

Terra Tape® Underground **MARKING TAPES**

PROTECT • IDENTIFY • LOCATE



TerraTape®
DIVISION OF REEF INDUSTRIES, INC.



Don't let pipeline dig-ins ruin your day, prevent them with Terra Tape® Underground Warning Tapes

Table of Contents



- Non-Detectable Underground Marking Tapes 4
- Detectable Underground Marking Tapes 6
- Accessories 8
- Terra Clips - Detectable Tape Connector Kit 9
- Available Options 10
- Education - Modifying your plow 12
- Education - Locating detectable tapes 14

Since 1957 all Terra Tape® products are formulated from 100% virgin polyolefin film chemically inert and will not degrade.

Why Terra Tape® Underground Marking Tapes

Digging can be dangerous and underground utilities are susceptible to interruptions caused by excavation. Not only are outages costly, they can also be hazardous not only to excavation crews but to nearby bystanders. When properly positioned and buried above underground utilities, dig-ins can be prevented by installing Terra Tape underground warning tape. This product is available in detectable and non-detectable constructions and is available in standard APWA color codes.

All Terra Tape products can be custom printed with your name, logo, phone number and/or message in up to four (4) colors. Rolls are readily available in sizes ranging from 2" x 1,000' to 6" x 6,000'. Designed for all budgets and site needs, Terra Tape is available in an economy grade to highly elastic, superior underground tape.

APWA Uniform Colors

Color	Application
Red	Electric Power Lines, Cables, Conduit, Lighting Cables
Yellow	Gas, Oil, Steam, Petroleum
Orange	Fiber Optic Lines, Telecommunication, Signal lines, Cables, Conduit
Blue	Water Lines, Portbale Water
Green	Sewers, Drain Lines

Non-Detectable **Underground Marking Tapes**



Products

Security Shield

Is a heavy duty warning tape for those projects requiring a robust early warning identification for protection of underground utilities. Built from multiple layers of multi-axially oriented films. Security Shield provides premier notification to protect buried piping or communication systems.

Extra Stretch™

Helps to prevent the high cost of accidental line damage and the inconvenience of utility line service interruptions.

A combination of high tensile strength, puncture resistance and elongation properties, makes it the ideal choice for protecting telecommunication, electric, gas and other utilities! Extra Stretch™ is capable of stretch-

ing above grade level in one continuous piece, ensuring job site personnel and machine operators will be alerted to stop digging immediately and contact the appropriate authorities.

Extra Stretch™ II

Very good tensile strength and very high elongation. Extra Stretch™ II is also suitable for static or vibratory cable plow installations.

Standard

Designed to suit your budget and project requirements, it can be used for static cable plow installations.

Economy

A light gauge product designed for your budget. Not suitable for plow installations.

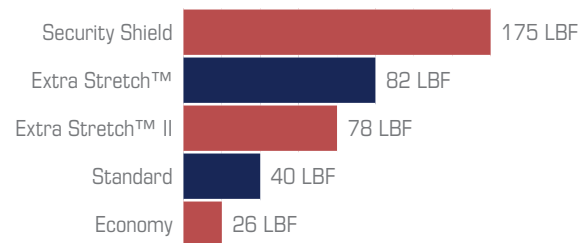
Continuous protection,
identification & location of your
underground utility lines.

Features and Benefits

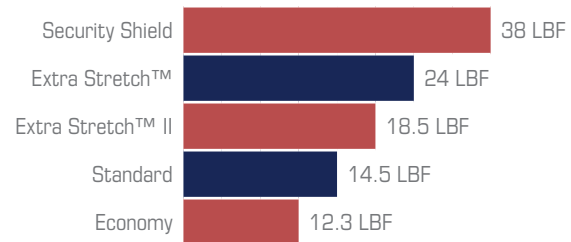
- Terra Tape® Non-Detectable tapes are all 100% virgin polyethylene film with a printed message
- The ink used in printing is permanent and cannot be removed by normal handling or upon burial
- The material and ink are chemically inert and will not degrade when exposed to acids, alkalies and other destructive substances commonly found in soil
- Lasts longer than the utility line
- Minimal installation costs
- Can be installed by plows at same time as utility line (depending on product)

Physical Properties & Values

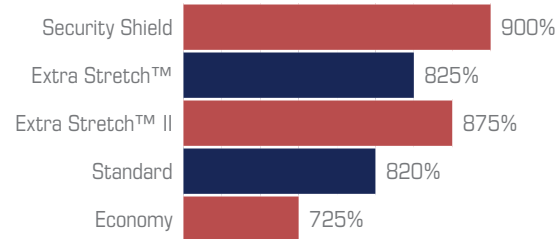
■ 3" Tensile Strength



■ PPT Resistance



■ Elongation



Detectable **Underground Marking Tapes**



Products

Sentry Line™ Detectable

May be located by inductive or conductive methods utilizing most standard pipe and cable locators.

Color coded for application and non-adhesively laminated, Sentry Line™ tapes are colorfast and chemically inert for lifetime stability underground and have been successfully located more than twenty years after interment.

Sentry Line™ Reinforced Detectable

Top of the line in detectable tapes with superior tensile strength, puncture resistance and elongation this allows it to withstand the rigors of being plowed in without breaking.

This also makes it ideal for situations where site conditions are difficult.

Ideal Tape Placement

- 2" width up to 12" deep
- 3" width up to 24" deep
- 6" width up to 36" deep



Factors that may affect location

- Type and sensitivity of locator being utilized
- Type of location method being utilized
- Distance the receiver is from the transmitter
- Location of other metallic underground structures to the tape
- Experience of the person using the locator with the operation of that model of locator
- Type of soil and/or surfaces above marking tape
- Moisture level of the soil
- Condition of batteries in locator

Features and Benefits

- The solid foil core is encased between an HDPE scrim coated with 100% virgin polyethylene pigmented resins and a clear protective film that allows a full view of the foil to ensure continuity. The solid core provides detectability utilizing a pipe and cable locator in either the inductive or conductive modes
- Terra Clips (available as an accessory item) are designed to allow you to connect multiple rolls, laterals or tees while maintaining electrical continuity
- The ink used to print the material is permanent and cannot be removed by normal handling or upon burial
- The material and ink are chemically inert and will not degrade when exposed to acids, alkalies and other destructive substances commonly found in soil
- Sentry Line™ tapes are available in the colors red, yellow, blue, green and orange. Other colors may be available upon request.



Physical Properties & Values

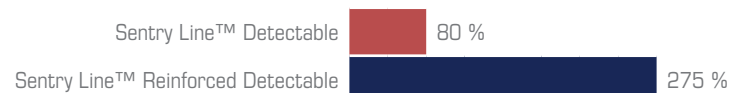
■ 3" Tensile Strength



■ PPT Resistance



■ Elongation



Terra Clips • Detectable Tape Connector Kit

Terra Clips are used to make an electrical connection to the solid aluminum foil in Sentry Line™ tape. They can be utilized when locating conductively and when locating inductively.

Make sure the tape is free of dirt before beginning the process.



1
Overlap two ends of detectable tape being spliced by 6-10 inches.



2
Place one clip on each side of the overlapping sections and crimp each clip securely with pliers.



3
Remove the release paper from the adhesive sealing tape.



4
Cover the clip completely, this will form a waterproof seal.



5
Repeat steps 3 and 4 for each additional clip.



6
Bury the completed splice manually.

Terra Clips electrically connect sections of tape by piercing the protective plastic jacket of the tape that encases the foil. The electrical continuity of the connections can be tested with an ohmmeter. The resistance between the clips should be zero ohms.

Accessories



Dispenser Reels and Handles

These allow to rapidly install in a trench by simply holding the roll over the trench while walking along side.



Dispenser Boxes

For more efficient use when traveling from job site to job site.

Terra Tape® accessories are available and ideal for those who appreciate a versatile and convenient installation.

Depending on your needs, we offer dispenser reels, boxes, and a connection kit.

Available Options



Custom Printing

All Terra Tape® products are printed in permanent black ink on colored tape and can be custom printed with your company name, logo, phone number and/or message in up to four different colors.

Other options

- Plastic Cores
- Individual or custom boxing
- Large diameter sideboards and core plugs for long lengths
- Export Packaging / Paperwork

Stock Sizes

All Terra Tape® products are available in:

- 3"x1000' rolls
- 3"x6000' rolls
- 6"x1000' rolls
- 6"x6000' rolls
- All 6,000' rolls are on plastic cores

Not all options may be available on all materials and minimum order may apply.

That moment when you realize
you should have installed

TerraTape
DIVISION OF REEF INDUSTRIES, INC.

Underground Warning Tapes



Education



Modifying your plow

Plow modification enabling the installation of Terra Tape® is straightforward and relatively simple.

The following tips should help to ensure satisfactory operation.

Vibratory Plow Roll Mount

Roll mount should be on the tractor to avoid vibration of the shank.

Roll can be mounted on its side or upright, in either case, utilizing a method minimizing rolling friction as much as possible.

Recommended Products:

- Security Shield
- Extra Stretch™
- Extra Stretch™ II

Static Plow Roll Mount

Roll mount should be directly above tape. The axle mount should allow free rotation and minimize friction.

Recommended Products:

- Security Shield
- Extra Stretch™
- Extra Stretch™ II
- Standard



The Chute

The top portion of chute must be directed toward where the tape is coming from and fluted or opened up in a funnel shape as much as possible with no rough edges.

Use a thin walled pipe with as large an inside diameter as possible, but not wider than the widest part of the plow shank. Curves or bends must be as gentle as possible with no burrs or rough spots inside the pipe, especially at the entrance and exit points.

If high winds cause the tape to unspool, use large hoops or short sections of pipe as needed for the tape to travel through until it reaches the tape chute.

If directional changes in tape are required the use of a roller is preferred.

The Tape Chute

Must be adjustable up and down along the back of the plow shank to allow for the tape to be installed at the correct depth even if the cable depth needs to be altered.

Use three or more adjustable brackets to hold the chute to the back of the plow shank. *The type of brackets used will vary depending on type of plow used.* The brackets should be welded to the back of the plow shank and centered so the tape chute travels directly behind the shank without touching the ground while being pulled through the earth.

Side Flanges

Diameter of side flanges should be at least as large as the diameter of the tape being installed.

These are available as an option or can be made from steel or plywood.

Education



Locating Detectable Tape

Inductive Locating

Place the transmitter portion of the locator directly above and parallel to a known section of tape to induce the signal through the ground onto the tape. Alternatively, an inductive couple can be used if a section of the tape is accessible. The transmitter should be in the radio or high frequency mode.

Sweep the receiver in a circle around the transmitter approximately 20 to 50 feet from the transmitter until the signal from the tape is found.

Attempting to get closer than this to the transmitter can result in false location due to the transmitter overpowering the receiver.

Once the tape is found, continue locating until the signal strength drops off. Mark this spot, move the transmitter to the spot and continue as above.

During installation, the ends of each roll, lateral, or tee should be overlapped at least a foot or more to avoid dead spots while locating.

Inductive locating is the most widely used location method for marking tape and is the easiest to install. No electrical connections of individual rolls are required during installation and no access to the tape is required during location.

For specific information on locating with your brand and model of locator refer to your locator manual or contact the manufacturer.



Conductive Locating

With the conductive method you must make an electrical connection with the solid aluminum core inside the tape from roll to roll during installation and onto the tape when locating. Terra Clips, an accessory item, make the necessary electrical connections.

Using the transmitter, in audio frequency or low frequency mode, connect to a section of tape using a Terra Clip. Leaving a few feet of tape in a pedestal or riser box provides easy access and avoids requiring the tape be dug up.

A ground rod or ground plane is then connected to the transmitter and placed at a 90° angle to the tape.

Location is then performed in the same way as in the inductive method. The distance the locator is capable of locating under the installed conditions must be taken into account before the installation is started to ensure that the distance between access points is not greater than one half the maximum location distance.



TerraTape

DIVISION OF REEF INDUSTRIES, INC.

Jeff Henderson • Product Manager

9209 Almeda Genoa Rd. • Houston, Texas 77075

P: 1.800.231.6074 • www.terratape.com



Imprints on 3" wide stock items are one line:

CAUTION _____ BURIED BELOW

Imprints on all 6" wide stock items are two lines:

**CAUTION CAUTION
_____ BURIED BELOW**

The word or words shown below replace the blank line. All stock imprints are printed in permanent black ink.

This list represents stock items only and does not include custom items, seasonally stocked items, overruns or discontinued items that might be available. Please contact us if you do not see an item you require.

Economy (NON-DETECTABLE)

42-0104	RED	3" X 1000'	ELECTRIC LINE
42-0105	RED	6" X 1000'	ELECTRIC LINE

Standard (NON-DETECTABLE)

42-0002	ORG	3" X 1000'	CATV CABLE
42-0004	ORG	3" X 1000'	COMMUNICATION CABLE
42-0007	ORG	6" X 1000'	COMMUNICATION CABLE
42-0001	ORG	3" X 1000'	FIBER OPTIC CABLE
42-0005	ORG	3" X 6000'	FIBER OPTIC CABLE
42-0008	ORG	6" X 1000'	FIBER OPTIC CABLE
42-0003	ORG	3" X 1000'	TELEPHONE CABLE
42-0006	ORG	3" X 6000'	TELEPHONE CABLE
42-0010	ORG	6" X 1000'	TELEPHONE CABLE
42-0106	RED	3" X 1000'	ELECTRIC LINE
42-0108	RED	6" X 1000'	ELECTRIC LINE
42-0054	YEL	3" X 1000'	ELECTRIC LINE
42-0059	YEL	6" X 1000'	ELECTRIC LINE
42-0053	YEL	3" X 1000'	GAS LINE
42-0058	YEL	6" X 1000'	GAS LINE
42-0060	YEL	6" X 1000'	PIPELINE
42-0056	YEL	3" X 1000'	CATHODIC PROTECTION LINE
42-0075	BLU	3" X 1000'	WATER LINE
42-0076	BLU	6" X 1000'	WATER LINE
42-0114	GRN	3" X 1000'	SEWER LINE
42-0115	GRN	6" X 1000'	SEWER LINE

Extra Stretch® II (NON-DETECTABLE)

42-0158	ORG	3" X 1000'	FIBER OPTIC CABLE
42-0159	ORG	3" X 6000'	FIBER OPTIC CABLE
42-0162	ORG	6" X 1000'	FIBER OPTIC CABLE
42-0163	ORG	6" X 6000'	FIBER OPTIC CABLE
42-0165	ORG	6" X 6000'	TELEPHONE CABLE
42-0166	ORG	3" X 1000'	COMMUNICATION CABLE
42-0167	ORG	3" X 6000'	COMMUNICATION CABLE

Extra Stretch® (NON-DETECTABLE)

42-0021	ORG	3" X 1000'	FIBER OPTIC CABLE
42-0026	ORG	3" X 6000'	FIBER OPTIC CABLE
42-0028	ORG	6" X 1000'	FIBER OPTIC CABLE
42-0033	ORG	6" X 6000'	FIBER OPTIC CABLE
42-0024	ORG	3" X 1000'	TELEPHONE CABLE
42-0027	ORG	3" X 6000'	TELEPHONE CABLE
42-0030	ORG	6" X 1000'	TELEPHONE CABLE
42-0119	RED	3" X 1000'	ELECTRIC LINE
42-0120	RED	6" X 1000'	ELECTRIC LINE
42-0081	YEL	3" X 1000'	GAS LINE
42-0084	YEL	6" X 1000'	GAS LINE



STOCK ITEM LIST

Sentry Line® Detectable

42-0039	ORG	3" X 1000'	COMMUNICATIONS CABLE
42-0042	ORG	6" X 1000'	COMMUNICATIONS CABLE
42-0037	ORG	3" X 1000'	FIBER OPTIC CABLE
42-0040	ORG	6" X 1000'	FIBER OPTIC CABLE
42-0064	YEL	3" X 1000'	ELECTRIC LINE
42-0069	YEL	6" X 1000'	ELECTRIC LINE
42-0110	RED	3" X 1000'	ELECTRIC LINE
42-0112	RED	6" X 1000'	ELECTRIC LINE
42-0111	RED	3" X 1000'	HIGH VOLTAGE CABLE
42-0063	YEL	3" X 1000'	GAS LINE
42-0068	YEL	6" X 1000'	GAS LINE
42-0100	BLU	2" X 1000'	WATER LINE
42-0073	BLU	3" X 1000'	WATER LINE
42-0074	BLU	6" X 1000'	WATER LINE
42-0125	GRN	2" X 1000'	SEWER LINE
42-0116	GRN	3" X 1000'	SEWER LINE
42-0117	GRN	6" X 1000'	SEWER LINE

Sentry Line® Reinforced Detectable

42-0046	ORG	6" X 1000'	FIBER OPTIC CABLE
42-0122	RED	6" X 1000'	ELECTRIC LINE

Terra Clips to use with Sentry Line®

Required to maintain continuity from roll to roll when conductively locating detectable tape.

60-0085	TERRA CLIPS - BAG OF 10
---------	-------------------------

Accessories

75-0014	DISPENSER BOXES - REUSABLE (FOR 3" x 1000' ECONOMY OR STANDARD)
75-0043	DISPENSER BOXES - REUSABLE (FOR 6" x 1000' ECONOMY OR STANDARD)
60-0090	REELS AND HANDLES - WITH <i>SIDEBOARDS</i> (FOR USE WITH ANY 3" x 1000' TERRA TAPE® PRODUCT)
60-0094	REELS AND HANDLES - WITH <i>SIDEBOARDS</i> (FOR USE WITH ANY 6" x 1000' TERRA TAPE® PRODUCT)

APWA UNIFORM COLOR CODE

(ANSI STANDARD Z 535.1)

RED	ELECTRIC POWER LINES, CABLES, CONDUIT AND LIGHTING CABLES
YELLOW	GAS, OIL, STEAM, PETROLEUM OR GASEOUS MATERIALS
ORANGE	COMMUNICATION, ALARM, OR SIGNAL LINES, CABLES OR CONDUITS
BLUE	POTABLE WATER
GREEN	SEWER AND DRAIN LINES

All 6,000 foot rolls are shipped on plastic cores. All products are shipped in cardboard cartons, larger orders ship in cardboard cartons secured to wood pallets.

Any Terra Tape® products can be custom printed with your own message, insignia or logo in up to four different ink colors.

Other options include roll lengths to 10,000 feet and widths up to 48 inches, sideboards for 6,000 foot rolls, plastic cores, end of roll indicators, multiple color imprints, custom packaging, export documentation and many more. Please ask your salesperson which option can be applied to the materials you are interested in.

All information subject to change without notice



TERRA TAPE®

SECURITY SHIELD

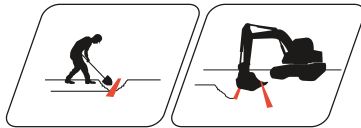
UNDER DEVELOPMENT



■ Description

Terra Tape® Security Shield is a 100% virgin pigmented polyolefin film with a printed message on one side.

Constructed by mechanical (non-adhesive) lamination of two plies of three ply blown film to produce the bi-axially oriented six ply structure.



■ Features and Benefits

- The ink used to print the material is permanent and cannot be removed by normal handling or upon long term underground burial.
- The material and ink are chemically inert and will not degrade when exposed to acids, alkalies and other destructive substances commonly found in soil.
- The material is available in red, orange and yellow. Other colors may be available upon request.

■ Suggested Applications

- Designed to protect, identify and locate underground utility lines.

■ Physical Properties & Typical Values

PROPERTY	ASTM TEST METHOD	U.S. VALUE	METRIC VALUE
Thickness Overall	D-2103	17.0 MIL	0.43 mm
Weight	D-2103	66 LBS/1000 FT ²	30 Kg/100 m ²
3" Load @ Yield	D-882	72 LBF	320 N
		1400 Psi	9.6 Mpa
6" Load @ Yield (Calculated Value)	D-882	144 LBF	640 N
		1400 Psi	9.6 Mpa
3" Load @ Break	D882	175 LBF	778 N
		3400 Psi	23.4 Mpa
Elongation	D-882	900%	900%
Trapezoidal Tear	D-4533	36 LBF	160 N
Printability	D-2578	≥ 40 Dynes	≥ 40 Dynes

The information provided herein is based upon data believed to be reliable. All testing is performed in accordance with ASTM standards and procedures. All values are typical and nominal and do not represent either minimum or maximum performance of the product. Although the information is accurate to the best of our knowledge and belief, no representation of warranty or guarantee is made as to the suitability or completeness of such information. Likewise, no representation of warranty or guarantee, expressed or implied, or merchantability, fitness or otherwise, is made as to product application for a particular use.

MADE IN THE USA

TERRA TAPE® SECURITY SHIELD

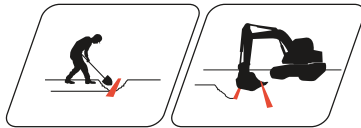
TERRA TAPE® EXTRA STRETCH™



■ Description

Terra Tape® Extra Stretch™ is a 100% virgin pigmented polyolefin film with a printed message on one side.

Constructed by mechanical (non-adhesive) lamination of two plies of three ply blown film to produce the bi-axially oriented six ply structure.



■ Features and Benefits

- The ink used to print the material is permanent and cannot be removed by normal handling or upon long term underground burial.
- The material and ink are chemically inert and will not degrade when exposed to acids, alkalies and other destructive substances commonly found in soil.
- The material is available in red, orange and yellow. Other colors may be available upon request.

■ Suggested Applications

- Designed to protect, identify and locate underground utility lines.

■ Physical Properties & Typical Values

PROPERTY	ASTM TEST METHOD		U.S. VALUE	METRIC VALUE
Thickness Overall	D-2103		9.0 MIL	0.23 mm
Weight	D-2103		30 LBS/1000 FT ²	14.6 Kg/100 m ²
3" Load @ Yield	D-882	MD	35 LBF	156 N
		TD	36 LBF	160 N
6" Load @ Yield (Calculated Value)	D-882	MD	70 LBF	311 N
		TD	72 LBF	320 N
3" Load @ Break	D-882	MD	82 LBF	365 N
		MD	3025 Psi	20.9 Mpa
Elongation	D-882	MD	825%	825%
Tongue Tear	D-1938		13 LBF	57.8 N
Trapezoidal Tear	D-4533		15 LBF	66.7 N
PPT Resistance	D-2582		24 LBF	106.8 N
Dart Impact	D-1709 (B)		1.7 LBS	0.8 Kg
Printability	D-2578		≥ 40 Dynes	≥ 40 Dynes

The information provided herein is based upon data believed to be reliable. All testing is performed in accordance with ASTM standards and procedures. All values are typical and nominal and do not represent either minimum or maximum performance of the product. Although the information is accurate to the best of our knowledge and belief, no representation of warranty or guarantee is made as to the suitability or completeness of such information. Likewise, no representation of warranty or guarantee, expressed or implied, or merchantability, fitness or otherwise, is made as to product application for a particular use.

MADE USA
IN THE

EXTRA STRETCH™

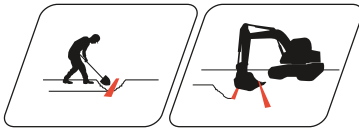
TERRA TAPE®

TERRA TAPE® EXTRA STRETCH™ II



■ Description

Terra Tape® Extra Stretch™ II is a 100% virgin pigmented polyolefin film with a printed message on one side.



■ Features and Benefits

- The ink used to print the material is permanent and cannot be removed by normal handling or upon long term underground burial.
- The material and ink are chemically inert and will not degrade when exposed to acids, alkalis and other destructive substances commonly found in soil.
- The material is available in orange. Other colors may be available upon request.

■ Suggested Applications

- Designed to protect, identify and locate underground utility lines.

■ Physical Properties & Typical Values

PROPERTY	ASTM TEST METHOD		U.S. VALUE	METRIC VALUE
Thickness Overall	D-2103		6 MIL	0.15 mm
Weight	D-2103		29 LBS/1000 FT ²	14.2 Kg/100 m ²
3" Load @ Yield	D-882	MD	30 LBF	133 N
		TD	27 LBF	120 N
6" Load @ Yield (Calculated Value)	D-882	MD	60 LBF	267 N
		TD	54 LBF	240 N
3" Load @ Break	D-882	MD	78 LBF	347 N
		MD	4480 Psi	30.9 Mpa
Elongation	D-882	MD	875%	875%
Tongue Tear	D-1938		6 LBF	27 N
Trapezoidal Tear	D-4533		13 LBF	58 N
PPT Resistance	D-2582		18.5 LBF	82 N
Dart Impact	D-1709 (B)		1.6 LBF	0.73 Kg
Printability	D-2578		≥ 40 Dynes	≥ 40 Dynes

The information provided herein is based upon data believed to be reliable. All testing is performed in accordance with ASTM standards and procedures. All values are typical and nominal and do not represent either minimum or maximum performance of the product. Although the information is accurate to the best of our knowledge and belief, no representation of warranty or guarantee is made as to the suitability or completeness of such information. Likewise, no representation of warranty or guarantee, expressed or implied, or merchantability, fitness or otherwise, is made as to product application for a particular use.

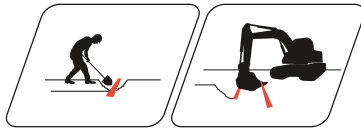
MADE IN THE USA

EXTRA STRETCH™ II

TERRA TAPE®

■ Description

Terra Tape® Economy is a 100% virgin pigmented polyolefin film with a printed message on one side.



■ Features and Benefits

- The ink used to print the material is permanent and cannot be removed by normal handling or upon long term underground burial.
- The material and ink are chemically inert and will not degrade when exposed to acids, alkalis and other destructive substances commonly found in soil.
- The material is available in red, orange, yellow, blue and green. Other colors may be available upon request.

■ Suggested Applications

- Designed to protect, identify and locate underground utility lines.

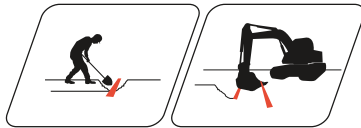
■ Physical Properties & Typical Values

PROPERTY	ASTM TEST METHOD		U.S. VALUE	METRIC VALUE
Thickness Overall	D-2103		4.0 MIL	0.1 mm
Weight	D-2103		19.6 LBS/1000 FT ²	8.8 Kg/100 m ²
3" Load @ Yield	D-882	MD	20 LBF	89 N
		TD	19 LBF	85 N
6" Load @ Yield (Calculated Value)	D-882	MD	40 LBF	178 N
		TD	38 LBF	170 N
3" Load @ Break	D-882	MD	40 LBF	178 N
		MD	3400 Psi	23.4 Mpa
Elongation	D-882	MD	820%	820%
Tongue Tear	D-1938		3.8 LBF	17 N
Trapezoidal Tear	D-4533		8.5 LBF	38 N
PPT Resistance	D-2582		14.5 LBF	65 N
Dart Impact	D-1709 (B)		2.0 LBS	0.9 Kg
Printability	D-2578		≥ 40 Dynes	≥ 40 Dynes

The information provided herein is based upon data believed to be reliable. All testing is performed in accordance with ASTM standards and procedures. All values are typical and nominal and do not represent either minimum or maximum performance of the product. Although the information is accurate to the best of our knowledge and belief, no representation of warranty or guarantee is made as to the suitability or completeness of such information. Likewise, no representation of warranty or guarantee, expressed or implied, or merchantability, fitness or otherwise, is made as to product application for a particular use.

■ Description

Terra Tape® Economy is a 100% virgin pigmented polyolefin film with a printed message on one side.



■ Features and Benefits

- The ink used to print the material is permanent and cannot be removed by normal handling or upon long term underground burial.
- The material and ink are chemically inert and will not degrade when exposed to acids, alkalies and other destructive substances commonly found in soil.
- The material is available in red or yellow. Other colors may be available upon request.

■ Suggested Applications

- Designed to protect, identify and locate underground utility lines.

■ Physical Properties & Typical Values

PROPERTY	ASTM TEST METHOD		U.S. VALUE	METRIC VALUE
Thickness Overall	D-2103		3.0 MIL	0.08 mm
Weight	D-2103		14.5 LBS/1000 FT ²	7.1 Kg/100 m ²
3" Load @ Yield	D-882	MD	16.0 LBF	71 N
		TD	13.5 LBF	60 N
6" Load @ Yield (Calculated Value)	D-882	MD	32 LBF	142 N
		TD	27 LBF	120 N
3" Load @ Break	D-882	MD	26 LBF	116 N
		MD	2850 Psi	19.7 Mpa
Elongation	D-882	MD	725%	725%
Tongue Tear	D-1938		2.5 LBF	11 N
Trapezoidal Tear	D-4533		7.0 LBF	31 N
PPT Resistance	D-2582		12.3 LBF	55 N
Dart Impact	D-1709 (B)		1.4 LBS	0.64 Kg
Printability	D-2578		≥ 40 Dynes	≥ 40 Dynes

The information provided herein is based upon data believed to be reliable. All testing is performed in accordance with ASTM standards and procedures. All values are typical and nominal and do not represent either minimum or maximum performance of the product. Although the information is accurate to the best of our knowledge and belief, no representation of warranty or guarantee is made as to the suitability or completeness of such information. Likewise, no representation of warranty or guarantee, expressed or implied, or merchantability, fitness or otherwise, is made as to product application for a particular use.

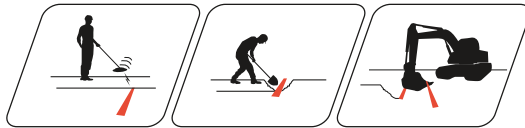
TERRA TAPE®

SENTRY LINE® REINFORCED DETECTABLE



■ Description

Sentry Line® Reinforced Detectable is a four layer laminate consisting of 100% virgin solid pigmented polyolefin film, polyester laid scrim, solid aluminum foil and a clear encapsulating film.



■ Features and Benefits

- A clear protective film allows a full view of the foil to ensure continuity. The solid core provides detectability utilizing either the inductive or conductive modes using a pipe and cable locator.
- Terra Clips (available as an accessory item) are designed to allow you to connect multiple rolls, laterals or tees while maintaining electrical continuity.
- The material and ink are chemically inert and will not degrade when exposed to acids, alkalies and other destructive substances commonly found in soil.

- The ink used to print the material is permanent and cannot be removed by normal handling or upon burial.
- Sentry Line Reinforced Detectable is available in the colors orange and red. Other colors may be available upon request.

■ Suggested Applications

- Designed to protect, identify and locate underground utility lines.

■ Physical Properties & Typical Values

PROPERTY	ASTM TEST METHOD		U.S. VALUE	METRIC VALUE
Thickness Overall	D-2103		8.0 MIL	0.20 mm
Weight	D-751		43 LBS/1000 FT ²	21 Kg/100 m ²
3" Load @ Yield	D-882	MD	125 LBF	556 N
		TD	140 LBF	623 N
6" Load @ Yield (Calculated Value)	D-882	MD	250 LBF	1112 N
		TD	280 LBF	1246 N
3" Load @ Break	D-882	MD	70 LBF	311 N
		MD	2917 Psi	20.1 Mpa
Elongation	D-882	MD	275%	275%
Tongue Tear	D-2261		12 LBF	53 N
Trapezoidal Tear	D-4533		24 LBF	107 N
PPT Resistance	D-2582		25.0 LBF	110 N
Dart Impact	D-1709 (B)		1.6 LBS	0.7 Kg.
Printability	D-2578		≥ 40 Dynes	≥ 40 Dynes

The information provided herein is based upon data believed to be reliable. All testing is performed in accordance with ASTM standards and procedures. All values are typical and nominal and do not represent either minimum or maximum performance of the product. Although the information is accurate to the best of our knowledge and belief, no representation of warranty or guarantee is made as to the suitability or completeness of such information. Likewise, no representation of warranty or guarantee, expressed or implied, or merchantability, fitness or otherwise, is made as to product application for a particular use.

TERRA TAPE® SENTRY LINE® DETECTABLE



■ Description

Sentry Line® Detectable is a tri-layer laminate consisting of a 100% virgin polyolefin pigmented film, a solid aluminum foil core and a clear encapsulating film.



■ Features and Benefits

- A clear protective film allows a full view of the foil to ensure continuity. The solid core provides detectability utilizing either the inductive or conductive modes using a pipe and cable locator.
- Terra Clips (available as an accessory item) are designed to allow you to connect multiple rolls, laterals or tees while maintaining electrical continuity.
- The material and ink are chemically inert and will not degrade when exposed to acids, alkalies and other destructive substances commonly found in soil.

- The ink used to print the material is permanent and cannot be removed by normal handling or upon burial.
- Sentry Line® Detectable is available in the colors red, orange, yellow, blue and green. Other colors may be available upon request.

■ Suggested Applications

- Designed to protect, identify and locate underground utility lines.

■ Physical Properties & Typical Values

PROPERTY	ASTM TEST METHOD		U.S. VALUE	METRIC VALUE
Thickness Overall	D-2103		6.0 MIL	0.15 mm
Weight	D-751		32 LBS/1000 FT ²	15.6 Kg/100 m ²
3" Load @ Yield	D-882	MD	70 LBF	311 N
		TD	65 LBF	289 N
6" Load @ Yield (Calculated Value)	D-882	MD	140 LBF	622 N
		TD	130 LBF	578 N
3" Load @ Break	D-882	MD	45 LBF	200 N
		MD	2459 Psi	25 Mpa
Elongation	D-882	MD	80%	80%
Tongue Tear	D-1938		6.5 LBF	29 N
Trapezoidal Tear	D-4533		11.5 LBF	51 N
PPT Resistance	D-2582		9.5 LBF	42 N
Dart Impact	D-1709 (B)		1.60 LBS	0.73 Kg.
Printability	D-2578		≥ 40 Dynes	≥ 40 Dynes

The information provided herein is based upon data believed to be reliable. All testing is performed in accordance with ASTM standards and procedures. All values are typical and nominal and do not represent either minimum or maximum performance of the product. Although the information is accurate to the best of our knowledge and belief, no representation of warranty or guarantee is made as to the suitability or completeness of such information. Likewise, no representation of warranty or guarantee, expressed or implied, or merchantability, fitness or otherwise, is made as to product application for a particular use.

MADE IN THE USA

TERRA TAPE® SENTRY LINE® DETECTABLE