

# Steel — Conversion of elongation values —

## Part 2: Austenitic steels

The European Standard EN ISO 2566-2:1999 has the status of a  
British Standard

ICS 77.040.10

# National foreword

This British Standard is the official English language version of EN ISO 2566-2:1999. It is identical with ISO 2566-2:1984. It supersedes BS 3894-2:1985 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ISE/NFE/4, Mechanical testing of metals, to Subcommittee ISE/NFE/4, Uniaxial testing of metals, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
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### Summary of pages

This document comprises a front cover, an inside front cover, the EN ISO title page, the EN ISO foreword page, the ISO title page, the ISO foreword page, pages 1 to 28, the annex ZA page and a back cover.

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English version

## Steel - Conversion of elongation values - Part 2: Austenitic steels (ISO 2566-2:1984)

Acier - Conversion des valeurs d'allongement - Partie 2:  
Aciers austénitiques (ISO 2566-2:1984)

Stahl - Umrechnung von Bruchdehnungswerten - Teil 2:  
Austenitische Stähle (ISO 2566-2:1984)

This European Standard was approved by CEN on 25 April 1999.

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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## **Foreword**

The text of the International Standard from Technical Committee ISO/TC 17 “Steel” of the International Organization for Standardization (ISO) has been taken over as an European Standard by Technical Committee ECISS/TC 1 “Steel testing”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 1999, and conflicting national standards shall be withdrawn at the latest by December 1999.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

## **Endorsement notice**

The text of the International Standard ISO 2566-2:1984 has been approved by CEN as a European Standard without any modification.

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# International Standard



# 2566/2

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## **Steel — Conversion of elongation values — Part 2: Austenitic steels**

*Acier — Conversion des valeurs d'allongement — Partie 2: Aciers austénitiques*

**First edition — 1984-08-01**

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 2566/2 was developed by Technical Committee ISO/TC 17, *Steel*, and was circulated to the member bodies in April 1983.

It has been approved by the member bodies of the following countries:

|                |                        |                       |
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Sweden

# Steel — Conversion of elongation values — Part 2: Austenitic steels

## 0 Introduction

Several different gauge lengths are commonly in use for the determination of percentage elongation of steels in tensile testing. Fixed gauge lengths of 50, 80, 100 and 200 mm are used; proportional gauge lengths of  $k\sqrt{S_0}$  are also used for flat and round test pieces, where  $k$  may be one of a number of values, i.e. 4; 5,65; 8,16; and 11,3.

The value  $5,65\sqrt{S_0}$  is adopted as the internationally preferred proportional gauge length.

Arising from this choice and the existence of specifications stipulating minimum percentage elongations on different gauge lengths, a growing need has been evident for an International Standard which could be used to convert test results into values based on the different gauge lengths. This part of ISO 2566 accordingly includes tables of conversion factors, tables of actual conversions for some of the most commonly used gauge lengths and elongation values, and figures which may also be used for such conversions. When using these conversions, however, note should be taken of the limitations on their applicability as stated in clause 1.

While, as indicated, the conversions are considered to be reliable within the stated limitations, because of the various factors influencing the determination of percentage elongations, they shall be used for acceptance purposes only by agreement between the customer and supplier.

In cases of dispute, the elongation shall be determined on the gauge length stated in the relevant specification.

## 1 Scope and field of application

This part of ISO 2566 specifies a method of converting room temperature percentage elongations after fracture obtained on various proportional and non-proportional gauge lengths to other gauge lengths.

The formula (see clause 4) on which conversions are based is considered to be reliable when applied to austenitic stainless steels within the tensile strength range 450 to 750 N/mm<sup>2</sup> and in the solution treated condition.

These conversions are not applicable to

- a) cold reduced steels;
- b) quenched and tempered steels;
- c) non-austenitic steels.

Neither should they be used where the gauge length exceeds  $25\sqrt{S_0}$  or where the width to thickness ratio of the test piece exceeds 20.

Care should be exercised in the case of strip under 3 mm thickness, as the index in the formula given in clause 4 increases with decreasing thickness; the value to be used shall be the subject of agreement between the customer and the supplier.

## 2 Symbols

In this part of ISO 2566, the symbols shown in table 1 are used.

Table 1 — List of symbols

| Symbol | Description                                                                     |
|--------|---------------------------------------------------------------------------------|
| $A$    | Percentage elongation on gauge length, $L_0$ , after fracture, obtained on test |
| $A_r$  | Percentage elongation on a different gauge length, required by conversion       |
| $d$    | Diameter of test piece                                                          |
| $L_0$  | Original gauge length                                                           |
| $S_0$  | Original cross-sectional area of test piece                                     |

## 3 Definitions

For the purpose of this part of ISO 2566, the following definitions apply:

**3.1 gauge length:** Any length of the parallel portion of the test piece used for measurement of strain.

The term is hereafter used in this part of ISO 2566 to denote the original gauge length,  $L_0$ , marked on the test piece for the determination of percentage elongation after fracture,  $A$ .

**3.2 proportional gauge length:** A gauge length having a specified relation to the square root of the cross-sectional area, for example  $5,65\sqrt{S_0}$ .

**3.3 non-proportional gauge length:** A gauge length not specifically related to the cross-sectional area of the test piece, usually expressed in a given dimension, for example 50 mm.

## 4 Basic formula

The data contained in this part of ISO 2566 are based on a formula obtained from a statistical assessment of international test results, which, in a simplified form, can be expressed as

$$A_r = 1,25A \left( \frac{\sqrt{S_0}}{L_0} \right)^{0,127}$$

where

$A_r$  is the required elongation on gauge length  $L_0$ ;

$A$  is the elongation on a gauge length of  $5,65\sqrt{S_0}$  which is the internationally accepted gauge length;

$S_0$  and  $L_0$  are defined in table 1.

Expressed in terms of  $4\sqrt{S_0}$  the formula becomes

$$A_r = 1,19A \left( \frac{\sqrt{S_0}}{L_0} \right)^{0,127}$$

where  $A$  is the elongation on a gauge length of  $4\sqrt{S_0}$ .

Tables 2 to 22 and figures 1 to 5 have been prepared on the basis of the above formulae.

## 5 Conversion from one proportional gauge length to another proportional gauge length

Simple multiplying factors based on the formula are used for such conversions, and the relationships between a number of the more widely used proportional gauge lengths are given in table 2. Detailed conversions of elongations obtained on  $4\sqrt{S_0}$  to  $5,65\sqrt{S_0}$  are given in table 6.

## 6 Conversion from one non-proportional gauge length to another non-proportional gauge length for test pieces of equal cross-sectional area

The conversion of elongation values of different fixed gauge lengths on test pieces of equal cross-sectional area are also made by simple factors. Conversion factors for gauge lengths of 50, 80, 100 and 200 mm are given in table 3.

## 7 Conversion from a proportional gauge length to a non-proportional gauge length

The conversion factors are variable according to the cross-sectional area of the non-proportional test piece. Table 4 gives the multiplying factors for conversion from elongation on  $5,65\sqrt{S_0}$  to the equivalent on fixed gauge lengths of 50, 80, 100 and 200 mm for a range of cross-sectional areas. For conversions in the reverse direction, i.e. elongation on a fixed gauge length to the equivalent of  $5,65\sqrt{S_0}$ , the reciprocal of the factors is used.

*Example:*

Elongation of 20 % on  $5,65\sqrt{S_0}$  is equivalent to  $20 \times 1,046 = 20,9$  % on a 25 mm wide test piece of 6 mm thickness with a 50 mm gauge length (see table 4).

From the example shown it will be seen that conversions involving other proportional gauge lengths can be obtained by prior or subsequent use of the factors shown in table 2.

Tables 7 to 10 can be used to obtain some of these conversions, whilst tables 15 to 18 can be used to obtain elongations on fixed gauge lengths corresponding to  $5,65\sqrt{S_0}$ .

Similarly, tables 11 to 14 can be used for conversion to  $4\sqrt{S_0}$  and tables 19 to 22 for elongations on fixed gauge lengths corresponding to  $4\sqrt{S_0}$ .

## 8 Conversion from a non-proportional gauge length to another non-proportional gauge length for test pieces of different cross-sectional areas

It is preferable for this calculation to be made in two stages with an initial conversion to  $5,65\sqrt{S_0}$ .

*Example:*

Elongation of 24 % on 200 mm for a 40 mm  $\times$  15 mm test piece in terms of equivalent on a 30 mm  $\times$  10 mm test piece with gauge lengths equal to 200, 100, and 50 mm.

$$24 \times 1/0,957 = 25,1 \text{ % on } 5,65\sqrt{S_0} \text{ (see table 4)}$$

$$25,1 \times 0,916 = 23,0 \text{ % on } 30 \text{ mm} \times 10 \text{ mm with } 200 \text{ mm gauge length}$$

$$25,1 \times 1,000 = 25,1 \text{ % on } 30 \text{ mm} \times 10 \text{ mm with } 100 \text{ mm gauge length}$$

$$25,1 \times 1,093 = 27,4 \text{ % on } 30 \text{ mm} \times 10 \text{ mm with } 50 \text{ mm gauge length}$$

Elongation on other proportional gauge lengths can be obtained by using the factors given in table 2.

## 9 Use of figures 1 to 5

**9.1** Figures 1 to 5 may be used as an alternative quick method to obtain elongation conversions.

**9.2** Figures 1 to 4 may be used for conversions between  $5,65\sqrt{S_0}$  and 50 mm,  $5,65\sqrt{S_0}$  and 200 mm,  $4\sqrt{S_0}$  and 50 mm, and  $4\sqrt{S_0}$  and 200 mm gauge lengths, respectively.

*Example:*

To find the equivalent elongation on  $5,65\sqrt{S_0}$  and  $4\sqrt{S_0}$  to an elongation of 25 % on a 200 mm gauge length of a 25 mm × 12,5 mm test piece of cross-sectional area 312,5 mm<sup>2</sup>.

The intersection of this ordinate with the abscissa representing an elongation of 25 % on a 200 mm gauge length lies on the sloping line representing an elongation of 27,2 % on  $5,65\sqrt{S_0}$  on figure 2 and at a position relative to the sloping lines on figure 4 approximating to an elongation of 28,8 % on  $4\sqrt{S_0}$ .

**9.3** Figure 5 may be used for the calculation of all elongation conversions.

The formula given in clause 4 may be rewritten as

$$A_2 = A_1 \left( \frac{K_1}{K_2} \right)^{0,127}$$

$$= \lambda_{1,2} \times A_1$$

where  $K_1$  and  $K_2$  designate the proportionality ratios of any two test pieces.

$$K_1 = \frac{L_1}{\sqrt{S_1}}$$

$$K_2 = \frac{L_2}{\sqrt{S_2}}$$

Figure 5 shows the values of  $\lambda_{1,2} = (K_1/K_2)^{0,127}$ .

To use figure 5 it is necessary to perform the following operations:

- calculate the value of proportionality  $K_1 = (L_1/\sqrt{S_1})$  and  $(K_2 = L_2/\sqrt{S_2})$  for two test pieces;
- read graphically the coefficient  $\lambda_{1,2} = (K_1/K_2)^{0,127}$ ;
- the elongation obtained is  $A_2 = \lambda_{1,2} \times A_1$ .

*Example:*

Elongation of 24 % on 200 mm for a 40 mm × 15 mm test piece in terms of equivalent on a 30 mm × 10 mm test piece with a gauge length equal to 100 mm.

$$a) \quad K_1 = \frac{L_1}{\sqrt{S_1}} = \frac{200}{\sqrt{600}} = 8,16$$

$$K_2 = \frac{L_2}{\sqrt{S_2}} = \frac{100}{\sqrt{300}} = 5,77$$

- From figure 5,  $\lambda_{1,2} = 1,04$ .
- Elongation required is  $24 \times 1,04 = 25,0$  %.

**Table 2 — Conversion factors: Proportional gauge lengths**

| Conversion from: | Factor for conversion to: |                  |                  |                  |       |       |       |
|------------------|---------------------------|------------------|------------------|------------------|-------|-------|-------|
|                  | $4\sqrt{S_0}$             | $5,65\sqrt{S_0}$ | $8,16\sqrt{S_0}$ | $11,3\sqrt{S_0}$ | $4d$  | $5d$  | $8d$  |
| $4\sqrt{S_0}$    | 1,000                     | 0,957            | 0,913            | 0,876            | 0,985 | 0,957 | 0,902 |
| $5,65\sqrt{S_0}$ | 1,045                     | 1,000            | 0,954            | 0,916            | 1,029 | 1,000 | 0,942 |
| $8,16\sqrt{S_0}$ | 1,095                     | 1,048            | 1,000            | 0,959            | 1,078 | 1,048 | 0,987 |
| $11,3\sqrt{S_0}$ | 1,141                     | 1,092            | 1,042            | 1,000            | 1,124 | 1,092 | 1,029 |
| $4d$             | 1,015                     | 0,972            | 0,928            | 0,890            | 1,000 | 0,972 | 0,916 |
| $5d$             | 1,045                     | 1,000            | 0,954            | 0,916            | 1,029 | 1,000 | 0,942 |
| $8d$             | 1,109                     | 1,061            | 1,013            | 0,972            | 1,092 | 1,062 | 1,000 |

**Table 3 — Conversion factors:<sup>1)</sup> Non-proportional gauge lengths**

| Conversion from: | Factor for conversion to: |       |        |        |
|------------------|---------------------------|-------|--------|--------|
|                  | 50 mm                     | 80 mm | 100 mm | 200 mm |
| 50 mm            | 1,000                     | 0,942 | 0,916  | 0,839  |
| 80 mm            | 1,062                     | 1,000 | 0,972  | 0,890  |
| 100 mm           | 1,092                     | 1,029 | 1,000  | 0,916  |
| 200 mm           | 1,193                     | 1,123 | 1,092  | 1,000  |

1) Provided cross-sectional areas are the same.

**Table 4 — Conversion factors from  $5,65\sqrt{S_0}$  to non-proportional gauge lengths**

Factors shown under “non-proportional gauge lengths” give the value of

$$1,25 \left( \frac{\sqrt{S_0}}{L_0} \right)^{0,127}$$

To convert from values on a gauge length of  $5,65\sqrt{S_0}$  to a non-proportional gauge length, multiply by the appropriate factor.

To convert from values on a non-proportional gauge length to  $5,65\sqrt{S_0}$ , divide by the appropriate factor.

See also figures 1 and 2.

| Cross-sectional<br>area of test piece | Factor for non-proportional gauge length of: |        |       |       |
|---------------------------------------|----------------------------------------------|--------|-------|-------|
|                                       | 200 mm                                       | 100 mm | 80 mm | 50 mm |
| 5                                     | 0,706                                        | 0,771  | 0,794 | 0,842 |
| 10                                    | 0,738                                        | 0,806  | 0,829 | 0,880 |
| 15                                    | 0,757                                        | 0,827  | 0,851 | 0,903 |
| 20                                    | 0,771                                        | 0,842  | 0,867 | 0,920 |
| 25                                    | 0,782                                        | 0,854  | 0,879 | 0,933 |
| 30                                    | 0,792                                        | 0,864  | 0,889 | 0,944 |
| 35                                    | 0,779                                        | 0,873  | 0,898 | 0,953 |
| 40                                    | 0,806                                        | 0,880  | 0,906 | 0,961 |
| 45                                    | 0,812                                        | 0,887  | 0,912 | 0,969 |
| 50                                    | 0,818                                        | 0,893  | 0,919 | 0,975 |
| 55                                    | 0,823                                        | 0,898  | 0,924 | 0,981 |
| 60                                    | 0,827                                        | 0,903  | 0,929 | 0,986 |
| 70                                    | 0,835                                        | 0,912  | 0,938 | 0,996 |
| 80                                    | 0,842                                        | 0,920  | 0,946 | 1,005 |
| 90                                    | 0,849                                        | 0,927  | 0,953 | 1,012 |
| 100                                   | 0,854                                        | 0,933  | 0,960 | 1,019 |
| 110                                   | 0,860                                        | 0,939  | 0,966 | 1,025 |
| 120                                   | 0,864                                        | 0,944  | 0,971 | 1,031 |
| 130                                   | 0,869                                        | 0,949  | 0,976 | 1,036 |
| 140                                   | 0,873                                        | 0,953  | 0,981 | 1,041 |
| 150                                   | 0,877                                        | 0,957  | 0,985 | 1,045 |
| 160                                   | 0,880                                        | 0,961  | 0,989 | 1,050 |
| 170                                   | 0,884                                        | 0,965  | 0,993 | 1,054 |
| 180                                   | 0,887                                        | 0,969  | 0,996 | 1,058 |
| 190                                   | 0,890                                        | 0,972  | 1,000 | 1,061 |
| 200                                   | 0,893                                        | 0,975  | 1,003 | 1,065 |
| 210                                   | 0,896                                        | 0,978  | 1,006 | 1,068 |
| 220                                   | 0,898                                        | 0,981  | 1,009 | 1,071 |
| 230                                   | 0,901                                        | 0,984  | 1,012 | 1,074 |
| 240                                   | 0,903                                        | 0,986  | 1,015 | 1,077 |
| 250                                   | 0,906                                        | 0,989  | 1,017 | 1,080 |
| 260                                   | 0,908                                        | 0,991  | 1,020 | 1,083 |
| 270                                   | 0,910                                        | 0,994  | 1,022 | 1,085 |
| 280                                   | 0,912                                        | 0,996  | 1,025 | 1,088 |
| 290                                   | 0,914                                        | 0,998  | 1,027 | 1,090 |
| 300                                   | 0,916                                        | 1,000  | 1,029 | 1,093 |
| 310                                   | 0,918                                        | 1,003  | 1,031 | 1,095 |
| 320                                   | 0,920                                        | 1,005  | 1,033 | 1,097 |
| 330                                   | 0,922                                        | 1,007  | 1,035 | 1,099 |
| 340                                   | 0,923                                        | 1,008  | 1,037 | 1,101 |
| 350                                   | 0,925                                        | 1,010  | 1,039 | 1,103 |
| 360                                   | 0,927                                        | 1,012  | 1,041 | 1,105 |
| 370                                   | 0,928                                        | 1,014  | 1,043 | 1,107 |
| 380                                   | 0,930                                        | 1,016  | 1,045 | 1,109 |
| 390                                   | 0,932                                        | 1,017  | 1,047 | 1,111 |

Table 4 (concluded) — Conversion factors from  $5,65\sqrt{S_0}$  to non-proportional gauge lengths

| Cross-sectional<br>area of test piece | Factor for non-proportional gauge length of: |        |       |       |
|---------------------------------------|----------------------------------------------|--------|-------|-------|
|                                       | 200 mm                                       | 100 mm | 80 mm | 50 mm |
| 400                                   | 0,933                                        | 1,019  | 1,048 | 1,113 |
| 410                                   | 0,935                                        | 1,021  | 1,050 | 1,114 |
| 420                                   | 0,936                                        | 1,022  | 1,051 | 1,116 |
| 430                                   | 0,937                                        | 1,024  | 1,053 | 1,118 |
| 440                                   | 0,939                                        | 1,025  | 1,055 | 1,119 |
| 450                                   | 0,940                                        | 1,027  | 1,056 | 1,121 |
| 460                                   | 0,941                                        | 1,028  | 1,058 | 1,123 |
| 470                                   | 0,943                                        | 1,029  | 1,059 | 1,124 |
| 480                                   | 0,944                                        | 1,031  | 1,060 | 1,126 |
| 490                                   | 0,945                                        | 1,032  | 1,062 | 1,127 |
| 500                                   | 0,946                                        | 1,033  | 1,063 | 1,129 |
| 550                                   | 0,952                                        | 1,040  | 1,070 | 1,135 |
| 600                                   | 0,957                                        | 1,045  | 1,076 | 1,142 |
| 650                                   | 0,962                                        | 1,051  | 1,081 | 1,148 |
| 700                                   | 0,967                                        | 1,056  | 1,086 | 1,153 |
| 750                                   | 0,971                                        | 1,060  | 1,091 | 1,158 |
| 800                                   | 0,975                                        | 1,065  | 1,095 | 1,163 |
| 850                                   | 0,979                                        | 1,069  | 1,100 | 1,167 |
| 900                                   | 0,982                                        | 1,073  | 1,104 | 1,171 |
| 950                                   | 0,986                                        | 1,076  | 1,107 | 1,176 |
| 1 000                                 | 0,989                                        | 1,080  | 1,111 | 1,179 |
| 1 050                                 | 0,992                                        | 1,083  | 1,114 | 1,183 |
| 1 100                                 | 0,995                                        | 1,087  | 1,118 | 1,187 |
| 1 150                                 | 0,998                                        | 1,090  | 1,121 | 1,190 |
| 1 200                                 | 1,000                                        | 1,093  | 1,124 | 1,193 |
| 1 250                                 | 1,003                                        | 1,095  | 1,127 | 1,196 |
| 1 300                                 | 1,006                                        | 1,098  | 1,130 | 1,199 |
| 1 350                                 | 1,008                                        | 1,101  | 1,132 | 1,202 |
| 1 400                                 | 1,010                                        | 1,103  | 1,135 | 1,205 |
| 1 450                                 | 1,013                                        | 1,106  | 1,138 | 1,208 |
| 1 500                                 | 1,015                                        | 1,108  | 1,140 | 1,210 |
| 1 550                                 | 1,017                                        | 1,110  | 1,142 | 1,213 |
| 1 600                                 | 1,019                                        | 1,113  | 1,145 | 1,215 |
| 1 650                                 | 1,021                                        | 1,115  | 1,147 | 1,217 |
| 1 700                                 | 1,023                                        | 1,117  | 1,149 | 1,220 |
| 1 750                                 | 1,025                                        | 1,119  | 1,151 | 1,222 |
| 1 800                                 | 1,027                                        | 1,121  | 1,153 | 1,224 |
| 1 850                                 | 1,028                                        | 1,123  | 1,155 | 1,226 |
| 1 900                                 | 1,030                                        | 1,125  | 1,157 | 1,228 |
| 1 950                                 | 1,032                                        | 1,127  | 1,159 | 1,230 |
| 2 000                                 | 1,033                                        | 1,129  | 1,161 | 1,232 |
| 2 050                                 | 1,035                                        | 1,130  | 1,163 | 1,234 |
| 2 100                                 | 1,037                                        | 1,132  | 1,165 | 1,236 |
| 2 150                                 | 1,038                                        | 1,134  | 1,166 | 1,238 |
| 2 200                                 | 1,040                                        | 1,135  | 1,168 | 1,240 |
| 2 250                                 | 1,041                                        | 1,137  | 1,170 | 1,242 |
| 2 300                                 | 1,043                                        | 1,139  | 1,171 | 1,243 |
| 2 350                                 | 1,044                                        | 1,140  | 1,173 | 1,245 |
| 2 400                                 | 1,045                                        | 1,142  | 1,175 | 1,247 |
| 2 450                                 | 1,047                                        | 1,143  | 1,176 | 1,248 |
| 2 500                                 | 1,048                                        | 1,145  | 1,178 | 1,250 |
| 2 550                                 | 1,050                                        | 1,146  | 1,179 | 1,252 |
| 2 600                                 | 1,051                                        | 1,148  | 1,181 | 1,253 |
| 2 650                                 | 1,052                                        | 1,149  | 1,182 | 1,255 |
| 2 700                                 | 1,053                                        | 1,150  | 1,183 | 1,256 |
| 2 750                                 | 1,055                                        | 1,152  | 1,185 | 1,258 |
| 2 800                                 | 1,056                                        | 1,153  | 1,186 | 1,259 |
| 2 850                                 | 1,057                                        | 1,154  | 1,187 | 1,260 |
| 2 900                                 | 1,058                                        | 1,156  | 1,189 | 1,262 |
| 2 950                                 | 1,059                                        | 1,157  | 1,190 | 1,263 |
| 3 000                                 | 1,060                                        | 1,158  | 1,191 | 1,265 |