

# PAS 125:2011

## Automotive services – Specification for vehicle damage repair processes



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# Foreword

This Publicly Available Specification, PAS 125:2011, revises and replaces PAS 125:2007 and has been prepared by BSI to bring the specification for vehicle damage repair (formerly vehicle body repair) processes up to date in line with technological developments and currently recognized good practice.

Following the correct application of this PAS it will be the repair process, not the vehicle repairer or the repair, for which conformity with the requirements of this PAS can be claimed.

It has been assumed in the preparation of this PAS that the execution of its provisions will be entrusted to a competent person or persons for whose use it has been produced.

Acknowledgement is given to the following organizations that have assisted with the development of this specification by nominating and supporting experts to undertake the necessary research and drafting.

ABP Club;  
Akzo Nobel Coatings Ltd;  
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RBS Insurance;  
RMI Bodyshop;  
SWIR Group;  
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The Vehicle and Operator Services Agency (VOSA);  
Vehicle Builders and Repairers Association (VBRA).

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This PAS is not to be regarded as a British Standard. It will be withdrawn as a PAS upon publication of its content in or as a British Standard.

## Presentational conventions

The provisions of this PAS are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is "shall". Its recommendations are expressed in sentences in which the principal auxiliary verb is "should". The use of the auxiliary verb "can" indicates that something is technically possible and the auxiliary verb "may" indicates permission.

## Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

The inclusion of reference to PAS 125:2011 in documentation relating to a particular vehicle damage repair process represents the repairer's declaration of conformity (see Clause 6) for the repair process employed in that repair. The accuracy of the claim is therefore solely the responsibility of the repairer. Such a declaration is not to be confused with conformity certification provided by an independent third party certification body.

**Compliance with this PAS does not in itself confer immunity from legal obligations.**

## 1 Scope

This Publicly Available Specification (PAS) specifies requirements for automotive vehicle (vehicle) damage repair processes undertaken at fixed facilities or through provision of a mobile service and includes requirements for:

- repair processes;
- competence of personnel;
- tools and equipment;
- parts and controlled consumables;
- repair process management;
- quality control.

This PAS also includes requirements for declarations of conformity to its provisions.

This PAS covers the removal and refitting or replacement of windscreens, other vehicle glazing and mechanical parts undertaken as part of the vehicle damage repair process.

PAS 125 does not cover motorcycles (with or without sidecars), 3 wheeled vehicles or vehicles over 5 tonnes GVW.

This PAS excludes windscreen repair undertaken as a separate activity, for which there is a code of practice, BS AU 242a.

## 2 Normative references

There are no external documents essential to the application of this PAS.

## 3 Terms and definitions

For the purposes of this PAS the following terms and definitions apply.

### 3.1 vehicle

automotive vehicle that is:

- designed and constructed for the carriage of passengers and comprising not more than eight seats in addition to the driver's seat (Category M1); or
- designed and constructed for the carriage of passengers and comprising more than eight seats in addition to the driver's seat and having a maximum mass not exceeding 5 tonnes (Category M2); or
- designed and constructed for the carriage of goods and having a maximum mass not exceeding 5 tonnes (Category N1 and part N2).

### 3.2 awarding organization

entity that awards accredited qualifications

*NOTE To be eligible to award accredited qualifications, it is necessary that awarding organizations meet the requirements of relevant regulatory authorities.*

### 3.3 controlled consumables

products used in vehicle damage repair processes that are intended to be stocked, used up and replaced as required but which require particular care in storing, handling or application (e.g. brake fluids; air conditioning refrigerants)

### 3.4 customer

owner of a vehicle or owner's agent authorized to instruct repairs

### 3.5 document

(verb) to record information in readable form

(noun) readable information in written, printed photographic or electronic form

### 3.6 industry recognized qualification

a competency qualification founded on relevant National Occupational Standards (NOS), accessible to interested parties and capable of supporting individual recognition by means of 'outcome criteria' which are assessed against industry set, current competences

### 3.7 procedure

set of instructions for achieving a particular goal or objective

### 3.8 repair

reinstatement of specified areas of damage on a vehicle to their pre-damaged condition in accordance with a relevant repair method

### 3.9 relevant repair method

specification for vehicle damage repair, developed and made available for others to use by the vehicle manufacturer or a recognized research facility in accordance with the vehicle manufacturer's design and performance intent or in the absence of such a method, developed by a currently competent person in respect of the vehicle type under repair

### 3.10 repairer

commercial or legal entity that undertakes vehicle damage repair

## 4 Repair process

### 3.11 repair task

individual activity undertaken as part of vehicle damage repair

### 3.12 repair method

specific manner and sequence in which repair tasks are currently carried out

### 3.13 repair process

entirety of repair methods and constituent repair tasks necessary for undertaking a particular instance of vehicle damage repair

### 3.14 supervision

activity undertaken by a currently competent person to ensure that other persons undertaking repair tasks understand and can apply the relevant repair method(s)

### 4.1 Repair process description

The repair process, relevant repair methods and constituent repair tasks to be undertaken, including authorities and responsibilities, shall be specified and documented by the repairer, to include:

- category of repair to be undertaken in accordance with **Annex A**;
- people authorized to participate in the process (**4.2**);
- repair method(s) to be applied (**4.3**);
- equipment and tools to be used (**4.4**);
- parts and controlled consumables required (**4.5**);
- quality control (**4.6**);
- repair process management (**5**).

### 4.2 People – Engagement, competence and responsibilities

#### 4.2.1 Job description and recruitment

The vehicle repairer shall establish, implement and document:

- a) job descriptions including reporting lines;
- b) recruitment procedures including verification of qualifications or competence,

for each repair role required to complete the repair process within the repair categories required in **4.1** and identified in **Annex A**, including those for:

- i) bonding, welding and other joining techniques;
- ii) air conditioning;
- iii) vehicle damage assessment (VDA);
- iv) mechanical, electrical and trim (MET);
- v) autoglazing;
- vi) panel processes;
- vii) refinishing.

#### 4.2.2 Induction and training

For each individual filling a role identified as part of the repair process within the categories required in **4.1** and identified in **Annex A**, the repairer shall establish, implement and document procedures for:

- i) induction, specific to the intended role of the individual;
- ii) the identification and delivery of current and ongoing training needs;

- iii) the evaluation of delivered training and its effectiveness;
- iv) assessing current competence in the repair tasks undertaken including any evidence required;
- v) undertaking a review of the skills required to apply the relevant repair methods (at least annually);
- vi) maintaining a documented and authenticated record of the training and development undergone by each employee.

#### 4.2.3 Currently competent person

An individual identified as a 'currently competent person' shall be able to demonstrate that he or she is all of 'a' through 'e', below:

- a) in possession of a current industry recognized qualification (3.6);
- b) able to undertake their allocated duties at the level of responsibility assigned to them;
- c) aware of the significance of the repair tasks to the safe operation of the vehicle concerned;
- d) capable of:
  - i) detecting technical defects in the work undertaken (or in the equipment used in its undertaking) or omissions in its completion;
  - ii) assessing the implications for health and safety;
  - iii) taking remedial action to mitigate those implications;
- e) alert to the hazards likely to be encountered in undertaking vehicle damage repairs and sufficiently experienced to take action to mitigate their effect should they occur.

**NOTE** Evidence of competence and skills will include individuals holding an 'industry recognized competency' based qualification, which includes National Vocational Qualification (NVQ), Scottish Vocational Qualification (SVQ) and Vocational Competency Qualification (VCQ), held for 3 years or less or a valid (within the timeframe of the applicable scheme) 'industry recognized competency certification' which includes current Automotive Technician Accreditation (ATA). Outcome criteria used to assess competence levels will include Quality Assurance by an Awarding Organization (3.2) within a programme approved by the recognized industry Sector Skills Council or industry standard body.

#### 4.2.4 Repair competence and supervision

**4.2.4.1** Repair methods and constituent repair tasks identified in 4.2.1 i and 4.2.1 ii shall only be carried out by a currently competent person (4.2.3).

**4.2.4.2** The repair methods and constituent repair tasks listed in 4.2.1iii through vii shall be undertaken by currently competent persons or persons under the supervision of a currently competent person.

**4.2.4.3** The ratio of currently competent persons to others (inclusive of apprentices) engaged in the repair tasks listed in 4.2.1 iii through vii shall not be less than one in four with at least one person currently competent in each relevant repair task.

### 4.3 Relevant repair methods

#### 4.3.1 Access to documented work instructions

**4.3.1.1** Documented work instructions including the relevant repair method(s) for all types of vehicle damage repair likely to be undertaken shall be readily accessible at the work bay.

**4.3.1.2** Evidence that the work instructions provided have been accessed and applied in undertaking particular repair processes shall be available on request.

#### 4.3.2 Repair documentation

The repairer shall have in place and implement procedures to ensure the provision of the information required to support the requirement for repair process records (5.5 i to vi) and the preparation, maintenance and availability upon request of documentary evidence in respect of the:

- accessibility;
- use;
- review; and
- change.

of all work instructions, relevant repair methods and constituent tasks including the date when any change to repair related activities is authorized and implemented.

#### 4.3.3 Separation of material types

Where cross contamination of material types is likely, e.g. between aluminium and steel, a means of physically segregating the respective repair activities and equipment shall be provided, e.g. by means of a fixed partition, removable screen or curtain.



## 4.4 Equipment and tools

### 4.4.1 Availability

Equipment as identified in **Annex A** shall be available for all types of repair undertaken, either on-site or via suitable subcontracted facilities.

### 4.4.2 Suitability and capability

The selection and use of equipment and tools shall be based upon evidence of suitability, relevance to the repair process being undertaken and proven capability.

### 4.4.3 Calibration

**4.4.3.1** Repair and measuring equipment other than bracketed jigs, including employee-owned equipment, shall be calibrated or verified at intervals specified by the repairer or prior to use. The interval between such calibration shall not exceed that recommended by the equipment manufacturer.

**4.4.3.2** Calibration and verification records for equipment, gauges, measuring and test equipment, including employee-owned and subcontracted equipment, shall include:

- i) equipment identification, including the measurement reference standard against which the equipment is calibrated;
- ii) changes to calibrated equipment following vehicle repair specification changes;
- iii) any out-of-specification readings when equipment is submitted for calibration;
- iv) a statement of conformity to specification after each calibration or verification.

**4.4.3.3** In the event that an item is found to be out of calibration, the repairer shall undertake an assessment of the likely impact of that finding on the quality of repairs undertaken during the period since the last correct calibration and ensure that customers are notified accordingly if repair work involving that equipment has been released during the period that the equipment was out of calibration.

### 4.4.4 Maintenance

**4.4.4.1** Equipment required to carry out the repair process shall be identified and resources provided for machine and equipment maintenance.

**4.4.4.2** A planned total preventive maintenance system shall be developed and implemented to include:

- i) scheduled maintenance activities;
- ii) reviewing the effectiveness of planned maintenance when setting new schedules, packaging and preservation of equipment, tooling and gauging;
- iii) technology and source data updates.

## 4.5 Replacement parts and controlled consumables

### 4.5.1 Replacement parts

Replacement parts shall be

- a) original parts for the vehicle to be repaired bearing the vehicle manufacturers mark;
- b) original parts for the vehicle to be repaired, bearing the part manufactures mark;
- c) parts for the vehicle to be repaired, supported by certification (either self assessed by the parts supplier or independent third party validated) that the parts have been manufactured to the vehicle manufacturer's specification and production standards for original parts; or
- d) parts for the vehicle to be repaired supported by certification (either self assessed by the parts supplier or independent third party validated) that the parts are of quality and performance equivalent to the original parts.

**NOTE 1** *original parts or equipment' means parts or equipment which are manufactured according to the specifications and production standards provided by the vehicle manufacturer for the production of parts or equipment for the assembly of the vehicle in question. This includes parts or equipment which are manufactured on the same production line as these parts or equipment. It is presumed, unless the contrary is proven, that parts constitute original parts if the part manufacturer certifies that the parts match the quality of the components used for the assembly of the vehicle in question and have been manufactured according to the specifications and production standards of the vehicle manufacturer.<sup>1)</sup>*

**NOTE 2:** *Reclaimed parts where provenance can be proved can be supplied under 4.5.1 a), b), c) or d).*

<sup>1)</sup> European Directive 2007/46/EC Article 3, Paragraph 26

#### 4.5.2 Receiving, handling and storage

**4.5.2.1** Replacement parts, displaced parts and controlled consumables for which the manufacturer specifies particular storage, handling or application techniques shall be treated in accordance with the manufacturer's instructions. For example, bonding materials shall be stored with their 'use by' date prominently displayed and arrangements shall be in place to ensure that they are withdrawn from use no later than that date.

**4.5.2.2** Where required to restore the operation of the vehicle after repair, the repairer shall be responsible for ensuring that fluids such as brake fluids or air conditioning refrigerants used in that restoration are of a specification and performance not less than that of the vehicle manufacturer's specification for the vehicle type being repaired.

**4.5.2.3** Replacement parts and controlled consumables shall be checked for conformity to purchase specification upon receipt.

**4.5.2.4** Replacement parts received shall be identified and remain traceable to the vehicle(s) to be repaired for which they were ordered or to which they have been allocated.

#### 4.6 Repair quality control

The repairer shall have in place and operate a documented quality control procedure appropriate for validating the quality of each repair including where relevant final jig and wheel alignment measurements. The repairer shall have in place procedures to ensure that the quality of repairs undertaken is at least to any level specified in the relevant repair methods. Record of the repair quality control outcomes for each repair undertaken shall be made and signed off by a currently competent person authorized to do so on behalf of the repairer.

**NOTE** *The appointment of currently competent persons authorized to sign off repair quality control records is the prerogative of the repairer who is entitled to decide the breadth of current competence required.*

#### 4.7 Use of subcontractors

##### 4.7.1 Specification of subcontracted work

Vehicle repair subcontracted by the repairer shall be specified for completion in accordance with this PAS and be subject to a specific agreement between the repairer and its subcontractor (**4.7.2**).

##### 4.7.2 Subcontracting agreements

Agreements between the repairer and its subcontractor shall ensure that:

- a) the current competency of person(s) undertaking the subcontracted repair tasks is as specified in this PAS;
- b) the repair methods, technical data, tools and equipment, parts and controlled consumables used to complete the subcontracted repair meet the requirements of this PAS;
- c) quality control procedures are in place and operated to ensure that work is completed to the agreed specification;
- d) the results of work carried out are documented and made available to the repairer by the subcontractor at completion of the subcontracted repair;
- e) vehicles are transferred between the repairer's premises and where the subcontracted work is to be undertaken in a manner that protects the quality and integrity of the repair and protects the vehicle against any potentially detrimental effects of relocation.

## 5 Repair process management

### 5.1 Repair process change

#### 5.1.1 Introduction of new or modified repair processes

New or modified repair processes shall be evaluated to verify repair process capability, reliability, maintainability and availability and the results shall be recorded.

#### 5.1.2 Compatibility of repair process change

Any change in the repair process shall be accompanied by a review of related tasks and methods to ensure compatibility.

#### 5.1.3 Internal feedback

All internally generated feedback on the repair process, positive or negative, shall be documented and acknowledged prior to being investigated and corrected where judged beneficial. Any decision not to take corrective action shall be documented including the reasons for reaching the decision (5.4.3 & 5.4.4).

### 5.2 Repair process continuity plan

Procedures shall be established, documented and implemented to ensure that, in the event of an emergency, all repair processes currently in progress or otherwise outstanding can be completed in accordance with this PAS whilst remaining under the original repairer's direction and responsibility.

### 5.3 Repair process control

The repairer shall have in place a documented repair process control procedure capable of demonstrating that the requirements of this PAS have been met for each repair undertaken including the completion of the repair quality control procedure (4.6). Record of the application of the repair process control procedure shall be maintained for each repair and signed off by a currently competent person authorized to do so on behalf of the repairer.

**NOTE** The appointment of currently competent persons authorized to sign off repair quality control records and repair process control records is the prerogative of the repairer who is entitled to decide the breadth of current competence required.

### 5.4 Internal audit and corrective action

#### 5.4.1 Procedure

A procedure for internal auditing of repair processes by the repairer shall be established, implemented and documented to ensure that over the course of a 12 month period each type of repair process undertaken is audited at least once to check conformity to the requirements of this PAS.

#### 5.4.2 Investigation

The cause and consequences of issues raised during internal audit (5.4.1) shall be identified, systematically examined and the findings documented.

#### 5.4.3 Corrective action

Corrective action shall include rectification of the particular occurrence identified under 5.4.2 and initiation of measures to prevent recurrence.

#### 5.4.4 Verification of corrective action

The effectiveness of corrective actions undertaken (5.4.3) shall be assessed by the repairer and outcomes documented.

### 5.5 Repair process records

In relation to each repair process at least the following information shall be documented prior to return of the vehicle to the customer and retained for not less than three years:

- i) name and address of the repairer;
- ii) date of repair commencement;
- iii) date of repair completion, and drive away time where safety is a consideration, e.g. windscreen sealant cure;
- iv) the Vehicle Identification Number (VIN), registration number, make, model and mileage of the vehicle;
- v) details of repair work carried out;
- vi) name of operative(s) involved in the repair process;
- vii) outcome of the repair quality control procedure (4.6);
- viii) confirmation that the repair process has been undertaken in accordance with this PAS (5.3).

## 6 Claims of conformity

Repair processes for which conformity with this specification is claimed shall be evidenced by the inclusion of the following information in associated documentation including any documentation specific to the repair, to be issued to the customer:

- a) the number and date of this Publicly Available Specification accompanied by description of the damage repair undertaken, categorized according to 4.1 and Annex A, e.g. PAS 125:2011 Repair category 3;
- b) the name or trade-mark of the vehicle body repairer;
- c) the postal address of the repair facility.

**NOTE** *The inclusion of reference to PAS 125:2011 in relation to a repair represents the repairer's declaration that the repair process used meets the requirements of this PAS. The accuracy of the claim is solely the claimant's responsibility and is not to be confused with third party certification of conformity.*

## Annex A (normative) Repair categories – Definitions, required skills, tools and equipment

**Table A.1** – Repair categories – Definitions, required skills, tools and equipment

Repair category	Definition	Required skills	Tools and equipment
<b>Category 1</b>	<p>The repair of dents, paint scratches and gouges or trim such that the damaged area can be returned to its pre-damaged condition without the need for replacement of parts.</p> <p>Excludes roadwheels.</p>	<p>Technician skills required to undertake the specified damage repair tasks at the competency level required to complete the specified damage repair process (see 4.2.1), including for:</p> <ul style="list-style-type: none"> <li>• paintless dent removal (PDR);</li> <li>• mechanical, electrical &amp; trim (MET);</li> <li>• panel;</li> <li>• paint;</li> <li>• trim repair.</li> </ul> <p>With each repair being undertaken using relevant repair method(s)</p>	<p>Tools appropriate to the repair tasks undertaken, which can include:</p> <ul style="list-style-type: none"> <li>• tools designed to ease out dents;</li> <li>• general tools, paint matching, application and drying;</li> <li>• headlamp alignment equipment;</li> <li>• repair equipment;</li> <li>• hand tools and paint refinish tools.</li> </ul>
<b>Category 2</b>	<p>The repair of dents, paint scratches and gouges or trim such that the damaged area can be returned to its pre-damaged condition including the removal, refitting or replacement of 'autoglazing units and bolt-on' parts, example of which includes but is not restricted to:</p> <ul style="list-style-type: none"> <li>• bonnets;</li> <li>• doors;</li> <li>• roadwheels;</li> <li>• wings;</li> <li>• tailgates;</li> <li>• bumpers;</li> <li>• bumper reinforcing bar.</li> </ul> <p>Excludes replacement of chassis, steering and suspension parts.</p>	<p>As defined in category 1 plus technician skills required to undertake the specified additional damage repair methods and constituent tasks (see 4.2.1) at the competency level required, including for:</p> <ul style="list-style-type: none"> <li>• vehicle damage assessment (VDA);</li> <li>• autoglazing.</li> </ul>	<p>As defined in category 1 plus tools appropriate to the additional repair task to be carried out, which can include:</p> <ul style="list-style-type: none"> <li>• wheel alignment equipment;</li> <li>• body alignment equipment;</li> <li>• VDA equipment;</li> <li>• autoglazing tools;</li> <li>• facility to enable segregation where cross contamination of material is likely to occur.</li> </ul>

Table A.1 – Repair categories – Definitions, required skills, tools and equipment

Repair type	Definition	Required skills	Tools and equipment
<b>Category 3</b>	<p>The repair of dents, paint scratches and gouges or trim such that the damaged area can be returned to its pre-damaged condition including the removal, refitting or replacement of 'autoglazing units and bolt-on' parts, example of which includes but is not restricted to:</p> <ul style="list-style-type: none"> <li>• bonnets;</li> <li>• doors;</li> <li>• roadwheels;</li> <li>• wings;</li> <li>• tailgates;</li> <li>• bumpers;</li> <li>• bumper reinforcing bar;</li> </ul> <p>and additionally:</p> <ul style="list-style-type: none"> <li>• replacement and repair of panel(s);</li> <li>• repair and replacement of structural parts including chassis members and 'bolt on' chassis related parts;</li> <li>• bodyshell and chassis replacements.</li> </ul>	<p>As defined in category 2 plus technician skills required to carry out the additional category 3 damage repair tasks at the competency level required, which include:</p> <ul style="list-style-type: none"> <li>• bonding;</li> <li>• welding;</li> <li>• other joining techniques.</li> </ul>	<p>As defined in category 2 plus; tools appropriate to the additional repair tasks carried out, which include:</p> <ul style="list-style-type: none"> <li>• welding equipment appropriate to the material type;</li> <li>• vehicle body jigs for measuring and realignment;</li> <li>• specialist equipment for bonding and other joining techniques appropriate to the material type.</li> </ul>

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