



Supporting New Zealand's Repair Certification Industry

Guidance, Requirements, & Inspection Form-set (GRIF)

135-20(00)

Water-damaged Vehicles

Initial Issue – Original Version | Effective 1 December 2023



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Approvals

RepairCert NZ GRIF #135-20 Approval:	
Signed on behalf of Waka Kotahi NZ Transport Agency:	Signed on behalf of RepairCert NZ:

Amendments

RepairCert NZ GRIF # 135-20 Amendment Record			
Detail of Amendments	Amendment #	Issue Date	Effect Date
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NOTE 1:	Text which is high-lit in grey shows amendments that have been made subsequent to the document's previous version, and a grey vertical stroke to the left of the text denotes new or changed information which is important and needs to be understood.		
NOTE 2:	Printed copies of RepairCert NZ GRIFs may become out of date, and should not be relied upon without ensuring that the version is current - visit www.repaircert.nz to check that this GRIF is the latest version before relying on the enclosed information.		

Associated Information

Author and Publisher
<p>This Guidance, Requirements, & Inspection Form-set document (GRIF) is authored and published by RepairCert NZ. This GRIF is part of a Repair Certification Manual being progressively developed by RepairCert NZ to support the national repair certification system. The Repair Certification Manual forms an integral part of the New Zealand Government's technical and operational requirements, and is developed by agreement, and in consultation with, Waka Kotahi New Zealand Transport Agency (Waka Kotahi).</p> <p>RepairCert NZ's Contact Details:</p> <ul style="list-style-type: none">  Postal Address: P. O. Box 50-600, Porirua 5240, Wellington, New Zealand  Website: www.repaircert.nz  Email: info@repaircert.nz
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Legal Status

This GRIF is enacted through 'the powers of the Director' of Waka Kotahi, as specified in 2.3(1) and 2.3(2) of the Land Transport Compliance Rule 35001.

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Further Information

For further information, RepairCert NZ can be contacted (under 'Publisher' details above), or Waka Kotahi may be contacted at <https://www.nzta.govt.nz/contact-us>.

Introduction

Requirements a Water-damaged Vehicle Must Meet

If, having applied *RepairCert NZ GRIF # xxx-xx(00) (Water-ingressed Vehicles)*, a vehicle is determined by a Repair Certifier to have sustained 'water-immersion' (rather than 'water-ingress'), the vehicle must be treated as 'water-damaged'. A 'water-damaged' vehicle must meet the requirements of this GRIF.

Applicable Legislation

The applicable supporting legislation in relation to water-damage is the *Land Transport Rule: Vehicle Standards Compliance 2002*, which defines water damage as, in relation to a vehicle, damage to a vehicle's critical safety systems as a result of exposure to water.

Vehicles which have been subjected to water-immersion, or sustained and intensive water-ingress, as a result of weather events such as flooding, traversing water levels deeper than that which the vehicle is designed for, or prolonged exposure to weather without protection (for example with broken glass), can cause damage to a vehicle's critical safety systems. When this occurs, a vehicle becomes defined as a 'water-damaged' vehicle.

Unidentified or incorrectly repaired collision avoidance and crash management systems (ADAS and SRS) within a water-damaged vehicle may not function as intended, creating considerable safety risk for vehicle occupants, and other road users, in the prevention, reduction, or severity of a collision.

For clarity, a 'water-damaged' vehicle is always treated as having been fully-immersed, and can therefore be reasonably assumed that the vehicle's critical safety systems will have been damaged.

Purpose

This Guidance, Requirements, and Inspection Form-set document (GRIF) is intended to provide comprehensive information to assist Repair Certifiers in providing high quality inspections, and achieving consistent outcomes, when assessing and inspecting water-damaged vehicles, to ensure the safety of water-damaged vehicles entering or re-entering the New Zealand vehicle fleet.

This information will also assist affected vehicle owners and the repair industry.

Information Provided

More specifically, this GRIF will provide details about:

- what happens to water-damaged vehicles; and
- the risks that water-damaged vehicles present to road safety; and
- things that owners of water-damaged vehicles should know; and
- the process required when sourcing second-hand components to be used in the repair process to ensure they are fit for purpose; and
- the inspection process that a Repair Certifier must apply; and

- the technical requirements which a Repair Certifier must apply to a vehicle that is water-damaged, particularly about those components which must always be replaced; and
- the Inspection Form-set necessary to enable a Repair Certifier to record the inspection process; and
- the process for notifying Waka Kotahi NZ Transport Agency (Waka Kotahi) when a vehicle is water damaged, along with information about ban-flags.

In summary, this GRIF should provide all the necessary information required by a Repair Certifier to make good certification decisions in relation to water-damaged vehicles.

GRIF Replaces Repair VIRM Content

This GRIF replaces, and significantly expands upon, all of the information relating to water-damaged vehicles contained in the *Waka Kotahi Light Vehicle Repair Vehicle Inspection Requirements Manual (Repair VIRM)*.

Part 1: Best-practice Guidance

Background

What Happens to Water-damaged Vehicles

The majority of water-damaged vehicles are written off by insurers as they are usually uneconomic and difficult to repair, and many are subsequently sold off to auto dismantlers for wrecking. This creates potential for repairers to source and re-use second-hand safety-related components from water-damaged wrecks.

Another safety risk is that some written-off water-damaged vehicles will be purchased by unscrupulous re-sellers who will not repair the vehicles properly.

There are also risks that some vehicle owners:

- who are either uninsured, or have chosen not to proceed with an insurance claim, will dry out their vehicles, attempt to repair them, and continue to drive or on-sell them; and
- who are insured, and retain their water-damaged and de-registered vehicles (after settling with their insurance company), will carry out repairs and rectification work without the oversight and advice of a Repair Certifier.

The Safety Risks

Water-immersion into vehicle passenger compartments – even if only up to lower sill lines - can cause corrosion of safety system electronic components, rendering them faulty, inoperable, or liable to premature failure. *Land Transport Rule: Vehicle Standards Compliance 2002*, defines water damage as, in relation to a vehicle, damage to a vehicle's critical safety systems as a result of exposure to water.

Untreated, the impact of water-immersion will become apparent over time with accelerated corrosion of the vehicle structure, and accelerated deterioration of its critical safety systems. Some safety systems may completely fail to operate as intended in a crash, leaving occupants at serious risk, or, such as in the case of a vehicle equipped with Advanced Driver Assistance Systems (ADAS), even fail to prevent or reduce the severity of a collision.

Over and above water-damage affecting a vehicle's critical safety systems, electric vehicles present additional risk, as high voltage batteries, wiring, and various other related components, may also be compromised. Even if no water-ingress into the passenger compartment has occurred, most electric vehicles have their high voltage components, batteries, and wiring mounted externally in vulnerable positions, directly underneath the floor-pan.

Water-damaged vehicles present a significant safety risk to the public if they do not go through a high-quality repair process.

The repair certification process is intended to prevent these vehicles going on the road in an unsafe condition, by having in place appropriate controls, including a rigorous inspection process by an authorised Repair Certifier to ensure that water-damaged vehicles are repaired and certified to a safe and compliant standard.

For these reasons, a vehicle must be referred to a Repair Certifier if there is evidence that the vehicle has suffered water damage.

Advice to Vehicle Owners

Specialist Advice Required

A substantial number of vehicles on New Zealand roads have sophisticated electronic safety systems, such as SRS/airbags and Advanced Driver Assistance Systems (ADAS). Most water-damaged vehicles will be written-off by an insurer, in which case a Repair Certifier will be involved. In the case of a water-damaged vehicle which is not insured, and therefore not written-off, RepairCert NZ strongly recommends that vehicle owners contact the appropriate manufacturers' franchise (dealership), who will have the necessary equipment and trained technicians to provide the correct advice.

Electric vehicles (Battery Electric [BEV], Hybrid Electric [HEV], and Plug-in [PHEV]) that have been water-damaged should also be referred to either the appropriate manufacturers' dealership, or an electric vehicle repair specialist.

Water-damaged motorcycles should be treated in the same way, as while during normal riding conditions motorcycles are exposed to all manner of weather conditions (rain and snow etc.), immersion in flood water for a period of time has a significantly greater detrimental effect on many mechanical and electrical components.

Insurance Write-offs and Deregistered Vehicles

If someone has purchased a water-damaged, deregistered, or ban-flagged vehicle, it is extremely important that they contact a Repair Certifier in their region prior to any repairs being undertaken. Deregistered vehicles (cars and motorcycles) are required to go through the compliance process, and an MR2A Registration Form (to enable a vehicle to be registered) will not be issued without repair certification being completed in order to enable the ban flag to be removed.

In many cases, it will not be economic to repair a modern water-damaged vehicle, so it is very important that advice from a Repair Certifier is sought before commencing any repair work on such vehicles.

Where to Look for Information on Water-damaged Vehicles

Water-damaged vehicles written off by insurance companies and de-registered are notified to Waka Kotahi and listed on a publicly-available *Written-off & Damaged Vehicles List*. This register enables members of the public to check to see if a particular vehicle is, or has been, damaged. When a vehicle is added to this list, it cannot be removed from the list, even once repaired. Members of the public can check a vehicle against this list of damaged vehicles, provided that they know the factory issued vehicle identification number (VIN) or chassis number. The e-address for the *Written-off & Damaged Vehicles List* is frr@nzta.govt.nz.

Not all water-damaged vehicles are recorded on the *Written-off & Damaged Vehicles List*. There will be some water-damaged vehicles which do not appear on the *Written-off & Damaged Vehicles List* for reasons such as the vehicle being uninsured, or an insurer has failed to provide information on an affected vehicle, or the list simply not being up to date.

The Repair Certification System

Repair Certifiers must by law, follow the requirements specified in this GRIF. This is the appropriate starting point for owners to understand the extent of which parts or components must be replaced on any water-damaged vehicles.

Explanation of Requirements

The Need for Robust Requirements

The requirements specified in *Section 2 - Requirements* for water-damaged vehicles must be extremely robust in order to mitigate the significant risks associated with the effects of sustained water-immersion, especially in relation to complex electronics which control a modern vehicle's various critical safety systems. A substantial number of safety-critical components must be replaced or repaired in modern cars which have suffered water-damage in order to enable them to be considered safe to operate. These components are shown in *Component Replacement & Repair Table 1* in *Section 2 - Requirements*.

Separate Requirements for Older Vehicles

Component Replacement & Repair Table 1 referred to above is applicable to modern vehicles, and is an updated version of Table 9.1.1 of the Repair VIRM.

Older vehicles need to be treated differently because of the absence of electronic safety systems (many parts listed in Table 9.1.1 which must be replaced are neither critical nor relevant to a classic or vintage vehicle's safety), the difficulty in purchasing OEM or aftermarket replacement parts (most of the vehicle manufacturers no longer exist), and the fact that sentimental value might sometimes outweigh economics.

The cut-off point between modern and older vehicles is 1976, to align with the 1976 Traffic Regulations; the predecessor to today's Land Transport Rules. Note that a vehicle which was manufactured during or after 1976 can be treated as a Pre-1976 Vehicle if the production of the model variant commenced prior to 1976 and continued beyond that date.

The components which must be replaced or repaired on a Pre-1976 vehicle are shown in Component Replacement & Repair Table 2 in Section 2 - Requirements.

Separate Requirements for Motorcycles

Motorcycles also need separate requirements. Motorcycles still require the replacement of critical safety systems, because although motorcycles are designed to be out in the weather, and adventure bikes are designed for a certain degree of water immersion such as river crossings, there is a difference between rain and spray, and a few seconds riding through a river, versus being immersed in water for extended periods of time. Many electronic and electrical components, including those fitted to motorcycles, are 'water-resistant' but are not 'waterproof'.

The components which must be replaced or repaired on a motorcycle are shown in *Component Replacement & Repair Table 3* in *Section 2 - Requirements*.

Deviations

Waka Kotahi used to provide deviations from the requirements specified in *Table 9.1.1* of the *Repair VIRM*, however vehicles purchased on or after 7 September 2016 and/or border checked on or after 7 October 2016 must be treated as fully-immersed, and deviations will not be considered by Waka Kotahi.

Second-hand Replacement Components

Origin of Replacement Components

Many of the safety-critical components which will be affected when a vehicle is water-damaged are required by *Component Replacement & Repair Tables 1, 2, and 3* to be replaced with new components, whereas the Tables allow other components to be replaced with second-hand components.

Most vehicles which are written off by insurance companies will be purchased by auto dismantlers, who in most instances, will strip-out and on-sell the vehicles' various components. This effectively places water-damaged vehicles in auto dismantling yards, with safety-critical components from the vehicle potentially for sale.

This situation places considerable responsibility on the Repair Certifiers to be careful, thorough, and diligent in determining the origin of any second-hand components used in the repair of a water-damaged vehicle.

Repair Certifiers will all be well aware of the many tricks and short cuts that are occasionally employed by some unscrupulous operators in the second-hand components supply industry. With that in mind, it is the responsibility of a Repair Certifier to always ensure that any second-hand replacement components used in a vehicle being repair certified are fit for purpose, and that the appropriate steps have been taken to ensure that the components are safe and compliant.

Documented Proof of Replacement Components

To ensure that safety-critical components in a water-damaged vehicle being repaired aren't inadvertently being replaced with safety critical components from a vehicle which has been written off because of water-damage, Repair Certifiers *must* establish the origin of any second-hand safety-critical replacement components. Without exception, electronic and electrical components sourced from a water-damaged vehicle *must not* be used in a vehicle being repair certified.

To verify that any second-hand safety-critical components are not from a water-damaged vehicle, Repair Certifiers must check:

1. **The VIN number** of the donor vehicle on the Waka Kotahi website '[Written off and damaged vehicles](#)'.

Checking a donor vehicle VIN number quickly identifies the reason why the vehicle was written off, as below.

VIN/Chassis	Make	Model	Damaged*	Date
VSKJWRS1A0269764	NISSAN	Pathfinder	W	13 March 2023
WBA1R520X05C75558	BMW	118i	W	13 March 2023
WWZZZAUZJW092511	VOLKSWAGEN	Golf	W	13 March 2023
WDC1569462J166329	MERCEDES-BENZ	GLA250	W	13 March 2023

Note: The following abbreviations which will be found in the table, and their meanings:

*W - flood-water damaged vehicle

*F - fire damaged vehicle

*S - written off vehicles (both statutory write off and economic repairable write-off vehicles)

*WS - written off due to flood/water damage (both statutory write off and economic repairable write-off vehicles)

*FS - written off due to fire damage (both statutory and economic repairable write-off vehicles)

2. **LANDATA** where entries in the notes section can also provide further information on the condition of the donor vehicle. Note that access to Landata is not available to members of the public.

The screenshot shows the NZ Transport Agency (NZTA) GNOTE system interface. The header includes the NZTA logo and navigation links. The main content area displays a vehicle record for a Nissan Pathfinder. The record includes fields for Customer No, VIN/Chassis, Plate, BTN, Payment No, Latis Id, Entered By, Enforcement, and Note Class. A table of notes is displayed, with the last entry highlighted in red: '09MAR23 JH2 WATER DAMAGED CONFIRMED BY .OWNER KNOWS. Water damaged, notified by owner -'.

Importantly, bolt-on panels (e.g. guards, doors, bonnets, tailgates, etc.), welded unibody panels and sub-assemblies (e.g. quarter panels, sill/rocker panels, pillars, etc.), and full-frame chassis structures sourced from water-damaged vehicles may be used in a vehicle that is being repair certified. However, these components still require close examination by the Repair Certifier to ensure any water damage contamination is removed, and the appropriate treatment process is completed prior to installation.

The Second-hand Replacement Components Declaration Form

To assist Repair Certifiers in meeting these requirements, RepairCert NZ has developed a 'Second Hand Replacement Components Declaration Form' for Repair Certifiers to use when determining if a second-hand replacement component will be fit for purpose, safe, and compliant. A Repair Certifier must use this Declaration Form when undertaking a repair certification on a water-damaged vehicle.

The Form includes a 'Supplier Declaration Section' for the supplier to sign, confirming that the replacement components from the donor vehicle(s) are 'Like, Kind and Quality', and also confirming that any electronic and electrical components they have supplied are not sourced from water-damaged vehicles.

NOTE 1:	The use of the 'Second-hand Replacement Components Declaration Form' does not override the requirements of the VIRM, Technical Bulletin 2 (Salvaged Airbags).
NOTE 2:	'Like, Kind, and Quality' means that the component is identical to that provided as original equipment by the vehicle manufacturer.

Imported Second-hand Components

Second-hand safety-critical components, including electrical or electronic components, from a donor vehicle where the origin and circumstances of the donor vehicle are unknown, cannot be used in the repair of a water-damaged vehicle.

Therefore, second-hand safety-critical components which are imported into New Zealand within container shipments cannot be used to repair a water-damaged vehicle, as it is virtually impossible to trace the history of the components.

Notification and Referral

The Written-off & Damaged Vehicles List

The vehicles contained in the *Waka Kotahi Written-off & Damaged Vehicles List* have come to the attention of Waka Kotahi for having sustained water damage or fire damage, or having been written-off in the country of previous registration. The following points should be noted:

- This list is not comprehensive. It was originally set up to let members of the public know about imported water and fire-damaged vehicles. Waka Kotahi has since added NZ water and fire-damaged vehicles (including those exposed to liquification during the Christchurch earthquakes), and vehicles which have been notified as having been written-off overseas.
- Insurance companies in NZ do not normally provide Waka Kotahi with details of written-off vehicles, but in the case of water or fire-damaged vehicles, Waka Kotahi has asked to be notified.
- Importers of Australian used vehicles must provide a copy of the Australian Personal Property Security Register (PPSR) report to the inspecting organisation at the border. If the PPSR shows the vehicle has been written off, then the vehicle is added to the *Written-off & Damaged Vehicles List*. Australian PPSR reports are available from the Australian Government www.ppsr.gov.au (*external link*).
- Waka Kotahi will accept notifications of water-damaged vehicles from any source, and such notifications should be made, with details of the vehicle and damage, via email to frr@nzta.govt.nz

It is possible that a small number of these vehicles may have been repaired, and repair certified, and it is expected that these vehicles will have been restored to acceptable standards. If a vehicle is on the *Written-off & Damaged Vehicles List* and is currently registered, the vehicle has been approved to be on the road via the entry certification process.

Note that repaired vehicles are not removed from the *Written-off & Damaged Vehicles List*.

Notification to Waka Kotahi

If a Repair Certifier determines that a vehicle has been subjected to water damage, the Repair Certifier must:

- record the water damage information in the vehicle notes section on LANDATA; and
- contact Waka Kotahi (via email to frr@nzta.govt.nz) so that the vehicle can be added to the *Written-off & Damaged Vehicles List*.

Damage Flags

A Repair Certifier must not lift a Damage Flag for a vehicle which has sustained water damage.

Repair Instructions

Certification of Repairs

After a final inspection a Repair Certifier must only certify a water-damaged vehicle as being compliant if fully satisfied that all necessary repairs have been completed to their instructions, and the vehicle is now compliant with the relevant requirements set out in *Section 2 - Requirements*.

When a Repair Certifier has issued an *LT308 Certificate of Compliance*, the vehicle may proceed to Entry Certification to enable it to be registered. The vehicle will still be subject to Entry Certification requirements.

Part 2: Requirements

Section 1: Repair Certifiers' Inspection Process

A Repair Certifier must, when inspecting a water-damaged vehicle:

- in order to become fully conversant with the subject of water-damaged vehicles, read *Section 1 - Best-practice Guidance* and *Section 2 – Requirements* of this GRIF; and
- thoroughly inspect the vehicle; and
- oversee all necessary repairs; and
- record the inspection process; and
- provide all required documents and supporting information.

The requirements specified in *Section 2 – Requirements* must not conflict with any procedures specified by the relevant OE vehicle manufacturer. If an OE vehicle manufacturer provides a specification for the repair of water-damaged vehicles, this should take precedence over these requirements.

Section 2: Scope and Application

2.1 Scope of Requirements

2.1.1 A light vehicle must meet the requirements specified in *Section 2* if the vehicle has:

- entered or re-entered the New Zealand vehicle fleet on or after 7 October 2016; and
- been repaired because of, or following, significant damage or deterioration to its structure, chassis, body-to-chassis attachment, suspension, or occupant protection system.

NOTE: The requirements specified in 2.1.1. (b) paraphrases 6.5(1)(a) of the Vehicle Standards Compliance Rule 2002, and is reproduced here in the interest of convenience.

This applies to water damage, because water damage is a form of damage that will affect a vehicle's safety systems - in particular electrical and electronic safety systems.

This also clarifies that cosmetic damage does not require repair certification.

2.1.2 For clarity, the repairs referred to in 2.1.1(b) are limited to those which that could affect the safety performance of the vehicle, its structure, systems, components, or equipment.

2.2 Over-arching Expectations

2.2.1 The requirements specified in *Section 2* align with an expectation from the *Land Transport Repair Rule 1998* that a repair to a vehicle, as specified in 2.1.1 and 2.1.2, must:

- (a) restore the damaged or worn vehicle, structure, system, component, or equipment so that they are within safe tolerance of the state of the vehicle, structure, system, component, or equipment when manufactured; and
- (b) take into account:
 - (i) the date of manufacture of the vehicle; and
 - (ii) the class, make and other relevant characteristics of the vehicle; and
 - (iii) the approved vehicle standards with which the vehicle is required to comply; and
 - (iv) the existence of relevant manufacturers' recommendations and alternative methods; and
 - (v) the material specifications used for construction of the vehicle, structure, systems, components, or equipment; and
 - (vi) the compatibility of the intended repair process with materials specifications.

NOTE: The requirements specified in 2.2.1(a) and (b) paraphrase the relevant requirements contained in 2.1(1) and 2.2(1) of the *Land Transport Vehicle Repair Rule 1998* (slightly amended for clarity), and are reproduced here in the interest of convenience.

2.2.2 A Repair Certifier must determine, at the earliest possible opportunity, whether a water-damaged vehicle will be economic to repair, and advise the vehicle owner accordingly.

NOTE: The requirement specified in 2.2.2 is to ensure that a vehicle owner is not subjected to unnecessary cost for a repair process that may not be worthwhile.

Section 3: General Requirements

3.1 Maintaining As-manufactured Condition

3.1.1 The vehicle manufacturer's supplied information, repair methods, procedures, or requirements, must, where applicable, be applied to a water-damaged vehicle in relation to all replacement components or systems.

Section 4: Technical Requirements

4.1 Safety-critical Component Replacement or Repair

4.1.1 A safety-critical component or system fitted to a water-damaged vehicle must be replaced or repaired in accordance with either, as applicable:

- (a) Table 1: Component Replacement and Repair - Post-1976 vehicles; or
- (b) Table 2: Component Replacement and Repair - Pre-1976 vehicles; or
- (c) Table 3: Component Replacement and Repair - Motorcycles.

- 4.1.2 A safety-critical component or system in a water-damaged vehicle that is required by the applicable *Component Replacement and Repair Table* to be replaced or repaired must:
- (a) be within a safe tolerance of it as-manufactured condition, and be fit for its intended purpose; and
 - (b) in the case of a second-hand component or system, not be sourced from a water-damaged vehicle.

4.2 Body and Chassis Requirements

- 4.2.1 All water contamination, silt deposits, and other residue must be removed from all panels, structural sections, surfaces, components, and cavities on a water-damaged vehicle.

NOTE: This is particularly relevant in the case of any box sections where such materials can remain in place and cause corrosion over time.

- 4.2.2 A water-damaged vehicle must have all affected underbody cavities and seams:
- (a) thoroughly flushed with water; and
 - (b) protected with a rust treatment product.
- 4.2.3 All affected underbody cavities and seams on a water-damaged vehicle must have any affected corrosion protection reinstated, which must be as near as is practicable to the OEM corrosion protection specifications.

NOTE: It is generally considered that the appropriate corrosion protection for underbody cavities and seams is cavity wax, which should be applied before the vehicle is reassembled.

4.3 Mechanical System Requirements

- 4.3.1 Hydraulic braking system components within a water-damaged vehicle, including master cylinders, wheel cylinders, and caliper pistons, must, if not replaced, be completely dismantled, cleaned, lubricated, and reassembled to OEM specifications.

NOTE: The braking system must be inspected in a disassembled state, either by a Repair Certifier, or by a suitably qualified expert nominated by the Repair Certifier to carry out the inspection on his behalf.

- 4.3.2 A hydraulic braking system within a water-damaged vehicle must, if not replaced, be cleaned out, bled, and have new fluid fitted.
- 4.3.3 A cable within a mechanical braking system fitted to a water-damaged vehicle must, if not replaced:
- (a) be free of any water ingress; and
 - (b) be lubricated with an appropriate mechanical lubricant.
- 4.3.4 All fluids, filters, and oils within a water-damaged vehicle must be replaced.

4.4 Electrical System Requirements

- 4.4.1 All electrical components, and controls which operate electrical components within a water-damaged vehicle, must, if not replaced:
- (a) be free of corrosion; and
 - (b) function correctly and normally.
- 4.4.2 All electrical wiring connectors fitted to a water-damaged vehicle must, if not replaced:
- (a) be cleaned with a high-quality contact cleaning material; and
 - (b) be lubricated with electrical grease or an appropriate electrical lubricant.
- 4.4.3 In addition to the requirements specified in 2.4.1, all high-voltage batteries, wiring and related components associated with a Battery Electric vehicle, Hybrid Electric vehicle, or Plug-in Electric vehicle, must, if not replaced, be inspected and assessed as safe, using the appropriate specialised equipment, by either:
- (a) the appropriate vehicle manufacturer's representative; or
 - (b) or a suitably qualified electric vehicle repair specialist.

4.5 Interior, Engine Bay, and Boot Requirements

- 4.5.1 The interior, engine bay, and boot area of a water-damaged vehicle must be completely free of:
- (a) wetness, dampness, moisture, or condensation; and
 - (b) mould or mildew; and
 - (c) any musty smells which might indicate the presence of water; and
 - (d) any visible signs of water ingress or immersion; and
 - (e) any visible signs of silt debris or silt marks; and
 - (f) any corrosion caused by water ingress or immersion.

NOTE:	In relation to an engine bay, 3.6.1. does not apply to typical water ingress that occurs during normal vehicle operation.
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Section 5: Other Requirements

5.1 Sourcing of safety-critical components

- 5.1.1 A Repair Certifier must provide documented evidence of the source of all safety-critical replacement components fitted to a water-damaged vehicle that are required by the relevant *Component Replacement and Repair Table* to be replaced, using the RepairCert NZ *Second-hand Replacement Components Declaration Form*, which provides evidence:

- (a) of the origin of the replacement component; and
- (b) that the replacement component meets the same specifications as the component being replaced; and
- (c) that the replacement component is within the manufacturer's operating tolerances.

5.2 Specialist Work Out-sourcing

5.2.1 A Repair Certifier must, for a water-damaged vehicle, engage a suitably qualified industry expert who is professionally involved in such work, to perform any:

- (a) pre and post diagnostic scans (and be able to clear/reset all codes) on Anti-lock Braking Systems (ABS), Supplementary Restraint Systems (SRS), and other safety-related electrical systems; and
- (b) scanning and calibration requirements of Advanced Driver Assistance Systems (ADAS).

5.2.2 A Repair Certifier must, for a water-damaged vehicle, obtain from a suitably qualified industry expert who is professionally involved in such work, a completed:

- (a) RepairCert NZ Brake Declaration Form; and
- (b) NZTA SRS Declaration Form; and
- (c) NZTA ADAS Declaration Form.

5.3 Non-Safety Critical Components

5.3.1 In addition to the replacement and repairs to safety-critical components specified by the relevant *Component Replacement & Repair Table*, a Repair Certifier must also require the replacement or repair of other components (not referred to in the relevant Tables) on a water-damaged vehicle which will have been affected by water-immersion, including:

- (a) the air conditioning compressor; and
- (b) the clutch release bearing; and
- (c) the idler pulleys on a belt drive system; and
- (d) the front or rear differential, transfer case, or automatic or manual transmission; and
- (e) any other components that, if affected by damage, could affect the reliable operation of the vehicle.

5.4 Vehicle Operation

5.4.1 A Repair Certifier must conduct a road-test of a water-damaged vehicle at the completion of the repair process to ensure that the vehicle, at the time of the inspection, functions safely and normally.

5.5 Disposal of Electrical Components

5.5.1 All electrical components, including wiring looms, ECUs, and other components fitted to a water-damaged vehicle that are required by the relevant Component Replacement and Repair Table to be replaced must:

- (a) be marked as water-damaged; and
- (b) have part numbers recorded as a reference for the replacement components; and
- (c) be rendered inoperable and disposed of by the Repair Certifier so that they cannot be recycled into other vehicles.

NOTE: 'Rendering inoperable' must be carried out safely, in accordance with best industry practice, especially in the case of when handling explosive devices such as SRS airbags.

5.6 Notification

5.6.1 A Repair Certifier must, when presented with a water-damaged vehicle, notify Waka Kotahi by:

- (a) adding the vehicle to the Waka Kotahi Written-off & Damaged Vehicle's list; and
- (b) recording the water damage information in the Vehicle Notes section of Landata.

Section 6: Exclusions

No exclusions apply to this Section.

Section 7: Terms and Definitions

Part 3: Inspection Form-set



Water-damaged Vehicles - #FS010

The Inspection Form-set is to be used for the inspection of vehicles that have been subject to water-damage.

The statements in this Inspection Form-set are a series of 'prompts' which directly relate to the requirements contained in Section 2 – Requirements of this GRIF. Section 2 – Requirements must be used as a reference and support document to this Inspection Form-set during a repair certification inspection.

Vehicle Information					
Vehicle Make:		Vehicle Model:		VIN:	
Client:			Repair Certifier ID:		Inspection Date:
Form-set Section Contents (tick those that are applicable, & note N/A for those that don't apply)					
		YES	N/A		YES N/A
Repair Certifier's Inspection Process			Technical requirements		
Scope and Expectations			Other Requirements		

Section 1 - Repair Certifier's Inspection Process					
Item #	Part 2 Ref #	Requirement	Comment	YES	N/A
1	1.1.1	I confirm that I have become familiar with Part 2 - Requirements of the Bonded Glass Aperture Preparation GRIF.			
2	1.2.1	I confirm that the inspection and approval process does not conflict with the vehicle manufacturer's repair specifications.			
3	1.3.1	I confirm that I have confidence in the repairer and glazing technician carrying out the work.			
4	1.3.2	I confirm that I have physically inspected the vehicle: <ul style="list-style-type: none"> before the bonded glass aperture preparation process is commenced; and at the completion of the bonded glass installation. 			
Notes:					

Section 2 - Scope and Application					
2.1 - Scope of Requirements					
Item #	Part 2 Ref #	Requirement	Comment	YES	N/A
5	2.1.1	Requirements of Sections 3 & 4 are met, as vehicle: <ul style="list-style-type: none"> has entered or re-entered the fleet on or after 1 March 1999; and has been repaired due to significant damage or deterioration to its structure, chassis, body-to-chassis attachment, suspension, or occupant protection system; and features repairs to a bonded glazing aperture. 			
6	2.1.2	Repairs carried out could have affected the safety performance of the vehicle, or its structure, systems, components, or equipment.			
Notes:					

2.2 - Overarching Expectations					
Item #	Part 2 Ref #	Requirement	Comment	YES	N/A
7	2.2.1	Repairs have restored the vehicle to within a safe tolerance of its state when manufactured, and take into account: <ul style="list-style-type: none"> vehicle's date of manufacture; and vehicle's material specifications; and other relevant vehicle characteristics; and approved standards vehicle met when vehicle was manufactured; and existence of vehicle manufacturer's recommendations and alternative methods. 			
Section 3 - General Requirements					
3.1 - Maintaining As-manufactured Condition					
Item #	Part 2 Ref #	Requirement	Comment	YES	N/A
8	3.1.1	Aperture preparation and bonding process does not: <ul style="list-style-type: none"> compromise vehicle's structural integrity; or prevent safety systems responding correctly in a collision; or enable water leaks to affect electronic safety systems; or allow corrosion to develop into the future. 			
Section 4 - Technical Requirements					
4.1 - Aperture Preparation					
Item #	Part 2 Ref #	Requirement	Comment	YES	N/A
9	4.1.1	Aperture preparation and bonding has been carried out by a suitably trained technician who is trusted by the Repair Certifier.			
10	4.1.1	Technician has verified that items 11 to 16 have been met.			
4.2 - Pinchweld Flange Repair & Preparation					
Item #	Part 2 Ref #	Requirement	Comment	YES	N/A
11	4.2.1	Area of pinchweld where urethane is to be applied: <ul style="list-style-type: none"> is free of body filler; and retains OEM E-coating; and is free of perforated or heavy-pitting corrosion. 			
12	4.2.2	Perforated or heavily-pitted corrosion is repaired using best practice, including use of: <ul style="list-style-type: none"> appropriate materials; and correct welding processes. 			
13	4.2.3	Any remaining minor corrosion not removed: <ul style="list-style-type: none"> has been neutralised or converted; and is free of loose or flaking materials. 			
14	4.2.4	Finished pinchweld flange surface is: <ul style="list-style-type: none"> clean and dry; and free of residual acids. 			
4.3 - Surface Coatings					
Item #	Part 2 Ref #	Requirement	Comment	YES	N/A
15	4.3.1	Pinchweld flange is coated with epoxy primer: <ul style="list-style-type: none"> where OEM E-coating has been removed; and on bare metal. 			
16	4.3.2	Epoxy primer or OEM E-coating is masked to prevent overcoating with other products.			

4.4 - Bonded Glass Installation					
Item #	Part 2 Ref #	Requirement	Comment	YES	N/A
17	4.4.1	Bonded glass installation has been carried out by a suitably trained and trusted glazing technician.			
18	4.4.2	Glazing technician has provided a correctly filled out RCNZ Bonded Glass Declaration Form DF02.			
4.5 - ADAS Diagnostic Scanning & Calibration					
Item #	Part 2 Ref #	Requirement	Comment	YES	N/A
19	4.5.1	ADAS diagnostic scanning and calibration has been determined to be necessary, and has been carried out by a suitably trained and trusted ADAS technician.			
20	4.5.2	ADAS technician has provided a correctly filled out RCNZ ADAS Declaration Form.			
Notes:					

Drawings/diagrams