Assumptions

Claims Modelling

Separate models are used for WIS claims and non-WIS claims. For both types of claims a frequency-severity model applies. It is assumed that WIS claims and non-WIS claims occur independently of each other. All claims, i.e. attritional and large claims, are considered in the model and no further separate modelling is required.

Distribution

A Poisson distribution has been selected to model the claims frequency, i.e. the number of claims during one year. This is based on the assumption that claims are independent of each other. Due to the nature of the cover this assumption is considered to be reasonable.

A Pareto distribution has been selected for the claims severity. The Pareto distribution has a long tail, which ensures that the model produces extremely large losses which have not been observed in the past. In addition, extreme value theory provides a mathematical basis for the assumption of a Pareto distribution for extreme losses.

Parameters of the claims distribution

WIS claims and non-WIS claims are considered separately to estimate the parameters of the respective distribution. The annual claims frequency per site for WIS claims and per landfill for non-WIS claims is derived from the incurred non-zero claims.

The Pareto distribution, which is used to model the severity, has two parameters. Since it is difficult to estimate the shape parameter of the Pareto distribution based on a very limited data set, the standard value for property business of 1.5 is used. This produces a relatively long tailed distribution.

The location parameters of the Pareto distributions are estimated such that the mean of the distribution matches the average observed claims.