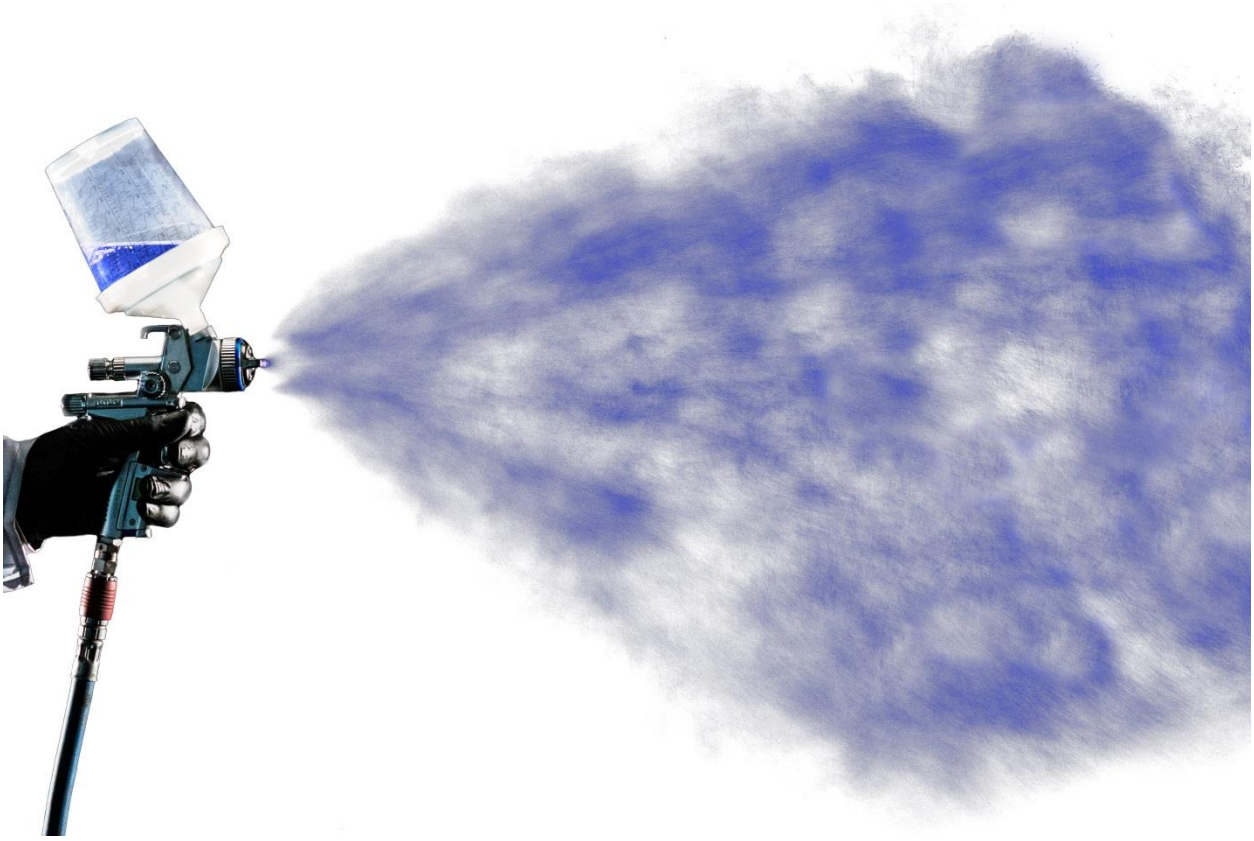
AZT Paint Calculation

-System description-



English version

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1 AZT-Foreword

1.1 Preamble to the foreword

The AZT paint calculation system is a calculation aid via which the repair-specific and model-specific values for painting time and material costs can be determined on the basis of the outer surfaces of vehicle parts, regardless of vehicle and paint manufacturers.

The conventional materials and methods currently used for paintwork repairs form the basis of this paint calculation system. New vehicle models are added regularly and the corresponding values are updated. New materials and methods are reviewed and taken into account in accordance with their market significance.

The user of this system receives:

- all the necessary working time and indicated expense information easily and quickly
- calculation values for the passenger vehicles, off-road vehicles and transport vehicle models which are recorded in the system
- painting time in hours according to the scope of repair concerned
- at the same time, currently applicable painting material costs in the respective local currency
- specific calculation values for
    - standard sectional painting depending on the vehicle (passenger vehicles, off-road vehicles, transport vehicles)
    - exterior body parts (zones) divided into body and attachments
    - plastic and metal parts

1.2 Information regarding contents

All working times of the AZT paint calculation system are based on average values from time studies, which the AZT has determined pursuant to REFA methods and evaluated according to repair stages. The starting point of the working times specified in the AZT paintwork repair is the paintable surface (see chapter 2.1). The working time information contained in the AZT paint calculation system includes all generally occurring painting processes which ensure the result of flawless paintwork.

The nature and quantity of the required material and auxiliary materials are determined on the basis of repair studies according to the repair stage and substrate and are calculated specifically according to area for each individual case. The AZT Index 100 represents the required cost of materials expressed in local currency. It displays the average of the country-specific selling prices calculated for workshops regarding materials and auxiliary materials from different manufacturers which are included in the shopping cart (see chapter 3.3 and chapter 4.4) according to the price list (excl. VAT), excluding increases or reductions (e.g. discounts). This indexed value can be specifically adjusted by the user if necessary (see chapter 2.11).

1.3 Pricing of paints and auxiliary materials for calculating the Index 100

The AZT Index 100 is calculated in the local currency and represents the cost of materials required for a vehicle painting. It reflects the average of the country-specific prices of the materials and auxiliary materials of various manufacturers contained in a defined shopping cart and calculated for workshops.

To determine the average prices, the AZT requires current prices for materials and auxiliary materials on a regular basis in the form of price lists according to the requirements below.

Essentially, only repair paint manufacturers that offer the entire product range for high-quality vehicle paintwork can be considered. Materials for HGV painting or materials in so-called fleet quality do not meet these requirements.

The AZT requires, for all countries in which the AZT paint calculation system is used, prices for materials and auxiliary materials as calculated for workshops in the countries concerned, without any consideration of individual increases and reductions, such as discounts for example.

The AZT contacts the repair paint manufacturer at least once every six months in order to obtain current price information to the extent required above.

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2 AZT paint system

2.1 Delivery condition of the body in terms of paint

The starting point of the recommended times specified in the AZT repair paintwork is the paintable surface. This exists when:

1. The areas and parts worked upon by the professional body worker have been flattened or welded according to the proper contour and edge requirements. This can, if necessary, be performed by the additional, professional application of current, state-of-the-art body filling compounds. The surfaces ultimately have to be processed with appropriate tools (no angle grinders) such that the paint technician may proceed with the first step (sanding of any transitions with random orbital or orbital sanders and, for example, abrasives with a grain of P120).

2. The vehicle paint technician has finished the areas processed according to point 1 in a maximum of three stages, e.g.

   polyester filler, fine filler, sanding filler

   or polyester filler, polyester spray filler, sanding filler

   or polyester spray filler, sanding filler.

A so defined delivery condition of the body in terms of paint means that the repaired areas are prepared by the body worker in such a way that the paint technician can achieve the final surface structure and shape by applying the procedures specified in point 2.

The working time information stated in the AZT paint calculation considers all generally occurring painting processes which ensure the result of flawless paintwork.

2.2 Painting of metal and plastic parts

Special investigations in the painting of plastic parts led as a result to calculation values that differed from those for metal parts.

Since in-house paint stages, work contents and additional painting materials are used for plastic, the following areas have been delineated:

- Chapter 3: Painting of metal parts
- Chapter 4: Painting of plastic parts

The tables for the individual vehicle types list the items for painting as follows:

- front, middle and rear parts made of metal
- sectional painting of metal parts
- standard-painted plastic parts

It should be noted that plastic parts are not included in the sectional painting items!

2.3 Scratch-resistant clear coat systems

Extensive time and material studies on scratch-resistant clearcoat systems have shown that any sanding work that has to be carried out can be carried out without any problem since the introduction of sanding tools and materials, which have also been optimised for scratch-resistant clearcoats and as long as the worker considers the respective application instructions. Information provided by the paint material and/or vehicle manufacturers helps the user to determine the most suitable processing method and the therefore used materials.

For vehicles coated with scratch-resistant clear lacquers, additional 0.3 h can be calculated for each horizontal component (e.g. bonnet, roof, boot lid) and additional 0.1 h for vertical components (e.g.

mudguard, door) for the slightly higher expenditure for sanding and polishing in case of a paint repair. A corresponding lump-sum charge is not provided. Any material costs which are actually significantly higher in individual cases can be taken into account and charged by adjusting the AZT material index.

2.4 Preparation for painting

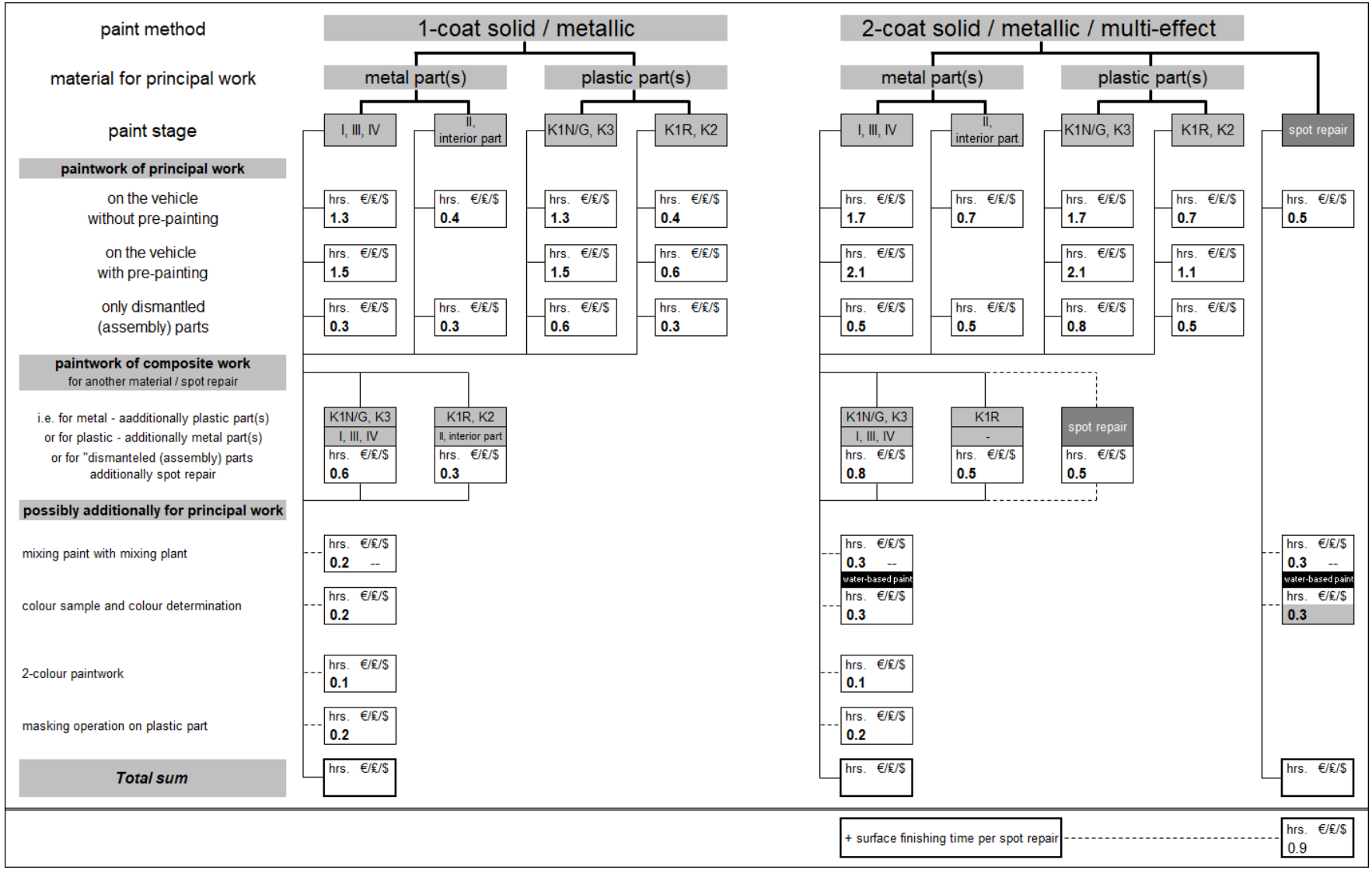

Figure 1: Preparation for painting.

For an overview and explanation of the application of the preparation times, see the table "Preparation for painting".

All the statements included therein regarding painting time and painting material costs are to be recorded once per order, according to the painting process.

The following activities are key to calculating the correct order-related time and associated costs:

1. **What type of paint is applied**
   - 1-coat solid / metallic / multi-effect
     or
   - 2-coat solid / metallic / multi-effect
     or
   - Multi-layer

2. **Which material is processed**
   - Metal part(s)
     or
   - Plastic part(s)

3. **Which paint stages apply**
   - Paint stages for metal parts **I**, **III**, **IV** or **II**
     or
   - Paint stages for plastic parts **K1N**, **KIG**, **K3** or **K1R**, **K2**

4. **Painting process**
   - on the vehicle without pre-painting
     or
   - on the vehicle with pre-painting
     or
   - only dismounted assembly parts

Painting process for "Painting on the vehicle with pre-painting in the paint stages

I

or **K1R, K1N, K1G,**

pre-painting of one or more parts in the **dismounted state** inside or at the folds, and also after adapting, mounting or welding

- Complete painting of exterior

5. What other materials are painted

- for metal - additional plastic part(s)
  or
- for plastic - additional metal part(s)

6. What additional preparation items are there

- Mixing paint with mixing plant
- Colour sample and final colour determination
- 2-colour paintwork

Criteria for the use of these additional preparatory items:

- Mixing paint with mixing plant:
  The colour shade can be mixed according to the colour number or the determined or measured colour shade using the mixing system of the paint manufacturer. This position thus includes the additional expenditure of the painter if ready-mix paint is not used.

- Colour sample and final colour determination
  The colour tone can either be found by means of the colour number in the vehicle or in the service documents or determined by using colour chips from the paint manufacturer or with a digital colour tone measuring device. Up to three colour sample sheets are painted with the selected colour tone on a given substrate (light, medium, dark grey). Using the self-sprayed colour sample sheets, the painting specialist makes a decision based on the colour comparison and the resulting painting or, if necessary, for tinting the colour tone.

- 2-colour paintwork
  Used for areas that have to be painted in another colour. Contrasting areas in matt black on the outer and/or inner surface of body parts do not constitute 2-colour paintwork in this sense.

Note: The processing time (order-related time and associated material costs) includes all processes/procedures required to apply the paintwork. The order-related time and also the lump sum material costs affect neither the area-dependent painting time nor the area-depending paint.

2.4.1 Application of the preparation for painting

1: If only metal part(s) **OR** only plastic part(s) are painted, see the "Principal work" in the table for the relevant data.

Example (a)

Order only includes metal part(s)
in paint stage**III**
on the vehicle without pre-painting

Appearing in the table for:

1-coat		2-coat	
hrs.	€/£/$	hrs.	€/£/$
1.3	xx.xx	1.7	xx.xx

Example (b)

The order only covers plastic body part(s) in paint stage **K1N**
on the vehicle with pre-painting

Appearing in the table for:

1-coat		2-coat	
hrs.	€/£/$	hrs.	€/£/$
1.5	xx.xx	2.1	xx.xx

2: If, however, a metal part/metal parts AND a plastic part/plastic parts are to be painted, a difference has to be made between "Principal work" and "Composite work".
For the determination of the respective relevant data, proceed according to the following two rules:

Rule 1: The preparation which requires the most time during the specificpaint job is classified as "Principal work", while for the alternative material (metal or plastic), the respective work is assessed as "Composite work".

Example (c)

Metal parts in paint stage III
on the vehicle without pre-painting
and
Plastic body part
in paint stage K1N
on the vehicle with pre-painting

Appearing in the table for:

1-coat		2-coat	
hrs.	€/£/$	hrs.	€/£/$
1.3	xx.xx	1.7	xx.xx
hrs.	€/£/$	hrs.	€/£/$
1.5	xx.xx	2.1	xx.xx
+		+	

Composite work of paint stage III	hrs. 0.6	€/£/$ xx.xx	Hrs. 0,8	€/£/$ xx.xx

Example (d)

Appearing in the table for:

	1-coat	2-coat
Metal parts of paint stage **I** on the vehicle with pre-painting and	hrs. 1.5 €/£/$ xx.xx	hrs. 2.1 €/£/$ xx.xx
	+	+
Plastic body part in paint stage **K1R** on the vehicle without pre-painting	hrs. 0.4 €/£/$ xx.xx	hrs. 0.7 €/£/$ xx.xx
Composite work in paint stage **K1R**	hrs. 0.3 €/£/$ xx.xx	hrs. 0.5 €/£/$ xx.xx

Rule 2: For simultaneous preparations, a metal part/metal parts is/are always rated as the principle work, while the respective work involving a plastic part/ plastic part(s) is/are assessed as composite work.

Example (e)

Appearing in the table for:

	1-coat	2-coat
Metal parts in paint stage **III** on the vehicle without pre-painting and	hrs. 1.3 €/£/$ xx.xx	hrs. 1.7 €/£/$ xx.xx
	+	+
Plastic body part in paint stage **K3** on the vehicle without pre-painting	hrs. 1.3 €/£/$ xx.xx	hrs. 1.7 €/£/$ xx.xx
Composite work in paint stage **K3**	hrs. 0.6 €/£/$ xx.xx	hrs. 0.8 €/£/$ xx.xx

Note: The prices in the AZT paint calculation system are continuously updated and therefore do not appear in the AZT system description.

2.5 Paint types and painting processes

The time input and cost of materials for a paint job are stated for two groups of painting methods.

1-coat solid / metallic

The 1-coat solid / metallic painting method refers to the 2C top coat paints for a 1-coat paint job.

2-coat solid / metallic / multi-effect

The 2-coat solid / metallic / multi-effect painting method refers to painting with solid, metallic or any other multi-effect base coat which is then covered with 2C clear coat.

Paint systems that are compliant with EU legislation and the state of the art (e.g. VOC compliant) are used:

- **e.g. water-based paint**
- **high solid and solvent reduced repair paint systems**

If paint jobs are carried out with multi-effect paint and/or in a 3- or 4-coat painting process, the table below and the respective

- **Painting process**
- **Painting method**

can be used for a calculation.

2.5.1 2-coat painting process

Painting process	Painting method	Paint structure (up to top coat, as usual)	Notes	Calculation	Calculation recommendation for painting time and material
mineral effect paint work	**wet-in-wet**	base coat		paintwork (per part)	2-coat, paint stage I-IV
		2C clear coat	wet-in-wet	+ poss. blending adjacent part	2-coat, surface paintwork
				+ preparation for painting	2-coat, paint stage I-IV
			multi-effect paints, e.g. mineral, mica, pearl, xirallic or other interference pigments	- no material surcharge	Already included in the respective material figure![1]

[1] Annotation:
Information on the inclusion of multi-effect pigments in the calculation of AZT paint material index values does currently not apply to the following countries (ISO 3166 Alpha 2):
AU, BA, CH, CZ, GB, GR, HR, HU, IE, IN, PL, RS, SK, SL, TR, ZA.
This also applies to the 3- and 4-coat painting processes described below.

2.5.2 3-coat painting process

Painting process	Painting method	Paint structure (up to top coat, as usual)	Notes	Calculation	Calculation recommendation for painting time and material
paint work with pre-painting	**wet-in-wet**	1. pre-painting 2. base coat 3. 2C clear coat	uniform coverage colour: usually white wet-in-wet wet-in-wet multi-effect paints, e.g. mineral, mica, pearl, xirallic or other interference pigments	paintwork (per part) + paintwork (per part) for pre-painting + possible blending of adjacent part + preparation for painting + preparation for painting for pre-painting - no material surcharge	2-coat, paint stage I-IV 50 % of 1-coat, surface paintwork 2-coat, surface paintwork 2-coat, paint stage I-IV additionally of 2-colour paintwork Already included in the respective material figure!
	Pre-painting dry and sanding	1. pre-painting 2. base coat 3. 2C clear coat	uniform coverage colour: usually white dry and sanding wet-in-wet multi-effect paints, e.g. mineral, mica, pearl, xirallic or other interference pigments	paintwork (per part) + paintwork (per part) for pre-painting + possible blending of adjacent part + preparation for painting + preparation for painting for pre-painting - no material surcharge	2-coat, paint stage I-IV 1-coat, surface paintwork 2-coat, surface paintwork 2-coat, paint stage I-IV additionally of 2-colour paintwork Already included in the respective material figure!
painting with two clear coat layers	**wet-in-wet**	1. base coat 2. clear coat coloured 3. 2C clear coat	wet-in-wet wet-in-wet multi-effect paints, e.g. mineral, mica, pearl, xirallic or other interference pigments	paintwork (per part) + paintwork (per part) for pre-painting + possible blending of adjacent part + preparation for painting + preparation for painting for pre-painting - no material surcharge	2-coat, paint stage I-IV 50 % of 1-coat, surface paintwork 2-coat, surface paintwork 2-coat, paint stage I-IV additionally of 2-colour paintwork Already included in the respective material figure!
	dry and sanding of first clear coat layer	1. base coat 2. clear coat clear or coloured 3. 2C clear coat	wet-in-wet dry and sanding multi-effect paints, e.g. mineral, mica, pearl, xirallic or other interference pigments	paintwork (per part) + paintwork (per part) of first clear coat layer + possible blending of adjacent part + preparation for painting + possible preparation for painting for coloured clear coat - no material surcharge	2-coat, paint stage I-IV 1-coat, surface paintwork 2-coat, surface paintwork 2-coat, paint stage I-IV additionally of 2-colour paintwork Already included in the respective material figure!

2.5.3 4-coat painting process

Painting process	Painting method	Paint structure (up to top coat, as usual)	Notes	Calculation	Calculation recommendation for painting time and material
painting with pre-painting and two clear coat layers	**wet-in-wet**	1. pre-painting	uniform coverage colour: usually white	paintwork (per part)	2-coat, paint stage I-IV
		2. base coat	wet-in-wet	+ paintwork (per part) of pre-painting and first clear coat layer	1-coat, surface paintwork
		3. clear coat coloured	wet-in-wet	+ possible blending of adjacent part	150 % of 2-coat, surface paintwork
		4. 2C clear coat	wet-in-wet	+ preparation for painting + preparation for painting of pre-painting + possible preparation for painting for coloured clear coat	2-coat, paint stage I-IV additionally of 2-colour paintwork additionally of 2-colour paintwork
			multi-effect paints, e.g. mineral, mica, pearl, xirallic or other interference pigments	- no material surcharge	Already included in the respective material figure!
	pre-painting dry and sanding, clear coat layers wet-in-wet	1. pre-painting	uniform coverage colour: usually white dry and sanding	paintwork (per part)	2-coat, paint stage I-IV
		2. base coat		+ paintwork (per part) of pre-painting and first clear coat layer	150 % of 1-coat, surface paintwork
		3. clear coat coloured	wet-in-wet	+ possible blending of adjacent part	150 % of 2-coat, surface paintwork
		4. 2C clear coat	wet-in-wet	+ preparation for painting + preparation for painting of pre-painting + possible preparation for painting for coloured clear coat	2-coat, paint stage I-IV additionally of 2-colour paintwork additionally of 2-colour paintwork
			multi-effect paints, e.g. mineral, mica, pearl, xirallic or other interference pigments	- no material surcharge	Already included in the respective material figure!
	wet-in-wet, first clear coat layer dry and sanding	1. pre-painting	uniform coverage colour: usually white	paintwork (per part)	2-coat, paint stage I-IV
		2. base coat	wet-in-wet	+ paintwork (per part) of pre-painting and first clear coat layer	150 % of 1-coat, surface paintwork
		3. clear coat clear or coloured	wet-in-wet dry and sanding	+ possible blending of adjacent part	150 % of 2-coat, surface paintwork
		4. 2C clear coat		+ preparation for painting + preparation for painting of pre-painting + possible preparation for painting for coloured clear coat	2-coat, paint stage I-IV additionally of 2-colour paintwork additionally of 2-colour paintwork
			multi-effect paints, e.g. mineral, mica, pearl, xirallic or other interference pigments	- no material surcharge	Already included in the respective material figure!

Painting process	Painting method	Paint structure (up to top coat, as usual)	Notes	Calculation	Calculation recommendation for painting time and material
painting with pre-painting and two clear coat layers	**pre-painting and first clear coat layer dry and sanding**	1. pre-painting 2. Base coat 3. clear coat clear or coloured 4. 2C clear coat	uniform coverage colour: usually white dry and sanding wet-in-wet dry and sanding multi-effect paints, e.g. mineral, mica, pearl, xirallic or other interference pigments	paintwork (per paint) + paintwork (per part) for pre-painting and first clear coat layer + possible blending of adjacent part + preparation for painting + preparation for painting for pre-painting + possible preparation for painting for coloured clear coat - no material surcharge	2-coat, paint stage I-IV 200% of 1-coat, surface paintwork 200% of 2-coat, surface paintwork 2-coat, paint stage I-IV additionally of 2-colour paintwork additionally of 2-colour paintwork Already included in the respective material figure!

2.6 Spot painting

(Spot-repairs and partial painting for bumper damages due to grazing)

This leaflet was prepared by the Institut für Fahrzeuglackierung (IFL) in cooperation with the working group of the publicly appointed and sworn expert for vehicle coating in the painting and refinishing trade, the Bundesfachgruppe Fahrzeuglackierer im Hauptverband Farbe, Gestaltung, Bautenschutz (BFL), AZT Automotive GmbH, the Allianz Zentrum für Technik (AZT) and the committee of vehicle painting and surface technology of the Zentralverband Karosserie und Fahrzeugtechnik (ZKF).

This leaflet presents the current spot-repair options. Spot describes the repair method in which the repair is limited to the damage site. A complete coating of the repair part with clear coat is not intended.

Regardless of the size of the damaged area to be painted, though, spot painting involves the painting activity including the necessary preparatory work for which all the commercial preconditions as well as all the legal regulations concerning air pollution control, water conservation and the specific regulations regarding occupational safety have to be observed and applied.

Spot painting is a blending method[2] in which the long-term behaviour of the transitional point between the old and the new clear coat has not yet been studied scientifically. There is a danger that with each polishing process, tear-off edges can be formed at the transitional point. Some individual customers want cost alternatives; this method can perhaps be a cost-effective repair method with qualitative limitations.

[2] The blending of base coat and clear coat is a method in which the paint runs out within a component. The transitional point of old and new clear coat is polished in order to achieve an alignment.

For technical and economic reasons, spot painting

is useful for:

- Damage up to a size of 3.5 cm. For bumpers, also sideswipe damage to the bumper side and corner. Both types of damage with only minimal filling work.
- Maximum one damage point per part.
- 2-coat paintwork
- Repairs to the vehicle (not of dismantled parts). Possible costs for assembly work receive additional compensation.
- Shiny paintwork (no reduced-gloss finishes)

not useful for:

- 2-colour paintwork (for example, for Mercedes bumpers, only one colour makes sense).
- Powder slurry 2 coated vehicles (with this substrate, tear-off edges may already arise during the first polishing).

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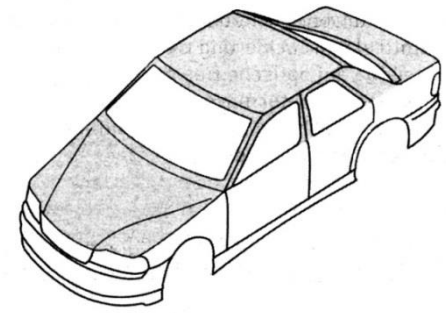
For technical and economic reasons, a differentiation is made regarding the various body surface areas:

Zone A:

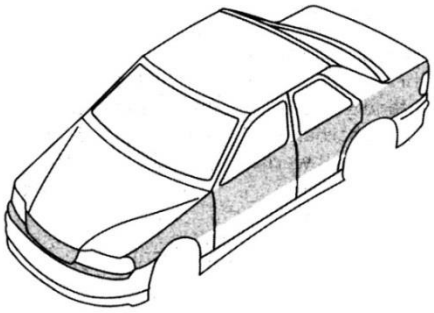
Horizontal surfaces, such as the hood, upper shell and roof to the bottom edge of the glass.
In this zone, spot painting is not useful



Zone B:

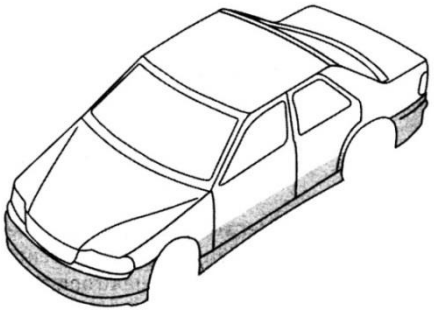
Vertical surfaces, such as from the bottom edge of the glass to mid-door or central ribbing/protection strip, wings, side part to the wheel well cutout, vertical surface boot lid to the front bumper, lower edge of the bonnet to the bumper.

In this zone, spot painting is only useful if the damage is in the vicinity of an edge and the colour tone is suited for spot painting[3].



Zone C:

Other exterior surfaces, all interior surfaces and covered surfaces (license plate, trims, bumper).
In these areas, spot painting is useful in full without any restrictions.
In strip damage to the bumper side and corner, larger areas can also be blended with base coat and clear coat by using a normal spray gun. Edges and stepped areas are to be used as borders.



[3] Partially dependent on paint manufacturer, e.g. colour deviations, cloud formation in the transition area (caused by small pistols), bright or grey due to dry splashes at low atmospheric pressure, pearl effect, paintwork with brightness and/or colour flops, etc.

Requirements for professional use:

- No foreign inclusions that affect the overall painting can be left over.
- A colour match with the surrounding area needs to be achieved.
- The repair may not allow any disturbances to the surface to be visible.
- In Zone C, slight bumpiness, barely discernible grinding areas and small paint flaws that do not affect the overall painting can be identified.
- The assessment of visual impairment is always made with the unaided eye (measures to correct poor vision are allowed). When assessing, an even, artificial (sufficiently bright) or diffuse natural daylight has to be present. Direct sunlight should be avoided.

Material:

- A 2-K top coat has to be used.
- A commercially available base coat has to be used.
- Inks and coloured polishes may not be used.
- The top coat paint has to be fuel resistant pursuant to VDA Test Sheet 621-412 (maximum classification number 3 pursuant to DIN 53230[4]). Pursuant to current information, the 2C clear coat recommended by paint manufacturers for this repair method comply with these requirements.
- The utilised material may not allow tear-off edges to be visible, even after repeated polishing.

Freedom of choice:

- The paint technician decides whether a repair is performed pursuant to paint stage **II**, **III** or by means of spot painting. A consultation with the client, the expert or the insurance company should take place if possible and reasonable.
- If painting occurs as reworking in paint stage **II** or **III**, spot painting may not be billed for the repair attempt. The paint stage of the reworking is to be charged.

[4] Literature:
- VDA Test sheet 621-421 - Technical Painting tests – Chemical resistance of automotive paintwork
- DIN 53230 - Assessment system for the evaluation of tests

Calculation values:

These calculation values are part of the AZT Paint Calculation and are therefore applicable in connection with it!

			Example with water-based base coat for x damaged areas:			
			x = 1		x = 2	
	Working hours in h	Paint material in €/£/$	Working hours in h	Paint material in €/£/$	Working hours in h	Paint material in €/£/$
Preparation for spot painting	0.5	---	0.5	---	0.5	---
Mixing paint (water-based base coat)	0.3	---	0.3	---	0.3	---
Colour sample (water-based base coat)	0.3	---	0.3	---	0.3	---
Spot painting per damaged area	0.9	---	0.9	---	1.8	---
			2.0	---	2.9	---

All calculation values are taken from the table "Preparation for painting" of the AZT Painting Calculation:

- Colour sample: See default value for colour sample
- Preparation: See default value 2-coat in the right column
- Per damage point: See default value surface processing time for spot repair.

The timelines and material values have been developed in cooperation with the Allianz Centre for Technology and are recommended for spot painting.

When drawing up the calculation time, the following conditions from environmental, health or VOC regulations have been complied with:

- All painting work has been performed with a spray mask
- Painting work was only performed in continuous spray booths, spray stands or with underfloor extraction
- Sanding work was performed with dust extraction and dust mask

The work units (WU) include the following requirements:

Spray guns:

- Spot painting was performed with the smaller spray gun
- Bumper damages due to grazing were performed with the larger spray gun

Work content:

- Order transfer depending on the scope of the order and processing work
- Recording of the work time (start/end of the order)
- Vehicle assessment
- Colour determination
- Colour mixing
- Creation of colour sample
- Setting up and working on the damaged area, depending on the degree of damage, repair material and the extent of damage (see extent of work)

Extent of work:

- Cleaning
- Covering up to 1.5 m around the damaged part
- Polishing (only if necessary)
- Sanding
- Filling and sanding (only if necessary)
- Spraying and sanding primer or primer filler
- Spraying of base coat, clear coat and blenders
- Finishing

Supplementary explanations for spot painting:

Spot painting can only be carried out directly on the vehicle.

The preparation time and material value for spot painting (marked orange in the preparation table, see Figure 2) is not applicable as soon as another paint job is applied to the vehicle. However, the disassembled assembly parts are an exception here. Only if a paint job is applied to a dismantled component and spot painting is carried out on the vehicle the preparation time marked in orange may be calculated. The time marked in green is the surface preparation time for spot painting per component and always has to be calculated for spot painting. For spot painting as a single job, the preparation time marked in blue must be taken into account.

The following examples should help to explain how to calculate spot painting:

Example 1: Only spot painting on the hood

Preparation	Time/h	Part	Layers	Time/h
spot painting	0.5	hood	2	0.9
mixing paint	0.3			
colour sample	0.3			
$\Sigma_{preparation}$	1.1	Σ_{part}		0.9

Example 1: Only spot painting on the hood and bumper fascia

Preparation	Time/h	Part	Layers	Time/h
spot painting	0.5	hood	2	0.9
mixing paint	0.3	bumper fascia	2	0.9
colour sample	0.3			
$\Sigma_{preparation}$	1.1	Σ_{part}		1.8

The preparation time is calculated once; the surface processing time and material value are calculated per component, in this case twice.

Example 3: Spot painting of the bumper fascia in combination with the hood as a dismantled new part **I**

Preparation	Time/h	Part	Layers	Time/h
assembly part dismantled	0.5	hood	2	2.9
spot painting in combination	0.5	bumper fascia	2	0.9
mixing paint	0.3			
colour sample	0.3			
$\Sigma_{preparation}$	1.6	Σ_{part}		3.8

Here it is important to ensure that two paint levels are calculated. Thus, the regular preparation time for spot painting should not be selected. The hood is painted as a dismantled assembly part, the user is entitled to an additional preparation spot painting of 0.5 h for the bumper. The surface preparation time and material value will continue to be calculated per component.

Example 4: Spot painting of bumper fascia in combination with hood as surface painting (on the vehicle w/o pre-painting)

Preparation	Time/h	Part	Layers	Time/h
on the vehicle w/o pre-painting	0.7	hood	2	1.3
mixing paint	0.3	bumper fascia	2	0.9
colour sample	0.3			
$\Sigma_{preparation}$	1.3	Σ_{part}		2.2

If, in addition to spot painting, a further paint job is carried out on the vehicle, the preparation time for spot painting is inapplicable, but the surface processing time and material value are still calculated per component.

Example 5: Spot painting on a front door in combination with the front fender as repair painting **III**

Preparation	Time/h	Part	Layers	Time/h
on the vehicle w/o pre-painting	1.7	front fender	2	1.1
mixing paint	0.3	front door	2	0.9
colour sample	0.3			
$\Sigma_{preparation}$	2.3	$\Sigma_{Baupart}$		2.0

In this example, the preparation time for spot painting is inapplicable, only the area processing time is calculated.

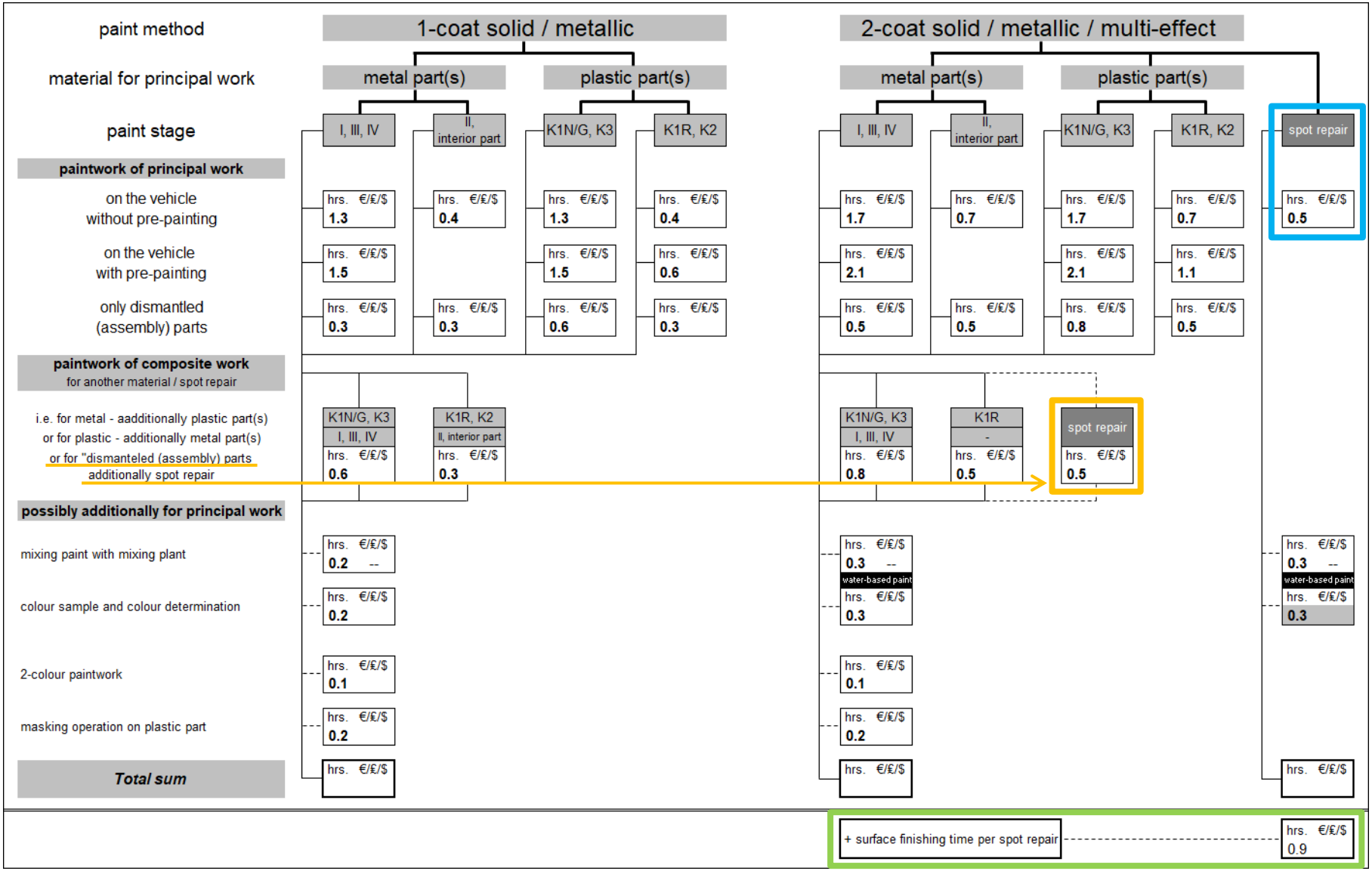


Figure 2: Preparation for painting incl. marks for spot painting.

2.7 Additional work

If the following additional work occurs as part of an individual repair painting process, this work is to be assessed **separately** with work time or time and materials costs:

- Colour search on the vehicle:
  a) If there is no colour code or colour number on the vehicle or in the service or maintenance documents or if the mixing recipe is missing or incorrect (for example, series production of new cars, etc.) or
  b) In the case of repainted vehicles without reference to colour code or colour number
- Removal and installation of ornamental, assembly and body parts
- Work items not included
- Exposure of the area to be painted in the engine compartment
- Removal of the protective wax and preservatives
- Application of underbody protection
- Sealing work
- Cavity protection
- Interior parts painting (for example, car floor, instrument panel, rear shelf panel, etc.)
- Corrosion removal in order to achieve a paintable surface (see paragraph "Delivery condition")
- Painting of the folds and inner surfaces of parts in the repainting of a vehicle in paint stage **II** or **III**
- Painting of window frames and columns/pillars which are offset with regard to colour (usually matt black)
- Removal and application of bonded trim or films

In the case of the painting calculation of disassembled vehicle parts and non-standard parts or parts which have not been painted according to standard, please refer to the special tables for metal parts and plastic parts for the painting times and painting material costs.

2.8 2-colour paintwork

The calculation of repair paintwork on vehicles with 2-colour finishes is possible. The two most common procedures and the associated calculation method are described below. However, this is only valid for the classic 2-colour painting work and not for design painting, strip painting or special painting.

Method

Variation A	**Variation B**
- Complete part or sectional painting, including top coat in the paint stage and paint type of the first colour **+** - Painting of the section surface (paint stage **II**) in the paint type of the second colour	- Complete part or sectional painting, including the grinding of the filler and/or old paintwork **+** - Painting of the first section in the paint type of the first colour **+** - Painting of the second section in the paint type of the second colour

Calculation method

Variation A	**Variation B**
- Painting time and material for complete part or partial area in the respective paint stage and paint type of the first colour **+** - Painting time and material for the section of paint stage **II** and the respective paint type of the second shade	- Painting time and material for the first section of the part or partial area in the respective paint stage and paint type of the first shade **+** - Painting time and material for the second area of the part or section in the respective paint stage and paint type of the second colour

+

Preparation time and material for the paint stage and painting method

	Painting time	Painting material
Preparation	0.3 – 2.1 h	€ / £ / $
Possibly also additionally for:		
Mixing paint with mixing plant	0.2 – 0.3 h	€ / £ / $
Colour sample and final colour determination	0.2 – 0.3 h	€ / £ / $

+

Additional preparation time and material for 2-colour paintwork

Preparation	0.1 h	€ / £ / $
Possibly also additionally for:		
Mixing paint with mixing plant	0.2 – 0.3 h	€ / £ / $
Colour sample and final colour determination	0.2 – 0.3 h	€ / £ / $

2.9 Subdivision of the painting surfaces

For informational purposes, the sketch of the painting surface subdivision has been provided.

In the type-specific tables about each part, the user is also informed about which area is particularly addressed there.

The affected painted parts and their possible areas are:

Parts designation	**Area**
Front wing partly	B, C, D, E
Door complete (with door frame)	K
Door complete (without door frame, to window line)	F
Door partially	B, C, D, E
Door frame	A
Side panel rear complete (with C-pillar to roof connection)	K
Side panel rear complete (without C-pillar to window line)	F
Side panel rear partially	B, C, D, E
C-pillar	A

If two or more sections on a part are painted, the value of the entire part is always to be applied.

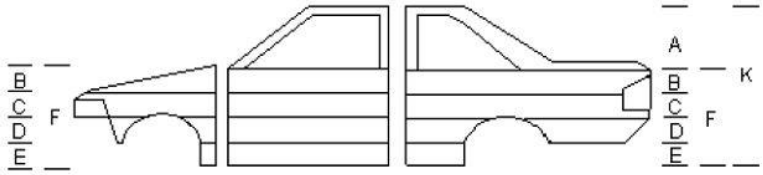
Sections of body surfaces can only be coated if the design in terms of form or construction allows for a subdivision of the areas which are to be painted.
It is usually easy to subdivide the painting surfaces at pronounced edges and corrugations as well by decorative trim. A subdivision of a surface using edges which are not so pronounced is only possible if flawless section painting can be achieved using special techniques for the application of masking tape. The following aspects should be considered in this respect:

- A technically and professionally correct painting process has priority regarding the use of a masking separation line for the subdivision of a surface.
- A possible paint area subdivision is always also influenced by the type, position and extent of the damage as well as the paint colour and the mixing recipe and layer structure of the repair paint system used.
- The decision on a paint surface subdivision is the responsibility of the painting specialist carrying out the work, since the surface to be painted must be considered individually depending on the individual case and the type of paint job.

The following chapters use sketches to show the subdivision of the vehicle surfaces and the associated add-on parts.

2.9.1 Subdivision of the painting surfaces of body parts

Division of the paint areas of body parts:



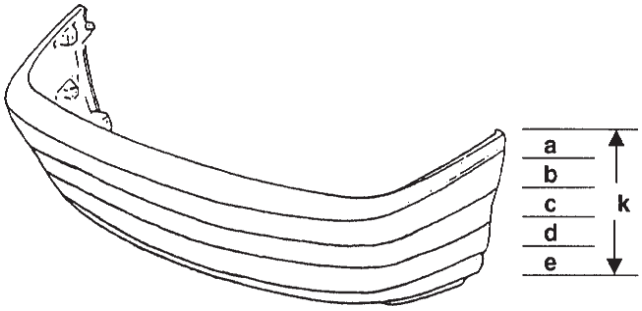
Division of the paint areas on: wings, doors and side sections

The target area is respectively noted next to the part designation!

If two or more sections are painted on one part, always use the value of the entire part.

2.9.2 Division of the bumper and trim surfaces to be painted

Add-on parts of the vehicle are divided into paint zones (partial areas), if the geometric requirements do fit. The user of this system receives tabulated information, depending on type, showing which vehicle part is divided into which zones.



Area	Example
k	= completely painted
k96	= completely painted from manufacturing year 1996 on
b-d	= painting of sections, here “b – d”
k/b	= completely painted without area “b”
Mt	= center section
St	= side section

2.10 Paint costs

The determination of the respective painting material costs is carried out expediently and most simply with the most current available data.

The AZT painting material costs are based on the consumption quantities of the individual materials (which depend on the application, the types of paint, the paint levels, the component material and the painting area) and the costs per material unit.

This ensures an exact cost calculation.

Because of supposedly simpler calculation, users also calculate the painting material as a percentage of the labour rate for painting. However, this means that the painting material costs are dependent on the hourly rate used for painting.

The AZT paint calculation system therefore does **not** provide the painting material costs as a percentage of the paint labour rate.

2.11 Individual index adjustment

Each user has the ability to match the designated paint costs to his individual circumstances by means of index adjustment.

For painting operations, the following procedure is recommended in order to determine the operation-specific painting material index:

(1) For at least three representative paint jobs, the respective material costs (for AZT index 100) are calculated and the corresponding preparation costs for painting are determined based upon the AZT paint calculation system.
(2) For the same paint jobs as well as for the prorated preparation, the operation-specific painting material costs are determined by means of a post calculation.
(3) The material costs of the respective paint jobs are each added together (excl. VAT).
(4) Operation-specific conditions with respect to the material cost are then taken into account.
(5) The two total cumulative expenditures which are determined in this way are compared and the individual index is calculated with the following formula:

$$individual\ index = \frac{material\ costs\ of\ the\ paint\ shop\ x\ 100}{material\ costs\ according\ to\ AZT\ paint\ calculation\ system}$$

(6) The index should be checked regularly by the operation, especially in the case of any changes in the operation-specific circumstances.

Note:

Surcharges for residual amounts, such as bulk and loss, are included in the material values of the AZT Paint Calculation. An index adjustment for this reason is not necessary.

2.12 Example of use

The AZT paint calculation is carried out in the same way for passenger cars as well as for off-road vehicles, delivery vans and transporters. All paint types, paint stages, time and material specifications can be applied unchanged to all vehicle types, regardless of the vehicle type.

The following example of use is intended to provide a better understanding of the AZT paint calculation:

Painting order: Mercedes C180-C400 (W205) 2013
2-coat painting solid / metallic / multi-effect water-based base coat
paint mixed using a mixing plant; colour sample is painted

- **Painting of left front wing (new part)**
- **Painting of left front door (repaired, filler area less 50 %)**

Calculation:

	time h	material €/£/$
- front wing complete (stage **I**)	1.0	---
- front door complete (stage **III**)	1.7	---
- preparation for painting (front wing dismantled and pre-painted, both parts painted on the vehicle)	2.1	---
- mixing paint with mixing plant	0.3	---
- colour sample and colour determination	0.3	---
- total painting time:	5.4	
- total paint material:		---

From here on, the calculation is continued with the individual labour rate and the individually determined material index (see chapter 2.11) for finalizing the paint calculation.

In general:

- All painting times and material costs are able to be added up.
- Once per painting order, time and materials are added for the "preparation for painting".
- It is important to take into account the types and stages of painting.
- For larger repair paintwork, use sectional items if possible (see chapter 6).

3 Painting of metal parts

3.1 Paint stages for metal parts

The time and materials specifications concerning the painting of metal parts as stated in the "AZT Paint Calculation" are divided into 4 paint stages. The classification is based on the initial or delivery condition and the usual painting practice.

All German car manufacturers, united in the German Automotive Industry Association (Verband der Automobilindustrie (VDA)), have adopted a uniform classification and definition of paint stages.

Paint stages	
New part *E* **I**	**New part painting – complete painting application** E = Welding part (in German, "Einschweißteil")
New part *M* **I**	**New painting – complete painting application** M = Installation part (in German, "Montageteil")
Surface **II-a**	**Surface painting** e.g. small damage to the surface (without filling work) Colour matching
Interior part **II-b**	**Interior part painting – complete painting application** New parts and repair painting (including filling work) of internal parts (Exposed and cleaned engine compartment – see Additional work)
Repair up to 50% **III**	**Repair painting with filler application up to 50%** of the surface of a part
Repair above 50% **IV**	**Repair painting with filler application above 50%** of the surface of a part

3.1.1 Painting of internal parts

The paint stage II comprises two painting processes, surface paintwork and the painting of vehicle interiors. Logically, the two stages differ in execution and application. Time and material studies have, however, shown that the time input and the material costs for preparation and surface processing (per dm^2) are identical. Therefore, the two processes have one common paint stage.

A precise definition of the painting process in paint stage **II** is explained in chapter 3.2. The description of the painting process also shows how these differ from one to another.

The painting of vehicle interiors is defined and specified in the AZT paint system by means of composite components and must not be changed by the user. During the vehicle surface measurement, adjacent components or components exposed to the painting process are also included. Further scaling/splitting of the component by the user in the IT systems incurs an additional cost. From a technical perspective, this is not correct and must therefore be rated incorrect.

Following interior parts and their peripheral parts are defined and must be rated as a complete component for AZT paint system:

- Front wheel housing incl. longitudinal beam up to the bulkhead
- Engine compartment without bulkhead
- Front panel interior side[5]
- Front panel interior top
- Front panel interior bottom
- Rear panel complete
- Luggage compartment floor incl. wheel housing and longitudinal beam

[5] The components "front panel interior side", "front panel interior top" and "front panel interior bottom" are interior parts which, as experience has shown, are more likely to be installed on older vehicles, since the design of the front end of newer vehicle types has changed fundamentally.

3.2 Work scope and content of the AZT Paint Calculation values for the painting of metal parts

Work process			paint stage I	II	III	IV
preparation for painting	vehicles & parts movement		x	x	x	x
	prepare, clean & sort equipment, tools, devices & auxiliary equipment		x	x	x	x
	prepare materials, clean up remnants		x	x	x	x
	wear & remove PPE		x	x	x	x
	cover / uncover vehicle / part		x	x	x	x
	evaporation times, perform finishing		x	x	x	x
	possibly also additionally:					
	mixing paint with mixing plant		x	x	x	x
	colour sample and final colour determination		x	x	x	x
painting	part cleaning (repeatedly if necessary)		x	x	x	x
	applying & removing covers		x	x	x	x
	sanding	before filling work	x		x	x
		before smoothing work	x	x(b)	x	x
		of interior surfaces - a	x		x	x
		of interior surfaces - b		x(b)		
		before applying top coat	x	x	x	x
	filling	repaired part		x(b)	x	x
		small transport & storage damages	x			
		welding joints	x			
	applying base coat & smoother	repaired part		x(b)	x	x
		new part	x	x(b)		
	apply rockfall protection to outer surfaces		x		x	x
	top coat application	1-coat solid / metallic or 2-coat solid / metallic / multi-effect				
		exterior part		x		
		exterior and (if applicable) interior part		x(b)	x	x
		exterior and interior part (interior if possible or necessary or if not yet pre-painted)	x			
Connecting points of welded new parts (up to 10 cm) have been taken into consideration. If a larger area of the adjacent part(s) also has/have to be painted, the respective value has to be taken from paint stage **II** or **III**.			x			

x(b) Affects only interior part paintwork

The preceding table shows the evaluated essential operations for the individual paint stages. A distinction is made between order-dependent or area-dependent working time and the associated material costs.

Order-dependent time and material costs

All stated steps in this field are to be assigned to preparation for painting. The times and the material costs from Figure 1 must be used for this purpose.

Preparation for painting

- Vehicles & parts movement
- Prepare, clean and sort tools & auxiliary equipment
- Prepare & clear up materials
- Prepare colour sample and toning
- Checking the surface
- Setup / strip paint booth
- Wear & remove PPE
- Evaporation times
- Cover vehicle / part(s)
- Execute finish

including:
- remove overspray
- remove sanding debris
- remove covering marks and masking lines on beads, edges & folds
- minor touch-ups like:
  - remove dust / dirt inclusions by grinding/polishing[6]
  - remove small paint runs by grinding/polishing

not included:
- vehicle preparation work and/or polishing of adjacent surfaces
- cleaning the vehicle interior
- washing the vehicle

[6] Grinding/polishing within the scope of defect removal always refers only to the freshly painted component surfaces.

Surface-dependent time and material costs

All determined time and paint costs are based, regardless of the vehicle manufacturer, only on the vehicle surface and result from evaluation of numerous time studies. Paint material, the painting method and the paint coat thickness are taken into consideration.

Paintwork per part *(applies to all sheet metal parts)*

• Clean part(s)		
• Applying and removing covers	***including:***	- masking work on the main part - the average value includes certain masking work such as for door handle, strips, etc.
	not included:	- masking work on bonded windscreens, can cause extra work depending on construction - masking work with assembled add-on parts, such as doors, can cause extra work, such that disassembly and assembly may be recommendable
• Sanding		
• Filling		
• Priming		
• Smoothing		
• Stone chip protection		
• Top coat application	***not included:***	- treating adjacent parts (welded-on new parts excluded – 10 cm of the adjacent part are included there)

3.3 Paint for metal parts

Paint material – VOC compliant systems	
- **abrasives** • manual sanding paper • mechanical sanding paper • eccentric discs • fiber sanding discs • sanding pad • sanding mat - **filling material** • polyester body filler • polyester spray filler • fine plastic filler - **foundation / smoother** • foundation, primer • 2C HS / VHS / UHS smoother - **top coats** • 2C top coat solid / metallic • 2C top coat matte black • water-based top coat solid / metallic / multi-effect (incl. mineral, mica, pearl, xirallic etc.)[7] • 2C cleat coat HS / VHS	- **hardeners** • hardeners for grounding & primer • hardeners for 2C smoother & top coat - **dilutions / detergents** • 2C spray dilution /adjusting base / demineralised water • cleaning thinner • silicone remover / degreaser - **auxiliary materials** • masking paper / -film b = 20 & 90 cm • masking tape b = 19 mm • edge strip b = 6 mm • fine dust filter mask - **finishing** • polish (abrasive, medium, fine) • abrasive film discs - **Materials for special application** • rockfall protection

All the materials (see table above) which are required for the proper performance of painting operations are taken into account in the specified values, depending on the paint stage.

The material expenses included in the calculation take into consideration the actual material consumption and material expenses per unit of material and are based on the average list price (excl. VAT) of various coatings and auxiliary materials manufacturers.

[7] Information on the inclusion of multi-effect pigments in the calculation of AZT paint material index values does currently not apply to the following countries (ISO 3166 Alpha 2):
AU, BA, CH, CZ, GB, GR, HR, HU, IE, IN, PL, RS, SK, SL, TR, ZA.

3.4 Special table for metal parts

For the paint calculation of vehicle parts which are non-standard or are painted in a non-standard manner and which are not already included in the basic model, the special table "Average values for the painting of disassembled metal parts" has been created. As stated in the table heading, it is assumed that these parts are generally painted after having been disassembled.

The delivery state of the part and the type of top coat determine the appropriate paint stage in each case.

These other parts of the vehicle can supplement the scope of the vehicle painting or be used separately.

The calculation data for "preparation for painting" are to be selected according Figure 1.

1-coat solid / metallic Paint stages				Average values for painting disassembled metal parts		2-coat solid / metallic / multi-effect Paint stages			
new part	surface	repair up to 50%	repair over 50%	Experience shows that the surface of the component to be painted has nothing to do with the size of the respective vehicle!		new part	surface	repair up to 50%	repair over 50%
I	II	III	IV			I	II	III	IV
hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	Item	PARTS DESIGNATION	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$
	0.4			1.	**Reinforcement of front bumper**		0.4		
0.8	0.4	0.8	1.3	2.	**Bumper front/rear - small**	0.9	0.4	0.9	1.3
1.2	0.5	1.1	1.8	3.	**Bumper front/rear - medium**	1.2	0.6	1.3	1.9
1.5	0.7	1.5	2.3	4.	**Bumper front/rear - large**	1.6	0.7	1.6	2.5
0.5	0.3	0.5		5.	**Bumper cover front/rear**	0.5	0.3	0.5	
0.6	0.3	0.6	0.9	6	**Front apron/front spoiler - small**	0.6	0.3	0.7	1.0
0.9	0.4	0.9	1.5	7	**Front apron/front spoiler - medium**	1.0	0.5	1.0	1.5
1.3	0.6	1.2	2.0	8	**Front apron/front spoiler - large**	1.4	0.6	1.4	2.1
0.4	0.2			9	**Headlight ring**	0.4	0.2		
0.5	0.3	0.6		10	**Front grille**	0.6	0.3	0.6	
0.4	0.2			11	**Door mirror**	0.4	0.2		
0.8	0.4	0.8	1.3	12	**Sunroof lid**	0.9	0.4	0.9	1.3
0.6	0.3	0.6	0.9	13	**Rear apron/rear spoiler - small**	0.6	0.3	0.7	1.0
0.9	0.4	0.9	1.5	14	**Rear apron/rear spoiler - medium**	1.0	0.5	1.0	1.5
1.3	0.6	1.2	2.0	15	**Rear apron/rear spoiler - large**	1.4	0.6	1.4	2.1
	0.4			16	**Reinforcement of rear bumper**		0.4		
0.4	0.2			17	**Small part** e.g. tank flap, door handle, etc.	0.4	0.2		
0.5	0.3	0.5		18	**Rim**	0.5	0.3	0.6	

4 Painting of plastic parts

If a paint calculation is to be performed for plastic parts, the following points should be noted. It is essential that the applicable painting process and the calculation be determined by the characteristics and the delivery state of the part:

- **Top coat** 1-coat solid / metallic
  2-coat solid / metallic / multi-effect
  multi-layer
- **Paint stage** new part painting
  surface painting
  repair painting
- **Surface** even
  structured
  unpainted unfinished part
  primed part
  already painted part
- **Type of plastic** <<hard>>
  PUR soft foam

The user can best find the respective processing procedures as well as the materials to be used from the information provided by the paint and / or vehicle manufacturers.
The table "work scope and content of the AZT paint calculation values for the painting of plastic parts" can also be helpful in making a decision (see chapter 4.2).

Plastic components are mostly painted when disassembled.

Plastic body parts can also be painted when mounted; additional masking work is then to be considered (see Figure 1 and chapter 4.3). In the case of a paint calculation for non-standard plastic parts or plastic parts which have not been painted according to standard, please refer to the painting times and painting costs in the special tables (see chapter 4.5).

4.1 Paint stages for plastic parts

The paint stages for plastic parts are always preceded by the identifier "K".

The time and materials specifications concerning the painting of plastic parts as stated in the AZT paint calculation are divided into five paint stages. Three of these paint stages are intended for new parts and two for repair parts. The divisions correspond to the initial or delivery condition as well as the painting practice which is necessary for plastic parts.

paint stage		applicable for / delivery condition	workflow to be performed (after cleaning & sanding the part)
new part painting	K1R	primered new part	- apply top coat
	K1R	unprimered new part	- apply bonding agent (1C) and top coat (wet-in-wet)
	K1N	unprimered new part surface can be structured covering power of the top coat is not sufficient or a defined base coat (shade of grey) is required by the paint manufacturer	- apply bonding agent (1C) and filler or primer filler - apply top coat (wet-in-wet)
	K1G	unprimered and unstructured new part made of hard material	- apply bonding agent (1C) and filler or primer filler - dry & sanding - apply top coat
	K1G	new part consists of PUR soft foam	- extensive cleaning - filling of the pores - high elastification - apply bonding agent (1C) and filler or primer filler - dry & sanding - apply top coat
surface painting	K2	minor damage to the surface repainting in another colour	- apply top coat
repair painting	K3	scratches and abrasions - not deeper than 1 mm, on an area up to 2 dm² (for small parts) to max. 15% of the surface (for larger parts such as bumpers)	- sanding of repair area - apply bonding agent (1C) - apply filler and sanding - apply filler / primer filler - dry & sanding - apply top coat

4.2 Work scope and content of the AZT paint calculation values for the painting of plastic parts

work process			paint stage					
			new part				sur-face	repair
			K1R	K1N	K1G hard	K1G PUR soft	K2	K3
preparation for painting	prepare, clean & sort equipment, tools, devices & auxiliary equipment		x	x	x	x	x	x
	prepare materials, clean up remnants		x	x	x	x	x	x
	wear & remove PPE		x	x	x	x	x	x
	cover / uncover part		x	x	x	x	x	x
	anneal the part		x[1)]	x	x	x		
	evaporation times		x	x	x	x	x	x
	inspect surface, finishing if necessary		x	x	x	x	x	x
	possibly also additionally:							
	colour sample and final colour determination		x	x	x	x	x	x
	mixing paint with mixing plant		x	x	x	x	x	x
painting	moving & fixing parts		x	x	x	x	x	x
	part cleaning (repeatedly if necessary)		x	x	x		x	x
	cleaning part thoroghly					x		
	apply sealer					x		
	applly bonding agent		x[1)]	x	x	x		x
	elastify paint (depending on paint manufacturer)		x	x	x		x	x
	elastify paint further					x		
	sanding	old paintwork					x	x
		damaged area						x
		new part - priming	x[2)]					
		new part	x	x	x	x		
		filler			x[3)]			x
		smoother			x	x		x
	smoothing	damaged area						x
		small flaws			x[3)]			
	fillers	damaged area						x
		new part		x	x	x		
	top coat	structured paint	x	x			x	x
		or 1-coat solid / metallic	x	x	x	x	x	x
		or 2-coat solid / metallic / multi-effect	x	x	x	x	x	x

1) = if foundation not applied 2) = if foundation applied 3) = possibly with fibre glass parts

4.3 Masking work

Since plastic parts are usually painted when disassembled, masking work is not considered in the calculation values.

For plastic parts which

- only have to be partially painted (e.g. some bumpers)
- have differently coloured, inlaid strips,
- have built-in or mounted parts (e.g. door mirrors)

and for mounted plastic body parts (e.g. wings), the following calculation values for masking work apply:

Also see Figure 1: Preparation for painting.		
masking work on	masking time/h	masking material/ €/£/$
1 part	0.2	---

4.4 Paint for plastic parts

Paint material for plastic partse – VOC compliant systems	
- **abrasives** • manual sanding paper • mechanical sanding paper • eccentric disc • sanding pad • sanding mat - **filling material** • plastic repair filler • fine plastic filler - **bonding agent / filler** • 1C plastic filler • bonding agent • 2C HS / VHS / UHS filler - **top coats** • 2C top coat solid / metallic • 2C top coat black matte • Water-based top coat solid / metallic / multi-effect (incl. mineral, mica, pearl, xirallic etc.)[8] • 2C clear coat HS / VHS	- **additional materials** • sealers • elastic addititve • effect additive - **hardeners** • hardener for primer • hardener for 2C smoother & top coat - **dilutions / detergents** • 2C spray dilution / adjusting base / demineralised water • cleaning thinner • silicone remover / degreaser - **auxiliary materials** • masking paper / film b = 20 & 90 cm • masking tape b = 19 mm • edge strip b = 6 mm • fine dust filter mask - **finishing** • polish (abrasive, medium, fine) • abrasive film discs

All the materials (see table above) which are required for the proper performance of painting operations are taken into account in the specified material values, depending on the paint stage.

[8] Information on the inclusion of multi-effect pigments in the calculation of AZT paint material index values does currently not apply to the following countries (ISO 3166 Alpha 2):
AU, BA, CH, CZ, GB, GR, HR, HU, IE, IN, PL, RS, SK, SL, TR, ZA.

4.5 Special table for plastic parts

For the paint calculation of plastic parts which are non-standard or are painted in a non-standard manner and which are not already included in the basic model, the special table "Average values for the painting of disassembled plastic parts" has been created. As stated in the table heading, it is assumed that these parts are generally painted after having been disassembled.

The surface and the material type of the part as well as the type of top coat determine the appropriate paint stage in each case.

These other parts of the vehicle can supplement the scope of the vehicle painting or be used separately.

The calculation data for "preparation for painting" are to be selected according Figure 1.

New part painting

K1R new part/without filler application

K1N new part / with filler application / without sanding

K1G new part / with filler application / with sanding / PUR soft

K2 surface painting

K3 repair paintwork

1-coat solid / metallic Paint stages					Average values for painting disassembled plastic parts		2-coat solid / metallic / multi-effect Paint stages				
new part			surface	repair	Experience shows that the surface of the component to be painted has nothing to do with the size of the respective vehicle!		new part			surface	repair
K1R	K1N	K1G	K2	K3			K1R	K1N	K1G	K2	K3
hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	Item	PARTS DESIGNATION	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$
0.5	0.6	0.9	0.5	1.1	1.	**Front bumper - small** *e.g. VW Vento*	0.6	0.7	1.0	0.5	1.1
0.7	0.9	1.3	0.6	1.2	2.	**Bumper front - medium** *e.g. Audi A4 94-2001*	0.8	1.0	1.4	0.7	1.3
0.9	1.1	1.7	0.8	1.3	3.	**Bumper front - large** *e.g. Mazda Demio*	1.1	1.3	1.8	0.9	1.5
1.1	1.3	2.0	0.9	1.5	4.	**Front bumper - extra large** *e.g. Mercedes 280-600 SE W140*	1.3	1.5	2,2	1.1	1.6
0.4	0.5	0.7	0.4	1.0	5.	**Bumper front middle - small**	0.4	0.5	0.7	0.4	1.0
0.5	0.6	0.9	0.5	1.1	6	**Front bumper middle - medium** *e.g. Ford Ka*	0.6	0.7	1.0	0.5	1.1
0.7	0.9	1.3	0.6	1.2	7	**Bumper front middle - large**	0.8	1.0	1.4	0.7	1.3
0.4	0.5	0.6	0.4	0.9	8	**Bumper front side**	0.4	0.5	0.6	0.4	1.0
0.5	0.6	0.9	0.5	1.1	9	**Bumper cover front**	0.6	0.7	1.0	0.5	1.1
0.5	0.6	0.8	0.4	1.0	10	**Bumper cover front middle**	0.5	0.6	0.8	0.5	1.0
0.3	0.4	0.5	0.3	0.9	11	**Bumper cover front side**	0.4	0.4	0.5	0.4	0.9
0.4	0.5	0.6	0.4	0.9	12	**Front apron - small**	0.4	0.5	0.6	0.4	1.0
0.5	0.6	0.8	0.5	1.0	13	**Front apron - medium**	0.6	0.7	0.9	0.5	1.1
0.7	0.8	1.2	0.6	1.1	14	**Front apron - large**	0.8	0.9	1.3	0.6	1.2
0.3	0.4	0.5	0.3	0.9	15	**Front apron middle - small**	0.4	0.4	0.5	0.4	0.9
0.5	0.6	0.8	0.4	1.0	16	**Front apron middle - medium**	0.5	0.6	0.8	0.5	1.0
0.6	0.7	1.0	0.5	1.1	17	**Front apron middle - large**	0.7	0.8	1.1	0.6	1.2
0.3	0.4	0.5	0.3	0.9	18	**Front apron side**	0.4	0.4	0.5	0.4	0.9
0.5	0.6	0.8	0.5	1.0	19	**Front spoiler**	0.6	0.7	0.9	0.5	1.1
0.5	0,6 3	0.8	0.4	1.0	20	**Front spoiler middle**	0.5	0.6	0.8	0.5	1.0
0.3	0.4	0.5	0.3	0.9	21	**Front spoiler side**	0.4	0.4	0.5	0.4	0.9
0.3	0.4	0.5	0.3		22	**Headlight cover**	0.3	0.4	0.5	0.3	
0.3	0.4	0.4	0.3		23	**Headlight ring**	0.3	0.4	0.4	0.3	
0.3	0.4	0.5	0.3		24	**Headlight housing**	0.4	0.4	0.5	0.4	
0.4	0.5	0.6	0.4	0.9	25	**Front grille** *e.g. Citroen Xsara (98)*	0.4	0.5	0.6	0.4	1.0

K1R	K1N	K1G	K2	K3			K1R	K1N	K1G	K2	K3
hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	Item	PARTS DESIGNATION	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$
0.3	0.4	0.5	0.3		26	**Panel front side**	0.3	0.4	0.5	0.3	
0.5	0.6	0.8	0.4	1.0	27	**Front trim panel complete - small**	0.5	0.6	0.8	0.5	1.0
0.7	0.9	1.3	0.6	1.2	28	**Front trim panel complete - medium** *e.g. Porsche 928*	0.8	1.0	1.4	0.7	1.3
1.0	1.2	1.8	0.8	1.4	29	**Front trim panel complete - large** *e.g. Mazda MX 5 (98)*	1.1	1.4	2.0	0.9	1.5
1.1	1.3	2.0	0.9	1.5	30	**Front trim panel complete - oversized** *e.g. Opel Calibra*	1.3	1.5	2,2	1.1	1.6
0.3	0.4	0.5	0.3	0.9	31	**Front trim panel top - small** *e.g. Renault Espace 91-96*	0.4	0.4	0.5	0.4	0.9
0.5	0.6	0.8	0.4	1.0	32	**Front trim panel top - medium** *e.g. VW Passat 88-94*	0.5	0.6	0.8	0.5	1.0
0.6	0.7	1.0	0.5	1.1	33	**Front trim panel top - large** *e.g. Citroën XM*	0.7	0.8	1.1	0.6	1.2
0.3	0.4	0.5	0.3	0.9	34	**Front trim panel middle - small**	0.3	0.4	0.5	0.3	0.9
0.4	0.5	0.7	0.4	1.0	35	**Front trim panel middle - medium**	0.4	0.5	0.7	0.4	1.0
0.5	0.6	0.9	0.5	1.1	36	**Front trim panel middle - large**	0.6	0.7	1.0	0.5	1.1
0.3	0.4	0.5	0.3	0.9	37	**Front trim panel bottom - small**	0.4	0.4	0.5	0.4	0.9
0.5	0.6	0.8	0.4	1.0	38	**Front trim panel bottom - medium**	0.5	0.6	0.8	0.5	1.0
0.7	0.8	1.2	0.6	1.1	39	**Front trim panel bottom - large**	0.8	0.9	1.3	0.6	1.2
0.3	0.4	0.5	0.3		40	**Wing panel**	0.3	0.4	0.5	0.3	
0,3 4	0.4	0.5	0.3		41	**Wing trim strip**	0.3	0.4	0.5	0.3	
0.5	0.6	0.8	0.4	1.0	42	**Fender enlargement, front**	0.5	0.6	0.8	0.5	1.0
0.4	0.5	0.7	0.4		43	**Windscreen cowl front**	0.5	0.6	0.8	0.4	
0.4	0.5	0.7	0.4		44	**Ventilation screen front**	0.4	0.5	0.7	0.4	
0.5	0.6	0.9	0.5	1.1	45	**Door panel 2-door**	0.6	0.7	1.0	0.5	1.1
0.3	0.4	0.5	0.3		46	**Door trim 2-door**	0.4	0.4	0.5	0.4	
0.3	0.4	0.5	0.3		47	**Door mirror**	0.3	0.4	0.5	0.3	
0.5	0.6	0.8	0.5	1.0	48	**Door panel 4-door front**	0.6	0.7	0.9	0.5	1.1
0.3	0.4	0.5	0.3		49	**Door trim 4-door front**	0.4	0.4	0.5	0.4	
0.4	0.5	0.7	0.4		50	**B-pillar panel 4-door**	0.4	0.5	0.7	0.4	
0.5	0.6	0.8	0.5	1.0	51	**Door panel 4-door rear**	0.6	0.7	0.9	0.5	1.1
0.3	0.4	0.5	0.3		52	**Door trim 4-door rear**	0.4	0.4	0.5	0.4	
0.4	0.5	0.7	0.4	1.0	53	**Door sill panel 2-door**	0.4	0.5	0.7	0.4	1.0
0.4	0.5	0.7	0.4	1.0	54	**Door sill panel 4-door complete**	0.5	0.6	0.8	0.4	1.0
0.4	0.5	0.6	0.4	0.9	55	**Door sill panel 4-door front**	0.4	0.5	0.6	0.4	1.0
0.3	0.4	0.5	0.3	0.9	56	**Door sill panel 4-door rear**	0.4	0.4	0.5	0.4	0.9
0.3	0.4	0.5	0.3		57	**Roof trim**	0.4	0.4	0.5	0.4	
0.5	0.6	0.8	0.4	1.0	58	**Roll bar complete**	0.5	0.6	0.8	0.5	1.0
0.3	0.4	0.5	0.3	0.9	59	**Roll bar side**	0.3	0.4	0.5	0.3	0.9

K1R	K1N	K1G	K2	K3			K1R	K1N	K1G	K2	K3
hrs.	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	Item	PARTS DESIGNATION	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$
0.4	0.5	0.7	0.4		60	**Side panel 2-door**	0.4	0.5	0.7	0.4	
0.3	0.4	0.5	0.3		61	**Side trim 2-door**	0.4	0.4	0.5	0.4	
0.5	0.6	0.8	0.4	1.0	62	**Side preparation 2-door**	0.5	0.6	0.8	0.5	1.0
0.3	0.4	0.5	0.3		63	**C-pillar panel 2-door**	0.3	0.4	0.5	0.3	
0.4	0.5	0.6	0.4		64	**Side panel 4-door**	0.4	0.5	0.6	0.4	
0.3	0.4	0.5	0.3		65	**Side trim 4-door**	0.4	0.4	0.5	0.4	
0.5	0.6	0.8	0.4	1.0	66	**Side preparation 4-door**	0.5	0.6	0.8	0.5	1.0
0.3	0.4	0.5	0.3		67	**C-pillar panel 4-door**	0.3	0.4	0.5	0.3	
0.6	0.7	1.0	0.5	1.1	68	**Cover for convertible roof**	0.7	0.8	1.1	0.6	1.2
0.4	0.5	0.6	0.4	0.9	69	**Ventilation cover rear**	0.4	0.5	0.6	0.4	1.0
0.4	0.5	0.7	0.4		70	**Panel on the cover/rear door/tailgate**	0.5	0.6	0.8	0.4	
0.3	0.4	0.5	0.3		71	**Handle strip on rear door / tailgate**	0.3	0.4	0.5	0.3	
0.5	0.6	0.8	0.4		72	**Rear spoiler on the roof rear**	0.5	0.6	0.8	0.5	
0.4	0.5	0.7	0.4	1.0	73	**Rear spoiler on the roof/rear door/tailgate – small** *e.g. Audi 100 Avant 91-94*	0.4	0.5	0.7	0.4	1.0
0.7	0.8	1.2	0.6	1.1	74	**Rear spoiler on the roof/rear door/tailgate – middle** *e.g. Mazda MX 3*	0.8	0.9	1.3	0.6	1.2
0.9	1.1	1.7	0.8	1.3	75	**Rear spoiler on the roof/rear door/tailgate - large**	1.1	1.3	1.8	0.9	1.5
		0.7	0.4	1.0	76	**Rear spoiler on the roof/rear door/tailgate, PUR - small**			0.7	0.4	1.0
		1.5	0.6	1.1	77	**Rear spoiler on the roof/rear door/tailgate, PUR - medium**			1.5	0.6	1.2
		2,2	0.8	1.3	78	**Rear spoiler on the roof/rear door/tailgate - PUR large**			2.3	0.9	1.5
0.4	0.5	0.6	0.4	0.9	79	**Rear spoiler middle on the roof/rear door/tailgate - small**	0.4	0.5	0.6	0.4	1.0
0.5	0.6	0.9	0.5	1.1	80	**Rear spoiler middle on roof/rear door/tailgate - medium** *e.g. Toyota Carina E Liftback 92-98*	0.6	0.7	1.0	0.5	1.1
0.8	0.9	1.4	0.7	1.2	81	**Rear spoiler middle on the roof/rear door/tailgate - large** *e.g. Toyota MR 2*	0.9	1.1	1.5	0.8 2	1.3
		0.6	0.4	0.9	82	**Rear spoiler middle roof/rear door/tailgate, PUR - small**			0.6	0.4	1.0
		1.1	0.5	1.1	83	**Rear spoiler middle roof/rear door/tailgate, PUR - medium**			1.1	0.5	1.1
		1.9	0.7	1.2	84	**Rear spoiler middle on the roof/rear door/tailgate, PUR - large**			1.9	0.8	1.3
0.4	0.5	0.7	0.4	1.0	85	**Rear spoiler side**	0.4	0.5	0.7	0.4	1.0
		0.7	0.4	1.0	86	**Rear spoiler side, PUR**			0.7	0.4	1.0
0.4	0.5	0.7	0.4	1.0	87	**Rear panel complete - small**	0.5	0.6	0.8	0.4	1.0
0.7	0.8	1.2	0.6	1.1	88	**Rear panel complete - medium** *e.g. Fiat Coupé 94-2001*	0.8	0.9	1.3	0.6	1.2
0.9	1.1	1.7	0.8	1.3	89	**Rear panel complete - large** *e.g. Rover 200 (RF) 96-2000*	1.1	1.3	1.8	0.9	1.5
1.1	1.4	2,2	0.9	1.5	90	**Rear panel complete - oversized** *e.g. Mazda MX 3*	1.4	1.6	2,4	1.1	1.7
0.4	0.5	0.6	0.4	0.9	91	**Rear panel top -small** *e.g. Toyota Celica (#T20#) 94-00*	0.4	0.5	0.6	0.4	1.0
0.5	0.6	0.8	0.5	1.0	92	**Rear panel top - medium**	0.6	0.7	0.9	0.5	1.1
0.7	0.8	1.2	0.6	1.1	93	**Rear panel top - large**	0.8	0.9	1.3	0.6	1.2

K1R	K1N	K1G	K2	K3			K1R	K1N	K1G	K2	K3
hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	Item	PARTS DESIGNATION	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$	hrs. €/£/$
0.3	0.4	0.5	0.3	0.9	94	**Rear panel middle - small**	0.4	0.4	0.5	0.4	0.9
0.5	0.6	0.8	0.4	1.0	95	**Rear panel middle - medium**	0.5	0.6	0.8	0.5	1.0
0.6	0.7	1.0	0.5	1.1	96	**Rear panel middle - large**	0.7	0.8	1.1	0.6	1.2
0.4	0.5	0.7	0.4	1.0	97	**Rear panel bottom - small**	0.4	0.5	0.7	0.4	1.0
0.5	0.6	0.9	0.5	1.1	98	**Rear panel bottom - medium**	0.6	0.7	1.0	0.5	1.1
0.8	0.9	1.4	0.7	1.2	99	**Rear panel bottom - large**	0.9	1.1	1.5	0.8	1.3
0.3	0.4	0.5	0.3		100	**Panel rear side**	0.4	0.4	0.5	0.4	
0.4	0.5	0.7	0.4	1.0	101	**Rear apron - small**	0.4	0.5	0.7	0.4	1.0
0.5	0.6	0.9	0.5	1.1	102	**Rear apron - medium**	0.6	0.7	1.0	0.5	1.1
0.8	0.9	1.4	0.7	1.2	103	**Rear apron - large**	0.9	1.1	1.5	0.8	1.3
0.3	0.4	0.5	0.3	0.9	104	**Rear apron middle - small**	0.4	0.4	0.5	0.4	0.9
0.5	0.6	0.8	0.4	1.0	105	**Rear apron middle - medium**	0.5	0.6	0.8	0.5	1.0
0.7	0.8	1.2	0.6	1.1	106	**Rear apron middle - large**	0.8	0.9	1.3	0.6	1.2
0.4	0.5	0.6	0.4	0.9	107	**Rear apron side**	0.4	0.5	0.6	0.4	1.0
1.0	1.2	1.8	0.8	1.4	108	**Luggage compartment floor, rear**	1.1	1.4	2.0	0.9	1.5
0.5	0.6	0.9	0.5	1.1	109	**Rear bumper – small** *e.g. Citroën Saxo (99)*	0.6	0.7	1.0	0.5	1.1
0.8	0.9	1.4	0.7	1.2	110	**Rear bumper – medium** *e.g. VW Corrado*	0.9	1.1	1.5	0.8	1.3
1.0	1.2	1.8	0.8	1.4	111	**Rear bumper - large** *e.g. Skoda Octavia (1U) Estate*	1.1	1.4	2.0	0.9	1.5
1.1	1.4	2,2	0.9	1.5	112	**Rear bumper - oversized** *e.g. Mercedes 280-600 SE W140*	1.4	1.6	2,4	1.1	1.7
0.4	0.5	0.7	0.4	1.0	113	**Bumper rear middle - small**	0.5	0.6	0.8	0.4	1.0
0.6	0.8	1.1	0.6	1.1	114	**Bumper rear middle - medium**	0.7	0.8	1.2	0.6	1.2
0.8	1.0	1.5	0.7	1.3	115	**Bumper rear middle - large**	1.0	1.2	1.7	0.8	1.4
0.4	0.5	0.7	0.4	1.0	116	**Bumper rear side**	0.4	0.5	0.7	0.4	1.0
0.7	0.8	1.2	0.6	1.1	117	**Bumper cover rear**	0.8	0.9	1.3	0.6	1.2
0.5	0.6	0.9	0.5	1.1	118	**Bumper cover rear middle**	0.6	0.7	1.0	0.5	1.1
0.4	0.5	0.6	0.4	0.9	119	**Bumper cover rear side**	0.4	0.5	0.6	0.4	1.0
0.3	0.4	0.4	0.3		120	**Small part** *e.g. tank flap, door handle, etc.*	0.3	0.4	0.4	0.3	
0,1	0,1	0,1	0,1		121	**PDC sensor, cover flap** (Tow hitch, headlamp cleaning unit)	0.1	0.1	0.1	0.1	

5 Item and component designations

The table below shows all item designations/component designations across all vehicles currently specified in the AZT paint system. This table is therefore valid for cars, off-road vehicles, delivery vans and transporters.

item no.	item / component designation	item no.	item / component designation
1010	Bumper front	1210	Front grille bottom
1015	Bumper front upper part	1215	Front grille side
1020	Bumper front middle	1220	Panel front side
1030	Bumper front bottom part	1230	Front panel complete
1040	Bumper front side	1240	Front panel top
1050	Bumper front section/corner	1250	Front panel middle
1051	Reinforcement of front bumper	1260	Front panel bottom
1052	Bumper trim, front	1310	Front panel interior complete
1053	Bumper trim front middle	1320	Front panel interior top complete
1054	Bumper trim front side	1330	Front panel interior top
1056	Cover tow hook front	1340	Front panel interior side
1060	Bumper cover front	1350	Front panel interior bottom
1070	Bumper cover front middle	1400	Wing front
1080	Bumper cover front side	1405	Wing front with interior part
1083	Bumper trim, front	1410	Front wings complete
1084	Bumper trim front middle	1415	Wing front top part
1085	Bumper trim front middle bottom	1420	Wing front middle
1086	Bumper trim front side	1425	Wing front bottom
1090	License plate panel front	1440	Side part front
1100	Front apron	1450	Corner piece front complete
1105	Front apron middle	1455	Corner piece front top
1110	Front apron side	1460	Corner piece front middle
1120	Front spoiler	1465	Corner piece front bottom
1125	Front spoiler middle	1480	Fender on chassis
1130	Front spoiler side	1490	Fender below cabin front
1140	Cover/grille with additional lamp	1495	Fender below cabin rear
1148	Trim/horn spray nozzle SWA	1500	Fender enlargement, front
1150	Headlight ring	1510	Wing panel front
1160	Headlight housing	1515	Wing trim strip front
1170	Headlight cover	1520	Corner part panel front
1175	Front panel	1525	Corner part strip front
1180	Front trim panel complete	1550	Mud flap front
1185	Front trim panel top	1600	Front flap
1190	Front trim panel middle	1615	Front flap top
1195	Front trim panel bottom	1620	Front flap bottom
1200	Front grille	1625	Front flap left
1202	Trim strip, front grille	1630	Front flap right
1204	Trim strip, front grille bottom	1640	Cover front
1205	Front grille middle	1650	Cover/front flap, front part

item no.	item / component designation	item no.	item / component designation
1660	Air scoop in cover, front	2160	Door rear complete
1665	Air scoop in front flap	2165	Door rear top
1720	Windscreen cowl front	2170	Door rear middle
1740	Windscreen cowl front with A-pillars	2175	Door rear bottom
1745	Panel windscreen cowl front	2180	Side door complete glazed
1747	Panel windscreen cowl side	2185	Side door complete unglazed
1780	Ventilation panel front	2190	Side door top glazed
1790	Ventilation screen front	2195	Side door top unglazed
1800	A-pillar complete	2200	Side door middle
1810	A-pillar exterior top	2210	Side door bottom
1820	A-pillar middle	2220	Side door (one) 2-piece complete glazed
1830	A-pillar bottom	2225	Side door (one) 2-piece complete unglazed
1835	A-pillar, bottom part, interior	2230	Side door (one) 2-piece top glazed
1840	Panel on the A-pillar	2235	Side door (one) 2-piece top unglazed
1850	Wind deflector, side	2240	Side door (one) 2-piece middle
1880	Cross-brace windscreen top	2250	Side door (one) 2-piece bottom
1890	Windscreen frame	2255	Door interior part rear
1915	Longitudinal beam end piece, front	2260	Window frames front/rear
1918	Longitudinal beam, front	2270	Door widening, rear
1920	Wheel well without headboard	2280	Door panel rear
1925	Wheel housing reinforcement front, top	2285	Door trim rear
1930	Engine compartment without headboard	2290	Door handle rear
1940	Boot front	2291	Door handle trim, rear
1950	Front section	2294	Door trim, rear
1970	Dash trim (driver side)	2300	Side panel intermediate piece complete glazed
1975	Dash trim (passenger side)	2305	Side panel intermediate piece complete unglazed
2010	Door front complete	2310	Side panel intermediate piece top glazed
2015	Door front top	2315	Side panel intermediate piece top unglazed
2020	Door front middle	2325	Side wall intermediate piece middle
2025	Door front bottom	2335	Side wall intermediate piece bottom
2030	Door extension	2340	Panel side wall intermediate piece
2035	Interior door section front	2345	Trim side wall intermediate piece
2040	Door widening, front	2360	Side panel front complete glazed
2045	Door trim, front	2365	Side panel front complete unglazed
2050	Door trim front	2370	Side panel front top glazed
2060	Door mirror	2375	Side panel front top unglazed
2062	Trim, door mirror	2380	Side wall front middle
2065	Door mirror holder	2385	Side panel front bottom
2070	Door handle front	2390	Side wall enlargement front
2075	Door handle trim, front	2395	Side wall panel front
2080	Door trim, front	2400	Side wall trim front
2100	B-pillar	2420	Side panel middle complete glazed
2105	B-pillar cover	2425	Side panel middle complete unglazed
2110	B-pillar panel	2430	Side panel middle, top part glazed
2115	B-pillar trim	2435	Side panel middle, top part unglazed
2130	Door pillar rear front door complete	2445	Side panel middle, middle part
2135	Door pillar rear front door top	2450	Side panel middle, bottom part
2140	Door pillar rear front door middle	2455	Side panel enlargement (side panel middle)
2145	Door pillar rear front door bottom	2460	Side panel trim (side panel middle)

item no.	item / component designation	item no.	item / component designation
2465	Side panel strip (side panel middle)	2755	Corner part panel rear
2480	Sill	2760	Cover plate rear bottom
2485	Sill front	2765	Cover plate rear side
2490	Knee piece/sill under front door	2770	Side spoiler complete
2495	Entry sill	2775	Side spoiler top part
2510	Entry panel complete	2780	Side spoiler middle
2515	Entry panel top	2785	Side spoiler bottom part
2520	Entry panel bottom	2800	Roof (in St. IE with roof frame and pillars)
2530	Running board	2802	Roof driver's cab
2535	Sill (for side door)	2805	Roof front
2540	Sill rear	2810	Roof middle
2545	Sill cover panel	2815	Roof side
2550	Door sill panel	2820	Roof side front
2555	Door sill panel front	2823	Roof side middle (with side door)
2560	Door sill panel rear	2825	Roof side middle
2570	Wheel base trim	2827	Roof middle
2575	Wheel base trim, front	2830	Roof side rear
2580	Wheel base trim, rear	2835	Roof for panorama/folding roof
2590	Side panel middle, rear part, complete glazed	2836	Sunroof lid
2591	Side panel middle, rear part, complete unglazed	2840	Roof front wall front
2592	Side panel middle, rear part, top glazed	2850	Roof rear
2593	Side panel middle, rear part, top unglazed	2855	Roof end piece
2594	Side panel middle, rear part, middle	2860	High roof
2595	Side panel middle, rear part, bottom part	2862	High roof glazed
2600	Side panel widening middle, rear part	2870	Roof flap
2602	Side panel middle, rear part	2880	Hardtop
2604	Side panel trim middle, rear part	2884	Hardtop unglazed
2640	Cabin floor	2890	Roof trim
2645	Cabin floor middle	2892	Roof trim front
2650	Cabin floor side	2894	Roof trim rear
2655	Cover partition wall	2900	Roof spoiler front
2660	Bulkhead complete	2905	Roof spoiler
2665	Bulkhead complete glazed	2910	Roof spoiler top part
2670	Bulkhead complete unglazed	2915	Roof spoiler bottom part
2675	Bulkhead top	2920	Roof panel front
2680	Bulkhead top glazed	2925	Roof panel side
2685	Bulkhead top unglazed	2930	Roof panel rear
2690	Bulkhead middle glazed	2932	Roof antenna
2695	Bulkhead middle	2933	Roof rail
2700	Bulkhead bottom	2934	Roof rail front
2705	Bulkhead bottom glazed	2935	Roof rail rear
2710	Bulkhead bottom unglazed	2936	Cover roof rail front
2720	Corner piece rear complete	2937	Cover roof rail rear
2725	Corner piece rear complete glazed	2940	Roll bar complete
2730	Corner piece rear top	2945	Roll bar side
2735	Corner piece rear top glazed	2950	Panel on roll bar
2740	Corner piece rear middle	3010	Side panel rear complete
2745	Corner piece rear bottom	3015	Side panel rear complete glazed
2750	Corner part widening	3020	Side panel rear complete unglazed

item no.	item / component designation	item no.	item / component designation
3020	Side panel rear complete unglazed	3345	Side frame bottom part
3025	Side panel rear top	3360	Mud flap rear
3030	Side panel rear top glazed	3380	Rear frame
3035	Side panel rear top unglazed	3390	Load compartment cover
3040	Side panel rear middle	3400	Screen cowl rear
3045	Side panel rear bottom	3405	Screen cowl panel rear
3060	Side panel rear (with side door) complete	3410	Convertible top cover
3065	Side panel rear (with side door) complete glazed	3412	Cover for covertible top cover
3070	Side panel rear (with side door) complete unglazed	3414	Convertible cover trim
3075	Side panel rear (with side door) top	3420	Cover for convertible roof
3080	Side panel rear (with side door) top glazed	3425	Trim cover for convertible roof
3085	Side panel rear (with side door) top unglazed	3430	Cover rear
3090	Side panel rear (with side door) middle	3435	Cover rear top
3100	Side panel rear (with side door) bottom	3440	Cover rear bottom
3110	Storage hatch in the side panel bottom	3450	Ventilation cover rear
3130	Side panel extension	3460	Maintenance flap rear bottom
3140	Side panel pillars	3480	Tail lift side
3150	Side panel extension rear	3485	Tail lift front/rear
3155	Side wall trim	3487	Tail lift front
3160	Side wall panel rear front	3490	Tail lift rear
3165	Side wall panel rear	3500	Corner piece rear bottom (for truck bed rear)
3170	Side panel extension rear (for side door)	3510	Rear door interior part
3172	Side panel rear (with side door)	3520	Tailgate with window frame
3175	Side panel rear (with side door)	3525	Tailgate top
3178	Cover guide rail side panel rear	3530	Tailgate bottom
3180	C-pillar	3540	Boot lid top
3190	C-pillar panel	3545	Boot lid bottom
3200	D-pillar panel	3560	Tailgate/boot lid 1-piece complete
3210	Tank flap	3565	Tailgate/boot lid 1-piece top
3230	Wing rear	3570	Tailgate/boot lid 1-piece bottom
3250	Side part rear	3575	Tailgate/boot lid 1-piece compl. glazed
3252	Side panel rear, rear part, compl. glazed	3575	Tailgate/boot lid 1-piece compl. glazed
3253	Side panel rear, rear part, compl. unglazed	3580	Tailgate/boot lid 1-piece compl. unglazed
3254	Side panel rear, rear part, top glazed	3585	Tailgate/boot lid 1-piece top glazed
3255	Side panel rear, rear part, top unglazed	3590	Tailgate/boot lid 1-piece top unglazed
3256	Side panel rear, rear part, middle	3595	Tailgate/boot lid 1-piece bottom
3257	Side panel rear, rear part, bottom part	3600	Tailgate (one) 2-piece complete glazed
3260	Side panel trim rear, rear part	3605	Tailgate (one) 2-piece complete unglazed
3263	Side wall panel rear, rear part front	3610	Tailgate (one) 2-piece top glazed
3265	Side wall panel rear, rear part rear	3615	Tailgate (one) 2-piece top unglazed
3270	Corner piece rear complete	3620	Tailgate (one) 2-piece bottom
3275	Corner piece rear top	3630	Tailgate left complete
3280	Corner piece rear bottom	3635	Tailgate left top
3290	Corner part panel rear top	3640	Tailgate left bottom
3292	Rear lamp panel	3650	Tailgate right complete
3294	Corner part panel rear bottom	3655	Tailgate right top
3330	Side frame complete	3660	Tailgate right bottom
3335	Side frame top part	3670	Window frame (rear)
3340	Side frame middle	3680	Handle trim on rear cover

item no.	item / component designation	item no.	item / component designation
3685	Handle on rear door/tailgate	3890	Bumper rear section/corner
3690	Handle on rear door left	3893	Reinforcement of rear bumper
3695	Handle on rear door right	3895	Bumper trim, rear
3697	Rear door handle	3896	Bumper trim, rear middle
3700	Trim on rear door/tailgate	3897	Bumper trim rear side
3702	Cover on rear door/tailgate top	3898	Cover tow hook rear
3703	Cover on rear door/tailgate bottom	3900	Bumper cover rear
3705	Trim on rear lid	3910	Bumper cover rear middle
3708	Cover on rear lid	3915	Bumper cover rear side
3710	Trim on rear door left	3923	Bumper trim, rear
3715	Trim on rear door right	3924	Bumper trim, rear middle
3718	Spare wheel holder	3925	Bumper trim, rear middle bottom
3719	Spare wheel holder panel, side	3926	Bumper trim front side
3720	Spare wheel cover	3930	License plate panel rear
3730	Rear spoiler on roof	4100	Front end
3735	Rear spoiler	4120	Front complete
3738	Rear spoiler on rear door	4140	Front below
3740	Rear spoiler middle	4150	Door frame complete
3745	Rear spoiler side	4155	Door frame front
3748	Rear spoiler bottom part	4160	Door frame rear
3758	Longitudinal beam end piece, rear	4165	Door frame rear with side panel
3759	Longitudinal beam, rear	4170	Side section compl.
3760	Boot floor	4200	Car side
3762	Boot floor side	4210	Car side with side door
3763	Spare wheel well	4230	Side complete with side door glazed
3765	Boot floor/truck bed	4235	Side complete with side door unglazed
3766	Rear floor front	4250	Side complete with 2 side doors glazed
3767	Rear floor rear	4255	Side complete with 2 side doors unglazed
3770	Engine compartment rear	4270	Side complete with side panel front glazed
3775	Wheel arch rear	4275	Side complete with side panel front unglazed
3780	Panel rear side	4280	Side below with side door
3782	Bumper trim rear side	4285	Side below with 2 side doors
3790	Rear panel complete	4290	Side below with side panel front
3795	Rear panel top	4300	Car rear
3797	Rear panel middle	4320	Rear cpl. with tailgate/boot lid 1-piece glazed
3798	Rear panel side	4325	Rear cpl. with tailgate/boot lid 1-piece unglazed
3800	Rear panel bottom	4340	Rear cpl. with rear doors 2-piece glazed
3810	Rear apron	4345	Rear cpl. with rear doors 2-piece unglazed
3815	Rear apron middle	4360	Rear below with tailgate/boot lid 1-piece
3820	Rear apron side	4365	Rear below with rear doors 2-piece
3830	Rear panel complete	4380	Rear complete with rear panel glazed
3835	Rear panel top	4385	Rear complete with rear panel unglazed
3840	Rear panel middle	4390	Rear below with rear panel
3845	Rear panel bottom	4500	Complete painting without roof
3860	Bumper rear	4525	Complete painting without roof glazed
3865	Bumper rear upper part	4550	Complete painting without roof unglazed
3870	Bumper rear middle	4600	Complete painting
3875	Bumper rear bottom part	4625	Complete painting glazed
3880	Bumper rear side	4650	Complete painting unglazed

6 Sectional painting

For AZT paint calculation system, different sectional positions are defined for the different vehicle types. A sectional position combines all serially painted metal parts of the respective vehicle model in the corresponding combination, which means that missing components and possible double entries can be avoided in the calculation.

It should be noted that plastic parts are not included in the sectional painting positions.

6.1 Sectional painting of cars

The following sectional painting positions are defined for passenger cars:

Front end:
- all external front panels
- both front wings complete
- cover front

and, depending on the model:
- windscreen cowl front
- ventilation panel front
- side part front
- etc.

Car side:
- front wing complete
- door front complete
- sill
- side panel rear complete

and, depending on the model:
- side part front and rear
- door rear complete
- wing rear

Rear end:
- all rear panels
- both side panels rear complete
- cover rear / tailgate

and, depending on the model:
- screen cowl rear
- both wings rear
- etc.

Complete painting without roof:
- front end
- rear end
- all doors complete
- both sills

Complete painting:
- complete painting without roof
- roof

The special table "Average values for painting of dismantled metal parts" (see chapter 3.4) provides calculation values for the non-standard or standard non-painted parts in each case. Chapter 2.7 describes in principle which working hours and material costs have to be taken into consideration additionally.

It should be noted that plastic parts are not included in the sectional painting positions.

6.2 Sectional painting of off-road vehicles

The following sectional painting positions each include all serially painted metal parts for off-road vehicles:

Front end:
- all external front panels
- both front wings complete
- cover front

and, depending on the model:
- windscreen cowl front
- ventilation panel front
- side part front
- etc.

Car side:
- front wing complete
- door front complete
- sill
- side panel rear complete

and, depending on the model:
- door rear complete
- wing rear
- roll bar side

Rear end:
- all rear panels
- both side panels rear complete
- cover rear / tailgate

and, depending on the model:
- screen cowl rear
- both wings rear
- etc.

Complete painting without roof:
- front end
- rear end
- all doors complete
- both sills

Complete painting:
- complete painting without roof
- roof

The special table "Average values for painting of dismantled metal parts" (see chapter 3.4) provides calculation values for the non-standard or standard non-painted parts in each case. Chapter 2.7 describes in principle which working hours and material costs have to be taken into consideration additionally.

It should be noted that plastic parts are not included in the sectional painting positions.

6.3 Sectional painting for delivery vans and transporters

The following sectional painting positions are defined for delivery vans and transporters, each of which includes all serially painted metal parts:

Front:	-	Front from door to door incl. wing / corner piece front (w/o bumper front)
Seite:	-	From front to rear (w/o wing / corner piece front and rear, w/o tail lift)
Heck:	-	Rear part from side part to side part incl. corner piece rear (w/o bumper rear, w/o tail lift)

It is possible to combine sections. The double assessment of individual parts is excluded by the scopes of the sections.

The calculation of individual parts or sectional positions requires, especially in the case of delivery vans and transporters, in addition to vehicle type and vehicle model, the consideration of the respective design variant, such as

parts or sections:	with / without glazing
side:	with side door or side part front or rear
rear:	Tailgate / boot lid one-piece or tailgate two-piece
installation length / wheel base:	normal short, medium, long (in mm)
roof height / installation height:	normal, high (in mm)

The special table "Average values for painting of dismantled metal parts" (see chapter 3.4) provides calculation values for the non-standard or standard non-painted parts in each case. Chapter 2.7 describes in principle which working hours and material costs have to be taken into consideration additionally.

It should be noted that plastic parts are not included in the sectional painting positions.