



EUROPEAN
COMMISSION

Brussels, **XXX**
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ANNEXES 1 to 21

ANNEXES

to

COMMISSION DELEGATED REGULATION (EU) No .../..

**supplementing Directive 2009/138/EC of the European Parliament and of the Council on
the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II)**

ANNEX I
LINES OF BUSINESS

A. NON-LIFE INSURANCE OBLIGATIONS

(1) Medical expense insurance

Medical expense insurance obligations where the underlying business is not pursued on a similar technical basis to that of life insurance, other than obligations included in the line of business 3.

(2) Income protection insurance

Income protection insurance obligations where the underlying business is not pursued on a similar technical basis to that of life insurance, other than obligations included in the line of business 3.

(3) Workers' compensation insurance

Health insurance obligations which relate to accidents at work, industrial injury and occupational diseases and where the underlying business is not pursued on a similar technical basis to that of life insurance.

(4) Motor vehicle liability insurance

Insurance obligations which cover all liabilities arising out of the use of motor vehicles operating on land (including carrier's liability).

(5) Other motor insurance

Insurance obligations which cover all damage to or loss of land vehicles (including railway rolling stock).

(6) Marine, aviation and transport insurance

Insurance obligations which cover all damage or loss to sea, lake, river and canal vessels, aircraft, and damage to or loss of goods in transit or baggage irrespective of the form of transport. Insurance obligations which cover liabilities arising out of the use of aircraft, ships, vessels or boats on the sea, lakes, rivers or canals (including carrier's liability).

(7) Fire and other damage to property insurance

Insurance obligations which cover all damage to or loss of property other than those included in the lines of business 5 and 6 due to fire, explosion, natural forces including storm, hail or frost, nuclear energy, land subsidence and any event such as theft.

(8) General liability insurance

Insurance obligations which cover all liabilities other than those in the lines of business 4 and 6.

(9) Credit and suretyship insurance

Insurance obligations which cover insolvency, export credit, instalment credit, mortgages, agricultural credit and direct and indirect suretyship.

(10) Legal expenses insurance

Insurance obligations which cover legal expenses and cost of litigation.

(11) Assistance

Insurance obligations which cover assistance for persons who get into difficulties while travelling, while away from home or while away from their habitual residence.

(12) Miscellaneous financial loss

Insurance obligations which cover employment risk, insufficiency of income, bad weather, loss of benefit, continuing general expenses, unforeseen trading expenses, loss of market value, loss of rent or revenue, indirect trading losses other than those mentioned above, other financial loss (non-trading) as well as any other risk of non-life insurance not covered by the lines of business 1 to 11.

B. PROPORTIONAL NON-LIFE REINSURANCE OBLIGATIONS

The lines of business 13 to 24 shall include proportional reinsurance obligations which relate to the obligations included in lines of business 1 to 12 respectively.

C. NON-PROPORTIONAL NON-LIFE REINSURANCE OBLIGATIONS

(25) Non-proportional health reinsurance

Non-proportional reinsurance obligations relating to insurance obligations included in lines of business 1 to 3.

(26) Non-proportional casualty reinsurance

Non-proportional reinsurance obligations relating to insurance obligations included in lines of business 4 and 8.

(27) Non-proportional marine, aviation and transport reinsurance

Non-proportional reinsurance obligations relating to insurance obligations included in line of business 6.

(28) Non-proportional property reinsurance

Non-proportional reinsurance obligations relating to insurance obligations included in lines of business 5, 7 and 9 to 12.

D. LIFE INSURANCE OBLIGATIONS

(29) Health insurance

Health insurance obligations where the underlying business is pursued on a similar technical basis to that of life insurance, other than those included in line of business 33.

(30) Insurance with profit participation

Insurance obligations with profit participation other than obligations included in line of business 33 and 34.

(31) Index-linked and unit-linked insurance

Insurance obligations with index-linked and unit-linked benefits other than those included in lines of business 33 and 34.

(32) *Other life insurance*

Other life insurance obligations other than obligations included in lines of business 29 to 31, 33 and 34.

(33) *Annuities stemming from non-life insurance contracts and relating to health insurance obligations*

(34) *Annuities stemming from non-life insurance contracts and relating to insurance obligations other than health insurance obligations*

E. LIFE REINSURANCE OBLIGATIONS

(35) *Health reinsurance*

Reinsurance obligations which relate to the obligations included in lines of business 29 and 33.

(36) *Life reinsurance*

Reinsurance obligations which relate to the obligations included in lines of business 30 to 32 and 34.

ANNEX II

SEGMENTATION OF NON-LIFE INSURANCE AND REINSURANCE OBLIGATIONS AND STANDARD DEVIATIONS FOR THE NON-LIFE PREMIUM AND RESERVE RISK SUB-MODULE

	Segment	Lines of business, as set out in Annex I, that the segment consists of	Standard deviation for gross premium risk of the segment	Standard deviation for reserve risk of the segment
1	Motor vehicle liability insurance and proportional reinsurance	4 and 16	10 %	9 %
2	Other motor insurance and proportional reinsurance	5 and 17	8 %	8 %
3	Marine, aviation and transport insurance and proportional reinsurance	6 and 18	15 %	11 %
4	Fire and other damage to property insurance and proportional reinsurance	7 and 19	8 %	10 %
5	General liability insurance and proportional reinsurance	8 and 20	14 %	11 %
6	Credit and suretyship insurance and proportional reinsurance	9 and 21	12 %	19 %
7	Legal expenses insurance and proportional reinsurance	10 and 22	7 %	12 %
8	Assistance and its proportional reinsurance	11 and 23	9 %	20 %
9	Miscellaneous financial loss insurance and proportional reinsurance	12 and 24	13 %	20 %
10	Non-proportional casualty reinsurance	26	17 %	20 %
11	Non-proportional marine, aviation and transport reinsurance	27	17 %	20 %
12	Non-proportional property reinsurance	28	17 %	20 %

ANNEX III

FACTOR FOR GEOGRAPHICAL DIVERSIFICATION OF PREMIUM AND RESERVE RISK

1. For all segments set out in Annexes II and XIV, the factor for geographical diversification of a particular segment s referred to in Articles 116 and 147 shall be equal to the following:

$$DIV_s = \frac{\sum_r (V_{(prem,r,s)} + V_{(res,r,s)})^2}{\left(\sum_r (V_{(prem,r,s)} + V_{(res,r,s)}) \right)^2}$$

where:

- (a) each of the sums cover all the geographical regions set out in paragraph 8;
 - (b) $V(prem,r,s)$ denotes the volume measure for premium risk of the segment s and the region r ;
 - (c) $V(res,r,s)$ denotes volume measure for reserve risk of the segment s and the region r .
2. For all segments set out in Annexes II and XIV and all geographical regions set out in paragraph 8, the volume measure for premium risk of a particular segment s and a particular region r shall be calculated in the same way as the volume measure for non-life or NSLT health premium risk of the segment s as referred to in Articles 116 and 147, but taking into account only insurance and reinsurance obligations where the underlying risk is situated in the region r .
 3. For all segments set out in Annexes II and XIV and all geographical regions set out in paragraph 8, the volume measure for reserve risk of a particular segment s and a particular region r shall be calculated in the same way as the volume measure for non-life or NSLT health reserve risk of the segment s as referred to in Articles 116 and 147, but taking into account only insurance and reinsurance obligations where the underlying risk is situated in the region r .
 4. For the purpose of the calculations set out in paragraphs 2 and 3, the criteria set out in Article 13(13) of Directive 2009/138/EC in the case of non-life insurance and the criteria set out in Article 13(14) of Directive 2009/138/EC in the case of life insurance shall be applied as if references in those criteria to Member States extended to regions also.
 5. Notwithstanding paragraph 1, the factor for geographical diversification shall be equal to 1 for segments 6, 10, 11 and 12 set out in Annex II and for segment 4 set out in Annex XIV.
 6. Notwithstanding paragraph 1, the factor for geographical diversification for a segment set out in Annex II shall be equal to 1 if insurance and reinsurance undertakings use an undertaking-specific parameter for the standard deviation for non-life premium risk or non-life reserve risk of the segment to calculate the non-life premium and reserve risk sub-module.

7. Notwithstanding paragraph 1, the factor for geographical diversification for a segment set out in Annex XIV shall be equal to 1 if insurance and reinsurance undertakings use an undertaking-specific parameter for the standard deviation for NSLT health premium risk or NSLT health reserve risk of the segment to calculate the NSLT health premium and reserve risk sub-module.
8. Regions for the calculation of the factor for geographical diversification

	Region	Territories that the region consists of
1	Northern Europe	Denmark (except Greenland), Estonia, Finland, Guernsey, Iceland, Ireland, Isle of Man, Jersey, Latvia, Lithuania, Norway, Sweden, United Kingdom (except Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Falkland Islands, Gibraltar, Montserrat, Pitcairn Islands, Saint Helena, Turks and Caicos Islands)
2	Western Europe	Austria, Belgium, France (except French Guiana, French Polynesia, Guadeloupe, Martinique, Mayotte, New Caledonia, Réunion, Saint Barthélemy, Saint Martin, Saint Pierre and Miquelon, Wallis and Futuna), Germany, Liechtenstein, Luxembourg, Monaco, Netherlands (except Aruba, Bonaire, Curaçao, Saba, Sint Eustatius, Sint Maarten), Switzerland
3	Eastern Europe	Belarus, Bulgaria, Czech Republic, Hungary, Moldova, Poland, Romania, Russia, Slovakia, Ukraine
4	Southern Europe	Albania, Andorra, Bosnia and Herzegovina, Croatia, Cyprus, the former Yugoslav Republic of Macedonia, Gibraltar, Greece, Italy, Malta, Montenegro, Portugal, San Marino, Serbia, Slovenia, Spain, Vatican City State
5	Central and Western Asia	Armenia, Azerbaijan, Bahrain, Georgia, Iraq, Israel, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Lebanon, Oman, Qatar, Saudi Arabia, Syria, Tajikistan, Turkey, Turkmenistan, United Arab Emirates, Uzbekistan, Yemen
6	Eastern Asia	China, Japan, Mongolia, North Korea, South Korea, Taiwan
7	South and South-Eastern Asia	Afghanistan, Bangladesh, Bhutan, Brunei, Burma/Myanmar, Cambodia, India, Indonesia, Iran, Laos, Malaysia, Maldives, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, East Timor, Vietnam
8	Oceania	American Samoa, Australia, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Micronesia, Nauru, New Caledonia, New Zealand, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Pitcairn Islands, Samoa, Solomon Islands,

		Tonga, Tuvalu, Vanuatu, Wallis and Futuna
9	Northern Africa	Algeria, Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Côte d'Ivoire, Egypt, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Libya, Mali, Mauritania, Morocco, Niger, Nigeria, Saint Helena, Senegal, Sierra Leone, South Sudan, Sudan, Togo, Tunisia
10	Southern Africa	Angola, Botswana, Burundi, Comoros, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mayotte, Mozambique, Namibia, Congo, Réunion, Rwanda, São Tomé and Príncipe, Seychelles, Somalia, South Africa, Swaziland, Uganda, Tanzania, Zambia, Zimbabwe
11	Northern America excluding the United States of America	Bermuda, Canada, Greenland, Saint Pierre and Miquelon
12	Caribbean and Central America	Anguilla, Antigua & Barbuda, Aruba, Bahamas, Barbados, Belize, Bonaire, British Virgin Islands, Cayman Islands, Costa Rica, Cuba, Curaçao, Dominica, Dominican Republic, El Salvador, Grenada, Guadeloupe, Guatemala, Haiti, Honduras, Jamaica, Martinique, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Barthélemy, Saba, Saint Kitts and Nevis, Saint Lucia, Saint Martin, Saint Vincent and the Grenadines, Sint Eustatius, Sint Maarten, Trinidad and Tobago, Turks and Caicos Islands, US Virgin Islands
13	Eastern South America	Brazil, Falkland Islands, French Guiana, Guyana, Paraguay, Suriname, Uruguay
14	Northern, southern and western South America	Argentina, Bolivia, Chile, Colombia, Ecuador, Peru, Venezuela
15	North-east United States of America	Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont
16	South-east United States of America	Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Puerto Rico, South Carolina, Tennessee, Virginia, West Virginia
17	Mid-west United States of America	Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Wisconsin
18	Western United States of America	Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Texas, Utah, Washington, Wyoming

ANNEX IV

CORRELATION MATRIX FOR NON-LIFE PREMIUM AND RESERVE RISK

The correlation parameter $\text{CorrS}(s,t)$ referred to in Article 117(1) shall be equal to the item set out in row s and in column t of the following correlation matrix. The headings of the rows and columns denote the numbers of the segments set out Annex II:

t \ s	1	2	3	4	5	6	7	8	9	10	11	12
1	1	0.5	0.5	0.25	0.5	0.25	0.5	0.25	0.5	0.25	0.25	0.25
2	0.5	1	0.25	0.25	0.25	0.25	0.5	0.5	0.5	0.25	0.25	0.25
3	0.5	0.25	1	0.25	0.25	0.25	0.25	0.5	0.5	0.25	0.5	0.25
4	0.25	0.25	0.25	1	0.25	0.25	0.25	0.5	0.5	0.25	0.5	0.5
5	0.5	0.25	0.25	0.25	1	0.5	0.5	0.25	0.5	0.5	0.25	0.25
6	0.25	0.25	0.25	0.25	0.5	1	0.5	0.25	0.5	0.5	0.25	0.25
7	0.5	0.5	0.25	0.25	0.5	0.5	1	0.25	0.5	0.5	0.25	0.25
8	0.25	0.5	0.5	0.5	0.25	0.25	0.25	1	0.5	0.25	0.25	0.5
9	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.25	0.5	0.25
10	0.25	0.25	0.25	0.25	0.5	0.5	0.5	0.25	0.25	1	0.25	0.25
11	0.25	0.25	0.5	0.5	0.25	0.25	0.25	0.25	0.5	0.25	1	0.25
12	0.25	0.25	0.25	0.5	0.25	0.25	0.25	0.5	0.25	0.25	0.25	1

ANNEX V

PARAMETERS FOR THE WINDSTORM RISK SUB-MODULE

Regions and windstorm risk factors

Abbreviation of region r	Region r	Windstorm risk factor $Q(\text{windstorm}, r)$
AT	Republic of Austria	0.08 %
BE	Kingdom of Belgium	0.16 %
CZ	Czech Republic	0.03 %
CH	Swiss Confederation; Principality of Lichtenstein	0.08 %
DK	Kingdom of Denmark	0.25 %
FR	French Republic ¹ ; Principality of Monaco; Principality of Andorra	0.12 %
DE	Federal Republic of Germany	0.09 %
IS	Republic of Iceland	0.03 %
IE	Ireland	0.20 %
LU	Grand Duchy of Luxemburg	0.10 %
NL	Kingdom of the Netherlands	0.18 %
NO	Kingdom of Norway	0.08 %
PL	Republic of Poland	0.04 %
ES	Kingdom of Spain	0.03 %
SE	Kingdom of Sweden	0.09 %
UK	United Kingdom of Great Britain and Northern Ireland	0.17 %
GU	Guadeloupe	2.74 %
MA	Martinique	3.19 %
SM	Collectivity of Saint Martin	5.16 %
RE	Réunion	2.50 %

¹ except Guadeloupe, Martinique, the Collectivity of Saint Martin and Réunion

WINDSTORM RISK CORRELATION COEFFICIENTS FOR REGIONS

	AT	BE	CH	CZ	DE	DK	ES	FR	UK	IE	IS	LU	NL	NO	PL	SE	GU	MA	SM	RE
AT	1.00	0.25	0.50	0.25	0.25	0.00	0.00	0.25	0.00	0.00	0.00	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BE	0.25	1.00	0.25	0.25	0.50	0.25	0.00	0.50	0.50	0.25	0.00	0.75	0.75	0.00	0.25	0.00	0.00	0.00	0.00	0.00
CH	0.50	0.25	1.00	0.25	0.25	0.00	0.25	0.50	0.00	0.00	0.00	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CZ	0.25	0.25	0.25	1.00	0.25	0.00	0.00	0.25	0.00	0.00	0.00	0.25	0.25	0.00	0.25	0.00	0.00	0.00	0.00	0.00
DE	0.25	0.50	0.25	0.25	1.00	0.50	0.00	0.50	0.25	0.25	0.00	0.50	0.50	0.25	0.50	0.00	0.00	0.00	0.00	0.00
DK	0.00	0.25	0.00	0.00	0.50	1.00	0.00	0.25	0.25	0.00	0.00	0.25	0.50	0.50	0.25	0.50	0.00	0.00	0.00	0.00
ES	0.00	0.00	0.25	0.00	0.00	0.00	1.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FR	0.25	0.50	0.50	0.25	0.50	0.25	0.25	1.00	0.25	0.00	0.00	0.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UK	0.00	0.50	0.00	0.00	0.25	0.25	0.00	0.25	1.00	0.50	0.00	0.25	0.50	0.25	0.00	0.00	0.00	0.00	0.00	0.00
IE	0.00	0.25	0.00	0.00	0.25	0.00	0.00	0.00	0.50	1.00	0.00	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LU	0.25	0.75	0.25	0.25	0.50	0.25	0.00	0.50	0.25	0.25	0.00	1.00	0.50	0.25	0.25	0.00	0.00	0.00	0.00	0.00
NL	0.25	0.75	0.25	0.25	0.50	0.50	0.00	0.50	0.50	0.25	0.00	0.50	1.00	0.25	0.25	0.00	0.00	0.00	0.00	0.00
NO	0.00	0.00	0.00	0.00	0.25	0.50	0.00	0.00	0.25	0.00	0.00	0.25	0.25	1.00	0.00	0.50	0.00	0.00	0.00	0.00
PL	0.00	0.25	0.00	0.25	0.50	0.25	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.00	1.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	1.00	0.00	0.00	0.00	0.00
GU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
MA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
SM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
RE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00

ANNEX VI

PARAMETERS FOR THE EARTHQUAKE RISK SUB-MODULE

Regions and earthquake risk factors

Abbreviation of region r	Region r	Earthquake risk factor $Q_{(earthquake,r)}$
AT	Republic of Austria	0.10 %
BE	Kingdom of Belgium	0.02 %
BG	Republic of Bulgaria	1.60 %
CR	Republic of Croatia	1.60 %
CY	Republic of Cyprus	2.12 %
CZ	Czech Republic	0.10 %
CH	Swiss Confederation; Principality of Lichtenstein	0.25 %
FR	French Republic ² ; Principality of Monaco; Principality of Andorra	0.06 %
DE	Federal Republic of Germany	0.10 %
HE	Hellenic Republic	1.85 %
HU	Republic of Hungary	0.20 %
IT	Italian Republic; Republic of San Marino; Vatican City State	0.80 %
MT	Republic of Malta	1.00 %
PT	Portuguese Republic	1.20 %
RO	Romania	1.70 %
SK	Slovak Republic	0.15 %
SI	Republic of Slovenia	1.00 %
GU	Guadeloupe	4.09 %
MA	Martinique	4.71 %
SM	Collectivity of Saint Martin	5.00 %

² except Guadeloupe, Martinique, the Collectivity of Saint Martin and Réunion

EARTHQUAKE RISK CORRELATION COEFFICIENTS FOR REGIONS

	AT	BE	BG	CR	CY	FR	DE	HE	HU	IT	MT	PT	RO	SI	CZ	CH	SK	GU	MA	ST
AT	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00
BE	0.00	1.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BG	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CR	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00
CY	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FR	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00
DE	0.00	0.25	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00
HE	0.00	0.00	0.25	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SI	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
CZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
CH	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
SK	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
GU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.75	0.75
MA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	1.00	0.75
ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.75	1.00

ANNEX VII

PARAMETERS FOR THE FLOOD RISK SUB-MODULE

Regions and flood risk factors

Abbreviation of region r	Region r	Flood risk factor $Q_{(flood,r)}$
AT	Republic of Austria	0.13 %
BE	Kingdom of Belgium	0.10 %
BG	Republic of Bulgaria	0.15 %
CZ	Czech Republic	0.30 %
CH	Swiss Confederation; Principality of Lichtenstein	0.15 %
FR	French Republic ³ ; Principality of Monaco; Principality of Andorra	0.10 %
DE	Federal Republic of Germany	0.20 %
HU	Republic of Hungary	0.40 %
IT	Italian Republic; Republic of San Marino; Vatican City State	0.10 %
PL	Republic of Poland	0.16 %
RO	Romania	0.40 %
SK	Slovak Republic	0.45 %
SI	Republic of Slovenia	0.30 %
UK	United Kingdom of Great Britain and Northern Ireland	0.10 %

³ except Guadeloupe, Martinique, the Collectivity of Saint Martin and Réunion

FLOOD RISK CORRELATION COEFFICIENTS FOR REGIONS

	AT	BE	CH	CZ	FR	DE	HU	IT	BG	PL	RO	SI	SK	UK
AT	1.00	0.00	0.25	0.50	0.00	0.75	0.50	0.00	0.25	0.25	0.25	0.00	0.50	0.00
BE	0.00	1.00	0.00	0.00	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CH	0.25	0.00	1.00	0.00	0.25	0.25	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00
CZ	0.50	0.00	0.00	1.00	0.00	0.50	0.25	0.00	0.00	0.75	0.25	0.00	0.75	0.00
FR	0.00	0.25	0.25	0.00	1.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DE	0.75	0.25	0.25	0.50	0.25	1.00	0.25	0.00	0.00	0.75	0.25	0.00	0.25	0.00
HU	0.50	0.00	0.00	0.25	0.00	0.25	1.00	0.00	0.25	0.25	0.50	0.00	0.25	0.00
IT	0.00	0.00	0.25	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.25	0.00	0.00
BG	0.25	0.00	0.00	0.00	0.00	0.00	0.25	0.00	1.00	0.00	0.50	0.00	0.00	0.00
PL	0.25	0.00	0.00	0.75	0.00	0.75	0.25	0.00	0.00	1.00	0.25	0.00	0.25	0.00
RO	0.25	0.00	0.00	0.25	0.00	0.25	0.50	0.00	0.50	0.25	1.00	0.00	0.25	0.00
SI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	1.00	0.25	0.00
SK	0.50	0.00	0.00	0.75	0.00	0.25	0.25	0.00	0.00	0.25	0.25	0.25	1.00	0.00
UK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00

ANNEX VIII

PARAMETETERS FOR THE HAIL RISK SUB-MODULE

Regions and hail risk factors

Abbreviation of region r	Region r	Hail risk factor $Q_{(hail,r)}$
AT	Republic of Austria	0.08 %
BE	Kingdom of Belgium	0.03 %
CH	Swiss Confederation; Principality of Lichtenstein	0.06 %
FR	French Republic ⁴ ; Principality of Monaco; Principality of Andorra	0.01 %
DE	Federal Republic of Germany	0.02 %
IT	Italian Republic; Republic of San Marino; Vatican City State	0.05 %
LU	Grand Duchy of Luxemburg	0.03 %
NL	Kingdom of the Netherlands	0.02 %
ES	Kingdom of Spain	0.01 %

⁴ except Guadeloupe, Martinique, the Collectivity of Saint Martin and Réunion

HAIL RISK CORRELATION COEFFICIENTS FOR REGIONS

	AT	BE	FR	DE	IT	LU	NL	CH	ES
AT	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BE	0.00	1.00	0.00	0.00	0.00	0.25	0.25	0.00	0.00
FR	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
DE	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
IT	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
LU	0.00	0.25	0.00	0.00	0.00	1.00	0.25	0.00	0.00
NL	0.00	0.25	0.00	0.00	0.00	0.25	1.00	0.00	0.00
CH	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
ES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00

ANNEX IX
**THE GEOGRAPHICAL DIVISION OF REGIONS SET OUT IN ANNEX V INTO
RISK ZONES**

The risk zones of regions set out in annex V as referred to in VIII-XIII shall be equal to the postal code areas or administrative units in the following tables.

Mappings of risk zones for regions with only one risk zone

The regions LU, MT, Guadeloupe, Martinique, St Martin and Reunion shall consist of only one zone.

Mappings of risk zones for the regions with only one risk zone which are part of another region

The regions Principality of Andorra, Principality of Lichtenstein, Principality of Monaco, Republic of San Marino and Vatican City State shall consist of only one zone each. The zones shall be mapped to the following regions:

Principality of Andorra	zone 9 of the region FR
Principality of Lichtenstein	zone 19 of the region CH
Principality of Monaco	zone 06 of the region FR
Republic of San Marino	zone 47 of the region IT
Vatican City State	zone 00 of the region IT

Mappings of risk zones for regions where the zonation is based on postal codes

For the purpose of this Annex, the following shall apply:

- (1) The mapping of risk zones for the regions AT, CZ, CH, DE, HE, IT, NL, NO, PL, ES, SK and SE shall be based on the first 2 digits of the postal code;
- (2) The mapping of risk zones for the regions BE and CY shall be based on the first digit of the postal code;
- (3) The mapping of risk zones for IE shall be based on the first 2 letters of the postal code;
- (4) The mapping of risk zones for UK shall be based on the first 2 letters of the postal code where the risk is located, with the exception of postal codes which have a digit in the second position. The risks in those postal codes postal codes which have a digit in the second position shall be mapped to zones identified by a 1-letter code.

Region/ Risk Zone	AT	BE	CZ	DE	HE	IT	NL	PL	SK	ES	UK
1	10	1	10	01	10	00	10	00	01	01	AB
2	11	2	11	02	11	01	11	01	02	02	AL
3	12	3	12	03	12	02	12	02	03	03	B
4	13	4	13	04	13	03	13	03	04	04	BA
5	20	5	14	06	14	04	14	04	05	05	BB
6	21	6	15	07	15	05	15	05	06	06	BD
7	22	7	16	08	16	06	16	06	07	07	BH
8	23	8	17	09	17	07	17	07	08	08	BL
9	24	9	18	10	18	08	18	08	09	09	BN
10	25		19	12	19	09	19	09	81	10	BR
11	26		25	13	20	10	20	10	82	11	BS
12	27		26	14	21	11	21	11	83	12	BT
13	28		27	15	22	12	22	12	84	13	CA
14	30		28	16	23	13	23	13	85	14	CB
15	31		29	17	24	14	24	14	90	15	CF
16	32		30	18	25	15	25	15	91	16	CH
17	33		31	19	26	16	26	16	92	17	CM
18	34		32	20	27	17	27	17	93	18	CO
19	35		33	21	28	18	28	18	94	19	CR
20	36		34	22	29	19	29	19	95	20	CT
21	37		35	23	30	20	30	20	96	21	CV
22	38		36	24	31	21	31	21	97	22	CW
23	39		37	25	32	22	32	22	98	23	DA
24	40		38	26	33	23	33	23	99	24	DD
25	41		39	27	34	24	34	24		25	DE
26	42		40	28	35	25	35	25		26	DG
27	43		41	29	36	26	36	26		27	DH
28	44		43	30	37	27	37	27		28	DL
29	45		44	31	38	28	38	28		29	DN
30	46		46	32	40	29	39	29		30	DT
31	47		47	33	41	30	40	30		31	DY
32	48		50	34	42	31	41	31		32	E
33	49		51	35	43	32	42	32		33	EC
34	50		53	36	44	33	43	33		34	EH
35	51		54	37	45	34	44	34		35	EN
36	52		55	38	46	35	45	35		36	EX
37	53		56	39	47	36	46	36		37	FK
38	54		57	40	48	37	47	37		38	FY
39	55		58	41	49	38	48	38		39	G
40	56		59	42	50	39	49	39		40	GL
41	57		60	44	51	40	50	40		41	GU

42	60		61	45	52	41	51	41		42	GY
43	61		62	46	53	42	52	42		43	HA
44	62		63	47	54	43	53	43		44	HD
45	63		64	48	55	44	54	44		45	HG
46	64		66	49	56	45	55	45		46	HP
47	65		67	50	57	46	56	46		47	HR
48	66		68	51	58	47	57	47		48	HS
49	67		69	52	59	48	58	48		49	HU
50	68		70	53	60	50	59	49		50	HX
51	69		71	54	61	51	60	50			IG
52	70		72	55	62	52	61	51			IM
53	71		73	56	63	53	62	52			IP
54	72		74	57	64	54	63	53			IV
55	73		75	58	65	55	64	54			JE
56	74		76	59	66	56	65	55			KA
57	75		77	60	67	57	66	56			KT
58	80		78	61	68	58	67	57			KW
59	81		79	63	69	59	68	58			KY
60	82			64	70	60	69	59			L
61	83			65	71	61	70	60			LA
62	84			66	72	62	71	61			LD
63	85			67	73	63	72	62			LE
64	86			68	74	64	73	63			LL
65	87			69	80	65	74	64			LN
66	88			70	81	66	75	65			LS
67	89			71	82	67	76	66			LU
68	90			72	83	70	77	67			M
69	91			73	84	71	78	68			ME
70	92			74	85	72	79	69			MK
71	93			75		73	80	70			ML
72	94			76		74	81	71			N
73	95			77		75	82	72			NE
74	96			78		80	83	73			NG
75	97			79		81	84	74			NN
76	98			80		82	85	75			NP
77	99			81		83	86	76			NR
78				82		84	87	77			NW
79				83		85	88	78			OL
80				84		86	89	80			OX
81				85		87	90	81			PA
82				86		88	91	82			PE
83				87		89	92	83			PH
84				88		90	93	84			PL
85				89		91	94	85			PO

86				90		92	95	86			PR
87				91		93	96	87			RG
88				92		94	97	88			RH
89				93		95	98	89			RM
90				94		96	99	90			S
91				95		97		91			SA
92				96		98		92			SE
93				97				93			SG
94				98				94			SK
95				99				95			SL
96								96			SM
97								97			SN
98								98			SO
99								99			SP
100											SR
101											SS
102											ST
103											SW
104											SY
105											TA
106											TD
107											TF
108											TN
109											TQ
110											TR
111											TS
112											TW
113											UB
114											W
115											WA
116											WC
117											WD
118											WF
119											WN
120											WR
121											WS
122											WV
123											YO
124											ZE

**Mapping of risk zones for regions where the zonation is based on administrative units –
part 1**

Region/	BG	CR	HU	RO
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Risk Zone				
1	Sofiya-Grad (incl. City of Sofiya)	Zagrebacka	City of Budapest	Alba
2	Sofiya	Krapinsko-zagorska	Gyor-Sopron	Arad
3	Pernik	Sisacko-moslavacka	City of Gyor	Arges
4	Kyustendil	Karlovacka	Vas	Bacau
5	Blagoevgrad	Varazdinska	Zala	Bihor
6	Pazardzhik	Koprivnicko-krizevac	Veszprem	Bistrita-Nasaud
7	Smolyan	Bjelovarsko-bilogors	Somogy	Botosani
8	Plovdiv	Primorsko-goranska	Komarom	Braila
9	Kurdzhali	Licko-senjska	Fejer	Brasov
10	Khaskovo	Viroviticko-podravsk	Tolna	Buzau
11	Stara Zagora	Pozesko-slavonska	Baranya	Caras-Severin
12	Sliven	Brodsko-posavska	City of Pecs	Calarasi
13	Yambol	Zadarska	Nograd	Cluj
14	Burgas	Osjecko-baranjska	Pest	Constanta
15	Varna	Sibensko-kninska	Bacs-Kiskun	Covasna
16	Tolbukin	Vukovarsko-srijemska	Borsod-Abauj-Zemplen	Dimbovita
17	Shumen	Splitsko-dalmatinska	City of Miskolc	Dolj
18	Silistra	Istarska	Heves	Galati
19	Razgrad	Dubrovacko-neretvanska	Szolnok	Giurgiu
20	Turgovishte	Medimurska	Csongrad	Gorj
21	Ruse	Grad Zagreb	Szabolcs-Szatmar	Harghita
22	Turnovo		Hadju-Bihar	Hunedoara
23	Gabrovo		City of debrecen	Ialomita
24	Lovech		Bekes	Iasi
25	Pleven			Maremures
26	Vrasta			Mehedinti
27	Mikhaylovgrad			Mures
28	Vidin			Neamt
29				Olt
30				Prahova
31				Salaj
32				Satu Mare
33				Sibiu
34				Suceava
35				Teleorman

36				Timisoara
37				Tulcea
38				Vaslui
39				Vilcea
40				Vrancea
41				Bucuresti

**Mappings of risk zones for regions where the zonation is based on administrative units –
part 2**

Region/ Risk Zone	CH	CY	IE	NO	SE
1	1	1	CE	01	01
2	2	2	CK	02	02
3	3	3	CN	03	03
4	4	4	CW	04	04
5	5	5	DL	05	05
6	6	6	DN	06	06
7	7		GY	07	07
8	8		KE	08	08
9	9		KK	09	09
10	10		KY	10	10
11	11		LD	11	11
12	12		LH	12	12
13	13		LK	14	14
14	14		LM	15	15
15	15		LS	16	16
16	16		MH	17	17
17	17		MN	18	18
18	18		MO	19	19
19	19		OY	20	20
20	20		RN		21
21	21		SO		22
22	22		TY		23
23	23		WD		24
24	24		WH		25
25	25		WW		
26	26		WX		

Mapping of risk zones for the Republic of France

The mapping of risk zones for the region FR shall be based on the first 2 digits of the postal code.

Risk Zone	FR	Risk Zone	FR	Risk Zone	FR	Risk Zone	FR
1	01	25	25	49	49	73	73
2	02	26	26	50	50	74	74
3	03	27	27	51	51	75	75
4	04	28	28	52	52	76	76
4	05	29	29	53	53	77	77
6	06	30	30	54	54	78	78
7	07	31	31	55	55	79	79
8	08	32	32	56	56	80	80
9	09	33	33	57	57	81	81
10	10	34	34	58	58	82	82
11	11	35	35	59	59	83	83
12	12	36	36	60	60	84	84
13	13	37	37	61	61	85	85
14	14	38	38	62	62	86	86
15	15	39	39	63	63	87	87
16	16	40	40	64	64	88	88
17	17	41	41	65	65	89	89
18	18	42	42	66	66	90	90
19	19	43	43	67	67	91	91
20	20	44	44	68	68	92	92
21	21	45	45	69	69	93	93
22	22	46	46	70	70	94	94
23	23	47	47	71	71	95	95
24	24	48	48	72	72		

Mapping of risk zones for the Republic of Slovenia

The mappings for the region SI shall be based on the 4 digits of the postal code.

Risk Zone	Region										
1	5000	5210	5211	5212	5213	5214	5215	5216	5220	5222	5223
	5224	5230	5231	5232	5242	5243	5250	5251	5252	5253	5261
	5262	5263	5270	5271	5272	5273	5274	5275	5280	5281	5282
	5283	5290	5291	5292	5293	5294	5295	5296	5297		
2	4000	4201	4202	4203	4204	4205	4206	4207	4208	4209	4211
	4212	4220	4223	4224	4225	4226	4227	4228	4229	4240	4243
	4244	4245	4246	4247	4248	4260	4263	4264	4265	4267	4270
	4273	4274	4275	4276	4280	4281	4282	4283	4290	4294	
3	1215	1216	1217	1218	1219	1221	1222	1223	1225	1230	1233
	1234	1235	1236	1241	1242	1251	1252	1262	1270	1272	1273
	1274	1275	1276	1281	1282	1290	1291	1292	1293	1294	1295
	1296	1301	1303	1310	1311	1312	1313	1314	1315	1316	1317
	1318	1319	1330	1331	1332	1336	1337	1338	1351	1352	1353
	1354	1355	1356	1357	1358	1360	1370	1372	1373	1380	1381
	1382	1384	1385	1386	1410	1411	1412	1413	1414	1420	1423
	1430	1431	1433	4207	4208	4212	8342				
4	1000	1210	1211	1231	1260	1261					
5	1432	2393	3000	3201	3202	3203	3204	3205	3211	3212	3213
	3220	3221	3222	3223	3224	3225	3230	3231	3232	3233	3240
	3241	3250	3252	3253	3254	3255	3256	3257	3260	3261	3262
	3263	3264	3270	3271	3272	3273	3301	3302	3303	3304	3305
	3310	3311	3312	3313	3314	3320	3325	3326	3327	3330	3331
	3332	3333	3334	3335	3341	3342					
6	2201	2204	2205	2206	2208	2211	2212	2213	2214	2215	2221
	2222	2223	2230	2231	2232	2233	2234	2235	2236	2241	2242
	2250	2252	2253	2254	2255	2256	2257	2258	2259	2270	2272
	2273	2274	2275	2276	2277	2281	2282	2283	2284	2285	2286
	2287	2288	2289	2310	2311	2312	2313	2314	2315	2316	2317
	2318	2319	2321	2322	2323	2324	2325	2326	2327	2331	2342
	2343	2344	2345	2352	2353	2360	2361	2362	2363	2364	2365
	2366	2367	2370	2371	2372	2373	2380	2381	2382	2383	2390
	2391	2392	2394	3206	3210	3214	3215				
7	2000	2229	2341	2351	2354						
8	9000	9201	9202	9203	9204	9205	9206	9207	9208	9220	9221
	9222	9223	9224	9225	9226	9227	9231	9232	9233	9240	9241
	9242	9243	9244	9245	9250	9251	9252	9253	9261	9262	9263
	9264	9265									
9	6000	6216	6240	6242	6243	6271	6272	6273	6274	6275	6276
	6280	6281	6310	6311	6320	6323	6330	6333			

10	5271	5272	6210	6215	6217	6219	6221	6222	6223	6224	6225
	6230	6232	6244	6250	6253	6254	6255	6256	6257	6258	
11	1434	8000	8210	8211	8212	8213	8216	8220	8222	8230	8231
	8232	8233	8250	8251	8253	8254	8255	8256	8257	8258	8259
	8261	8262	8263	8270	8272	8273	8274	8275	8276	8280	8281
	8282	8283	8290	8292	8293	8294	8295	8296	8297	8310	8311
	8312	8321	8322	8323	8330	8331	8332	8333	8340	8341	8343
	8344	8350	8351	8360	8361	8362					

Mapping of risk zones for the Kingdom of Denmark.

The mapping of risk zones for the region DK shall be based on the first 2 digits of the postal code.

Risk Zone	Region									
1	90	92	93	94	95	96	97	98	99	
2	69	74	75	76	77	78	79			
3	80	82	83	84	85	86	87	88	89	
4	62	65	66	67	68	72				
5	60	61	63	64	70	71	73			
6	50	52	53	54	55	56	57	58	59	
7	40	41	42	43	44	45				
8	46	47	48	49						
9	30	31	32	33	34	35	36			
10	10	11	12	13	14	15	16	17	18	19
	20	21	22	23	24	25	26	27	28	29
11	37									

ANNEX X

RISK WEIGHTS FOR CATASTROPHE RISK ZONES

Risk weights for windstorm risk

Zone/ Region	AT	BE	CH	CZ	DE	DK	ES	FR	IE	NL	NO	PL	SE	UK
1	0.6	0.9	1.4	1.2	0.9	1.1	2.3	1.0	1.4	0.9	1.4	0.6	0.6	0.9
2	0.7	1.0	1.1	1.0	0.8	1.6	0.8	2.0	1.1	1.0	0.7	0.6	1.4	1.1
3	0.9	0.9	1.5	1.0	0.8	0.9	0.6	1.7	1.5	1.0	0.5	0.6	1.6	0.7
4	1.5	0.9	1.3	1.0	1.2	2.0	0.6	0.8	1.3	1.1	0.8	0.6	2.6	1.5
5	1.6	1.0	1.5	1.2	1.3	1.3	1.5	1.5	1.5	1.5	1.2	0.6	2.3	1.1
6	1.4	1.0	0.7	1.2	1.1	1.4	1.1	0.6	0.7	1.2	0.8	0.6	2.5	0.9
7	1.5	1.2	1.5	1.2	1.0	1.4	0.2	0.7	1.5	1.6	1.0	0.8	2.0	1.5
8	1.1	1.6	1.1	1.0	1.1	1.6	1.3	1.7	1.1	1.9	0.9	0.7	3.7	0.9
9	1.4	1.1	1.1	1.2	0.5	0.9	2.3	1.2	1.1	1.4	1.0	0.6	2.0	1.9
10	1.1		1.6	1.2	0.7	0.6	1.5	1.7	1.6	1.4	1.5	0.9	1.5	0.7
11	1.1		1.8	1.4	0.7	1.8	1.5	0.9	1.8	0.9	2.8	1.0	2.6	1.3
12	1.1		0.9	1.5	1.0		1.1	1.2	0.9	1.4	2.6	0.9	1.1	1.2
13	1.2		1.1	1.5	1.1		0.8	0.8	1.1	1.7	3.6	0.8	2.8	1.6
14	1.1		2.0	1.3	1.3		1.1	3.3	2.0	1.3	2.9	1.0	1.4	1.5
15	1.2		1.2	1.4	1.6		2.5	1.6	1.2	1.4	1.4	1.2	1.1	1.5
16	1.5		1.2	1.6	2.1		1.3	1.6	1.2	1.2	1.7	0.5	1.9	1.3
17	1.6		1.3	1.6	1.9		1.7	3.0	1.3	1.5	1.3	0.6	1.4	2.4
18	1.3		1.4	1.6	1.4		0.8	1.8	1.4	1.3	0.7	0.5	3.1	3.2
19	1.5		1.3	1.6	1.7		1.5	1.2	1.3	1.1	0.2	0.6	7.0	0.7
20	1.5		1.4	1.7	1.1		2.5	1.3	1.4	1.0		0.7	2.7	2.0
21	1.8		1.5	1.9	2.0		1.3	1.1	1.5	0.9		0.5	1.8	1.2
22	2.0		1.1	1.8	1.9		2.1	2.9	1.1	1.5		0.5		1.3
23	2.0		1.2	1.2	2.9		0.8	1.8	1.2	1.7		0.4		2.3
24	1.3		1.2	1.4	2.7		2.3	1.3	1.2	1.2		0.4		1.2
25	2.1		0.9	1.3	2.2		1.9	0.8	0.9	1.1		0.5		1.3
26	1.8		1.3	1.6	1.5		1.5	0.8	1.3	0.9		0.6		1.6
27	1.8			1.6	1.6		2.5	2.2		1.3		0.6		0.9
28	1.5			1.7	1.6		1.1	2.3		0.9		0.5		1.1
29	1.5			1.7	1.8		1.3	3.4		0.9		0.5		3.8
30	1.7			1.4	1.8		0.6	0.6		0.9		0.7		2.2
31	3.2			1.5	1.7		2.3	1.0		1.0		0.6		0.8
32	1.6			1.2	1.3		2.5	1.6		1.1		0.5		0.6
33	3.1			1.1	1.1		2.5	1.3		1.4		0.5		0.4
34	1.4			1.1	1.2		2.3	0.7		2.0		0.4		0.8
35	2.4			1.1	1.4		0.0	2.5		1.7		0.5		0.8
36	2.3			1.1	1.5		2.5	1.7		1.3		0.4		1.9
37	1.8			0.9	1.7		1.7	1.8		1.6		0.4		1.1
38	1.6			0.9	1.5		0.0	0.8		1.1		0.4		2.4

39	2.2			1.1	1.8		2.5	1.0		0.8		0.4		0.8
40	2.0			1.0	1.2		1.7	1.5		1.1		0.4		1.4
41	1.9			0.8	1.1		1.3	1.7		0.7		0.6		1.0
42	1.6			0.8	1.2		1.9	1.0		1.0		0.7		3.1
43	2.0			0.8	1.8		1.5	1.3		0.9		0.7		0.6
44	2.1			0.9	1.7		1.3	2.7		1.0		0.7		1.0
45	2.0			0.8	2.1		1.3	1.7		0.7		0.7		1.2
46	2.2			0.9	2.0		0.8	1.0		0.7		0.9		1.2
47	2.4			0.9	1.3		1.9	1.3		0.6		1.0		1.4
48	2.6			0.7	1.2		2.5	1.3		0.7		0.8		1.6
49	2.2			0.7	1.5		2.1	2.3		0.8		0.9		1.9
50	2.1			0.5	1.3		1.9	4.8		1.0		1.0		1.0
51	2.7			0.5	1.3			1.6		0.9		1.2		0.7
52	1.6			0.5	1.2			1.4		0.7		1.2		1.8
53	1.9			0.4	1.2			3.1		0.8		1.2		1.9
54	1.2			0.6	1.0			1.1		0.7		1.2		1.0
55	1.3			0.6	1.1			1.4		0.7		1.2		2.5
56	1.3			0.6	1.7			3.3		0.8		1.2		1.6
57	1.6			0.7	0.8			1.1		1.1		1.3		0.7
58	1.1			0.8	1.3			1.7		0.8		1.1		1.4
59	1.4			0.8	0.9			1.6		0.8		1.3		1.2
60	1.5				1.1			1.9		0.9		1.7		1.1
61	1.6				1.1			3.2		0.8		1.7		1.7
62	1.7				1.1			2.2		0.9		1.6		2.2
63	1.6				1.1			1.2		0.8		1.4		1.3
64	1.1				1.0			1.3		0.6		1.3		1.9
65	1.4				0.9			1.5		0.8		2.0		3.2
66	2.3				0.7			0.8		0.7		1.8		0.7
67	1.7				0.9			0.9		0.9		2.3		1.2
68	1.9				0.8			0.7		1.0		1.6		0.6
69	2.1				0.8			0.7		1.2		1.7		6.1
70	2.2				1.0			1.0		1.1		2.3		1.3
71	1.9				0.8			1.3		1.1		3.4		1.1
72	1.9				0.9			2.4		0.9		3.6		0.5
73	1.9				0.9			1.1		1.3		3.6		0.7
74	1.8				0.9			0.9		1.8		2.9		1.2
75	1.7				0.9			0.6		1.2		3.0		1.4
76	1.8				0.9			2.5		1.6		3.3		1.4
77	2.1				0.8			1.3		1.5		3.2		1.5
78					0.9			1.3		1.8		2.6		0.5
79					0.9			2.2		1.8		3.0		0.8
80					0.8			2.4		1.1		1.9		1.6
81					0.8			1.1		1.4		2.7		1.3
82					0.8			1.2		1.4		1.4		3.2

83					1.0			0.8		1.2		1.8		1.4
84					1.0			0.5		1.2		2.9		2.1
85					0.8			3.4		0.8		1.5		1.7
86					0.8			1.8		1.0		1.5		1.5
87					0.9			1.5		1.0		1.2		1.2
88					0.7			1.0		1.0		1.4		1.0
89					0.8			1.7		1.4		1.9		1.1
90					0.8			0.6		1.4		0.8		0.9
91					0.9			1.1				0.8		2.1
92					0.9			0.6				0.8		0.6
93					1.1			0.6				0.8		1.4
94					1.0			0.7				0.8		0.9
95					1.4			1.0				0.8		1.0
96												0.7		0.6
97												0.7		1.5
98												0.9		1.1
99												0.9		1.6
100														0.8
101														4.8
102														1.2
103														0.5
104														1.8
105														1.6
106														1.3
107														1.2
108														1.3
109														1.7
110														2.4
111														0.8
112														0.8
113														0.8
114														0.4
115														1.1
116														0.4
117														0.9
118														1.0
119														1.1
120														1.4
121														0.8
122														0.8
123														2.0
124														1.5

Risk weights for earthquake risk

Zone/ Region	AT	BE	BG	CZ	CH	CR	CY	DE	FR	HE	HU	IT	PT	RO	SI	SK
1	3.5	0.8	1.5	0.1	1.1	0.8	0.6	0.1	1.4	1.5	2.6	4.3	1.7	0.0	1.4	4.3
2	3.1	0.4	0.3	0.1	1.3	1.3	1.9	0.2	0.1	1.5	0.4	2.0	2.3	0.1	0.8	2.0
3	3.2	1.7	0.5	0.1	1.8	0.1	1.3	0.2	0.3	2.1	0.0	6.8	1.9	0.8	0.7	3.3
4	4.0	1.8	0.3	0.1	3.1	0.7	2.0	1.1	3.1	3.2	0.8	6.0	1.2	2.0	1.4	1.4
5	0.9	1.1	0.6	0.1	3.8	1.0	0.4	0.7	1.0	3.3	1.6	3.2	1.4	0.0	0.7	1.5
6	1.6	2.4	0.4	0.1	1.4	0.5	0.2	1.5	4.1	1.6	1.0	5.0	3.6	0.0	0.4	1.7
7	2.4	3.3	0.1	0.1	1.5	0.3		2.7	1.1	0.6	0.6	4.7	2.4	0.0	0.2	1.7
8	3.4	0.7	0.7	0.1	1.0	0.8		0.6	0.1	1.9	1.0	0.0	2.1	0.9	0.2	2.7
9	3.2	0.5	0.1	0.1	2.1	0.4		0.1	4.9	2.1	0.6	0.0	3.4	0.2	1.7	2.3
10	3.8		0.3	0.1	1.2	0.2		0.1	0.1	2.3	0.0	0.0	2.0	4.0	1.3	8.0
11	3.6		0.1	0.1	1.7	0.3		0.1	2.9	4.6	0.4	1.9	1.6	0.1	1.0	7.2
12	3.8		0.1	0.1	1.5	0.3		0.2	0.1	1.9	0.0	1.8	1.5	2.2		7.9
13	2.5		0.2	0.1	0.7	0.6		0.2	2.7	3.6	0.5	1.4	0.6	0.0		8.2
14	1.9		0.1	0.1	2.5	0.3		0.2	0.2	3.0	1.7	1.3	1.3	0.0		6.5
15	1.2		0.5	0.1	2.3	1.8		0.1	0.2	4.3	0.1	0.8	0.6	1.5		4.0
16	0.6		0.6	0.1	0.6	0.3		0.1	0.6	4.0	0.0	1.6	0.8	1.3		5.6
17	0.2		0.5	0.1	1.7	0.6		0.2	0.7	3.1	0.0	1.2	2.0	0.2		4.8
18	1.7		0.7	0.1	1.7	0.6		0.1	0.1	6.4	1.8	1.8	1.6	1.3		2.9
19	0.2		0.5	0.6	1.4	0.8		0.2	0.1	8.0	0.7	3.2	2.6	0.9		4.5
20	0.1		0.3	0.6	0.5	0.3		0.1	0.2	6.8	0.0	4.0	1.8	0.3		4.9
21	0.4		0.4	2.5	0.9	1.3		0.1	0.3	3.3	0.2	1.5	0.4	0.0		1.6
22	0.0		0.2	1.5	2.1			0.1	0.2	7.2	0.0	0.8	0.6	0.0		5.4
23	0.0		0.1	0.1	1.4			0.1	0.2	3.3	0.0	1.4	0.3	2.0		0.4
24	0.0		0.1	0.1	2.6			0.1	0.1	7.6	0.1	1.8	0.2	0.3		4.0
25	0.0		0.1	0.1	0.8			0.1	2.0	2.9		4.3	0.1	0.1		
26	0.0		0.2	0.1	1.3			0.2	2.5	3.8		4.5	0.1	0.3		
27	0.0		0.1	0.1				0.2	0.1	4.4		3.1	0.1	0.0		
28	0.0		0.0	1.1				0.1	0.1	4.1		1.9	0.1	0.5		
29	0.0			0.9				0.1	0.2	6.1		1.1	0.3	0.4		
30	0.0			0.1				0.1	1.4	2.5		3.2	0.3	2.1		
31	0.0			0.1				0.1	1.4	3.9		3.0	0.3	0.0		
32	0.1			0.7				0.2	2.6	4.7		8.0	0.2	0.2		
33	0.0			1.3				0.4	0.1	8.3		5.3	0.2	0.1		
34	0.4			0.1				0.9	0.6	1.0		4.3	0.2	0.0		
35	0.1			1.5				0.2	0.2	1.4		3.4	0.1	0.4		
36	0.1			1.5				0.1	0.5	4.1		3.0	0.2	0.2		
37	0.2			0.1				0.3	0.5	7.5		6.5	0.2	0.1		
38	0.4			0.1				1.9	3.0	4.1		5.0	0.1	1.0		
39	0.5			0.1				6.4	0.8	3.6		2.5	0.3	0.6		
40	0.5			0.1				0.2	5.5	0.6		1.2	0.2	5.2		

41	1.0			0.1				0.1	0.2	0.8		5.9	0.1	2.5		
42	2.4			0.1				0.2	0.3	0.9		6.1	0.2			
43	1.8			0.1				0.3	0.2	1.1		6.0	0.1			
44	1.7			0.1				1.6	0.5	2.9		5.1	0.1			
45	1.1			0.1				0.1	0.1	2.1		5.5	0.1			
46	1.8			0.1				0.1	0.1	3.6		2.3	0.3			
47	1.0			0.1				5.8	0.1	3.1		3.6	0.1			
48	2.0			7.6				2.1	0.2	1.3		6.4	0.1			
49	1.4			8.8				8.1	0.5	1.2		6.4	0.1			
50	1.8			10.5				3.4	0.4	0.4		5.5	0.8			
51	1.2			11.0				0.2	0.1	4.3		6.3	0.4			
52	3.1			10.5				1.9	0.1	3.7		4.2	0.5			
53	1.7			11.3				2.0	0.2	1.4		3.2	0.1			
54	3.4			9.5				0.2	0.1	0.8		5.9	0.5			
55	1.4			0.1				0.1	0.1	0.1		5.1	1.3			
56	0.9			0.1				0.1	0.3	0.8		4.2	0.9			
57	0.4			0.1				2.2	0.1	0.5		3.0	0.6			
58	0.7			0.1				1.4	0.1	0.5		1.9	0.3			
59	1.1			6.6				1.1	1.8	0.6		6.7	0.7			
60	1.0							2.0	0.1	4.9		5.3	2.9			
61	0.3							2.2	0.2	4.6		5.0	1.4			
62	0.3							0.1	0.9	4.4		5.7	3.1			
63	0.6							2.5	0.4	3.1		6.0	1.9			
64	2.2							2.7	16.5	4.2		5.9	1.9			
65	1.1							2.0	23.4	4.6		5.4	1.3			
66	0.8							3.1	13.5	1.6		3.7	1.4			
67	0.2							3.4	5.0	2.4		10.9	4.6			
68	0.7							6.4	10.4	0.4		1.4	1.2			
69	0.7							2.3	0.5	0.6		5.5	1.3			
70	0.5							1.7	0.8	5.9		0.5	0.2			
71	0.6							2.8	0.4			1.0	0.3			
72	0.6							5.0	0.3			1.4	0.1			
73	0.9							6.1	4.5			3.1	0.1			
74	1.6							3.4	7.2			3.7	0.3			
75	1.2							7.1	0.2			3.1	0.8			
76	1.0							0.2	0.1			7.0	1.0			
77	0.8							0.2	0.1			6.3	1.4			
78								1.1	0.1			2.8	2.1			
79								2.3	0.7			5.3	1.7			
80								0.2	0.1			6.6				
81								0.4	0.2			9.1				
82								0.7	0.1			7.9				
83								4.0	0.5			10.5				
84								3.6	3.5			6.3				

85								2.2	0.6			2.5				
86								0.1	0.7			2.1				
87								0.1	0.2			3.6				
88								0.2	0.5			5.3				
89								0.2	0.1			8.4				
90								0.1	4.1			7.7				
91								0.4	0.1			6.3				
92								0.2	0.2			10.1				
93								0.1	0.1							
94								0.3	0.2							
95								0.3	0.1							

Risk weights for flood risk

Zone/ Region	AT	BE	BG	CH	CZ	DE	FR	IT	HU	PL	RO	SI	SK	UK
1	0.1	0.3	1.3	2.0	0.6	1.5	1.9	8.0	0.6	0.4	1.3	1.3	1.5	1.3
2	0.1	1.0	2.8	1.8	1.6	0.8	1.1	2.4	0.9	0.1	2.0	1.2	1.0	0.5
3	0.5	0.5	0.0	1.8	0.5	0.5	1.1	1.2	13.7	0.1	1.3	0.8	0.8	1.5
4	0.0	3.5	2.6	1.8	0.4	1.5	0.5	0.8	0.6	1.7	2.6	2.7	3.8	7.8
5	0.9	3.8	0.2	1.8	0.9	2.5	0.3	1.6	0.0	0.8	2.0	0.6	0.2	10.5
6	4.0	0.5	0.1	3.3	1.5	1.3	0.2	2.0	0.0	0.7	0.7	1.1	0.3	5.8
7	0.4	0.5	0.1	1.3	1.4	0.5	0.7	4.8	0.2	2.4	0.7	1.8	1.5	1.3
8	0.2	1.0	0.5	1.3	1.6	0.3	1.3	0.0	0.2	1.0	11.9	1.5	1.5	3.3
9	0.5	2.8	0.3	4.2	1.7	1.0	0.6	0.0	0.0	0.8	0.7	0.9	1.5	1.3
10	1.0		0.8	3.0	0.5	1.3	1.3	0.0	0.3	2.5	0.7	0.1	0.0	2.3
11	0.2		0.1	3.0	1.1	1.8	1.4	4.8	0.1	1.0	2.0	1.7	0.0	6.0
12	0.3		0.7	3.0	1.6	2.0	0.4	0.0	0.0	2.0	3.3		0.0	0.0
13	0.3		0.4	1.5	1.6	0.8	6.1	2.4	0.0	2.6	2.0		0.5	4.3
14	0.5		0.2	3.8	1.5	0.8	1.1	0.4	0.2	2.2	2.0		0.0	2.8
15	0.9		0.2	4.5	2.7	0.3	0.3	2.0	0.3	1.2	1.3		0.2	7.0
16	0.4		0.0	1.3	2.5	0.3	1.1	2.4	0.7	0.0	2.0		2.1	2.0
17	1.4		0.1	2.8	4.5	1.3	2.2	0.0	0.0	1.8	3.3		1.1	1.5
18	2.6		2.5	1.8	1.1	2.3	1.3	0.8	0.1	1.3	4.0		1.3	1.5
19	3.6		0.8	2.5	1.8	4.5	0.4	0.8	2.4	1.4	3.3		0.9	2.0
20	2.2		0.9	2.0	2.3	2.0	0.0	0.0	19.9	1.8	0.7		0.3	2.8
21	0.5		7.5	2.0	1.7	0.8	1.6	3.2	0.7	0.0	0.7		2.8	3.0
22	1.6		4.2	5.0	1.5	0.3	0.3	0.0	0.3	1.3	3.3		2.7	2.5
23	1.0		0.8	1.5	1.6	0.5	0.3	1.6	0.0	0.7	4.6		0.1	3.3
24	3.6		0.8	3.3	2.1	2.0	1.0	1.6	0.4	1.4	2.0		0.0	1.3
25	1.8		7.5	1.5	2.0	2.3	0.7	3.2		3.1	3.3			4.0
26	0.8		5.8	1.8	2.2	2.5	1.1	1.6		0.2	2.0			5.5
27	2.0		3.3		3.1	4.3	1.2	3.2		0.8	1.3			8.5
28	2.4		2.5		1.1	2.8	0.5	3.2		3.6	2.0			3.0
29	0.7		3.3		2.9	2.3	0.3	0.0		5.9	4.0			1.3
30	4.4				1.7	0.8	3.0	0.8		0.8	0.7			1.3
31	2.0				1.3	0.3	1.6	4.8		0.6	3.3			2.0
32	3.3				1.1	1.8	1.3	4.8		0.1	2.6			2.5
33	0.9				2.0	1.0	2.8	1.6		5.9	1.3			0.3
34	4.6				2.2	0.3	1.7	2.4		9.8	1.3			3.5
35	1.5				1.4	3.0	0.7	0.0		7.3	4.6			3.0
36	0.3				1.8	2.3	0.7	2.4		0.5	2.0			2.8
37	0.4				2.6	2.5	2.0	1.2		2.2	7.9			2.8
38	4.4				2.6	3.3	1.4	6.4		7.3	2.0			3.3
39	1.2				0.8	1.0	1.7	2.4		10.6	1.3			3.5
40	0.4				1.0	0.8	1.7	1.2		5.4	2.6			1.8

41	0.2				3.9	0.3	1.4	6.4		0.0	1.3			2.5
42	0.3				4.2	0.3	0.7	1.2		0.7				0.0
43	0.1				1.2	2.0	0.4	0.8		1.7				3.0
44	0.2				1.5	3.8	1.9	0.8		3.1				7.5
45	0.6				0.8	3.5	1.7	1.6		0.3				2.8
46	0.1				1.1	2.0	0.8	4.8		2.8				1.0
47	0.1				0.7	4.5	2.3	3.2		1.1				19.5
48	1.5				3.6	2.5	0.2	0.4		5.6				0.5
49	0.1				2.1	0.3	2.5	1.6		2.2				3.0
50	2.4				1.9	3.3	0.9	3.6		3.0				5.8
51	2.8				1.0	2.0	1.1	0.8		1.1				3.3
52	0.4				2.2	4.3	0.6	3.2		2.1				0.0
53	0.3				1.2	6.0	0.4	0.4		0.3				2.0
54	0.0				2.8	0.3	1.0	0.0		0.1				2.5
55	0.1				3.5	1.0	1.2	0.8		0.2				0.0
56	0.1				1.9	0.8	0.7	4.8		4.9				4.0
57	0.1				4.8	1.5	1.0	0.0		4.9				3.8
58	0.3				3.3	0.3	1.3	0.0		2.3				1.0
59	0.9				2.4	3.8	0.9	0.8		4.6				1.8
60	0.1					1.3	1.0	0.0		7.0				2.0
61	0.1					3.3	0.5	0.4		0.1				10.0
62	0.1					2.3	0.8	0.8		0.9				13.3
63	0.1					4.0	0.7	0.0		0.9				2.8
64	0.4					3.0	0.9	0.8		1.7				2.8
65	1.1					1.5	1.2	4.0		3.0				0.8
66	0.5					0.5	0.8	1.6		0.1				8.5
67	0.9					0.3	4.3	2.4		2.9				1.0
68	0.0					1.5	2.9	3.2		4.6				6.0
69	0.0					0.5	1.6	1.2		4.6				4.3
70	0.0					1.3	1.5	0.8		8.8				3.3
71	0.0					0.8	1.9	0.0		1.9				2.0
72	0.0					3.5	1.4	1.6		1.2				2.0
73	0.0					1.0	0.9	1.2		2.2				2.0
74	0.0					0.5	0.5	3.2		1.6				6.8
75	0.0					1.0	6.2	6.4		8.8				1.5
76	0.0					0.8	1.1	1.2		0.1				4.5
77	0.1					0.5	1.3	2.4		0.3				1.3
78						1.0	1.2	1.6		0.6				2.0
79						3.0	0.7	1.6		1.6				3.8
80						2.3	0.8	0.8		1.5				2.5
81						2.3	0.5	1.2		0.1				2.8
82						3.0	2.5	0.0		12.6				2.0
83						1.3	0.7	0.0		3.9				5.5
84						0.5	2.7	3.2		0.1				0.8

85						1.3	2.0	0.0		0.8				1.3
86						0.3	0.8	0.8		2.1				2.5
87						1.0	0.3	1.2		0.9				2.0
88						0.8	0.6	0.8		2.4				2.8
89						1.5	0.9	1.6		1.9				1.5
90						2.3	0.8	0.0		0.1				4.5
91						0.5	1.0	0.0		0.2				6.5
92						2.5	6.1	1.2		0.1				1.5
93						5.0	1.4			0.2				1.5
94						0.8	5.0			0.1				3.5
95						2.0	1.1			1.2				2.8
96										0.8				1.0
97										0.8				2.5
98										1.3				1.8
99										2.1				2.0
100														1.0
101														1.5
102														1.0
103														1.5
104														3.5
105														3.0
106														13.3
107														1.0
108														3.0
109														3.8
110														0.8
111														3.8
112														2.8
113														1.5
114														1.3
115														6.8
116														0.3
117														0.3
118														5.0
119														3.8
120														3.5
121														2.0
122														2.3
123														2.3
124														0.5

Risk weights for hail risk

Zone/ Region	AT	BE	CH	ES	DE	FR	IT	NL
1	3.1	2.8	2.8	7.5	0.5	12.6	3.7	4.0
2	3.4	2.7	1.6	1.7	0.0	1.9	3.7	5.8
3	1.8	2.0	0.3	6.7	0.0	5.7	3.7	5.3
4	23.6	3.1	2.1	0.0	0.8	8.7	0.0	1.4
5	0.2	2.0	6.7	1.7	0.4	5.4	0.0	6.6
6	1.9	3.9	4.0	3.3	2.7	3.9	0.8	0.1
7	8.3	2.0	0.1	16.7	0.4	12.3	0.8	0.3
8	0.3	2.8	0.2	2.5	0.8	2.7	0.0	2.9
9	1.4	2.4	1.5	1.7	0.2	27.6	0.0	9.6
10	0.8		0.3	0.0	0.1	1.7	0.0	0.1
11	3.1		6.1	7.5	0.9	6.8	10.8	6.1
12	2.8		3.0	0.0	0.1	8.7	10.8	2.8
13	1.0		0.1	0.0	0.0	2.8	10.8	2.0
14	17.4		2.7	6.7	0.1	0.3	10.8	0.6
15	0.2		4.4	1.7	0.0	3.7	10.8	0.2
16	0.9		0.3	10.0	0.0	8.5	10.8	2.0
17	1.7		1.4	5.0	0.2	0.6	10.8	0.1
18	1.4		1.9	2.5	0.0	7.2	10.8	0.1
19	0.3		5.9	10.0	0.1	12.4	10.8	3.4
20	0.3		0.5	0.0	0.0	2.5	10.8	1.5
21	0.4		1.3	3.3	0.0	8.1	7.5	5.6
22	1.1		1.3	3.3	0.0	0.1	7.5	0.5
23	0.2		1.4	3.3	0.0	10.2	7.5	0.5
24	5.3		1.2	6.7	5.5	2.0	7.5	4.2
25	15.9		1.3	5.0	0.5	8.3	7.5	1.4
26	5.8		4.9	3.3	0.1	25.3	7.5	11.6
27	1.6			8.4	0.1	1.0	7.5	12.0
28	3.8			0.0	3.3	4.7	7.5	1.3
29	5.4			5.0	1.7	0.0	10.8	4.3
30	7.9			6.7	3.1	3.6	7.5	2.6
31	16.5			3.3	17.4	14.0	3.3	0.4
32	5.6			6.7	1.8	7.7	3.3	13.4
33	5.9			2.5	2.0	5.8	3.3	12.0
34	2.4			6.7	1.7	0.3	3.3	0.3
35	2.7			1.7	2.1	0.2	3.3	3.2
36	14.1			10.0	2.2	1.3	3.3	0.2
37	0.4			2.5	6.1	7.6	3.3	10.6
38	3.5			0.0	19.7	10.6	3.3	3.4
39	6.1			2.5	5.4	11.6	3.3	3.1
40	3.1			7.5	7.9	2.8	3.3	0.2

41	10.4			2.5	3.7	2.3	7.5	5.9
42	5.4			3.3	3.5	10.4	7.5	7.2
43	1.1			6.7	3.0	4.8	7.5	3.8
44	5.9			3.3	9.8	0.1	7.5	3.5
45	11.3			12.5	3.4	3.4	7.5	3.9
46	4.5			1.7	2.7	12.2	3.3	3.2
47	0.3			6.7	13.2	18.1	7.5	1.2
48	3.3			0.1	11.9	13.7	7.5	2.5
49	1.3			0.5	8.7	2.1	7.5	0.6
50	2.1			1.2	13.9	1.9	3.7	4.7
51	11.4				11.2	6.4	3.7	2.9
52	2.7				2.1	10.9	3.7	4.6
53	0.2				6.0	4.7	3.7	0.3
54	0.4				5.0	2.0	3.7	2.4
55	7.9				3.3	0.8	3.7	5.8
56	0.4				11.2	0.1	3.7	2.4
57	0.2				0.3	2.7	3.7	5.2
58	8.2				4.3	19.9	3.7	2.1
59	3.6				2.4	1.9	3.7	8.5
60	4.7				3.0	1.9	0.8	9.7
61	1.5				0.7	16.1	0.8	8.9
62	3.9				18.2	1.4	0.8	0.1
63	2.6				5.3	2.6	0.8	0.1
64	2.4				4.9	15.3	0.8	7.4
65	4.8				0.3	20.0	0.8	4.1
66	0.8				8.0	2.0	0.8	0.8
67	1.2				15.3	4.6	0.8	0.3
68	0.4				11.7	12.1	0.0	3.2
69	10.7				7.7	17.1	0.0	1.5
70	1.3				1.7	13.6	0.0	1.6
71	4.5				6.4	12.1	0.0	2.9
72	15.0				5.6	0.7	0.0	7.1
73	0.3				5.0	15.3	0.0	4.1
74	1.2				7.8	9.5	0.0	1.6
75	1.3				8.0	6.2	0.0	1.4
76	0.2				55.9	0.7	0.0	0.1
77	4.2				41.6	1.9	0.0	0.4
78					7.9	1.7	0.0	0.3
79					10.7	1.1	0.0	0.0
80					8.7	4.6	0.8	5.1
81					7.8	3.7	0.0	0.7
82					15.8	20.4	0.0	0.3
83					5.2	0.6	0.0	1.0
84					3.2	0.6	0.0	1.1

85					12.4	1.3	0.0	5.1
86					9.1	1.3	0.0	2.5
87					4.2	1.7	0.0	1.8
88					8.5	3.2	0.0	0.3
89					3.9	3.3	0.0	4.4
90					6.4	6.0	0.0	3.0
91					2.7	2.3	0.0	
92					3.0	1.0	0.0	
93					2.5	4.0		
94					2.5	0.7		
95					1.4	2.3		

Risk weights for subsidence risk

Zone	FR	Zone	FR	Zone	FR	Zone	FR	Zone	FR
1	0.5	20	0.3	39	0.5	58	0.3	77	2.5
2	0.3	21	0.5	40	0.3	59	6.0	78	2.0
3	0.5	22	0.3	41	0.5	60	0.3	79	0.8
4	0.3	23	0.3	42	0.3	61	0.3	80	0.3
5	0.3	24	1.8	43	0.3	62	1.0	81	0.8
6	0.5	25	0.3	44	0.5	63	0.8	82	0.8
7	0.3	26	0.3	45	1.5	64	0.5	83	0.5
8	0.3	27	0.3	46	0.3	65	0.5	84	0.5
9	0.3	28	0.5	47	1.0	66	0.3	85	0.5
10	0.3	29	0.3	48	0.3	67	0.3	86	1.0
11	0.5	30	0.3	49	1.3	68	0.3	87	0.3
12	0.3	31	6.3	50	0.3	69	0.5	88	0.3
13	2.5	32	1.0	51	0.3	70	0.3	89	0.5
14	0.3	33	4.8	52	0.3	71	0.5	90	0.3
15	0.3	34	0.5	53	0.3	72	0.8	91	1.5
16	0.5	35	0.3	54	0.5	73	0.3	92	0.5
17	2.3	36	0.5	55	0.3	74	0.3	93	0.8
18	0.5	37	1.5	56	0.3	75	0.3	94	1.0
19	0.3	38	0.3	57	1.0	76	0.3	95	0.8

ANNEX XI

LIABILITY RISK GROUPS, RISK FACTORS AND CORRELATION COEFFICIENTS FOR THE LIABILITY RISK SUB-MODULE

<i>i</i>	Liability risk group <i>i</i>	Risk factor $f_{(liability,i)}$
1	Professional malpractice liability insurance and proportional reinsurance obligations other than professional malpractice liability insurance and reinsurance for self-employed craftspersons or artisans	100 %
2	Employers liability insurance and proportional reinsurance obligations	160 %
3	Directors and officers liability insurance and proportional reinsurance obligations	160 %
4	Liability insurance and reinsurance obligations included in lines of business 8 and 20 as set out in Annex I, other than obligations included in liability risk groups 1 to 3 and other than personal liability insurance and proportional reinsurance and other than professional malpractice liability insurance and reinsurance for self-employed craftspersons or artisans	100 %
5	Non-proportional reinsurance of obligations relating to insurance obligations included in line of business 8 as set out in Annex I	210 %

For the purpose of the above table, the following definitions shall apply:

- (a) Professional malpractice liability insurance obligations mean liability insurance obligations included in line of business 8 as set out in Annex I which cover liabilities arising out of professional practice in relation to clients and patients;
- (b) Employers liability insurance obligations mean liability insurance obligations included in line of business 8 as set out in Annex I which cover liabilities of employers arising out of death, illness, accident, disability or infirmity of an employee in the course of the employment;
- (c) Directors and officers insurance obligations mean liability insurance obligations included in line of business 8 as set out in Annex I which cover liabilities of directors and officers of a company, arising out of the management of that company, or losses of the company itself to the extent it indemnifies its directors and officers in relation to such liabilities.
- (d) Personal liability insurance obligations mean liability insurance obligations included in line of business 8 as set out in Annex I which cover liabilities of natural persons in their capacity of private householders.

LIABILITY RISK CORRELATION COEFFICIENTS

$i \backslash j$	1	2	3	4	5
1	1	0	0.5	0.25	0.5
2	0	1	0	0.25	0.5
3	0.5	0	1	0.25	0.5
4	0.25	0.25	0.25	1	0.5
5	0.5	0.5	0.5	0.5	1

ANNEX XII

GROUPS OF OBLIGATIONS AND RISK FACTORS FOR THE SUB-MODULE FOR OTHER NON-LIFE CATASTROPHE RISK

<i>i</i>	Group of insurance and reinsurance obligations <i>i</i>	Risk factor c_i
1	Insurance and reinsurance obligations included in lines of business 6 and 18 as set out in Annex I other than marine insurance and reinsurance and aviation insurance and reinsurance	100 %
2	Reinsurance obligations included in line of business 27 as set out in Annex I other than marine reinsurance and aviation reinsurance	250 %
3	Insurance and reinsurance obligations included in lines of business 12 and 24 as set out in Annex I, other than extended warranty insurance and reinsurance obligations provided that the portfolio of these obligations is highly diversified and these obligation do not cover the costs of product recalls	40 %
4	Reinsurance obligations included in line of business 26 as set out in Annex I other than general liability reinsurance	250 %
5	Non-proportional reinsurance obligations relating to insurance obligations included in lines of business 9 and 21 as set out in Annex I	250 %

For the purpose of group 3, 'extended warranty insurance obligation' means insurance obligations which cover the cost of repair or replacement in the event of a breakdown of a consumer good used by the individuals in a private capacity and which may also provide additional cover against eventualities such as accidental damage, loss or theft and assistance in setting up, maintaining and operating the good.

ANNEX XIII

LIST OF REGIONS FOR WHICH NATURAL CATASTROPHE RISK IS NOT CALCULATED BASED ON PREMIUMS

- Member States of the European Union
- Principality of Andorra
- Republic of Iceland
- Principality of Lichtenstein
- Principality of Monaco
- Kingdom of Norway
- Republic of San Marino
- Swiss Confederation
- Vatican City State

ANNEX XIV

**SEGMENTATION OF NSLT HEALTH INSURANCE AND REINSURANCE
OBLIGATIONS AND STANDARD DEVIATIONS FOR THE NSLT HEALTH
PREMIUM AND RESERVE RISK SUB-MODULE**

	Segment	Lines of business, as set out in Annex I that the segment consists of	Standard deviation for gross premium risk of the segment	Standard deviation for reserve risk of the segment
1	Medical expense insurance and proportional reinsurance	1 and 13	5%	5%
2	Income protection insurance and proportional reinsurance	2 and 14	8.5%	14%
3	Workers' compensation insurance and proportional reinsurance	3 and 15	8%	11%
4	Non-proportional health reinsurance	25	17%	20%

ANNEX XV

CORRELATION MATRIX FOR NSLT HEALTH PREMIUM AND RESERVE RISK

The correlation parameter $\text{CorrHS}(s,t)$ referred to in Article 148(1) shall be equal to the item set out in row s and in column t of the following correlation matrix. The headings of the rows and columns denote the numbers of the segments set out Annex XIV:

$\begin{matrix} t \\ s \end{matrix}$	1	2	3	4
1	1	0.5	0.5	0.5
2	0.5	1	0.5	0.5
3	0.5	0.5	1	0.5
4	0.5	0.5	0.5	1

Annex XVI

HEALTH CATASTROPHE RISK SUB-MODULE OF THE SOLVENCY CAPITAL REQUIREMENT STANDARD FORMULA

GEOGRAPHICAL SEGMENTATION AND RISK FACTORS FOR THE MASS ACCIDENT RISK SUB-MODULE

Country s	rs - Ratio of persons affected by the mass accident in country s
Republic of Austria	0.30 %
Kingdom of Belgium	0.25 %
Republic of Bulgaria	0.30 %
Republic of Croatia	0.40 %
Republic of Cyprus	1.30 %
Czech Republic	0.10 %
Kingdom of Denmark	0.35 %
Republic of Estonia	0.45 %
Republic of Finland	0.35 %
French Republic; Principality of Monaco; Principality of Andorra	0.05 %
Hellenic Republic	0.30 %
Federal Republic of Germany	0.05 %
Republic of Hungary	0.15 %
Republic of Iceland	2.45 %
Ireland	0.95 %
Italian Republic; Republic of San Marino; Vatican City State	0.05 %
Republic of Latvia	0.20 %
Republic of Lithuania	0.20 %
Grand Duchy of Luxembourg	1.05 %
Republic of Malta	2.15 %
Kingdom of the Netherlands	0.15 %

Kingdom of Norway	0.25 %
Republic of Poland	0.10 %
Portuguese Republic	0.30 %
Romania	0.15 %
Slovak Republic	0.30 %
Republic of Slovenia	0.40 %
Kingdom of Spain	0.10 %
Kingdom of Sweden	0.25 %
Swiss Confederation	0.25 %
United Kingdom of Great Britain and Northern Ireland	0.05 %

**DEFINITION OF EVENTS AND RISK FACTORS FOR THE MASS ACCIDENT RISK SUB-MODULE
AND ACCIDENT CONCENTRATION RISK SUB-MODULE**

Event type e	x_e - Ratio of persons which will be affected by event type e as the result of the accident
Death caused by an accident	10 %
Permanent disability caused by an accident	1.5 %
Disability that lasts 10 years caused by an accident	5 %
Disability that lasts 12 months caused by an accident	13.5 %
Medical treatment caused by an accident	30 %

**DEFINITION OF HEALTHCARE UTILISATION AND RISK FACTORS FOR THE PANDEMIC RISK
SUB-MODULE**

Healthcare utilisation type h	H_h - Ratio of persons with clinical symptoms which will utilise healthcare of type h
Hospitalisation	1 %
Consultation with a medical practitioner	20 %
No formal medical care sought	79 %

ANNEX XVII

METHOD-SPECIFIC DATA REQUIREMENTS AND METHOD SPECIFICATIONS FOR UNDERTAKING-SPECIFIC PARAMETERS OF THE STANDARD FORMULA

A. Definitions and notations

- (1) For the purpose of this Annex, the following definitions shall apply:
 - (a) ‘accident year’ means, with respect to a payment for an insurance or reinsurance claim, the year in which the insured event that gave rise to that claim took place;
 - (b) ‘development year’ means, with respect to a payment for an insurance or reinsurance claim, the difference between the year of that payment and the accident year of that payment.
 - (c) ‘reporting year’ means, with respect to a payment for an insurance or reinsurance claim, the year in which the insured event that gave rise to that claim was notified to the insurance or reinsurance undertaking;
 - (d) ‘financial year’ means, with respect to a payment for an insurance or reinsurance claim, the year in which this payment took place.
- (2) For the purpose of this annex, ‘segment s ’ denotes the segment for which the undertaking-specific parameter is determined, being one of the segments set out in Annex II or one of the segments set out in Annex XIV.

B. Premium risk method

Input data and method-specific data requirements

- (1) The data for estimating the undertaking-specific standard deviation of segment s shall consist of the following:
 - (a) the payments made and the best estimates of the provision for claims outstanding in segment s after the first development year of the accident year of those claims (aggregated losses);
 - (b) the premiums earned in segment s ;

Those aggregated losses and earned premiums shall be available separately for each accident year of the insurance and reinsurance claims in segment s .

- (2) The following method-specific data requirements shall apply:
 - (a) the data are representative for the premium risk that the insurance or reinsurance undertaking is exposed to during the following twelve months;
 - (b) data are available for at least five consecutive accident years;
 - (c) where the premium risk method is applied to replace the standard parameters referred to in Article 218(1)(a)(i) and (c)(i), the aggregated losses and earned premiums are not adjusted for recoverable from reinsurance contracts and special purpose vehicles or reinsurance premiums;
 - (d) where the premium risk method is applied to replace the standard parameters referred to in Article 218(1)(a)(ii) and (c)(ii):

- i. the aggregated losses are adjusted for amounts recoverable from reinsurance contracts and special purpose vehicles which are consistent with the reinsurance contracts and special purpose vehicles that are in place to provide cover for the following twelve months;
- ii. the earned premiums are adjusted for reinsurance premiums which are consistent with the reinsurance contracts and special purpose vehicles that are in place to provide cover for the following twelve months;
- (e) the aggregated losses are adjusted for catastrophe claims to the extent that the risk of those claims is reflected in the non-life or health catastrophe risk sub-modules;
- (f) the aggregated losses include the expenses incurred in servicing the insurance and reinsurance obligations;
- (g) the data fit the following assumptions:
 - i. expected aggregated losses in a particular segment and accident year are linear proportional in premiums earned in a particular accident year;
 - ii. the variance of aggregated losses in a particular segment and accident year is quadratic in premiums earned in a particular accident year;
 - iii. aggregated losses follow a lognormal distribution;
 - iv. maximum likelihood estimation is appropriate.

Method specification

- (3) For the purpose of paragraphs 4-6, the following notation shall apply:
 - (a) accident years are denoted by consecutive numbers starting with 1 for the first accident year for which data are available;
 - (b) T denotes the latest accident year for which data are available;
 - (c) for all accident years, the aggregated losses in segment s in a particular accident year t are denoted by y_t ;
 - (d) for all accident years, the premiums earned in segment s in a particular accident year t are denoted by x_t .
- (4) The undertaking-specific standard deviation of segment s shall be equal to the following:

$$\sigma_{(prem,s,USP)} = c \cdot \hat{\sigma}(\hat{\delta}, \hat{\gamma}) \cdot \sqrt{\frac{T+1}{T-1}} + (1-c) \cdot \sigma_{(prem,s)}$$

where:

- (a) c denotes the credibility factor set out in section G;
- (b) $\hat{\sigma}$ denotes the standard deviation function set out in paragraph 5;
- (c) $\hat{\delta}$ denotes the mixing parameter set out in paragraph 6;
- (d) $\hat{\gamma}$ denotes the logarithmic variation coefficient set out in paragraph 6.
- (e) $\sigma_{(prem,s)}$ denotes the standard parameter that should be replaced by the undertaking-specific parameter.

- (5) The standard deviation function shall be equal to the following function of two variables:

$$\hat{\sigma}(\hat{\delta}, \hat{\gamma}) = \exp \left(\hat{\gamma} + \frac{\frac{1}{2}T + \sum_{t=1}^T \pi_t(\hat{\delta}, \hat{\gamma}) \cdot \ln \left(\frac{y_t}{x_t} \right)}{\sum_{t=1}^T \pi_t(\hat{\delta}, \hat{\gamma})} \right)$$

where:

- (a) $\hat{\delta}$ and $\hat{\gamma}$ are defined in point (c) and (d) of paragraph 4;
- (b) $\exp$ denotes the exponential function;
- (c) $\ln$ denotes the natural logarithm;
- (d) π_t denotes the following function of two variables:

$$\pi_t(\hat{\delta}, \hat{\gamma}) = \frac{1}{\ln \left(1 + \left((1 - \hat{\delta}) \cdot \frac{\bar{x}}{x_t} + \hat{\delta} \right) \cdot e^{2\hat{\gamma}} \right)}$$

where:

- i. $\hat{\delta}$ and $\hat{\gamma}$ are defined in point (c) and (d) of paragraph 4;
- ii. $\bar{x}$ denotes the following amount:

$$\bar{x} = \frac{1}{T} \cdot \sum_{t=1}^T x_t$$

- (6) The mixing parameter and the logarithmic variation coefficient shall be the values $\hat{\delta}$ and $\hat{\gamma}$ respectively for which the following amount becomes minimal:

$$\sum_{t=1}^T \pi_t(\hat{\delta}, \hat{\gamma}) \left(\ln \left(\frac{y_t}{x_t} \right) + \frac{1}{2 \cdot \pi_t(\hat{\delta}, \hat{\gamma})} + \hat{\gamma} - \ln(\hat{\sigma}(\hat{\delta}, \hat{\gamma})) \right)^2 - \sum_{t=1}^T \ln(\pi_t(\hat{\delta}, \hat{\gamma}))$$

where:

- (a) $\ln$ denotes the natural logarithm;
- (b) π_t denotes the function set out in point (d) of paragraph 5;
- (c) $\hat{\sigma}$ denotes the standard deviation function set out in paragraph 5;
- (d) $\bar{x}$ denotes the following amount:

$$\bar{x} = \frac{1}{T} \cdot \sum_{t=1}^T x_t$$

For the determination of the minimal amount, no values for the mixing parameter less than zero or exceeding 1 shall be considered.

C. Reserve risk method 1

Input data and method-specific data requirements

- (1) The data for estimating the undertaking-specific standard deviation for non-life reserve risk or NSLT health reserve risk of segment s shall consist of the following:
- (a) the sum of the best estimate provision at the end of the financial year for claims that were outstanding in segment s at the beginning of the financial year and the payments made during the financial year for claims that were outstanding in segment s at the beginning of the financial year;
 - (b) the best estimate of the provision for claims outstanding in segment s at the beginning of the financial year.

The amounts referred to in points (a) and (b) shall be available separately for different financial years.

- (2) The following method-specific data requirements shall apply:
- (a) the data are representative for the reserve risk that the insurance or reinsurance undertaking is exposed to during the following twelve months
 - (b) data are available for at least five consecutive financial years;
 - (c) the data are adjusted for amounts recoverable from reinsurance contracts and special purpose vehicles which are consistent with the reinsurance contracts and special purpose vehicles that are in place to provide cover for the following twelve months;
 - (d) the data include the expenses incurred in servicing the insurance and reinsurance obligations.
 - (e) the data fit the following assumptions:
 - i. the amount referred to paragraph 1(a) in that particular segment and financial year is linear proportional in the best estimate of the provision for claims outstanding in that particular segment and financial year;
 - ii. the variance of the amount referred to paragraph 1(a) in a particular segment and financial year is quadratic in the provision for claims outstanding in a particular segment and financial year;
 - iii. the amount referred to paragraph 1(a) follows a lognormal distribution;
 - iv. maximum likelihood estimation is appropriate.

Method specification

- (3) For the purpose of paragraphs 4-6, the following notation shall apply:
- (a) the financial years are denoted by consecutive numbers starting with 1 for the first financial year for which data are available;
 - (b) T denotes the latest financial year for which data are available;
 - (c) for all financial years, the amount referred to paragraph 1(a) in segment s in a particular financial year t is denoted by y_t ;
 - (d) for all financial years, the best estimate of the provision for claims outstanding in segment s in a particular financial year t are denoted by x_t .

- (4) The undertaking-specific standard deviation for non-life reserve risk or NSLT health reserve risk of segment s shall be equal to the following:

$$\sigma_{(res,s,USP)} = c \cdot \hat{\sigma}(\hat{\delta}, \hat{\gamma}) \cdot \sqrt{\frac{T+1}{T-1}} + (1-c) \cdot \sigma_{(res,s)}$$

where:

- (a) c denotes the credibility factor set out in section G;
 - (b) $\hat{\sigma}$ denotes the standard deviation function set out in paragraph 5;
 - (c) $\hat{\delta}$ denotes the mixing parameter set out in paragraph 6;
 - (d) $\hat{\gamma}$ denotes the logarithmic variation coefficient set out in paragraph 6.
 - (e) $\sigma_{(prem,s)}$ denotes the standard parameter that should be replaced by the undertaking-specific parameter.
- (5) The standard deviation function shall be equal to the following function of two variables:

$$\hat{\sigma}(\hat{\delta}, \hat{\gamma}) = \exp \left(\hat{\gamma} + \frac{\frac{1}{2}T + \sum_{t=1}^T \pi_t(\hat{\delta}, \hat{\gamma}) \cdot \ln \left(\frac{y_t}{x_t} \right)}{\sum_{t=1}^T \pi_t(\hat{\delta}, \hat{\gamma})} \right)$$

where:

- (a) $\hat{\delta}$ and $\hat{\gamma}$ are defined in point (c) and (d) of paragraph 4;
- (b) exp denotes the exponential function;
- (c) ln denotes the natural logarithm;
- (d) π_t denotes the following function of two variables:

$$\pi_t(\hat{\delta}, \hat{\gamma}) = \frac{1}{\ln \left(1 + \left((1-\hat{\delta}) \cdot \frac{\bar{x}}{x_t} + \hat{\delta} \right) \cdot e^{2 \cdot \hat{\gamma}} \right)}$$

where:

- i. $\hat{\delta}$ and $\hat{\gamma}$ are defined in point (c) and (d) of paragraph 4;
- ii. $\bar{x}$ denotes the following amount:

$$\bar{x} = \frac{1}{T} \cdot \sum_{t=1}^T x_t$$

- (6) The mixing parameter and the logarithmic variation coefficient shall be the values $\hat{\delta}$ and $\hat{\gamma}$ respectively for which the following amount becomes minimal:

$$\sum_{t=1}^T \pi_t(\hat{\delta}, \hat{\gamma}) \left(\ln \left(\frac{y_t}{x_t} \right) + \frac{1}{2 \cdot \pi_t(\hat{\delta}, \hat{\gamma})} + \hat{\gamma} - \ln(\hat{\sigma}(\hat{\delta}, \hat{\gamma})) \right)^2 - \sum_{t=1}^T \ln(\pi_t(\hat{\delta}, \hat{\gamma}))$$

where:

- (a) $\ln$ denotes the natural logarithm;
- (b) π_t denotes the function set out in point (c) of paragraph 5;
- (c) $\hat{\sigma}$ denotes the standard deviation function set out in paragraph 5;
- (d) $\bar{x}$ denotes the following amount:

$$\bar{x} = \frac{1}{T} \cdot \sum_{t=1}^T x_t$$

For the determination of the minimal amount, no values for the mixing parameter less than zero or exceeding 1 shall be considered.

D. Reserve risk method 2

Input data and method-specific data requirements

- (1) The data for estimating the undertaking-specific standard deviation for deviation for non-life reserve risk or NSLT health reserve risk of segment s shall consist of cumulative payment amounts for insurance or reinsurance claims in segment s (cumulative claims amounts), separately for each accident year and development year of the payments.
- (2) The following method-specific data requirements shall apply:
 - (a) the data are representative for the reserve risk that the insurance or reinsurance undertaking is exposed to during the following twelve months;
 - (b) data are available for at least five consecutive accident years;
 - (c) in the first accident year, data are available for at least five consecutive development years;
 - (d) in the first accident year the cumulative payment amount of the last development year for which data are available includes all the payments of the accident year except an immaterial amount;
 - (e) the number of consecutive accident years for which data are available is not less than the number of consecutive development years in the first accident year for which data are available;
 - (f) the cumulative claims amounts are adjusted for amounts recoverable from reinsurance contracts and special purpose vehicles which are consistent with the reinsurance contracts and special purpose vehicles that are in place to provide cover for the following twelve months;
 - (g) the cumulative claims amounts shall include the expenses incurred in servicing the insurance or reinsurance obligations;
 - (h) the data are consistent with the following assumptions about the stochastic nature of cumulative claims amounts:

- i. cumulative claims amounts for different accident years are mutually stochastically independent;
- ii. for all accident years the implied incremental claim amounts are stochastically independent;
- iii. for all accident years the expected value of the cumulative claims amount for a development year is proportional to the cumulative claims amount for the preceding development year;
- iv. for all accident years the variance of the cumulative claims amount for a development year is proportional to the cumulative claims amount for the preceding development year.

For the purposes of point (d), a payment amount shall be considered to be material where ignoring it in the calculation of the undertaking-specific parameter could influence the decision-making or the judgement of the users of that information, including the supervisory authorities

Method specification

- (3) For the purpose of paragraphs 4 and 5, the following notation shall apply:
 - (a) the accident years are denoted by consecutive numbers starting with 0 for the first accident year for which data are available;
 - (b) I denotes the latest accident year for which data are available;
 - (c) J denotes the latest development year in the first accident year for which data are available;
 - (d) $C_{(i,j)}$ denotes the cumulative claims for accident year i and development year j .
- (4) The undertaking-specific standard deviation for non-life reserve risk or NSLT health reserve risk of segment s shall be equal to the following:

$$\sigma_{(res,s,USP)} = c \cdot \frac{\sqrt{MSEP}}{\sum_{i=0}^I (\hat{C}_{(i,J)} - C_{(i,I-i)})} + (1-c) \cdot \sigma_{(res,s)}$$

where:

- (a) c denotes the credibility factor set out in section G;
- (b) $MSEP$ denotes the mean squared error of prediction as specified in paragraph 5;
- (c) for all accident years and development years, $\hat{C}_{(i,j)}$ denotes the cumulative claims estimate for the specific accident year i and development year j , being defined as follows:

$$\hat{C}_{(i,j)} = C_{(i,I-i)} \hat{f}_{I-i} \cdots \hat{f}_{j-2} \hat{f}_{j-1}$$

where for all development years $\hat{f}_j$ denotes for development factor estimate of the specific development year j , being defined as follows:

$$\hat{f}_j = \frac{\sum_{i=0}^{I-j-1} C_{(i,j+1)}}{\sum_{i=0}^{I-j-1} C_{(i,j)}}$$

- (d) $\sigma_{(res,s)}$ denotes the standard parameter for non-life reserve risk or NSLT health reserve risk of segment s .

- (5) The mean squared error of prediction shall be equal to the following:

$$MSEP = \sum_{i=1}^I \hat{C}_{(i,J)}^2 \cdot \frac{\hat{Q}_{I-i}}{C_{(i,I-i)}} + \sum_{i=1}^I \sum_{k=1}^I \hat{C}_{(i,J)} \cdot \hat{C}_{(k,J)} \cdot \left(\frac{\hat{Q}_{I-i}}{S_{I-i}} + \sum_{j=I-i+1}^{J-1} \frac{C_{(I-j,j)}}{S'_j} \cdot \frac{\hat{Q}_j}{S_j} \right) \text{ where:}$$

- (a) for all accident years and development years, $\hat{C}_{(i,j)}$ denotes the cumulative claim estimate in the specific accident year i and development year j , as set out in paragraph 4(c).
- (b) for all development years, S_j denotes for a specific development year j the following amount:

$$S_j = \sum_{i=0}^{I-j-1} C_{(i,j)}$$

- (c) for all development years, S'_j denotes for a specific development year j the following amount:

$$S'_j = \sum_{i=0}^{I-j} C_{(i,j)}$$

- (d) for all development years, $\hat{Q}_j$ denotes for a specific development year j the following amount:

$$\hat{Q}_j = \frac{\hat{\sigma}_j^2}{\hat{f}_j^2}$$

where:

- (i) $\hat{f}_j$ denotes the development factor estimate of development year j as set out in paragraph 4(c);
- (ii) $\hat{\sigma}_j^2$ denotes the following amount:

$$\hat{\sigma}_j^2 = \frac{1}{I-j-1} \sum_{i=0}^{I-i-1} C_{(i,j)} \left(\frac{C_{(i,j+1)}}{C_{(i,j)}} - \hat{f}_j \right)^2 \quad j = 0, \Lambda, (J-2)$$

$$\hat{\sigma}_j^2 = \min \left(\hat{\sigma}_{J-2}^2, \hat{\sigma}_{J-3}^2, \frac{\hat{\sigma}_{J-2}^4}{\hat{\sigma}_{J-3}^2} \right) \quad j = (J-1)$$

E. Revision risk method

Input data and method-specific data requirements

- (1) The data for estimating the undertaking-specific increase in the amount of annuity benefits shall consist of annual amounts of annuity benefits of annuity insurance obligations where the benefits payable could increase as a result of changes in the legal environment or in the state of health of the person insured (annuity benefits), separately for consecutive financial years and each beneficiary.
- (2) The following method-specific data requirements shall apply:
 - (a) the data are representative for the revision risk that the insurance or reinsurance undertaking is exposed to during the following twelve months;
 - (b) data are available for at least five consecutive financial years;
 - (c) the annuity benefits are gross, without deduction of the amounts recoverable from reinsurance contracts and special purpose vehicles;
 - (d) the annuity benefits shall include the expenses incurred in servicing the annuity obligations;
 - (e) the data are consistent with the following assumptions about the stochastic nature of increases in the amount of annuity benefits:
 - i. the annual number of annuity increases follows a negative binomial distribution, including in the tail of the distribution;
 - ii. the amount of an annuity increase follows a lognormal distribution, including in the tail of the distribution;
 - iii. the annual number of annuity increases and the amounts of the annuity increase are mutually stochastically independent.

Method specification

- (3) For the purpose of paragraphs 4-8, the following notation shall apply:
 - (a) the financial years are denoted by consecutive numbers starting with 1 for the first financial year for which data are available;
 - (b) T denotes the latest financial year for which data are available;
 - (c) $A_{(i,t)}$ denotes the annuity benefits of beneficiary i in financial year t ;
 - (d) $D_{(i,t)}$ denotes the change of annuity benefits after financial year t , being equal to the following difference:

$$D_{(i,t)} = A_{(i,t)} - A_{(i,t-1)}$$

- (4) The undertaking-specific increase in the amount of annuity benefits shall be equal to the following:

$$S_{USP} = c \cdot \frac{VaR_{0.995}(R) - \bar{R}}{\bar{R}} + (1 - c) \cdot S$$

where:

- (a) c denotes the credibility factor set out in section G;
- (b) $\bar{R}$ denotes the expected value of annuity increases set out in paragraph 5;
- (c) $VaR_{0.995}(R)$ denotes the 99.5 % quantile of the distribution of annuity increases set out in paragraph 6;
- (d) S is equal to 3 % where the calculation is done for the purpose of the revision risk sub-module set out in Article 141 and equal to 4 % where the calculation is done for the purpose of the health revision risk sub-module set out in Article 158.

(5) The expected value of annuity increases shall be equal to the following:

$$\bar{R} = \bar{X} \cdot \bar{N}$$

where:

- (a) $\bar{X}$ denotes the estimated average change in annuity benefits, restricted to those changes in of annuity benefits that are larger than zero;
- (b) $\bar{N}$ denotes the estimated average number, per financial year, of changes in annuity benefits that are larger than zero.

(6) The annuity increases shall be equal to the following:

$$R = \sum_{k=1}^N X_k$$

where:

- (a) N denotes the annual number of annuity increases and follows a negative binominal distribution with an expected value that is equal to the estimated number of changes in annuity benefits set out in point (b) of paragraph 5 and with a standard deviation that is equal to the estimated standard deviation of the number of changes in annuity benefits set out in paragraph 7;
- (b) X_k denotes the amount of an annuity increase and follows a lognormal distribution with an expected value that is equal to the estimated average change in annuity benefits set out in point (a) of paragraph 5 and with a standard deviation that is equal to the estimated standard deviation of changes in annuity benefits set out in paragraph 8;
- (c) the annual number of annuity increases and the amounts of the annuity increase are mutually stochastically independent.

(7) The estimated standard deviation of the number of changes in annuity benefits shall be equal to the following:

$$\hat{\sigma}_N = \sqrt{\frac{1}{T-1} \cdot \sum_{t=1}^T (N_t - \bar{N})^2}$$

where:

- (a) N_t denotes the number of changes in annuity benefits in financial years t that are larger than zero;
 - (b) $\bar{N}$ denotes the estimated average change in annuity benefits set out in point (b) of paragraph 5.
- (8) The estimated standard deviation of changes in annuity benefits shall be equal to the following:

$$\hat{\sigma}_X = \sqrt{\frac{1}{n-1} \cdot \sum_{i,t} (D_{(i,t)} - \bar{X})^2}$$

where:

- (a) the sum includes only those beneficiaries i and financial years t for which $D_{(i,t)}$ is larger than zero;
- (b) n denotes the number of summands of the sum referred to in point (a);
- (c) $\bar{X}$ denotes the estimated average change in annuity benefits set out in point (a) of paragraph 5.

F. Non-proportional reinsurance method

Input data and method-specific data requirements

- (1) The data for estimating the undertaking-specific adjustment factor for non-proportional reinsurance shall consist of the ultimate claim amounts of insurance and reinsurance claims that were reported to the insurance or reinsurance undertaking in segment s during the last financial years, separately for each insurance and reinsurance claim.
- (2) The following method-specific data requirements shall apply:
 - (a) the data are representative for the premium risk that the insurance or reinsurance undertaking is exposed to during the following twelve months;
 - (b) the data do not indicate a higher premium risk than reflected in the standard deviation for premium risk used to calculate the Solvency Capital Requirement;
 - (c) the ultimate claim amounts are estimated in the year the insurance and reinsurance claims were reported;
 - (d) data are available for at least five reporting years;
 - (e) where the recognisable excess of loss reinsurance contract applies to gross claims, the ultimate claim amounts are gross;
 - (f) where the recognisable excess of loss reinsurance contract applies to claims after deduction of the recoverables from certain other reinsurance contracts and special purpose vehicles, the amounts receivable from those certain other reinsurance contracts and special purpose vehicles are deducted from the ultimate claim amounts;

- (g) the ultimate claim amounts shall not include expenses incurred in servicing the insurance and reinsurance obligations;
- (h) the data are consistent with the assumption that ultimate claim amounts follow a lognormal distribution, including in the tail of the distribution.

Method specification

- (3) For the purpose of paragraphs 4-7, the following notation shall apply:
 - (a) insurance and reinsurance claims for which data are available are denoted by consecutive numbers starting with 1;
 - (b) n denotes the number of insurance and reinsurance claim for which data are available;
 - (c) Y_i denotes the ultimate claim amount of insurance or reinsurance claim i ;
 - (d) μ and ω denote the first and second moment, respectively, of the claim amount distribution, being equal to the following amounts:

$$\mu = \frac{1}{n} \sum_{i=1}^n Y_i \quad \text{and} \quad \omega = \frac{1}{n} \sum_{i=1}^n Y_i^2$$

- (e) b_1 denotes the amount of the retention of the recognisable excess of loss reinsurance contract referred to in Article 218(2);
 - (f) where the recognisable excess of loss reinsurance contract referred to in Article 196(1) provides compensation only up to a specified limit, b_2 denotes the amount of that limit.
- (4) The undertaking-specific specific adjustment factor for non-proportional reinsurance shall be equal to the following:

$$NP_{USP} = c \cdot NP' + (1 - c) \cdot NP$$

where:

- (a) c denotes the credibility factor set out in section G;
 - (b) NP' denotes the estimated adjustment factor for non-proportional reinsurance set out in paragraph 5;
 - (c) NP denotes the adjustment factor for non-proportional reinsurance set out in Article 117(2).
- (5) The estimated adjustment factor for non-proportional reinsurance shall be equal to the following:

$$(6) \quad NP' = \begin{cases} \sqrt{\frac{\omega_1 - \omega_2 + \omega + 2 \cdot (b_2 - b_1) \cdot (\mu_2 - \mu)}{\frac{\omega}{\omega_1}}}, & \text{where paragraph 3(f) applies,} \\ \sqrt{\frac{\omega_1}{\omega}} & \text{else.} \end{cases}$$

where the parameters μ_2 , ω_1 and ω_2 are set out in paragraph 6.

- (7) The parameters μ_2 , ω_1 and ω_2 shall be equal to the following:

$$\mu_2 = \mu \cdot N\left(\frac{\ln(b_2) - \theta}{\eta} - \eta\right) + b_2 \cdot N\left(-\frac{\ln(b_2) - \theta}{\eta}\right)$$

$$\omega_1 = \omega \cdot N\left(\frac{\ln(b_1) - \theta}{\eta} - 2 \cdot \eta\right) + b_1^2 \cdot N\left(-\frac{\ln(b_1) - \theta}{\eta}\right)$$

$$\omega_2 = \omega \cdot N\left(\frac{\ln(b_2) - \theta}{\eta} - 2 \cdot \eta\right) + b_2^2 \cdot N\left(-\frac{\ln(b_2) - \theta}{\eta}\right)$$

where:

- (a) N denotes the cumulative probability function of the normal distribution;
- (b) $\ln$ denotes the natural logarithm;
- (c) the parameters θ and η are equal to the following:

$$\theta = 2 \ln \mu - \frac{1}{2} \ln \omega$$

$$\eta = \sqrt{\ln \omega - 2 \ln \mu}.$$

- (8) Notwithstanding paragraph 5, where non-proportional reinsurance covers homogeneous risk-groups within a segment, the estimated adjustment factor for non-proportional reinsurance shall be equal to the following:

$$NP' = \frac{\sum_h V_{(prem,h)} \cdot NP'_{(h)}}{\sum_h V_{(prem,h)}}$$

where:

- (a) $V_{(prem,h)}$ denotes the volume measure for premium risk of the homogeneous risk group h determined in accordance with paragraph 3 of Article 116;
- (b) $NP'_{(h)}$ denotes the estimated adjustment factor for non-proportional reinsurance of homogeneous risk group h determined in accordance with paragraph 5.

G. Credibility factor

- (1) The credibility factor for segments 1, 5 and 6 set out in Annex II shall be equal to the following:

Time lengths in years	Credibility factor c
5	34 %
6	43 %
7	51 %
8	59 %
9	67 %
10	74 %
11	81 %
12	87 %
13	92 %
14	96 %
15 and larger	100 %

- (2) The credibility factor for segments 2 to 4 and 7 to 12 set out in Annex II, for the segments set out Annex XIV and for the revision risk method shall be equal to the following:

Time lengths in years	Credibility factor c
5	34 %
6	51 %
7	67 %
8	81 %
9	92 %
10 and larger	100 %

- (3) The time length shall be equal to the following:

- (a) for the premium risk method, the number of accident years for which data are available;

- (b) for reserve risk method 1, the number of financial years for which data are available;
- (c) for reserve risk method 2, the number of accident years for which data are available;
- (d) for the revision risk method, the number of financial years for which data are available;
- (e) for the non-proportional reinsurance method, the number of reporting years for which data are available.

ANNEX XVIII

INTEGRATION TECHNIQUES FOR PARTIAL INTERNAL MODELS

A. General provisions

- (1) For the purposes of this Annex, the following definitions shall apply:
 - (a) ‘unit of the partial internal model’ is a component of the partial internal model that is separately calculated and not aggregated within the partial internal model;
- (2) Where insurance and reinsurance undertakings apply integration techniques 1 to 5, their Solvency Capital Requirement shall be the sum of the following items:
 - (a) the Basic Solvency Capital Requirements as laid down in sections C to F;
 - (b) the capital requirement for operational risk as laid down in Article 107 of Directive 2009/138/EC, where that capital requirement is not within the scope of the partial internal model, and calculated with the partial internal model, where that capital requirement is within the scope of the partial internal model;
 - (c) the adjustment for the loss-absorbing capacity of technical provisions and deferred taxes, as laid down in paragraph 3, where that adjustment is not within the scope of the partial internal model, and calculated with the partial internal model where that adjustment is within the scope of the partial internal model.
- (3) Where the adjustment for the loss-absorbing capacity of technical provisions and deferred taxes is not within the scope of the partial internal model, it shall be calculated as laid down in Articles 205 to 207, but with the following changes:
 - (a) the Basic Solvency Capital Requirement referred to in Articles 206(1) and (2) and 207(1) is calculated in accordance with sections B to F;
 - (b) points (a) to (d) of Article 206(2) apply only to calculations with the standard formula;
 - (c) for the purposes of Article 206(2) the capital requirements used in the calculation of the Basic Solvency Capital Requirement that are calculated with the partial internal take into account the risk-mitigating effect provided by future discretionary benefits of insurance contracts;
 - (d) the capital requirement for operational risk referred to in Article 207(1)(c) is calculated in accordance with paragraph 2(b).

B. Integration technique 1

The Basic Solvency Capital Requirement shall be equal to the sum of the capital requirements for the units of the partial internal model, the capital requirement derived by applying the standard formula for the Basic Solvency Capital Requirement only to the risks that are out of the scope of the partial internal model and the capital requirement for intangible asset risk as set out in Article 203.

C. Integration technique 2

- (1) The Basic Solvency Capital Requirement shall be equal to the following:

$$BSCR = \sqrt{\sum_{i,j} Corr_{(i,j)} \cdot SCR_i \cdot SCR_j} + SCR_{int}$$

where:

- (a) the sum covers all possible combinations (i,j) of the aggregation list set out in paragraph 2;
 - (b) $Corr_{(i,j)}$ denotes the correlation parameter, for items i and j of the aggregation list;
 - (c) SCR_i and SCR_j denote the capital requirements for the items i and j of the aggregation list respectively;
 - (d) SCR_{int} denotes the capital requirement for intangible asset risk as set out in Article 203.
- (2) The items on the aggregation list shall meet the following requirements:
- (a) they shall cover each of the units of the partial internal model;
 - (b) none of the following sub-modules of the standard formula shall be within the scope of the partial internal model:
 - i. the sub-modules of the non-life underwriting risk module set out in Article 114(1);
 - ii. the sub-modules of the life underwriting risk module set out in Article 105(3) of Directive 2009/138/EC;
 - iii. the sub-modules of the health underwriting risk module set out in Article 151(1);
 - iv. the sub-modules of the market risk module set out in Article 105(5) of Directive 2009/138/EC;
 - (c) the counterparty default risk module of the standard formula shall not be within the scope of the partial internal model.

However, where none of the sub-modules of a module of the standard formula are within the scope of the partial internal module, the aggregation list shall include that module instead of its sub-modules.

- (3) The correlation parameters referred to in point (b) of paragraph 1 shall comply with the following requirements:
- (a) for all items i and j from the aggregation list the correlation parameter $Corr_{(i,j)}$ shall not be less than -1 and shall not exceed 1;
 - (b) for all items i and j from the aggregation list the correlation parameters $Corr_{(i,j)}$ and $Corr_{(j,i)}$ shall be equal;
 - (c) for all items i from the aggregation list the correlation parameter $Corr_{(i,i)}$ shall be equal to 1;

- (d) for any assignment of real numbers to the items of the aggregation list the following shall hold:

$$\sum_{i,j} Corr_{(i,j)} \cdot x_i \cdot x_j \geq 0$$

where:

- i. the sum covers all possible combinations (i,j) of the aggregation list;
 - ii. x_i and x_j are the numbers assigned to the items i and j , respectively, of the aggregation list;
- (e) where the items i and j from the aggregation list are modules of the standard formula, the correlation parameter $Corr_{(i,j)}$ shall be equal to the correlation parameter of the standard formula that is used to aggregate those two modules;
- (f) where the items i and j from the aggregation list are sub-modules of the same module of the standard formula, then the correlation parameter $Corr_{(i,j)}$ shall be equal to the correlation parameter of the standard formula that is used to aggregate those two sub-modules;
- (g) for all items i and j from the aggregation list the correlation parameter $Corr_{(i,j)}$ shall not be less than $Corr^{min}_{(i,j)}$ and shall not exceed $Corr^{max}_{(i,j)}$, where $Corr^{min}_{(i,j)}$ and $Corr^{max}_{(i,j)}$ are appropriate lower and upper bounds selected by the undertaking.

Insurance and reinsurance undertakings shall choose the correlation parameters referred to in point (b) of paragraph 1 in such a way that no other set of correlation parameters that meets the requirements set out in points (a) to (g) results in a higher Solvency Capital Requirement, calculated in accordance with paragraph 1.

D. Integration technique 3

- (1) The Basic Solvency Capital Requirement shall be equal to the following:

$$BSCR = \sqrt{S_S^2 + 2 \cdot S_S \cdot (\omega_1 \cdot P_C + \omega_2 \cdot P_S) + P^2} + SCR_{int}$$

where:

- (a) S_S denotes the capital requirement derived by applying the standard formula for the Basic Solvency Capital Requirement only to the risks not covered by the partial internal model;
- (b) ω_1 denotes the first implied correlation parameter as set out in paragraph 2;
- (c) P_C denotes the capital requirement reflecting the risks that are both within the scope of the standard formula and the partial internal model, calculated with the partial internal model;
- (d) ω_2 denotes the second implied correlation parameter as set out in paragraph 3;
- (e) P_S is the capital requirement reflecting the risks within the scope of the partial internal model but not within the scope of the standard formula, calculated with the partial internal model;

- (f) P denotes the capital requirement reflecting the risks that are within the scope of the partial internal model, calculated with the partial internal model.
- (g) SCR_{int} denotes the capital requirement for intangible asset risk as set out in Article 203.

(2) The first implied correlation parameter shall be equal to the following:

$$\omega_1 = \frac{S^2 - S_S^2 - S_C^2}{d_1 + 2 \cdot S_S \cdot S_C}$$

where:

- (a) S denotes the capital requirement calculated in the same way as the Basic Solvency Capital Requirement by means of the standard formula, but where capital requirements for modules or sub-modules are replaced by capital requirements for those modules or sub-modules that are calculated with the partial internal model where possible;
- (b) S_C denotes the capital requirement derived by applying the standard formula for the Basic Solvency Capital Requirement only to the risks that are within the scope of the standard formula and the partial internal model, but where the capital requirements for the modules and sub-modules are replaced by capital requirements for those modules or sub-modules that are calculated with the partial internal model;
- (c) S_S is defined as in paragraph 1(a);
- (d) d_1 is equal to 1 where S_S or S_C are zero and equal to zero where S_S and S_C are different from zero.

(3) The second implied correlation parameter shall be equal to the following:

$$\omega_2 = \omega_1 \cdot \omega_3 + \frac{1}{2} \cdot \sqrt{(1 - \omega_1^2) \cdot (1 - \omega_3^2)}$$

where ω_1 is as defined in paragraph 2 and ω_3 is the third implied correlation parameter as set out in paragraph 4.

(4) The third implied correlation parameter shall be equal to the following:

$$\omega_3 = \frac{P^2 - P_S^2 - P_C^2}{d_2 + 2 \cdot P_S \cdot P_C}$$

where:

- (a) P , P_S and P_C are as defined in paragraph 1;
- (b) d_2 is equal to 1 where P_S or P_C are zero and equal to zero where P_S and P_C are different from zero.

E. Integration technique 4

(1) The Basic Solvency Capital Requirement shall be equal to the following:

$$BSCR = \sqrt{P^2 + S_S^2 + \sum_{j=k+1}^n 2 \cdot S_j \cdot \left(\sum_{i=1}^l Corr_{(i,j)} \cdot P_i + \sum_{i=l+1}^k Corr_{(i,j)} \cdot S_i \right)} + SCR_{int}$$

where:

- (a) P denotes the capital requirement reflecting the risks that are within the scope of the partial internal model, calculated with the partial internal model;
 - (b) S_S denotes the capital requirement derived by applying the standard formula for the Basic Solvency Capital Requirement only to the risks not covered by the partial internal model;
 - (c) k denotes the number of modules of the standard formula that are within the scope of the partial internal model;
 - (d) n denotes the number of modules of the standard formula;
 - (e) l denotes the number of modules of the standard formula for each of which the capital requirement can be calculated with the partial internal model;
 - (f) $Corr_{(i,j)}$ denotes the correlation parameter of the standard formula for the aggregation of modules i and j ;
 - (g) P_i denotes the capital requirement for the module i of the standard formula, calculated with the partial internal model;
 - (h) S_i and S_j denote the capital requirement for modules i and j of the standard formula respectively which are calculated in the following way:
 - i. the module is calculated with the standard formula provided that the module does not consists of sub-modules;
 - ii. the module is calculated in accordance with paragraph 2 provided that the module consist of sub-modules.
 - (i) SCR_{int} denotes the capital requirement for intangible asset risk as set out in Article 203.
- (2) For all modules of the standard formula referred to in paragraph 1(h)(ii), the capital requirement of a particular module shall be calculated with the formula set out in paragraph 1, applying the following denominations:
- (a) P denotes the capital requirement reflecting the risks of the sub-modules of that particular module which are within the scope of the partial internal model, calculated with the partial internal model;
 - (b) S_S denotes the capital requirement derived by applying that particular module only to the risks not covered by the partial internal model;
 - (c) k denotes the number of sub-modules of that particular module that are within the scope of the partial internal model;
 - (d) n denotes the number of sub-modules of that particular module;
 - (e) l denotes the number of sub-modules of that particular module for each of which the capital requirement can be calculated with the partial internal model;

- (f) $Corr_{(i,j)}$ denotes the correlation parameter of the standard formula for the aggregation of sub-modules i and j of that particular module;
 - (g) P_i denotes the capital requirement for the sub-module i of that particular module, calculated with the partial internal model;
 - (h) S_i and S_j denote the capital requirement for sub-modules i and j of that particular module respectively which are calculated in the following way:
 - i. the sub-module is calculated with the standard formula provided that the sub-module does not consists of other sub-modules;
 - ii. the sub-module is calculated in accordance with paragraph 3 provided that the sub-module consist of other sub-modules.
 - (i) SCR_{int} shall be set to zero.
- (3) For all sub-modules of the standard formula referred to in paragraph 2(h)(ii), the capital requirement of a particular sub-module shall be calculated with the formula set out in paragraph 1, applying the following denominations:
- (a) P denotes the capital requirement reflecting the risks of the sub-modules of that particular sub-module which are within the scope of the partial internal model, calculated with the partial internal model;
 - (b) S_S denotes the capital requirement derived by applying that particular sub-module only to the risks not covered by the partial internal model;
 - (c) k denotes the number of sub-modules of that particular sub-module that are within the scope of the partial internal model;
 - (d) n denotes the number of sub-modules of that particular sub-module;
 - (e) l denotes the number of sub-modules of that particular sub-module for each of which the a capital requirement can be calculated with the partial internal model;
 - (f) $Corr_{(i,j)}$ denotes the correlation parameter of the standard formula for the aggregation of sub-modules i and j of that particular sub-module;
 - (g) P_i denotes the capital requirement for the sub-module i of that particular sub-module, calculated with the partial internal model;
 - (h) S_i and S_j denote the capital requirement for sub-modules i and j of that particular sub-module respectively which are calculated in the following way:
 - i. the sub-module is calculated with the standard formula provided that the sub-module does not consists of other sub-modules;
 - ii. the sub-module is calculated in accordance with this paragraph provided that the sub-module consist of other sub-modules.
 - (i) SCR_{int} shall be set to zero.

F. Integration technique 5

- (1) The Basic Solvency Capital Requirement shall be equal to the following:

$$BSCR = \sqrt{P^2 + S_S^2 + \frac{2 \cdot P}{\sqrt{\sum_{i=1}^k \sum_{j=1}^k Corr_{(i,j)} \cdot S_i \cdot S_j}} \cdot \sum_{j=k+1}^n \sum_{i=1}^k Corr_{(i,j)} \cdot S_i \cdot S_j + SCR_{int}}$$

where:

- (a) P , S_S , k , n , $Corr_{(i,j)}$ and SCR_{int} are defined as in paragraph 1 of section E;
 - (b) S_i and S_j denote the capital requirement for modules i and j respectively of the standard formula which are calculated in the following way:
 - i. the module is calculated with the standard formula provided that the module does not consists of sub-modules;
 - ii. the module is calculated in accordance with paragraph 2 provided that the module consist of sub-modules.
- (2) For all modules of the standard formula referred to in paragraph 1(b)(ii), the capital requirement of a particular module shall be calculated with the formula set out in paragraph 1, applying the following denominations:
- (a) P , S_S , k , n , $Corr_{(i,j)}$ and SCR_{int} are defined as in paragraph 2 of section E;
 - (b) S_i and S_j denote the capital requirement for sub-modules i and j of that particular module respectively which are calculated in the following way:
 - i. the sub-module is calculated with the standard formula provided that the sub-module does not consists of other sub-modules;
 - ii. the sub-module is calculated in accordance with paragraph 3 provided that the sub-module consist of other sub-modules.
- (3) For all modules of the standard formula referred to in paragraph 2(b)(ii), the capital requirement of a particular module shall be calculated with the formula set out in paragraph 1, applying the following denominations:
- (a) P , S_S , k , n , $Corr_{(i,j)}$ and SCR_{int} are defined as in paragraph 3 of section E;
 - (b) S_i and S_j denote the capital requirement for sub-modules i and j of that particular module respectively which are calculated in the following way:
 - i. the sub-module is calculated with the standard formula provided that the sub-module does not consists of other sub-modules;
 - ii. the sub-module is calculated in accordance with this paragraph provided that the sub-module consist of other sub-modules.

ANNEX XIX

MCR RISK FACTORS FOR NON-LIFE AND HEALTH INSURANCE OR REINSURANCE OBLIGATIONS

	Segment	Lines of business, as set out in Annex I, that the segment consists of	Factor for technical provisions for segment s (α_s)	Factor for premiums written for segment s (β_s)
1	Medical expense insurance	1 and 13	4.7 %	4.7 %
2	Income protection insurance	2 and 14	13.1 %	8.5 %
3	Workers' compensation insurance	3 and 15	10.7 %	7.5 %
4	Motor vehicle liability insurance and proportional reinsurance	4 and 16	8.5 %	9.4 %
5	Other motor insurance and proportional reinsurance	5 and 17	7.5 %	7.5 %
6	Marine, aviation and transport insurance and proportional reinsurance	6 and 18	10.3 %	14 %
7	Fire and other damage to property insurance and proportional reinsurance	7 and 19	9.4 %	7.5 %
8	General liability insurance and proportional reinsurance	8 and 20	10.3 %	13.1 %
9	Credit and suretyship insurance and proportional reinsurance	9 and 21	17.7 %	11.3 %
10	Legal expenses insurance and proportional reinsurance	10 and 22	11.3 %	6.6 %
11	Assistance and its proportional reinsurance	11 and 23	18.6 %	8.5 %
12	Miscellaneous financial loss insurance and proportional reinsurance	12 and 24	18.6 %	12.2 %
13	Non-proportional casualty reinsurance	26	18.6 %	15.9 %
14	Non-proportional marine, aviation and transport reinsurance	27	18.6 %	15.9 %
15	Non-proportional property reinsurance	28	18.6 %	15.9 %
16	Non-proportional health reinsurance	25	18.6 %	15.9 %

ANNEX XX

STRUCTURE OF THE SOLVENCY AND FINANCIAL CONDITION REPORT AND REGULAR SUPERVISORY REPORT

Summary

A. Business and Performance

- A.1 Business
- A.2 Underwriting Performance
- A.3 Investment Performance
- A.4 Performance of other activities
- A.5 Any other information

B. System of Governance

- B.1 General information on the system of governance
- B.2 Fit and proper requirements
- B.3 Risk management system including the own risk and solvency assessment
- B.4 Internal control system
- B.5 Internal audit function
- B.6 Actuarial function
- B.7 Outsourcing
- B.8 Any other information

C. Risk Profile

- C.1 Underwriting risk
- C.2 Market risk
- C.3 Credit risk
- C.4 Liquidity risk
- C.5 Operational risk
- C.6 Other material risks
- C.7 Any other information

D. Valuation for Solvency Purposes

- D.1 Assets
- D.2 Technical provisions
- D.3 Other liabilities

D.4 Alternative methods for valuation

D.5 Any other information

E. Capital Management

E.1 Own funds

E.2 Solvency Capital Requirement and Minimum Capital Requirement

E.3 Use of the duration-based equity risk sub-module in the calculation of the Solvency Capital Requirement

E.4 Differences between the standard formula and any internal model used

E.5 Non-compliance with the Minimum Capital Requirement and non-compliance with the Solvency Capital Requirement

E.6 Any other information

ANNEX XXI
AGGREGATE STATISTICAL DATA

A. Data on supervised undertakings and groups

Data with regard to insurance and reinsurance undertakings supervised under Directive 2009/138/EC.

- (1) The number of insurance and reinsurance undertakings, the number of branches as referred to in Article 13(11) of Directive 2009/138/EC and the number of branches as referred to in Article 162(3) of Directive 2009/138/EC established in the Member State of the supervisory authority;
- (2) The number of branches of insurance and reinsurance undertakings established in the Member State of the supervisory authority carrying out relevant business in one or more other Member States;
- (3) The number of insurance undertakings established in the Member State of the supervisory authority pursuing business in other Member States under the freedom to provide services;
- (4) The number of insurance undertakings established in other Member States which have notified their intention to pursue business in the Member State of the supervisory authority under the freedom to provide services and those which actually pursue business;
- (5) The number of insurance and reinsurance undertakings falling outside the scope of Directive 2009/138/EC;
- (6) The number of special purpose vehicles authorised in accordance with Article 211 of Directive 2009/138/EC;
- (7) The number of insurance and reinsurance undertakings subject to reorganisation measures or winding-up proceedings;
- (8) The number of insurance and reinsurance undertakings and the number of their portfolios where the matching adjustment referred to in Article 77b of Directive 2009/138/EC is applied.
- (9) The number of insurance and reinsurance undertakings applying the volatility adjustment referred to in Article 77d of Directive 2009/138/EC.
- (10) The number of insurance and reinsurance undertakings applying the transitional risk-free interest rate term structure referred to in Article 308c Directive 2009/138/EC.
- (11) The number of insurance and reinsurance undertakings applying the transitional deduction to technical provisions referred to in Article 308d Directive 2009/138/EC.
- (12) The total amount of assets of the insurance and reinsurance undertakings valued in accordance with Article 75 of Directive 2009/138/EC, by material asset classes;
- (13) The total amount of liabilities of the insurance and reinsurance undertakings valued in accordance with Articles 75 to 86 of Directive 2009/138/EC, divided

by technical provisions and other liabilities, with separate indication of the subordinated liabilities which are not included in the own funds;

- (14) The total amount of basic own funds, with separate indication of the subordinated liabilities which are included in own funds, and the total amount of ancillary own funds;
- (15) The total eligible amount of own funds to cover the Solvency Capital Requirement, classified by tiers;
- (16) The total eligible amount of basic own funds to cover the Minimum Capital Requirement, classified by tiers;
- (17) The total amount of the Minimum Capital Requirement;
- (18) The total amount of the Solvency Capital Requirement;
- (19) Where the Solvency Capital Requirement is calculated using the standard formula the total amount of the Solvency Capital Requirement by risk module and sub-module - at the level of aggregation available - expressed as percentage of the total amount of the Solvency Capital Requirement ;
- (20) Where the Solvency Capital Requirement for credit risk is calculated using the standard formula the total amount of the Solvency Capital Requirement for spread risk and market risk concentration sub-modules and for counterparty default risk module for which a reassessment of the credit quality steps of the larger or more complex exposures has been conducted in accordance with paragraph 5 of Article 4 - at the level of aggregation available - expressed as percentage of the total amount of the respective sub-modules or module ;
- (21) Where the Solvency Capital Requirement is calculated using an approved partial internal model the total amount of the Solvency Capital Requirement by risk module and sub-module - at the level of aggregation available - expressed as percentage of the total amount of the Solvency Capital Requirement; data on internal models which scope includes credit risk in both market risk and counterparty default risk shall be separately disclosed;
- (22) The number of insurance and reinsurance undertakings using an approved full internal model and the number of insurance and reinsurance undertakings using an approved partial internal model for the calculation of the Solvency Capital Requirement; data on internal models which scope includes credit risk in both market risk and counterparty default risk shall be separately disclosed;
- (23) The number of capital add-ons, the average capital add-on per undertaking and the distribution of capital add-ons measured as a percentage of the Solvency Capital Requirement, with regard to all insurance and reinsurance undertakings supervised under Directive 2009/138/EC.

The information set out in paragraphs 1 to 5, 7 to 17 shall be provided separately for:

- all insurance and reinsurance undertakings;
- life insurance undertakings;
- non-life insurance undertakings;
- insurance undertakings which simultaneously pursue both life and non-life insurance activities;
- reinsurance undertakings.

Data with regard to insurance groups supervised under Directive 2009/138/EC

- (24) The number of insurance groups of which the supervisory authority is the group supervisor including, the number of insurance and reinsurance subsidiary undertakings at national level, in other Member States and third countries, further split by equivalent and non-equivalent third countries in accordance with Article 260 of Directive 2009/138/EC ;
- (25) The number of insurance groups of which the supervisory authority is the group supervisor, where the ultimate parent insurance or reinsurance undertaking or insurance holding company or mixed financial holding company which has its head office in the Union is a subsidiary undertaking of a company which has its head office outside of the Union;
- (26) The number of ultimate parent insurance or reinsurance undertakings or insurance holding companies or mixed financial holding companies subject to group supervision at national level by the supervisory authority in accordance with Article 216 of Directive 2009/138/EC, including for each such undertaking and holding company the number of its insurance and reinsurance subsidiary undertakings at national level, in other Member States and third countries, further split by equivalent and non-equivalent third countries in accordance with Article 260 of Directive 2009/138/EC;
- (27) The number of ultimate parent insurance or reinsurance undertakings or insurance holding companies or mixed financial holding companies subject to group supervision at national level by the supervisory authority in accordance with Article 216 of Directive 2009/138/EC, where another related ultimate parent undertaking at national level is present as referred to in Article 217 of Directive 2009/138/EC;
- (28) The number of cross-border insurance groups where the supervisory authority is the group supervisor;
- (29) The number of insurance groups that have been allowed to use method 2 or a combination of methods 1 and 2 in accordance with Article 220(2) of Directive 2009/138/EC for the calculation of the solvency at the level of the group;
- (30) The total amount of the group eligible own funds for the insurance groups of which the supervisory authority is the group supervisor, separately for group eligible own funds calculated in accordance with method 1 as referred to in Article 230(1) of Directive 2009/138/EC and for group eligible own funds calculated in accordance with method 2 as referred to in Article 233 of Directive 2009/138/EC;
- (31) The total amount of the group Solvency Capital Requirement for the insurance groups of which the supervisory authority is the group supervisor separately for the group Solvency Capital Requirement calculated in accordance with method 1 as referred to in Article 230(1) of Directive 2009/138/EC and for the group Solvency Capital Requirement calculated in accordance with method 2 as referred to in Article 233 of Directive 2009/138/EC;
- (32) The number of insurance groups of which the supervisory authority is the group supervisor using an approved full internal model for the calculation of the group Solvency Capital Requirements, and the number of insurance groups

of which the supervisory authority is the group supervisor using an approved partial internal model for the calculation of the group Solvency Capital Requirement. The information shall be disclosed separately for approvals in accordance with Article 230 and Article 231 of Directive 2009/138/EC.

The information set out in paragraphs 1 to 27 shall be provided in relation to the end of the last calendar year. In relation to paragraphs 8 to 17, 25 and 26 the information shall relate to the financial year ends of insurance and reinsurance undertakings and insurance groups which ended in the last calendar year.

B. Data on the supervisory authority

- (1) The structure of the supervisory authority including the number of staff at the end of the last calendar year;
- (2) The number of on-site inspections undertaken both at solo and group level, and the total number of man-days spent on them, also specifying the number of regular inspections and ad-hoc inspections, inspections mandated to third parties and on-site inspections under group supervision which were undertaken jointly with other members of the group's College of supervisors ; data on inspections conducted in order to review and evaluate the reliance of undertakings on external ratings shall be separately disclosed;
- (3) The number of formal reviews both at solo and group level, of ongoing compliance of full or partial internal models with the requirements in relation to the number of internal models in use; data on reviews conducted in order to review and evaluate the reliance of undertakings on external ratings shall be separately disclosed;
- (4) The number of partial and of full internal models submitted for approval and how many of those application were successful, divided into solo undertakings and groups; data on internal models which scope includes credit risk in both market risk and counterparty default risk shall be separately disclosed;
- (5) The number of corrective measures taken, as defined by Articles 110, 117, 119, 137, 138 and 139 of Directive 2009/138/EC, by type of measure; the number of corrective measures as defined by Article 119 triggered by a deviation of the risk profile of the insurance or reinsurance undertakings with respect to their credit risk;
- (6) The number of authorisations withdrawn;
- (7) The number of authorisations granted to insurance or reinsurance undertakings;
- (8) The criteria used for the application of capital add-ons and the criteria for their calculation and removal;
- (9) The number of applications submitted to the supervisory authorities to use the matching adjustment referred to in Article 77b Directive 2009/138/EC and how many were successful.
- (10) Where Member States have chosen to require prior approval for use of the volatility adjustment referred to in Article 77d of Directive 2009/138/EC, the number of applications submitted to the supervisory authorities to use this adjustment and how many were successful.

- (11) The number of extensions granted in accordance with Article 138(4) of Directive 2009/138/EC, and their average duration;
- (12) The number of authorisations granted in accordance with Article 304 of Directive 2009/138/EC;
- (13) The number of applications submitted to the supervisory authority to use the transitional risk-free interest rate term structure referred to in Article 308c Directive 2009/138/EC, how many were successful and the number of decisions to revoke the approval of this transitional measure pursuant to article 308e of Directive 2009/138/EC.
- (14) The number of applications submitted to the supervisory authority to use the transitional deduction to technical provisions referred to in Article 308d Directive 2009/138/EC and how many were successful.
- (15) The number of meetings of Colleges of supervisors which the supervisory authority attended as a member and those chaired as group supervisor;
- (16) The number of applications submitted to the supervisory authority for the approval of ancillary own funds, how many of those applications were successful and the main feature of the items approved;
- (17) The number of applications submitted to the supervisory authority for approval of the assessment and classification of own-fund items, which are not covered by the list of the Articles 69, 72, 74, 76 and 78, how many of those applications were successful, the main features of the items and the method used to assess and classify them;
- (18) The number and scope of peer review analyses organised and conducted by EIOPA in accordance with Article 30 of the Regulation (EU) No 1094/2010, in which the supervisory authority participated.

The information set out in paragraphs 2 to 15 shall be provided in relation to the last calendar year.