

briteline

Saving lives by making our roads brighter.™

Product Catalog

revised April 2021

Brite-Line® LLC

COMPANY OVERVIEW AND HISTORY

Brite-Line® LLC is a worldwide manufacturer and marketer of removable, durable and intersection grade pavement marking tapes. Since 1986, our products have undergone extensive laboratory and field testing, developing a highly successful track record of commercial installations throughout the United States, Europe and Asia. Our field representatives are pavement marking experts ready to assist with all applications. Distribution centers are located in Baltimore, Chicago, Denver, Frankfurt, Paris, Sydney, and Beijing.

Brite-Line® was founded in 1989 as an R&D Company by Charles Wyckoff, an American photographic innovator and photochemist specializing in high speed photography. He is also noted for his innovations in the field of high dynamic range imaging.

Born in Cleveland, Ohio, Wyckoff was a graduate of Dartmouth College. He later did postgraduate work at the Massachusetts Institute of Technology with Harold Edgerton, graduating from MIT in 1941. After World War II he worked with Edgerton to develop techniques to photograph atomic experiments in the Pacific Ocean. With little resources in the field, he solved chronic fogging problems during tests in the Marshall Islands in 1954, thus saving the entire photographic record of the project. He was later engaged by CBS to analyze the famous Zapruder film of the Kennedy assassination. In 1975, with Edgerton and Robert Rines he made headlines by allegedly photographing the Loch Ness monster.

Wyckoff's interest in highway markings began after the death of his son, who was killed by a wrong-way driver in a construction zone in 1994.

Prior to joining the company, Brite-Line® President Kevin White was EVP of Interstate Safety Lines in Boston, MA, a company he co-founded in the 1970s. He managed over \$50 million of pavement marking contracts in 25 states during that time, in the 1980s, and served as a Director of the Citizens for Highway Safety that successfully sponsored congressional legislation to permanently establish Federal funding of durable pavement markings. White received a B.A. in History/Government from Harvard University.

Our mission: Form lasting alliances with our partners to achieve the safest roads possible.

Our vision: To become the most trusted and reliable manufacturer of pavement marking tape.

Table of Contents

PRODUCT CARDS

Deltaline®
100 Removable
100 Removable Blackout
1000 Durable

PRODUCT DATA SHEETS

Deltaline® XRP
Deltaline® XRP-R & HCL-R
Deltaline® HDX
Deltaline® BXP
Deltaline® TWR
Deltaline® BTR
100 Removable
100 Removable Blackout
1000 Durable

APPLICATION INSTRUCTIONS

Deltaline® XRP, XRP-R, HDX, HCL, BXP
Deltaline® TWR
Deltaline® BTR
100 Removable & 100 Removable Blackout
1000 Durable
C-20 Primer Brite-Sky
D-20 Durable Tape Primer

SAFETY DATA SHEETS

Highway Marking Tapes Series 100, 200, 1000, 2000, Deltaline®
P-20 Removable Tape Primer
C-20 Primer Brite-Sky
D-20 Durable Tape Primer

DIMENSIONED ARTWORK

Arrows Left Turn, Right Turn, Left Turn Combo, Right Turn Combo, Straight, Right Lane Drop, Left Lane Drop
Legends ONLY, STOP, AHEAD, SCHOOL, PED, SLOW, XING, YIELD, R, MPH, LANE, MERGE, BIKE, BUS

Product Cards





Profiled pavement marking tapes with the light-bouncing ridge.



Deltaline® is the original — designed for long lasting reflective performance and dramatically improved nighttime visibility on both wet and dry pavements. The patented retroreflective system utilizes a unique ridged pattern and hybrid ceramic microspheres to guarantee bright, safer lane markings that outlast and outshine all others.

Product Benefits:

- Superior reflectivity for the life of the line provided by ridged profile design.
- Superior durability and bead adhesion due to high performance polyurethane topcoat.
- Exceptional nighttime visibility on both wet and dry pavements.
- Greater visibility from all viewing angles.
- The BTR ridged profile design provides superior black out characteristics for all light conditions.

Application Benefits:

- Greater performance in extreme temperatures provided by a specially designed adhesive system.
- XRP, HCL and HDX tape can be inlaid while paving due to heat stable raw materials.
- Construction zones may be opened to traffic immediately after application.
- Contractor installation support from a comprehensive field service organization.

Material Benefits:

- Weather resistant raw materials provide long lasting color and visibility
- Roll goods available in various widths and lengths, including metric sizes
- Available in symbols, legends and custom orders.

Manufactured in the U.S.A.

del•ta [del-tuh] -noun

1. the fourth letter of the Greek alphabet ($\Delta\delta$).
2. an incremental change in a variable.

Del•ta-line – a .6mm surface rise creating superior reflectivity!

Deltaline® XRP

Extended reflective performance pavement marking tapes.

Deltaline® HDX

High durability intersection tapes for crosswalks

Deltaline® TWR

Wet reflective removable pavement marking tapes.

Deltaline® BTR

Black temporary removable tapes for masking existing lines.

brite line



Contact us today for a demonstration of these extraordinary profiled road marking tapes.

Brite-Line® LLC
10390 E. 48th Ave, Denver, CO 80238

P 888.201.6448 or 303.375.1293
F 888.208.0758 or 303.375.8557
W brite-line.com
E info@brite-line.com



Removable pavement marking tape provides a bright, well delineated channel to guide motorists safely through construction zones and work crew areas. It is exceptionally quick and easy to install, highly durable and removes cleanly. The ideal solution to all your temporary roadway marking requirements.

Product Benefits:

- Significant cost savings through dependable performance.
- Engineered for superior daytime visibility and nighttime reflectivity.
- Stands up to the heaviest traffic and inclement weather conditions.
- Design based upon 25 years of applied research and extensive field testing.
- Readily available from nationwide distribution centers in standard sizes.

Application Benefits:

- Comes up cleanly- completely intact or in large pieces without damage to road surfaces.
- Unique adhesive allows tape to be placed down easily and stay down.
- Rapid installation reduces need for road closures.

Material Benefits:

- Yellow and white tapes conform to specified highway marking colors for construction zone use.
- Thoroughly blended pigments produce long-lasting, weather-resistant color.
- Roll goods available in various widths and lengths.
- Available in symbols, legends and custom orders, including metric sizes.

Manufactured in the U.S.A.

briteline



Contact us today for a demonstration of these extraordinary profiled road marking tapes.

Brite-Line® LLC
10390 E. 48th Ave, Denver, CO 80238

P 888.201.6448 or 303.375.1293
F 888.208.0758 or 303.375.8557
W brite-line.com
E info@brite-line.com

Brite-Line® 100 Removable Blackout

Lets work crews set up temporary lanes in less time — for less cost.



Removable **BLACKOUT** Pavement Masking Tape helps **prevent motorist confusion caused by temporary lane changes** and reduces hazards to work crews in construction zones. Tape applies easily over existing road markings without using heat or solvents. When construction is completed, **tape lifts off easily and quickly** ... permanent road markings underneath are clearly visible and undamaged.

Product Benefits:

- Eliminates expensive, time-consuming mechanical removal of permanent lane markings.
- Meets or exceeds all required anti-skid standards.
- Design based upon 25 years of applied research and extensive field testing.
- Readily available from nationwide distribution centers in standard sizes.

Application Benefits:

- Unique pressure-sensitive adhesive eliminates need for extra steps.
- Lifts up intact or in large pieces without damage to permanent markings underneath.
- Construction zones may be opened to traffic immediately after application.

Material Benefits:

- Available in matte black conforming to standard highway marking color — blends with color of road surface.
- Thoroughly blended pigments produce long-lasting and weather-resistant tape.
- Roll goods available in various widths, to temporarily mask a variety of roadway markings.

Manufactured in the U.S.A.

briteline



Contact us today for a demonstration
of these extraordinary profiled road marking tapes.

Brite-Line® LLC
10390 E. 48th Ave, Denver, CO 80238

P 888.201.6448 or 303.375.1293
F 888.208.0758 or 303.375.8557
W brite-line.com
E info@brite-line.com

Brite-Line®
1000 Durable

Better visibility, better durability. Safer roads, fewer accidents.



A highly reflective tape consisting of specially formulated polymer resins, pigments and fillers which provide outstanding durability under the heaviest traffic conditions.

Product Benefits:

- Advanced nighttime visibility for life of tape.
- Design based upon 25 years of applied research and extensive field testing.
- Readily available from nationwide distribution centers in standard sizes.

Application Benefits:

- Can be surface applied (overlay) or inlaid.
- Rapid installation reduces need for road closures.
- Unique adhesive system requires no heat or solvents.

Material Benefits:

- Highly reflective product based on specially formulated blend of beads and topcoat.
- Yellow and white tapes conform to standard highway marking colors.
- Thoroughly blended pigments produce long lasting, weather resistant color.
- 60mils thick for outstanding durability under heaviest traffic conditions.
- Roll goods available in various widths, lengths, symbols, legends and custom orders.

Manufactured in the U.S.A.

briteline



Contact us today for a demonstration
of these extraordinary profiled road marking tapes.

Brite-Line® LLC
10390 E. 48th Ave, Denver, CO 80238

P 888.201.6448 or 303.375.1293
F 888.208.0758 or 303.375.8557
W brite-line.com
E info@brite-line.com

Product Data Sheets



PRODUCT DATA SHEET

Brite-Line Deltaline® XRP

Extended Reflective Performance Pavement Marking Tape

Deltaline® XRP profiled tape is a high performance durable pavement marking that also provides Extended Reflective Performance not achievable from traditional markings. Deltaline® XRP is available in white, yellow, and high contrast, in a variety of roll widths and as words and symbols.

Applications

Deltaline® XRP Extended Reflective Performance tapes can be used as an inlay on new asphalt or surface applied on most pavement surfaces where high levels of reflectivity are required to ensure the safety of the motoring public, and traffic is generally free rolling.

XRP: White (W) and Yellow (Y) materials are intended for use as lane lines, edge lines, and transverse markings on asphalt and concrete surfaces. High Contrast with black edges is intended for use on light colored surfaces.

All applications using Deltaline® XRP tapes can be installed by following the instructions listed on the appropriate Brite-Line® Product Application Instructions.

Product Features

- Durable, conformable, and highly retroreflective
- Profile design provides long term Reflective retention.
- Abrasion resistant ceramic beads and anti-skid particles bonded to a durable polyurethane topcoat
- Channels between raised areas are substantially free of exposed reflective spheres
- Conformable construction is made from high quality polymeric materials, pigments, and glass beads
- Coated with pressure sensitive adhesive on bottom surface for ease of application
- Manufactured without the use of heavy metals, lead chromate pigments, or other similar lead containing chemicals
- Nominal thickness of 0.065 inches (1.6mm) at profile heights
- White: XRP-W, Yellow: XRP-Y, Contrast: HCL

Reflectance

Table # 1 illustrates Deltaline® XRP pavement marking tapes excellent minimum reflective properties. Measurements made using ASTM Test Method E1710.

Table # 1

Minimum Retroreflectivity Values	White	Yellow
Entrance Angle	88.76°	88.76°
Observation Angle	1.05°	1.05°
Retroreflectivity (mcd/m ² /lx)	500	300

These measurements can be taken at any angle from down web.

* “The quantity specific luminance (SL) relates to the way the effective retroreflective surface is focused on the retina of the human eye and to the visual effect thereby produced. It is recommended for describing the performance of highway signs and striping..” Federal Test Method Standard 370, 3.1.3, Note 6. March 1, 1977.

Skid Resistance

The surface of the tape provides an initial skid resistance value of 45 BPN when tested according to ASTM Method E303. These measurements can be made at any angle from down web.

PRODUCT DATA SHEET
Brite-Line Deltaline® XRP
Extended Reflective Performance Pavement Marking Tape

Patch Ability

Heavy traffic and snow plowing may cause wear and damage. New materials can be patched into these areas following instructions indicated on the appropriate Brite-Line® Product Application Instructions.

**Recommended Usage and
 Material Replacement Provisions**

Performance Life

The performance life of pavement markings will depend on the following:

- Traffic conditions
- Snow removal practices
- Pavement surfaces
- Application techniques

It is recommended that each customer thoroughly evaluate Deltaline® XRP Pavement Marking Tapes under the conditions in the specified location. While experience has shown that when properly applied, these materials are highly effective traffic control devices, Brite-Line® Technologies LLC makes no generalized performance claims.

Material Replacement Provisions

Brite-Line® Technologies LLC will provide replacement materials for Deltaline® XRP tapes determined to be inadequate traffic control devices due to:

1. Failure to meet the minimum retained reflectance values as shown in Table # 2 as determined by instructions in Section C.

Table # 2

Minimum Retroreflectivity Values	White	Yellow
Entrance Angle	88.76°	88.76°
Observation Angle	1.05°	1.05°
Retroreflectivity (mcd/m ² /lx)	100	100

2. Loss of adhesion or complete wear-through, except mountainous, heavy snowfall areas above 5,000 feet (1,500m) in elevation.

Brite-Line® Technologies will provide replacement materials for Deltaline® XRP tapes determined to be inadequate traffic control devices for the period of time defined in Table # 3.

(Refer to Figure 1 for classification of snow removal and non-snow removal areas.)

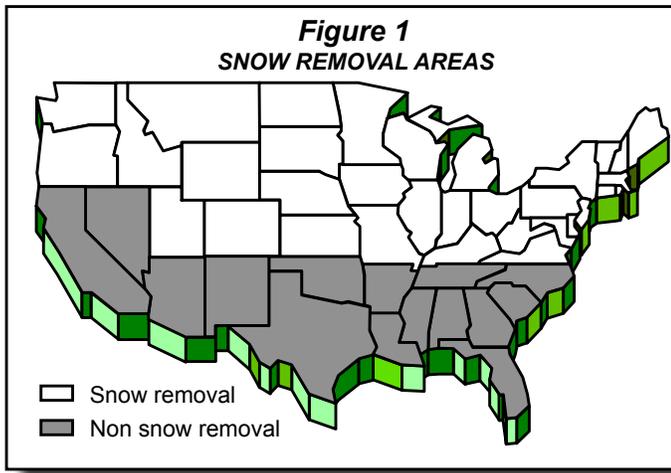
Table # 3	Non-Snow Areas ¹	Snow Removal Areas ²
Longitudinal Lines²		
New Asphalt Inlay	4 Years	4 Years
Overlay – Any Surface ^{3,4}	4 Years	4 Years
Legends and Symbols:		
New Asphalt Inlay	2 Years	2 Years
Overlay		
New Asphalt 0-3 Days	2 YR Primed ⁴	2 YR Primed ⁴
4-10 Days	1	1
11-90 Days	1	1
Old Asphalt	1	1
New Concrete	1	1
Old Concrete	1	1

¹2 Year when Primed⁴

1. Overlay applications after September 1st in snow removal areas are not recommended and are not covered under these materials replacement provisions. Damage to pavement markings caused by snow removal equipment is not covered under these material replacement provisions. Snowplow damage is generally characterized by chatter marks, gouges, or localized areas of missing pieces in the marking.
2. Overlay applications of Deltaline® tapes as gore markings in snow removal areas are not covered under these material replacement provisions. Each customer must carefully evaluate traffic conditions and determine the suitability of markings used in these applications.

PRODUCT DATA SHEET
Brite-Line Deltaline® XRP
Extended Reflective Performance Pavement Marking Tape

3. Applications made on new concrete that has been open to traffic less than 3 months must be sandblasted to remove the curing compound and primed with the specified pavement preparation adhesive to qualify for these material replacement provisions.
4. Brite-Line D-20 adhesive is the recommended primer for for all Overlay and Concrete applications.



Applications of these materials are not recommended in mountainous, heavy snowplow areas above 5,000 ft. (1,500m) in elevation.

Important Notice To Buyer

All statements, technical information and recommendations contained herein are based on tests believed to be reliable. The accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied:

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of, or the inability to use the product. Before using, user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith.

Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.

PRODUCT DATA SHEET

Deltaline® XRP-R & HCL-R

High Performance Durable Pavement Marking Tape

Deltaline® profiled marking tape is an easy to install, highly durable, conformable, highly retroreflective delineator. The Deltaline® XRP-R has extended reflective performance and enhanced wet reflectivity over traditional flat tapes and paints. Deltaline® XRP-R is available in white and yellow, in a variety of widths as well as words and symbols. The roadway can be opened to traffic immediately after application.

Application

Deltaline® XRP-R & HCL-R (Extended Reflective Performance) & (High Contrast Line) series tapes can be used as an inlay on new asphalt or surface applied on most pavement surfaces where high levels of reflectivity are required to ensure the safety of the motoring public, and traffic is generally free rolling.

Series XRP-R: White (W) and Yellow (Y) materials are intended for use as lane lines, edge lines, and gore markings on asphalt surfaces.

Series HCL-R: High Contrast Line with black edges is intended for use as lane lines on light colored surfaces.

All applications using Series XRP-R and HCL-R tapes can be installed by following the instructions listed on the appropriate Brite-Line® Product Application Instructions.

Product Features

- Durable, conformable, and highly retroreflective
- Excellent reflective properties in wet conditions
- Profile design that provides long term reflectivity
- Abrasion resistant ceramic beads and anti-skid particles bonded to a durable polyurethane topcoat
- Channels between raised areas are substantially free of exposed reflective spheres
- Conformable construction is made of high quality polymeric materials, pigments, and glass beads
- Coated with pressure sensitive adhesive on bottom surface for ease of application
- Manufactured without the use of heavy metals, lead chromate pigments, or other similar lead containing chemicals
- Nominal thickness of 0.065 inches (1.6mm) at profile heights
- Excellent reflective properties in wet conditions

Reflectance

Table 1 illustrates Deltaline® XRP-R pavement marking tapes excellent minimum reflective properties. Measurements made using ASTM Test Method E1710 & E2177.

Minimum Retroreflectivity Values	White	Yellow
Entrance Angle	88.76°	88.76°
Observation Angle	1.05°	1.05°
Dry Retroreflectivity (mcd/m ² /lx)	500	300
Wet Retroreflectivity (mcd/m ² /lx)	250	200

These measurements can be taken at any angle from down web.

* "The quantity specific luminance (SL) relates to the way the effective retroreflective surface is focused on the retina of the human eye and to the visual effect thereby produced. It is recommended for describing the performance of highway signs and striping.." Federal Test Method Standard 370, 3.1.3, Note 6. March 1, 1977.

Skid Resistance

The surface of the tape provides a minimum initial skid resistance value of 45 BPN when tested according to ASTM Method E303.

PRODUCT DATA SHEET
Deltaline® XRP-R & HCL-R
High Performance Durable Pavement Marking Tape

Patch Ability

Heavy traffic and snow plowing may cause wear and damage. New materials can be patched into these areas following instructions indicated on the appropriate Brite-Line® Product Application Instructions.

**Recommended Usage and
 Material Replacement Provisions**

Performance Life

The performance life of pavement markings will depend on the following:

- Traffic conditions
- Snow removal practices
- Pavement surfaces
- Application techniques

It is recommended that each customer thoroughly evaluate Deltaline® XRP-R & HCL-R Pavement Marking Tapes under the conditions in the specified location. While experience has shown that when properly applied, these materials are highly effective traffic control devices, Brite-Line® Technologies LLC makes no generalized performance claims.

Material Replacement Provisions

Brite-Line® Technologies LLC will provide replacement materials for Deltaline® XRP-R & HCL-R tapes determined to be Inadequate traffic control devices due to:

1. Failure to meet the minimum retained reflectance values as shown in Table # 2 as determined by instructions in Section C.

Table 2

Minimum Retroreflectivity Values	White	Yellow
Entrance Angle	88.76°	88.76°
Observation Angle	1.05°	1.05°
Retroreflectivity (mcd/m ² /lx)	100	100

2. Loss of adhesion or complete wear-through, except mountainous, heavy snowfall areas above 5,000 feet (1,500m) in elevation.

Brite-Line® Technologies will provide replacement materials for Deltaline® XRP-R and HCL-R tapes determined to be Inadequate traffic control devices for the period of time defined in Table 3. (Refer to Figure 1 for classification of snow removal and non-snow removal areas.)

Table 3

	Non-Snow Areas¹	Snow Removal Areas²
Longitudinal Lines²		
New Asphalt Inlay	4 Years	4 Years
Overlay – Any Surface ^{3,4}	4 Years	4 Years
Legends and Symbols:		
New Asphalt Inlay	2 Years	2 Years
Overlay		
New Asphalt 0-3 Days	2 YR Primed ⁴	2 YR Primed ⁴
4-10 Days	1	1
11-90 Days	1	1
Old Asphalt	1	1
New Concrete	1	1
Old Concrete	1	1

¹2 Year when Primed⁴

PRODUCT DATA SHEET
Deltaline® XRP-R & HCL-R
High Performance Durable Pavement Marking Tape

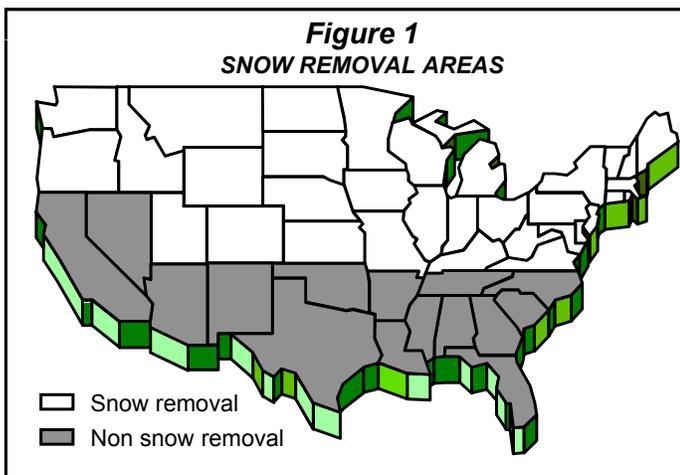
1. Overlay applications after September 1st in snow removal areas are not recommended and are not covered under these materials replacement provisions. Damage to pavement markings caused by snow removal equipment is not covered under these material replacement provisions. Snowplow damage is generally characterized by chatter marks, gouges, or localized areas of missing pieces in the marking.
2. Overlay applications of Deltaline® tapes as gore markings in snow removal areas are not covered under these material replacement provisions. Each customer must carefully evaluate traffic conditions and determine the suitability of markings used in these applications.
3. Applications made on new concrete that has been open to traffic less than months must be sandblasted to remove the curing compound and primed with the specified pavement preparation adhesive to qualify for these material replacement provisions.
4. Brite-Line D-20 adhesive is the recommended primer for all Overlay and Concrete applications.

Important Notice To Buyer:

All statements, technical information and recommendations contained herein are based on tests believed to be reliable. The accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied:

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of, or the inability to use the product. Before using, user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith.

Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.



Applications of these materials are not recommended in mountainous, heavy snowplow areas above 5,000 ft. (1,500m) in elevation.

PRODUCT DATA SHEET

Deltaline® HDX

High Durability Intersection Tapes for Crosswalks

Deltaline® HDX profiled tape is a high performance durable pavement marking that also provides extended reflective performance not achievable from traditional markings. Deltaline® HDX is specially engineered for the more demanding intersection and crosswalk applications. The road may be opened to traffic immediately after application. Deltaline HDX is available in white, yellow and high contrast, in a variety of roll widths and as words and symbols.

Application

Deltaline® HDX (High Durability Intersection) tape can be used as an inlay on new asphalt or surface applied on most pavement surfaces where high durability in the demanding applications of intersections, crosswalks, stop bars, symbols, and legends. Deltaline® HDX is the best value to ensure the safety of the motoring public in intersections.

The Federal Highway Administration recommends the use of retroreflective traffic control devices including pavement markings to facilitate safe navigation of the roadway for all drivers. Aging drivers in particular are dependent on pavement markings for guidance when traveling through intersections.

All applications using Deltaline® HDX tapes can be installed by following the instructions listed on the appropriate Brite-Line® Product Application Instructions.

Product Features

- Durable, conformable, and retroreflective
- Profile design provides long term reflective retention
- Abrasion resistant glass beads and anti-skid particles bonded to a durable polyurethane topcoat
- Channels between raised areas are substantially free of exposed reflective spheres
- Conformable construction made from high quality polymeric materials, pigments, and glass beads
- Coated with pressure sensitive adhesive on bottom surface for ease of application
- Manufactured without the use of heavy metals, lead chromate pigments, or other similar lead containing chemicals
- Nominal thickness of 0.065 inches (1.6mm) at profile heights

Reflectance

Table # 1 illustrates Deltaline® HDX pavement marking tapes excellent minimum reflective properties. Measurements made using ASTM Test Method E1710.

Minimum Retroreflectivity Values	White	Yellow
Entrance Angle	88.76°	88.76°
Observation Angle	1.05°	1.05°
Retroreflectivity (mcd/m ² /lx)	300	200

These measurements can be taken at any angle from down web.

* “The quantity specific luminance (SL) relates to the way the effective retroreflective surface is focused on the retina of the human eye and to the visual effect thereby produced. It is recommended for describing the performance of highway signs and striping.” Federal Test Method Standard 370, 3.1.3, Note 6. March 1, 1977.

Skid Resistance

The surface of the tape provides an minimum initial skid resistance value of 45 BPN when tested according to ASTM Method E303. These measurements can be made at any angle from down web.

Patch Ability

Heavy traffic and snow plowing may cause wear and damage. New materials can be patched into these areas following instructions indicated on the appropriate Brite-Line® Product Application Instructions.

PRODUCT DATA SHEET**Deltaline® HDX****High Durability Intersection Tapes for Crosswalks****Performance Life**

The performance life of pavement markings will depend on the following:

- Traffic conditions
- Snow removal practices
- Pavement surfaces
- Application techniques

The performance of pavement markings will depend on the following:

- Traffic conditions
- Pavement surfaces
- Application techniques
- Snow removal practices

It is recommended that each customer thoroughly evaluate Deltaline® HDX Pavement Marking Tapes under the conditions in the specified location. While experience has shown that when properly applied, these materials are highly effective traffic control devices, Brite-Line® Technologies LLC makes no generalized performance claims.

Important Notice To Buyer

All statements, technical information and recommendations contained herein are based on tests believed to be reliable. The accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied:

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of, or the inability to use the product. Before using, user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith.

Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.

PRODUCT DATA SHEET**Deltaline® BXP****Black Extended Performance Patterned Tape**

Deltaline® BXP is an easy to install, highly durable means of providing a non-reflective contrast or shadow for permanent roadway delineation on concrete or light colored surfaces.

Composition

Deltaline® BXP consists of a layer of anti-skid particles bonded to a conformable matte black patterned surface of specially formulated polymer resins, pigments, fillers and an integrated reinforcing system. It is coated with a pressure sensitive adhesive on the bottom surface for ease of application. Deltaline® BXP is manufactured without the use of heavy metals, lead chromate, pigments, or other similar lead containing chemicals.

Skid Resistance

The surface of Deltaline® BXP provides excellent skid resistance. When tested according to the procedures specified in ASTM-E-303, Deltaline® BXP exhibits an initial minimum skid resistance value of 45 BPN.

Application

All applications using Deltaline® BXP tape can be installed by following the instructions listed on the appropriate Brite-Line® product application instructions.

Important Notice to Buyer

All statements, technical information and recommendations contained herein are based on tests believed to be reliable. The accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied:

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of, or the inability to use the product. Before using, user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith.

Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.

PRODUCT DATA SHEET

Deltaline® TWR

Temporary Wet Reflective Pavement Marking Tape

Deltaline® TWR marking tape is an easy to install completely removable means of providing the highest level of reflective performance for temporary roadway delineation. The composition of Deltaline® TWR is designed to provide superior high performance wet night reflectivity and daytime visibility for Portland cement and bituminous surfaces. Deltaline® TWR is available in white, yellow and high contrast in a variety of widths, as well as words and symbols, and is intended primarily for construction zones that may be opened to traffic immediately after application. Performs for duration of the normal* construction season.

*A normal construction season is defined as the time after the last snow plowing in the spring and before the first snow plowing in the fall/winter. In locations where snow removal is not performed the tape has a maximum life of up to 12 months.

Composition

Deltaline® TWR consists of a uniquely designed blend of highly reflective glass micro-spheres bonded to the specially formulated blend of polymer resins, pigments, and filters, evenly dispersed with glass spheres and an integrated reinforcing system. The bottom side of Deltaline® TWR is coated with a unique pressure sensitive adhesive designed to adhere to properly prepared bituminous and Portland cement surfaces without the use of heat, solvents, or other extra measures.

Application

Proper surface preparation is essential for satisfactory Deltaline® TWR results. Essentially, the surface must be clean and dry, with a surface temperature of 50°F, and rising. Deltaline® TWR tapes cannot be successfully applied over loose or caked dirt, gravel, oily residues, road salt residues, or other foreign substances which will interfere with proper bonding. Manufacturer’s application instructions, with more detailed information, are included in each carton.

Color

Deltaline® TWR pavement marking tapes are available from inventory stock in white, yellow and high contrast conforming to standard highway marking colors. The pigments are thoroughly blended to produce long lasting colors resistant to the effects of weather exposure. Other colors are available on a custom basis.

Reflectance

The following table illustrates Deltaline® TWR pavement marking tapes excellent reflective properties both dry and wet. Measured using ASTM Test Method E1710 for Dry properties and ASTM E2177 for wet properties.

Minimum Retroreflectivity Values	White		Yellow	
	Dry	Wet	Dry	Wet
Entrance Angle	88.76°	88.76°	88.76°	88.76°
Observation Angle	1.05°	1.05°	1.05°	1.05°
Retroreflectivity (mcd/m²/lx)	500	300	300	200

Reflectance Retention

To have a long, effective service life, the surface layer of glass beads must be strongly bonded and not easily removed by traffic wear. To assure excellent long-lasting reflectance, Deltaline® TWR has a specially formulated, abrasion-resistant top coating designed to securely hold the surface layer of glass beads. The following two tests demonstrate the effectiveness of this coating.

Use a microscope to observe a sample of Deltaline® TWR after 200 cycles on a Tabor Abrader equipped with an H-18 wheel under a 125 gram load. No more than 15 percent of the beads shall be lost due to “pop out”. The predominant mode of failure shall be “wear down” of the beads.

A simple and reliable glass bead retention test can be easily performed.

PRODUCT DATA SHEET**Deltaline® TWR****Temporary Wet Reflective Pavement Marking Tape**

Wrap a 3 inch by 3 inch sample of Deltaline® TWR tape around a one-half inch mandrel. When applied to the point of maximum bend, masking tape shall not remove beads from surface. In addition, beads shall not be readily removed from the surface by scratching the tape at the point of maximum bend with a thumb nail.

Skid Resistance

The surface of Deltaline® TWR provides excellent skid resistance. When tested according to the procedures specified in ASTM-E-303, Series 100 & 200 exhibits an initial minimum skid resistance value of 50 BPN.

Removal

Deltaline® TWR temporary tape is designed to allow removal intact or in large pieces. The use of heat, solvents, hydro blasting, or grinding is not needed. It may be necessary to use a sharp edge to start the removal of Deltaline® TWR, then lift one edge of the tape and pull at a 90° angle to the surface. The temperature should be 40°F or higher. At lower temperatures, Deltaline® TWR maybe somewhat more difficult to remove and excess breakage may occur.

Performance

Deltaline® TWR Pavement Masking Tape is designed to provide temporary roadway delineation for the duration of the normal construction season (the construction season is defined as the time between the last spring snowfall and first snow plow in the fall/winter). Application method, traffic volume and type, pavement and weather conditions are factors that will determine the actual performance of the product. It is the responsibility of the user to determine the suitability of the product based on the conditions present as abrasions or heavy wear may reduce expected effective performance.

Important Notice To Buyer

All statements, technical information and recommendations contained herein are based on tests believed to be reliable. The accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied:

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of, or the inability to use the product. Before using, user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith.

Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.

PRODUCT DATA SHEET**Deltaline® BTR****Black Temporary Removable Patterned Masking Tape**

Deltaline® BTR Black is an easy to install, highly durable, completely removable means of providing a temporary cover for permanent roadway delineation. Deltaline® BTR is available in a variety of widths and is intended primarily for construction zones when permanent markings are masked out temporarily but will be used in the future.

Composition

Deltaline® BTR consists of a layer of anti-skid particles bonded to a patterned surface of specially formulated polymer resins, pigments, fillers and an integrated reinforcing system. The bottom side of Deltaline® BTR is coated with a unique pressure sensitive adhesive which has been specifically designed to firmly adhere to properly prepared surfaces and existing pavement markings.

Application

Proper surface preparation is required for satisfactory results. Essentially, the surface must be clean and dry, with a surface temperature of 50°F and rising. Deltaline® BTR cannot be successfully applied over loose or caked dirt, gravel, oily residues, road salt residues, or other foreign substances which will interfere with proper bonding. Review manufacturer's application instructions for more detailed information.

Skid Resistance

The surface of Deltaline® BTR provides excellent skid resistance. When tested according to the procedures specified in ASTM-E-303, Deltaline BTR exhibits an initial minimum skid resistance value of 60 BPN.

Removal

Deltaline® BTR tape is designed to allow removal intact or in large pieces. The use of heat solvents, hydroblasting grinding, or other methods damaging to the road surface or permanent marking is not needed. It may be necessary to use a sharp edge to start the removal of Deltaline® BTR, then lift one edge of the tape and pull at a 90° angle to the surface. The temperature should be 40°F or higher. At lower temperatures, Deltaline® BTR may be somewhat more difficult to remove and excess breakage may occur.

Important Notice To Buyer:

All statements, technical information and recommendations contained herein are based on tests believed to be reliable. The accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied:

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of, or the inability to use the product. Before using, user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith.

Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.

PRODUCT DATA SHEET
Brite-Line 100 Removable
Pavement Marking Tapes

Brite-Line 100 Removable marking tape is an easy to install, highly durable, completely removable means of providing temporary roadway delineation. The composition of 100 Removable is designed to provide superior daytime visibility as well as excellent nighttime reflectivity for portland cement and bituminous surfaces. 100 Removable is available in white and yellow, in a variety of widths, as well as words and symbols, and is intended primarily for construction zones that may be opened to traffic immediately after application. Performs for duration of the normal* construction season.

*A normal construction season is defined as the time after the last snow plowing in the spring and before the first snow plowing in the fall/winter. In locations where snow removal is not performed the tape has a maximum life of up to 12 months.

Composition

100 Removable consists of a highly reflective layer of select glass spheres bonded to the specially formulated blend of polymer resins, pigments, and filters, evenly dispersed with glass spheres and an integrated reinforcing system. The bottom side of 100 Removable is coated with a unique pressure sensitive adhesive designed to adhere to properly prepared bituminous and portland cement surfaces without the use of heat, solvents, or other extra measures.

Application

Proper surface preparation is essential for satisfactory 100 Removable results. Essentially, the surface must be clean and dry, with a surface temperature of 50°F, and rising. 100 Removable cannot be successfully applied over loose or caked dirt, gravel, oily residues, road salt residues, or other foreign substances which will interfere with proper bonding. Manufacturer’s application instructions, with more detailed information, are included in each carton.

Color

100 Removable pavement marking tapes are available from inventory stock in white and yellow conforming to standard highway marking colors. The pigments are thoroughly blended to produce long lasting colors resistant to the effects of weather exposure. Other colors are available on a custom basis.

Reflectance

Exhibit 1 illustrates 100 Removable pavement marking tapes excellent reflective properties both initially and over the life of the product. When measured using ASTM Test Method D4061, 100 Removable tapes exhibit the following minimum initial values expressed as specific luminance in millicandelas per square meter per lux (MCD/M²/Lux). The entrance angle should be 86°.

Exhibit 1

	White		Yellow	
	0.2°	0.5°	0.2°	0.5°
Observation Angle	0.2°	0.5°	0.2°	0.5°
Specific Luminance (MCD/M ² /Lux)	700	500	410	250

Reflectance Retention

To have a long, effective service life, the surface layer of glass beads must be strongly bonded and not easily removed by traffic wear. To assure excellent long lasting reflectance, 100 Removable has a specially formulated, abrasion-resistant top coating designed to securely hold the surface layer of glass beads. The following two tests demonstrate the effectiveness of this coating.

Use a microscope to observe a sample of 100 Removable after 200 cycles on a Tabor Abraser equipped with an H-18 wheel under a 125 gram load. No more than 15 percent of the beads shall be lost due to “popout”. The predominant mode of failure shall be “wear down” of the beads.

A simple and reliable glass bead retention test can be easily performed.

PRODUCT DATA SHEET
Brite-Line 100 Removable
Pavement Marking Tapes

Wrap a 3 inch by 3 inch sample of 100 Removable tape around a one-half inch mandrel. When applied to the point of maximum bend, masking tape shall not remove beads from surface. In addition, beads shall not be readily removed from the surface by scratching the tape at the point of maximum bend with a thumb nail.

Skid Resistance

The surface of 100 Removable provides excellent skid resistance. When tested according to the procedures specified in ASTM-E-303, 100 Removable exhibits an initial minimum skid resistance value of 45 BPN.

Removal

100 Removable temporary tape is designed to allow removal intact or in large pieces. The use of heat, solvents, hydroblasting, or grinding is not needed. It may be necessary to use a sharp edge to start the removal of 100 Removable, then lift one edge of the tape and pull at a 90o angle to the surface. The temperature should be 40oF or higher. At lower temperatures, 100 Removable maybe somewhat more difficult to remove and excess breakage may occur.

Performance

Brite-Line® 100 Removable Pavement Masking Tape is designed to provide temporary roadway delineation for the duration of the normal construction season (the construction season is defined as the time between the last spring snowfall and first snow plow in the fall/winter). Application method, traffic volume and type, pavement and weather conditions are factors that will determine the actual performance of the product. It is the responsibility of the user to determine the suitability of the product based on the conditions present as abrasions or heavy wear may reduce expected effective performance.

Important Notice To Buyer:

All statements, technical information and recommendations contained herein are based on tests believed to be reliable. The accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied:

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of, or the inability to use the product. Before using, user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith.

Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.

PRODUCT DATA SHEET**Brite-Line 100 Removable Blackout
Pavement Masking Tapes**

Brite-Line 100 Removable Blackout masking tape is an easy to install, highly durable, completely removable means of providing a temporary cover for permanent roadway delineation. Series 100 Blackout Tape is available in a variety of widths, and is intended primarily for construction zones when permanent markings are masked out temporarily but will be used in the future. Performs for duration of the normal* construction season.

*A normal construction season is defined as the time after the last snow plowing in the spring and before the first snow plowing in the fall/winter. In locations where snow removal is not performed the tape has a maximum life of up to 12 months.

Composition

100 Removable Blackout consists of a layer of anti-skid particles bonded to the specially formulated blend of polymer resins, pigments, fillers, and an integrated reinforcing system. The bottom side of 100 Removable Blackout is coated with a unique pressure sensitive adhesive designed to adhere to properly prepared surfaces; road delineation markings, without the use of heat, solvents, or other extra measures.

Application

Proper surface preparation is essential for satisfactory 100 Removable Blackout results. Essentially, the surface must be clean and dry, with a surface temperature of 50°F, and rising. 100 Removable Blackout cannot be successfully applied over loose or caked dirt, gravel, oily residues, road salt residues, or other foreign substances which will interfere with proper bonding. Manufacturer's application instructions, with more detailed information, are included in each carton.

Skid Resistance

The surface of 100 Removable Blackout provides excellent skid resistance. When tested according to the procedures specified in ASTM-E-303, 100 Removable Blackout exhibits an initial minimum skid resistance value of 45 BPN.

Removal

100 Removable Blackout temporary tape is designed to allow removal intact or in large pieces. The use of heat, solvents, hydroblasting, or grinding is not needed. It may be necessary to use a sharp edge to start the removal of 100 Removable Blackout, then lift one edge of the tape and pull at a 90° angle to the surface. The temperature should be 40°F or higher. At lower temperatures, 100 Removable Blackout may be somewhat more difficult to remove and excess breakage may occur.

Performance

Brite-Line 100 Removable Blackout Pavement Masking Tape is designed to provide temporary coverage of permanent roadway delineation for the duration of the normal construction season (the construction season is defined as the time between the last spring snowfall and first snow plow in the fall/winter). Application method, traffic volume and type, pavement and weather conditions are factors that will determine the actual performance of the product. It is the responsibility of the user to determine the suitability of the product based on the conditions present as abrasions or heavy wear may reduce expected effective performance.

Important Notice To Buyer:

All statements, technical information and recommendations contained herein are based on tests believed to be reliable. The accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied:

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of, or the inability to use the product. Before using, user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith.

Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.

PRODUCT DATA SHEET
1000 Durable
Pavement Marking Tapes

Brite-Line 1000 marking tape is an easy to install, highly durable, conformable, retroreflective delineator. Brite-Line 1000 is available in white and yellow in a variety of widths, as well as words and symbols, and is intended primarily for construction zones that may be opened to traffic immediately after application.

Description

Composition

Brite-Line 1000 consists of a highly reflective layer of select glass spheres bonded to the specially formulated blend of polymer resins, pigments, and fillers, evenly dispersed with glass spheres and an integrated reinforcing system. The bottom side of Brite-Line 1000 is coated with a unique pressure sensitive adhesive designed to adhere to properly prepared bituminous and Portland cement surfaces without the use of heat, solvents, or other extra measures.

Application

Proper surface preparation is essential for satisfactory Brite-Line 1000 results. Essentially, the surface must be clean and dry, with a minimum surface temperature of, 50°F and rising. Brite-Line 1000 cannot be successfully applied over loose or caked dirt, gravel, oily residues, road salt residues, or other foreign substances which will interfere with proper bonding. Manufacturer’s application instructions with more detailed information are included in each carton.

Color

Brite-Line 1000 pavement marking tapes are available from inventory stock in white conforming to standard highway marking color. The pigments are thoroughly blended to produce long lasting color resistant to the effects of weather exposure. Other colors are available on a custom basis.

Reflectance

Exhibit 1 illustrates Brite-Line 1000 pavement marking tapes excellent reflective properties both initially and over the life of the product. When measured using ASTM Test Method E1710, Brite-Line 1000 tapes exhibit the following minimum initial values expressed as specific luminance in millicandelas per square meter per lux (MCD/M²/Lux). The entrance angle should be 88.76°.

Exhibit 1

	White	Yellow
Observation Angle	1.05	1.05
Specific Luminance (MCD/M ² /Lux)	500	300

Reflectance Retention

To have a long, effective service life, the surface layer of glass beads must be strongly bonded and not easily removed by traffic wear. To assure excellent long-lasting reflectance, Brite-Line 1000 has a specially formulated, abrasion-resistant, top coating designed to securely hold the surface layer of glass beads.

Skid Resistance

The surface of Brite-Line 1000 provides excellent skid resistance. When tested according to the procedures specified in ASTM-E-303, Brite-Line 1000 exhibits an initial minimum skid resistance value of 45 BPN. This meets ASTM D 4505-05 Specification for Classification ; Level A.

Patch Ability

Brite-Line 1000 pavement marking tape is designed for use in patching worn areas of Brite-Line 1000 installations. The tape will readily adhere to previously applied material.

PRODUCT DATA SHEET
1000 Durable
Pavement Marking Tapes

Performance Life

The performance life of Brite-Line 1000 plastic marking materials will vary greatly depending upon traffic conditions, snow removal practices, pavement surfaces, and application techniques. It is recommended that each customer evaluate Brite-Line 1000 pavement Marking tape under the various conditions of specific locations. Experience has shown that when properly applied, these materials are highly effective traffic control devices. However, Brite-Line makes no generalized performance claims.

Important Notice To Buyer:

All statements, technical information and recommendations contained herein are based on tests believed to be reliable. The accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied:

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of, or the inability to use the product. Before using, user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith.

Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.

Application Instructions



APPLICATION INSTRUCTIONS

Deltaline® XRP, XRP-R, HDX, HCL, BXP

High Durability Pavement Marking Tape

Health and Safety Information

Be sure to read all health hazard, precautionary, and handling sections found in the Material Safety Data Sheet (MSDS) and/or product label of chemicals prior to handling or use.

Introduction

This sheet contains information concerning pavement preparation, application, and removal procedures for Brite-Line Deltaline Durable Pavement Marking Tapes. Users of Brite-Line Tapes should be completely familiar with the contents of this information prior to the application procedure.

If the installer has any questions regarding the application of Deltaline Durable Pavement Marking Tapes, he or she should contact the appropriate Brite-Line Sales Representative. Also, call for guidance under the following conditions:

- Rainfall forecast within 48 hours of application
- Periods of marginal weather conditions
- Special pavement surface conditions

Pavement Surface Description

The pavement age and surface type are the determining factors in what application procedure should be used.

1. Inlay Applications
 - A. Standard Mix — Mixture contains both fine and large aggregate with an asphalt cement binder.
 - B. Recycled Asphalt — Existing asphalt is removed, recycled, and reapplied.
2. Overlay Applications
 - A. Open Grade Friction Course — Mixture contains only large aggregate with an asphalt cement binder.
 - B. Chip Seal — This mixture is an asphalt emulsion sprayed onto the road surface and covered with aggregate. Exposed aggregate must be removed before tape application.
 - C. Standard Mix — This mixture contains both fine and large aggregate with an asphalt cement binder.
 - D. Recycled Asphalt — Existing asphalt is removed, recycled, and reapplied.
 - E. Rubberized Asphalt — This asphalt contains additives designed to increase durability.

CALL TOLL FREE 888-201-6448 for technical assistance when applying on the following surfaces:

- Slurry Seal
- New Concrete
- Smooth Concrete

General Application Conditions

The following general conditions apply to all Deltaline Tape applications:

- Air and surface temperature: 50°F minimum and rising
- Overnight air temperature: 40°F minimum the night before tape application
- Pavement must be completely dry
- Pavement surface must be clean and free of all foreign or contaminating materials such as oils, grease, salt, dust, loose aggregate or sand particles, and other deteriorating surfaces
- Do not apply to joints, seams or deteriorating surfaces
- Do not overlap the tape
- Use butt splices only
- Gloves should be worn when handling and unrolling tape
- Applications that occur after October 15th and before May 1st are not covered under the Brite-Line warranty.

APPLICATION INSTRUCTIONS

Deltaline® XRP, XRP-R, HDX, HCL, BXP

High Durability Pavement Marking Tape

Application Procedures

Assure that all general application conditions are favorable.

All Preformed Marking Tapes shall be stored between 60°F and 80°F for at least 24 hours prior to installation. During installation, stock piles shall be maintained at the required storage temperature.

Inlay Applications

Step 1: Mark the pavement where the tape will be applied.

Step 2: Remove any liners protecting the adhesive backing of the symbols and legends.

Step 3: Deltaline pavement markings shall be embedded in the asphalt concrete surface with a conventional steel wheeled roller. The surface temperature of the mat shall be the warmest temperature possible without deforming the marking. The minimum allowable surface temperature, taken within 6.4mm or 1/4" of the top of the mat is 130°F.

Step 4: If the inlay application of the Deltaline pavement markings falls behind the paving operation to the extent that the markings are not being applied at the minimum acceptable temperature, the paving operation shall be slowed to match the rate of the marking lay down.

Step 5: Use minimum water on the finishing roller. Always tamp in the same direction the tape is being applied. Do not use a vibrator. Do not run a rubber wheeled pneumatic roller on freshly applied tape. Finishing roller must stay max 50 feet from applicator.

Overlay Applications

Step 1: Clean and prepare road surface by the following methods:

- A. New smooth or grooved concrete (less than 6 months old) sand blasting will be required to remove all curing compound residue prior to tape installation. Ensure all sand blast debris is completely removed prior to applying contact cement.
- B. Old smooth or grooved concrete (more than 6 months old): Use high pressure air or thorough sweeping.
- C. New and old asphalt: Use high pressure air or thorough sweeping.

Step 2: Mark the pavement where the tape will be applied.

Step 3: Apply Contact Adhesive:

Brite-Line D-20 or C-20 Contact Adhesive is designed for use with Deltaline XRP, XRP-R, HDX, HCL, BXP durable tapes. D-20 or C-20 should be applied by roller brush for all transverse markings, symbols and legends. D-20 or C-20 may be spray applied for longitudinal markings, edge, center and lane lines. D-20 or C-20 can be used on both asphalt and concrete surfaces. Contact Adhesive application usage will vary depending upon the road surface profile. Always apply an adequate amount of D-20 or C-20 to completely cover and seal the road surface. The approximate usage rate of D-20 or C-20 is 50 square ft per gallon for transverse markings, legends and symbols and 100 square feet per gallon for longitudinal markings. The applied Contact Adhesive should extend a minimum of at least "1 beyond the outlined area. Allow the contact adhesive to dry. Contact adhesive is dry when it will not transfer to your hand. Normal drying time is ~10 minutes at 70°F. Drying time will vary depending upon application conditions. It is very important that the contact adhesive is dry to prevent the tape from sliding after application.

Note: Spray application is not recommended if weather conditions are too windy to allow for consistent coverage and sealing of the road surface

Step 4: Apply Deltaline Durable Pavement Marking Tape using an applicator cart or by hand.

Step 5: Tamping is Crucial to Tape Performance. Tamp tape using a tamper cart with a minimum 200 pound load, or drive over the tape with vehicle tire at 2-3 mph.

- To ensure thorough adhesion to road surface, tamp tape with a minimum of 3 passes on asphalt and smooth concrete and 4 passes on grooved concrete. At temperatures below 70°F,

APPLICATION INSTRUCTIONS
Deltaline® XRP, XRP-R, HDX, HCL, BXP
High Durability Pavement Marking Tape

- tamp all applications with 4 passes.
- Do not twist or turn the tamper device or vehicle wheel when tamping.
 - Make sure all edges are securely bonded to the surface.
 - Open to traffic immediately after tamping.

Removal

Deltaline Durable Pavement Marking Tape is not designed to be easily removed after the initial application.

Overview:

Grooving is an alternative method to Overlay and Hot Inlay of installation for Brite-Line Technologies LLC traffic durable marking tapes. Application by grooved inlay provides enhanced protection from damage due to snow plows in northern snow fall regions. Grooved inlay application offers the greatest protection for the tape which extends the reflective performance and marking life.

Groove Dimensions

	Imperial	Metric
Depth	100-130 mils	2.5-3.3 mm
Width (wider than marking)	1-2 in	25.4-50.8 mm
Length (longer than marking)	2-4 in	50.8-101.6 mm

Groove Placement

It is recommended that the groove be 2–4 inches (25–50 mm) away from asphalt seams and concrete joints.

Asphalt Surfaces

Older asphalt surfaces will need to be tested to ensure that the surface has the integrity needed to support the cutting of a groove. Inspect for weak aggregate / asphalt bonds near the surface and for weakness in the groove wall. New asphalt should not be grooved until it has had enough time to set and harden. In general asphalt should not be grooved within ten days of the installation of the final course of pavement. The exact time required before the asphalt is strong enough to support grooving is variable dependant on the asphalt mix used, geographic region, and existing weather conditions. Hotter weather requires longer durations to achieve enough strength. Before grooving new asphalt surfaces be sure to test the surface to ensure that it has the integrity needed to support the cutting of a groove.

Grooving Equipment

There are numerous different manufacturers and types of cutting and grinding equipment. The type of equipment and the road surface will dictate the speed of the cutting heads and grooving. Equipment with a free floating independent grinding or cutting head is recommended due to its ability to follow surface irregularities and provide a more consistent groove depth. For asphalt surfaces the use of stacked cutting blades is recommended over grinder heads. Tight spacing of the blades provides smother surfaces. Use a shot or hydro blaster to remove any ridges left behind by the cutter or grinder. The valley on the groove should be as flat and smooth as possible. Ribbed or corduroy looking surfaces are not good for tape adhesion.

APPLICATION INSTRUCTIONS

Deltaline® XRP, XPR-R, HDX, HCL, BXP

High Durability Pavement Marking Tape

Measuring Groove Depth

A caliper, depth gauge, or depth plate should be used frequently to check the groove to verify both depth and uniformity. Measurements should be done with extra frequency during startup to aid in the proper setup and grooving technique.

Groove Cleaning

It is important to use a pressure washer soon after grinding to remove all signs of fine dust and slurry from the groove before it can settle and dry into a hard cake. This is especially true when using water cooling during grinding but is also important when dry grinding before rainfall. Use compressed air or a blower to remove any water in the groove. Allow to dry for 24 hours in a dry climate before tape application. The groove should be left overnight without covering to dry. Use compressed air or a blower just prior to tape application to ensure a clean dry surface.

Tape Application

Follow the detailed overlay application instructions for Brite-Line Technologies LLC Deltaline XRP, XPR-R, HDX, HCL, BXP for tape installation. Note: A specially cut rubber roller taper cart may be required for proper tamping in a groove.

This sheet contains detailed information concerning procedures for Brite-Line Deltaline Durable Pavement Marking Tapes. Users of Brite-Line Tapes should be completely familiar with the contents of this information prior to the application procedure.

If the installer has any questions regarding the application of Deltaline Durable Pavement Marking Tapes, he or she should contact the appropriate Brite-Line Sales Representative.

Also, call for guidance under the following conditions:

- Rainfall forecast within 48 hours of application
- Periods of marginal weather conditions
- Special pavement surface conditions

Important Notice To Buyer

All statements, technical information and recommendations contained herein are based on tests believed to be reliable. The accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied:

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of, or the inability to use the product. Before using, user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith.

Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.

APPLICATION INSTRUCTIONS

Deltaline® TWR

Temporary Wet Reflective Pavement Marking Tape

Health and Safety Information

Be sure to read all health hazard, precautionary, and handling sections found in the Material Safety Data Sheet (MSDS) and/or product label of chemicals prior to handling or use.

Introduction

This sheet contains information concerning pavement preparation, application, and removal procedures for Brite-Line® Deltaline® TWR Removable Pavement Marking Tapes. Users of Brite-Line® Tapes should be completely familiar with the contents of this information prior to the application procedure.

If the installer has any questions regarding the application of Deltaline® TWR Removable Pavement Marking Tapes, he or she should contact the appropriate Brite-Line® Sales Representative. Also, call for guidance under the following conditions:

1. Rainfall forecast within 48 hours of application
2. Periods of marginal weather conditions
3. Special pavement surface conditions
4. Removal techniques under unusual conditions

General Application Conditions

The following general conditions apply to all Removable Tape applications:

- Air and surface temperature: 50°F minimum and rising.
- Overnight air temperature: 40°F minimum the night before tape application.
- Pavement must be completely dry.
- Pavement surface must be clean and free of all foreign or contaminating materials such as oils, grease, salt, dust, loose aggregate or sand particles, and other deteriorating surfaces.
- Do not apply to joints, seams or deteriorating surfaces.
- Do not overlap the tape.
- Use butt splices only.
- Gloves should be worn when handling and unrolling tape.

Application Procedures

Assure that all general application conditions are favorable.

Asphalt

- Step 1: Clean road surface with high pressure air or by thorough sweeping. All foreign or contaminating materials must be removed.
- Step 2: Mark pavement where tape will be applied.
- Step 3: Apply Removable Pavement Marking Tape using an applicator cart or by hand.
- Step 4: Tamp, using a tamper cart, with a minimum 200 pound load, or drive over tape with vehicle tire at 2–3 mph.

APPLICATION INSTRUCTIONS

Deltaline® TWR

Temporary Wet Reflective Pavement Marking Tape

New Portland Cement Concrete (Less than 6 months old)

Step 1: Clean road surface by sand blasting, water blasting, wire brushing, or grinding to remove curing compound.

Step 2: Remove all debris remaining from blasting or grinding operation.

Step 3: Ensure all curing compound residue has been removed by performing the following test:

Using a 4" x 4" piece of yellow tape, stick the tape to road surface. Remove the tape.

If there is any white residue apparent on the back of the tape, some residue still exists.

If residue exists, one coat of P-20 (primer adhesive) will be needed prior to installing tape (see step 5). If primer is used, be sure primer is DRY prior to installing tape.

If no residue is present, proceed with installation.

Step 4: Mark Pavement where tape will be applied.

Step 5: Apply Removable Tape using an applicator cart or by hand.

Step 6: Tamp tape using a tamper cart with a minimum 200 pound load or drive over tape

with vehicle tire at 2-3 mph.

Portland Cement Concrete (More than 6 months old)

Same procedure as asphalt.

Tamping is Crucial to Tape Performance

- Always tamp with a **minimum of 3 passes** with appropriate tamper or vehicle tire until tape is completely conformed to the surface.
- Do not twist or turn the tamper device or vehicle wheel when tamping.
- Make sure all edges are securely bonded to the surface.
- Open to traffic immediately after tamping.

Removal

Deltaline® TWR Removable Pavement Marking Tapes are designed for removal in large pieces. The use of heat, solvents, grinding, or hydro blasting is not necessary. Use gloves when removing tape.

1. Use a sharp tool to pry up one edge of the tape.
2. Pull tape straight up at a 90° angle to the pavement
3. When temperature conditions are below 40°F, the tape may be difficult to remove in large pieces.

Application Recommendations

The application of Brite-Line®'s Removable Marking Tapes is not recommended when air and road temperatures are less than 50oF and rising, or when air temperatures fall below 40oF the night before application. The tape must be applied to a completely dry road surface.

APPLICATION INSTRUCTIONS

Deltaline® TWR

Temporary Wet Reflective Pavement Marking Tape

MARGINAL WEATHER CONDITIONS

Marginal conditions are defined as any early or late season cold temperature cycles above and below specification minimums, or when heavy rain is forecasted within 48 hours of application. When experiencing any one of these conditions, please contact your local Brite-Line Representative for guidance.

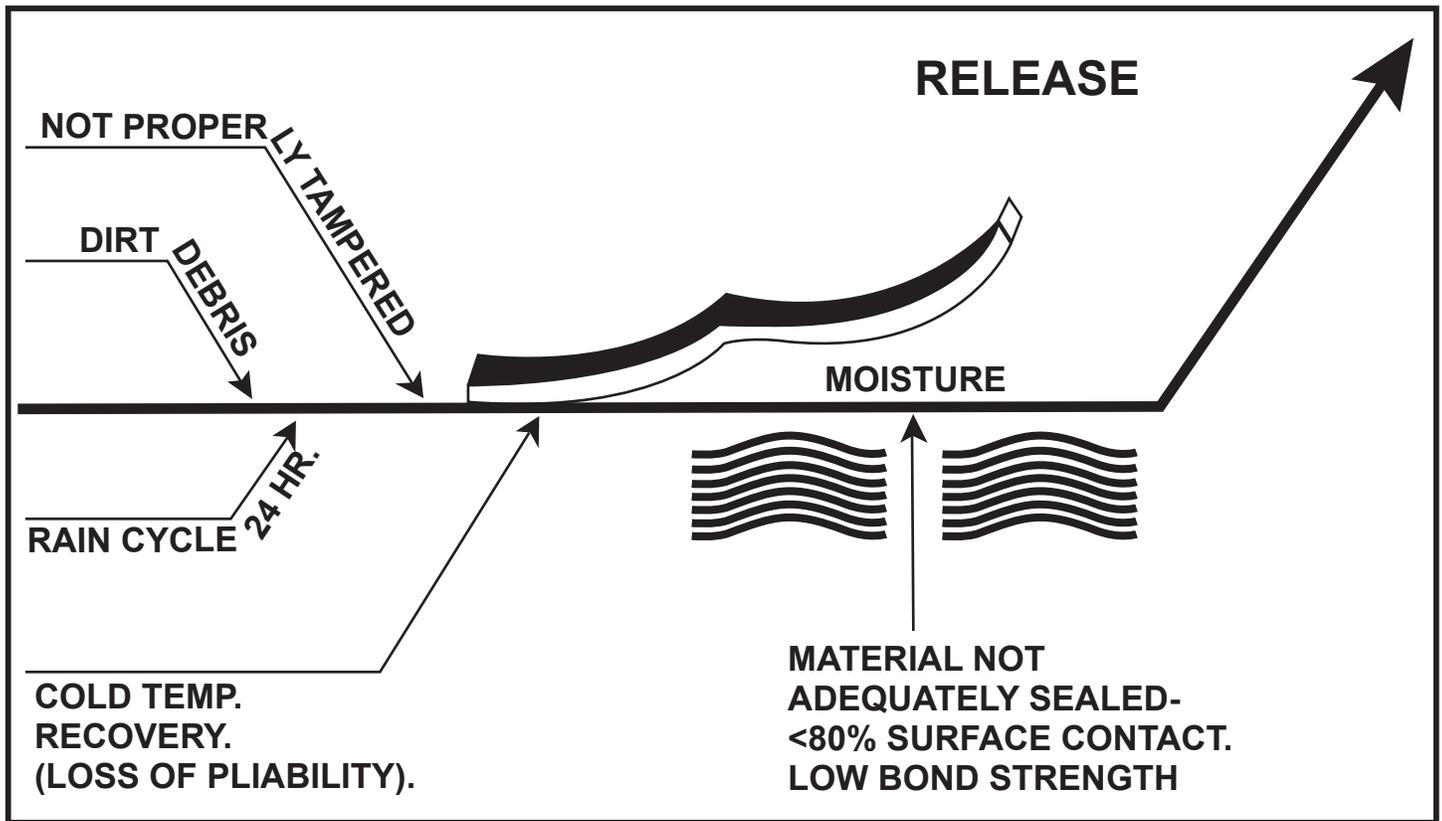
Priming

The purpose of a primer is to ensure a stable bonding surface on a wide variety of variable surfaces. The primer aids adhesion by:

1. Acting as a barrier against any upheaval moisture that may exist beneath a road surface, either concrete or asphalt
2. Sealing and stabilizing any residual dust, dirt or debris
3. Providing surface leveling by filling in the valleys of irregular road surfaces

The use of primer will always improve both adhesion and removal performance or removable tapes.

Graphic Representation



APPLICATION INSTRUCTIONS

Deltaline® TWR

Temporary Wet Reflective Pavement Marking Tape

Priming Specification

Brite-Line®, P-20, primer is strongly recommended for use with removable tape applications under the following conditions:

Air Temperature: 50°–55°
56°–62° with high humidity (>65%) and especially with impending rain.

Average Dry-cycle Times (Spray-Coating) at a coverage rate of 150 sq. ft. per gallon:

Air Temp.	Minutes
50°–55°	8
56°–65°	6
>65°	4

- Notes:
- Primer should be allowed to dry to a light tack level upon touch.
 - High humidity (>65%) will increase the dry-cycle time.

Tamping

The purpose and importance of tamping is to press marking tape into the profile shape of the road so as to ensure a minimum of 80% surface contact. This property is described as conformability and is best accomplished when tamping is performed immediately after placement, in order to eliminate any possibility of moisture or road debris accumulation in the voids (or pockets) underneath the material.

Tamping Specification

Road surface should be clean and dry.

Material must be tamped a minimum of 3 times in each direction, paying specific attention to the edges. Check edges periodically to assure adequate sealing with the surface. Cut the tape on either side of any surface joint or crack.

The two most common devices are a weighted tamper cart with a minimum 200 pound load or a one-ton (or heavier) vehicle.

Performance

Brite-Line 100 Removable Pavement Masking Tape is designed to provide temporary roadway delineation for the duration of the normal construction season (the construction season is defined as the time between the last spring snowfall and first snow plow in the fall/winter). Application method, traffic volume and type, pavement and weather conditions are factors that will determine the actual performance of the product. It is the responsibility of the user to determine the suitability of the product based on the conditions present as abrasions or heavy wear may reduce expected effective performance.

Important Notice To Buyer

All statements, technical information and recommendations contained herein are based on tests believed to be reliable. The accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied:

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of, or the inability to use the product. Before using, user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith.

Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.

APPLICATION INSTRUCTIONS

Deltaline® BTR

Black Temporary Removable Patterned Masking Tape

Health and Safety Information

Be sure to read all health hazard, precautionary, and handling sections found in the Material Safety Data Sheet (MSDS) and/or product label of chemicals prior to handling or use.

Introduction

This sheet contains information concerning pavement preparation, application, and removal procedures for Deltaline® BTR Patterned Masking Tape. Users of Brite-Line® Tapes should be completely familiar with the contents of this information prior to the application procedure.

If the installer has any questions regarding the application of Deltaline® BTR Tape, he or she should contact the appropriate Brite-Line® Sales Representative. Also, call for guidance under the following conditions:

1. Rainfall forecast within 48 hours of application
2. Periods of marginal weather conditions
3. Special pavement surface conditions
4. Application over newly installed marking tapes
5. Removal techniques under unusual conditions

General Application Conditions

The following general conditions apply to Deltaline® BTR Patterned Masking Tape applications:

- Air and surface temperature: 50°F minimum and rising.
- Overnight air temperature: 40°F minimum the night before tape application.
- Pavement must be completely dry.
- Pavement surface must be clean and free of all foreign or contaminating materials such as oils, grease, salt, dust, loose aggregate or sand particles, and other deteriorating surfaces.
- Do not apply to joints, seams or deteriorating surfaces.
- Do not overlap the tape.
- Use butt splices only.
- Gloves should be worn when handling and unrolling tape.

Application Procedures

Assure that all general application conditions are favorable.

Asphalt

Step 1: Clean road surface with high pressure air or by thorough sweeping. All foreign or contaminating materials must be removed.

Step 2: Recommend application of P-20 primer at an application rate of 100 square feet per gallon.

Step 3: Apply Deltaline® BTR Patterned Masking Tape using an applicator cart or by hand.

Step 4: Tamp, using a tamper cart, with a minimum 200 pound load, or drive over tape with vehicle tire at 2-3 mph.

New Portland Cement Concrete (Less than 6 months old):

Step 1: Clean road surface by sand blasting, water blasting, wire brushing, or grinding to remove curing compound.

Step 2: Remove all debris remaining from blasting or grinding operation.

APPLICATION INSTRUCTIONS

Deltaline® BTR

Black Temporary Removable Patterned Masking Tape

- Step 3: Ensure all curing compound residue has been removed by performing the following test:
Using a 4" x 4" piece of yellow tape, stick the tape to road surface. Remove the tape. If there is any white residue apparent on the back of the tape, some residue still exists. If residue exists, one coat of P-20 (primer adhesive) will be needed prior to installing tape (see step 5). If primer is used, be sure primer is DRY prior to installing tape. If no residue is present, proceed with installation.
- Step 4: Mark Pavement where tape will be applied.
- Step 5: Apply Removable Tape using an applicator cart or by hand.
- Step 6: Tamp tape using a tamper cart with a minimum 200 pound load or drive over tape with vehicle tire at 2-3 mph.

Portland Cement Concrete (More than 6 months old):
Same procedure as asphalt.

Removal

Deltaline® BTR Patterned Masking Tape is designed for removal in large pieces. The use of heat, solvents, grinding, or hydroblasting is not necessary. Use gloves when removing tape.

1. Use a sharp tool to pry up one edge of the tape.
2. Pull tape straight up at a 90° angle to the pavement
3. When temperature conditions are below 40°F, the tape may be difficult to remove in large pieces.

Important Notice To Buyer

All statements, technical information and recommendations contained herein are based on tests believed to be reliable. The accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied:

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of, or the inability to use the product. Before using, user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith.

Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.

APPLICATION INSTRUCTIONS

Brite-Line 100 Removable & 100 Removable Blackout Pavement Marking Tapes

Health and Safety Information

Be sure to read all health hazard, precautionary, and handling sections found in the Material Safety Data Sheet (MSDS) and/or product label of chemicals prior to handling or use.

Introduction

This sheet contains information concerning pavement preparation, application, and removal procedures for Brite-Line® 100 Removable Pavement Marking Tapes. Users of Brite-Line® Tapes should be completely familiar with the contents of this information prior to the application procedure.

If the installer has any questions regarding the application of 100 Removable Pavement Marking Tapes, he or she should contact the appropriate Brite-Line® Sales Representative. Also, call for guidance under the following conditions:

1. Rainfall forecast within 48 hours of application
2. Periods of marginal weather conditions
3. Special pavement surface conditions
4. Removal techniques under unusual conditions

General Application Conditions

The following general conditions apply to all Removable Tape applications:

- Air and surface temperature: 50° F minimum and rising.
- Overnight air temperature: 40°F minimum the night before tape application.
- Pavement must be completely dry.
- Pavement surface must be clean and free of all foreign or contaminating materials such as oils, grease, salt, dust, loose aggregate or sand particles, and other deteriorating surfaces.
- Do not apply to joints, seams or deteriorating surfaces.
- Do not overlap the tape.
- Use butt splices only.
- Gloves should be worn when handling and unrolling tape.

Application Procedures

Assure that all general application conditions are favorable.

Asphalt:

- Step 1: Clean road surface with high pressure air or by thorough sweeping. All foreign or contaminating materials must be removed.
- Step 2: Mark pavement where tape will be applied.
- Step 3: Apply Removable Pavement Marking Tape using an applicator cart or by hand.
- Step 4: Tamp, using a tamper cart, with a minimum 200 pound load, or drive over tape with vehicle tire at 2–3 mph.

APPLICATION INSTRUCTIONS

Brite-Line 100 Removable & 100 Removable Blackout Pavement Marking Tapes

New Portland Cement Concrete (Less than 6 months old):

- Step 1: Clean road surface by sand blasting, water blasting, wire brushing, or grinding to remove curing compound.
- Step 2: Remove all debris remaining from blasting or grinding operation.
- Step 3: Ensure all curing compound residue has been removed by performing the following test:
Using a 4" x 4" piece of yellow tape, stick the tape to road surface. Remove the tape. If there is any white residue apparent on the back of the tape, some residue still exists. If residue exists, one coat of P-20 (primer adhesive) will be needed prior to installing tape (see step 5). If primer is used, be sure primer is DRY prior to installing tape. If no residue is present, proceed with installation.
- Step 4: Mark Pavement where tape will be applied.
- Step 5: Apply Removable Tape using an applicator cart or by hand.
- Step 6: Tamp tape using a tamper cart with a minimum 200 pound load or drive over tape with vehicle tire at 2-3 mph.

Portland Cement Concrete (Less than 6 months old):
Same procedure as asphalt.

Tamping is Crucial to Tape Performance:

- Always tamp with a minimum of 3 passes with appropriate tamper or vehicle tire until tape is completely conformed to the surface.
- Do not twist or turn the tamper device or vehicle wheel when tamping.
- Make sure all edges are securely bonded to the surface.
- Open to traffic immediately after tamping.

Removal

100 Removable Pavement Marking Tapes are designed for removal in large pieces. The use of heat, solvents, grinding, or hydroblasting is not necessary. Use gloves when removing tape.

1. Use a sharp tool to pry up one edge of the tape.
2. Pull tape straight up at a 90° angle to the pavement
3. When temperature conditions are below 40°F, the tape may be difficult to remove in large pieces.

Performance

Brite-Line 100 Removable Pavement Masking Tape is designed to provide temporary roadway delineation for the duration of the normal construction season (the construction season is defined as the time between the last spring snowfall and first snow plow in the fall/winter). Application method, traffic volume and type, pavement and weather conditions are factors that will determine the actual performance of the product. It is the responsibility of the user to determine the suitability of the product based on the conditions present as abrasions or heavy wear may reduce expected effective performance.

Important Notice To Buyer:

All statements, technical information and recommendations contained herein are based on tests believed to be reliable. The accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied:

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of, or the inability to use the product. Before using, user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith.

Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.

APPLICATION INSTRUCTIONS

Brite-Line® 1000 Durable

High Durability Pavement Marking Tapes

Health and Safety Information

Be sure to read all health hazard, precautionary, and handling sections found in the Material Safety Data Sheet (MSDS) and/or product label of chemicals prior to handling or use.

Introduction

This sheet contains information concerning pavement preparation, application, and removal procedures for Brite-Line® 1000 Durable Pavement Marking Tapes. Users of Brite-Line® Tapes should be completely familiar with the contents of this information prior to the application procedure.

If the installer has any questions regarding the application of 1000 Durable Pavement Marking Tapes, he or she should contact the appropriate Brite-Line® Sales Representative. Also, call for guidance under the following conditions:

- Rainfall forecast within 48 hours of application
- Periods of marginal weather conditions
- Special pavement surface conditions

Pavement Surface Description

The pavement age and surface type are the determining factors in what application procedure should be used.

1. Inlay Applications
 - A. Standard Mix — Mixture contains both fine and large aggregate with an asphalt cement binder.
 - B. Recycled Asphalt — Existing asphalt is removed, recycled, and reapplied.
2. Overlay Applications
 - A. Open Grade Friction Course — Mixture contains only large aggregate with an asphalt cement binder.
 - B. Chip Seal — This mixture is an asphalt emulsion sprayed onto the road surface and covered with aggregate. Exposed aggregate must be removed before tape application.
 - C. Standard Mix — This mixture contains both fine and large aggregate with an asphalt cement binder.
 - D. Recycled Asphalt — Existing asphalt is removed, recycled, and reapplied.
 - E. Rubberized Asphalt — This asphalt contains additives designed to increase durability.

CALL TOLL FREE 888-201-6448 for technical assistance when applying on the following surfaces:

- Slurry Seal
- New Concrete
- Smooth Concrete

General Application Conditions

The following general conditions apply to all Brite-Line® Tape applications:

- Air and surface temperature: 50°F minimum and rising
- Overnight air temperature: 40°F minimum the night before tape application
- Pavement must be completely dry
- Pavement surface must be clean and free of all foreign or contaminating materials such as oils, grease, salt, dust, loose aggregate or sand particles, and other deteriorating surfaces
- Do not apply to joints, seams or deteriorating surfaces
- Do not overlap the tape
- Use butt splices only
- Gloves should be worn when handling and unrolling tape

APPLICATION INSTRUCTIONS

Brite-Line® 1000 Durable

High Durability Pavement Marking Tapes

Application Procedures

Assure that all general application conditions are favorable.

All Preformed Marking Tapes shall be stored between 60°F and 80°F for at least 24 hours prior to installation. During installation, stock piles shall be maintained at the required storage temperature.

Inlay Applications

Step 1: Mark the pavement where the tape will be applied.

Step 2: Remove any liners protecting the adhesive backing of the symbols and legends.

Step 3: Pavement markings shall be embedded in the asphalt concrete surface with a conventional steel wheeled roller. The surface temperature of the mat shall be the warmest temperature possible without deforming the marking. The minimum allowable surface temperature, taken within 6.4mm or 1/4" of the top of the mat is 130°F.

Step 4: If the inlay application of the pavement markings falls behind the paving operation to the extent that the markings are not being applied at the minimum acceptable temperature, the paving operation shall be slowed to match the rate of the marking lay down.

Step 5: Use minimum water on the finishing roller. Always tamp in the same direction the tape is being applied. Do not use a vibrator. Do not run a rubber wheeled pneumatic roller on freshly applied tape. Finishing roller must stay max 50 feet from applicator.

Overlay Applications

Step 1: Clean and prepare road surface by the following methods:

- A. New smooth or grooved concrete (less than 6 months old) sand blasting will be required to remove all curing compound residue prior to tape installation. Ensure all sand blast debris is completely removed prior to applying contact cement.
- B. Old smooth or grooved concrete (more than 6 months old): Use high pressure air or thorough sweeping.
- C. New and old asphalt: Use high pressure air or thorough sweeping.

Step 2: Mark the pavement where the tape will be applied.

Step 3: Apply Contact Adhesive:

Brite-Line® D-20 or C-20 Brite-Sky Low VOC Primer Contact Adhesive is designed for use with Brite-Line® durable tapes. D-20 or C-20 should be applied by roller brush for all transverse markings, symbols and legends. D-20 or C-20 may be spray applied for longitudinal markings, edge, center and lane lines. D-20 or C-20 can be used on both asphalt and concrete surfaces. Contact Adhesive application usage will vary depending upon the road surface profile. Always apply an adequate amount of D-20 or C-20 to completely cover and seal the road surface. The approximate usage rate of D-20 or C-20 is 50 square ft per gallon for transverse markings, legends and symbols and 100 square feet per gallon for longitudinal markings. The applied Contact Adhesive should extend a minimum of at least "1 beyond the outlined area. Allow the contact adhesive to dry. Contact adhesive is dry when it will not transfer to your hand. Normal drying time is ~10 minutes at 70°F. Drying time will vary depending upon application conditions. It is very important that the contact adhesive is dry to prevent the tape from sliding after application.

Note: Spray application is not recommended if weather conditions are too windy to allow for consistent coverage and sealing of the road surface

Step 4: Apply Durable Pavement Marking Tape using an applicator cart or by hand.

Step 5: Tamping is Crucial to Tape Performance. Tamp tape using a tamper cart with a minimum 200 pound load, or drive over the tape with vehicle tire at 2-3 mph.

- To ensure thorough adhesion to road surface, tamp tape with a minimum of 3 passes on asphalt and smooth concrete and 4 passes on grooved concrete. At temperatures below 70°F, tamp all

APPLICATION INSTRUCTIONS
Brite-Line® 1000 Durable
High Durability Pavement Marking Tapes

applications with 4 passes.

- Do not twist or turn the tamper device or vehicle wheel when tamping.
- Make sure all edges are securely bonded to the surface.
- Open to traffic immediately after tamping.

Removal

Durable Pavement Marking Tape is not designed to be easily removed after the initial application.

Overview:

Grooving is an alternative method to Overlay and Hot Inlay of installation for Brite-Line® Technologies LLC traffic durable marking tapes. Application by grooved inlay provides enhanced protection from damage due to snow plows in northern snow fall regions. Grooved inlay application offers the greatest protection for the tape which extends the reflective performance and marking life.

Groove Dimensions

	Imperial	Metric
Depth	100-130 mils	2.5-3.3 mm
Width (wider than marking)	1-2 in	25.4-50.8 mm
Length (longer than marking)	2-4 in	50.8-101.6 mm

Groove Placement

It is recommended that the groove be 2–4 inches (25–50 mm) away from asphalt seams and concrete joints.

Asphalt Surfaces

Older asphalt surfaces will need to be tested to ensure that the surface has the integrity needed to support the cutting of a groove. Inspect for weak aggregate / asphalt bonds near the surface and for weakness in the groove wall. New asphalt should not be grooved until it has had enough time to set and harden. In general asphalt should not be grooved within ten days of the installation of the final course of pavement. The exact time required before the asphalt is strong enough to support grooving is variable dependant on the asphalt mix used, geographic region, and existing weather conditions. Hotter weather requires longer durations to achieve enough strength. Before grooving new asphalt surfaces be sure to test the surface to ensure that it has the integrity needed to support the cutting of a groove.

Grooving Equipment

There are numerous different manufacturers and types of cutting and grinding equipment. The type of equipment and the road surface will dictate the speed of the cutting heads and grooving. Equipment with a free floating independent grinding or cutting head is recommended due to its ability to follow surface irregularities and provide a more consistent groove depth. For asphalt surfaces the use of stacked cutting blades is recommended over grinder heads. Tight spacing of the blades provides smother surfaces. Use a shot or hydro blaster to remove any ridges left behind by the cutter or grinder. The valley on the groove should be as flat and smooth as possible. Ribbed or corduroy looking surfaces are not good for tape adhesion.

APPLICATION INSTRUCTIONS

Brite-Line® 1000 Durable

High Durability Pavement Marking Tapes

Measuring Groove Depth

A caliper, depth gauge, or depth plate should be used frequently to check the groove to verify both depth and uniformity. Measurements should be done with extra frequency during startup to aid in the proper setup and grooving technique.

Groove Cleaning

It is important to use a pressure washer soon after grinding to remove all signs of fine dust and slurry from the groove before it can settle and dry into a hard cake. This is especially true when using water cooling during grinding but is also important when dry grinding before rainfall. Use compressed air or a blower to remove any water in the groove. Allow to dry for 24 hours in a dry climate before tape application. The groove should be left overnight without covering to dry. Use compressed air or a blower just prior to tape application to ensure a clean dry surface.

Tape Application

Follow the detailed overlay application instructions for Brite-Line® Technologies LLC for tape installation. Note: A specially cut rubber roller taper cart may be required for proper tamping in a groove.

This sheet contains detailed information concerning procedures for Brite-Line® 1000 Durable Pavement Marking Tapes. Users of Brite-Line® Tapes should be completely familiar with the contents of this information prior to the application procedure.

If the installer has any questions regarding the application of Durable Pavement Marking Tapes, he or she should contact the appropriate Brite-Line® Sales Representative.

Also, call for guidance under the following conditions:

- Rainfall forecast within 48 hours of application
- Periods of marginal weather conditions
- Special pavement surface conditions

Important Notice To Buyer

All statements, technical information and recommendations contained herein are based on tests believed to be reliable. The accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied:

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of, or the inability to use the product. Before using, user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith.

Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.

Revised July 2014

APPLICATION INSTRUCTIONS

C-20 Primer Brite-Sky

Health and Safety Information

Be sure to read all health hazard, precautionary, and handling sections found in the Material Safety Data Sheet (MSDS) and/or product label of chemicals prior to handling or use. The C-20 Primer should only be used by trained, well qualified, personnel.

Introduction

Brite-Line Technologies, LLC. C-20 Brite-Sky Primer was developed to have good adhesion to most road surfaces and to Deltaline XRP durable marking tapes. The C-20 Brite-Sky acts as both a surface primer and a sealant for road surfaces.

This sheet contains information concerning pavement preparation, primer application, and tape application procedures for Brite-Line® Deltaline® XRP Durable Pavement Marking Tapes. Users of Brite-Line® Tapes should be completely familiar with the contents of this information prior to the application procedure.

If the installer has any questions regarding the application of Deltaline® Durable Pavement Marking Tapes he or she should contact the appropriate Brite-Line® Sales Representative.

Equipment Requirements

The C-20 Brite-Sky will process on most standard airless spray carts and equipment. Tamping cart equipped with weights to achieve a minimum of 85#/inch (15 kg/cm) of tape width

Equipment Cleanup

Flush thoroughly with Heptane, Toluene, Xylene, or Naphtha.

Personnel Cleanup

Use standard abrasive hand washing pastes.

C-20 Brite-Sky Packaging

Metal container: 5 gallon (18.93 liter) pails.

General Application Conditions

The following general conditions apply to all Durable Tape applications:

- Air and surface temperature of 40°F (5°C) minimum and rising
- Overnight air temperature of 32°F (0°C) minimum the night before application
- The road surface can not be moist, damp, or wet
- Application should be completed ≥ 48 hours before a rain fall
- Do not apply to joints, seams, or deteriorating surfaces
- Use butt splices only, do not overlap the tape
- The road surface must be clean and free of all foreign contaminates such as water, grease, oils, salt, dust, sand, loose aggregate, and other materials
- Gloves should be worn when handling the liquid C-20 and Deltaline XRP tapes

APPLICATION INSTRUCTIONS

C-20 Primer Brite-Sky

Surface Preparation

Existing Asphalt and Old Cement or Concrete (More than 6 months old):

Clean road surface with high pressure air, portable air blowers, or by thorough sweeping.

If there are fluid contaminants such as antifreeze, oil, brake fluid, grease, etc. pressure wash the surface.

All foreign or contaminating materials must be removed.

Remove all previous markings.

New Cement or Concrete (Less than 6 months old):

Clean road surface by sand blasting, water blasting, wire brushing, or grinding to remove all curing compound on the surface of the cement.

Remove all debris remaining from blasting or grinding operation.

Layout or Pre-marking

Keep the layout markings just outside the area of application of the C-20 Brite-Sky.

The C-20 Brite-Sky should be applied ~ 1" (2-3) cm wider than the Deltaline XRP tape that is being applied.

C-20 Application

Apply the C-20 Brite-Sky primer to the road surface with a airless sprayer, airless sprayer cart, or paint roller at a rate of 100-150 ft²/gallon (2.45-3.68M²/liter).

Use a paint roller if winds exceed 15 mph (24 kph).

Deltaline XRP Application

The tape application is done as soon as possible after C-20 drying.

The C-20 Brite-Sky surface temperature must be within 50°-60°F (10°-15°C)

The tape must be centered in the C-20 with ½-1.0" (1-2.5 cm) of C-20 extending beyond the tape edge.

Tamping

Immediately following Deltaline XRP tape application the tape must be tamped with a rubber roller tamping cart or equivalent.

Tamping should be done at the slowest possible speed.

The tamping roller must be weighted to apply a minimum of 85#/inch (15 kg/cm) of tape width.

Shelf Life

The C-20 Bitumen Primer can be stored for 2 years in original containers prior to usage.

Important Notice To Buyer

All statements, technical information, and recommendations contained herein are based on tests believed to be reliable. The accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied:

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of, or the inability to use the product. Before using, user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith.

Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.

APPLICATION INSTRUCTIONS
C-20 Primer Brite-Sky

MARGINAL WEATHER CONDITIONS

Marginal conditions are defined as any early or late season cold temperature cycles above and below specification minimums, or when heavy rain is forecasted within 48 hours of application. When experiencing any one of these conditions, please contact your local Brite-Line Representative for guidance.

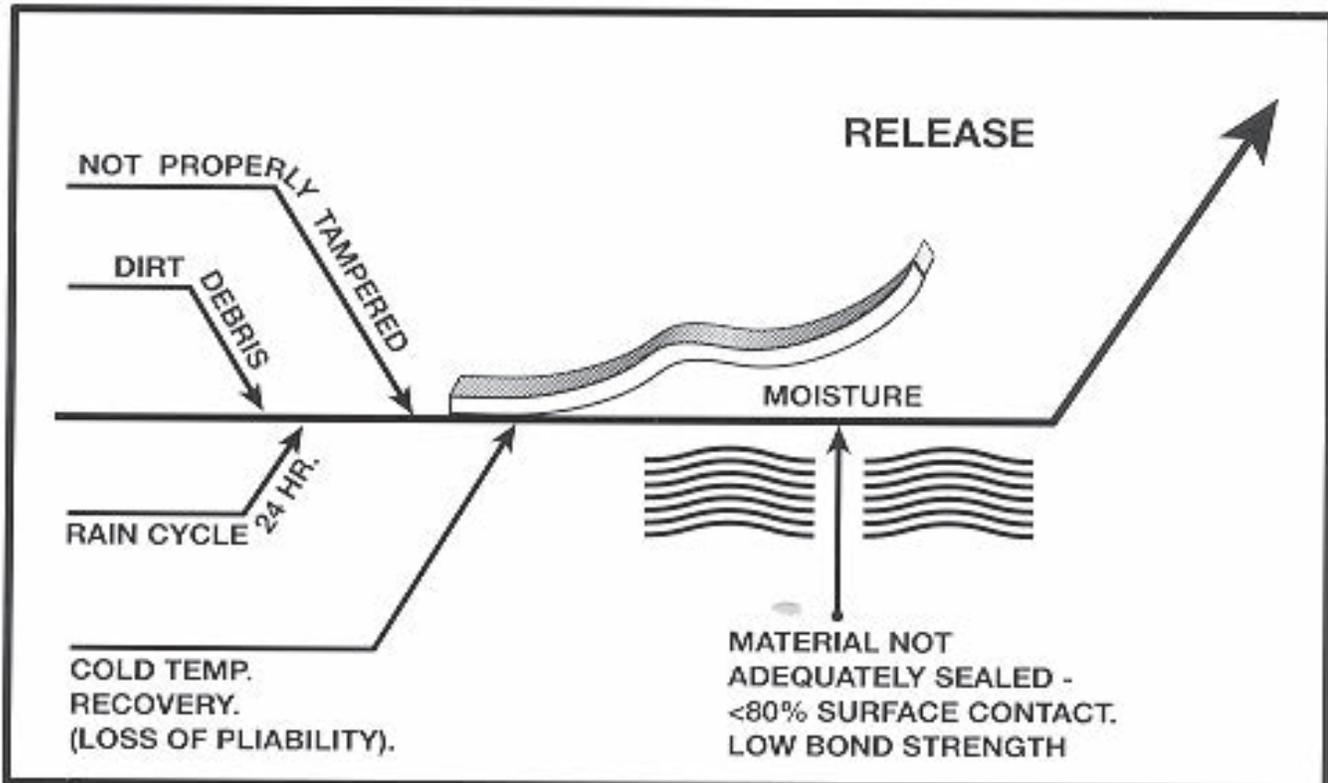
PRIMING

The purpose of a primer is to ensure a stable bonding surface on a wide variety of variable surfaces. The primer aids adhesion by:

1. Acting as a barrier against any upheaval moisture that may exist beneath a road surface, either concrete or asphalt.
2. Sealing and stabilizing any residual dust, dirt or debris.
3. Providing surface leveling by filling in the valleys of irregular road surfaces.

The use of primer will always improve both adhesion and removal performance or removable tapes.

GRAPHIC REPRESENTATION



APPLICATION INSTRUCTIONS

C-20 Primer Brite-Sky

PRIMING SPECIFICATION

Brite-Line® C-20 Brite-Sky, primer is strongly recommended for use with Durable tape applications under the following conditions:

AIR TEMPERATURE: 40°–45°F (10°–12°C) Minimum or 50°–55°F (15°–17°C) with high humidity (>55%) and especially with impending rain.

AVERAGE DRY-CYCLE TIMES (Spray-Coating) at a coverage rate of 100–150 ft²/gallon (2.45–3.68 M²/liter): 5–10 minutes depending on the ambient temperature, road surface temperature, relative humidity and local wind conditions.

NOTES:

- Primer should be allowed to dry to a light tack level upon touch.
- High humidity (>65%) will increase the dry-cycle time.

APPLICATION INSTRUCTIONS

D-20 Durable Tape Primer

Health and Safety Information

Be sure to read all health hazard, precautionary, and handling sections found in the Material Safety Data Sheet (MSDS) and/or product label of chemicals prior to handling or use. The D-20 Primer should only be used by trained, well qualified, personnel.

Introduction

Brite-Line Technologies, LLC. D-20 Primer was developed to have good adhesion to most road surfaces and to Deltaline XRP durable marking tapes. The D-20 acts as both a surface primer and a sealant for road surfaces.

This sheet contains information concerning pavement preparation, primer application, and tape application procedures for Brite-Line® Deltaline® XRP Durable Pavement Marking Tapes. Users of Brite-Line® Tapes should be completely familiar with the contents of this information prior to the application procedure.

If the installer has any questions regarding the application of Deltaline® Durable Pavement Marking Tapes he or she should contact the appropriate Brite-Line® Sales Representative.

Equipment Requirements

The D-20 will process on most standard airless spray carts and equipment.

Tamping cart equipped with weights to achieve a minimum of 85#/inch (15 kg/cm) of tape width

Equipment Cleanup

Flush thoroughly with Heptane, Toluene, Xylene, or Naphtha.

Personnel Cleanup

Use standard abrasive hand washing pastes.

D-20 Packaging

Metal container: 5 gallon (18.93 liter) pails.

General Application Conditions

The following general conditions apply to all Durable Tape applications:

- Air and surface temperature of 40°F (5°C) minimum and rising
- Overnight air temperature of 32°F (0°C) minimum the night before application
- The road surface can not be moist, damp, or wet
- Application should be completed ≥ 48 hours before a rain fall
- Do not apply to joints, seams, or deteriorating surfaces
- Use butt splices only, do not overlap the tape
- The road surface must be clean and free of all foreign contaminates such as water, grease, oils, salt, dust, sand, loose aggregate, and other materials
- Gloves should be worn when handling the liquid D-20 and Deltaline XRP tapes

APPLICATION INSTRUCTIONS

D-20 Durable Tape Primer

Surface Preparation

Existing Asphalt and Old Cement or Concrete (More than 6 months old):

Clean road surface with high pressure air, portable air blowers, or by thorough sweeping.

If there are fluid contaminants such as antifreeze, oil, brake fluid, grease, etc. pressure wash the surface.

All foreign or contaminating materials must be removed.

Remove all previous markings.

New Cement or Concrete (Less than 6 months old):

Clean road surface by sand blasting, water blasting, wire brushing, or grinding to remove all curing compound on the surface of the cement.

Remove all debris remaining from blasting or grinding operation.

Layout or Pre-marking

Keep the layout markings just outside the area of application of the D-20 .

The D-20 should be applied ~ 1" (2-3) cm wider than the Deltaline XRP tape that is being applied.

D-20 Application

Apply the D-20 primer to the road surface with a airless sprayer, airless sprayer cart, or paint roller at a rate of 100-150 ft²/gallon (2.45-3.68M²/liter).

Use a paint roller if winds exceed 15 mph (24 kph).

Deltaline XRP Application

The tape application is done as soon as possible after D-20 drying.

The D-20 surface temperature must be within 50°-60°F (10°-15°C)

The tape must be centered in the D-20 with ½-1.0" (1-2.5 cm) of D-20 extending beyond the tape edge.

Tamping

Immediately following Deltaline XRP tape application the tape must be tamped with a rubber roller tamping cart or equivalent.

Tamping should be done at the slowest possible speed.

The tamping roller must be weighted to apply a minimum of 85#/inch (15 kg/cm) of tape width.

Shelf Life

The D-20 Bitumen Primer can be stored for 2 years in original containers prior to usage.

Important Notice To Buyer

All statements, technical information, and recommendations contained herein are based on tests believed to be reliable. The accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied:

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of, or the inability to use the product. Before using, user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith.

Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.

APPLICATION INSTRUCTIONS
D-20 Durable Tape Primer

MARGINAL WEATHER CONDITIONS

Marginal conditions are defined as any early or late season cold temperature cycles above and below specification minimums, or when heavy rain is forecasted within 48 hours of application. When experiencing any one of these conditions, please contact your local Brite-Line Representative for guidance.

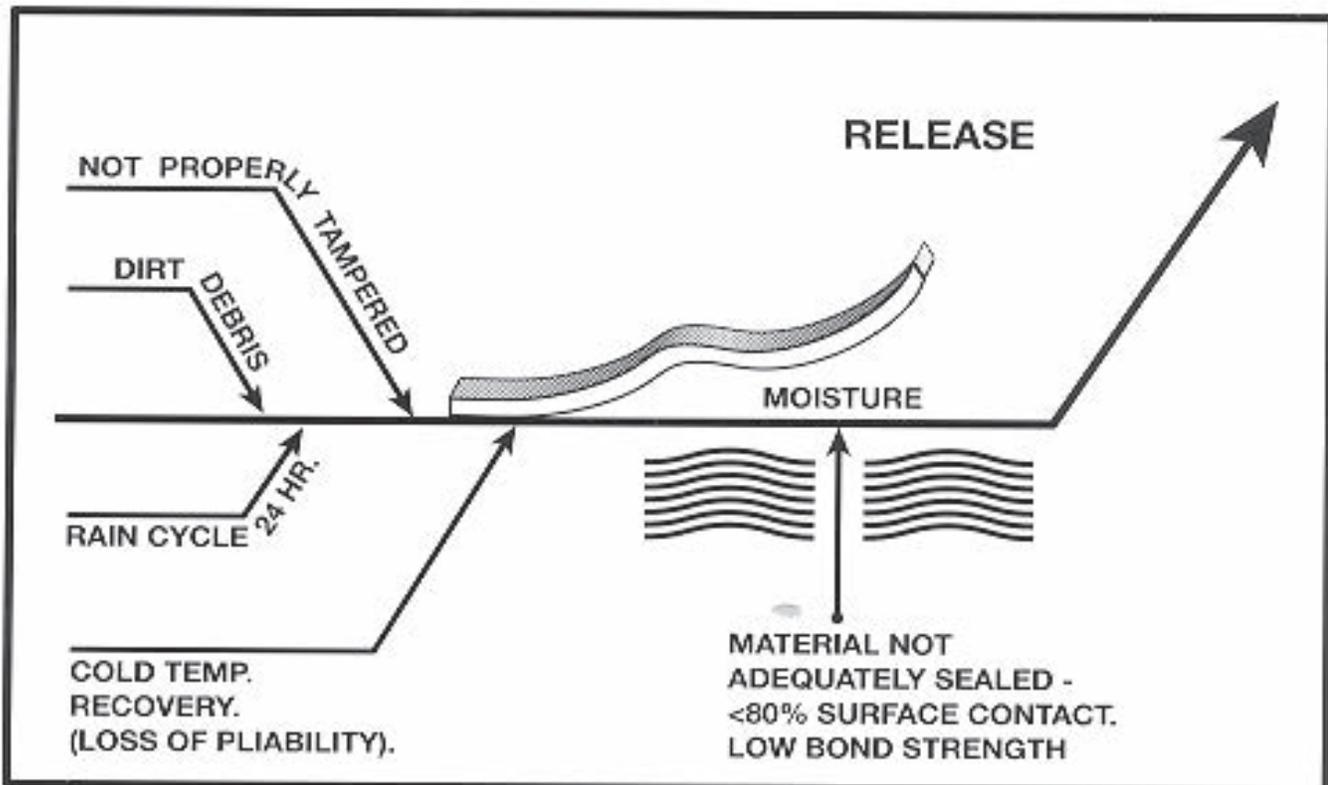
PRIMING

The purpose of a primer is to ensure a stable bonding surface on a wide variety of variable surfaces. The primer aids adhesion by:

1. Acting as a barrier against any upheaval moisture that may exist beneath a road surface, either concrete or asphalt.
2. Sealing and stabilizing any residual dust, dirt or debris.
3. Providing surface leveling by filling in the valleys of irregular road surfaces.

The use of primer will always improve both adhesion and removal performance or removable tapes.

GRAPHIC REPRESENTATION



APPLICATION INSTRUCTIONS

D-20 Durable Tape Primer

PRIMING SPECIFICATION

Brite-Line® D-20 primer is strongly recommended for use with Durable tape applications under the following conditions:

AIR TEMPERATURE: 40°–45°F (10°–12°C) Minimum or 50°–55°F (15°–17°C) with high humidity (>55%) and especially with impending rain.

AVERAGE DRY-CYCLE TIMES (Spray-Coating) at a coverage rate of 100–150 ft²/gallon (2.45–3.68 M²/liter): 5–10 minutes depending on the ambient temperature, road surface temperature, relative humidity and local wind conditions.

NOTES:

- Primer should be allowed to dry to a light tack level upon touch.
- High humidity (>65%) will increase the dry-cycle time.

Safety Data Sheets



Copyright 2015, Brite-Line® LLC. All rights reserved. The use of copies from the Internet or paper is allowed: (1) for proper use of the listed road marking tapes as long as the copied material is copied in its entirety and not altered, and (2) must not be resold or in other ways distributed for a financial gain.

This safety data sheet (SDS) is provided as a courtesy for customers to properly use, install, and dispose of Brite-Line® LLC’s road marking tapes. These products are not regulated; and as these road marking products do not present a safety or health hazard under normal use conditions (as provided in 29 CFR 1910.1200), no SDS is required.

If these products are used under not recommended conditions, it is possible that these products could potentially present a safety and/or health hazard and/or experience changes in product performance. Always follow the Brite-Line® LLC product use recommendations unless otherwise instructed by Brite-Line® LLC.

1. Product and Company Identification

Product Identifiers: Series 100, 200, 1000, 2000 Deltaline XRP, Deltaline XRP-R, Deltaline CO, Deltaline MO, Deltaline TWR, Deltaline HCL

Product Codes: 100, 101, 200, 201, 1000, 2000, Deltaline XRP, Deltaline XRP-R, Deltaline CO, Deltaline MO, Deltaline NC, Deltaline TWR, & Deltaline HCL

Manufacturer:
BRITE-LINE®, LLC
 10390 E. 48th Ave
 Denver, CO 80238

Emergency phone number:
CHEMTREC 1-800-424-9300

Issue date: 6/06/13
 Supersedes date: Original MSDS , undated MSDS 13 September 2013
 Use: Brite-Line® LLC road marking tapes

2. Composition/Information on Ingredients

<u>Components</u>	<u>Wt. %</u>	<u>CAS #</u>
Carbon Black	0-<1	1333-86-4
Titanium Dioxide	0-<14	13463-67-7
Other Inorganic Components (glass beads, fillers)	30-50	N/A
Organic Components (e.g. UV inhibitors, pigments, plasticizers)	2-10	N/A
Polymeric Components (e.g. PU paint, resins, synthetic rubber)	20-60	N/A

Date Prepared: 10/30/19

3. Hazards Identification

OSHA Hazardous Components (29 CFR 1910.1200) Exposure Limits - No hazardous components

3.1 Emergency Overview

Product form: solid – a roll of highway marking tape

Odor: minimal odor

Color: white, yellow, black

Immediate environmental, health, physical hazards: none when used as directed

3.2 Potential health effects

Eyes: If irritation develops, irrigate with water for 15 minutes. If persists, see a physician.

Skin: If skin irritation develops, wash with soap and water and wear gloves. If irritation persists, see a physician.

Inhalation: No known issues.

Ingestion: No known issues.

3.3 Potential environmental effects

None are known when product is used per manufacturer's instructions. No hazardous metals or RCRA 40 CFR 261 listed TCLP hazardous substances present at levels that would cause the product to be considered a hazardous waste.

4. First Aid Measures

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are/have been followed.

Eye Contact:

Flush with large amounts of water. If signs or symptoms persist, get medical attention.

Skin Contact:

Wash effected areas with soap and water. If signs or symptoms develop, get medical attention.

Inhalation:

Inhalation is not an expected exposure condition.

Ingestion:

Ingestion is not an expected exposure route. No need for first aid is anticipated.

5. Fire Fighting Measures

5.1 Flammable properties: solid at room temperature

Autoignition temperature: unknown
Flash point: unknown
LEL – lower explosive limit: not applicable
UEL – upper explosive limit: not applicable

5.2 Fire Extinguishing Media: for combustible material

Class A fire extinguishers (water/foam)
Class B fire extinguishers (dry chemical/carbon dioxide)

6. Accidental Release Measures

Not applicable

7. Handling and Storage

7.1 Handling: Use ventilation and/or respiratory protection if cutting or grinding.

7.2 Storage: Life of unused product is longest when stored in dry, cool places (e.g. <90 °F).

8. Exposure Controls/Personal Protection

8.1 Engineering controls

Provide local dust control/exhaust for any cutting or grinding. If dust results, monitor to ensure below OSHA (Occupational Safety and Health Administration) exposure limits for fugitive dust and/or fumes. If can't stay below OSHA limits, provide appropriate respirator equipment. Under normal conditions (i.e. no cutting and/or grinding), no special protection is required.

8.2 Personal protective equipment

Eyes: Avoid eye and face contact

Skin: Gloves not normally recommended; use gloves if any skin irritation develops.

Respiratory: Do not breathe dust from cutting product. Under normal use, usual air exposure is not significant enough to require breathing protection.

Ingestion: Not applicable.

8.3 Exposure guidelines

None established. None required for normal use.

General: If skin irritation occurs as a result of handling, wash affected areas with soap and water and wear protective clothing to avoid future irritation.

9. Physical and Chemical Properties

Specific Physical Form:	roll of Tape	Color:	white, yellow, black
General Physical Form:	solid	Odor:	minimal
Auto ignition Temperature:	unknown	Flash Point:	unknown
Flammable Limits – LEL:	N/A	Flammable Limits – UEL:	N/A
Boiling Point:	N/A	Melting Point:	no data available
Solubility in Water:	N/A	pH:	N/A
Volatile Compounds:	N/A	Evaporation Rate:	N/A
Vapor Density:	N/A	Vapor Pressure:	N/A
Viscosity:	N/A	Specific Gravity:	N/A

10. Stability and Reactivity

Stability: Stable under normal conditions

Materials and conditions to avoid: Fire/burning

Hazardous polymerization: Will not occur

Hazardous decomposition products: From burning may include various hydrocarbons, carbon monoxide, carbon dioxide, hydrogen chloride, hydrogen cyanide, oxides of nitrogen, and other organic species.

Hazardous decomposition: Generally does not occur unless exposed to extreme temperatures and/or burning or other continuous combustion sources.

11. Toxicological Information

Contact the address on the first page for more information on this product or its constituents.

12. Ecological Information

Ecotoxicological information: not applicable

Chemical fate information: not applicable

13. Disposal Considerations

Waste: Not a hazardous waste as designated by U.S. EPA regulations (40 CFR Part 261.2). Normal solid waste disposal methods are recommended. Typically incinerated at an authorized industrial or commercial incinerator or deposited in an authorized sanitary landfill. Since local regulations vary, consult applicable regulations or authorities before disposal.

14. Transport Information

No special handling required.

15. Regulatory Information

These products are considered an "article" as defined by the Federal Occupational Safety and Health Administration (OSHA) Hazard Communication Standard CFR Title 29-1910.1200 (5) (v) & (6) (xii) (c). Such products are considered exempt from the notice requirements since they do not release or otherwise result in exposure to a hazardous chemical under normal conditions of use.

An article, as defined by the law is:

"A manufactured item: (I) which is formed to a specific shape or design during manufacture; (II) which has end-use functions dependent in whole or in part upon its shape or design during end-use, and which does not release, or otherwise result in exposure to, a hazardous chemical under normal conditions of use".

311/312 Hazard Categories:

- a. No fire hazard
- b. No pressure hazard
- c. No reactivity hazard
- d. No immediate hazard
- e. No delayed hazard

State Regulations: See Brite-Line® LLC for more information.

International Regulations: See Brite-Line® LLC for more information.

16. Other Information

NFPA Hazard Classifications:

Health	0
Flammability	1
Reactivity	0
Special Hazards	none

Brite-Line® LLC has had our highway marking tapes tested by an independent laboratory against the US federal standard test 16CFR1500.44 (1-1-12 edition) for potential flammable solids. Under this standard US test, BLT highway marking tapes were deemed to not be flammable solids (i.e. could not sustain combustion at room temperature even when lit by a source of ignition for 5 seconds).

Reason for update: This SDS has been updated to reflect the most current information available for our customers to operate in a safe manner when installing Brite-Line® LLC highway marking tape products. The information on this Material Safety Data Sheet represents our current data and best opinion as to the proper use and handling of this product under normal conditions.

This SDS has been prepared to meet the United States Hazard Communication Standard 29 CFR 1910.1200.

Brite-Line® LLC makes no warranties, expressed or implied, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose or course of performance or usage of trade. Any use of the products which is not in conformance with this Material Safety Data Sheet, the Product's Technical Data Sheet, or the Product's Application Recommendations which involves using the product in combination with any other product or any other process is the responsibility of the user. Due to the infinite variety of factors that can affect the use and application of a Brite-Line® product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the Brite-Line® product to determine its fitness for a particular purpose or application method. It is the user's responsibility to determine if the Brite-Line® product is suitable for a particular purpose and application method.

1. Product and Company Identification

Product Identifiers: Removable Tape Primer

Product Codes: P-20

Emergency Response:
Phone Number:

Chemtrec
1-800-424-9300

Manufacturer:

BRITE-LINE® LLC
10390 E. 48th Ave
Denver, CO 80238

2. Composition/Information on Ingredients

Components	Wt. %	CAS #
N-Heptane	30-60	142-82-5
Acetone	30-60	67-64-1
Proprietary Polymeric Components	15-25	N/A

3. Hazards Identification

Routes of Entry	Inhalation, skin contact, ingestion, eye contact
Carcinogenic Status	Not considered carcinogenic by NTP, IARC, and OSHA
Target Organs	Eyes and skin
Health Effects – Eyes	May cause eye irritation
Health Effects – Skin	May cause skin irritation
Health Effects – Ingestion	No known significant effects or critical hazards
Health Effects – Inhalation	No known significant effects or critical hazards
Chronic Exposure	No known significant effects or critical hazards

4. First Aid Measures

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact:

Check for and remove any contact lens. Flush with large amounts of water. Occasionally lift lower and upper eyelids. Get medical attention immediately.

Skin Contact:

Wash effected areas with soap and water. If signs or symptoms develop, get medical attention.

Inhalation:

Remove to fresh air. If not breathing, if breathing is irregular, or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention immediately.

If Swallowed:

Wash out mouth with water. Do not induce vomiting unless directed to do so by a medical personnel. Contact a physician immediately. Never give anything by mouth to an unconscious or convulsing person.

5. Fire Fighting Measures

Flammability of the Product:

Extremely flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst with the risk of subsequent explosion. Run off to a sewer may create a fire or explosion hazard.

Fire Extinguishing Media:

Foam, dry chemical, or water.

Hazardous Combustion Products:

Decomposition products may include carbon monoxide and carbon dioxide

Special Protective Equipment for Fire Fighters:

Fire fighters should wear appropriate protective equipment and self contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Special Exposure Hazards:

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. I possible move containers from the fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

6. Accidental Release Measures

Personal Precautions:

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking, or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Environmental Precautions:

Avoid dispersal of spilled material and run off and contact with soil, waterways, drains, and sewers. Inform the relevant authorities if the product has caused environmental pollution.

Large Spills:

Eliminate all ignition sources. Equipment must be grounded to prevent sparking. Evacuate the area of unprotected personnel. Trained personnel should contain source of the spill if it can be done without risk. Dike or otherwise confine spilled product. Prevent entry into sewers, water courses, or confined spaces. Move containers away from the spill. Take up with non-flammable absorbent material and place in non-leaking container and seal tightly. Use spark proof tools and explosion proof equipment. Dispose of via a licensed waste disposal contractor.

Small Spills:

Eliminate all ignition sources. Equipment must be grounded to prevent sparking. Evacuate the area of unprotected personnel. Contain source of the spill. Dike or otherwise confine spilled product. Take up with absorbent material and place in non-leaking container and seal tightly. Dispose of via a licensed waste disposal contractor.

7. Handling and Storage

Handling:

Put on appropriate personal protective equipment. Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Workers should wash hands and face before eating, drinking, and smoking. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame, or any other ignition source. Use explosion proof ventilating, lighting, and material handling equipment. Use non-sparking tools. Take precautionary measures to prevent electrostatic discharges. To avoid fire or explosion dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain residue and can be hazardous. Do not reuse containers.

Storage:

Store in accordance with local regulations. Store in a segregated and approved area. Store in the original containers protected from direct sunlight in a dry cool and well ventilated area away from incompatible materials. Eliminate all ignition sources. Keep all containers tightly closed. Use appropriate containment to avoid environmental contamination in the event of a leak.

Date Prepared: 10/30/15

8. Exposure Controls/Personal Protection

Engineering Measures:

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Use explosion proof ventilation equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Hygiene Measures:

Thoroughly wash hands, forearms, and face with soap and water after handling chemical products, before eating, drinking, smoking, or using the lavatory and at the end of the work period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

Personal Protection:

Respiratory; Use a properly fitted air purifying or air fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, hazards of the product and the safe working limits of the selected respirator.

Hands; Chemical resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates that that this is necessary.

Eyes; Safety eyewear complying with an approved standard should be used when a risk assessment indicates that that this is necessary to avoid exposure to liquid splashes, mists, or dusts.

Skin: Personal protective equipment and clothing for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

9. Physical and Chemical Properties

Specific Physical Form:	Liquid Solution	Color:	Clear
General Physical Form:	Liquid	Odor:	Minimal
Auto ignition Temperature:	465°C	Flash Point:	-17°C (closed cup)
Flammable Limits – LEL:	2%	Flammable Limits – UEL:	13%
Boiling Point:	56°C	Melting Point:	-94°C
Solubility in Water:	Partially Miscible	pH:	no data available
Volatile Compounds:	80% E	vaporation Rate:	7.7 (BuAc =1)
Vapor Density:	1.6 (air = 1)	Vapor Pressure: 1	84 @ 20°C (mm Hg)
Viscosity:	40 cps	Specific Gravity:	0.767 g/cc

10. Stability and Reactivity

Stability:	Stable
Conditions to Avoid:	Avoid all possible sources of ignition.
Materials to Avoid:	Highly reactive oxidizers
Hazardous Polymerization:	Hazardous polymerization will not occur

Date Prepared: 10/30/15

11. Toxicological Information

Acetone	Acute Toxicity: Rat: Oral LD50: 5800 mg/kg, inhalation LC50 8-hr- 50, 100 mg/m ³ Remarks: Behavior – altered sleep time including change in righting reflex, tremor. Guinea Pig: Dermal LD50: 7,426 mg/kg Irritation and Corrosion: Rabbit: Mild skin irritation 24h eye irritation 24h Not classifiable as a carcinogen based on its IARC, ACGIH, NTP, or EPA
Heptane	Acute Toxicity: Rat: Inhalation rat LC50: 103 gm/m ³ /4H. Not classifiable as a carcinogen based on its IARC, ACGIH, NTP, or EPA classification.
Proprietary Polymeric Components	No toxicity data available.

12. Ecological Information

Mobility P	artially miscible with water
Persistence / degradability	No information is available
Bio accumulation	No information is available
Ecotoxicity	No information is available

13. Disposal Considerations

Since local regulations vary, consult applicable regulations or authorities before disposal.

14. Transport Information

Domestic (Land, D.O.T.)	Hazard Class: 3, UN/NA: UN1133, Packing Group: II
International (Water, I.M.O.)	Hazard Class: 3, UN/NA: UN1133, Packing Group: II
International (Air, I.C.A.O.)	Hazard Class: 3, UN/NA: UN1133, Packing Group: II

15. Regulatory Information

TSCA Listing	All components have been verified for inclusion on the EPA Toxic Substances Control Act Chemical Substance Inventory
MA Right to Know Law	All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at the de minimus concentration have been identified in the hazardous ingredient section of the MSDS.
California Prop 65	No components listed
SARA Title III, Sect. 302	No components listed
SARA Title III Sect. 311/312	Categorized as Fire Hazard
SARA Title III Sect. 313	No components listed
Clean Air Act – Hazardous Air Pollutants (HAPs)	No components listed
Clean Air Act – Ozone Depleting Substances (ODS)	This product does not contain a Class I or II ozone depleting substance (ODS) as defined by the US Clean Air Act Section 602 at 40 CFR 82.
VOC Content	310 g/l of VOC (estimated)

16. Other Information

The information on this Data Sheet represents our current data and best opinion as to the proper use and handling of this product under normal conditions.

Brite-Line® LLC makes no warranties, expressed or implied, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose or course of performance or usage of trade. Any use of the products which is not in conformance with this Safety Data Sheet, the Products Technical Data Sheet, or the Products Application Recommendations which involves using the product in combination with any other product or any other process is the responsibility of the user. Due to the infinite variety of factors that can affect the use and application of a Brite-Line® product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the Brite-Line® product to determine its fit for a particular purpose or application method. It is the user's responsibility to determine if the Brite-Line® product is suitable for a particular purpose and application method. No other information is available.

1. Product and Company Identification

Product Identifiers: C-20 BRITE-SKY

Synonym: Solvent based adhesive

Material uses: Coatings: Road marking tape low VOC primer adhesive (<150g/l VOC)

Manufacturer: Tri-Tex co inc.

Code: 9968SC-20_99

Validation date: 23 July 2014

Print date: 23 July 2014

Responsible name: Company

Product type: Liquid

Manufacturer:
BRITE-LINE® LLC
10390 E. 48th Ave
Denver, CO 80238

Emergency Telephone Number:

Canada: 613-996-6666 (Canutec)

United States: 800-424-9300 (Chemtrec)

2. Hazards Identification

Physical state: Liquid. [Organic mixture of solvent blend]

OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview: WARNING!
FLAMMABLE LIQUID AND VAPOR. CAUSES RESPIRATORY TRACT AND EYE IRRITATION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR IF SWALLOWED. MAY CAUSE SKIN IRRITATION.
Flammable liquid. May be harmful if absorbed through skin or if swallowed. Irritating to respiratory system. Moderately irritating to the eyes and skin. Keep away from heat, sparks and flame. Do not ingest. Do not get in eyes. Avoid breathing vapor or mist. Avoid contact with skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Potential acute health effects:

Inhalation: Irritating to respiratory system.
Ingestion: Harmful if swallowed.
Skin: Harmful in contact with skin. Moderately irritating to the skin.
Eyes: Moderately irritating to eyes.

Potential chronic health effects:

Chronic effects: Contains material that can cause target organ damage.
Target organs: Contains material which causes damage to the following organs: blood, kidneys, lungs, liver.
Contains material which may cause damage to the following organs: upper respiratory tract, skin, eyes, central nervous system (CNS).

Over-exposure signs/symptoms:

Inhalation: Adverse symptoms may include the following: -respiratory tract irritation - coughing
Skin: Adverse symptoms may include the following: -irritation -redness
Eyes: Adverse symptoms may include the following: -irritation -watering -redness

Medical conditions aggravated by overexposure:

Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

3. Composition/information on ingredients

Name	CAS number	%
acetone	67-64-1	30 - 60
tert-butyl acetate	540-88-5	10 - 30
heptane	142-82-5	10 - 30

4. First Aid Measures

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Notes to physician: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire Fighting Measures

Flash point:	Closed cup: Between -18°C (0°F) and 23°C (73°F).
Flammability of the product:	Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.
<u>Extinguishing media:</u>	
Suitable:	Use dry chemical, CO2, water spray (fog) or foam.
Not suitable:	Do not use water jet.
Special exposure hazards:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Hazardous thermal decomposition products:	Decomposition products may include the following materials: carbon dioxide carbon monoxide
Special protective equipment for fire-fighters:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Special remarks on fire hazards:	Vapor may travel a considerable distance to source of ignition and flash back.

6. Accidental Release Measures

Personal precautions: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up:

Small spill: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

Large spill: Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and Storage

Handling:

Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage:

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure Controls/Personal Protection

Product name

acetone

Exposure limits

ACGIH TLV (United States, 1/2008).

TWA: 500 ppm 8 hour(s).

TWA: 1188 mg/m³ 8 hour(s).

STEL: 750 ppm 15 minute(s).

STEL: 1782 mg/m³ 15 minute(s).

NIOSH REL (United States, 6/2008).

TWA: 250 ppm 10 hour(s).

TWA: 590 mg/m³ 10 hour(s).

OSHA PEL (United States, 11/2006).

TWA: 1000 ppm 8 hour(s).

TWA: 2400 mg/m³ 8 hour(s).

Product name	Exposure limits
tert-butyl acetate	ACGIH TLV (United States, 1/2008). TWA: 200 ppm 8 hour(s). TWA: 950 mg/m ³ 8 hour(s). NIOSH REL (United States, 6/2008). TWA: 200 ppm 10 hour(s). TWA: 950 mg/m ³ 10 hour(s). OSHA PEL (United States, 11/2006). TWA: 200 ppm 8 hour(s). TWA: 950 mg/m ³ 8 hour(s).
heptane	ACGIH TLV (United States, 1/2008). TWA: 400 ppm 8 hour(s). TWA: 1640 mg/m ³ 8 hour(s). STEL: 500 ppm 15 minute(s). STEL: 2050 mg/m ³ 15 minute(s). NIOSH REL (United States, 6/2008). TWA: 85 ppm 10 hour(s). TWA: 350 mg/m ³ 10 hour(s). CEIL: 440 ppm 15 minute(s). CEIL: 1800 mg/m ³ 15 minute(s). OSHA PEL (United States, 11/2006). TWA: 500 ppm 8 hour(s). TWA: 2000 mg/m ³ 8 hour(s).

Recommended monitoring**procedures:**

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection:

Respiratory: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eyes Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental Exposure controls Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Other protection In case of insufficient ventilation, wear suitable respiratory equipment.

Personal protective equipment (Pictograms)



9. Physical and Chemical Properties

Physical state	Liquid. [Organic mixture of solvent blend]
Flash point	Closed cup: Between -18°C (0°F) and 23°C (73°F).
Flammable limits	Greatest known range: Lower: 2.6% Upper: 12.8% (acetone)
Color	Yellowish
Boiling/ condensation point	60 to 100°C (140 to 212°F) N/A
Relative density	0.838 (Water = 1)
VOC	112 (g/l)

10. Stability and Reactivity

Stability	The product is stable.
Hazardous Polymerization	Under normal conditions of storage and use, hazardous polymerization will not occur.
Materials to Avoid	Reactive or incompatible with the following materials: oxidizing materials
Hazardous Decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Conditions of reactivity	Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge. Highly flammable in the presence of the following materials or conditions: heat and combustible materials. Flammable in the presence of the following materials or conditions: oxidizing materials.

11. Toxicological Information

Acute toxicity:

Product/ingredient name	Result	Species	Dose	Exposure
acetone	LD50 Oral	Rat	5800 mg/kg	-
	LD50 Oral	Rabbit	5340 mg/kg	-
	LC50 Inhalation Vapor	Rat	50100 mg/m3	8 hours
heptane	LC50 Inhalation Vapor	Rat	103 g/m3	4 hours
tert-butyl acetate	LD50 Dermal	Rabbit	>2 g/kg	-
	LD50 Oral	Rat	4100 mg/kg	-
	LD50 Oral	Rat	4500 mg/kg	-
	LC50 Inhalation Vapor	Rat	>2230 mg/m3	4 hours

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
acetone	A4	-	-	-	-	-
heptane	-	-	-	None	-	-

12. Ecological Information

Environmental effects

No known significant effects or critical hazards.

Acute ecotoxicity:

Product/ingredient name	Test Result	Species	Exposure
acetone	- Acute LC50 8300000 ug/L Fresh water	Fish - Bluegill – Lepomis macrochirus	96 hrs
	- Acute LC50 8300000 ug/L Fresh water	Fish - Bluegill – Lepomis macrochirus	96 hrs
	- Acute LC50 >100000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hrs
	- Acute LC50 10000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hrs
tert-butyl acetate	- Acute LC50 327000 to 362000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hrs

13. Disposal Considerations

Waste disposal The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any byproducts should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport Information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	1133	ADHESIVES	3	II		-
IMDG Class	1133	ADHESIVES	3	II		-
IATA-DGR Class	1133	ADHESIVES	3	II		-

PG* : Packing group

15. Regulatory Information

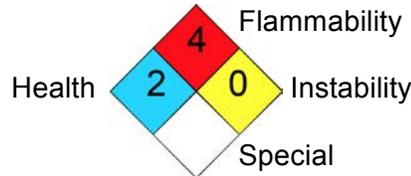
HCS Classification	Flammable liquid Irritating material
U.S. Federal regulations	TSCA 4(a) final test rules: acetone; heptane TSCA 8(a) PAIR: tert-butyl acetate; heptane United States inventory (TSCA 8b): All components are listed or exempted. TSCA 12(b) one-time export: acetone; heptane SARA 302/304/311/312 extremely hazardous substances: No products were found. SARA 302/304 emergency planning and notification: No products were found. SARA 302/304/311/312 hazardous chemicals: acetone; tert-butyl acetate; heptane SARA 311/312 MSDS distribution - chemical inventory – hazard identification: acetone: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; tert-butyl acetate: Fire hazard, Immediate (acute) health hazard; heptane: Fire hazard
State regulations	Connecticut Carcinogen Reporting: None of the components are listed. Connecticut Hazardous Material Survey: None of the components are listed. Florida substances: None of the components are listed. Illinois Chemical Safety Act: None of the components are listed. Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed. Louisiana Reporting: None of the components are listed. Louisiana Spill: None of the components are listed. Massachusetts Spill: None of the components are listed. Massachusetts Substances: The following components are listed: ACETONE; TERTBUTYL ACETATE;HEPTANE (N-HEPTANE) Michigan Critical Material: None of the components are listed. Minnesota Hazardous Substances: None of the components are listed. New Jersey Hazardous Substances: The following components are listed: ACETONE; tert-BUTYL ACETATE;n-HEPTANE New Jersey Spill: None of the components are listed. New Jersey Toxic Catastrophe Prevention Act: None of the components are listed. New York Acutely Hazardous Substances: The following components are listed: Acetone;tert-Butyl acetate New York Toxic Chemical Release Reporting: None of the components are listed. Pennsylvania RTK Hazardous Substances: The following components are listed: 2-PROPANONE; HEPTANE Rhode Island Hazardous Substances: None of the components are listed.

United States inventory (TSCA 8b)

United States inventory (TSCA 8b): All components are listed or exempted.

16. Other Information

National Fire Protection Association (U.S.A.)



References - Manufacturer's Material Safety Data Sheet.

Date of printing 23 July 2014

Date of issue 23 July 2014

 Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

1. Product and Company Identification

Product name	Durable Tape Primer D-20
MSDS name	Durable Tape Primer D-20
CAS #	Mixture
Product use	Primer for permanent road marking tapes
Generic description	Solvent based rubber dispersion
Manufacturer	BRITE-LINE® LLC 10390 E. 48th Ave Denver, CO 80238
24 hour emergency assistance	CHEMTREC telephone number 1-800-424-9300
General assistance	Telephone number 1-888-201-6448
MSDS assistance	Telephone number 1-888-201-6448

2. Hazards Identification

Emergency overview Liquid and vapors are flammable. Contact may cause skin and eye irritation. Mist may cause nose and throat irritation. Ingestion will cause nausea, vomiting, pain, upset stomach, and diarrhea.

Potential health effects

Eyes	Liquid or vapors may irritate the eyes. Prolonged or repeated contact may worsen irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May lead to permanent damage if not treated promptly.
Skin	This product may cause irritation to the skin. Prolonged or repeated contact with this product may dry and/or defat the skin. This product may be harmful if it is absorbed through the skin.
Inhalation	This product may cause irritation to the respiratory system. Excessive inhalation of this material causes headaches, dizziness, nausea, and incoordination.
Ingestion	This product is harmful if swallowed. Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Target organs Lungs, skin, and eyes. Central nervous system. Kidneys.

Signs and symptoms Signs and symptoms of overexposure to this product include headache, irritation of upper respiratory tract, asthmatic symptoms, chest tightness, breathing difficulty, coughing, eye irritation, skin irritation, diarrhea.

3. Composition/Information on Ingredients

Components	CAS #	Weight %
Methyl ethyl ketone (MEK)	78-93-3	30-60
Ethylacetate	141-78-6	30-60
Cyclohexane	110-82-7	5-10

Date Prepared: 10/30/15

4. First Aid Measures

First aid procedures

Eye contact	In case of contact, immediately flush with large amounts of water, continuing to flush for 15 minutes. Get medical attention or advice immediately.
Skin Contact	For skin contact flush with large amounts of water. If irritation persists, repeat flushing and get medical attention. Discard any shoes or clothing items that cannot be decontaminated.
Inhalation	Move person to non-contaminated air. Call a physician if symptoms develop or persist.
Ingestion	If the material is swallowed, get immediate medical attention. If vomiting occurs naturally, have the victim lean forward to reduce risk of aspiration. Never give anything by mouth to a victim who is unconscious or is having convulsions.
Notes to physician	This material, if aspirated into the lungs, may cause chemical pneumonitis; treat the affected person appropriately. If overexposure to the solvents in this product is suspected, testing should include nervous system and brain effects including recent memory, mood, concentration, headaches, and altered sleep patterns. Liver and kidney function should be evaluated.

5. Fire Fighting Measures

Extinguishing media	Use water to cool fire-exposed containers and to protect personnel. Do not direct a solid stream of water or foam into hot, burning pools; this may result in frothing and increased fire intensity.
Basic firefighting	Empty containers may retain product residue including Flammable or Explosive vapors. Do not cut, drill, grind, or weld near full, partially full, or empty product containers.
Firefighting PPE	Firefighters should wear full protective clothing including self-contained breathing apparatus
Sensitivity to static	Sparks generated by static discharge may ignite this product or its vapors. All containers and equipment must be bonded or grounded to minimize risk.
Unusual fire and	During a fire, irritating and highly toxic gases may be generated during combustion or explosion hazards decomposition. Vapors may be heavier than air and may travel long distances along the ground before igniting back to the vapor source. High temperatures can cause sealed containers to rupture due to a build-up of internal pressure. Cool with water to reduce this likelihood in a high temperature situation.
Flash point	<71.6 °F (<22 °C)

6. Accidental Release Measures

Emergency action	WARNING, FLAMMABLE. Eliminate all sources of ignition. Evacuate the area promptly and keep upwind of the spilled material. Isolate the spill area to prevent people from entering the area. Wear appropriate personal protective equipment (PPE) and clothing during clean-up.
Containment actions	Stop discharge if safe to do so. Stop material from contaminating soil or from entering sewers or water streams. Cover spills with non-flammable absorbent and place in closed chemical waste containers.
Reporting	See Federal reporting requirements listed in Section 15. We recommend you contact local authorities to determine if there may be other local reporting requirements.

7. Handling and Storage – For Commercial Use Only – Not Packaged or Labeled for Home Use!

Handling	Keep this product from heat, sparks, or open flame. Avoid getting this material into contact with your skin and eyes. Wash hands thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles, face shields, and gloves. Professionally launder contaminated clothing before re-use. Avoid breathing vapors or mists of this product. Use this product with adequate ventilation. Do not reuse the empty container.
Storage	Keep the container tightly closed and in a cool, well-ventilated place. Do not handle or store near an open flame, heat, or other sources of ignition. All containers must be bonded or grounded to minimize risk.
Empty container	ATTENTION! Follow the label warnings even after container is emptied since empty precaution containers may retain product residues. Do not reuse empty container for food, clothing, or products for human or animal consumption, or where skin contact can occur. Do not heat or cut empty container with electric or gas torch.

8. Exposure Controls/Personal Protection

Engineering controls	Provide local and general exhaust ventilation to effectively remove and prevent build-up of any vapors or mist generated from the handling of this product. Explosion proof exhaust ventilation should be used. Additional area ventilation or local exhaust may be required to maintain air concentrations below recommended exposure limits.
Personal protective equipment	
Eyes	Wear safety glasses; chemical goggles (if splashing is possible). Contact lenses should not be worn while working with D-20 primer.
Skin/Body	Impervious gloves should be used at all times when handling this product. Recommended gloves include rubber, neoprene, nitrile or Viton. Use of protective coveralls and long sleeves is recommended.
Respiratory	Special applications may necessitate the use of more stringent respiratory protection equipment.
General	Eyewash fountains and emergency showers should be readily available. Use good industrial hygiene practices in handling this material.

9. Physical & Chemical Properties

Target solids	20%
pH	N/A
Density	0.717
Odor	Solvent
Color	Colorless to yellow
Physical state	Liquid
Freeze protect	No

10. Chemical Stability & Reactivity Information

Hazardous reactions	If product is burned, carbon dioxide, carbon monoxide, acetic acid, vinyl acetate, and /decomposition other unknown products may be produced. Additionally, depending on conditions, some products aliphatic aldehydes and carboxylic acids may be formed.
Hazardous polymerization	Will not occur.
Conditions to avoid	Extremes of temperature and direct sunlight. Keep away from sources of ignition.

Date Prepared: 10/30/15

Stability Stable under normal conditions. This product may react with strong acids, bases, and oxidizing agents.

11. Toxicological Information

Chronic effects Chronic exposure to solvents can cause reproductive problems, reduced fertility, dryness and cracking of skin, headaches, loss of appetite, and nausea.

Carcinogenicity If this product contains any carcinogens, these will be noted below:

12. Ecological Information

Ecotoxicological Organic solvents produce slight to moderate toxicity to aquatic life. Insufficient data **information**exists to evaluate the effect on plants, birds, and other land animals.

13. Disposal Considerations

It is the obligation of each user of the product mentioned herein to determine and comply with the requirements of all applicable local, state, and federal regulations with regard to use and disposal of this product.

Waste disposal Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations. Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes. Empty containers must be handled with care due to product residue. Do not heat or cut empty container with electric or gas torch.

14. Transportation Information

DOT Basic shipping requirements:
 Proper shipping name: Adhesives
 Hazard class: 3
 UN number: UN1133
 Packing group: II



IATA Basic shipping requirements:
 Proper shipping name: Adhesives
 Hazard class: 3
 UN number: UN1133
 Packing group: II



IMDG Basic shipping requirements:
 Proper shipping name: Adhesives
 Hazard class: 3
 UN number: UN1133
 Packing group: II



15. Regulatory Information

This SDS is prepared and distributed pursuant to the Federal Hazard Communication Standard, 29 CFR 1910.1200.

Federal regulations All components are on the U.S. EPA TSCA Inventory List.

US CWA Section 311 Reporting Quantities of Hazardous Substances: Reportable quantity

Cyclohexane 110-82-7 CYCLOHEXANE 1000 LBS

US EPA (SARA Title III) Section 313 – Toxic Chemical: Listed substance

Cyclohexane 110-82-7 CYCLOHEXANE US EPCRA (SARA Title III) Section 313 – Toxic Chemical: Listed substance

State Regulations If this product contains any California Proposition 65 chemicals at reportable levels, these will be listed below:

Restrictions of The product(s) covered by this SDS do not contain or are under the prescribed levels **Hazardous** of prohibited substances listed under 2011/65/EU Hazardous Substances Restricted or **Substances (RoHS)** Prohibited in Electrical Equipment, including lead (CAS# 7439-92-1), mercury (CAS# 7439-97-6), cadmium (CAS# 7440-43-9), hexavalent chromium (CAS# 7440-47-3), polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE).

International This product has been classified in accordance with the hazard criteria of the Controlled **Regulations** Products Regulations and contains all the information required by the Controlled Products Regulations.

Substances of Very The product(s) covered by this SDS do not include any of the substances above a **High Concern (SVHC)** concentration of 0.1% weight by weight (w/w) in the Candidate List of Substances of Very High Concern (SVHC) for authorization published or proposed by ECHA on the following dates:

- October 28, 2008
- August 31, 2009
- January 13, 2010
- March 8, 2010
- June 18, 2010
- October 14, 2010
- December 15, 2010
- June 20, 2011
- December 19, 2011
- February 17, 2012
- June 18, 2012
- December 19, 2012

HMIS Ratings

Health:	2*
Flammability:	3
Physical hazard:	0
Personal protection:	X

SARA 311/312 Hazard Categories

Immediate Hazard:	Yes
Delayed Hazard:	Yes
Fire Hazard:	Yes
Pressure Hazard:	No
Reactivity Hazard:	No

Date Prepared: 10/30/15

WHMIS Status Controlled
WHMIS Labeling



WHMIS Classification B2 – Flammable/Combustible
D2B – Other Toxic Effects – Toxic

16. Other Information

Disclaimer The data in this SDS has been compiled from publicly available sources. This data relates only to the designated product and not to the use of said product in combination with other materials. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Responsibility for proper precautions and safe use of the product lies with the user. All data in this SDS is typical of the product as a whole, and does not represent any individual lot or batch, therefore, Brite-Line® LLC makes no warranty about the accuracy of the data herein and assumes no liability for the use of such data. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

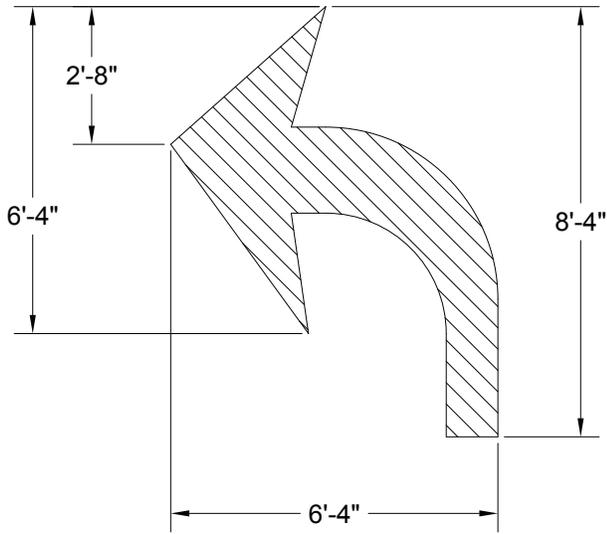
Issue date 10/30/15

Prepared by Brite-Line® LLC, Regulatory Affairs

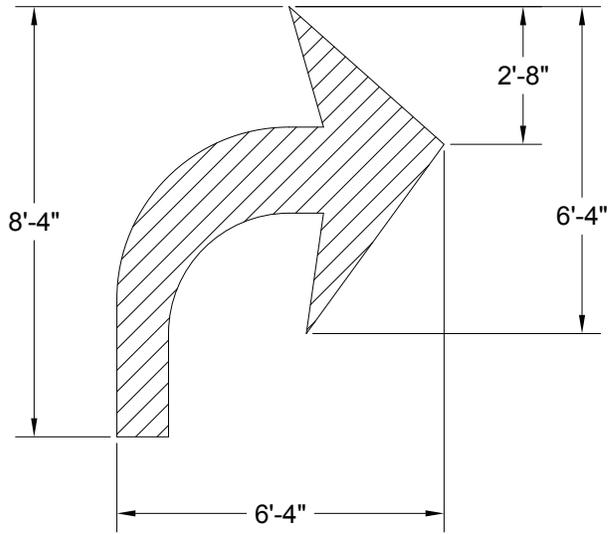
Dimensioned Artwork



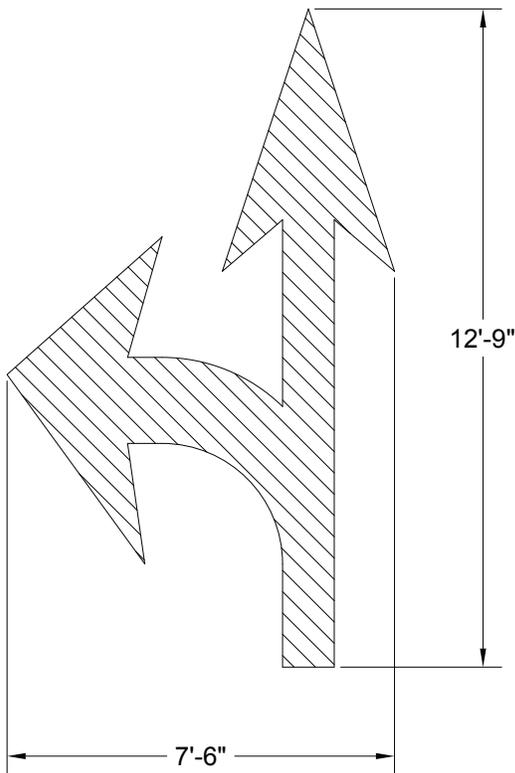
Available in all Brite-Line® tapes



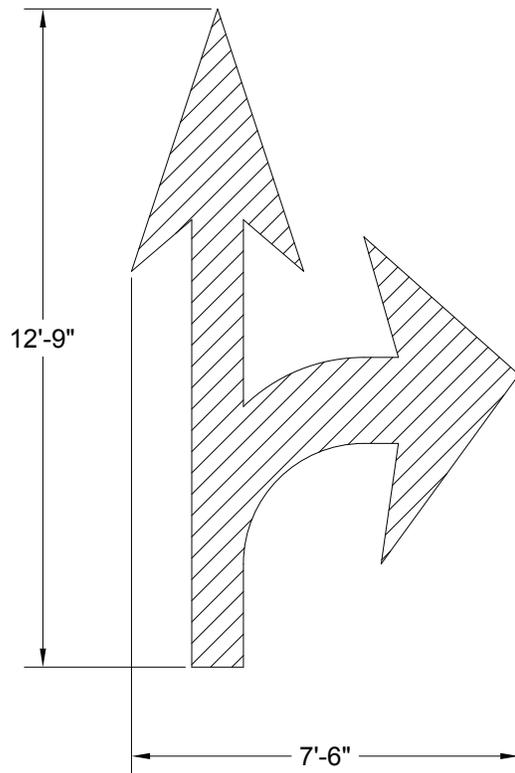
LEFT TURN ARROW



RIGHT TURN ARROW

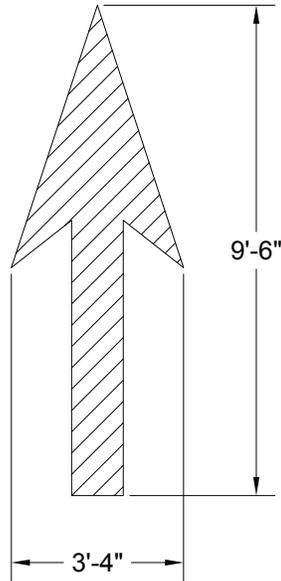


LEFT TURN COMBO

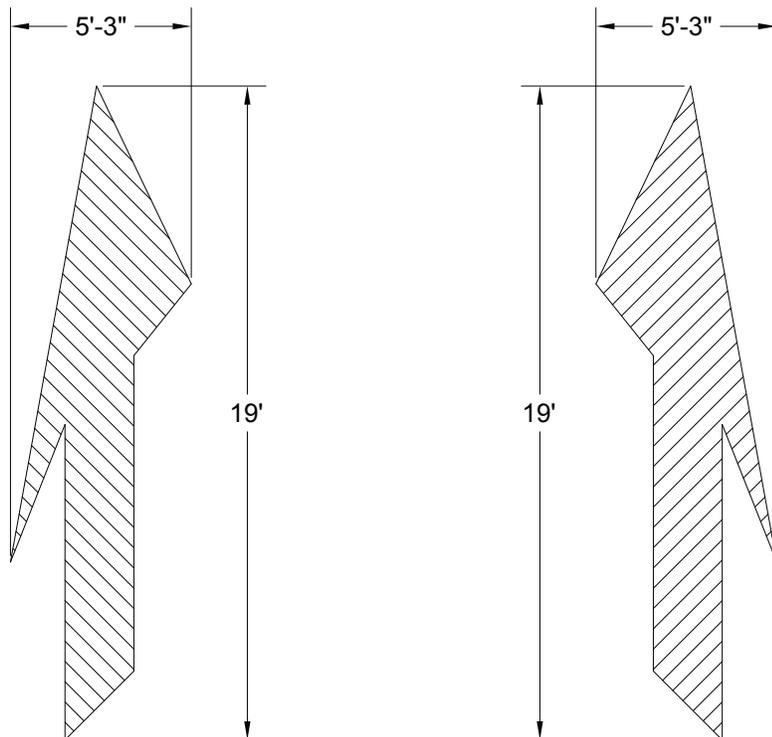


RIGHT TURN COMBO

Available in all Brite-Line® tapes

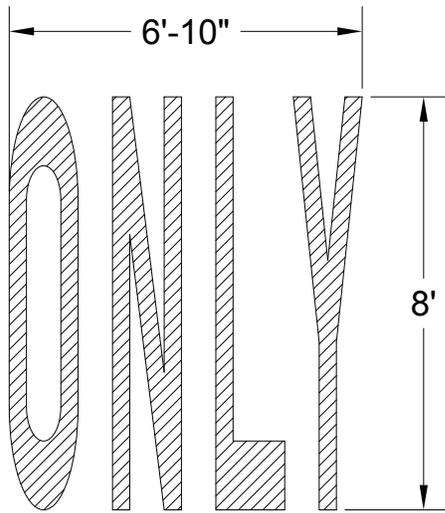


STRAIGHT ARROW

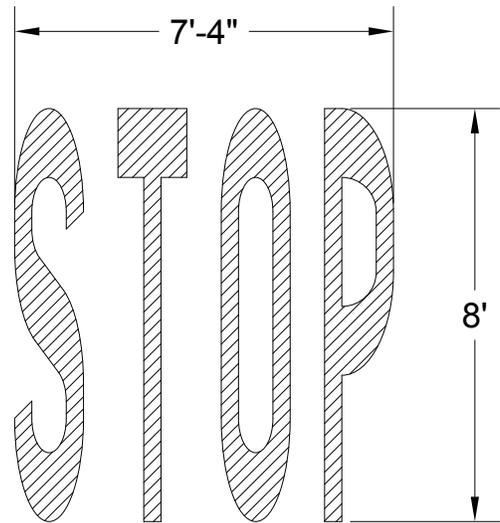


RIGHT LANE DROP ARROW

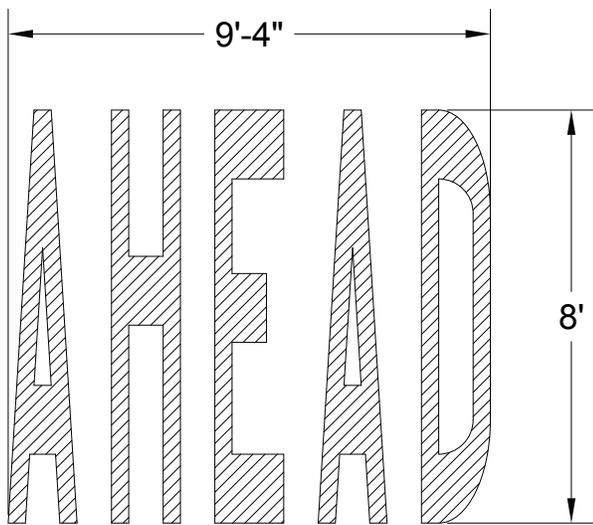
LEFT LANE DROP ARROW



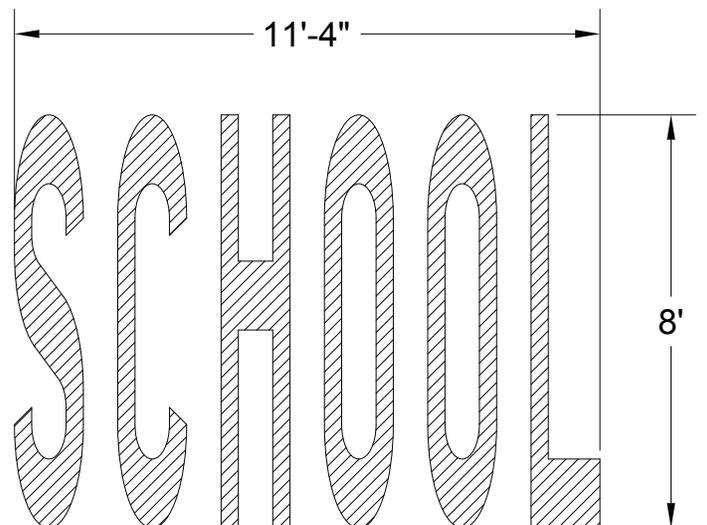
"ONLY" LEGEND



"STOP" LEGEND

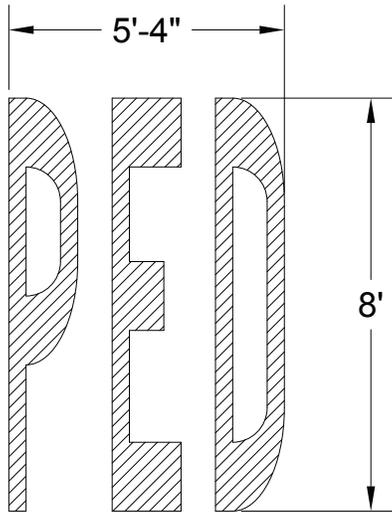


"AHEAD" LEGEND

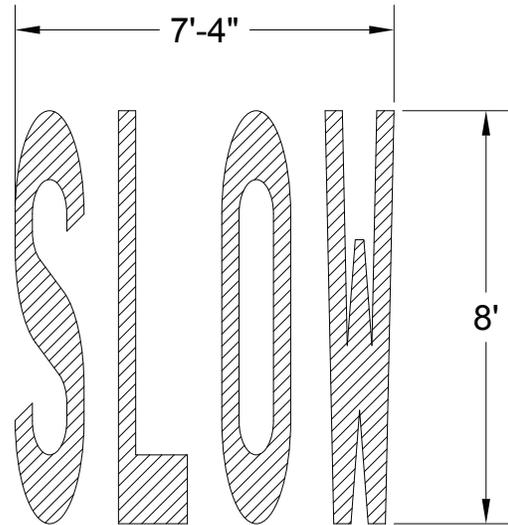


"SCHOOL" LEGEND

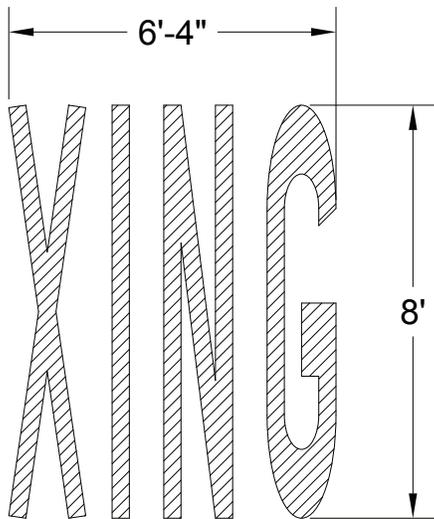
Available in all Brite-Line® tapes



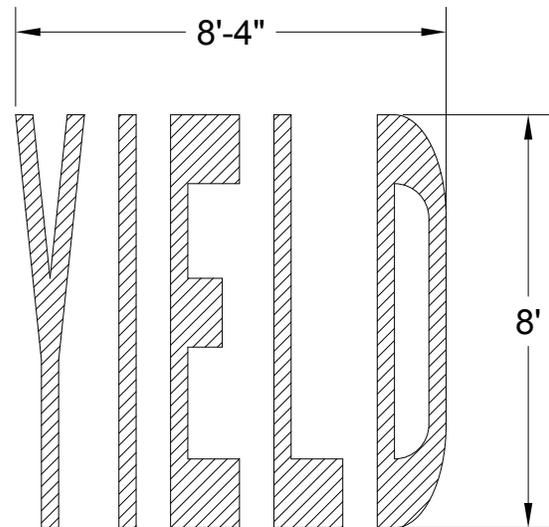
"PED" LEGEND



"SLOW" LEGEND

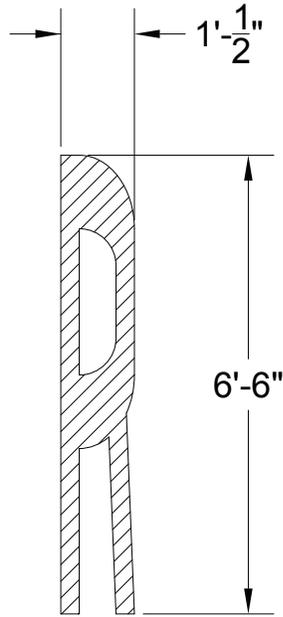


"XING" LEGEND

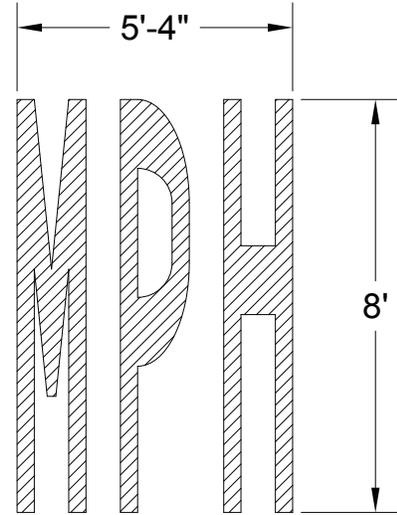


"YIELD" LEGEND

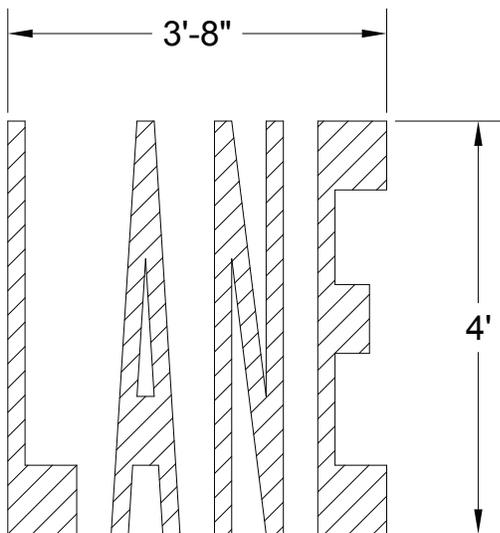
Available in all Brite-Line® tapes



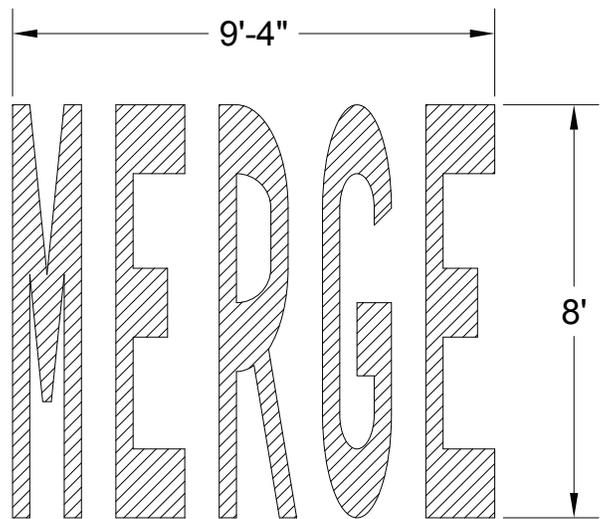
"R" LETTER



"MPH" LEGEND

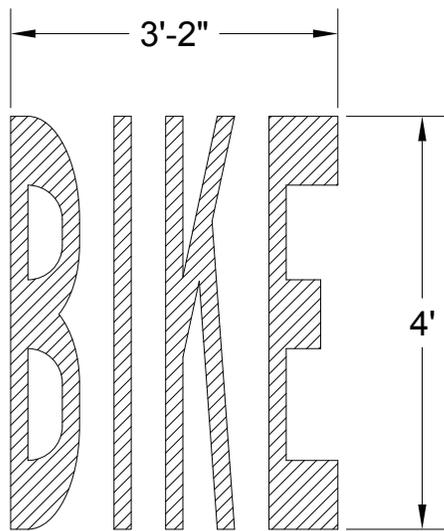


"LANE" LEGEND

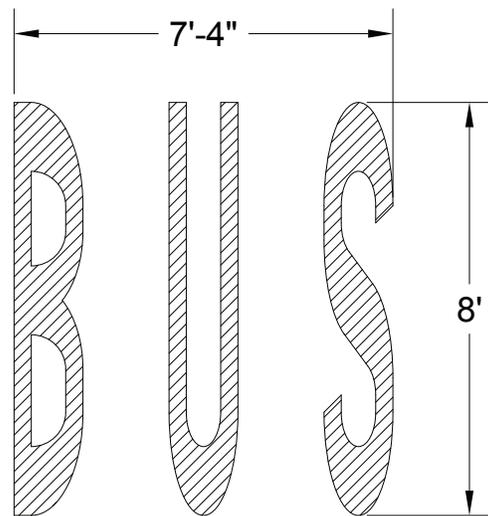


"MERGE" LEGEND

Available in all Brite-Line® tapes



"BIKE" LEGEND



"BUS" LEGEND

briteline

Saving lives by making our roads brighter.™

10390 E. 48th Ave. | Denver, CO 80238 | 888.201.6448

briteline
CHINA

Saving lives by making our roads brighter.™

Product Catalog

revised February 2020

Table of Contents

PRODUCT DATA SHEETS

LUDWAY PL5000

LUDWAY PL5010

LUDWAY PL10000

LUDWAY PL10000 Durable

LUDWAY PLU5002

Product Data Sheets



PRODUCT DATA SHEET

LUDWAY PL5000

Reflective Pavement Marking Tape

PL5000 reflective pavement marking tape is pre-made with synthetic rubber. It has high tensile strength with the surface coated with 1.5 index glass-beads that has good retro-reflectivity. With high performance coatings on the tape, it has a strong anti-friction ability. The bottom is coated with a strong and weather resistant adhesive which improves the adhesion between road and tape. It makes the tape firmly stuck on roads. PL5000 reflective pavement marking tape has not only a good retro-reflectivity, but also has an easy application advantage than ordinary road signs.

Features

Good retro-reflectivity all day long ; anti-skid ; high tensile ; strong weather resistance ; easy application; Pre-cut symbols and legends—standard and custom

Application

It can be used for road signs; letters; arrows; graphics; warnings at port, airport, toll, parking lot etc. Pre-cut symbols and legends—standard and custom.

Property

Items	Values		Units	Test Methods
Color	PL5001/W	PL5002/Y	---	---
Overall Thickness	1.4	1.4	mm	ASTM-D-4325
Retroreflectivity	250	175	mcd·m-2lx-1	ASTM-D-4061
Adhesion	16	16	N/25mm	ASTM-D-1000
Skid Resistance	45	45	BPN	ASTM-E-303

Performance Life

The performance life of pavement markings will depend on the following:

- Traffic conditions
- Snow removal practices
- Pavement surfaces
- Application techniques

It is recommended that each customer thoroughly evaluate LUDWAY pavement marking tapes under the conditions in the specified location. While experience has shown that when properly applied, these materials are highly effective traffic control devices, LUDWAY Technologies makes no generalized performance claims.

Standard Dimension

- Standard length : 33m , 50m
- Standard width : 10cm, 15cm, 20cm, 40cm, 45cm; or according to customer's requirements.
- available color: white, yellow, red, blue, black,green

Application Methods

Inlay and overlay; Coated with P120 contact primer. The quantity can be 1kg per every 3-5m²of road tape on new roads. Actual amount depends on the situation of roads.

Shelf life

24 months in the first package under the condition of 23°C×65%RH.

Important Notice

The information, data and other statements are based on our testing results, the user should determine the suitability of the product for its intended use.

PRODUCT DATA SHEET

LUDWAY PL5010

Pavement Marking Tape

PL5010 pavement marking tape is pre-made with synthetic rubber. It has smooth surface without beads. The tape uses a high quality polyurethane topcoat with a special release coating to make it easy to clean up by water or wet mop. It has an ability of self-cleaning and non-stickiness to dust and mud. The bottom is coated with a strong and weather resistant adhesive which improves the adhesion between road and tape. It is more durable than traditional PVC marking tape.

Features

Smooth surface; high tensile; strong weather resistance; easy application; self-cleaning; Pre-cut symbols and legends— standard and custom

Application

It can be used for road marking in airport, shopping center, exhibition hall, workshop etc. It is applicable to various pavements of concrete, asphalt, cement, marble and walls.

Property

Items	Values		Units	Test Methods
Color	PL5011/W	PL5012/Y	---	---
Overall Thickness	1.0	1.0	mm	ASTM-D-4325
Adhesion	16	16	N/25mm	ASTM-D-1000
Adhesion	16	16	N/25mm	ASTM-D-1000
Water Resistant	Pass		---	GB/T24717

Performance Life

The performance life of pavement markings will depend on the following:

- Pavement surfaces
- Application techniques

It is recommended that each customer thoroughly evaluate LUDWAY pavement marking tapes under the conditions in the specified location. While experience has shown that when properly applied, these materials are highly effective traffic control devices, LUDWAY Technologies makes no generalized performance claims.

Standard Dimension

- Standard length : 33m , 50m
- Standard width : 5cm,10cm, 15cm, 20cm, or according to customer’s requirements.
- available color: white, yellow, red, blue, black, green
- with liner

Application Methods

Coated with P120 contact primer. The quantity can be 1kg per every 3–5m²of road tape on new roads. Actual amount depends on the situation of roads.

Shelf life

24 months in the first package under the condition of 23°C×65%RH.

Important Notice

The information, data and other statements are based on our testing results, the user should determine the suitability of the product for its intended use.

PRODUCT DATA SHEET

LUDWAY PL10000

Profiled Pavement Marking Tape

PL10000 series profiled pavement marking tape is highly reflective under both wet and dry conditions with a big block raised profile. The unique patterned construction combines technologies in beads, topcoats and adhesives. It is a conformable marking tape intended for lane and edge lines applications in highway work zones. It is a warning when you drive on the line. It is a solution to help drivers navigate work zones in all conditions.

Features

Highly reflective, wet or dry; Durable for normal work zone life, installs and removes easily; It is designed for use as long lines, edge lines, channelizing lines, gore markings, stop bars, cross walks, symbols and legends.

Property

Items	Values		Units	Test Methods
color	PL10001/W	PL10002/Y	---	---
Thickness at thin spots	1.6	1.6	mm	ASTM-D-4325
Thickness at thick spots	2.5	2.5	mm	ASTM-D-4325
Adhesion	20	20	N/25mm	ASTM-D-1000
Retroreflectivity	400	250	mcd·m-2lx-1	ASTM-D-4061

Performance Life

The performance life of pavement markings will depend on the following:

- Traffic conditions
- Snow removal practices
- Pavement surfaces
- Application techniques

It is recommended that each customer thoroughly evaluate LUDWAY Pavement Marking Tapes under the conditions in the specified location. While experience has shown that when properly applied, these materials are highly effective traffic control devices, LUDWAY Technologies makes no generalized performance claims.

Standard Dimension

- Standard length : 33m , 50m
- Standard width : 10cm, 15cm, 20cm, 40cm, 45cm; Or according to customer's requirement.
- available color: white, yellow

Application Methods

Inlay and overlay; Coated with P120 contact primer. The quantity can be 1kg per every3-5m²of road tape on new roads. Actual amount depends on the situation of roads.

Shelf life

24 months in the first package under the condition of 23°C×65%RH.

Important Notice

The information, data and other statements are based on our testing results, the user should determine the suitability of the product for its intended use.

PRODUCT DATA SHEET

LUDWAY PL10000

Profile Durable Pavement Marking Tape

PLU10000 consists of a uniquely designed round pattern which can provide same reflectance from every direction, also offers excellent drainage in rain weather. PLU10000 can be used as an inlay on new asphalt or surface applied on most pavement surfaces with bitumen or primer where high durability in the demanding applications of lane lines, edge lines intersections, cross walks, stop bars, symbols, and legends.

Features

- All weather visibility with maximum durability ; High skid resistance ; Easy application
- Round pattern presents a maximum reflectance from every direction
- Product design which provides increased visibility under wet road condition
- Coated with butyl rubber mastic adhesive on bottom which provide long durability

Properties:

PLU10000 meets requirements for traffic category: Type II, P7, also meets following categories according to DIN EN 1436:

Property	Condition as new	Value in use	
		PLU10001/W	PLU10002/Y
Skid Resistance	≥ S 1	S 3	S2
Night Visibility - Dry Road	R 5	R 3	R4
Night Visibility - Wet Road	RW 6	RW 3	RW6
Daytime Visibility	Q 5	Q 5	Q3
Color	Y2	---	Y2

Minimum requirements for resistance to wear and tear were met by 90% of the remaining area.

BAST-Approval Number: 2017 1DF 01.17 / 2017 1VF 01.18

Performance Life

The performance life of pavement markings will depend on the following:

- Traffic conditions
- Snow removal practices
- Pavement surfaces
- Application techniques

It is recommended that each customer thoroughly evaluate LUDWAY Pavement Marking Tapes under the conditions in the specified location. While experience has shown that when properly applied, these materials are highly effective traffic control devices, LUDWAY Technologies makes no generalized performance claims.

Standard Dimension

- Standard length : 50m
- Standard width : 15cm, 30cm

Application Methods

Inlay and overlay; Coated with P120 contact primer. The quantity can be 1kg per every3-5m²of road tape on new roads. Actual amount depends on the situation of roads.

Shelf life

24 months in the first package under the condition of 23°C×65%RH.

Important Notice

The information, data and other statements are based on our testing results, the user should determine the suitability of the product for its intended use.

PRODUCT DATA SHEET

LUDWAY PLU5002

Yellow Temporary Road Marking Tape

Temporary Removable Marking Tape PLU5002 is a conformable yellow colored marking material to be used in highway construction work zones. PLU5002 offers excellent retroreflectance due to a mixture of high quality super glass beads bonded to the polyurethane topcoat. The tape is coated with a pressure sensitive adhesive for easy, rapid application. PLU5002 helps drivers navigate work zones in all conditions.

Features

- extremely high visibility on dry and wet pavements ; High skid resistance; Easy application
- Road can be opened to traffic immediately after application
- Easy to remove intact or in large pieces

Properties

PLU5002 meets requirements for traffic category: Type II, P6, also meets following categories according to DIN EN 1436:

Property	Condition as new	Value in use
Skid Resistance	≥ S 1	S 2
Night Visibility – Dry Road	R 5	R 5
Night Visibility – Wet Road	RW 6	RW 6
Daytime Visibility	Q 3	Q 3
Color Coordinates	Y2	---

Minimum requirements for resistance to wear and tear were met by 90% of the remaining area.

BASt-Approval Number: 2015 1VF 09.17

Removability

The tape is removable from asphalt and cement concrete surfaces intact or in large pieces at temperatures above 32 °F (0 °C) without the use of heat, solvents, grinding, or sandblasting.

Use the following procedure:

1. Wear gloves and use a chisel-like tool to pry up the edge of the tape.
2. Pull straight up at a 90 ° angle to the pavement.
3. A small amount of heat may be used to help soften the adhesive when removing tape during cold weather conditions.

Note: Burning or grinding is not recommended.

Performance Life

The performance life of pavement markings will depend on the following:

- Traffic conditions
- Snow removal practices
- Pavement surfaces
- Application techniques

It is recommended that each customer thoroughly evaluate LUDWAY Pavement Marking Tapes under the conditions in the specified location. While experience has shown that when properly applied, these materials are highly effective traffic control devices, LUDWAY Technologies makes no generalized performance claims.

Standard Dimension

- Standard length : 100m
- Standard width : 15cm

Shelf life

24 months in the first package under the condition of 23°C×65%RH.

Important Notice

The information, data and other statements are based on our testing results, the user should determine the suitability of the product for its intended use.

Saving lives by making our roads brighter.™

North Sun Shine Road, Zhuozhou City, Hebei, China

T 0086-312-3833980 | F 0086-312-3833966



Saving lives by making our roads brighter.™

Product Catalog

revised February 2020

Table of Contents

PRODUCT DATA SHEETS

BLE GA

BLE MA

BLE NY

Brite-Line® 150

Durable 1000

Deltaline® NM Profiled

Deltaline® SD Profiled

Deltaline® NY Profiled

Deltaline® CO Profiled

Deltaline® NC Profiled

BAST CERTIFICATES

BLE GA

BLE MA

BLE NY

Brite-Line® 150

Deltaline® NM Profiled

Deltaline® SD Profiled

Deltaline® WY Profiled

Product Data Sheets



PRODUCT DATA SHEET**BLE GA****Yellow Temporary Road Marking Tape****BASt-Approval Number: 2014 1VF 04.20****Compliance with DIN EN 1436**

Property	New values	Used values
Grip	S 2	S 2
Night Visibility - Dry Road	R 5	R 5
Night Visibility - Wet Road	RW 6	RW 6
Daytime Visibility	Q 3	Q 3
Colour	Y 2	Y 2

The product satisfies the wear resistance regulation, which stipulates that at least 90% of the tape must remain intact as long as it is on the road.

PRODUCT DATA SHEET**BLE MA****Yellow Temporary Road Marking Tape****BAST-Approval Number: 2007 1VF 05.06****Compliance with DIN EN 1436**

Property	New values	Used values
Grip	S 2	S 2
Night Visibility - Dry Road	R 5	R 4
Night Visibility - Wet Road	RW 6	RW 4
Daytime Visibility	Q 3	Q 3
Colour	Y 2	Y 2

The product satisfies the wear resistance regulation, which stipulates that at least 90% of the tape must remain intact as long as it is on the road.

PRODUCT DATA SHEET**BLE NY****Yellow Temporary Road Marking Tape****BASt-Approval Number: 2008 1VF 05.04****Compliance with DIN EN 1436**

Property	New values	Used values
Grip	S 2	S 2
Night Visibility - Dry Road	R 5	R 4
Night Visibility - Wet Road	RW 6	RW 4
Daytime Visibility	Q 3	Q 3
Colour	Y 2	Y 2

The product satisfies the wear resistance regulation, which stipulates that at least 90% of the tape must remain intact as long as it is on the road.

PRODUCT DATA SHEET**Brite-Line® 150****Yellow Temporary Road Marking Tape****BAST-Approval Number: 99 1G 03.02****Compliance with DIN EN 1436**

Property	Used values
Grip	S 2
Night Visibility - Dry Road	R 3
Daytime Visibility	Q 3
Colour	Y 2

The product satisfies the wear resistance regulation, which stipulates that at least 90% of the tape must remain intact as long as it is on the road.

PRODUCT DATA SHEET**Durable 1000****White Permanent Road Marking Tape****BAST-Approval Number: 2005 1DF 08.09****Compliance with DIN EN 1436**

Property	Used values
Grip	S 1
Night Visibility - Dry Road	R 5
Night Visibility - Wet Road	RW 4
Daytime Visibility	Q 5

The tape not only surpassed the minimum requirement of 90% wear resistance of the remaining surface, but even reached 95% after 4 million roll overs.

PRODUCT DATA SHEET**Deltaline® NM Profiled****Yellow Profiled Permanent Road Marking Tape****DELTA**LINE™**BAST-Approval Number: 2010 1VF 06.04****Compliance with DIN EN 1436**

Property	New values	Used values
Grip	S 3	S 3
Night Visibility - Dry Road	R 5	R 4
Night Visibility - Wet Road	RW 6	RW 4
Daytime Visibility	Q 3	Q 3
Colour	Y 2	Y 2

The tape not only surpassed the minimum requirement of 90% wear resistance of the remaining surface, but even reached 100% after 2 million roll overs.

PRODUCT DATA SHEET**Deltaline® SD Profiled****Yellow Profiled Permanent Road Marking Tape****DELTA**LINE™**BASt-Approval Number: 2011 1VF 06.19****Compliance with DIN EN 1436**

Property	New values	Used values
Grip	S 2	S 2
Night Visibility - Dry Road	R 5	R 5
Night Visibility - Wet Road	RW 6	RW 5
Daytime Visibility	Q 3	Q 3
Colour	Y 2	Y 2

The tape not only surpassed the minimum requirement of 90% wear resistance of the remaining surface, but even reached 100% after 4 million roll overs.

PRODUCT DATA SHEET

Deltaline® WY Profiled

Yellow Profiled Permanent Road Marking Tape



BASt-Approval Number: 2013 1VF 01.12

Compliance with DIN EN 1436

Property	New values	Used values
Traffic Category	P7	P7
Grip	S 2	S 2
Night Visibility - Dry Road	R 5	R 4
Night Visibility - Wet Road	RW 6	RW 3
Daytime Visibility	Q 3	Q 3
Colour	Y 2	Y 2

The product satisfies the wear resistance regulation, which stipulates that at least 90% of the tape must remain intact as long as it is on the road.

PRODUCT DATA SHEET**Deltaline® CO Profiled****White Profiled Permanent Road Marking Tape****DELTA**LINE™**BASt-Approval Number: 2011 1DF 06.13****Compliance with DIN EN 1436**

Property	New values	Used values
Grip	S 2	S 2
Night Visibility - Dry Road	R 5	R 5
Night Visibility - Wet Road	RW 6	RW 5
Daytime Visibility	Q 5	Q 5
Installation	Durable Primer	Durable Primer

The tape not only surpassed the minimum requirement of 90% wear resistance of the remaining surface, but even reached 100% after 4 million roll overs.

PRODUCT DATA SHEET**Deltaline® NC Profiled****White Profiled Permanent Road Marking Tape****DELTA**LINE™**BASt-Approval Number: 2013 1DF 01.10****Compliance with DIN EN 1436**

Property	New values	Used values
Grip	S 2	S 2
Night Visibility - Dry Road	R 5	R 5
Night Visibility - Wet Road	RW 6	RW 5
Daytime Visibility	Q 5	Q 5

The product satisfies the wear resistance regulation, which stipulates that at least 90% of the tape must remain intact as long as it is on the road.

BASt Certificates



Bundesanstalt für Straßenwesen

V4z – If (EPM)

Bundesanstalt für Straßenwesen • Postfach 10 01 50 • D-51401 Bergisch Gladbach

Akkreditiertes Prüflabor für den
Produktbereich 'Fahrbahnmarkierungen'
Akkreditierungsnummer D-PL-15013-01-00

Zeugnis über die Prüfung eines Markierungssystems auf der Rundlaufprüfanlage der BAST (RPA) Prüfnummer: 2014 1VF 04.20

1. Antrag

Antragsteller: **Brite-Line Europe GmbH, Bongard-und-Lind-Str. 1, 56414 Weroth**
Antragsache: Prüfung der Verschleißfestigkeit und der verkehrstechnischen Eigenschaften eines Markierungssystems unter den Prüfbedingungen der DIN EN 13 197 (Ausgabe Juli 2014). Die Klassen der verkehrstechnischen Eigenschaften richten sich nach DIN EN 1436 (Ausgabe Januar 2009).

2. Prüfgegenstand

Typ II - Markierungsfolie mit groben Reflexkörpern und Griffigkeitsmitteln für vorübergehende Markierungen

- Systembezeichnung: **BLE GA**
- Folienhersteller: **Brite-Line**
- Folienart: **Gewebefolie, gelb**
- Foliendicke [μm]: **2.000**
- Verwendeter Primer: **P-20 AF/1**

3. Applikationsdaten

- Applikationsverfahren: **aufgewalzt**
- Durchführung der Applikation: Die Applikation erfolgte nach Vorgabe des Antragstellers unter Angabe der o.g. technischen Daten (soweit nicht messbar) durch die BAST.

4. Ergebnisse der Prüfung:

4.1 Erreicht wurden die Anforderungen für die **Verkehrsklasse P 7**. Für die einzelnen verkehrstechnischen Eigenschaften wurden folgende Klassen gemäß DIN EN 1436 erreicht:

	Neuzustand	Gebrauchszustand
- Griffigkeit:	$\geq S 1$	S 2
- Nachsichtbarkeit, trocken:	R 5	R 5
- Nachsichtbarkeit, feucht:	RW 6	RW 6
- Tagessichtbarkeit:	Q 3	Q 3
- Farbbereich:	Y 2	

4.2 Die Mindestanforderung an die Verschleißfestigkeit von 90 % Restfläche wird erfüllt. Die Ergebnisse der physikalisch-chemischen Urmusterprüfung liegen bei der BAST vor.

Dieses Prüfzeugnis darf nur vollständig weitergegeben oder veröffentlicht werden. Die auszugsweise Weitergabe oder Veröffentlichung bedarf der schriftlichen Zustimmung der BAST.

Bergisch Gladbach, 7. November 2014



(M. Zedler)
wissenschaftl. Ang.

Brüderstraße 53
51427 Bergisch Gladbach
Postfach 10 01 50
51401 Bergisch Gladbach
Telefon: 0 22 04 / 43 - 0
Telefax: 0 22 04 / 43 - 673
Internet: www.bast.de

Bundesanstalt für Straßenwesen

V4k – lf (EPM)

Bundesanstalt für Straßenwesen • Postfach 1001 50 • D-51401 Bergisch Gladbach

Prüf- und Zertifizierungsstelle für den
Produktbereich 'Straßenausstattung'
EU – Notifizierungsnummer 0760

Zeugnis über die Prüfung eines Markierungssystems auf der Rundlaufprüfanlage der BASt (RPA)

Prüfnummer: 2007 1VF 05.06

1. Antrag

Antragsteller: **Brite-Line Europe GmbH, Ruhrstr. 6, 56410 Montabaur**
Antragssache: Prüfung der Verschleißfestigkeit und der verkehrstechnischen Eigenschaften eines Markierungssystems unter den Prüfbedingungen der DIN EN 13 197 (Ausgabe Juli 2001). Die Klassen der verkehrstechnischen Eigenschaften richten sich nach DIN EN 1436 (Ausgabe Juli 2003).

2. Prüfgegenstand

Typ II - Markierungsfolie mit groben Reflexkörpern und Griffigkeitsmitteln für vorübergehende Markierungen

- Systembezeichnung: **BLE MA**
- Folienhersteller: **Brite-Line**
- Folienart: **Gewebefolie, gelb**
- Foliendicke [μm]: **2.000**
- Verwendeter Primer: **Veluvine Adhesive P-20 AF**

3. Applikationsdaten

- Applikationsverfahren: **Voranstrich (Primer), aufgewalzt**
- Durchführung der Applikation: Die Applikation erfolgte nach Vorgabe des Antragstellers unter Angabe der o.g. technischen Daten (soweit nicht messbar) durch die BASt.

4. Ergebnisse der Prüfung:

4.1 Erreicht wurden die Anforderungen für **Verkehrsklasse P 5**. Für die einzelnen verkehrstechnischen Eigenschaften wurden folgende Klassen gemäß DIN EN 1436 erreicht:

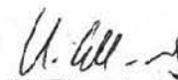
- Griffigkeit: **S 2**
- Nachsichtbarkeit, trocken: **R 4**
- Nachsichtbarkeit, feucht: **RW 4**
- Tagessichtbarkeit: **Q 3**
- Farbbereich: **Y 2**

4.2 Die Mindestanforderung an die Verschleißfestigkeit von 90 % Restfläche wird

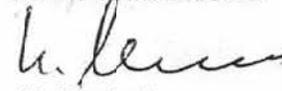
Dieses Prüfzeugnis darf nur vollständig weitergegeben oder veröffentlicht werden. .
oder Veröffentlichung bedarf der schriftlichen Zustimmung der BASt.

Bergisch Gladbach, geändert am 12. Dezember 2007

Leiter des Referates Straßenausstattung


(U. Ellmers)
Regierungsdirektor

Für die Sachbearbeiter:


(R. Keppler)
Techn. Ang.

Brüderstraße 53
51427 Bergisch Gladbach
Postfach 1001 50
51401 Bergisch Gladbach
Telefon: 022 04 / 43-0
Telefax: 022 04 / 43-673
Internet: www.bast.de

Bundesanstalt für Straßenwesen

V4z – If (EPM)

Bundesanstalt für Straßenwesen • Postfach 1001 50 • D-51401 Bergisch Gladbach

Prüf- und Zertifizierungsstelle für den
Produktbereich 'Straßenausstattung'
EU – Notifizierungsnummer 0760

Zeugnis über die Prüfung eines Markierungssystems auf der Rundlaufprüfanlage der BAST (RPA) Prüfnummer: 2008 1VF 05.04

1. Antrag

Antragsteller: **Brite-Line Europe GmbH, Ruhrstr. 6, 55410 Montabaur**
Antragssache: Prüfung der Verschleißfestigkeit und der verkehrstechnischen Eigenschaften eines Markierungssystems unter den Prüfbedingungen der DIN EN 13 197 (Ausgabe Juli 2001). Die Klassen der verkehrstechnischen Eigenschaften richten sich nach DIN EN 1436 (Ausgabe Oktober 2007).

2. Prüfgegenstand

Typ II - Markierungsfolie mit groben Reflexkörpern und Griffigkeitsmitteln für vorübergehende Markierungen

- Systembezeichnung: **BLE-NY**
- Folienhersteller: **Brite-Line**
- Folienart: **Gewebefolie, gelb**
- Foliendicke [µm]: **1.500**
- Verwendeter Primer: **Adhesive Primer P-20 AF**

3. Applikationsdaten

- Applikationsverfahren: **Voranstrich (Primer), aufgewalzt**
- Durchführung der Applikation: Die Applikation erfolgte nach Vorgabe des Antragstellers unter Angabe der o.g. technischen Daten (soweit nicht messbar) durch die BAST.

4. Ergebnisse der Prüfung:

4.1 Erreicht wurden die Anforderungen für **Verkehrsklasse P 6**.

4.2 Für die einzelnen verkehrstechnischen Eigenschaften wurden folgende Klassen gemäß DIN EN 1436 erreicht:

- Griffigkeit: **S 2**
- Nachsichtbarkeit, trocken: **R 4**
- Nachsichtbarkeit, feucht: **RW 4**
- Tagessichtbarkeit: **Q 3**
- Farbbereich: **Y 2**

4.3 Die Mindestanforderung an die Verschleißfestigkeit von 90 % Restfläche wird erfüllt. Die Ergebnisse der physikalisch/chemischen Urmusterprüfung liegen bei der BAST vor.

Dieses Prüfzeugnis darf nur vollständig weitergegeben oder veröffentlicht werden. Auszugsweise Weitergabe oder Veröffentlichung bedarf der schriftlichen Zustimmung der BAST.

Bergisch Gladbach, 4. November 2008

Leiter des Referates Straßenausstattung


(U. Ellmers)
Regierungsdirektor

Für die Sachbearbeiter:


(M. Zedler)
wissenschaftliche Ang.

Brüderstraße 53
51427 Bergisch Gladbach
Postfach 10 01 50
51401 Bergisch Gladbach
Telefon: 0 22 04 / 43 - 0
Telefax: 0 22 04 / 43 - 673
Internet: www.bast.de

Bundesanstalt für Straßenwesen

V4s/K - Vlf 99 1G 03.02

Bundesanstalt für Straßenwesen • Postfach 100150 • D-51401 Bergisch Gladbach

Prüf- und Zertifizierungsstelle für den
Produktbereich 'Straßenausstattung'
EU - Notifizierungsnummer 0760

über die Verschleißfestigkeit und die Entwicklung der verkehrstechnischen Eigenschaften von Markierungsmaterialien unter den Prüfbedingungen der Rundlaufprüfanlage (RPA). Die Prüfung wurde vom 21. Feb. - 14. März 2000 durchgeführt. Dieser Prüfbericht darf nur vollständig weitergegeben oder veröffentlicht werden. Auszugsweise Weitergabe oder Veröffentlichung bedarf der schriftlichen Zustimmung der BAST.

1. Antrag

Antragsteller: Volkmann & Rossbach GmbH & Co. KG, Hohe Straße 11-19, 56410 Montabaur
Antragsache: Prüfung der Verschleißfestigkeit und der Entwicklung der verkehrstechnischen Eigenschaften von Markierungsmaterialien unter den Prüfbedingungen der RPA

2. Untersuchtetes System

Untergrund: Asphaltdeckschicht mit feinstrukturierter Oberfläche
Materialart: Gewebefolie
Materialbezeichnung: Briteline 150 (gelb)
Applikation: Die Applikation erfolgte durch den Antragsteller unter Aufsicht der BAST

3. Applikationsdaten

entfallen
Materialstärke [µm]: 2000

4. Prüfbedingungen

Umlaufgeschwindigkeit: 60 km/h bzw. 10 km/h
Prüfreifen: Michelin Classic TL 91 H
Anzahl der Prüfreifen: 4
Radlast: 3.000 N
Reifenluftdruck: 2,5 bar
Radsturz: 0°
Anlenkwinkel: alternierend ±1°
Prüfraumtemperatur: +5 bis +10 °C
Fahrzyklus: 3 Stunden Wässerung der Proben bei einer Umlaufgeschwindigkeit der Drehscheibe von 10 km/h, anschließend Überrollung der Proben mit der Umlaufgeschwindigkeit von 60 km/h bis zum Erreichen von 0,1 bzw. 0,2; 0,4; 0,6; 1,0; 1,4 und 2,0 Mio Überrollungen mit jeweils stündlichem Drehrichtungswechsel

5. Ergebnisse (geprüft nach den Anforderungen der Tabelle 8 der TL-Vorübergehende Markierungen 97)

Eigenschaft	Anzahl der Radüberrollungen (Mio)							
	0	0,1	0,2	0,4	0,6	1,0	1,4	2,0
Verschleißfestigkeit [%]	100	100	100	100	100	100	100	99
Griffigkeit [SR1-Einheiten]	61	50	51	53	53	50	52	49
Nachtsichtbarkeit [mcd/m²] [X]	455	287	247	207	193	161	155	105*)
Tageslichtbarkeit [%]	0,43	0,43	0,44	0,43	0,42	0,42	0,41	0,4
Farbbereichsklasse	Y2							

*) Die Mindestanforderung dieser Eigenschaft wurde unterschritten

Für den Leiter des Referates
Straßenausstattung



(Dr. H.-H. Meseberg)
Oberregierungsrat

Für die Sachbearbeiter:



(R. Keppler)
Techn. Ang.

Brüderstraße 53
51427 Bergisch Gladbach
Postfach 100150
51401 Bergisch Gladbach
Telefon: 022 04 / 43 - 0
Telefax: 022 04 / 43 - 673
Internet: www.bast.de

Bundesanstalt für Straßenwesen

V4I – If (EPM)

Bundesanstalt für Straßenwesen • Postfach 1001 50 • D-51401 Bergisch Gladbach

Prüf- und Zertifizierungsstelle für den
Produktbereich 'Straßenausstattung'
EU – Notifizierungsnummer 0760

Zeugnis über die Prüfung eines Markierungssystems auf der Rundlaufprüfanlage der BASt (RPA)

Prüfnummer: 2010 1VF 06.04

1. Antrag

- Antragsteller: **Brite-Line Europe GmbH, Heilberscheider Straße 12, 56412 Nentershausen**
Antragssache: Prüfung der Verschleißfestigkeit und der verkehrstechnischen Eigenschaften eines Markierungssystems unter den Prüfbedingungen der DIN EN 13 197 (Ausgabe Juli 2001). Die Klassen der verkehrstechnischen Eigenschaften richten sich nach DIN EN 1436 (Ausgabe Januar 2009).

2. Prüfgegenstand

Typ II - Markierungsfolie, profiliert für vorübergehende Markierungen

- Systembezeichnung: **Deltaline NM**
- Folienhersteller: **Brite-Line**
- Folienart: **Gewebefolie, gelb**
- Foliendicke [µm]: **2.400**
- Verwendeter Primer: **P-20 G**

3. Applikationsdaten

- Applikationsverfahren: **Voranstrich (Primer), aufgewalzt**
- Durchführung der Applikation: Die Applikation erfolgte nach Vorgabe des Antragstellers unter Angabe der o.g. technischen Daten (soweit nicht messbar) durch die BASt.

4. Ergebnisse der Prüfung:

4.1 Erreicht wurden die Anforderungen für die **Verkehrsklasse P 6**.

4.2 Für die einzelnen verkehrstechnischen Eigenschaften wurden folgende Klassen gemäß DIN EN 1436 erreicht:

- Griffbarkeit: **S 3**
- Nachsichtbarkeit, trocken: **R 4**
- Nachsichtbarkeit, feucht: **RW 4**
- Tagessichtbarkeit: **Q 3**
- Farbbereich: **Y 2**

4.3 Die Mindestanforderung an die Verschleißfestigkeit von 90 % Restfläche wird erfüllt. Die Ergebnisse der physikalisch-chemischen Urmusterprüfung liegen bei der BASt vor.

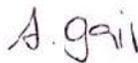
Dieses Prüfzeugnis darf nur vollständig weitergegeben oder veröffentlicht werden. Die auszugsweise Weitergabe oder Veröffentlichung bedarf der schriftlichen Zustimmung der BASt.

Bergisch Gladbach, 17. September 2010

Leiter des Referates Straßenausstattung


(U. Ellmers)
Regierungsdirektor

Für die Sachbearbeiter:


(Dr. A. Gail)
wissenschaftliche Ang.

Brüdersstraße 53
51427 Bergisch Gladbach
Postfach 1001 50
51401 Bergisch Gladbach
Telefon: 02204/43-0
Telefax: 02204/43-673
Internet: www.bast.de

Zeugnis über die Prüfung eines Markierungssystems auf der Rundlaufprüfanlage der BAST (RPA) Prüfnummer: 2011 1VF 06.19

1. Antrag

- Antragsteller: **Brite-Line Europe GmbH, Bongard-und-Lind-Str. 1, 56414 Weroth**
Antragsache: Prüfung der Verschleißfestigkeit und der verkehrstechnischen Eigenschaften eines Markierungssystems unter den Prüfbedingungen der DIN EN 13 197 (Ausgabe Juli 2001). Die Klassen der verkehrstechnischen Eigenschaften richten sich nach DIN EN 1436 (Ausgabe Januar 2009).

2. Prüfgegenstand

Typ II - Markierungsfolie, profiliert für vorübergehende Markierungen

- Systembezeichnung: **Delta-Line SD**
- Folienhersteller: **Brite-Line**
- Folienart: **Gewebefolie, gelb**
- Foliendicke [μm]: **2.000**
- Verwendeter Primer: **P 20 G**

3. Applikationsdaten

- Applikationsverfahren: **aufgewalzt**
- Durchführung der Applikation: Die Applikation erfolgte nach Vorgabe des Antragstellers unter Angabe der o.g. technischen Daten (soweit nicht messbar) durch die BAST.

4. Ergebnisse der Prüfung:

- 4.1 Erreicht wurden die Anforderungen für die **Verkehrsklasse P 7**.
- 4.2 Für die einzelnen verkehrstechnischen Eigenschaften wurden folgende Klassen gemäß DIN EN 1436 erreicht:
- Griffbarkeit: **S 2**
 - Nachsichtbarkeit, trocken: **R 5**
 - Nachsichtbarkeit, feucht: **RW 5**
 - Tagessichtbarkeit: **Q 3**
 - Farbbereich: **Y 2**
- 4.3 Die Mindestanforderung an die Verschleißfestigkeit von 90 % Restfläche wird erfüllt. Die Ergebnisse der physikalisch-chemischen Urmusterprüfung liegen bei der BAST vor.

Dieses Prüfzeugnis darf nur vollständig weitergegeben oder veröffentlicht werden. Die auszugsweise Weitergabe oder Veröffentlichung bedarf der schriftlichen Zustimmung der BAST.

Bergisch Gladbach, 20. Oktober 2011



(M. Zedler)
wissenschaftl. Ang.

Brüderstraße 53
51427 Bergisch Gladbach
Postfach 10 01 50
51401 Bergisch Gladbach
Telefon: 0 22 04 / 43 - 0
Telefax: 0 22 04 / 43 - 673
Internet: www.bast.de

Bundesanstalt für Straßenwesen

V4z – If (EPM)

Bundesanstalt für Straßenwesen • Postfach 10 01 50 • D-51401 Bergisch Gladbach

Prüf- und Zertifizierungsstelle für den
Produktbereich 'Straßenausstattung'
EU – Notifizierungsnummer 0760

Zeugnis über die Prüfung eines Markierungssystems auf der Rundlaufprüfanlage der BAST (RPA) Prüfnummer: 2013 1VF 01.12

1. Antrag

- Antragsteller: **Brite-Line Europe GmbH, Bongard-und-Lind-Str. 1, 56414 Weroth**
- Antragssache: Prüfung der Verschleißfestigkeit und der verkehrstechnischen Eigenschaften eines Markierungssystems unter den Prüfbedingungen der DIN EN 13 197 (Ausgabe Dez. 2011). Die Klassen der verkehrstechnischen Eigenschaften richten sich nach DIN EN 1436 (Ausgabe Januar 2009).

2. Prüfgegenstand

Typ II - Markierungsfolie, profiliert für vorübergehende Markierungen

- Systembezeichnung: **Deltaline WY**
- Folienhersteller: **Brite-Line**
- Folienart: **Gewebefolie, gelb**
- Foliendicke [µm]: **2.500**
- Verwendeter Primer: **P 20 AF**

3. Applikationsdaten

- Applikationsverfahren: **aufgewalzt**
- Durchführung der Applikation: Die Applikation erfolgte nach Vorgabe des Antragstellers unter Angabe der o.g. technischen Daten (soweit nicht messbar) durch die BAST.

4. Ergebnisse der Prüfung:

4.1 Beantragt war die **Verkehrsklasse P 7**. Es wurden die Mindestanforderungen gemäß DIN EN 1436 erreicht für die

<u>Verkehrsklasse:</u>	<u>P 6</u>	<u>P 7</u>
- Griffigkeit:	S 2	S 2
- Nachsichtbarkeit, trocken:	R 5	R 4
- Nachsichtbarkeit, feucht:	RW 5	RW 3
- Tagessichtbarkeit:		Q 3
- Farbbereich:		Y 2

4.2 Die Mindestanforderung an die Verschleißfestigkeit von 90 % Restfläche wird erfüllt. Die Ergebnisse der physikalisch-chemischen Urmusterprüfung liegen bei der BAST vor.

Dieses Prüfzeugnis darf nur vollständig weitergegeben oder veröffentlicht werden. Die auszugsweise Weitergabe oder Veröffentlichung bedarf der schriftlichen Zustimmung der BAST.

Bergisch Gladbach, 26. März 2013



(M. Zedler)
wissenschaftl. Ang.

Brüderstraße 53
51427 Bergisch Gladbach
Postfach 10 01 50
51401 Bergisch Gladbach
Telefon: 022 04 / 43 - 0
Telefax: 022 04 / 43 - 673
Internet: www.bast.de

Saving lives by making our roads brighter.™

Bongard-und-Lind-Straße 1, 56414 Weroth, Germany

T + 49 (0) 64 35 90 80 400 | F + 49 (0) 64 35 90 80 410