



**Environmental criteria for sustainable public  
procurement of**

# **Office Buildings New Construction**

**Version August 2017**

# 1. Scope/definition

The Office Buildings New Construction product group comprises criteria for the design and construction of new office buildings. Office buildings are buildings where more than more than 55% of the buildings' functional use is as office space and space for meetings. The design and construction of buildings may form part of an integrated contract in which other services may also be included. The criteria in this document are also applicable to this type of contract.

This document describes the environmental criteria. Information about the other elements of sustainable public procurement, such as social conditions and social return, may be found on the PIANOo website, on the specific product group page: <https://www.piano.nl/document/10568/productgroep-kantoorgebouwen-nieuwbouw>.

## 2. Most significant environmental impacts

The government opts for a performance-based approach to the procurement of new office buildings. The table in Annex 1 has been developed to facilitate this. The table addresses the following themes:

- energy conservation;
- materials use;
- health in buildings/interior environment.

Annex 1 also includes explanatory notes for each theme, and summarises the calculation methods. Annex 2 lists the premises assumed at the time of drafting this document.

A number of other themes are relevant, but no criteria for these themes have been drafted; for those themes, this is left for the contracting authority to consider doing. They include:

- materials with low emissions of volatile organic compounds (VOCs);
- view in each working area;
- water management;
- openable windows in each working area;
- individually adjustable sun blinds;
- individually adjustable temperature;
- total accessibility.

## 3. Points of attention/suggestions

Devoting attention to the opportunities and possibilities for the most sustainable procurement possible in the preparation phase will lead to specifications that are more ambitious or which differ from the standard technical specifications and award criteria set out in this document. The table below presents points for attention and suggestions for promoting sustainability in procurement within this product group.

No.	Points of attention/suggestions (AS)
AS1	<b>Specifics of adaptive capacity or future value</b> The performance criterion adaptive capacity or future value is on the agenda, but is not yet fully worked out in detail. The goal of this criterion is to be able to say something in design and specifications about the preservation of substances in the process, such as the expected construction and waste flows during the use and conversion. Part of this involves a cohesive approach to the entire life cycle of the building. For example, the design takes into account the degree to which the building is suitable for a redesigned or different use function. VNO/NCW and MKB-Nederland have been working closely with the construction sector and governmental agencies to operationalise this criterion. The result is described in the "Buildings with future value!" report: <a href="http://slimbouwen.nl/fileadmin/user_upload/news/nieuwsberichten/rapport_adaptief_vermogen/20140630_%20Eindrapport%20bepalingsmethode_DEF.PDF">http://slimbouwen.nl/fileadmin/user_upload/news/nieuwsberichten/rapport_adaptief_vermogen/20140630_%20Eindrapport%20bepalingsmethode_DEF.PDF</a> .
AS2	<b>Ask architect to provide evidence of experience with environmentally friendly construction projects</b> The architect can be asked to demonstrate sufficient experience with the design of environmentally friendly construction projects. The architect could refer to experts that have been partnered with on current or past projects, such as advisory engineers for heating and/or cooling systems. This could be

	obtained by asking for references.
AS3	<p><b>Ask tenderer to demonstrate technical capacity for implementation of environmental management measures</b></p> <p>Tenderers may be asked to demonstrate that they are technically capable (based on expertise within their organisation or through cooperation with external experts) of implementing specific environmental management measures relevant to the execution of the construction works.</p>
AS4	<p><b>Educate the building manager about energy efficiency</b></p> <p>After handover of the construction/renovation work, the building manager can be educated about energy efficiency in the use of the building. The tenderer may be requested to provide a description of the content of this material.</p>
AS5	<p><b>Consider bio-based procurement</b></p> <p>In many cases, bio-based raw materials are preferable over fossil-based raw materials (such as plastics). Survey (with the market where possible) the possibilities, the pros (and any cons) of use of bio-based raw materials for your procurement needs, and give them an appropriate place in your procurement documents. More information on bio-based procurement can be found via PIANOo SPP Theme Bio-based Procurement (<a href="https://www.pianoo.nl/themes/maatschappelijk-verantwoord-inkopen-duurzaam-inkopen/mvi-thema-s/biobased-inkopen">https://www.pianoo.nl/themes/maatschappelijk-verantwoord-inkopen-duurzaam-inkopen/mvi-thema-s/biobased-inkopen</a>), where the guide to bio-based procurement and the Guidelines to Bio-based Procurement have also been made available (<a href="https://www.pianoo.nl/themas/maatschappelijk-verantwoord-inkopen-mvi-duurzaam-inkopen/handreikingen-mvi-0/handreikingen-biobased-inkopen">https://www.pianoo.nl/themas/maatschappelijk-verantwoord-inkopen-mvi-duurzaam-inkopen/handreikingen-mvi-0/handreikingen-biobased-inkopen</a>).</p> <p>If you include a requirement that the material used must be bio-based, ask for descriptions of the material used and documentation supporting claims such as “bio-based”, “sustainable biomass” and “compostable”. This will make the assessment easier and give the purchaser the opportunity to check upon delivery of the goods whether the items supplied are in fact those agreed. It is also important not to require the production of specific certificates because this may put producers to unnecessary expense when alternative evidence would also suffice.</p>
AS6	<p><b>Transport, recycling and waste management of construction materials</b></p> <p>The contract party can be asked to take steps to prevent construction waste, or to separate and reuse construction waste, such as:</p> <ul style="list-style-type: none"> <li>• Contract party must indicate a minimum and target level for the use of reusable packaging and/or containers for the transport of the required construction materials from and to the construction site.</li> <li>• Suppliers of construction materials must indicate a minimum and target level for packaging waste (to be achieved through measures such as a system for collection, recycling and reuse of packaging material supplied).</li> </ul> <p>The contract party must take appropriate measures to limit the waste produced during the demolition and construction works, and to reclaim any such waste through reuse or recycling). A minimum of a certain percentage (to be defined) of the total weight must be reclaimed (through reuse or recycling).</p>

## 4. Selection criteria

Not defined for this product group.

## 5. Technical specifications

No.	Technical specifications (ME)
ME1	<p><b>Sustainability performance</b></p> <p>The tenderer will complete a building that is in compliance with level C for every sustainability category as set out in the table in Annex 1 and described in more detail in the explanatory notes to that table.</p> <p>The tenderer will include with the tender a description of the performance offered and will substantiate this with corresponding calculations. These calculations must be carried out in accordance with the appropriate calculation methods as described in the explanatory note to the table in Annex 1.</p> <p><i>Explanation</i></p> <p>The text above could be incorporated into the schedule of requirements, and the annex could be</p>

	added in its entirety to the schedule of requirements.  <i>Verification</i> For documentation for the purposes of the handover, see contract clause 1.
--	---

## 6. Award criteria

No.	Award criteria (GC)
GC1	<p><b>Higher sustainability performance</b> The higher the individual aspects of building performance as described in the table in Annex 1, the higher the tender will be rated.</p> <p><i>Explanation</i> This award criterion is a supplement to the technical specification. See the explanatory notes. You must assign the rating yourself. The table identifies different classes and suggests point allocations. The background to the breakdown into classes is included in Annex 1.</p> <p>Naturally, other methods of rating are also possible. If you expect tenders to score very close together, or if you expect a tender to score higher than the highest class on the table, one option would be to use a sliding scale. In this case you would not be working with classes, but you would rate a higher score with a percentage of the maximum number of points that you wish to assign to the building performance in question. For this, you must define a maximum score or compare tenders against each other. However you do this, you must describe your procedure clearly, in advance, in the tender documents.</p> <p><i>Verification</i> For documentation for the purposes of the handover, see contract clause 1.</p>

## 7. Contract provisions

No.	Contract provisions (CB)
CB1	<p><b>Documentation of sustainability performance</b> For the purposes of the handover of the building the contractor will supply documentation of the performance level achieved, with calculations and measurement data where relevant, in accordance with the methods explained in Annex 1.</p>
CB2	<p><b>Maintenance plan and operations guide</b> Upon handover of the building the contractor will supply a maintenance plan setting out the maintenance steps to be taken over the lifetime of the building. The maintenance plan will include at least the following components:</p> <ul style="list-style-type: none"> <li>• description of the components and materials used;</li> <li>• description of the inspection and maintenance intervals for the entire building, including systems, with corresponding instructions (at a minimum, description of inspection points, methods, maintenance activities and required materials);</li> <li>• description of the way in which materials and components can be removed or demolished in an environmentally responsible way.</li> </ul> <p>In addition, an operations guide will be provided. This guide explains how to use the building in the most sustainable manner. The operations guide will include at least the following components:</p> <ul style="list-style-type: none"> <li>• description of the intended use of the systems in the building (configuration, automatic settings, options for optimisation during use period, etc.); and</li> <li>• description of the sustainable materials and components used and the way to handle them during the operations period.</li> </ul>

## Annex 1 – Details of minimum requirement, award criterion and contract clauses

	Energy		Materials	Health in buildings				
	Energy performance	Own generation of sustainable energy	Environmental performance	Noise in work areas, workspaces	Indoor Air Quality, ventilation capacity	Airflow ventilation	Thermal comfort	Natural light incidence in workspace for long-term use > 2 hours
<b>Level A1</b>	100 % better than base value <b>x points</b>	50 % independent generation <b>x points</b>	30 % better than level C <b>x points</b>	Class A (in accordance with explanatory notes) <b>x points</b>	No higher level specified	6 dm <sup>3</sup> /s per m <sup>2</sup> of working area <b>x points</b>	No higher level specified	100% of workspaces designated for long-term occupancy min. DF > 3.0% <b>x points</b>
<b>Level A2</b>	80 % better than base value <b>x points</b>		25 % better than level C <b>x points</b>					
<b>Level B1</b>	65 % better than base value <b>x points</b>	25 % independent generation <b>x points</b>	20 % better than level C <b>x points</b>	Class B (in accordance with explanatory notes) <b>x points</b>				100% of workspaces designated for long-term occupancy min. DF > 2.0% <b>x points</b>
<b>Level B2</b>	50 % better than base value <b>x points</b>	10 % independent generation <b>x points</b>	15 % better than level C <b>x points</b>					

<b>Level C</b>	35 % better than base value <b>0 points</b>	No level specified	Calculation in accordance with the explanatory notes to calculation method:  Max. €0.90 /m <sup>2</sup> GFA  100% Sustainable Procurement of wood  Flexible fit-out package (in accordance with explanatory notes) <b>0 points</b>	Class C (in accordance with explanatory notes) <b>0 points</b>	8.3 dm <sup>3</sup> /s. pp <b>0 points</b>	3 dm <sup>3</sup> /s per m <sup>2</sup> of working area Or: 6 dm <sup>3</sup> /s per m <sup>2</sup> of working area <b>0 points</b>	Class A, in accordance with new ISSO 74 <b>0 points</b>	100% of workspaces designated for long-term occupancy min. DF > 1.0% <b>0 points</b>
<b>Basic level</b>	Buildings Decree (*)	No level specified	No level specified Calculation required in Buildings Decree	Buildings Decree	Buildings Decree	No level specified	No level specified	Buildings Decree

\* As from 1 January 2019, all Central Government buildings must be built in an energy-neutral manner. This means that this must be factored in with the invitation. An application for an integrated environmental permit will be regarded as the start time.

## Explanatory notes to table 1

With Socially Responsible Procurement, the government opts for a performance-based approach. The table is based on the assumption that the effects can be quantified using generally accepted calculation methods, so that the level of performance achieved can be determined simply and in a verifiable manner. Wherever possible, this has been done using calculation methods stipulated in other legislation.

As basic value, the table adopts the legal standard for new construction (wherever one is available). For the purposes of Socially Responsible Procurement, a performance requirement in excess of this statutory basic value is selected for a number of aspects. Level C in the table is the minimum requirement. Secondly, the class breakdown presents a clear picture of the performance to be delivered in order to achieve an added value. This relies on either the class breakdown as already used in practice (for example, thermal comfort) or an indication of the percentage of the basic value. Award criteria may be specified for level B2 and above.

Several levels are indicated, to give the purchaser/user a level of choice. To be able to compare the descriptions objectively, points may be assigned to the individual levels.

The individual themes are quantified using the following calculation methods:

	Theme	Calculation method for new construction
Energy	Energy performance	NEN7120*, including NVN7125 (April 2011)
	Own generation of sustainable energy	$x\% = (E_{ownparcel}/E_{p,adm,tot,nb}) * 100\%$ according to NEN 7120*
Materials	Environmental Performance	Calculation method for Environmental Performance Buildings and Groundwork, Road and Hydraulic Engineering works, with associated environmental database [SBK]
	Wood	<a href="http://www.inkoopduurzaamhout.nl/">www.inkoopduurzaamhout.nl/</a> and specifically <a href="http://www.inkoopduurzaamhout.nl/bestektekst.pdf">www.inkoopduurzaamhout.nl/bestektekst.pdf</a>
	Flexible fit-out package	See explanation in Annex 1
Health	Noise in workspaces	Quality levels according to the NVBV** Handbook of Building-Physical Quality of Office Space with reference to NEN 5077
	Indoor Air Quality, ventilation capacity	NEN 1087 and NVBV Handbook of Building-Physical Quality of Office Space
	Thermal comfort	In accordance with ISSO 74 and ISSO 32.
	Natural lighting incidence	Daylight factor [DF] = $E_{room}/E_{open\ field} * 100\%$ -Design phase: calculation using daylight simulation programmes with a CIE-overcast sky.

\* For all standards, the version applicable at the moment of the announcement of the tendering procedure applies.

\*\* *Nederlands Vlaamse Bouwfysica Vereniging* (Netherlands-Flanders Association of Building Physics)

Further explanation of each theme is provided below.

## **Energy performance**

### **Objective of requirements**

The goal of this requirement is to improve the energy performance of buildings with respect to the legal minimum standard.

### **Explanation of calculation method**

Calculation method: NEN7120, including NVN7125:  $EPC_{usi} < (100\% - x\%) * EPC_{usi}$ .

The percentage "better than base value" is evaluated. The scale provided refers to the percentage improvement in performance over the legally required basic level.

### **Explanation of Socially Responsible Procurement threshold**

The underlying goal is the reduction of the use of fossil fuels. This is pursued by improving the energy performance; this energy performance must be demonstrated prior to the application for the integrated environmental permit. Looking at the trends at the European level (EU 2020 and Green Public Procurement), it would be advisable to strive for an energy performance at least 20% below the standard in the law. Because in many cases it is a matter of years between the moment of procurement and the handover of a project, the threshold for Socially Responsible Procurement has already been set at 35% below the legal standard, this in consideration of the national ambition to have all new construction be energy-neutral by 2020 (for government buildings, this target goes into effect starting 2019).

### **Documentation (this must be included in the contract)**

Upon handover and at any time specified by the contracting authority in the intervening period, the contractor must demonstrate that the agreed energy performance is attained. This can be done with an energy label in accordance with the applicable standards. The contractor must also demonstrate that the building is constructed in accordance with the substantive content of the calculation (construction-technical and systems-technical).

## **Own generation of sustainable energy**

### **Objective of requirements**

The goal of this requirement is to promote the use of renewable energy sources that generate capacity at the location itself or in the immediate vicinity.

### **Explanation of calculation method**

Calculation method: NEN7120, including NVN 7125:  $x\% = (E_{ownparcel} / E_{p,adm,tot,nb}) * 100\%$  The energy generated at the space ( $E_{ownparcel}$  [MJ]) in relation to the permissible characteristic energy consumption ( $E_{p,adm,tot,nb}$  [MJ] in accordance with NEN7120, including NVN 7125) is evaluated. The amount of energy generated at the space consists of an item for the electricity generated at the space ( $E_{pr;el;gi}$ ) and the contribution to sustainable energy generation as described in section 5.4.4 of NEN7120:2011.

Passive solar energy, utilisation of natural light for lighting and thermal solar energy (see also section 5.4.4 of NEN7120:2011) are not included here. For the calculation of the quantity of electricity generated at the space ( $E_{pr;el;gi}$ ), see section 5.4.5 of NEN7120:2011.

### **Explanation of Socially Responsible Procurement threshold**

Setting a requirement on the generation of renewable energy at the space promotes not only energy-efficient construction but also on-site generation of sustainable energy. "Renewable energy sources" are defined as wind, solar, ambient air/surface water/geothermal heat, energy from the oceans, hydroelectric power, biomass, landfill gas, sewage treatment gas and biogas, all as defined in section 1, paragraph 1(t) of the Electricity Act 1998.

### **Documentation (this must be included in the contract)**

Upon handover and at any time specified by the contracting authority in the intervening period, the contractor must submit the calculations demonstrating that the percentage of energy generated on-site is attained. The contractor must also demonstrate that the building is constructed in accordance with the substantive content of the calculation (construction-technical and systems-technical).

## **Environmental performance of materials**

### **Objective of requirements**

The goal of the requirement is the reduction of the environmental impact as a result of the material used of the construction and the building-specific systems.



## **Explanation of calculation method**

The Environmental Performance of Buildings (MPG) calculation measures the environmental impact of the materials used in a building. Every application for an integrated environmental permit for new-build dwellings and new office buildings that are larger than 100m<sup>2</sup> must be accompanied by an environmental performance calculation.

In an Environmental Performance of Buildings calculation, the environmental effects of materials are calculated, expressed in shadow prices (environmental costs) and added up. The result of the Environmental Performance of Buildings calculation is a shadow price per m<sup>2</sup> of floor surface. For offices, €0.90 a year per m<sup>2</sup> of gross floor surface is used as reference value.

A more comprehensive explanation of the MPG is outlined on the Netherlands Enterprise Agency (RVO) website: <http://www.rvo.nl/onderwerpen/duurzaam-ondernemen/gebouwen/wetten-en-regels-gebouwen/milieuprestatie-gebouwen>

The requirements for the Environmental Performance of Buildings calculation are laid down in the SBK (Construction Quality Foundation) Calculation Method, drawn up by the Construction Quality Foundation, which follows the European standards EN15804 and 15978: [https://www.milieudatabase.nl/mgcms/20141125\\_SBK\\_Bepalingsmethode\\_versie\\_2\\_0\\_definitief.pdf](https://www.milieudatabase.nl/mgcms/20141125_SBK_Bepalingsmethode_versie_2_0_definitief.pdf)

## **Explanation of Socially Responsible Procurement threshold**

Drafting a calculation of the maximum shadow price encourages optimisation of design and construction based on a calculation of the environmental impact.

### **Documentation (this must be included in the contract)**

Upon handover and at any time specified by the contracting authority in the intervening period, the contractor must demonstrate that the agreed shadow price is achieved. This is demonstrated using the calculation of the shadow costs based on the materials actually used.

## **Sustainable Timber**

### **Objective of requirements**

Wood to be used in the building and in products to be delivered, where this wood remains in the work, must be wood that is demonstrably sustainably produced.

### **Explanation of Socially Responsible Procurement threshold**

Raw wood to be supplied, or wood incorporated into wood products or other products to be supplied, must meet the Dutch Procurement Criteria for Timber set out in the TPAS (Timber Procurement Assessment System). The wood must be in compliance with all 9 principles for sustainable forest management.

### **Documentation**

Upon handover and at any time specified by the contracting authority in the intervening period, the contractor must demonstrate that the timber meets the criteria set, by means of certificates in accordance with a system approved by the TPAC (Timber Procurement Assessment Committee).

A list of approved certification systems can be found on the website: <http://www.tpac.smk.nl/170/about/judgements.html>.

### **Explanation**

More information on the procurement of sustainably produced wood can be found on: [www.inkoopduurzaamhout.nl](http://www.inkoopduurzaamhout.nl). An example of specifications defined for sustainably produced wood can be found on: [www.inkoopduurzaamhout.nl/bestektekst.pdf](http://www.inkoopduurzaamhout.nl/bestektekst.pdf).

General information on the prescription and verification of sustainably produced wood can be found on: [www.houtdatabase.nl](http://www.houtdatabase.nl). The complete TPAS criteria can be found on the website: <http://www.tpac.smk.nl/Public/TPAC%20documents/DutchProcurementCriteriaMAR2014.pdf>

## **Flexible fit-out package** (for modification or replacement of the fit-out package)

### **Objective of requirements**

The goal of the requirement is to prevent and limit extra environmental impact from the use of materials that are not easily adaptable or replaceable.

### **Further explanation of classes**

The tenderer must implement the requested modifications to the fit-out package in such a way that this can easily be moved or removed.

For this, the following requirements must be met:

- Internal walls to be newly installed must not be made load-bearing.
- Cables and pipework must not be installed in fixed/load-bearing walls.
- The floor and ceiling finishes must be able to be reunified simply upon removal of internal walls. Consequently:
  - There must be no height difference between the floor finishes on each side of a non-loadbearing wall.
  - The ceiling finish on each side of a non-loadbearing partition wall must have the same ceiling height, grid size and final finish.

### **Explanation of Socially Responsible Procurement threshold**

When applying a new fit-out package upon lease or purchase of a building, this package must be selected such that minor changes in layout (for example, in response to changing space needs) will not necessitate a large-scale renovation to make the space workable and orderly.

### **Documentation** (this must be included in the contract)

The operation guide for the building must include procedures on how to remove non-load-bearing interior walls and finishing instructions for the floors and ceilings. Upon handover, this guide must demonstrate that these activities can be done fairly simply.

## **Noise in work areas, workspaces**

### **Objective of requirements**

The goal of the requirement is to prevent and limit nuisance from noise, in order to promote a healthy and comfortable work environment.

### **Further explanation of classes**

Class A: The office building is designed for a high level of acoustic comfort, with attention to speech intelligibility and conversational discretion at the relevant workspaces. Additionally, all furnished and unfinished office spaces are in compliance with the requirements for echo and all workspaces are in compliance with tables 34-38 of the Handbook of Building-Physical Quality of Office Space, and the noise nuisance from on-site systems is limited.

Class B: All workspaces are in compliance with tables 34-38 of the Handbook of Building-Physical Quality of Office Space.

Class C: All furnished and unfinished office spaces are in compliance with the requirements for echo in the Handbook of Building-Physical Quality of Office Space. At least 60% of the workspaces in all categories meet the acoustic quality requirements of tables 34-38 of the Handbook of Building-Physical Quality of Office Space, and these spaces are identified as such.

### **Explanation of calculation method**

NEN5077, NVBV Handbook of Building-Physical Quality of Office Space

### **Explanation of Socially Responsible Procurement threshold**

The buildings decree does not set requirements on the noise comfort level of a space. For Socially Responsible Procurement, the class breakdown is based on the quality levels defined in the NVBV Handbook of Building-Physical Quality of Office Space. For further elaboration of the acoustic requirements in the building, see this Handbook. The minimum level for Socially Responsible Procurement is Class C. If desired, higher classes may be required or rated more highly in the tendering procedure.

### **Documentation** (this must be included in the contract)

Upon handover and at any time specified by the contracting authority in the intervening period, the contractor must demonstrate that the agreed performance levels with regards to the prevention and limitation of noise nuisance are attained. This must be demonstrated based on measurements of the result.

### **Indoor Air Quality, ventilation capacity**

#### **Objective of requirements**

The goal of the requirement is to improve air quality in work areas, in order to promote a healthy and comfortable work environment.

#### **Explanation of calculation method**

Calculation method NEN1087

The required volume of air circulation per person must be calculated based on the number of persons in the integrated environmental permit application.

#### **Explanation of Socially Responsible Procurement threshold**

Socially Responsible Procurement assumes a volume of 8.3 dm<sup>3</sup>/s per person. This figure is adopted from previous studies and quality levels maintained in other publications (including the Handbook of Building-Physical Quality of Office Space). Increasing the ventilation capacity further is not included in the criteria for Socially Responsible Procurement. Other aspects such as ventilation efficiency, draught-free air circulation, etc., play a more important role in further increasing the sustainability of this aspect. At present, these cannot be easily and objectively quantified. For the time being, the higher levels will be left undefined.

#### **Documentation (this must be included in the contract)**

Upon handover and at any time specified by the contracting authority in the intervening period, the contractor must demonstrate that the agreed performance on the ventilation capacity is obtained. This will be demonstrated by measurements coordinated for the maximum occupancy of the spaces.

### **Indoor Air Quality, airflow capacity**

#### **Objective of requirements**

The goal of this requirement is to achieve an airflow capacity such that the users can temporarily influence the air quality in work areas to promote a healthy and comfortable work environment. Users of the building are given adequate options to influence the supply of fresh air, so they can efficiently clear out any sudden increased air contamination.

#### **Explanation of calculation method**

Calculation method: NEN1087. The availability of adequate airflow capacity for the square footage of a work area and/or occupied space of an office function must be demonstrated.

#### **Explanation of Socially Responsible Procurement threshold**

Socially Responsible Procurement assumes 3 dm<sup>3</sup>/s per m<sup>2</sup> of work area or 6 dm<sup>3</sup>/s per m<sup>2</sup> of occupied space. The airflow ventilation features must be placed in each individual space/area. The requirements are set on the work areas or spaces of an office function. Meeting rooms, reception desk areas, gatehouses, etc., may be disregarded for the calculation. If there are no changes made to the airflow features, demonstration of compliance with these requirements is not required.

#### **Documentation (this must be included in the contract)**

Upon handover and at any time specified by the contracting authority in the intervening period, the contractor must demonstrate that the agreed performance on airflow capacity is obtained. The contractor must also demonstrate that the building is constructed in accordance with the substantive content of the calculation.

### **Thermal comfort**

#### **Objective of requirements**

The goal of the requirement is to improve thermal comfort in work areas, in order to promote a healthy and comfortable work environment.

#### **Explanation of calculation method**

ISSO 74 and ISSO 32.

### **Explanation of Socially Responsible Procurement threshold**

Socially Responsible Procurement assumes a minimum threshold of class A. Use the flowchart of ISSO 74 to determine the building/climate type for making this calculation. The Handbook and ISSO 32 also provide premises for this calculation. For further elaboration of the thermal comfort requirements in the building, see these publications. The requirements are set on all workspaces intended for long-term (more than two hours) use.

### **Documentation (this must be included in the contract)**

Upon handover and at any time specified by the contracting authority in the intervening period, the contractor must demonstrate with calculations that the agreed performance level for thermal comfort is attained. The contractor must also demonstrate that the building is constructed in accordance with the substantive content of the calculation.

### **Natural lighting incidence**

#### **Objective of requirements**

The goal of the requirement is to improve natural light incidence in work areas, in order to promote a healthy and comfortable work environment.

#### **Explanation of calculation method**

The daylight factor (DF) is calculated using natural light simulation programmes with a CIE-overcast sky. Daylight factor: relationship between the illumination strength at a point in the room as compared to the horizontal illumination strength in open space under an overcast sky. The calculations for this requirement are based on workspaces at a horizontal plane 800 mm above the floor.

$$DF = E_{\text{room}}/E_{\text{open field}} * 100\%$$

Assumptions to be used in the calculations:

light reflection factors maximum: walls: 0.5; ceiling: 0.7; floor: 0.1.

### **Explanation of Socially Responsible Procurement threshold**

For Socially Responsible Procurement, an additional requirement for a healthy and comfortable work environment is set above the natural light incidence requirement of the Buildings Decree. For all workspaces in an office function intended for long-term use (more than two hours), compliance with the set requirements for daylight factor must be demonstrated.

Socially Responsible Procurement assumes a minimum daylight factor of 1% for the workspaces (horizontal plane at height of 800 mm above the floor) for 100% of the workspaces for long-term use (> 2hours in succession).

### **Documentation (this must be included in the contract)**

Upon handover and at any time specified by the contracting authority in the intervening period, the contractor must demonstrate that the agreed performance on natural light incidence has been achieved. Calculations must be used to demonstrate that the daylight factor is adequate. The contractor must also demonstrate that the agreed natural light features are actually present.

## Annex 2 - Assumptions

The following premises were assumed in the creation of this document:

- Sustainability is becoming an increasingly important principle in the quality policy pursued within the construction sector. Sustainability is a broad concept. Under the three Ps of sustainable development (People, Planet, Profit), new aspects are emerging alongside older and more familiar ones as elements of "sustainability" in office buildings and building systems. The goal is to reduce the environmental effects of material and energy use over the entire life cycle of a building or construction work, without compromising the quality of the indoor environment in the process. Reuse of buildings and materials is part of this.
- A performance-based approach, in which the sustainability effects across the entire lifetime are considered, and built on the prescriptions and calculation methods of the Buildings Decree 2012 (*Bouwbesluit 2012*), is called for. The trend in construction is to work under integrated contracts and with functional and performance-based requirements at the building-level (solution-free). Working with performance requirements is preferable to working with a checklist or list of measures.
- This means commitments with the parties in the construction process on reductions and threshold values to be achieved.
- An important point of attention here is using consistent calculation methods for the various environmental themes, in order to allow clarity and verifiability for all parties. Wherever possible, this must be done using calculation methods already stipulated in other legislation. One calculation can be used for several purposes. This leads to a minimum of administrative burden and offers opportunities for benefits to the business sector and society. Parties and institutions can then build on these to create their own quality classes. A national classification system should emerge to foster a level playing field and clear communication, and prevent undue administrative burden.
- The performance-based focus at the level of building or construction offers design freedom and opportunities for innovation. This type of approach depends on the environmental effects of energy and material use being clearly and verifiably calculated, and that the aspects of health and comfort in the indoor environment can be tested. This way, sustainability values can be declared and expressed in joint contracts, Socially Responsible Purchasing, building certifications, etc. This performance-based approach is in keeping with the European policy agenda on the individual construction products and complete construction works (including activities within CEN/TC 350 "Sustainability of Construction works"). The performance-based approach is also being further pursued in consultations at the European level.

Based on the foregoing, performance criteria have been drafted for:

- energy conservation;
- materials use;
- health in buildings.