

Australian Standard[®]

**CORROSION INHIBITION
(RUST-PROOFING)—
MOTOR VEHICLES**

**Part 2—TREATMENT OF
VEHICLES**

This Australian Standard was prepared by Committee CS/57, Protection of Automobiles from Corrosion. It was approved on behalf of the Council of the Standards Association of Australia on 22 March 1988 and published on 12 December 1988.

The following interests are represented on Committee CS/57:

- Australian Automobile Association
- Australian Automobile Chamber of Commerce
- Australian Automobile Dealers Association
- Australian Consumers Association
- Australian Corrosion Association
- Australian Institute of Petroleum
- Automobile Rust-proofing Industry
- Department of Consumer Affairs, N.S.W.
- Department of Defence
- Federal Chamber of Automobile Industries
- Government Paint Committee

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This Standard was issued in draft form for comment as DR 84104.

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First published as AS 2662.2—1988.

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 5042 2

PREFACE

This Standard was prepared by the Association's Committee on Protection of Automobiles from Corrosion, under the direction of the Consumer Standards Advisory Board and in response to a number of requests from the motor vehicle rust-proofing industry.

Before a document is published as an Australian Standard, approval is sought from each of the organizations represented on the committee. This Standard is published on the basis of majority approval. The Australian Consumers Association did not approve publication of the Standard, based on their view that rust-proofing applied after manufacture of a vehicle is not effective. This point was not accepted by the remainder of the committee.

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FOREWORD

This Standard sets out procedures which are to be followed when applying corrosion inhibition products (commonly known as rust-proofing products) to motor vehicles. It describes pretreatment procedures including cleaning, where required, possible accesses to concealed surfaces, the surfaces on the motor vehicles that are to be treated, inspection and finishing, as well as retreatment procedures if the conditions of the contract for treatment of the vehicle require that the vehicle be periodically retreated. Further, to ensure that the corrosion inhibition product(s) is of a suitable quality this Standard requires that the product(s) used to treat the vehicle is to comply with Part 1 of this series of Standards. Moreover, the minimum coating thickness that is to be applied to the surfaces (except unsealed seams) is to be as recommended by the product manufacturer.

Accordingly, this Standard ensures not only that the corrosion inhibition product is appropriately applied to the rust-prone surfaces of a motor vehicle but also that the product is of such a quality that it does in fact inhibit rust formation. However, the committee was aware that some customers may not wish to have particular surfaces (e.g. exposed plenum chambers) coated even though this Standard requires that such surfaces be appropriately coated. In such instances, it was agreed that such omissions are to be possible but the rust-proofer should indicate the omissions in the contract and clearly advise the customer that the treatment of their vehicle would *not* be in accordance with the Standard.

To provide guidance to the rust-proofer, this Standard includes sample data sheets (see Appendix A). However, it is emphasized that since the purpose of the data sheets (see Clause 5.3) is to clearly indicate the conditions and procedures which would ensure treatment of the vehicle in accordance with this Standard, variations to the format shown in Appendix A are possible.

Finally, to provide complete protection to the consumer, Part 3 of this series of Standards, which is yet to be prepared, will set out the contract conditions for treatment of the vehicle. That Standard will also require compliance with the product Standard and the application Standard. Consequently, for total consumer protection, compliance with all three Standards is required.

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

CORROSION INHIBITION (RUST-PROOFING)—MOTOR VEHICLES

PART 2: TREATMENT OF VEHICLES

1 SCOPE. This Standard sets out the procedures to be followed before, during and after applying corrosion inhibition products to motor vehicles.

2 APPLICATION. This Standard relates to the application of one or more corrosion inhibition products complying with AS 2662.1, to specified metal components of a fully assembled new or used motor vehicle and not to unassembled components of a motor vehicle during its manufacture.

3 REFERENCED DOCUMENT. The following Standard is referred to in this Standard:

AS
2662 Corrosion inhibition (rust-proofing)—Motor vehicles
Part 1: Product (AS 2662.1)

4 DEFINITIONS. For the purpose of this Standard, the definitions below apply.

NOTE: The definitions in this Clause are identical with those specified in AS 2662.1 and are reproduced here for ready reference only.

4.1 Corrosion inhibition product—a product which is intended to be applied to—

- (a) concealed areas; and/or
- (b) exposed areas,

of metal components of a motor vehicle for the purpose of protecting the treated areas from corrosion.

4.2 Concealed area—inside surface area of a component, wherein the area is generally not accessible without damaging or dismantling the component, e.g. seams, box sections such as sills, pillars, bonnet stiffeners, door cavities.

NOTE: Access for treating a concealed area with a corrosion inhibition product is obtained—

- (i) in the case of seams, by the penetrating properties of the corrosion inhibition product itself (see AS 2662.1, Clause 6.9).
- (ii) in the case of box sections, through existing holes including those holes that require the removal of obstructing components, e.g. the removal of the bootleg lining to gain access to the rear quarter panel, or by drilling holes in the component which is to be treated.

4.3 Exposed area—outside surface area of a component, wherein the area is readily accessible, e.g. underside of floor pan, underside of quarter panel, underside of boot, wheel well.

5 GENERAL REQUIREMENTS.

5.1 Workplace. The arrangement of the workplace shall be such that the instructions of the corrosion inhibition product manufacturer can be followed. The vehicle treatment area shall be fit for purpose having a sealed surface, adequate lighting and ventilation and being generally tidy and free from excessive build-up of corrosion inhibition product.

NOTE: The workplace is to comply with the requirements of the appropriate Regulatory Authority.

5.2 Equipment. The equipment required to treat vehicles shall be in good working order and shall include the following:

- (a) Spray equipment e.g. airless spray gun, applicator wands etc.

NOTE: Examples of applicator wands are shown in Figures 1(a) to (e). An extension wand which may be required for reaching distant surfaces (e.g. in deep box sections) is shown in Figure 1(f). The wands should be capable of passing through 13 mm diameter holes since Clause 7.1.3(c) requires that, if holes are drilled, they are to be no more than 13 mm in diameter.

- (b) Means (e.g. screwdrivers, spanners, pliers) for removing components such as linings, trim, grilles, without damaging the vehicle, in order to gain access to parts of the vehicle that are to be sprayed with the corrosion inhibition product.

- (c) Drilling equipment (e.g. drill, bits).

NOTE: A unibit drill and a hole saw are shown in Figures 1(g) and (h) respectively.

- (d) Thickness gauges capable of measuring the thickness of wet and dry films of corrosion inhibition product that has been applied.
- (e) Visual inspection instrument (e.g. a fibre optic probe), capable of being inserted through a 13 mm diameter access hole, to allow visual examination of internal surfaces of box sections or other surfaces in order to ascertain whether or not such surfaces have been sprayed with the corrosion inhibition product.
- (f) Suitable equipment (e.g. suitably pressurized hot or cold water) for cleaning dirt from the surfaces of the vehicles, e.g. the underbody, that are to be sprayed with the corrosion inhibition product.

WARNING

Steam is *not* to be used as it may damage components e.g. plastics, electronic connectors etc.

- (g) Means (e.g. wire brush, scraper) for removing rust or dirt that was not removed by use of the equipment in (f) from the surfaces of the vehicle that are to be sprayed with the corrosion inhibition product.
- (h) Drying equipment for drying the vehicle (e.g. compressed air equipment, paint drying equipment such as floodlighting, spray equipment for applying water displacing products).

5.3 Data sheets. Data sheets applicable to the particular make and model of vehicle that is to be treated, shall be available *before* that vehicle is treated. The data sheets should include illustrations wherever practicable and shall indicate the following:

- (a) The details of the pretreatment that the vehicle is to be subjected to (see Clause 6). Suitable cautionary instructions, if necessary, (e.g. about incompatible detergents or solvents) shall also be provided.
- (b) The locations of all exposed manufactured openings that will permit access to the surfaces to be treated.
- (c) If not obvious, details for the removal of trim, linings or other components that will permit access to concealed manufactured openings through which appropriate surfaces may be treated.

Suitable cautionary instructions, if necessary, shall also be provided.

- (d) The locations of all holes that are to be drilled if—
 - (i) no manufactured openings are provided;
 - (ii) access to manufactured openings would damage the vehicle; or
 - (iii) the manufactured openings provided do not permit the appropriate surfaces to be treated as required by this Standard.

Suitable cautionary instructions, if any, shall also be provided.

- (e) Each of the surfaces that is required to be treated, together with the type and the specified minimum thickness of the corrosion inhibition product that is to be applied to the appropriate surface (see Clauses 8 and 9).

NOTE: It is recommended that an optimum coating thickness, which is greater than the specified minimum thickness, be also indicated to ensure that sufficient product is applied especially in difficult areas.

- (f) The appropriate equipment and the manner, if not obvious, in which each of the surfaces is required to be treated (see Clause 5.2).
- (g) Requirements indicating how the vehicle is to be inspected, finished and marked before it is presented to the customer (see Clauses 10 and 11).
- (h) Requirements indicating how the vehicle is to be retreated when the vehicle is represented for reassessment (see Clause 12) as required by the warranty conditions.
- (j) Any other relevant information relating to the appropriate treatment of the motor vehicle.

NOTES:

1. Examples of data sheets for a contrived vehicle are shown in Appendix A. The format of the data sheets used by industry may vary from that shown in Appendix A provided the information specified complies with the requirements of this Clause.
2. Details for the location of access holes, the removal of trims, linings etc as well as other pertinent data (e.g. locations of electrical wires etc) may possibly be obtained from the vehicle manufacturer. However, if the vehicle manufacturer does not wish to provide such information, then the corrosion inhibition product applicator has to obtain the relevant information for the data sheets from other sources (e.g. by thorough examination of the appropriate vehicle by a person possessing the relevant expertise).
3. The information on the data sheets is to be kept up-to-date to ensure that any changes to the design of the vehicle do not adversely affect the procedures for treating the vehicle.

6 PRETREATMENT. Prepare the vehicle in such a way that it is suitable for the application of the corrosion inhibition product. Preparation should include the following steps:

- (a) Close all the windows on the vehicle.
- (b) Fully extend all retractable seat belts.
- (c) Cover the vehicle interior (e.g. seats, carpets, etc.) with plastics or other suitable material to protect the interior from damage (e.g. spillage of corrosion inhibition product).
- (d) Where speakers or other equipment are in-built into vehicle components (e.g. doors), which are to be treated, the speakers or other equipment are to be protected from damage by the corrosion inhibition product.

NOTE: To obviate disputes with customers, if equipment does extend into an area that is to be treated, it is recommended that such equipment be removed or covered whether or not the corrosion inhibition product will damage such equipment.

- (e) Where possible, fold back or remove the carpet and underlay, if any, from the boot of the vehicle.

NOTE: Do *not* remove the carpet or underlay if these are permanently fixed to the boot.

- (f) Ensure that all the drain holes in the doors are clear.
- (g) If the spare wheel is housed in a wheel well in the boot compartment, remove the wheel from the boot.
- (h) Close or otherwise block off, all the air vents leading into the vehicle so that, when the vehicle is treated as specified in Clause 9, the corrosion inhibition product does not damage the interior of the vehicle. In the case of the vent on the cowl, it is recommended that some plastics or other suitable material be placed over the cowl opening to seal off the vent, to ensure that when the cowl is treated, the product is not sprayed onto the windshield.

- (j) Using any suitable means remove any exterior shipping coating and transit rail dust.

NOTE: It is necessary to remove exterior coatings *BEFORE* the vehicle is treated with a corrosion inhibition product because if the *vehicle* is treated first, the solvents used to remove such coatings may also remove the corrosion inhibition product.

- (k) Using any suitable means (e.g. compressed air, pressurized hot or cold water, wire brush, scraper, putty knife), remove dirt, loose paint, temporary shipping coatings or other foreign matter from all of the surfaces that are to be treated with the corrosion inhibition product as required in this Standard.

WARNING

Do not spray pressurized water onto electronic connectors.

NOTES:

1. Do *not* steam clean any of the surfaces.
2. Do *not* use detergents or solvents unless these are compatible with the corrosion inhibition products and vehicle components. Detergents and solvents that are incompatible with the corrosion inhibition products may inhibit the penetration of the product into seams etc.
3. It is recommended that eye protection (e.g. goggles) be worn when cleaning surfaces for treatment.
4. Refer to data sheets (see Clause 5.3) for the surfaces that are to be treated and as such may require to be cleaned.

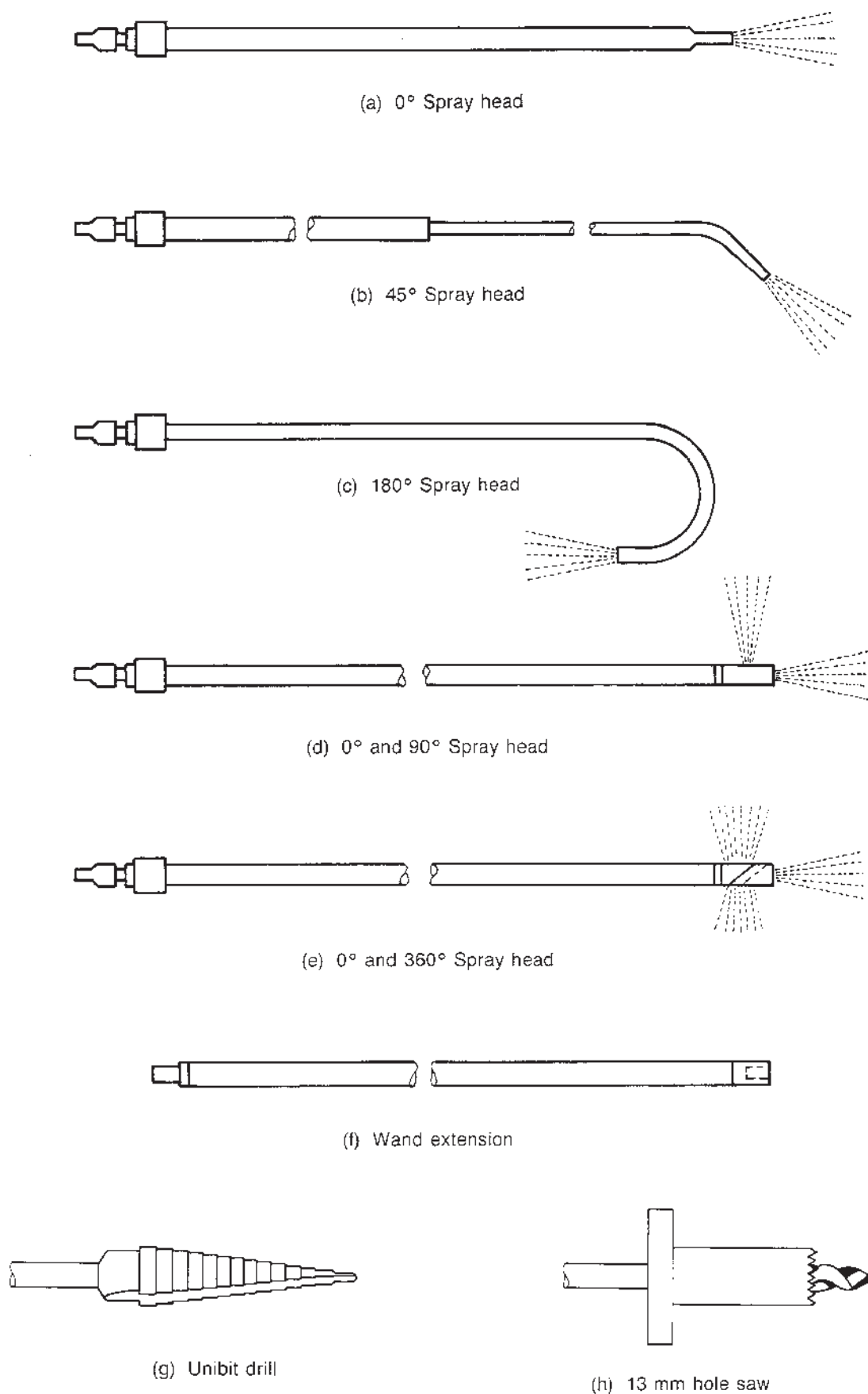


FIGURE 1. EXAMPLES OF TYPICAL EQUIPMENT

- (l) Locate access openings that would enable the appropriate corrosion inhibition product to be applied in accordance with Clause 9.

If necessary, without damaging the vehicle, remove any trim, lining etc, (e.g. plastics trim on rear mudguards (see Figure 2); the rear quarter panel lining (see Figure 3)), which obstructs access to a component which is to be treated. If wheels are removed they should be numbered and their alignment marked so that the wheels may be replaced in their original locations.

If access openings are not available, without damaging the vehicle, drill access holes at the appropriate locations.

NOTES:

1. Clause 7 indicates possible access openings as well as where access holes are to be drilled if access openings are not available.
2. Data sheets are to clearly indicate all available access openings, details for the removal of trim, linings etc, as well as details for drilling of holes, if required.

- (m) Thoroughly dry using the drying equipment specified in Clause 5.2(h), all of the surfaces, especially unsealed seams and box sections, that are to be treated with the appropriate corrosion inhibition product.

NOTES:

1. It is essential to thoroughly dry all surfaces, especially unsealed seams and box sections, that are to be treated, using appropriate drying equipment because such surfaces may take days to dry by natural convection.
2. Where a water displacer is used, the nature of the displacer is not to inhibit the rust-proofing properties of the corrosion inhibition product.

- (n) Visually inspect for rust, surfaces that are to be treated with the corrosion inhibition product.

If rust is visible on any component that is required to be treated and the removal of the rust

does not require substantial effort (e.g. the rust is only surface rust), the rust shall be—

- (i) removed immediately before that surface is coated with the appropriate corrosion inhibition product; or
- (ii) treated, without damaging the vehicle, with a suitable rust converter before that surface is coated with the appropriate corrosion inhibition product.

If rust is visible and its removal does require substantial effort (e.g. the rust needs to be neutralized, puttied and possibly painted), the rust-proofer shall advise the vehicle owner of this prior to treating the vehicle, for the purpose of deciding what action is to be taken in respect of rust formation.

NOTES:

1. As the above requirement specifies that the surfaces to be treated are to be inspected for rust prior to the treatment, if any surface is *not* inspected and rust is present or forms on that surface during the warranty period, the rust-proofer is to accept responsibility for the rectification of the problem. If the corrosion inhibition product is of the type that has rust conversion properties then the pretreatment and treatment of surfaces would be carried out simultaneously with a single application of the product. As such, the need for inspection of the surfaces could be minimized since it would be likely that all surfaces (i.e. rusted and unrusted) would be coated with the single product. However, it is stressed that regardless of whether the vehicle is pretreated with a rust converter and then coated with a corrosion inhibition product or simply treated with a single application of a corrosion inhibition product that includes a rust inhibitor, the vehicle is not to be damaged by any of the products applied (e.g. the rust converter, if applied) and the corrosion inhibition product is to comply with AS 2662.1 (see Clause 8.1).
2. Where the surfaces to be treated are inside a box section the surfaces may be examined using the instrument specified in Clause 5.2(e).
3. Where the removal of rust requires substantial effort, the decision as to what action is to be taken prior to treating the vehicle, if any, and what warranty is to apply, if any, should be decided between the parties. The decision is to be covered in the contract for rust proofing.

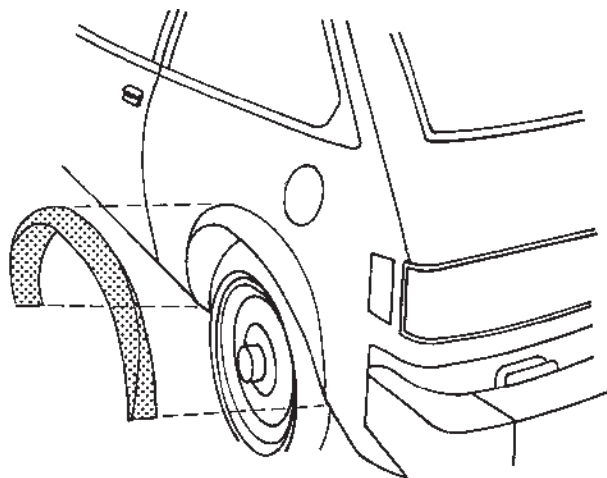


FIGURE 2. MUDGUARD TRIM

7 ACCESS TO SURFACES TO BE TREATED.

7.1 General. Examine each of the components of the vehicle which are to be coated with the appropriate corrosion inhibition product, for access to those surfaces that are to be coated.

If manufactured openings, through which appropriate surfaces may be treated, are provided but concealed by linings, trims etc (e.g. linings on doors) such linings, trims etc shall be removed if this may be achieved without damaging any part of the vehicle.

7.1.1 Prohibited drilling. Holes shall *NOT* be drilled in components that are highly stressed e.g. in the sub-frame assembly or the sub-frame chassis mounting points.

NOTE: The drilling of holes in stressed components is not permitted because holes would substantially weaken such components.

7.1.2 Conditions for permitted drilling. Access holes shall be drilled *only* if—

- (a) there are no manufactured openings in that component; or
- (b) gaining access to manufactured openings would damage the vehicle; or
- (c) the manufactured openings do not permit the appropriate surfaces to be coated as required by this Standard; or
- (d) the component in which the hole is to be drilled is not stressed.

7.1.3 Drilling. If access holes are to be drilled—

- (a) each hole shall be so located that drilling does not—
 - (i) damage adjacent components (e.g. drilling through to the outer skin, drilling into speakers, door locks or other mechanisms, electrical wiring, fuel lines); or

- (ii) substantially weaken the component in which the hole is drilled;

NOTE: Where speakers are fitted near a component that is to be drilled, care is to be taken to ensure that drill shavings do not attach themselves to the magnetic coils of the speakers.

- (b) the drilled access hole or holes shall be located—

- (i) as specified in appropriate clauses (e.g. see Clause 7.2.2(b)(ii));
- or
- (ii) in such a position that would require the least number of holes to be drilled (e.g. see Clause 7.2.2 (e)(iii)) and if possible at the lowermost part of the component, if no specific location is specified in the appropriate clause;

- (c) each hole that is drilled shall be not more than 13 mm in diameter.

NOTE: Access, by way of removal of trim, lining etc or by way of drilled access holes, to each of the surfaces that are to be coated is to be indicated on the data sheets.

7.2 Vehicle at ground level.

7.2.1 General. With the vehicle resting substantially at ground level, inspect and where necessary drill access holes, in accordance with the requirements of Clauses 7.2.2 to 7.2.9 at the positions indicated on the data sheets.

7.2.2 Underbonnet area. The underbonnet area includes the following:

- (a) *Box section radiator supports.* Access to box section radiator supports may be attained as follows:
 - (i) *Inspection.* Where the top or bottom radiator supports are in the form of a box section(s), examine the support(s) for access which would enable the whole inside surfaces of the radiator support(s) to be coated with the appropriate corrosion inhibition product.

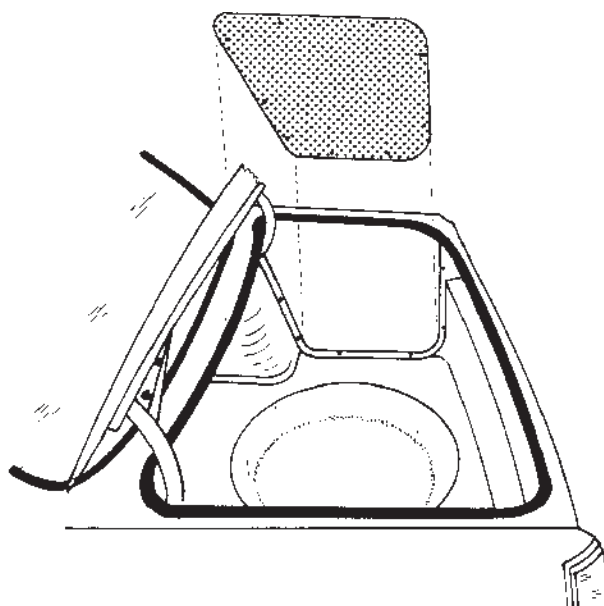


FIGURE 3. LINING IN BOOT

- (ii) *Drilling.* Where it is necessary to drill a hole to gain access to the inside surfaces of a box section radiator support, the hole shall be drilled near the end of the radiator support (see Figure 4).

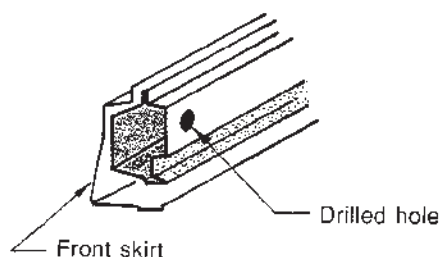


FIGURE 4. ACCESS HOLE DRILLED IN BOX SECTION RADIATOR SUPPORT

- (b) *Box sections in engine compartment area.* Access to box sections in the engine compartment area may be attained as follows:

- (i) *Inspection.* Examine each of the box sections in the engine compartment area for access which would enable the whole of the inner surfaces of each box section to be coated with the appropriate corrosion inhibition product. For example, in the case of a box section in the front mudguard (see Figure 5), it may be possible to gain access to the inner surfaces of the box section by removing the outer mudguard skirt (see Figure 6).
- (ii) *Drilling.* Where it is necessary to drill access holes in a box section that is in the engine compartment area, such holes shall comply with the requirements of Clauses 7.1 to 7.1.3. For example, in the case of the box-section illustrated in Figure 5, access holes may be drilled through the engine compartment (see '1' in Figure 6) or through the mudguard skirt (see '2' in Figure 6).

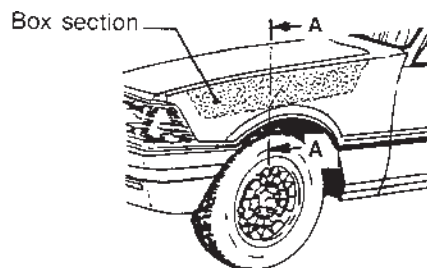


FIGURE 5. BOX SECTION IN FRONT MUDGUARD AREA

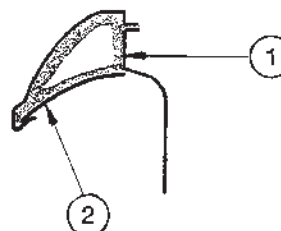


FIGURE 6. SECTION A-A IN FIGURE 5

- (c) *Lamp housing and supports.* Access to the lamp housing and the lamp supports may be attained by removal of the grille or the headlamps themselves (see Figure 27).
- (d) *Cowl.* Access to the cowl may be attained as follows:
- (i) *Inspection.* Examine the cowl for access which would enable the cowl panel as well as the whole of the inner surfaces of the plenum to be coated with the appropriate corrosion inhibition product.
- (ii) *Possible access.* Where the design of the vehicle is such that the cowl area is a hidden vent type (see Figure 7), access may be attained directly by merely lifting a screen, usually plastics, that sometimes covers the vent.

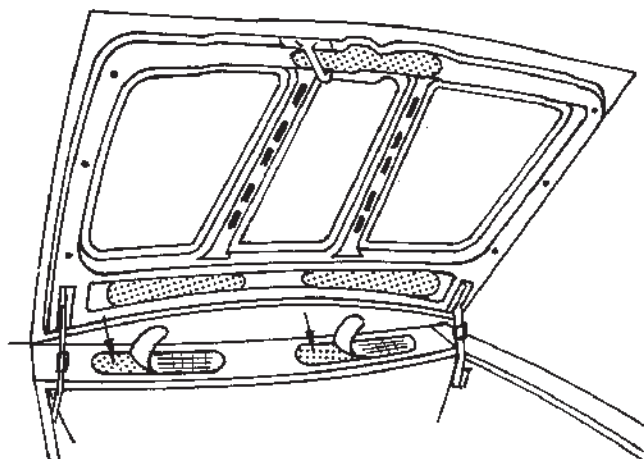


FIGURE 7. HIDDEN COWL VENT

- (iii) *Drilling.* Where it is necessary to drill a hole to gain access to the cowl area, the hole shall be drilled near the end of the cowl panel and near the bottom of the plenum (see Figures 8 and 9).
- (e) *Bonnet stiffeners.* Access to the inner surface of each bonnet stiffener and the seam along the periphery of the bonnet may be attained as follows:
- Inspection.* Examine the bonnet for access which would enable the whole of the inside of each of the bonnet stiffeners as well as the seam along the periphery of the bonnet (see Figure 10) to be coated with the appropriate corrosion inhibition product.
 - Possible access.* Generally, the bonnet has a sufficient number of manufactured openings, as shown in Figure 10, to enable appropriate treatment of each of the stiffeners and along the periphery of the bonnet.
 - Drilling.* Due to the many different designs of bonnets, no specific locations for

drilling access holes can be given. However, attention is drawn to Clauses 7.1 to 7.1.3.

WARNING

When drilling access holes in the bonnet stiffeners, TAKE CARE NOT to penetrate the outer skin of the bonnet.

7.2.3 Doors. Access to the inner surface of each door may be attained as follows:

- Inspection.* Examine each of the doors for access which would enable the whole of the inside surfaces to be coated with the appropriate corrosion inhibition product. For example, access for treating the inside surfaces of doors may possibly be available through exposed drain holes (see Figure 11). If exposed access openings are not available for the appropriate treatment of the door but it is practicable to remove the lining of the door (to expose hidden manufactured openings) without damaging any part of the vehicle, the door lining shall be removed and

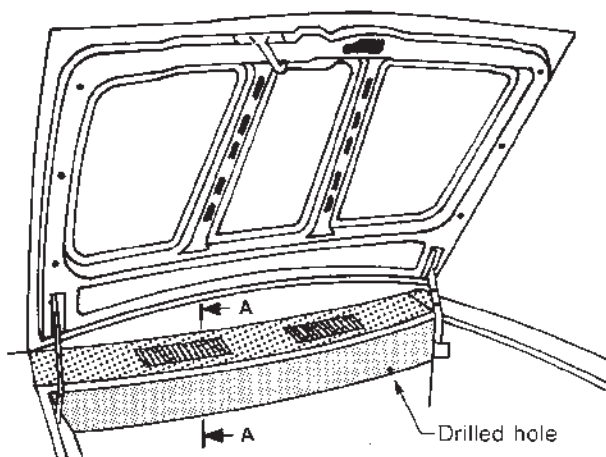


FIGURE 8. COWL PANEL

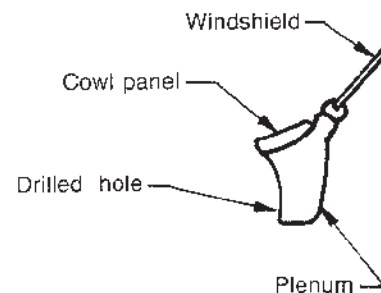


FIGURE 9. SECTION A-A IN FIGURE 8

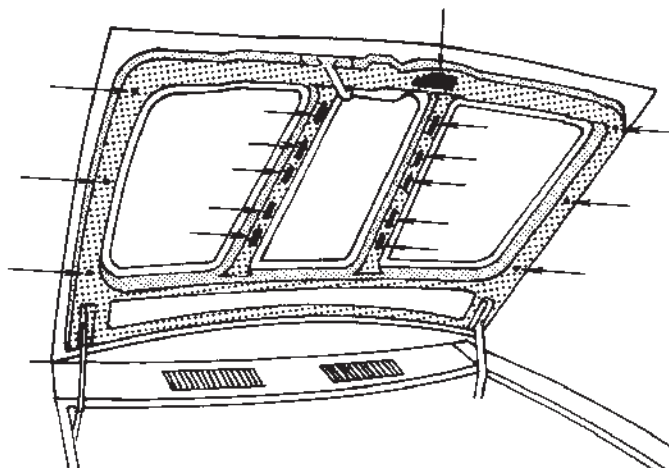


FIGURE 10. BONNET

access shall be achieved through those manufactured openings. Where a plastics, or other material, weather shield is attached to the door, access to the internal surfaces of the door shall be achieved with minimum damage to the weather shield.

NOTE: Care is to be taken to ensure that no part of the vehicle is damaged when removing components since Clause 10.2.1(b) (iv) requires that the lining, weather shield etc should be replaced in the manner intended by the vehicle manufacturer.

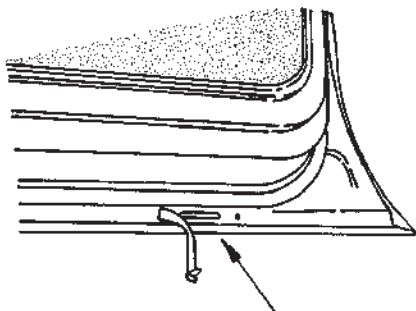


FIGURE 11. POSSIBLE ACCESS THROUGH DRAIN HOLES

(b) *Drilling.* If it is permitted by Clauses 7.1 to 7.1.3 to drill one or more holes to gain access to the inside surfaces of a door or doors, because there are no manufactured openings and no suitable manufactured openings would be exposed by the removal of trim, linings, etc, without damaging the vehicle, the hole or holes shall be located as follows:

- (i) If access to the lower part of the door is not available through existing openings, an access hole shall be drilled near the bottom

of the door (see '1' in Figures 12 and 13) in the centre of the door end panel.

- (ii) If access around the intrusion bar (see data sheets Clause 5.3), is not available through existing openings, an access hole shall be drilled so that either—

- (A) the hole is located between the outer skin and the intrusion bar (see '2' in Figures 12 and 13);

or

- (B) the hole is located between the inner skin and the intrusion bar (see '2' in Figures 12 and 13).

NOTE: Some door designs allow for accurate location of intrusion bars because of the tack welding spots which fasten the bar to the door.

WARNINGS

1. Never drill opposite door handles, as this could damage lock mechanism.
2. Do *not* drill through the intrusion bar.
3. Some door designs do *not* allow for holes to be drilled. Always check with the data sheets.

- (iii) If access to the upper part of the door is not available through manufactured openings, an access hole shall be drilled near the top of the door so that the hole is off-centre, towards the outer skin in the door end panel (see '3' in Figures 12 and 13), so as not to interfere with the Bayley channel.

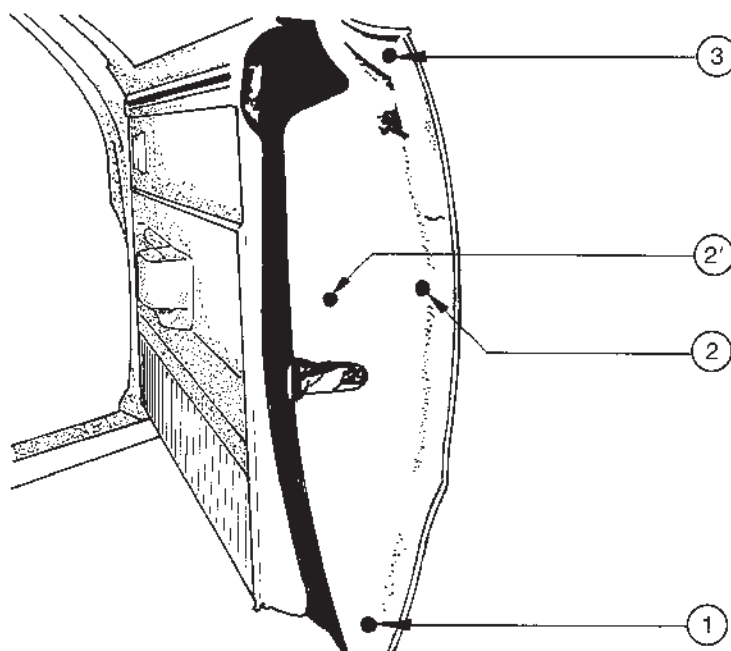


FIGURE 12. POSSIBLE LOCATIONS FOR DRILLING ACCESS HOLES IN FRONT DOOR