

The EU Directive 90/270 on VDU-Work:
a European State-of-the-Art Overview

Report over the situation in

The Netherlands

The EU Directive 90/270/EEC on the Minimum
Health and Safety Requirements for Work with
Display Screen Equipment

edited by

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The EU Directive on VDU-Work: a European State-of-the-Art Overview over the situation in The Netherlands

"The EU Directive on the Minimum Health and Safety Requirements for Work with Display Screen Equipment in Practice - a European Overview"

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Foreword

The EU Directive 90/270/EEC on the minimum health and safety requirements for work with display screen equipment gives general guidelines on responsibilities and identifies areas for legislation. It does not provide measurable ergonomic standards. These values are being identified in standards such as ISO 9241 and EN 29241.

The International Standards Organisation (ISO) has announced a set of standards called ISO 9241 which provide specific values on which legislation may be based. It also provides system manufacturers, employers and employees with a scientific basis for planning ergonomic working environments. The standard currently comprises 17 parts: Part 1 General Introduction, Part 2 Task design (the way jobs are designed for people working with display equipment), Parts 3-9 Hardware and physical environment, Parts 10-17 Software and usability.

The European Committee for Standardisation (CEN) has decided to issue its own standard, EN 29241, which will be virtually identical to ISO 9241. In this context EN standards are particularly relevant because CEN member countries, which include both EEC and EFTA, have jointly decided that EN standards will replace national standards (e.g. BS 7179) as soon as they are published. ISO-standards are not always introduced as national standards.

Of course, the Directive outlines minimum standards. Many countries will have existing legislation that already meets or exceeds the proposals.

Each member country will review the Directive and having interpreted it to suit local conditions, they will create new legislation. The new ergonomic laws should be in place as soon as possible. Local legislation will refer to local standards bodies' interpretation of ISO 9241 and EN 29241.

The principles behind ergonomic legislation are simple and founded in common sense. However, far reaching implications for manufacturers and employers ensure that their implementation is complex.

The aims of this book are threefold:

- (1) to present the actual state of the national legislation from a theoretical, political and a practical point of view,
- (2) to discuss the range of possible evaluation criteria,
- (3) to give a state of the art overview of the methods and tools in practice.

The Dutch author will give an overview of the national activities and forthcoming of the legislation process.

We hope that this report will help to harmonize the implementation and practice of the EU Directive 90/270/EEC in Europe.

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The Netherlands: Implementation of the EU Directive

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1 Introduction

Just like in any other memberstate of the European Community, the EC-directive 90/270/EEC on the minimum safety and health requirements for work with display screen equipment, needed to be implemented in the legislation of the Netherlands. On December 30, 1992, - one day before the final date for implementation - this has been achieved with enforcement of a special decree for VDU-work (Besluit Beeldschermwerk), based on the Working Environment Act (Arbeidsomstandighedenwet). The 'VDU-work Order' is founded on most of the articles of the EC-directive. Some smaller alterations have been made because of the general wording in the EC-text. To avoid opinion and interpretation differences, the Dutch Labour Inspectorate published an information sheet (P 184). In this guidebook all articles of the 'VDU-work Order' are clarified and, if possible, attached to a national or international standard (EN or NEN).

2 The VDU-Work Order

The definition of worker in the EC-directive is: 'any worker (...) who habitually uses display screen equipment as a significant part of his normal work'. In the 'VDU-work Order' of the Netherlands this definition is: 'a worker who in course of this work usually uses display screen equipment for at least two hours per calendar day.' The word 'habitually' is applicable where VDU-work consists of an major component of the employee's function. This definition has been introduced to exclude negligible display screen work. Taken into account the evidence from ergonomic research that indications of injury may significantly arise at sustained VDU-work, a criteria of two hours per calendar day has been adapted. Accordingly, the VDU-Work Order becomes relevant for 1,8 million employees (43% of the total number).

Article 7 of the EC directive contains the requirements on work organisation. The article is relevant because of its impact on the number of hours that people work with Visual Display Units. It states that the employer needs to plan the employee's activities in such a way that daily work on a display screen is intermitted by breaks or changes of activity, reducing the workload. In the 'VDU-work Order' this article is transformed into: 'The employer should plan the employee's activities in such a way that any work at a display

screen for two successive hours or more, will always be alternated by separate tasks or a rest period, reducing the workload'.

The explanatory notes to this article stress the necessity to prevent people from working with VDU's during the entire working time. Interruptions in working with display screen equipment over the working day are essential, at least after every two successive hours. Separate work patterns are preferable during these interruptions. Alternation with work of a different kind, requiring different physical and mental effort, is an appropriate way to relieve the stress due to display screen work. If no other kind of work is available, display screen work must alternate with regular breaks. The duration of the other tasks to be performed or the length of the breaks must be sufficient to reduce stress from VDU-work. The need to relieve the stress of display screen work by alternation with separate working tasks is indicated by evidence from literature that five or six hours of VDU-work is ergonomically inappropriate for a working day of eight hours. This in no way detracts from the requirement that employees should not spend more than two successive hours working without interruption at a display screen. If display screen work alternates with breaks, the breaks should preferably last at least ten minutes.

3 Information-Sheet 'Work with VDU's' (P-184)

The information-sheet 'Work with VDU's' of the Labour Inspectorate was published in 1993. In this year almost 11.500 copies of this guidebook were sold. Early 1994 an inquiry has been conducted to evaluate the effects of the VDU-Work Order and the publication of the guidebook. The guidebook P 184 provides useful information about requirements in the annex of the EC-directive. In the subsequent cases it was possible to attach the general wording of the annex-rules to a standard: LET OP: Opmaak! Requirements for the

VDU: NEN ISO 9241/EN 29241 part 3 ... "..."

chair: NEN (Dutch Standard) 1812 ... "..."

table: NEN 2449 ... "..."

lighting situation: NEN 3087 ... "..."

soft-ware: ISO 9241 part 10-19

The guidebook also gives information on health problems related to work with VDU's. Furthermore, many requirements and recommendations are presented - based on legislation of the EC-directive - to avoid health problems due to VDU-work. The guidebook also contains a checklist, that may support the employee to examine one's own workstation according to the requirements and recommendations in P-184.

An inquiry has been conducted in order to evaluate policy outcome. Effects of the widespread publication P-184 on the actual working conditions are discussed. Important questions are:

- Who are the purchasers of P-184?
- Does the content of P-184 meet the expectations of the purchasers?
- Does P-184 have a positive effect on working conditions with Visual Display Units?
- Have VDU-workstations been adapted to the requirements of the Dutch government?
- How does working conditions policy compare with complaints of employees?
- Will these complaints give rise to an overall improvement of workstations?

A questionnaire has been sent to a random sample of 469 purchasers of the guidebook. The response rate turned out to be 43.5 percent. Fairly representative data have been obtained for the total group of buyers, although relatively few reactions were obtained from the category banking, insurance business and commercial services.

4 Conclusions

In the Netherlands the implementation of the EC-directive has been implemented with exact definitions of working time and breaks and also with references to standards for the ergonomic aspects of the VDU-work. Generally speaking, the guidebook meets to a large extent the expectations of its purchasers. They appreciate the way the information is presented. Yellow borders in the left margin of the text, demonstrate the difference between requirements and recommendations. The difficulty level of the guidebook corresponds to the average education level of the readers, which is rather high. The checklist is also of significant value. About one third of the readers uses the checklist to examine the overall quality of VDU-work in the organization. According to the buyers the main deficiencies of the guidebook are the bad binding, the glaze of the paper, the lack of a summary and clear directions for improving the working conditions.

Many Dutch VDU-employees receive information on the VDU-work Order via the guidebook, published by the Labour Inspectorate. However, only a small number of guidebooks have been sold to small companies (1-9 employees), compared to medium sized companies (10-99 employees) and large industrial corporations (100 employees or more). The small organisations might be reached through the overall line organisations. A special manual could be made for this target section, which includes a summary of the requirements and recommendations next to a checklist and clear instructions about how to improve working conditions.

The buyers of P-184 are very actively engaged in the quality of work with VDU's. The 'VDU-work Order' gives, as the complaints of the employees do, a big impulse towards improvement of the working conditions of VDU-employees. The guidebook has demonstrated its value for remedial purposes. To remedy the complaints of employees by improving the working conditions is seen as more important than solely adjusting the working conditions to the requirements of the Order. Next to the major concern for furniture, screen, possibilities for interruptions, lighting and guidance, the environmental factors climate, workspace and noises become more important. Improvements that are harder and more expensive to accomplish are easily postponed. About one-third of the users of P-184 give low priority to the improvement of the working conditions. Extensive formal procedures and lack of financial support are the major hindrances for improving the quality of VDU-work.

Ninety percent of the buyers of the guidebook bear in some way responsibility for the working conditions of their colleagues. Generally speaking, they find it hard to estimate the effects of ameliorations. A extensive survey on VDU-work before and after improvements are realized, may demonstrate whether improvements serve the goal to reduce the number of health problems among VDU-employees. These evaluations need to focus on specific shortcomings of VDU-working conditions and complaints of employees. This way the success of pursuing the goal of optimum working conditions may become clear to the users of P-184.

So far the Dutch Labour Inspectorate has spent little attention to the subject of work with VDU's. This is probably a consequence of the fact that all VDU-workstations have to be adapted to the requirements of the Order only by January 1, 1995. In view of the fact that there are 1.8 million VDU-workers in the Netherlands, and the direct relationship between VDU-work characteristics and health problems, the Labour Inspectorate could spend some more time on this subject. During the inspections the features of VDU-work that are

hard to improve need to get special attention, because improvements on these features are often delayed.

The guidebook has demonstrated its value for remedial purposes. Nowadays people tend to adapt their work environment to legislation requirements. On the other hand, care for good work conditions in an early stage - the design of offices - may be more beneficial compared with this remedy-approach. Besides, improvement in an early stage is less expensive and easier to accomplish. For that reason prevention of physical and mental health problems need special emphasis in any work environment policy.

The improvement of the working conditions may also result in positive side-effects. The attention for the improvement of working conditions may have a positive effect upon the reduction of sick-leave. Furthermore, it may prevent the loss of skilled and experienced employees who become unfit for the VDU-work. This means that there is a positive effect on the costs of labour and the productivity, by which the (maintenance of) employment will be stimulated in a durable way.

Reference

Ministerie van Sociale Zaken en Werkgelegenheid, Werken met Beeldschermen (Work with Visual Display Units) P 184, Sdu Uitgeverij, Den Haag 1993.

Appendix

English Version of the EU Directive 90/270/EEC

COUNCIL DIRECTIVE of 29 May 1990 on the minimum safety and health requirements for work with display screen equipment (fifth individual Directive within the meaning of Article 16 (1) of Directive 87/391/EEC).

(90/270/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 118a thereof,

Having regard to the Commission proposal (1) drawn up after consultation with the Advisory Committee on Safety, Hygiene and Health Protection at Work,

In cooperation with the European Parliament(2)

Having regard to the opinion of the Economic and Social Committee(3)

Whereas Article 118a of the Treaty provides that the Council shall adopt, by means of Directives, minimum requirements designed to encourage improvements, especially in the working environment, to ensure a better level of protection of workers' safety and health;

Whereas, under the terms of that Article, those Directives shall avoid imposing administrative, financial and legal constraints, in a way which would hinder the creation and development of small and medium-sized undertakings;

Whereas the communication from the Commission on its programme concerning safety, hygiene and health at work (4) provides for the adoption of measures in respect of new technologies; whereas the Council has taken note thereof in resolution of 21 December 1987 on safety, hygiene and health at work (5);

Whereas compliance with the minimum requirements for ensuring a better level of safety at workstations with display screens is essential for ensuring the safety and health of workers;

Whereas this Directive is an individual Directive within the meaning of Article 16 (1) of Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work (6); whereas the provisions of the latter are therefore fully applicable to the use by workers of display screen equipment, without prejudice to more stringent and/or specific provisions contained in the present Directive;

Whereas employers are obliged to keep themselves informed of the latest advances in technology and scientific findings concerning workstation design so that they can make

any changes necessary so as to be able to guarantee a better level of protection of workers' safety and health;

Whereas the ergonomic aspects are of particular importance for a workstation with display screen equipment;

Whereas this Directive is a practical contribution towards creating the social dimension of the internal market;

Whereas, pursuant to Decision 74/325/EEC(7), the Advisory Committee on Safety, Hygiene and Health Protection at Work shall be consulted by the Commission on the drawing-up of proposals in this field,

HAS ADOPTED THIS DIRECTIVE

SECTION I: GENERAL PROVISIONS

ARTICLE 1

SUBJECT

1. This Directive, which is the fifth individual Directive within the meaning of Article 16 (1) of Directive 89/391/EEC, lays down minimum safety and health requirements for work with display screen equipment as defined in Article 2.
2. The provisions of Directive 89/391/EEC are fully applicable to the whole field referred to in paragraph 1, without prejudice to more stringent and/or specific provisions contained in the present Directive.

This directive shall not apply to:

- a) drivers' cabs or control cabs for vehicles or machinery;
- b) computer systems on board a means of transport;
- c) portable systems not in prolonged use at a workstation;
- e) calculators, cash registers and any equipment having a small data or measurement display required for direct use of the equipment;
- f) typewriters of traditional design, of the type known as 'typewriter with window'

ARTICLE 2

Definitions

For the purpose of this Directive, the following terms shall have the following meanings;

- a) display screen equipment; an alphanumeric or graphic display screen, regardless of the display process employed;
- b) workstation; an assembly comprising display screen equipment, which may be provided with a keyboard or input device and/or software determining the operator/machine interface, optional accessories, peripherals including the diskette drive, telephone, modem, printer, document holder, work chair and work desk or work surface, and immediate work environment;

- c) worker; any worker as defined in Article 3 (a) of Directive 89/391/EEC who habitually uses display screen equipment as a significant part of his normal work.

SECTION II: EMPLOYERS OBLIGATIONS

ARTICLE 3

Analysis of workstations

1. Employers shall be obliged to perform an analysis of workstations in order to evaluate the safety and health conditions to which they give rise for their workers, particularly as regards possible risks to eyesight, physical problems and problems of mental stress.
2. Employers shall take appropriate measures to remedy the risks found, on the basis of the evaluation referred to in paragraph 1, taking account of the additional and/or combined effects of the risks so found.

ARTICLE 4

Workstations put into service for the first time

Employers must take the appropriate steps to ensure that workstations first put into service after 31 December 1992, meet the minimum requirements laid down in the Annex.

ARTICLE 5

Workstations already put into service

Employers must take the appropriate steps to ensure that workstations already put into service on or before 31 December 1992 adapted to comply with the minimum requirements laid down in the Annex not later than four years after that date.

ARTICLE 6

Information for, and training of, workers

1. Without prejudice to Article 10 of Directive 89/391/EEC, workers shall receive information on all aspects of safety and health relating to their workstations as are implemented under Articles 3, 7 and 9.

In all cases workers or their representatives shall be informed of any health and safety measure taken in compliance with this Directive.

2. Without prejudice to Article 12 of Directive 89/391/EEC, every worker shall also receive training in use of the workstation before commencing this type of work and whenever the organization of the workstation is substantially modified.

ARTICLE 7

Daily work routine

The employer must plan the worker's activities in such a way that daily work on a display screen is periodically interrupted by breaks or changes of activity reducing the workload at the display screen.

ARTICLE 8

Worker consultation and participation

Consultation and participation of workers and/or their representative shall take place in accordance with Article 11 of Directive 89/391/EEC on the matters covered by this Directive, including its Annex.

ARTICLE 9

Protection of workers eyes and eyesight

1. Workers shall be entitled to an appropriate eye and eyesight test carried out by a person with the necessary capabilities:
 - before commencing display screen work,
 - at regular intervals thereafter, and
 - if they experience visual difficulties which may be due to display screen work.
2. Workers shall be entitled to an ophthalmological examination if the result of the test referred to in paragraph 1 show that this is necessary.
3. If the results of the test referred to in paragraph 1 or of the examination referred to in paragraph 2 show that it is necessary and if normal corrective appliances cannot be used, workers must be provided with special corrective appliances appropriate for the work concerned.
4. Measures taken pursuant to this Article may in no circumstances involve workers in additional financial cost.
5. Protection of worker's eyes and eyesight may be provided as part of a national health system.

SECTION III: MISCELLANEOUS PROVISIONS

ARTICLE 10

Adaptations to the Annex

The strictly technical adaptations to the Annex to take account of technical progress, developments in international regulations and specifications and knowledge in the field of display screen equipment shall be adopted in accordance with the procedure laid down in Article 17 of Directive 89/391/EEC.

ARTICLE 11

Final provisions

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 31 December 1992.

They shall forthwith inform the Commission thereof,

2. Member States shall communicate to the Commission the texts of the provisions of national law which they adopt or have already adopted, in the field covered by this Directive.

3. Member States shall report to the Commission every four years on the practical implementation of the provisions of this Directive, indicating the points of view of employers and workers.

The Commission shall inform the European Parliament, the Council, the Economic and Social Committee and the Advisory Committee on Safety, Hygiene and Health Protection at Work.

4. The Commission shall submit a report on the implementation of this Directive at regular intervals to the European Parliament, the Council and the Economic and Social Committee, taking into account paragraphs 1, 2 and 3.

ARTICLE 12

This Directive is addressed to the Member States

Done at Brussels

29 May 1990.

For the Council

The President

B. AHERN

Footnotes

(1) OJ No C 113, 29, 4? 1988? P.7 and OJ No C 130, 26.5. 1989, P.5

(2) OJ No C 12, 16.1. 1989, P.92 and OJ No C 113, 7.5 1990

(3) OJ No C 318, 12, 12, 1988, P.32

(4) OJ No C 28, 3.2. 1988, P.3

(5) OJ No C 28, 3.2. 1988, P.1.

(6) OJ No L 183, 29? 6. 1989? P.1

(7) OJ No L 185, 9.7. 1974, P.15.

Annex

MINIMUM REQUIREMENTS

(articles 4 and 5)

Preliminary remark

The obligations laid down in this Annex shall apply in order to achieve the objectives of this Directive and to the extent that, firstly, the components concerned are present at the workstation, and secondly, the inherent requirements or characteristics of the task do not preclude it.

1. EQUIPMENT

a) General comment

The use as such of the equipment must not be a source of risk for workers.

b) Display screen

The characters on the screen shall be well-defined and clearly formed, of adequate spacing between the characters and lines. The image on the screen should be stable, with no flickering or other forms of instability. The brightness and/or contrast between the characters and the background shall be easily adjustable by the operator, and also be easily adjustable to ambient conditions. It shall be possible to use a separate base for the screen or an adjustable table. The screen shall be free of reflective glare and reflections liable to cause discomfort to the user.

c) Keyboard

The keyboard shall be tiltable and separate from the screen so as to allow the worker to find a comfortable working position avoiding fatigue in the arms or hands. The space in front of the keyboard shall be sufficient to provide support for the hands and arms of the operator. The keyboard shall have a matt surface to avoid reflective glare. The arrangement of the keyboard and the characteristics of the keys shall be such as to facilitate the use of the keyboard. The symbols on the keys shall be adequately contrasted and legible from the design working position.

d) Work desks or work surface

The work desk or work surface shall have a sufficiently large, low-reflectance surface and allow a flexible arrangement of the screen, keyboard, documents and related equipment. The document holder shall be stable and adjustable and shall be positioned so as to minimize the need for uncomfortable head and eye movements. There shall be adequate space for workers to find a comfortable position.

e) Work chair

The work chair shall be stable and allow the operator easy freedom of movement and a comfortable position. The seat shall be adjustable in height. The seat back shall be adjustable in both height and tilt. A footrest shall be made available to any one who wishes for one.

2. ENVIRONMENT

a) Space requirements

The workstation shall be dimensioned and designed so as to provide sufficient space for the user to change position and vary movements.

b) Lighting

Room lighting and/or spot lighting (work lamps) shall ensure satisfactory lighting conditions and an appropriate contrast between the screen and the background environment, taking into account the type of work and the user's vision requirements. Possible disturbing glare and reflections on the screen or other equipment shall be

prevented by coordinating workplace and workstation layout with the positioning and technical characteristics of the artificial light sources.

c). Reflections and glare

Workstations shall be so designed the sources of light, such as windows and other openings, transparent or translucent walls, and brightly coloured fixtures or walls cause not direct glare and, as far as possible, no reflections on the screen. Windows shall be fitted with a suitable system of adjustable covering to attenuate the daylight that falls on the workstation.

d) Noise

Noise emitted by equipment belonging to workstation(s) shall be taken into account when a workstation is being equipped, in particular so as not to distract attention or disturb speech.

e) Heat

Equipment belonging to workstation(s) shall not produce excess heat which could cause discomfort to workers.

f) Radiation

All radiation with the exception of the visible part of the electromagnetic spectrum shall be reduced to negligible levels from the point of view of the protection of workers safety and health.

g) Humidity

An adequate level of humidity shall be established and maintained.

3. OPERATOR/COMPUTER

In designing, selecting, commissioning and modifying software, and in designing tasks using display screen equipment, the employer shall take into account the following principles;

- a) software must be suitable for the task;
- b) software must be easy to use and, where appropriate, adaptable to the operators level of knowledge or experience, no quantitative or qualitative checking facility may be used without the knowledge of the workers;
- c) systems must provide feedback to workers on their performance;
- d) systems must display information in a format and at a pace which are adapted to operators;
- e) the principles of software ergonomics must be applied, in particular to human data processing.