Martin® Belt Splice Patch Kit

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Operator's Manual
M3529

Important

MARTIN ENGINEERING HEREBY DISCLAIMS ANY LIABILITY FOR: DAMAGE DUE TO CONTAMINATION OF THE MATERIAL; USER'S FAILURE TO INSPECT, MAINTAIN AND TAKE REASONABLE CARE OF THE EQUIPMENT; INJURIES OR DAMAGE RESULTING FROM USE OR APPLICATION OF THIS PRODUCT CONTRARY TO INSTRUCTIONS AND SPECIFICATIONS CONTAINED HEREIN. MARTIN ENGINEERING'S LIABILITY SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF EQUIPMENT SHOWN TO BE DEFECTIVE.

Observe all safety rules given herein along with owner and Government standards and regulations. Know and understand lockout/tagout procedures as defined by American National Standards Institute (ANSI) z244.1-1982, *American National Standard for Personnel Protection - Lockout/Tagout of Energy Sources - Minimum Safety Requirements* and Occupational Safety and Health Administration (OSHA) Federal Register, Part IV, 29 CFR Part 1910, *Control of Hazardous Energy Source (Lockout/Tagout); Final Rule*.

The following symbols may be used in this manual:

⚠ DANGER

Danger: Immediate hazards that will result in severe personal injury or death.

⚠ WARNING

Warning: Hazards or unsafe practices that could result in personal injury.

⚠ CAUTION

Caution: Hazards or unsafe practices that could result in product or property damages.

IMPORTANT

Important: Instructions that must be followed to ensure proper installation/operation of equipment.

NOTE

Note: General statements to assist the reader.

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Introduction

General

The Martin® Belt Splice Patch Kit is a quick-curing, two-component kit that forms a tough, resilient, low-shrinkage, watertight elastomer for the repair and reconstruction of many materials.

Applications

The Martin® Belt Splice Patch Kit is suitable for applications indoors or outdoors, above and below ground.

Martin® Belt Splice Patch Resin adheres to most industrial surfaces, including natural and synthetic rubber, steel and metals, PVC, concrete and most plastic. It is suitable for applications on vertical or horizontal surfaces. Use of Adhesion Promoter is recommended for best adhesion to steel (e.g. mechanical splices).

References

The following documents are referenced in this manual:

- American National Standards Institute (ANSI) z244.1-1982, *American National Standard for Personnel Protection - Lockout/Tagout of Energy Sources - Minimum Safety Requirements*, American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.
- Federal Register, Volume 54, Number 169, Part IV, 29 CFR Part 1910, *Control of Hazardous Energy Source (Lockout/Tagout); Final Rule*, Department of Labor, Occupational Safety and Health Administration (OSHA), 32nd Floor, Room 3244, 230 South Dearborn Street, Chicago, IL 60604.

Safety

All safety rules defined in the above documents and all owner/employer safety rules must be strictly followed when working with the Martin® Belt Splice Patch Kit.

Materials required

The Martin® Belt Splice Patch Kit comes with a spatula for easy application.

Before Applying Martin® Belt Splice Patch Kit

IMPORTANT

The delivery service is responsible for damage occurring in transit. Martin Engineering CANNOT enter claims for damages. Contact your transportation agent for more information.

1. Inspect shipping container for damage. Report damage to delivery service immediately and fill out delivery service's claim form. Keep any damaged goods subject to examination.
2. Remove Martin® Belt Splice Patch Kit from shipping container. Equipment in containers should include the following:
   a. Martin® Belt Splice Patch Packet
   b. Martin® Belt Splice Patch Spatula
3. If anything is missing or damaged, contact Martin Engineering or a representative.

⚠WARNING

Before applying Martin® Belt Splice Patch Kit, turn off and lock out/tag out energy source to conveyor and conveyor accessories.

4. Turn off and lock out/tag out energy source according to ANSI standards.

NOTE

Protective clothing is recommended when using the Martin® Belt Splice Patch Kit. Martin® Belt Splice Patch Resin washes off of hands with soap and water but does not easily wash out of clothing.

Applying Martin® Belt Splice Patch Kit

IMPORTANT

Read entire section before beginning work.

To apply Martin® Belt Splice Patch Kit, follow the procedures corresponding to the following steps:

1. Prepare the surface.

Prepare the conveyor belt or other surface (i.e. cleaned, roughened, free of dust, oil, grease, moisture, etc.).

NOTE

If a power grinder or sanding disc is used, the grinding speed must be set at the lowest setting possible. If the setting is too high, the rubber will melt and fuse, resulting in a glazed surface and poor adhesion.

2. Pull the pin and knead components together.

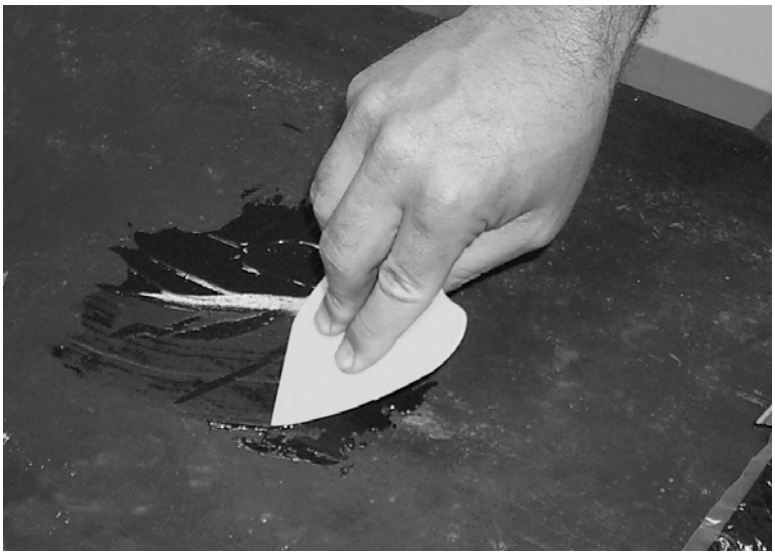
Feel the aluminum foil for the separator clip inside. Cut the foil along the edge to the outside of the separator clip. This will ensure the resin pouch is not accidentally cut.

Take out the resin pouch and lay flat. Grasping the pouch on each end, gently pull the sides apart until the separator tube pops up. Carefully slide the tube out, moving from top to bottom.

After the clip is removed, mixing can begin.

Mix for approximately 3 minutes by kneading and squashing the pack. You will feel the resin begin to warm up after approximately 2 minutes of mixing. In colder temperatures, you will want to mix for 4-5 minutes.

3. Apply to surface.



Cut the corner and squeeze out the resin onto the surface using the spatula.

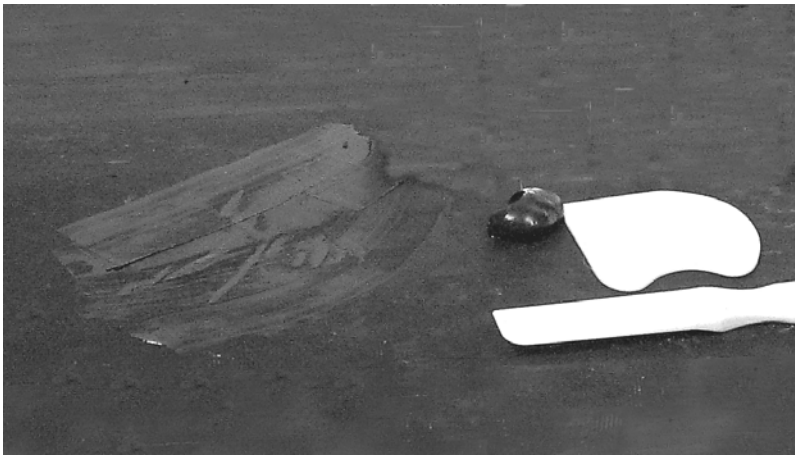
IMPORTANT

Working time is limited to 10 minutes before the resin begins to thicken. After approximately 20 minutes, the resin will gel and after 45 minutes it will set.

NOTE

Maximum strength and flexibility occurs after 12 hours of cure. Approximate times noted are for 77°F (25°C).

4. Allow to cure.



Curing time is accelerated by high temperature and extended in low temperatures. By providing heat in the following ways, accelerated cure can be achieved in low temperatures by:

(1) Pre-heating resin pouch prior to opening - approximately 90°F (32.2°C).

(2) Mixing resin for slightly longer than normal time. (5-6 minutes instead of 3 minutes).

(3) Applying heat directly onto resin and surrounding belt area for 5-10 minutes.

NOTE

Resin flashpoint>302°F (150°C), Resin ignition point>752°F (400°C).

NOTE

When sealing or covering metallic, mechanical belt clips, make sure they are rust-free, roughened, and degreased. Use a cleaning solvent like trichloroethylene, industrial methylated spirits, acetone, or similar products. For best results on mechanical fasteners, Adhesion Promoter must be used. (See section on Using Martin® Belt Splice Patch Adhesion Promoter.)

Using Martin® Belt Splice Patch Adhesion Promoter

1. When using Martin® Belt Splice Patch Adhesion Promoter, shake bottle and apply a thin, even coat of the Adhesion Promoter by brushing across the prepared surface.
2. Prepare **Martin® Belt Splice Patch Resin Pack by kneading and squashing pack for at least 3 minutes while allowing Promoter to tack.** Promoter will tack in approximately 5-10 minutes. Apply **Martin® Belt Splice Patch Adhesion Promotor while Promoter is still sticky.**

NOTE

If you can leave a clearly visible fingerprint in the Promoter, it is ready to accept the Martin® Belt Splice Patch Kit.

IMPORTANT

A completely dry surface of the Adhesion Promoter will not promote any adhesion. When applying the Martin® Belt Splice Patch Kit, make sure it is forced into all voids and gaps between the fasteners and clip joint. All splices should be countersunk as per the individual manufacturer's recommendations.

Part Numbers

This section provides product names and corresponding part numbers for Martin® Belt Splice Patch Kit and related equipment. Please reference part numbers when ordering parts:

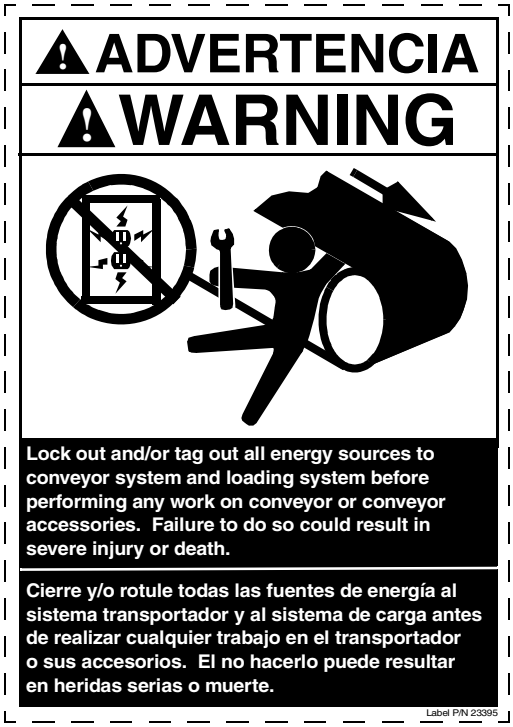
Martin® Belt Splice Patch Kit

Martin® Belt Splice Patch Kit 150-gram (5.25-oz.): P/N 36220-150

Martin® Belt Splice Patch Kit 300-gram (10.5-oz.): P/N 36220-300

Adhesion Promoter 200 ml (6.75 oz.): P/N 36236

Warning Labels



Conveyor Products Warning Label, P/N 23395

Martin® Belt Splice Patch Kit Intended Usage Label

Material Safety Data Sheets (Section 1 of 2)

Basic Information

Trade Name: Martin® Belt Splice Patch Adhesion Promoter

Part Number: 36236

Formula or Chemical Family: Polyurethane Resin

Hazardous Ingredients: Isocyanate and aromatic solvents

Suppliers' Name and Address: Martin Engineering
One Martin Place
Neponset, IL 61345-9766

Contact Numbers: (309)594-2384 (phone)
(309)594-2432 (fax)

Health Hazard Data

Threshold Limit Value: 0.02 ppm

Effects of overexposure when inhaled: Irritation to the mucous membranes/ respiratory tract.

Contact with the eyes: Burning sensation and irritation.

Contact with the skin: Low irritation potential.

Ingested: Can cause irritation and vomiting.

Emergency procedures in cases of overexposure as above: Remove victim to fresh air, remove contaminated clothing, obtain prompt medical attention.

Fire and Explosion Hazard Data

Potential for accidental or spontaneous ignition. Vapor buildup in hot, poorly ventilated areas may cause a fire hazard. Very low risk of spontaneous ignition. Typical flashpoint:100°C (212°F).

Recommended fire-fighting procedures and precautions: Use breathing apparatus, dry chemical powder, or CO_2. If water is used, large quantities are required since the reaction between water and hot isocyanate is quite vigorous.

Special Precautions Recommended for Handling and Storage

Store under cool, dry conditions in tightly sealed containers. Keep away from water and chemicals. Do not expose to an open flame.

Special Precautions for Use

Ventilation requirements: Use in well-ventilated areas.

Respiratory protection: Only if used in poorly-ventilated areas.

Other protective equipment: Although unnecessary, the use of gloves and goggles is recommended.

Reactivity Data

Conditions to avoid: Do not expose to heat above 60°C (140°F) or to an open flame.

Incompatibility materials: Keep away from water and other chemicals.

Hazardous decomposition products: Carbon Hydrocarbons

Spill or Leak Procedures

Environmental Effects: Spilled material reacts with air moisture and water and emits CO^2 gas before solidification.

In the event of spillage or leakage: Cover spillage with sand, sweep off, and clean with an industrial detergent.

Neutralizing Chemicals: N/A

Waste Disposal: As above with no special requirements.

NOTE

All information given here is based on current knowledge and experience and is believed to be accurate. It is given without acceptance of liability for loss or damage attributable to reliance upon this information, as conditions of use lie outside our control. The purpose of this Material Safety Data Sheet is to describe the product in terms of its safety requirements. The data does not signify any warranty with regard to the product's properties. No statements shall be understood as to recommending the use of any product in conflict of any patent.

Material Safety Data Sheets (Section 2 of 2) Complying to U.S. Specifications and MSHA Requirements

Statement of Hazardous Nature

Company: Martin Engineering

Address: One Martin Place, Neponset, IL 61345-9766

Telephone No: (309) 594-2384 Fax: (309) 594-2432

E-Mail: martinone@martin-eng.com

Identification

Product Name: Martin® Belt Splice Patch Kit

Part Number: 36220-150 for one packet
36220-15040 for box of 40
36220-300 for one packet
36220-30025 for box of 25

Regulatory Information:

a. Resin: Any hazardous components, both singularly and combined, are below the concentrations at which they need to be declared or classified.
b. Hardener: CAS No. 9016-87-9

Dangerous Goods Class and Subsidiary Risk: Class 6

HAZARDS IDENTIFICATION: Not regarded as a health or environmental hazard under current legislation.

Content of Harmful or Flammable Substances

Resin: Harmful Products - Phosphorous 0-1%, Chlorene 1-5%

Hardener: Flammable Products - Isocyanate (MDI) 10-30%

NOT CLASSIFIED AS HAZARDOUS FOR TRANSPORTATION.

Use: Indoor and outdoor rubber surface repair.

Physical Description/ Properties

Appearance: Resin - Black, Hardener - Brown

Boiling/Melting Point: See “Precautions for Use.”

Heat Resistance: 194°F (90°C)

Flashpoint: Resin->302°F (150°C), Hardener->392°F (200°C)

Ignition Temperature: Resin->752°F (400°C), Hardener->752°F (400°C)

Specific Gravity: @77°F Mixed Resin 1.04 - 1.05 g/cm^3 (.0376 -.0379 lb/in^3)

Solubility in Water: Non-Soluble

Other Properties: See Technical Data Sheet.

Ingredients:

a. Resin: Polyether/Polyester Polyols
   Inorganic Fillers
   Additives/Catalysts
b. Hardener: Aromatic Di-Isocyanate (MDI)

Health Hazard Information: Health Effects/ First Aid

If swallowed: Do not induce vomiting. Contact a doctor immediately.

Contact with eyes: Flush eyes with large amounts of water for at least 15 minutes.

Contact with skin: Wash skin with soap and water.

If inhaled: If overcome by vapors, remove to fresh air.

Effects of over-exposure:

a. Resin: No harmful effects under normal handling and operating procedures.
b. Hardener: Prolonged/repeated exposure may cause irritation of the skin, eyes, nose, throat, and result in headaches. Do not expose hardener to heat or open flame.

Precautions for Use

Personal Protection:

a. Resin: Respiratory protection not required at ambient temperatures.
b. Hardener: Fire fighters should wear self-contained breathing apparatus.
c. Resin/Hardener: Ensure good ventilation.
d. Protective gloves recommended.
e. Eye Protection recommended.

Flammability:

a. Other protective equipment not needed.
b. Resin: Flash point>302°F (150°C), Ignition Point >752°F (400°C)

Safe Handling Information

Storage and transport:

(a) Store/transport under dry and cool conditions in tightly sealed containers/packs.
(b) Keep away from open flame.

Spills and disposals: Cover spillage with sand, clean with cotton waste, thereafter use industrial detergents, and flush with water.

Fire/Explosion hazard: The product is of low flammability. It may burn. Auto-ignition is highly unlikely. In a fire situation, carbon monoxides, carbon dioxides, nitrous oxide, and various hydrocarbon gases are released.

Technical Information

Product: Martin® Belt Splice Patch Kit (P/N 36220-150, 36220-300) is a flame retardant, two-component, ambient-temperature curing compound with excellent flexibility, good tear strength, and abrasion resistance.

Color: Resin - Black

Mixing Ratio:

a. By weight - 100 pts Resin: 24 pts hardener
b. By volume - 100 pts Resin: 21 pts hardener

Note: Mix resin and hardener for 3 minutes. Increases in temperature will shorten the working time and setting time. Decreases in temperature will extend the working time and setting time.

Specific Gravity/77°F (25°C): Mixed Resin 1.04 - 1.05 g/cm^3 (.0376 -.0379 lb/in^3)

Viscosity/77°F (25°C): Mixed Resin - Thixotropic Paste

Coverage:

a. 1-mm thick application (0.04-inches) i.e. 3 sq. ft.
b. 150g (5.3-oz) twin pack will cover approx. 1 sq. ft. (.09 sq m)
c. 300g (10.6-oz) twin pack will cover approx. 2 sq. ft. (.18 sq m)

Practical Working Time: (Pot Life) 150g (5.3 oz) mix/77°F (25°C) = approx. 10 minutes

Gel Time/77°F (25°C): 150g (5.3 oz) mix = 15-20 minutes

Setting Time/77°F (25°C): 40-45 minutes

Setting Time/45°F (7.2°C): 2-3 hours

Typical Cured Properties

Hardness after 24 hours: Shore A 60-63

Hardness after 7 hours: Shore A 75-80

Hardness at 176°F (80°C): Shore A 80

Tensile Strength: (DIN 53504) 435-580 psi (30-40 bar)

Elongation at break: (DIN 53504) 180-200%

Impact Resistance: (DIN 53453) 10KJ/mm^2 (684 ft•lb/ft^2)

Tear propagation resistance: 575 psi (40 bar)

Abrasion Resistance: (DIN 53516) 350-450 mm^3 (.021-.027 in^3)

Heat Resistance: 176-195°F (80°-90.6°C)

Adhesion: To cleaned and roughened rubber and PVC, excellent. To metal, concrete, and plastic, good/satisfactory.

Typical Properties: Once mixed, Martin® Belt Splice Patch Kit produces an ambient temperature curing high-grade rubber with a Shore A hardness of 60-65. The product shows excellent flexibility combined with good tear strength and abrasion resistance. Martin® Belt Splice Patch Kit can be used for indoor and outdoor applications, both above and below ground.

Typical Applications and Uses

Martin® Belt Splice Patch Kit has a very low irritation potential at room temperature. However, good industrial hygiene must be observed. Details can be found under “Application Instructions.”

Storage Stability

Martin® Belt Splice Patch Kit is moisture sensitive. Material must be stored under dry and cool conditions in tightly-sealed containers. Prolonged exposure to temperatures in excess of 105°F (40.6°C) must be avoided.

NOTE

The technical specification and/or our technical advice whether verbal, in writing, or by trials is given in good faith and based on our test results obtained, but without warranty. It does not release the user from the obligation of testing the products supplied by us or any third party as to the suitability of the intended application. The application, use, and processing of the products are beyond our control and Elite Chemical Industries (Pty) Ltd. Legal obligation in respect of any sale of its products shall be determined by the terms of its conditions of sale. PATENT APPLICATION NO. 86/4152.

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