

## **Title 210 -- NEBRASKA DEPARTMENT OF INSURANCE**

### **Chapter 71 -- VALUATION OF LIFE INSURANCE POLICIES REGULATION**

#### 001. Purpose.

001.01 The purpose of this regulation is to provide:

- 001.01(1) Tables of select mortality factors and rules for their use;
- 001.01(2) Rules concerning a minimum standard for the valuation of plans with nonlevel premiums or benefits; and
- 001.01(3) Rules concerning a minimum standard for the valuation of plans with secondary guarantees.

001.02 The method for calculating basic reserves defined in this regulation will constitute the Commissioner's Reserve Valuation Method for policies to which this regulation is applicable.

#### 002. Authority.

This regulation is issued under the authority of Neb.Rev.Stat. §44-101.01 of the Insurance Laws of Nebraska.

#### 003. Applicability.

This regulation shall apply to all life insurance policies, with or without nonforfeiture values, issued on or after January 1, 2000, subject to the following exceptions and conditions.

##### 003.01 Exceptions

- 003.01(1) This regulation shall not apply to any individual life insurance policy issued on or after January 1, 2000, if the policy is issued in accordance with and as a result of the exercise of a reentry provision contained in the original life insurance policy of the same or greater face amount, issued before January 1, 2000, that guarantees the premium rates of the new policy. This regulation also shall not apply to subsequent policies issued as a result of the exercise of such a provision, or a derivation of the provision, in the new policy.

- 003.01(2) This regulation shall not apply to any universal life policy that meets all the following requirements:
- 003.01(2)(a) Secondary guarantee period, if any, is five (5) years or less;
  - 003.01(2)(b) Specified premium for the secondary guarantee period is not less than the net level reserve premium for the secondary guarantee period based on the CSO valuation tables as defined in Section 004.06 and the applicable valuation interest rate; and
  - 003.01(2)(c) The initial surrender charge is not less than 100 percent of the first year annualized specified premium for the secondary guarantee period.
- 003.01(3) This regulation shall not apply to any variable life insurance policy that provides for life insurance, the amount or duration of which varies according to the investment experience of any separate account or accounts.
- 003.01(4) This regulation shall not apply to any variable universal life insurance policy that provides for life insurance, the amount or duration of which varies according to the investment experience of any separate account or accounts.
- 003.01(5) This regulation shall not apply to a group life insurance certificate unless the certificate provides for a stated or implied schedule of maximum gross premiums required in order to continue coverage in force for a period in excess of one year.

#### 003.02 Conditions

- 003.02(1) Calculation of the minimum valuation standard for policies with guaranteed nonlevel gross premiums or guaranteed nonlevel benefits (other than universal life policies), or both, shall be in accordance with the provisions of Section 006.
- 003.02(2) Calculation of the minimum valuation standard for flexible premium and fixed premium universal life insurance policies, that contain provisions resulting in the ability of a policyholder to keep a policy in force over a secondary guarantee period shall be in accordance with the provisions of Section 007.

#### 004. Definitions.

For purposes of this regulation:

- 004.01 "Basic reserves" means reserves calculated in accordance with Neb.Rev.Stat. §44-404(d).
- 004.02 "Contract segmentation method" means the method of dividing the period from issue to mandatory expiration of a policy into successive segments, with the length of each segment being defined as the period from the end of the prior segment (from policy inception, for the first segment) to the end of the latest policy year as determined below. All calculations are made using the 1980 CSO valuation tables, as defined in Subsection 004.06 of this section, (or any other valuation mortality table adopted by the National Association of Insurance Commissioners (NAIC) after the operative date of this regulation and promulgated by regulation by the director for this purpose), and, if elected, the optional minimum mortality standard for deficiency reserves stipulated in Section 005.02 of this regulation.
- The length of a particular contract segment shall be set equal to the minimum of the value  $t$  for which  $G_t$  is greater than  $R_t$  (if  $G_t$  never exceeds  $R_t$  the segment length is deemed to be the number of years from the beginning of the segment to the mandatory expiration date of the policy), where  $G_t$  and  $R_t$  are defined as follows:

$$G_t = \frac{GP_{x+k+t}}{GP_{x+k+t-1}}$$

where:

- $x$  = original issue age;
- $k$  = the number of years from the date of issue to the beginning of the segment;
- $t$  = 1, 2, ...;  $t$  is reset to 1 at the beginning of each segment;
- $GP_{x+k+t-1}$  = Guaranteed gross premium per thousand of face amount for year  $t$  of the segment, ignoring policy fees only if level for the premium paying period of the policy.

$$R_t = \frac{q_{x+k+t}}{q_{x+k+t-1}},$$
 However,  $R_t$  may be increased or decreased by one percent in any policy year, at the company's option, but  $R_t$  shall not be less than one;

where:

x, k and t are as defined above, and

$q_{x+k+t-1}$  = valuation mortality rate for deficiency reserves in policy year k+t but using the mortality of Section 005.02(2) if Section 005.02(3) is elected for deficiency reserves.

However, if  $GP_{x+k+t}$  is greater than 0 and  $GP_{x+k+t-1}$  is equal to 0,  $G_t$  shall be deemed to be 1000. If  $GP_{x+k+t}$  and  $GP_{x+k+t-1}$  are both equal to 0,  $G_t$  shall be deemed to be 0.

- 004.03 "Deficiency reserves" means the excess, if greater than zero, of
- 004.03(1) Minimum reserves calculated in accordance with Neb.Rev.Stat. §44-404(h) over
- 004.03(2) Basic reserves.
- 004.04 "Guaranteed gross premiums" means the premiums under a policy of life insurance that are guaranteed and determined at issue.
- 004.05 "Maximum valuation interest rates" means the interest rates defined in Neb.Rev.Stat. §44-404(c) (Computation of Minimum Standard by Calendar Year of Issue) that are to be used in determining the minimum standard for the valuation of life insurance policies.
- 004.06 "1980 CSO valuation tables" means the Commissioner's 1980 Standard Ordinary Mortality Table (1980 CSO Table) without ten-year selection factors, incorporated into the 1980 amendments to the NAIC Standard Valuation Law, and variations of the 1980 CSO Table approved by the NAIC, such as the smoker and nonsmoker versions approved in December 1983.
- 004.07 "Scheduled gross premium" means the smallest illustrated gross premium at issue for other than universal life insurance policies. For universal life insurance policies, scheduled gross premium means the smallest specified

premium described in 007.01(3), if any, or else the minimum premium described in Section 007.01(4).

- 004.08 (1) "Segmented reserves" means reserves, calculated using segments produced by the contract segmentation method, equal to the present value of all future guaranteed benefits less the present value of all future net premiums to the mandatory expiration of a policy, where the net premiums within each segment are a uniform percentage of the respective guaranteed gross premiums within the segment. The uniform percentage for each segment is such that, at the beginning of the segment, the present value of the net premiums within the segment equals:
- 004.08(1)(a) The present value of the death benefits within the segment, plus
  - 004.08(1)(b) The present value of any unusual guaranteed cash value (see section 006.04) occurring at the end of the segment, less
  - 004.08(1)(c) Any unusual guaranteed cash value occurring at the start of the segment, plus
  - 004.08(1)(d) For the first segment only, the excess of 004.08(1)(d)(i) over 004.08(1)(d)(ii), as follows:
    - 004.08(1)(d)(i) A net level annual premium equal to the present value, at the date of issue, of the benefits provided for in the first segment after the first policy year, divided by the present value, at the date of issue, of an annuity of one per year payable on the first and each subsequent anniversary within the first segment on which a premium falls due. However, the net level annual premium shall not exceed the net level annual premium on the nineteen-year premium whole life plan of insurance of the same renewal year equivalent level amount at an age one year higher than the age at issue of the policy.

- 004.08(1)(d)(ii) A net one year term premium for the benefits provided for in the first policy year.
- 004.08(2) The length of each segment is determined by the "contract segmentation method," as defined in this section.
- 004.08(3) The interest rates used in the present value calculations for any policy may not exceed the maximum valuation interest rate, determined with a guarantee duration equal to the sum of the lengths of all segments of the policy.
- 004.08(4) For both basic reserves and deficiency reserves computed by the segmented method, present values shall include future benefits and net premiums in the current segment and in all subsequent segments.
- 004.09 "Tabular cost of insurance" means the net single premium at the beginning of a policy year for one-year term insurance in the amount of the guaranteed death benefit in that policy year.
- 004.10 "Ten-year select factors" means the select factors adopted with the 1980 amendments to the NAIC Standard Valuation Law.
- 004.11 (1) "Unitary reserves" means the present value of all future guaranteed benefits less the present value of all future modified net premiums, where:
  - 004.011(1)(a) Guaranteed benefits and modified net premiums are considered to the mandatory expiration of the policy; and
  - 004.011(1)(b) Modified net premiums are a uniform percentage of the respective guaranteed gross premiums, where the uniform percentage is such that, at issue, the present value of the net premiums equals the present value of all death benefits and pure endowments, plus the excess of 004.11(1)(b)(i) over 004.11(1)(b)(ii), as follows:
    - 004.011(1)(b)(i) A net level annual premium equal to the present value, at the date of issue, of the benefits provided for after the first policy year, divided by the present value,

at the date of issue, of an annuity of one per year payable on the first and each subsequent anniversary of the policy on which a premium falls due. However, the net level annual premium shall not exceed the net level annual premium on the nineteen-year premium whole life plan of insurance of the same renewal year equivalent level amount at an age one year higher than the age at issue of the policy.

004.11(1)(b)(ii) A net one year term premium for the benefits provided for in the first policy year.

004.11 (2) The interest rates used in the present value calculations for any policy may not exceed the maximum valuation interest rate, determined with a guarantee duration equal to the length from issue to the mandatory expiration of the policy.

004.12 "Universal life insurance policy" means any individual life insurance policy under the provisions of which separately identified interest credits (other than in connection with dividend accumulations, premium deposit funds, or other supplementary accounts) and mortality or expense charges are made to the policy.

#### 005. General Calculation Requirements for Basic Reserves and Premium Deficiency Reserves.

005.01 At the election of the company for any one or more specified plans of life insurance, the minimum mortality standard for basic reserves may be calculated using the 1980 CSO valuation tables with select mortality factors (or any other valuation mortality table adopted by the NAIC after January 1, 2000 and promulgated by regulation by the director for this purpose). If select mortality factors are elected, they may be:

005.01(1) The ten-year select mortality factors incorporated into the 1980 amendments to the NAIC Standard Valuation Law;

005.01(2) The select mortality factors in the Appendix; or

005.01(3) Any other table of select mortality factors adopted by the NAIC after the effective date of this regulation and

promulgated by regulation by the director for the purpose of calculating basic reserves.

005.02 Deficiency reserves, if any, are calculated for each policy as the excess, if greater than zero, of the quantity A over the basic reserve. The quantity A is obtained by recalculating the basic reserve for the policy using guaranteed gross premiums instead of net premiums when the guaranteed gross premiums are less than the corresponding net premiums. At the election of the company for any one or more specified plans of insurance, the quantity A and the corresponding net premiums used in the determination of quantity A may be based upon the 1980 CSO valuation tables with select mortality factors (or any other valuation mortality table adopted by the NAIC after January 1, 2000 and promulgated by regulation by the director). If select mortality factors are elected, they may be:

005.02(1) The ten-year select mortality factors incorporated into the 1980 amendments to the NAIC Standard Valuation Law;

005.02(2) The select mortality factors in the Appendix of this regulation;

005.02(3) For durations in the first segment, X percent of the select mortality factors in the Appendix, subject to the following:

005.02(3)(a) X may vary by policy year, policy form, underwriting classification, issue age, or any other policy factor expected to affect mortality experience;

005.02(3)(b) X is such that, when using the valuation interest rate used for basic reserves, 005.02(3)(b)(i) is greater than or equal to 005.02(3)(b)(ii);

005.02(3)(b)(i) The actuarial present value of future death benefits, calculated using the mortality rates resulting from the application of X;

005.02(3)(b)(ii) The actuarial present value of future death benefits calculated using anticipated mortality experience without recognition of mortality improvement beyond the valuation date;



005.02(3)(c) X is such that the mortality rates resulting from the application of X are at least as great as the anticipated mortality experience, without recognition of mortality improvement beyond the valuation date, in each of the first five (5) years after the valuation date;

005.02(3)(d) The appointed actuary shall increase X at any valuation date where it is necessary to continue to meet all the requirements of Subsection 005.02(3);

005.02(3)(e) The appointed actuary may decrease X at any valuation date as long as X continues to meet all the requirements of Subsection 005.02(3); and

005.02(3)(f) The appointed actuary shall specifically take into account the adverse effect on expected mortality and lapsation of any anticipated or actual increase in gross premiums.

005.02(3)(g) If X is less than 100 percent at any duration for any policy, the following requirements shall be met:

005.02(3)(g)(i) The appointed actuary shall annually prepare an actuarial opinion and memorandum for the company in conformance with the requirements of Section 006 of Chapter 69 of the Nebraska Department of Insurance Regulations; ~~and~~

005.02(3)(g)(ii) The appointed actuary shall disclose, in the Regulatory Asset Adequacy Issues Summary, the impact of the insufficiency of assets to support the payment of benefits and expenses and the establishment of statutory reserves during one or more interim periods; and

005.02(3)(g)(iii) The appointed actuary shall annually opine for all policies subject to this regulation as to whether the mortality rates resulting from the application of X

meet the requirements of Subsection 005.02(3). This opinion shall be supported by an actuarial report, subject to appropriate Actuarial Standards of Practice promulgated by the Actuarial Standards Board of the American Academy of Actuaries. The X factors shall reflect anticipated future mortality, without recognition of mortality improvement beyond the valuation date, taking into account relevant emerging experience.

005.02(4) Any other table of select mortality factors adopted by the NAIC after January 1, 2000 and promulgated by regulation by the director for the purpose of calculating deficiency reserves.

005.03 This subsection applies to both basic reserves and deficiency reserves. Any set of select mortality factors may be used only for the first segment. However, if the first segment is less than ten (10) years, the appropriate ten-year select mortality factors incorporated into the 1980 amendments to the NAIC Standard Valuation Law may be used thereafter through the tenth policy year from the date of issue.

005.04 In determining basic reserves or deficiency reserves, guaranteed gross premiums without policy fees may be used where the calculation involves the guaranteed gross premium but only if the policy fee is a level dollar amount after the first policy year. In determining deficiency reserves, policy fees may be included in guaranteed gross premiums, even if not included in the actual calculation of basic reserves.

005.05 Reserves for policies that have changes to guaranteed gross premiums, guaranteed benefits, guaranteed charges, or guaranteed credits that are unilaterally made by the insurer after issue and that are effective for more than one year after the date of the change shall be the greatest of the following: (1) reserves calculated ignoring the guarantee, (2) reserves assuming the guarantee was made at issue, and (3) reserves assuming that the policy was issued on the date of the guarantee.

005.06 The director may require that the company document the extent of the adequacy of reserves for specified blocks, including but not limited to policies issued prior to January 1, 2000. This documentation may include a demonstration of the extent to which aggregation with other non-

specified blocks of business is relied upon in the formation of the appointed actuary opinion pursuant to and consistent with the requirements of Section 006 of Chapter 69 of the Nebraska Department of Insurance Regulations.

006. Calculation of Minimum Valuation Standard for Policies with Guaranteed Nonlevel Gross Premiums or Guaranteed Nonlevel Benefits (Other than Universal Life Policies)

006.01 Basic Reserves

Basic reserves shall be calculated as the greater of the segmented reserves and the unitary reserves. Both the segmented reserves and the unitary reserves for any policy shall use the same valuation mortality table and selection factors. At the option of the insurer, in calculating segmented reserves and net premiums, either of the adjustments described in Subsections 006.01(1) or 006.01(2) below may be made:

- 006.01(1) Treat the unitary reserve, if greater than zero, applicable at the end of each segment as a pure endowment and subtract the unitary reserve, if greater than zero, applicable at the beginning of each segment from the present value of guaranteed life insurance and endowment benefits for each segment.
- 006.01(2) Treat the guaranteed cash surrender value, if greater than zero, applicable at the end of each segment as a pure endowment; and subtract the guaranteed cash surrender value, if greater than zero, applicable at the beginning of each segment from the present value of guaranteed life insurance and endowment benefits for each segment.

006.02 Deficiency Reserves

- 006.02(1) The deficiency reserve at any duration shall be calculated:
  - 006.02(1)(a) On a unitary basis if the corresponding basic reserve determined by Subsection 006.01 is unitary;
  - 006.02(1)(b) On a segmented basis if the corresponding basic reserve determined by Subsection 006.01 is segmented; or
  - 006.02(1)(c) On the segmented basis if the corresponding basic reserve determined by Subsection 006.01 is equal to both the segmented reserve and the unitary reserve.

- 006.02(2) This subsection shall apply to any policy for which the guaranteed gross premium at any duration is less than the corresponding modified net premium calculated by the method used in determining the basic reserves, but using the minimum valuation standards of mortality (specified in Section 005.02) and rate of interest.
- 006.02(3) Deficiency reserves, if any, shall be calculated for each policy as the excess if greater than zero, for the current and all remaining periods, of the quantity A over the basic reserve, where A is obtained as indicated in Section 005.02.
- 006.02(4) For deficiency reserves determined on a segmented basis, the quantity A is determined using segment lengths equal to those determined for segmented basic reserves.

006.03 Minimum Value

Basic reserves may not be less than the tabular cost of insurance for the balance of the policy year, if mean reserves are used. Basic reserves may not be less than the tabular cost of insurance for the balance of the current modal period or to the paid-to-date, if later, but not beyond the next policy anniversary, if mid-terminal reserves are used. The tabular cost of insurance shall use the same valuation mortality table and interest rates as that used for the calculation of the segmented reserves. However, if select mortality factors are used, they shall be the ten-year select factors incorporated into the 1980 amendments of the NAIC Standard Valuation Law. In no case may total reserves (including basic reserves, deficiency reserves and any reserves held for supplemental benefits that would expire upon contract termination) be less than the amount that the policyowner would receive (including the cash surrender value of the supplemental benefits, if any, referred to above), exclusive of any deduction for policy loans, upon termination of the policy.

006.04 Unusual Pattern of Guaranteed Cash Surrender Values

- 006.04(1) For any policy with an unusual pattern of guaranteed cash surrender values, the reserves actually held prior to the first unusual guaranteed cash surrender value shall not be less than the reserves calculated by treating the first unusual guaranteed cash surrender value as a pure endowment and treating the policy as an  $n$  year policy providing term insurance plus a pure endowment equal to the unusual cash surrender value, where  $n$  is the number of

years from the date of issue to the date the unusual cash surrender value is scheduled.

006.04(2) The reserves actually held subsequent to any unusual guaranteed cash surrender value shall not be less than the reserves calculated by treating the policy as an  $n$  year policy providing term insurance plus a pure endowment equal to the next unusual guaranteed cash surrender value, and treating any unusual guaranteed cash surrender value at the end of the prior segment as a net single premium, where

006.04(2)(a)  $n$  is the number of years from the date of the last unusual guaranteed cash surrender value prior to the valuation date to the earlier of:

006.04(2)(a)(i) The date of the next unusual guaranteed cash surrender value, if any, that is scheduled after the valuation date; or

006.04(2)(a)(ii) The mandatory expiration date of the policy; and

006.04(2)(b) The net premium for a given year during the  $n$  year period is equal to the product of the net to gross ratio and the respective gross premium; and

006.04(2)(c) The net to gross ratio is equal to 006.04(2)(c)(i) divided by 006.04(2)(c)(ii) as follows:

006.04(2)(c)(i) The present value, at the beginning of the  $n$  year period, of death benefits payable during the  $n$  year period plus the present value, at the beginning of the  $n$  year period, of the next unusual guaranteed cash surrender value, if any, minus the amount of the last unusual guaranteed cash surrender value, if any, scheduled at the beginning of the  $n$  year period.

006.04(2)(c)(ii) The present value, at the beginning of the  $n$  year period, of the scheduled gross premiums payable during the  $n$  year period.

006.04(3) For purposes of this subsection, a policy is considered to have an unusual pattern of guaranteed cash surrender values if any future

guaranteed cash surrender value exceeds the prior year's guaranteed cash surrender value by more than the sum of:

- 006.04(3)(a) One hundred ten percent (110%) of the scheduled gross premium for that year;
- 006.04(3)(b) One hundred ten percent (110%) of one year's accrued interest on the sum of the prior year's guaranteed cash surrender value and the scheduled gross premium using the nonforfeiture interest rate used for calculating policy guaranteed cash surrender values; and
- 006.04(3)(c) Five percent (5%) of the first policy year surrender charge, if any.

006.05 Optional Exemption for Yearly Renewable Term Reinsurance. At the option of the company, the following approach for reserves on YRT reinsurance may be used:

- 006.05(1) Calculate the valuation net premium for each future policy year as the tabular cost of insurance for that future year.
- 006.05(2) Basic reserves shall never be less than the tabular cost of insurance for the appropriate period, as defined in Subsection 006.03.
- 006.05(3) Deficiency reserves.
  - 006.05(3)(a) For each policy year, calculate the excess, if greater than zero, of the valuation net premium over the respective maximum guaranteed gross premium.
  - 006.05(3)(b) Deficiency reserves shall never be less than the sum of the present values, at the date of valuation, of the excesses determined in accordance with Subparagraph 006.05(3)(a) above.
- 006.05(4) For purposes of this subsection, the calculations use the maximum valuation interest rate and the 1980 CSO mortality tables with or without ten-year select mortality factors, or any other table adopted after January 1, 2000 by the NAIC and promulgated by regulation by the director for this purpose.
- 006.05(5) A reinsurance agreement shall be considered YRT reinsurance for purposes of this subsection if only the mortality risk is reinsured.

006.05(6) If the assuming company chooses this optional exemption, the ceding company's reinsurance reserve credit shall be limited to the amount of reserve held by the assuming company for the affected policies.

006.06 Optional Exemption for Attained-Age-Based Yearly Renewable Term Life Insurance Policies. At the option of the company, the following approach for reserves for attained-age-based YRT life insurance policies may be used:

006.06(1) Calculate the valuation net premium for each future policy year as the tabular cost of insurance for that future year.

006.06(2) Basic reserves shall never be less than the tabular cost of insurance for the appropriate period, as defined in Subsection 006.03.

006.06(3) Deficiency reserves.

006.06(3)(a) For each policy year, calculate the excess, if greater than zero, of the valuation net premium over the respective maximum guaranteed gross premium.

006.06(3)(b) Deficiency reserves shall never be less than the sum of the present values, at the date of valuation, of the excesses determined in accordance with Subparagraph 006.06(3)(a) above.

006.06(4) For purposes of this subsection, the calculations use the maximum valuation interest rate and the 1980 CSO valuation tables with or without ten-year select mortality factors, or any other table adopted after January 1, 2000 by the NAIC and promulgated by regulation by the director for this purpose.

006.06(5) A policy shall be considered an attained-age-based YRT life insurance policy for purposes of this subsection if:

006.06(5)(a) The premium rates (on both the initial current premium scale and the guaranteed maximum premium scale) are based upon the attained age of the insured such that the rate for any given policy at a given attained age of the insured is independent of the year the policy was issued; and

- 006.06(5)(b) The premium rates (on both the initial current premium scale and the guaranteed maximum premium scale) are the same as the premium rates for policies covering all insureds of the same sex, risk class, plan of insurance and attained age.
- 006.06(6) For policies that become attained-age-based YRT policies after an initial period of coverage, the approach of this subsection may be used after the initial period if:
  - 006.06(6)(a) The initial period is constant for all insureds of the same sex, risk class and plan of insurance; or
  - 006.06(6)(b) The initial period runs to a common attained age for all insureds of the same sex, risk class and plan of insurance; and
  - 006.06(6)(c) After the initial period of coverage, the policy meets the conditions of Paragraph 006.06(5) above.
- 006.06(7) If this election is made, this approach shall be applied in determining reserves for all attained-age-based YRT life insurance policies issued on or after January 1, 2000.
- 006.07 Exemption from Unitary Reserves for Certain  $n$ -Year Renewable Term Life Insurance Policies. Unitary basic reserves and unitary deficiency reserves need not be calculated for a policy if the following conditions are met:
  - 006.07(1) The policy consists of a series of  $n$ -year periods, including the first period and all renewal periods, where  $n$  is the same for each period, except that for the final renewal period,  $n$  may be truncated or extended to reach the expiry age, provided that this final renewal period is less than 10 years and less than twice the size of the earlier  $n$ -year periods, and for each period, the premium rates on both the initial current premium scale and the guaranteed maximum premium scale are level;
  - 006.07(2) The guaranteed gross premiums in all  $n$ -year periods are not less than the corresponding net premiums based upon the 1980 CSO Table with or without the ten-year select mortality factors; and
  - 006.07(3) There are no cash surrender values in any policy year.



006.08 Exemption from Unitary Reserves for Certain Juvenile Policies

Unitary basic reserves and unitary deficiency reserves need not be calculated for a policy if the following conditions are met, based upon the initial current premium scale at issue:

- 006.08(1) At issue, the insured is age twenty-four (24) or younger;
- 006.08(2) Until the insured reaches the end of the juvenile period, which shall occur at or before age twenty-five (25), the gross premiums and death benefits are level, and there are no cash surrender values; and
- 006.08(3) After the end of the juvenile period, gross premiums are level for the remainder of the premium paying period, and death benefits are level for the remainder of the life of the policy.

007. Calculation of Minimum Valuation Standard for Flexible Premium and Fixed Premium Universal Life Insurance Policies That Contain Provisions Resulting in the Ability of a Policyowner to Keep a Policy in Force Over a Secondary Guarantee Period.

007.01 General

- 007.01(1) Policies with a secondary guarantee include:
  - 007.01(a) A policy with a guarantee that the policy will remain in force at the original schedule of benefits, subject only to the payment of specified premiums;
  - 007.01(b) A policy in which the minimum premium at any duration is less than the corresponding one year valuation premium, calculated using the maximum valuation interest rate and the 1980 CSO valuation tables with or without ten-year select mortality factors, or any other table adopted after January 1, 2000 by the NAIC and promulgated by regulation by the director for this purpose; or
  - 007.01(c) A policy with any combination of Subparagraph 007.01(a) and 007.01(b).
- 007.01(2) A secondary guarantee period is the period for which the policy is guaranteed to remain in force subject only to a secondary guarantee. When a policy contains more than one secondary guarantee, the minimum reserve shall be the greatest of the

respective minimum reserves at that valuation date of each unexpired secondary guarantee, ignoring all other secondary guarantees. Secondary guarantees that are unilaterally changed by the insurer after issue shall be considered to have been made at issue. Reserves described in Subsections 007.02 and 007.03 below shall be recalculated from issue to reflect these changes.

- 007.01(3) Specified premiums mean the premiums specified in the policy, the payment of which guarantees that the policy will remain in force at the original schedule of benefits, but which otherwise would be insufficient to keep the policy in force in the absence of the guarantee if maximum mortality and expense charges and minimum interest credits were made and any applicable surrender charges were assessed.
- 007.01(4) For purposes of this section, the minimum premium for any policy year is the premium that, when paid into a policy with a zero account value at the beginning of the policy year, produces a zero account value at the end of the policy year. The minimum premium calculation shall use the policy cost factors (including mortality charges, loads and expense charges) and the interest crediting rate, which are all guaranteed at issue.
- 007.01(5) The one-year valuation premium means the net one-year premium based upon the original schedule of benefits for a given policy year. The one-year valuation premiums for all policy years are calculated at issue. The select mortality factors defined in Section 005.02(2), 005.02(3), and 005.02(4) may not be used to calculate the one-year valuation premiums.
- 007.01(6) The one-year valuation premium should reflect the frequency of fund processing, as well as the distribution of deaths assumption employed in the calculation of the monthly mortality charges to the fund.

007.02 Basic Reserves for the Secondary Guarantees

Basic reserves for the secondary guarantees shall be the segmented reserves for the secondary guarantee period. In calculating the segments and the segmented reserves, the gross premiums shall be set equal to the specified premiums, if any, or otherwise to the minimum premiums, that keep the policy in force and the segments will be determined according to the contract segmentation method as defined in Section 004.02.

007.03 Deficiency Reserves for the Secondary Guarantees

Deficiency reserves, if any, for the secondary guarantees shall be calculated for the secondary guarantee period in the same manner as described in Section 006.02 with gross premiums set equal to the specified premiums, if any, or otherwise to the minimum premiums that keep the policy in force.

007.04 Minimum Reserves

The minimum reserves during the secondary guarantee period are the greater of:

- 007.04(1) The basic reserves for the secondary guarantee plus the deficiency reserve, if any, for the secondary guarantees; or
- 007.04(2) The minimum reserves required by other rules or regulations governing universal life plans.

**Appendix A**  
**SELECT MORTALITY FACTORS**

The six tables of select mortality factors contained herein include: (1) male aggregate, (2) male nonsmoker, (3) male smoker, (4) female aggregate, (5) female nonsmoker, and (6) female smoker.

These tables apply to both age last birthday and age nearest birthday mortality tables.

For sex-blended mortality tables, compute select mortality factors in the same proportion as the underlying mortality. For example, for the 1980 CSO-B Table, the calculated select mortality factors are eighty percent (80%) of the appropriate male table in this Appendix, plus twenty percent (20%) of the appropriate female table in this Appendix.

## Appendix

### SELECT MORTALITY FACTORS

Issue Age	Male, Aggregate Duration																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
0-15	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
16	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
17	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
18	96	98	98	99	99	100	100	90	92	92	92	92	93	93	96	97	98	98	99	100
19	83	84	84	87	87	87	79	79	79	81	81	82	82	82	85	88	91	94	97	100
20	69	71	71	74	74	69	69	67	69	70	71	71	71	71	74	79	84	90	95	100
21	66	68	69	71	66	66	67	66	67	70	70	70	71	71	77	83	88	94	100	
22	65	66	66	63	63	64	64	64	65	68	68	68	69	71	77	83	88	94	100	
23	62	63	59	60	62	62	63	63	64	65	65	67	67	69	70	76	82	88	94	100
24	60	56	56	59	59	60	61	61	61	64	64	64	66	67	70	76	82	88	94	100
25	52	53	55	56	58	58	60	60	60	63	62	63	64	67	69	75	81	88	94	100
26	51	52	55	56	58	58	57	61	61	62	63	64	66	69	66	73	80	86	93	100
27	51	52	55	57	58	60	61	61	60	63	63	64	67	66	67	74	80	87	93	100
28	49	51	56	58	60	60	61	62	62	63	64	66	65	66	68	74	81	87	94	100
29	49	51	56	58	60	61	62	62	62	64	64	62	66	67	70	76	82	88	94	100
30	49	50	56	58	60	60	62	63	63	64	62	63	67	68	71	77	83	88	94	100
31	47	50	56	58	60	62	63	64	64	62	63	66	68	70	72	78	83	89	94	100
32	46	49	56	59	60	62	63	66	62	63	66	67	70	72	73	78	84	89	95	100
33	43	49	56	59	62	63	64	62	65	66	67	70	72	73	75	80	85	90	95	100
34	42	47	56	60	62	63	61	63	66	67	70	71	73	75	76	81	86	90	95	100
35	40	47	56	60	63	61	62	65	67	68	71	73	74	76	76	81	86	90	95	100
36	38	42	56	60	59	61	63	65	67	68	70	72	74	76	77	82	86	91	95	100
37	38	45	56	57	61	62	63	65	67	68	70	72	74	76	76	81	86	90	95	100
38	37	44	53	58	61	62	65	66	67	69	69	73	75	76	77	82	86	91	95	100
39	37	41	53	58	62	63	65	65	66	68	69	72	74	76	76	81	86	90	95	100
40	34	40	53	58	62	63	65	65	66	68	68	71	75	76	77	82	86	91	95	100





**Male, Non-Smoker**

<b>Issue</b>	<b>Duration</b>																			
<b>Age</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20+</b>
<b>0-15</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>16</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>17</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>18</b>	93	95	96	98	99	100	100	90	92	92	92	92	95	95	96	97	98	98	99	100
<b>19</b>	80	81	83	86	87	87	79	79	79	81	81	82	83	83	86	89	92	94	97	100
<b>20</b>	65	68	69	72	74	69	69	67	69	70	71	71	72	72	75	80	85	90	95	100
<b>21</b>	63	66	68	71	66	66	67	66	67	70	70	70	71	71	73	78	84	89	95	100
<b>22</b>	62	65	66	62	63	64	64	64	67	68	68	68	70	70	73	78	84	89	95	100
<b>23</b>	60	62	58	60	62	62	63	63	64	67	68	68	67	69	71	77	83	88	94	100
<b>24</b>	59	55	56	58	59	60	61	61	63	65	67	66	66	69	71	77	83	88	94	100
<b>25</b>	52	53	55	56	58	58	60	60	61	64	64	64	64	67	70	76	82	88	94	100
<b>26</b>	51	53	55	56	58	60	61	61	61	63	64	64	66	69	67	74	80	87	93	100
<b>27</b>	51	52	55	58	60	60	61	61	62	63	64	66	67	66	67	74	80	87	93	100
<b>28</b>	49	52	57	58	60	61	63	62	62	64	66	66	63	66	68	74	81	87	94	100
<b>29</b>	49	51	57	60	61	61	62	62	63	64	66	63	65	67	68	74	81	87	94	100
<b>30</b>	49	51	57	60	61	62	63	63	63	64	62	63	66	68	70	76	82	88	94	100
<b>31</b>	47	50	57	60	60	62	63	64	64	62	63	65	67	70	71	77	83	88	94	100
<b>32</b>	46	50	57	60	62	63	64	64	62	63	65	66	68	71	72	78	83	89	94	100
<b>33</b>	45	49	56	60	62	63	64	62	63	65	66	68	71	73	74	79	84	90	95	100
<b>34</b>	43	48	56	62	63	64	62	62	65	66	67	70	72	74	74	79	84	90	95	100
<b>35</b>	41	47	56	62	63	61	62	63	66	67	68	70	72	74	75	80	85	90	95	100
<b>36</b>	40	47	56	62	59	61	62	63	66	67	68	70	72	74	75	80	85	90	95	100
<b>37</b>	38	45	56	58	59	61	62	63	66	67	67	69	71	73	74	79	84	90	95	100
<b>38</b>	38	45	53	58	61	62	63	65	65	67	68	70	72	74	73	78	84	89	95	100
<b>39</b>	37	41	53	58	61	62	63	64	65	67	68	70	71	73	73	78	84	89	95	100
<b>40</b>	34	41	53	58	61	62	63	64	64	66	67	69	71	73	72	78	83	89	94	100







**Male, Smoker  
Duration**

<b>Issue</b>																				
<b>Age</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20+</b>
<b>0-15</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>16</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>17</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>18</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>19</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>20</b>	98	100	100	100	100	100	100	99	99	99	100	99	99	99	100	100	100	100	100	100
<b>21</b>	95	98	99	100	95	96	96	95	96	97	97	96	96	96	96	97	98	98	99	100
<b>22</b>	92	95	96	90	90	93	93	92	93	95	95	93	93	92	93	94	96	97	99	100
<b>23</b>	90	92	85	88	88	89	89	89	90	90	90	90	89	90	92	94	95	97	98	100
<b>24</b>	87	81	82	85	84	86	88	86	86	88	88	86	86	88	89	91	93	96	98	100
<b>25</b>	77	78	79	82	81	83	83	82	83	85	84	84	84	85	86	89	92	94	97	100
<b>26</b>	75	77	79	82	82	83	83	82	83	84	84	84	84	85	81	85	89	92	96	100
<b>27</b>	73	75	78	82	82	83	83	82	82	82	82	84	84	80	81	85	89	92	96	100
<b>28</b>	71	73	79	82	81	82	83	81	81	82	82	82	80	80	81	85	89	92	96	100
<b>29</b>	69	72	78	81	81	82	82	81	81	81	81	77	80	80	81	85	89	92	96	100
<b>30</b>	68	71	78	81	81	81	82	81	81	81	76	77	80	80	81	85	89	92	96	100
<b>31</b>	65	70	77	81	79	81	82	81	81	76	77	79	81	81	83	86	90	93	97	100
<b>32</b>	63	67	77	78	79	81	81	81	76	77	77	80	83	83	85	88	91	94	97	100
<b>33</b>	60	65	74	78	79	79	81	76	77	77	79	80	83	85	85	88	91	94	97	100
<b>34</b>	57	62	74	77	79	79	75	76	77	79	79	81	83	85	87	90	92	95	97	100
<b>35</b>	53	60	73	77	79	75	75	76	77	79	80	82	84	86	88	90	93	95	98	100
<b>36</b>	52	59	71	75	74	75	75	76	77	79	79	81	83	85	87	90	92	95	97	100
<b>37</b>	49	58	70	71	74	74	75	76	77	78	79	81	84	86	86	89	92	94	97	100
<b>38</b>	48	55	66	70	72	74	74	75	76	78	79	81	83	85	87	90	92	95	97	100
<b>39</b>	45	50	65	70	72	72	74	74	75	77	79	81	84	86	86	89	92	94	97	100
<b>40</b>	41	49	63	68	71	72	73	74	74	76	78	80	83	85	86	89	92	94	97	100





**Female, Aggregate  
Duration**

<b>Issue Age</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20+</b>
<b>0-15</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>16</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>17</b>	99	100	100	100	100	100	100	100	93	95	96	97	97	100	100	100	100	100	100	100
<b>18</b>	83	83	84	84	84	84	86	78	78	79	82	84	85	88	88	90	93	95	98	100
<b>19</b>	65	66	68	68	68	68	63	63	64	66	69	71	72	74	75	80	85	90	95	100
<b>20</b>	48	50	51	51	51	47	48	48	49	51	56	57	58	61	63	70	78	85	93	100
<b>21</b>	47	48	50	51	47	47	48	49	51	53	57	60	61	64	64	71	78	86	93	100
<b>22</b>	44	47	48	45	47	47	48	49	53	54	60	61	63	64	66	73	80	86	93	100
<b>23</b>	42	45	44	45	47	47	49	51	53	54	61	64	64	67	69	75	81	88	94	100
<b>24</b>	39	40	42	44	47	47	50	51	54	56	64	64	66	69	70	76	82	88	94	100
<b>25</b>	34	38	41	44	47	47	50	53	56	57	64	67	69	71	73	78	84	89	95	100
<b>26</b>	34	38	41	45	49	49	51	56	58	59	66	69	70	73	70	76	82	88	94	100
<b>27</b>	34	38	41	47	50	51	54	57	59	60	69	70	73	70	71	77	83	88	94	100
<b>28</b>	34	37	43	47	53	53	56	59	62	63	70	73	70	72	74	79	84	90	95	100
<b>29</b>	34	38	43	49	54	56	58	60	63	64	73	70	72	74	75	80	85	90	95	100
<b>30</b>	35	38	43	50	56	56	59	63	66	67	70	71	74	75	76	81	86	90	95	100
<b>31</b>	35	38	43	51	56	58	60	64	67	65	71	72	74	75	76	81	86	90	95	100
<b>32</b>	35	39	45	51	56	59	63	66	65	66	72	72	75	76	76	81	86	90	95	100
<b>33</b>	36	39	44	52	58	62	64	65	66	67	72	74	75	76	76	81	86	90	95	100
<b>34</b>	36	40	45	52	58	63	63	66	67	68	74	74	76	76	76	81	86	90	95	100
<b>35</b>	36	40	45	53	59	61	65	67	68	70	75	74	75	76	75	80	85	90	95	100
<b>36</b>	36	40	45	53	55	62	65	67	68	70	74	74	74	75	75	80	85	90	95	100
<b>37</b>	36	41	47	52	57	62	65	67	68	69	72	72	73	75	74	79	84	90	95	100
<b>38</b>	34	41	44	52	57	63	66	68	69	70	72	71	72	74	75	80	85	90	95	100
<b>39</b>	34	40	45	53	58	63	66	68	69	69	70	70	70	73	74	79	84	90	95	100
<b>40</b>	32	40	45	53	58	65	65	67	68	69	70	69	70	73	73	78	84	89	95	100







**Female, Non-Smoker  
Duration**

<b>Issue</b>																				
<b>Age</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20+</b>
<b>0-15</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>16</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>17</b>	96	98	98	98	98	99	99	99	92	92	93	95	95	97	99	99	99	100	100	100
<b>18</b>	78	80	80	80	80	81	81	74	75	75	78	79	82	83	85	88	91	94	97	100
<b>19</b>	60	62	63	63	63	65	59	59	60	60	64	67	67	70	72	78	83	89	94	100
<b>20</b>	42	44	45	45	45	42	42	42	45	45	50	51	53	56	58	66	75	83	92	100
<b>21</b>	41	42	44	45	41	42	42	44	47	47	51	53	54	57	59	67	75	84	92	100
<b>22</b>	39	41	44	41	41	42	44	45	49	49	54	56	57	58	60	68	76	84	92	100
<b>23</b>	38	41	38	40	41	42	44	46	49	50	56	57	58	60	62	70	77	85	92	100
<b>24</b>	36	36	38	40	41	42	46	47	50	51	58	59	60	62	63	70	78	85	93	100
<b>25</b>	32	34	37	40	41	43	46	49	51	53	59	60	62	63	64	71	78	86	93	100
<b>26</b>	32	34	37	41	43	45	47	50	53	53	60	62	63	64	62	70	77	85	92	100
<b>27</b>	32	34	38	43	46	47	49	51	53	55	62	63	64	62	62	70	77	85	92	100
<b>28</b>	30	34	39	43	47	49	51	53	56	58	63	63	61	62	63	70	78	85	93	100
<b>29</b>	30	35	40	45	50	51	52	55	58	59	64	61	62	63	63	70	78	85	93	100
<b>30</b>	31	35	40	46	51	52	53	56	59	60	62	62	63	65	65	72	79	86	93	100
<b>31</b>	31	35	40	46	51	53	55	58	60	58	62	62	63	65	65	72	79	86	93	100
<b>32</b>	32	35	40	45	51	53	56	59	57	58	62	63	63	65	64	71	78	86	93	100
<b>33</b>	32	36	41	47	52	55	58	55	58	59	63	63	65	65	65	72	79	86	93	100
<b>34</b>	33	36	41	47	52	55	55	57	58	59	63	65	64	65	64	71	78	86	93	100
<b>35</b>	33	36	41	47	52	53	57	58	59	61	63	64	64	64	64	71	78	86	93	100
<b>36</b>	33	36	41	47	49	53	57	58	59	61	63	64	63	64	63	70	78	85	93	100
<b>37</b>	32	36	41	44	49	53	57	58	59	60	62	62	61	62	63	70	78	85	93	100
<b>38</b>	32	37	39	45	50	54	57	58	60	60	61	61	61	62	61	69	77	84	92	100
<b>39</b>	30	35	39	45	50	54	57	58	60	59	60	60	59	60	61	69	77	84	92	100
<b>40</b>	28	35	39	45	50	54	56	57	59	59	60	59	59	59	60	68	76	84	92	100





**Female, Smoker  
Duration**

<b>Issue</b>																					
<b>Age</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20+</b>	
<b>0-15</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
<b>16</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
<b>17</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
<b>18</b>	99	100	100	100	100	100	100	95	96	97	100	100	100	100	100	100	100	100	100	100	
<b>19</b>	87	89	92	92	92	92	84	84	86	86	92	93	95	96	99	99	99	100	100	100	
<b>20</b>	74	77	80	80	80	73	73	73	75	77	83	83	86	88	90	92	94	96	98	100	
<b>21</b>	71	74	78	78	71	71	73	74	77	79	85	86	88	89	90	92	94	96	98	100	
<b>22</b>	68	71	75	70	71	71	73	74	78	79	88	90	89	89	92	94	95	97	98	100	
<b>23</b>	65	69	67	70	70	70	73	77	79	81	89	90	90	92	92	94	95	97	98	100	
<b>24</b>	62	60	64	69	70	70	74	77	79	81	92	90	92	93	93	94	96	97	99	100	
<b>25</b>	53	58	63	67	69	70	74	78	81	82	92	93	93	95	95	96	97	98	99	100	
<b>26</b>	53	58	63	69	71	72	75	79	82	82	93	93	95	96	90	92	94	96	98	100	
<b>27</b>	52	56	63	70	74	74	78	81	82	84	93	95	95	90	90	92	94	96	98	100	
<b>28</b>	52	56	64	71	75	77	79	82	85	86	95	95	90	92	92	94	95	97	98	100	
<b>29</b>	51	56	64	71	78	78	81	84	86	88	95	90	90	92	92	94	95	97	98	100	
<b>30</b>	51	56	64	72	79	79	82	85	88	89	90	90	92	93	93	94	96	97	99	100	
<b>31</b>	51	56	64	72	78	81	84	84	88	84	90	90	92	93	93	94	96	97	99	100	
<b>32</b>	51	56	64	71	78	81	85	86	84	85	90	90	92	94	93	94	96	97	99	100	
<b>33</b>	51	57	62	71	78	82	85	83	84	85	90	92	93	93	93	94	96	97	99	100	
<b>34</b>	51	56	62	71	78	82	81	83	85	86	90	92	92	94	93	94	96	97	99	100	
<b>35</b>	51	56	62	71	78	79	83	84	85	86	90	91	91	93	93	94	96	97	99	100	
<b>36</b>	49	56	62	71	74	79	83	84	85	86	90	90	91	93	92	94	95	97	98	100	
<b>37</b>	48	55	62	67	74	79	83	84	85	86	89	90	89	92	91	93	95	96	98	100	
<b>38</b>	47	55	57	66	72	77	81	84	86	86	87	88	88	90	91	93	95	96	98	100	
<b>39</b>	45	50	57	66	72	77	81	83	85	86	86	87	86	89	90	92	94	96	98	100	
<b>40</b>	41	50	57	66	72	77	81	83	84	85	86	86	86	86	89	89	91	93	96	98	100



