

TRUCK, LIGHTWEIGHT AND TRUCK, LIGHT - ALL TYPES - LAND ROVER 110 4X4 AND 6X6

APPLICATION OF RUST PREVENTATIVE SOLUTION

PREPARATION FOR SPECIAL PURPOSE

This instruction is authorised for use by command of the Chief of Army. It provides direction, mandatory controls and procedures for the operation, maintenance and support of equipment. Personnel are to carry out any action required by this instruction in accordance with EMEI General A 001.

GENERAL

Introduction

1. This instruction details the application of a rust preventative compound (Zep Ironclad) to the chassis and fuse panel of Land Rover 4x4 and 6x6 variants, and a protective coating (Dow Corning Conformal Coating) to the electrical fuses and relays. The treatment is carried out to reduce corrosion and water ingress. The measures are relevant when vehicles are operated in adverse conditions such as consistent fording and operation in a high salt environment.

NOTE

NSN and Designation used in this instruction were current at the date of issue. If twelve months or more have expired since issue, the NSN should be checked for supersession.

Associated Publications

2. Reference may be necessary to the latest issue of the following documents:
- a. EMEI Workshop E Series;
 - b. [Defence Safety Manual \(SAFETYMAN\)](#);
 - c. [Product Material Safety Data Sheets \(MSDS\)](#);
 - d. Equipment User Hand Books;
 - e. EMEI Vehicle G 10 Decade (Land Rover 110 4 X 4);
 - f. EMEI Vehicle G 20 Decade (Land Rover 110 6 X 6); and
 - g. [EMEI Vehicle A 201-2](#) – Preparation of Vehicles for Shipment by Sea.
3. **Authority.** Refer to Rover Australia Engineering Changes 2023 and 2031, which are authorised by the OEM and endorsed by Project MEA 910294 to carry out this function.
4. **Application.** This application is for all Land Rover 110 4x4 and 6x6 variants.
5. **Items Affected.** The items affected are the chassis, fuse panel, fuses and relays.
6. **Action Required.** Action is needed when protection is required for vehicles operating in adverse conditions likely to cause rust to the chassis or the ingress of moisture into fuses and relays.
7. **Estimated Manhours to Perform.** The application of the compounds will take approximately 2.0 man-hours. Additional drying times of two hours for Zep Ironclad and four hours for the conformal coating should be allowed.
8. **Special Equipment.** Safety equipment is detailed in Paras 10 and 11.
9. **Stores Required.** The stores required can be demanded in various quantities as detailed in Table 1. Approximately 1.5 litres of Zep Ironclad is required per coat.

WARNING

Each of the hazardous substances referred to in this instruction are to be used, stored and disposed of in accordance with the safety requirements given in their material safety data sheets (MSDS).

The safety precautions that follow have been extracted from the respective MSDS, however, the MSDS is to be read in full before using any of the products.

Zep Ironclad

10. Safety precautions for Zep Ironclad are:

- a. **Ventilation.** Zep Ironclad is a flammable item which must be stored and used away from heat, sparks, open flame or any ignition source. Ensure ventilation is adequate to prevent build up of vapours. Zep Ironclad should be applied where the ventilation is equivalent to outdoor conditions. An explosion-proof exhaust fan or an exhaust hood should be used in enclosed areas.
- b. **Respiratory Protection.** Keep the face away from spray mists and do not breathe the vapours. If ventilation is inadequate wear, as a minimum, a properly fitting approved half-face cartridge respirator suitable for organic vapours. For emergency situations involving high vapour concentrations, use a self contained breathing apparatus.
- c. **Personal Protection.** Neoprene, nitrile or natural rubber gloves are to be worn. Full-body clothing is to be worn to prevent skin contact (e.g., overalls, long-sleeved shirt, long pants).
- d. **Eye Protection.** Wear splash-proof safety goggles.

Dow Corning 1-2577 Conformal Coating

11. Safety precautions for the conformal coating are:

- a. **Ventilation.** Dow Corning 1-2577 is a flammable item. Store it and use it away from heat, sparks, open flame or any ignition source. Ensure ventilation is adequate to prevent build up of vapours. Dow Corning 1-2577 should be applied where the ventilation is equivalent to outdoor conditions. An explosion-proof exhaust fan or an exhaust hood should be used in enclosed areas.
- b. **Respiratory Protection.** If ventilation is inadequate wear, as a minimum, a properly fitting approved half-face cartridge respirator suitable for organic vapours. For emergency situations involving high vapour concentrations use self contained breathing apparatus.
- c. **Personal Protection.** Neoprene, nitrile or natural rubber gloves are to be worn. Wash hands and areas of body contact before meals and on completion of the task.
- d. **Eye Protection.** Wear splash-proof safety goggles, especially if contact lenses are worn.

PRODUCTS

Description

12. The products used are detailed in Table 1.

Table 1 Stores Required

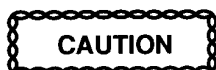
Item	NSN	Description	Qty	Qty per Equip
1.1	8030-66-134-9170	Corrosion Preventive Compound (Zep Ironclad)	5L	As required
1.2	8030-66-134-9171	Corrosion Preventive Compound (Zep Ironclad)	10L	As required
1.3	8030-66-134-9172	Corrosion Preventive Compound (Zep Ironclad)	25L	As required
1.4	8030-66-134-9173	Corrosion Preventive Compound (Zep Ironclad)	205L	As required
2	5970-00-402-2323	Insulating Compound, Electrical Liquid 454 gm container	Pint	As required

13. **Zep Ironclad.** Zep Ironclad (Table 1 Items 1.1 – 1.4) is a wax type coating and one application (two coats) will normally protect surfaces for six months. It should be reapplied more often if the vehicle is operating in salty conditions. When applied, as detailed in this instruction, it may be used instead of PX115 on external surfaces when preparing vehicles for shipment by sea (Ref EMEI Vehicle A 201-2). Zep Ironclad does not need to be removed at the end of an activity or removed before reapplication, apart from normal surface cleaning.

14. Zep Ironclad has a coverage of 9.7 square metres per litre and requires approximately 1.5 litres per coat. The product can be applied to a dry and clean surface by spraying, dipping, brushing or roller coating. When spraying, use a pump up spray or air operated spray gun. The degree of protection obtained depends on the thickness of the film applied. Two coats should be applied and time must be allowed for the first coat to dry (between one and two hours under normal conditions) before applying the second coat.

15. **Insulating Compound (Dow Corning 1-2577 Conformal Coating).** Dow Corning 1-2577 conformal coating (Table 1 Item 2) is a transparent silicone resin that sets as a hard coating and is used to protect fuses and relays by preventing moisture ingress. It should not require re-application; however, if damage occurs to the coating then items may be recoated after cleaning the damaged surface. The conformal coating can be applied to a dry and clean surface by dipping, brushing or flow coating. Curing commences upon contact with air and the product dries to a tack free state in one hour and may then be handled but will take five days at room temperature to completely cure.

APPLICATION



Zep Ironclad is not to be used on polycarbonate plastic as it seriously erodes the strength of the plastic.

Vehicle Underbody

16. The vehicle underbody is treated with Zep Ironclad as follows:
- a. Clean all underbody surfaces of dirt, grease and loose rust.
 - b. Mix the Zep Ironclad thoroughly before use.
 - c. Apply the Zep Ironclad solution to the underside of the vehicle, paying particular attention to the components identified in Figure 1.
 - d. Allow the first coat to dry.
 - e. Apply a second coat.

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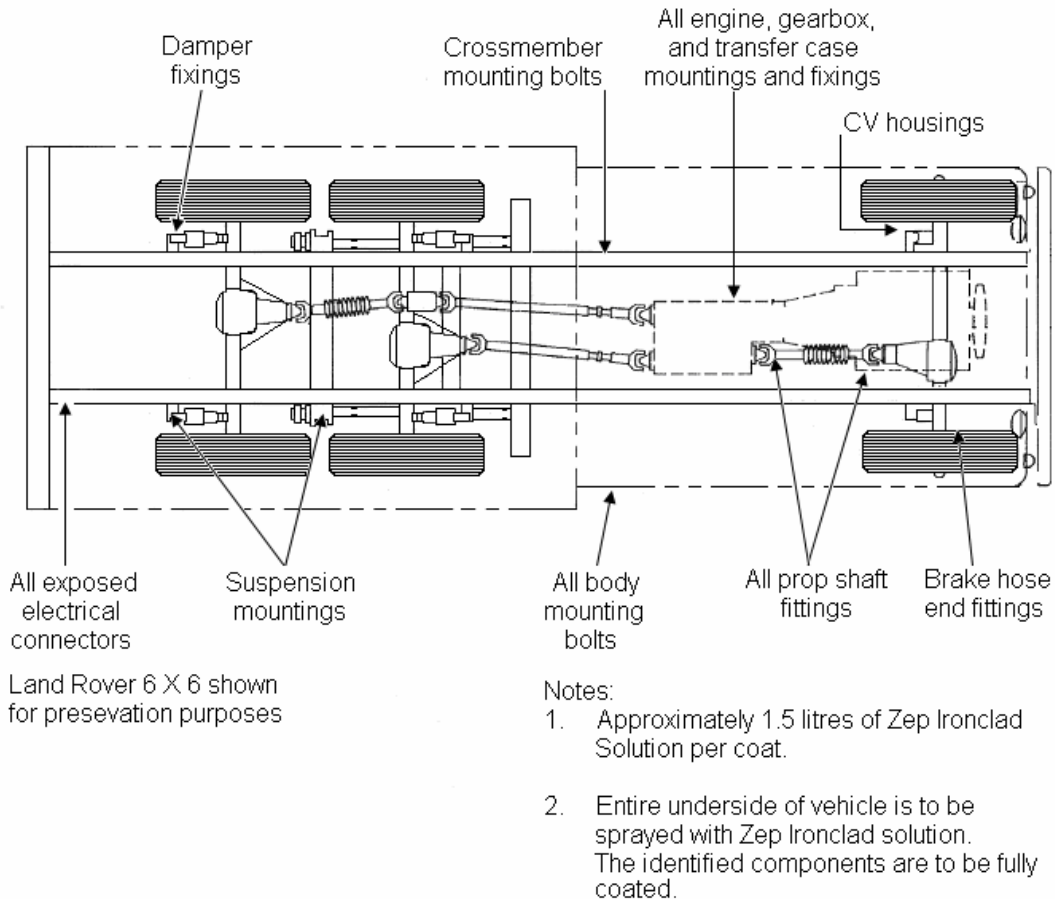


Figure 1 Under-Body Treatment Of Land Rover 110 Variants With Zep Ironclad

Treatment of Fuse Panel and Relays

17. The fuse panel and relays are treated with Zep Ironclad as follows:
- a. Disconnect the terminals from the vehicle batteries.
 - b. Remove the fuses and relays from the fuse panel and engine compartment.

NOTE

Ensure the position of the components is identified to ensure correct reassembly.

- c. Clean the fuse panel surface of dirt, grease and loose rust.
- d. Apply the conformal coating (Table 1, Item 2) to the wiper delay relay, flasher unit, other relays and fuses, as shown in Figure 2.
- e. Allow the coating to cure.
- f. Mix the Zep Ironclad thoroughly and apply the solution to the fuse panel, relays and fuses, as shown in Figure 3.
- g. Allow the coating to cure.
- h. Refit all electrical relays and fuses.
- i. Reconnect the terminals to the vehicle batteries and check the system for correct operation.

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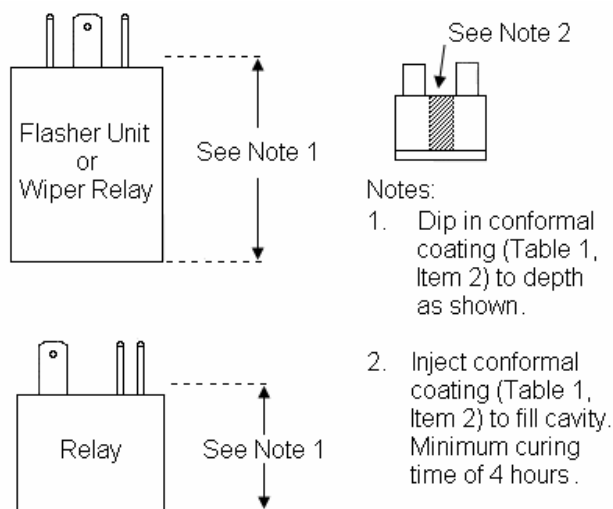


Figure 2 Treatment Of Fuses And Relays With Conformal

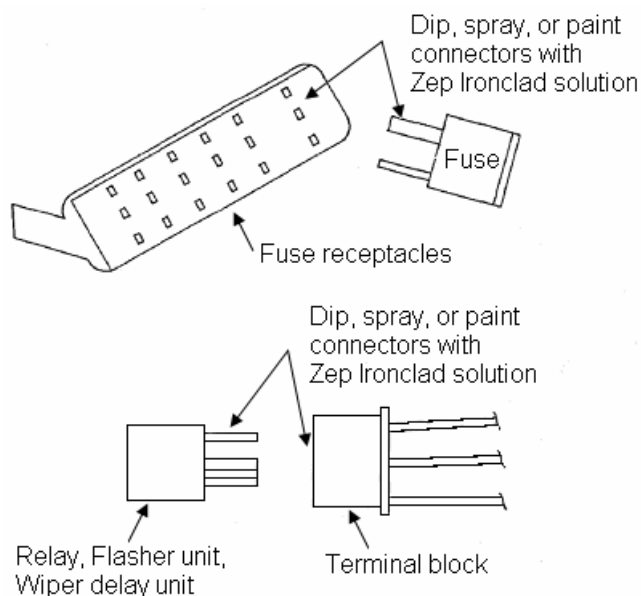


Figure 3 Treatment Of Fuse Panels And Relays With Zep Ironclad

18. Recording Action. On completion of the action, enter the details in Part Four of the GM 120, Record Book for Service Equipment.

END

Distribution List: **VEH G 16.0 – Code 1** (Maint Level)
(Sponsor: LV SPO, Lt B Vehicles)
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