
15. MODULE Office

- Introduction
- Data
- Report
- Recommendations



INTRODUCTION

Scope of application. The *Office* module makes it possible to analyse office tasks in which the worker has more than 2 hours daily of effective work with visual display terminals.

Content. The evaluation questionnaire consists of various sections with factors that can suppose a risk for the worker, in relation to the working computer, chair, table, accessories, environment and organization. It should be checked if there are the risk situations included in each of these sections, and the corresponding items should be ticked.

The module also offers some **recommendations** to aid in controlling the risks detected in the analysis.

Source. The module is based basically on a manual for the evaluation and prevention of ergonomic and psychosocial risks in the SME, which has been developed by the IBV and the *Instituto Nacional de Seguridad e Higiene en el Trabajo* from Spain [INSHT and IBV, 2003]. These contents have been reviewed, updated and supplemented with the following normative reference: ISO 9241-303, ISO 9241-4, ISO 9241-400, ISO 9241-5, ISO 9241-6, ISO 9241-9, ISO 8995, ISO 7730, UNE-EN-29241.3, Technical Note of Prevention (NTP) 602, EN-1335-2, Royal Decree (RD) 488/97, Act 31/1995.

DATA

Start by selecting *Office* module in the *New task* window (Figure 1).

This gives access to the module's main window (Figure 2) so as to enter the data.

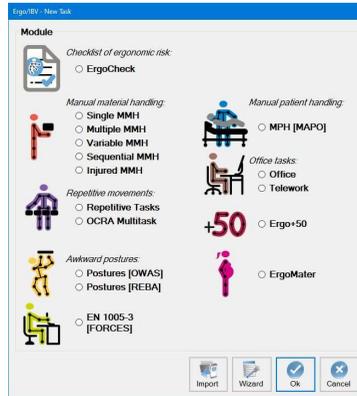


Figure 1: Office module entry

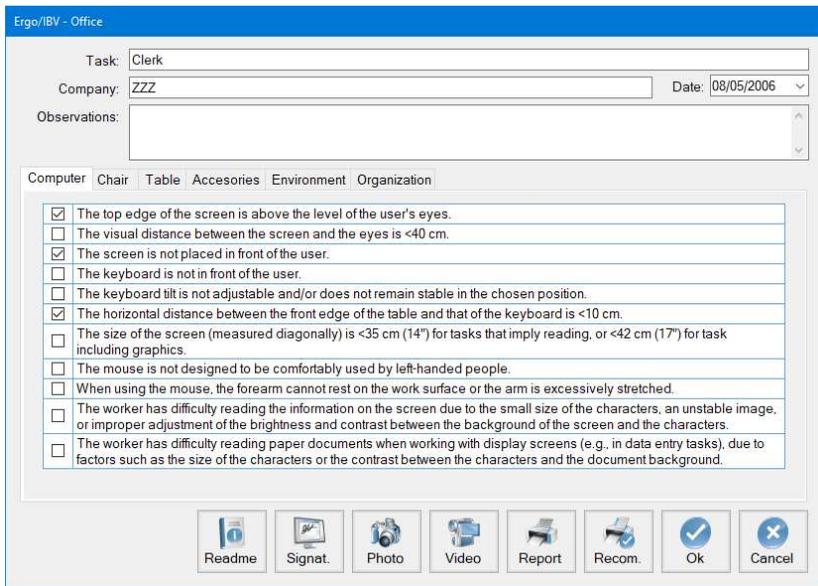


Figure 2: Office – Main window

Identification. The task name, the company, the date of the analysis and the appropriate observations are recorded in the main window's header.

Risk factors. The evaluation itself consists of a questionnaire or checklist with 39 items distributed into six sheets, which are accessed by clicking the corresponding sign:

- *Computer*
- *Chair*
- *Table*
- *Accessories*
- *Environment*
- *Organization*

All of the items in each sheet have to be reviewed and the corresponding box ticked when this factor exists in the analysed task. A single item ticked in any of the sheets indicates a possible non-acceptable risk situation on which it is necessary to adopt corrective and/or preventive measures. The risk level is higher as the number of ticked items increases.

Instructions. Clicking on the *Read me* button (lower part of the main window) displays the instructions for using the *Office* module that have already been commented on in the preceding text.

Detailed below is the content of each sheet.

Computer

- The top edge of the screen is above the level of the user's eyes.
- The visual distance between the screen and the eyes is <40 cm.
- The screen is not placed in front of the user.
- The keyboard is not in front of the user.
- The keyboard tilt is not adjustable and/or does not remain stable in the chosen position.
- The horizontal distance between the front edge of the table and that of the keyboard is <10 cm.
- The size of the screen (measured diagonally) is <35 cm (14") for tasks that imply reading, or <42 cm (17") for task including graphics.
- The mouse is not designed to be comfortably used by left-handed people.
- When using the mouse, the forearm cannot rest on the work surface or the arm is excessively stretched.
- The worker has difficulty reading the information on the screen due to the small size of the characters, an unstable image, or improper adjustment of the brightness and contrast between the background of the screen and the characters.

- The worker has difficulty reading paper documents when working with display screens (e.g., in data entry tasks), due to factors such as the size of the characters or the contrast between the characters and the document background.

Chair

- Some accessible parts of the chair may have rough edges, protrusions or coatings which might cause injuries.
- The chair is not stable and may fall over when the user leans on the edge of the seat, the back, or one of the armrests.
- The seat or back are not padded or are made of a non-breathable material.
- The chair does not have a swiveling seat.
- The base of the chair does not have 5 legs on rolling casters
- The seat height is not adjustable while seated.
- The seat back tilt is not adjustable while seated.
- The dimensions of the seat back do not properly support the back.
- When the worker leans back completely on the chair backrest, the seat edge presses the back of the legs.
- The chair does not have armrests.
- The armrests hit the edge of the table and prevent the user from getting closer to it.

Table

- The edges and corners are not rounded or there are protrusions that may cause injuries.
- There are drawers or cross planks below the central part of the board.
- The table does not have a matte finish and is not a soft color
- The table height is not at approximately the height of the user elbows when seated.
- The free space under the table is not enough to accommodate the user.
- The surface of the main tabletop is not enough to place all the work elements and perform the task comfortably.

Accessories

- The worker does not have a footrest (to use it, for example, when the feet are not entirely supported on the ground once the seat height has been properly adjusted with respect to the height of the table).

- There is no special support or holder to place documents in those tasks that require reading often.

Environment

- The workers think that the light level is not sufficient to perform the task comfortably.
- The visual field of the worker includes bright light sources that produce direct glare (ceiling lights, windows, auxiliary lamp of a nearby workstation, etc.).
- The visual field of the worker includes reflections that produce indirect glare (from the screen, keyboard, table, other workstations, floor, etc.).
- The noise level in the office is so high that it interferes with the communication or concentration of the workers.
- The workers think that the temperature in the workplace is not suitable.
- In the space around the table where the chair of the worker is, the minimum free surface is $<2 \text{ m}^2$, or the distance between the front edge of the table and the closest obstacle behind the worker is $<115 \text{ cm}$.

Organization

- The organization of the work, the task and the furniture arrangement do not promote voluntary change of posture.
- The worker has not been informed about the risks involved in the job and the preventive measures associated with them.
- Workers do not have instructions for use of the working elements (computer, desk chair, etc.) so that they can adjust their workstation.

REPORT

Once the information has been entered, clicking the *Report* button in the lower part of the main window accesses to a window for the *task report* (Figure 3) consisting of the following sections:

- **Identification.** This contains the general data (file, date, task, company and observations) and an image of the task, if a video source has been configured.
- **Risk factors.** This includes the items that have been ticked in each sheet of the checklist.

RISK FACTORS

COMPUTER

- The top edge of the screen is above the level of the user's eyes.
- The screen is not placed in front of the user.
- The horizontal distance between the front edge of the table and that of the keyboard is <10 cm.

CHAIR

- The chair does not have a swiveling seat.
- The base of the chair does not have 5 legs on rolling casters
- The seat height is not adjustable while seated.
- The seat back tilt is not adjustable while seated.
- The chair does not have armrests.

TABLE

- No risk factors have been detected.

ACCESORIES

- There is no special support or holder to place documents in those tasks that require reading often.

ENVIRONMENT

- The workers think that the light level is not sufficient to perform the task comfortably.
- The noise level in the office is so high that it interferes with the communication or concentration of the workers.

ORGANIZATION

- Workers do not have instructions for use of the working elements (computer, desk chair, etc.) so that they can adjust their workstation.

Figure 3: Office – Task report

RECOMMENDATIONS

By clicking on the *Recom.* button in the lower part of the main window a *recommendations report* is generated (Figure 4). In addition to the **identification** data, this report includes the **recommendations** aimed at resolving the problems detected in the different sections of the checklist.

RECOMMENDATIONS

COMPUTER

- The top edge of the screen should be at eye level maximum. In a relaxed and sitting position, the optimal viewing area is between the horizontal line of sight and the line drawn between 30° and 35° below the horizontal, although up to 60° below the horizontal is acceptable. The most important display screens should be placed in an arc of + 15°, both in the vertical and horizontal direction with respect to the line of vision.
- The screen should be in front of the user to minimize head rotation.
To ensure this criterion, the ISO standard specifies that the most important display screens should be placed at a maximum arc of + 15° degrees both in the vertical and horizontal direction with respect to the line of vision.
- It is very important that workers can support their forearms on the table while typing; therefore, there should be at least 10 cm between the edge of the table and the keyboard (if the table is so small that it is not possible to leave that distance, it is advisable to support the forearms on the armrest of the chair).

CHAIR

- The seat of the chair should have a swivel mechanism that allows the seat to rotate 360°, so that the user can easily move (sitting and standing, access to work items while sitting, etc.) as well as avoid trunk rotation and other awkward positions.
- The base of the chair should have 5 legs on roller casters to provide stability and mobility.
A 5-leg base provides a very high stability, preventing the chair from falling over or swinging.
Rollers make it easier to move the chair around, which improves access to work items while sitting, reduces awkward postures and makes it easier to stand up and sit down. It is advisable to use wheels adapted to the type of floor (hard wheels for soft floors or soft wheels for hard floors).
- The user should be able to adjust the seat height within a certain range of adjustment, which should allow the seat to be positioned at the popliteal height in a sitting position (a range between 42 and 53 cm is usually suitable for most people). Once the user is correctly seated, the table should be at about the elbow height. If the table is too high, the seat height should be raised, in which case the feet will not touch the ground, and therefore a footrest should be used.
The adjustment can be done by gas piston or springs. The user should be able to access the adjustment mechanism from the sitting position without requiring excessive force, and such mechanism should only be operated by a deliberate action of the user and not accidentally.
- The user should be able to access the adjustment mechanism of the backrest tilt while seated. The design should ensure that users can adjust the positions at any time. A seat-backrest angle between 95 and 110° is recommended.
- The chair should have armrests as they increase comfort while seated (they allow users to rest their neck and shoulders while performing certain tasks or during the breaks), and make it easier to stand up and sit down.

TABLE

- No risk factors have been detected.

Figure 4: Office – Recommendations report