properties	Unit	Roll Characteristic
Mass/Unit Area (ASTM D5261)	oz/yd <sup>2</sup> (g/m <sup>2</sup> )	28.2 (956)
Roll Dimensions <sup>4</sup> (width x length)	ft (m)	12 x 200 (3.6 x 61)
Roll Area	yd <sup>2</sup> (m <sup>2</sup> )	267 (220)
Estimated Roll Weight	lbs (kg)	470 (213)

<sup>4</sup> Special order roll lengths are available upon request.

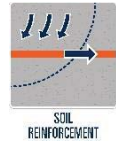
Miragrid<sup>®</sup> 22XT and Tensile Strength direction are continuously printed in white on the edge of the roll.

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# Miragrid<sup>®</sup> 24XT

Miragrid<sup>®</sup> 24XT geogrid is composed of high molecular weight, high tenacity polyester multifilament yarns woven in tension and finished with a PVC coating. Miragrid<sup>®</sup> 24XT geogrid is inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids.

Miragrid<sup>®</sup> 24XT geogrid is used as soil reinforcement in MSE structures such as; segmental retaining walls, precast modular block walls, wire faced walls, geosynthetic wrapped faced walls and steepened slopes. Miragrid<sup>®</sup> 24XT is also used in MSE stabilized platforms for voids bridging, embankments on soft soils, landfill veneer stability, reducing differential settlement and for foundation seismic stability.

TenCate Geosynthetics Americas is accredited by Geosynthetic Accreditation Institute – Laboratory Accreditation Program ([GAI-LAP](#)).

Mechanical Properties	Test Method	Unit	Machine Direction Value
Tensile Strength @ Ultimate (MARV <sup>1</sup> )	ASTM D6637 (Method B)	lbs/ft (kN/m)	27415 (400.0)
Tensile Strength @ 5% strain (MARV <sup>1</sup> )	ASTM D6637 (Method B)	lbs/ft (kN/m)	7000 (102.1)
Creep Rupture Strength <sup>2</sup>	ASTM D5262/D6992	lbs/ft (kN/m)	18907 (275.9)
Long Term Design Strength <sup>3</sup>		lbs/ft (kN/m)	16370 (238.8)

<sup>1</sup> Minimum Average Roll Values (MARV) shown above are based on QC Testing per a defined lot not to exceed 12 months. Testing Frequency follows ASTM D4354, Table 1.

<sup>2</sup> 75-year design life based on NTPEP Report [REGEO-2011-01-001](#) and [REGEO-2015-01-002](#).

<sup>3</sup> Long Term Design Strength for sand, silt, clay.  $RF_{CR} = 1.45$ ;  $RF_{ID} = 1.05$ ;  $RF_D = 1.1$  (Installation damage reduction factor for other soils available upon request).

Physical Properties	Unit	Roll Characteristic
Mass/Unit Area (ASTM D5261)	oz/yd <sup>2</sup> (g/m <sup>2</sup> )	32.6 (1119)
Roll Dimensions <sup>4</sup> (width x length)	ft (m)	12 x 200 (3.6 x 61) 12 x 1000 (3.6 x 305)
Roll Area	yd <sup>2</sup> (m <sup>2</sup> )	267 (220) 1333 (1114)
Estimated Roll Weight	lbs (kg)	595 (270) 2840 (1287)

<sup>4</sup> Special order roll lengths are available upon request.

Miragrid<sup>®</sup> 24XT and Tensile Strength direction are continuously printed in white on the edge of the roll.

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