

## **The Type Class System applied in the German Vehicle Insurance Industry – Short Summary**

German motor insurers take type classes into account in order to be able to calculate the insurance premiums for motor third party liability and comprehensive insurance. The purpose of this document is to give a brief overview of the German type class system and classification procedure for manufacturers and importers of motor vehicles.

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### **Type classes reflect the damage and accident records of every car model registered in Germany.**

The type class is one of the multiple tariff features that insurers consider when calculating the insurance premium. The lower the classification in the type class, the more favorable the effect on the insurance premium. However, the change in the type class alone does not allow any conclusions to be drawn about the development of the overall motor insurance premium.

### **The lower the claims costs, the lower the type class**

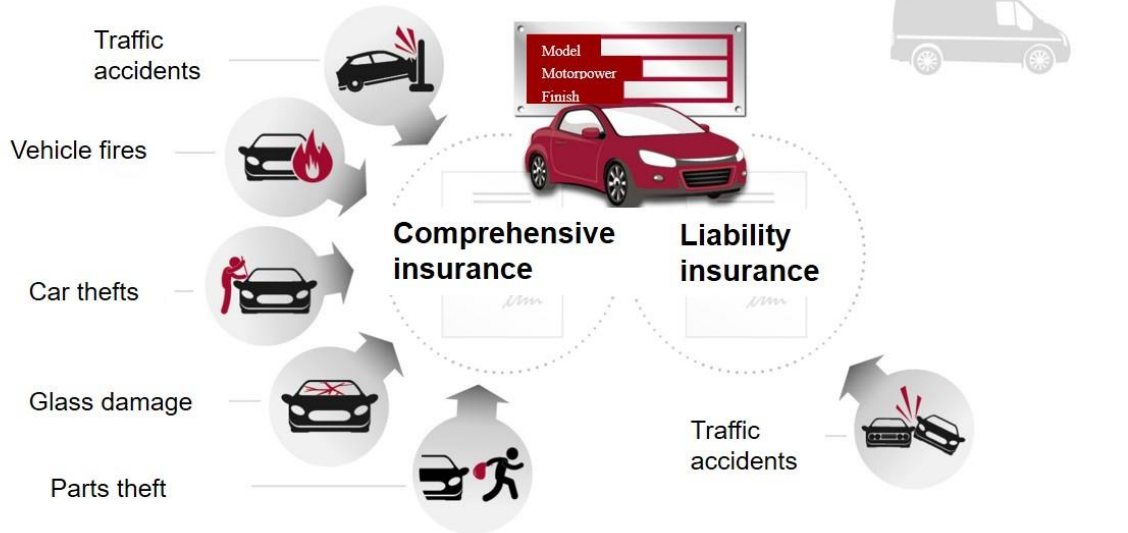
The type classes reflect the damage and accident records of each car model registered in Germany. To calculate the type classes, the vehicle damage and the resulting claims costs of the last three years are considered. The individual type class is always ranked relative to market average. If comparatively less damage was reported and compensated with a vehicle type compared to previous years, the model is placed in a lower type class. It works the same way in reverse. The type class for each model is updated on annual basis and hence not a static rating.

The type class in motor vehicle liability insurance is primarily influenced by the type of vehicle and the driving style of the user. In comprehensive insurance, in addition to collisions, car thefts, vehicle fires, glass damage or damage caused by natural hazards are also taken into account when classifying the type class. In motor third party liability insurance there are 16 type classes (10-25), in comprehensive insurance 25 (10-34), in partial coverage 24 (10-33).

The type class classification is non-binding for the insurance companies and can be applied immediately for new contracts and for existing contracts.

Type classes for the classification of the car model

## Factors for the classification of the car model



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Source: GDV (German Insurance Association)

### Independent Trustee

An independent trustee is responsible for assigning models to the type class indexes. The trustee role is performed by a third party auditor. The trustee is advised by a classification committee appointed by the same. The classification committee consists of representatives from German Insurers Association (GDV), German motor insurers and the Federal Motor Transport Authority (KBA).

### Data basis

The type class system only encompasses vehicles assigned by the German Federal Motor Transport Authority to category M1 (passenger vehicles) and M1G (off-road passenger vehicles), and which have a manufacturer code number (HSN) and a type code number (TSN). The German Federal Motor Transport Authority assigns each vehicle type with unique HSN/TSN on the basis of technical criteria in the course of the homologation process.

The calculations are based on historical vehicle insurance data provided by the members of GDV. They provide this data to GDV. The evaluations are each based on the data for non-fleet passenger vehicles for the last three statistical years. The data resources are split according to risk characteristics as well as the manufacturer and type code number (HSN/TSN). For the purpose of the evaluations, similar vehicle types of one manufacturer are placed into so called design groups of vehicle types with high similarity regarding characteristics such as body style (saloon, estate, coupé, cabriolet), the engine type (petrol, diesel, hybrid, electric), drive type (front-wheel drive, all-wheel drive, rear-wheel drive) and engine power.

## **Classification of new vehicle types**

Generally speaking, the assignment of vehicle types to type class is solely based on their statistically measured claims history. However, this statistical base is not available for newly approved vehicle types.

If there is no pre-existing design group that is appropriate for the third-party liability, fully comprehensive and partially comprehensive insurance aspect, an initial classification procedure is applied.

## **Initial type class for fully comprehensive insurance for new car types – basic procedure**

The following basic procedure to calculate the average claim index with the type-damage calculation is generally applied for the relevant vehicle types.

The type-damage calculation is based on the anticipated repair costs for front, rear and side damage. The relevant aspects are

- the scope of the claim – which parts are damaged and how badly,
- the repair times and costs for the standard repair defined by the manufacturer
- the costs for replacement parts and paint materials.

The scope of the claim for front and rear damage is determined using the standardized RCAR 10° Structural Crash Test, which simulates a typical low-speed accident.

To enable defective parts to be identified, the vehicle manufacturer generally makes the "crashed" vehicle(s) available for inspection.

If no relevant crash results are available, a "theoretical" scope of claim is assumed. At this juncture, the crash results or scopes of damage of comparable vehicle designs are applied to the vehicle type in question. In the case of a side-on crash, theoretical scope of damage is presumed and this is identical for all vehicle types.

For the calculation of the repair costs, the following parameters are taken into consideration:

- labor costs for bodywork and paint work,
- costs of painting materials as a percentage of the labor costs for paint work,

The total repair costs in the type-damage calculation comprise the following: 54% for front damage costs, 30% for rear damage costs and 16% for side damage costs. The average claim index for the vehicle type is produced from the repair costs thus calculated regarding market average for the claim type car to car collision.

## **Consideration of the RCAR Bumper Test**

Alongside the RCAR 10° Structural Crash Test, the results of the RCAR Bumper Test are used in order to take the performance of the car bumper system and the bumper system's ability to interact with an opponent into consideration. Crash tests have demonstrated that the absence of bumpers on the rear of the vehicle, or the use of poorer performing bumpers

regularly result in significantly higher repair costs. Another reason is that the bumpers can only provide the results shown in the RCAR 10° Structure Test if they can also interact in the actual accident.

As a consequence, the result of the type-damage calculation is increased by one type class, if the rateable vehicle type does not meet the requirements of the RCAR Bumper Test; this is considered separately for the front and rear crash.

Claims frequency for the initial type class is derived from a choice of adequate competitors by weighting their individual CF values with their statistical annual units.

The test vehicle shall be the variant with the largest projected sales volume of the model series to be rated and fitted with the standard equipment scope relevant for crash purposes.

### **Further procedures**

The initial classification for partial comprehensive insurance and third party liability is mainly based on appropriate comparison models with an existing statistical base of exposure in the market.

Special procedures apply for high-price or high-performance versions of existing cars. The short description of the procedures is nonexhaustive and non-binding and should serve as a first information on the system.

### **Responsibilities**

Maintaining the type class list

The trustee maintains the type class list and provides these to the insurers via the GDV by 30th of June each year. The type class indexes are publicly announced by GDV ([www.typklassen.de](http://www.typklassen.de)). The GDV also informs insurers several times a year of the classification results of the vehicle types newly classified during the year.

Type statistics

On GDV request participating insurers submit their data for the preparation of the type class lists in accordance with the statistics guidelines of GDV. GDV performs the necessary statistical calculations and provides the trustee with the results. The trustee monitors the organizational procedure of the determination of the figures and that the work steps are duly observed.

Classification committee

The trustee is responsible for convening the classification committee. The classification committee provides guidance to the trustee. GDV forwards proposals to the classification committee regarding the composition of the design groups, the calculation of the claims requirements indexes per vehicle type and per design group.

## Vehicle manufacturers and importers

Newly rateable vehicles are generally reported to the GDV by the manufacturer or importer or by the KBA. The manufacturer and importers are responsible for the accuracy of this data (incl. specifications concerning engine performance, engine capacity, fuel type, body type etc.). The data for type-damage calculation is supplied by the manufacturers and importers in the same way. The manufacturer and importers are also responsible for the accuracy of this data.

The basis of the type-damage calculation for the fully comprehensive type class are the crash tests according to the RCAR standards. Responsibility for performing these crash tests rests with the manufacturers and importers.

## Verification of manufacturers' information by GDV

The result of the type-damage calculation is critical for the fully comprehensive type class. For this reason, GDV continuously and regularly reviews the accuracy of the manufacturers' information (where available), which forms the basis for the type-damage calculation. The review is performed for every model using well-established repair costing systems supplied by Audatex, DAT or others.

Among the details supplied by the manufacturer / importer for the preparation of the type damage calculation for the classification of new models with fully comprehensive insurance are the following:

- Labor values for the replacement and/or removal/installation of spare parts
- Paint job times (new parts painting, repair paint jobs)
- Replacement part prices (excl. VAT, in Euro)

The initial classification procedure requires that the applied replacement part prices and the labor values remain unchanged for at least one year.

If it turns out that the initial classification of a rated vehicle was conducted using a different data basis, a new calculation will be performed for the initial classification.

## Verification tests

The classification committee reserves the right to subject every rated model to verification crash tests (15 km/h RCAR 10° Structural Crash Test, RCAR Bumper Test).

## **Contacts and resources**

### Allianz Center for Technology

The Allianz Center for Technology provides customer-specific advisory services that are built on many years of experience in collaborating with vehicle manufacturers in the area of vehicle type classification. Services include crash testing and consulting for international vehicle manufacturers and importers of vehicles to the German market.

<https://www.azt-automotive.com/en>

Contact: [AZT@allianz.de](mailto:AZT@allianz.de)

### German Insurance Association

Newly rateable vehicles should be reported to the GDV by the manufacturer or importer with sufficient time before market start to agree on deadlines.

<https://www.gdv.de/gdv-en>

Contact: Michael Heiduk, [M.Heiduk@gdv.de](mailto:M.Heiduk@gdv.de)

## **RCAR Test Standards**

<https://www.rcar.org>

[RCAR - RCAR Standards Papers](#)