

ANNEX 3

- Task data sheet



ErgoCheck

(1 de 6)

Task:

Company:

Date:

Observations:

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.....

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Task sheet:

Location of the task analyzed in the company

Description of the task

Number of workers

Outstanding organizational aspects (schedules, shifts, breaks, flexibility, etc)

Previous incidents recorded (complaints, accidents, injuries, etc)

Previous ergonomic interventions performed (describe)

Observations on the analysis

ErgoCheck - LEVEL I - Inicial Identification

(2 de 6)

Below are detailed the items of the ergonomics identification checklist (Level I). Each item marked indicates a possible risk situation, which requires a more detailed information. For each item completed in level I, the section of the level II list to be filled in is indicated.

- Are there in the workplace or task analysed workers who can be especially sensitive to the risks arising from work (people with disabilities, injured workers, pregnant women, workers over 50, etc.)?---**LEVEL II, SENSITIVE WORK.**
- Are there situations in the workplace or task analysed that may give rise to psychosocial risks (such as high psychological demands, little control over work, conflicts between workers and/or people in charge, discomfort perceived, etc.)? --- **LEVEL II, PSYCHOSOCIAL ASP**
- Does any body segment (neck, trunk, arms, hands/wrists or feet) adopt a position that is away from the neutral posture frequently and for a long period of time? --- **LEVEL II, POSTURES/REPETITIVENESS**
- Is it necessary to stand for a long time?--- **LEVEL II, POSTURES/REPETITIVENESS**
- Is it necessary to kneel, squat or sit on the floor? --- **LEVEL II, POSTURES/REPETITIVENESS**
- Does the work involve performing repetitive movements (the same movement is repeated several times) with any body segment (neck, trunk, arms, hands/wrists)? **LEVEL II, POSTURES/REPETITIVENESS**
- Have any annoying situations been detected related to temperature, noise, lighting, ventilation, etc? -- **LEVEL II, ENVIRONMENTAL CONDITIONS**
- Are objects weighing 3 kg or more manually lifted and/or heavy elements carried, pushed or pulled? --- **LEVEL II, MMH**
- Does any task performed involve applying force (apart from load handling) with the hands, arms, trunk or legs/feet? --- **LEVEL II, FORCE**
- Does any task performed involve using display screens for more than 2 hours? --- **LEVEL II, DISPLAY SCREENS**
- Have any problems been detected regarding work heights (very high or very low), reaches (too far) and/or working space (insufficient or inadequate)? --- **LEVEL II, SPACE**
- Have any situations been detected in which the tools, controls and/or indicators are inadequate (shape, size, weight, comfort, etc.) for the task being performed? --- **LEVEL II, ELEM. AND EQUIPMENT**

ErgoCheck - LEVEL II - Detailed Check

(3 de 6)

SENSITIVE WORKERS

- Is there any worker over the age of 50 in the workplace?
- Is there any person with physical, sensory or psychic disabilities in the workplace?
- Is there any pregnant woman in the workplace?
- Is there any minor (16 to 18 years old) in the workplace?
- Is there any worker in the workplace who has returned to work after a sick leave?

PSYCHOSOCIAL ASPECTS

- Have any workers complaints or problems been detected in the workplace regarding the work pace, the distribution and number of tasks or the need to hide emotions?
- Have any complaints or problems been detected regarding the lack of worker's control over the number, distribution or type of tasks in the workplace?
- Have any complaints been detected in relation to job instability or working conditions insecurity (working hours, tasks, salary, etc.)?
- Have any workers' complaints or problems been detected in relation to the information they receive to perform their tasks or about their relationships with colleagues and managers?

POSTURES/REPETITIVENESS

Type of task / activity

- Non-repetitive tasks involving a wide variety of postures that are difficult to characterize
- Non-repetitive tasks in which it is possible to identify the most representative positions (frequent and/or arduous)
- The activity is clearly repetitive (the work cycle is always repeated in the same way), there are movements of the arms and hands, and the neck posture is relevant..

The activity is clearly repetitive (the cycle is always repeated in the same way) and the movements are mainly performed by the arm, elbow joint and hand.

Adopted postures

- Moderate trunk flexion (between 20°- 60°) or high trunk flexion (above 60°)
- Trunk in extension (tilted backwards)
- Trunk tilted to one side or rotated (clearly visible)

ErgoCheck - LEVEL II - Detailed Check

(4 de 6)

Adopted postures continued

- Moderate arm/s flexion (between 20° and 60°), without support
- High arm/s flexion (near or above shoulder height), without support
- Arm/s extension (backwards)
- Wrist/s with high flexion/extension, laterally deviated and/or turned
- Elbow/s with high flexion/extension
- Neck highly bent forward (flexion) or backward (extension) and/or laterally tilted or rotated in a clearly visible manner
- Standing, without moving (for example, in front of a work bench or a conveyor belt)
- Standing with knees bent
- Standing posture, supporting almost all the body weight on one leg
- Kneeling or squatting posture

ENVIRONMENTAL COND.

- Are there situations in which temperature is inadequate (very hot or cold, high or very low humidity, or lack of adequate heating/cooling systems)?
- Are there annoying drafts?
- Have the workers complained about hot or cold conditions?
- Are there high noise situations that make it difficult for workers to speak or concentrate during any task over the workday?
- Are there unfavourable lighting conditions in the workplace (poor or insufficient lighting, reflections, glares, lack of natural light, etc.)?
- Are there any problems or complaints regarding ventilation (stale air, bad smells, etc.)?

MMH

Manual Material Handling Situations

- Are loads greater than 3 kg handled in any of the following situations?
 - Above shoulder level or below the knees.
 - Away from the body.
 - With the trunk rotated.
 - With a frequency greater than once per minute.
- Are loads handled by adopting poor posture (straight legs, trunk bent, etc.)?

ErgoCheck - LEVEL II - Detailed Check

(5 de 6)

Manual material handling situations continued

- Are difficult-to-handle loads handled (irregular shapes, large sizes, moving parts, no handles or inadequate handles)?
- Are loads handled in a sitting position?
- Are loads heavier than 3 kg manually carried over distances greater than 2 meters?
- Are heavy loads pushed or pulled on carts or any other element or surface that has castors or which makes them easier to move?
- Are people handled, moved, or transferred?

Manual Material Handling Organization

- Is manual materials handling (lifting, pushing or pulling) always the same? That is, the conditions do not significantly change during the task (for example, loads of the same weight are lifted, always in the same way, from and to the same place, etc.).
- Is manual materials handling (lifting, pushing or pulling) different? That is, some conditions significantly change (weight, load position at origin or destination, etc.), load lifting is combined with carrying, or pushing is combined with pulling.
- Do load handling conditions greatly vary? (For example, in warehouse order picking, where many objects with different weights are lifted, at very different heights and/or depths, with or without trunk rotation, etc.).
- Are there different tasks of manual materials handling that are performed in a specific sequence or rotation throughout the working day? The working height is not adapted to the type of task and the dimensions of each worker

FORCE

- Do the tasks performed require significant force exertion with the foot (for example, when operating pedals)?
- Do the tasks performed require significant force exertion with the hand to hold, grasp, grip or adjust elements?
- Do the tasks performed require significant force exertion with the arm and/or the entire body while standing or sitting (for example, when operating levers, pushing or pulling objects with no castors or rollers to support them, etc.)?
- Does any action involve that the worker uses any part of their body (hands, knees, elbows, etc.) as a tool by repeatedly pressing or hitting?

DISPLAY SCREEN / OFFICE

- Are the screen and the main controls (buttons, computer, keyboard, mouse) incorrectly placed (very high or very low, on one side, very close or very far from the worker)?
- Is the worker sitting incorrectly (back not leaning on the backrest, feet not properly supported on the floor, arms too raised, no arms support)? Or has the worker said that the chair is uncomfortable?
- Is there not enough clear space under the table for the legs and thighs?
- Is there not enough space on the table to properly arrange the work items and/or to adequately support the forearms?
- Can the worker not properly support the feet on the floor while sitting?

SPACE/HEIGHTS/REACHES

- Does the work height not adapt to the type of task and the dimensions of each worker? Specifically, one of the following situations occurs when the worker is standing:
 - In precision tasks, the work height is not 5-10 cm above the height of the worker's elbows.
 - In light tasks, the work height is not 10-15 cm below the height of the worker's elbows.
 - In heavy tasks, the work height is not 15-30 cm below the height of the worker's elbows
- When the worker is sitting, is the height of the work surface not approximately at the level of the elbows?
- Are reaches performed laterally or behind the body?
- Is there not enough space on the work surface (table, work bench, etc.) to adequately arrange the different elements or objects used by the worker?
- Does the worker have not enough space to comfortably move their legs (under the table or work bench, for example) or body?

ELEMENTS - EQUIPMENT

- Are the tools used not specific to the task being performed or in poor condition?
- Is the handle of the tools uncomfortable (unsuitable thickness, length, shape or material)?
- Are heavy tools without support/suspension used (generally >2.3 kg or >0.4 kg in precision tasks)?
- Is there vibration transmission from the tools or the machinery used?
- Are the controls of the machines (levers, handwheels, push-buttons,) inadequate or uncomfortable to operate (they are too far, difficult to use, require strength, etc.)?
- Are the indicators (screens, displays, light warnings, etc.) difficult to see (they cannot be properly viewed, they do not have enough contrast, there are reflections, etc.) or to understand?
- Are the pedals difficult to operate and/or cannot be operated by both feet?

Manual Material Handling – Lifting

Single task

Task:

Multiple task

Subtask:

of the task:

Company:

Date:

Observations:

.....
.....
.....

Population: general more protection

Variables

Duration: short moderate long

Load mass (kg.):

Frequency (lif/min.):

Origin

Destination

Horizontal location (cm.):

Vertical location (cm.):

Angle of asymmetry (°):

Type of grip (good, fair, poor):

Control at destination: yes no

One handed operation: yes no

Two person operation: yes no

Additional task:

yes

no

Manual Material Handling – Carrying

Multiple task

Subtask:

of the task:

Company:

Date:

Observations:

.....

.....

.....

Population: general more protection

Variables

Load mass (kg):

Distance traveled (m):

Frequency (carries/min):

Height of the grip: hips elbows

Manual Material Handling – Pulling

Single task

Task:

Multiple task

Subtask:

of the task:

Company:

Date:

Observations:

.....
.....
.....

Population: general more protection

Variables

Initial force (kg):

Sustained force (kg):

Distance (m):

Frequency (pull/min):

Grip height (cm.):

Manual Material Handling – Pushing

Single task

Task:

Multiple task

Subtask:

of the task:

Company:

Date:

Observations:

.....
.....
.....

Population: general more protection

Variables

Initial force (kg):

Sustained force (kg):

Distance (m):

Frequency (push/min):

Grip height (cm):

Injured MMH

(1 of 1)

Task:

Company:

Date:

Observations:

.....

.....

Variables

Load mass (kg):

Handling conditions

- **Horizontal location**
 - close (until 30 cm)
 - far (30-60 cm)
- **Vertical location**
 - floor level
 - knee level
 - waist level
 - shoulder level
- **Trunk twisting**
 - 0-30°
 - 30-60°
 - 60-90°

Manual Patient Handling (MAPO) – Hospitalization

Task/Area:

.....

Company/Center:.....

.....

Date:

Observations:

.....

.....

.....

Type

Checklist

Analytical

General

Total number of operators who perform Manual Patient Handling:

Number of operators who perform Manual Patient Handling in 24 hours (OP):

| Nurses | | | Assistants | | | Porters | | |
|--------|---|---|------------|---|---|---------|---|---|
| M | E | N | M | E | N | M | E | N |
| | | | | | | | | |

Patient typology:

| Patient typology | <u>Noncooperative patients (NC)</u> | <u>Partially cooperative patients (PC)</u> | <u>Total of disabled patients who require MPH (D)</u> |
|------------------|-------------------------------------|--|---|
| | | | |

Maneuvers

| <u>Manual Patient Handling Tasks</u> | No. of total liftings | | | | | | No. of partial liftings | | | | | |
|--|-----------------------|---|---|-------|---|---|-------------------------|---|---|-------|---|---|
| | Manuals | | | Aided | | | Manuals | | | Aided | | |
| Working shifts | M | E | N | M | E | N | M | E | N | M | E | N |
| Moving up in bed towards the headboard | | | | | | | | | | | | |
| Bed to wheelchair/armchair | | | | | | | | | | | | |
| Wheelchair/armchair to bed | | | | | | | | | | | | |
| Bed to stretcher | | | | | | | | | | | | |
| Stretcher to bed | | | | | | | | | | | | |
| Wheelchair to toilet | | | | | | | | | | | | |
| Toilet to wheelchair | | | | | | | | | | | | |
| Turning over in bed and repositioning | | | | | | | | | | | | |
| Lifting from sitting to standing posture | | | | | | | | | | | | |
| Other: | | | | | | | | | | | | |
| TOTAL | | | | | | | | | | | | |

Observations:

.....

.....

Training

| | | | | | |
|--|-----|----|--|-----|----|
| Was there any specific TRAINING in Manual Patient Handling? | YES | NO | INFORMATION (use of equipment or informative brochures) | | |
| If the answer is YES How many months ago? | | | Was there any training in the use of equipment? | YES | NO |
| How many hours/operator? | | | Were any informative brochures on Manual Patient Handling delivered? | YES | NO |
| How many operators? | | | If the answer is YES How many operators? | YES | NO |
| Was the effectiveness of the training/information verified? | | | | YES | NO |

Help equipment

| <u>Equipment and help to lift disabled patients</u> | <u>Number</u> |
|--|---------------|
| Lift: Equipment for patient total lifting with adjustable electric mechanism | |
| Height-adjustable stretcher: stretcher whose height can be changed | |
| Height-adjustable bed (total) | |
| Height-adjustable bed: Bed which is at least adjustable in height (electric or hydraulic mechanism) and three articulation nodes | |
| Sliding sheet | |
| Sliding boards | |
| Ergonomic belt | |
| ROLLBORD | |
| Active or sit-to-stand hoist, thoracic band lift | |
| Other: | |

The following tabs should be completed ONLY if ANALYTICAL mode is chosen

Wheelchair

| | |
|-----------------------------|--|
| Total number of wheelchairs | |
|-----------------------------|--|

| <u>Characteristics of ergonomic inadequacy</u> | <u>Number</u> |
|--|---------------|
| Malfunctioning brakes | |
| Non-removable or folding armrest | |
| Inadequate backrest H >90cm; Incl. > 100° | |
| Maximun inadequate width > 70 cm | |
| Non-removable or non-folding footrest (<i>descriptive</i>) | |
| Poor maintenance (<i>descriptive</i>) | |

Bathroom

| | |
|--|--|
| Total number of bathrooms with shower/bath | |
|--|--|

| <u>Characteristics of ergonomic inadequacy</u> | <u>Number</u> |
|--|---------------|
| Free space inadequate for use of aids | |
| Door width less tan 85 cm | |
| Presence of fixed obstacles | |
| Door inward opening (<i>descriptive</i>) | |
| Presence of a shower (<i>descriptive</i>) | |
| Fixed bathtub (<i>descriptive</i>) | |

WC

| | |
|------------------------------|--|
| Total number of toilets (WC) | |
|------------------------------|--|

| <u>Characteristics of ergonomic inadequacy</u> | <u>Number</u> |
|---|----------------------|
| Free space insufficient to turn around a wheelchair | |
| Insufficient height of WC (below 50 cm) | |
| Absence or inadequate side grab bar in the toilet | |
| Door width less than 85 cm | |
| Space at side of WC less than 80 cm | |
| Door inward opening (<i>descriptive</i>) | |

Rooms

| | |
|-----------------------|--|
| Total number of rooms | |
|-----------------------|--|

| <u>Characteristics of ergonomic inadequacy</u> | <u>Number</u> |
|---|----------------------|
| Space between beds or between bed and wall less than 90 cm | |
| Space between foot of bed and wall less than 120 cm | |
| Unsuitable bed: one section has to be manually lifted | |
| Space between bed and floor less than 15 cm | |
| Height of armchair seat less than 50 cm | |
| Presence of non-removable obstacles (<i>descriptive</i>) | |
| Fixed-height bed (<i>descriptive</i>) | |
| Inadequate side bars (they are an obstacle) (<i>descriptive</i>) | |
| Door width (<i>descriptive</i>) | |
| Bed without wheels (<i>descriptive</i>) | |

Manual Patient Handling (MAPO) – Surgical Unit

Task/Area:

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Company/Center:

.....

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Date:

.....

Observations:

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.....

Type

Checklist

Analytical

General

Total number of operators who perform Manual Patient Handling:

Number of operators who perform Manual Patient Handling in 24 hours (OP):

| Nurses | | | Assistants | | | Porters | | |
|--------|---|---|------------|---|---|---------|---|---|
| M | E | N | M | E | N | M | E | N |
| | | | | | | | | |

Intervention typology:

| Intervention typology | General Anesthesia (GA) | Local Anesthesia (LA) | Number of procedures requiring patient handling (NS) |
|-----------------------|-------------------------|-----------------------|--|
| | | | |

| | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|

(2 of 4)

Maneuvers

| <u>Manual Patient Handling Tasks</u> | No. of lifts general | | | | | | No. of lifts local anesthesia | | | | | |
|--------------------------------------|----------------------|---|---|-------|---|---|-------------------------------|---|---|-------|---|---|
| | Manuals | | | Aided | | | Manuals | | | Aided | | |
| <u>Working shifts</u> | M | E | N | M | E | N | M | E | N | M | E | N |
| Bed to stretcher | | | | | | | | | | | | |
| Stretcher to operating table | | | | | | | | | | | | |
| Operating table to stretcher | | | | | | | | | | | | |
| Stretcher to bed | | | | | | | | | | | | |
| Stretcher to stretcher | | | | | | | | | | | | |
| From prone to supine | | | | | | | | | | | | |
| From supine to prone | | | | | | | | | | | | |

Observations:

.....

.....

.....

Training

| | | | | |
|---|-----|----|---|--------|
| Was there any specific training in Manual Patient Handling? | YES | NO | INFORMATION (use of equipment or informative brochures) | |
| If the answer is YES How many months ago? | | | Was there any training in the use of equipment? | YES NO |
| How many hours/operator? | | | Where any informative brochures on Manual Patient Handling delivered? | YES NO |
| How many operators? | | | If the answer is YES How many operators? | YES NO |
| Was the effectiveness of the training/information verified? | | | YES | NO |

The following tabs should be completed **ONLY** if **ANALYTICAL** mode is chosen

Stretchers

| | |
|----------------------------|--|
| Total number of stretchers | |
|----------------------------|--|

| <u>Characteristics of ergonomic inadequacy</u> | <u>Number</u> |
|--|---------------|
| Malfunctioning brakes | |
| Not height-adjustable | |
| Inadequate side bars (they are an obstacle) | |
| Need to perform partial manual liftings | |

Operating rooms

| | |
|---------------------------------|--|
| Total number of operating rooms | |
|---------------------------------|--|

| <u>Characteristics of ergonomic inadequacy</u> | <u>Number</u> |
|--|---------------|
| Operating table with side rails | |
| Non removable rails | |
| Inadequate space for use of aids | |

Manual Patient Handling (MAPO) – Community Health Center

Task/Area:

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Company/Center:

.....

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Date:

.....

Observations:

.....

.....

.....

.....

Type

Checklist

Analytical

General

Total number of operators who perform Manual Patient Handling:

Number of operators who perform Manual Patient Handling in 24 hours (OP):

| Nurses | | | Assistants | | | Porters | | |
|--------|---|---|------------|---|---|---------|---|---|
| M | E | N | M | E | N | M | E | N |
| | | | | | | | | |

Patient typology:

| Patient typology | <u>Non cooperative patients (NC)</u> | <u>Partially cooperative patients (PC)</u> | <u>Total of disabled patients who required MPH (D)</u> |
|------------------|--------------------------------------|--|--|
| | | | |

Maneuvers

| <u>Manual Patient Handling Tasks</u> | No. of total liftings | | No. of total liftings | |
|---------------------------------------|-----------------------|-------|-----------------------|-------|
| | Manuals | Aided | Manuals | Aided |
| Stretcher to exam bed | | | | |
| Wheelchair to exam bed | | | | |
| Ward bed to exam bed | | | | |
| Exam bed to stretcher | | | | |
| Exam bed to wheelchair | | | | |
| Exam bed to ward bed | | | | |
| Turning over in bed and repositioning | ----- | ----- | | |
| Trunk lifting | ----- | ----- | | |
| Other | ----- | ----- | | |
| TOTAL | | | | |

Training

| Was ther any specific TRAINING in Manual Patient Handling? | YES | NO | INFORMATION (use of equipments or informative brochures) | | |
|---|-----|----|---|-----|----|
| If the answer is YES How many months ago? | | | Was there any training in the use of equipment? | YES | NO |
| How many hours/ operator? | | | Where any informative brochures on Manual Patient Handling delivered? | YES | NO |
| How many operators? | | | If the answer is YES, How many operators? | YES | NO |
| Was the effectiveness of the training/information verified? | | | | YES | NO |

The following tabs should be completed **ONLY** if **ANALYTICAL** mode is chosen

Stretchers

| | |
|----------------------------|--|
| Total number of stretchers | |
|----------------------------|--|

| <u>Characteristics of ergonomic inadequacy</u> | <u>Number</u> |
|--|---------------|
| Malfunctioning brakes | |
| Not height-adjustable | |
| Inadequate side bars (they are an obstacle) | |
| Need to perform partial manual liftings | |

Wheelchair

| | |
|-----------------------------|--|
| Total number of wheelchairs | |
|-----------------------------|--|

| <u>Characteristics of ergonomics inadequacy</u> | <u>Number</u> |
|--|---------------|
| Malfunctioning brakes | |
| Non-removable or folding armrest | |
| Inadequate backrest H >90cm; Incl. > 100° | |
| Maximun inadequate width > 70 cm | |
| Non-removable or non-folding footrest (<i>descriptive</i>) | |
| Poor maintenance (<i>descriptive</i>) | |

Exam rooms

| | |
|-----------------------------------|--|
| Total number of exam rooms | |
|-----------------------------------|--|

| <u>Characteristics of ergonomic inadequacy</u> | <u>Number</u> |
|---|----------------------|
| Free space inadequacy for use of aids | |
| Exam bed not height adjustable | |
| Inadequate stretcher side flaps | |
| Part of exam bed needs to be raised manually | |
| Patient armchair height less than 50 cm | |
| Door width < 85 cm | |

Rooms (day hospital)

| | |
|------------------------------|--|
| Total number of rooms | |
|------------------------------|--|

| <u>Characteristics of ergonomic inadequacy</u> | <u>Number</u> |
|--|----------------------|
| Space between beds or between bed and wall less than 90 cm | |
| Space between foot of bed and wall less than 120 cm | |
| Unsuitable bed that needs to be partially lifted | |
| Space between bed and floor less than 15 cm | |
| Patient armchair height less than 50 cm | |

Repetitive Tasks

(1 of 2)

Task:

Company:

Date:

Observations:

.....

.....

Subtasks

| | Subtask | Exposure (% of total task) | Arms Rep. (rep/min) | Hands Rep. (rep/min) |
|----|----------------|--------------------------------------|-------------------------------|--------------------------------|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |

Postures

| | Posture | Time (% of total subtask) | Subtask |
|----|----------------|-------------------------------------|----------------|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |

- 8.
- 9.

Repetitive Task – Posture

(2 de 2)

Subtask:

Posture:

Time (% of total subtask):

Neck

Flexion or extension:

- flexion 0-10°
- flexion 10-20°
- flexion > 20°
- extension

Lateral tilt: yes no

Torsion: yes no

Arms

Flexion or extension:

- extension > 20°
- between 20° extension and 20° flexion
- flexion 20-45°
- flexion 45-90°
- flexion > 90°

Wrists

Flexion or extension:

- neutral position (0°)
- flexion or extension < 15°
- flexion or extension > 15°

Radial or ulnar deviation: yes no

Pronation or supination: yes no

Hand effort:

- light task (< 10% of maximum force)
- rather hard task (10-30% of maximum force)
- hard task (30-50% of maximum force)
- very hard task (50-80% of maximum force)
- nearly the maximum (> 80% of maximum force)

OCRA Multitask

(1 of 4)

Task:

Company:

Date:

Observations:

.....

.....

Organization

Repetitive subtasks

| Subtask | Description |
|---------|-------------------------|
| ----- | |

Subtask

Technical action

Side

Observations - action

Force

Check the force exerted according to the Borg scale (or its equivalent as a % of the maximum voluntary contraction)

- | | | |
|-----------------------------------|-----------------------|-----------------------|
| <input type="checkbox"/> 0 | None at all | |
| <input type="checkbox"/> 0.5 | Extremely weak | (5% of MVC) |
| <input type="checkbox"/> 1 | Very weak | (10% of MVC) |
| <input type="checkbox"/> 2 | Weak | (20% of MVC) |
| <input type="checkbox"/> 3 | Moderate | (30% of MVC) |
| <input type="checkbox"/> 4 | Quite hard | (40% of MVC) |
| <input type="checkbox"/> ≥ 5 | Hard/very hard | ($\geq 50\%$ of MVC) |

Posture

Check if the following postures and movements of the upper limb occur

- | | | | |
|-----------------|--|--------------|--|
| Shoulder | <input type="checkbox"/> Flexion $\geq 80^\circ$ | Wrist | <input type="checkbox"/> Flexion/Extension $\geq 45^\circ$ |
| | <input type="checkbox"/> Extension $\geq 20^\circ$ | | <input type="checkbox"/> Radial/Ulnar dev. $\geq 20^\circ$ |
| | <input type="checkbox"/> Abduction $\geq 45^\circ$ | | |
| Elbow | <input type="checkbox"/> Flexion/Extension $\geq 60^\circ$ | Hand | <input type="checkbox"/> Pinch |
| | <input type="checkbox"/> Pronation $\geq 60^\circ$ | | <input type="checkbox"/> Hook |
| | <input type="checkbox"/> Supination $\geq 60^\circ$ | | <input type="checkbox"/> Palmar |
| | <input type="checkbox"/> Power | | |

Additional

Check if there are other additional risk factors

- Vibrations
- Countershocks
- Precision
- Compression
- Cold
- Gloves
- Imposedpace
- Otros

Postures [OWAS]

(1 of 2)

Task:

Company:

Date:

Sampling interval: seconds

Subtasks:

| | |
|---|--|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |

| | |
|--------------|--|
| Back | <ol style="list-style-type: none"> 1. Straight 2. Bent 3. Twisted 4. Bent and twisted |
| Arms | <ol style="list-style-type: none"> 1. Both below the shoulder 2. One above the shoulder 3. Both above the shoulder |
| Legs | <ol style="list-style-type: none"> 1. Sitting 2. Standing, legs straight 3. Standing on a straight leg 4. Standing, legs bent 5. Standing on a bent leg 6. Kneeling on one/both legs 7. Walking |
| Force | <ol style="list-style-type: none"> 1. Less than or equal to 10 kg 2. Between 10 and 20 kg 3. Greater than 20 kg |

| | Back | Arms | Legs | Force | Subtask | | Back | Arms | Legs | Force | Subtask |
|----|------|------|------|-------|---------|----|------|------|------|-------|---------|
| 1 | | | | | | 26 | | | | | |
| 2 | | | | | | 27 | | | | | |
| 3 | | | | | | 28 | | | | | |
| 4 | | | | | | 29 | | | | | |
| 5 | | | | | | 30 | | | | | |
| 6 | | | | | | 31 | | | | | |
| 7 | | | | | | 32 | | | | | |
| 8 | | | | | | 33 | | | | | |
| 9 | | | | | | 34 | | | | | |
| 10 | | | | | | 35 | | | | | |
| 11 | | | | | | 36 | | | | | |
| 12 | | | | | | 37 | | | | | |
| 13 | | | | | | 38 | | | | | |
| 14 | | | | | | 39 | | | | | |
| 15 | | | | | | 40 | | | | | |
| 16 | | | | | | 41 | | | | | |
| 17 | | | | | | 42 | | | | | |
| 18 | | | | | | 43 | | | | | |
| 19 | | | | | | 44 | | | | | |
| 20 | | | | | | 45 | | | | | |
| 21 | | | | | | 46 | | | | | |
| 22 | | | | | | 47 | | | | | |
| 23 | | | | | | 48 | | | | | |
| 24 | | | | | | 49 | | | | | |
| 25 | | | | | | 50 | | | | | |

Postures [OWAS]

Observations:

.....

.....

.....

| | Back | Arms | Legs | Force | Subtask | | Back | Arms | Legs | Force | Subtask |
|----|------|------|------|-------|---------|-----|------|------|------|-------|---------|
| 51 | | | | | | 91 | | | | | |
| 52 | | | | | | 92 | | | | | |
| 53 | | | | | | 93 | | | | | |
| 54 | | | | | | 94 | | | | | |
| 55 | | | | | | 95 | | | | | |
| 56 | | | | | | 96 | | | | | |
| 57 | | | | | | 97 | | | | | |
| 58 | | | | | | 98 | | | | | |
| 59 | | | | | | 99 | | | | | |
| 60 | | | | | | 100 | | | | | |
| 61 | | | | | | 101 | | | | | |
| 62 | | | | | | 102 | | | | | |
| 63 | | | | | | 103 | | | | | |
| 64 | | | | | | 104 | | | | | |
| 65 | | | | | | 105 | | | | | |
| 66 | | | | | | 106 | | | | | |
| 67 | | | | | | 107 | | | | | |
| 68 | | | | | | 108 | | | | | |
| 69 | | | | | | 109 | | | | | |
| 70 | | | | | | 110 | | | | | |
| 71 | | | | | | 111 | | | | | |
| 72 | | | | | | 112 | | | | | |
| 73 | | | | | | 113 | | | | | |
| 74 | | | | | | 114 | | | | | |
| 75 | | | | | | 115 | | | | | |
| 76 | | | | | | 116 | | | | | |
| 77 | | | | | | 117 | | | | | |
| 78 | | | | | | 118 | | | | | |
| 79 | | | | | | 119 | | | | | |
| 80 | | | | | | 120 | | | | | |
| 81 | | | | | | 121 | | | | | |
| 82 | | | | | | 122 | | | | | |
| 83 | | | | | | 123 | | | | | |
| 84 | | | | | | 124 | | | | | |
| 85 | | | | | | 125 | | | | | |
| 86 | | | | | | 126 | | | | | |
| 87 | | | | | | 127 | | | | | |
| 88 | | | | | | 128 | | | | | |
| 89 | | | | | | 129 | | | | | |
| 90 | | | | | | 130 | | | | | |

Postures [REBA]

(2 of 4)

Posture data

 Subtask: **Posture:**

 Frequency: low medium high

Video reference:

Observations (posture):

Group A – Trunk, Neck, Legs

• TRUNK

Select one option:

- Extension > 20°
- Extension up to 20°
- Upright
- Flexion up to 20°
- Flexion 20-60°
- Flexion > 60°

Check if there is also:

- Rotation

- Lateral tilt

• NECK

Select one option:

- Extension
- Flexion 0-20°
- Flexion > 20°

Check if there is also:

- Rotation

- Lateral tilt

• LEGS

Select one option:

- Bilateral support
- Walking
- Sitting
- Unilateral support or Unstable posture

Check if there is also:

- Knee(s) flexion 30-60°

- Knee(s) flexion > 60°
(except sitting)

Group B – Arms, Forearms, Wrists

Side (Right/Left):

• **ARM**

Select one option:

- Extension > 20°**
- Extension 20° to flexion 20°**
- Flexion 20-45°**
- Flexion 45-90°**
- Flexion > 90°**

Check if there is also:

- Arm abduction**

- Arm rotation**

- Shoulder raised**

- Arm supported in favor of gravity**

• **FOREARM**

Select one option:

- Flexion < 60°**
- Flexion 60-100°**
- Flexion > 100°**

• **WRIST**

Select one option:

- Flexion or extension 0-15°**
- Flexion or extension > 15°**

Check if there is also:

- Rotation**

- Lateral deviation**

Postures [REBA]

(4 of 4)

Force, Grip, Activity

• FORCE/LOAD

Select one option:

- < 5 kg
- 5-10 kg
- > 10 kg

Check if there is also:

- Sudden or abrupt force**

• GRIP

Select one optionn:

- Good** Appropriate handle and mid-range power grip
- Fair** Acceptable but not ideal, or acceptable using another body part
- Poor** Not acceptable although possible
- Unacceptable** Awkward, unsafe, without handles, or unacceptable using other body parts

• ACTIVITY

Check if the following conditions exist:

- Static** (sustained > 1 min)
- Repeated** (> 4 times/min, except walking)
- Large and rapid postural changes or unstable surface**

UNE EN 1005-3 [FORCES]

(1 of 3)

Task:

Company:

Date:

Observations:
.....
.....
.....

Population: general more protection

Subtasks

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....
- 6.....
- 7.....
- 8.....
- 9.....
- 10.....
- 11.....
- 12.....
- 13.....
- 14.....
- 15.....

UNE EN 1005-3 [FORCES]

(2 of 3)

Subtask data

Subtask:

Observations (subtask):

.....

• SUBTASK DURATION

Select one option:

- 1 hour or less
- Between 1 and 2 hours
- Between 2 and 8 hours

• ACTIVITY

Select one option:

Working with hand

- grabbing with the whole hand

Working with the arm

- Upwards
- Downwards
- Outwards
- Inwards
- Pushing with supported trunk
- Pushing with unsupported trunk
- Pulling with supported trunk
- Pulling with unsupported trunk

Working with the whole body

- Pushing
- Pulling

Working with the foot

- Action of the ankle
- Action of the leg

• MOVEMENT SPEED

Select one option:

- The action involves immobility or very slow movement
- The action involves noticeable movement

• SUBTASK FREQUENCY

Select one option:

Actions per minute

- Less than or equal to 0.2 actions/min
- Between 0.2-2 actions/min
- Between 2-20 actions/min
- More than 20 actions/min

Duration of each action

- Less than or equal to 3 seconds
- More than 3 seconds

• EXERTED FORCE (Kg). Measured with a dynamometer

| Value 1 | Value 2 | Value 3 | Value4 |
|----------------|----------------|----------------|---------------|
| | | | |

VALUE CONSIDERED OF THE FORCE EXERTED (kg)

Office

(1 of 3)

Task:

Company:

Date:

Observations:

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 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 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 tasks including graphics.
- The mouse is not designed for left-handed people to comfortably handle it.
- When using the mouse, the forearm cannot be supported 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, the unstable image or an improper adjustment of brightness and contrast between the screen background and the characters.
- The worker has difficulty reading documents (in paper) when working with display screens (for example, in data entry tasks), due to factors such as the character size or the contrast between the characters and the document background.

Office

(2 of 3)

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 leaning 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 is not adjustable while seated.
- The dimensions of the back do not support the back properly.
- When the worker leans back completely on the chair back, the seat edge will press 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 can 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 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 board is not enough to place all the work elements and to perform the task comfortably.

Accessories

- The worker does not have a footrest in case needed (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

- 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, desk, other computers, floor, etc.).
- The noise level in the office is so high that it interferes with the communication or concentration of the workers.
- Workers think that the temperature in the workplace is not suitable.
- In the space that surrounds the table where the chair of the worker is the minimum free surface is $<2 \text{ m}^2$, or the distance between the frontal 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 trained 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.

Ergo +50 [Working conditions]

(1 of 5)

It is a questionnaire to assess the working conditions that affect older workers. It must be filled out by the company.

Procedure:

1. Check if any of the situations included in each section occurs; mark the box only if the item occurs in the analyzed workplace, considering the most usual and/or most unfavourable situation.
2. A single item marked in any of the sections indicates a possible risk situation.
3. The greater the number of items marked, the greater the risk will be.
4. Note that some items require the calculation of an additional variable, which must be done through the appropriate procedure.

Physical load

- Weights above the acceptable weight are handled.
- In the sitting position, weights above 5 kg are handled or force must be exerted.
- Pushing and/or pulling forces are exerted.
- High forces are exerted with the hand and/or arm.
- The worker performs tasks that require continuous physical activity and/or a high sustained effort.
- There are tasks that involve handling, moving, lifting or transferring people/patients.
- It is necessary to stand or walk for a long time.
- The worker must remain seated for a long time.
- The worker maintains static postures: parts of the body are not moved for long periods.
- The worker performs tasks that require repetitive movements of the upper limbs (arms, elbows, hands).
- The tasks performed require maintaining any of the following positions: arms raised, rotation of the trunk or neck, significant flexion of the trunk or neck, or significant flexion, twist or deviation of the wrist.
- The worker performs tasks that require bending down, squatting or kneeling.
- The tasks require performing quick movements.

Ergo+50 [Working conditions]

(2 of 5)

Cognitive aspects

- The tasks involve learning new things and/or memorizing information constantly and frequently.
- The person is exposed to a lot of information and/or stimuli (including those not related to the tasks).
- The tasks involve making complex and/or quick decisions.
- There are interruptions and distracting elements in the work environment.
- The elements and/or materials are frequently restructured.
- The consequences of a decision are irreversible.

Spaces and equipment

- The working height does not adapt to the type of task and the anthropometry of each person.
- Far reaches are performed.
- Lateral reaches or reaches behind the body are performed.
- The characteristics of the work tools and instruments are not appropriate for a comfortable handling.
 - The length, thickness and shape of the handle do not provide a comfortable and firm grip (the handle does not adjust well to the hand and/or the type of task).
 - The tool cannot be handled with either the right or left hand.
 - The texture of the object does not make it easier to hold it for a while.
 - If it is necessary to apply force, the object cannot be held with both hands.
 - The handle does not distribute pressure evenly all over the hand.
 - While the tool is being handled, the wrist does not remain in the neutral posture (handshake position).
- The working space conditions can cause trips and/or falls
 - The ground is uneven, not uniform or in poor condition.
 - The floor is not kept clean or free of slippery substances.
 - Passage areas are not free of obstacles.
 - The lighting level is insufficient in the passage areas.
 - Passage areas are not delimited.
 - There are no specific locations to place the materials without invading the passage areas.

Vision and hearing

- The lighting levels are not suitable for the type of task or space.
(register the **lighting conditions**)
 - Lighting level: _____ lux
 - Area / task (select an option):
 - Areas where tasks with low visual requirements are performed
 - Areas where tasks with moderate visual requirements are performed
 - Areas where tasks with high visual requirements are performed
 - Areas where tasks with very high visual requirements are performed
 - Occasionally used areas or premises
 - Regularly used areas or premises
 - Occasionally used areas of people flow
 - Regularly used areas of people flow
- During the performance of the tasks, there is direct or indirect glare (reflections).
- There are large lighting variations between work spaces or areas.
- Tasks involving constant changes in the distance of the space of vision (near-far) are performed.
- Some situations involve low visual contrast.
- The size and shape of the signals (indicators, characters) does not allow the worker to correctly perceive them.
- There are no collective or individual measures for people to adapt acoustic signals to their hearing ability.
- Auditory signals are not complemented with visual signals.
- In the work environment, there are acoustic signals and/or noise that can hide important acoustic messages.
- There are high noise levels.

Environment and organization

- Some situations involve great heat or cold, or sudden changes in temperature.
- Some situations involve frequent exposure to vibrations (use of machinery/tools, use of vehicles...).
- The organization of the tasks and the pace of work are imposed. The worker cannot choose the distribution of the tasks, the breaks or the pace of work.

Ergo+50 [Working conditions]

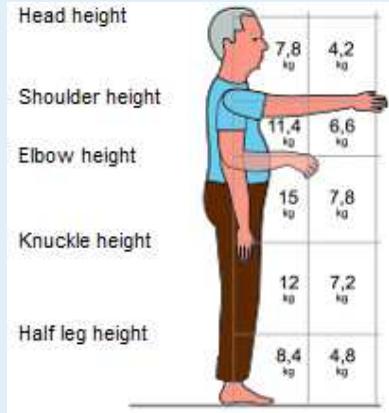
(4 of 5)

Age management

- There are no actions in the company to promote health or encourage healthy living habits.
- There are no specific and regular health check-ups intended for people over 50 years.
- After an illness or injury, no period of adaptation is provided when returning to work.
- Older workers do not have the same training opportunities as younger workers.
- Older workers are not encouraged to participate in the training activities.
- The characteristics and needs of older workers are not considered when planning, designing or implementing the training actions.
- No actions are carried out to benefit from the experience of older workers in order to improve the organization or to train younger workers.
- No specific activities are intended to hire older people: There is no qualified personnel to carry out the personnel selection considering age.
- The company does not have a specific procedure or measures to facilitate the transition to retirement.

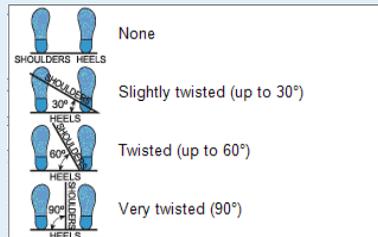
Handling conditions

- **Weight handled:** _____ Kg
- **Handling zone** (mark on figure):

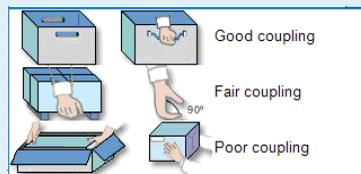


- **Vertical displacement:**
 - Up to 25 cm.
 - Up to 50 cm.
 - Up to 100 cm.
 - Up to 175 cm.
 - >175 cm.

- **Trunk twisting** (mark on figure):



- **Coupling** (click on figure):



- **Duration:** ≤1 hour 1-2 hours 2-8 hours
- **Frequency:** times/min.

Ergo +50 [Workers assessment]

(1 of 3)

The following questionnaire is designed to assess your perceived ability to perform the tasks of your current workstation and to give your opinion on how your company manages age. It is an individual, voluntary and confidential questionnaire.

Please, read carefully all the questions and, for each of them, choose the answer which you sincerely consider that best describes your current situation and your opinion.

The questionnaire is divided into 5 sections. All the questions included in the questionnaire must be answered.

In the first four sections indicate your perceived ability to perform each of the items.
In the fifth section, give your opinion on how the company manages age.

IMPORTANT: The answers to the questionnaire are personal and voluntary; both the anonymity and confidentiality of the answers are fully guaranteed.

Physical load

| QUESTIONS | ANSWERS | | |
|--|---------|----------|-----|
| | Good | Moderate | Bad |
| Handling heavy loads (lifting, pushing, pulling). | | | |
| Applying force or perform tasks involving intense or prolonged physical activity. | | | |
| Standing or sitting for a long time or adopting a static posture. | | | |
| Performing repetitive movements or rapid movements with the upper limbs (arms, elbows, hands). | | | |
| Adopting awkward positions with the arms, hands, trunk or neck. | | | |
| Performing tasks that involve bending down, squatting or kneeling. | | | |
| Reaching objects or elements that are far away. | | | |
| Handling work tools and equipment. | | | |

Ergo+50 [Workers assessment]

(2 of 3)

Cognitive aspects

| QUESTIONS | ANSWERS | | |
|---|---------|----------|-----|
| | Good | Moderate | Bad |
| Learning new things, memorize or handle a lot of information. | | | |
| Making complex and/or quick decisions. | | | |
| Focusing on the task, although there are frequent stimuli and distracting elements in the work environment. | | | |

Vision and hearing

| QUESTIONS | ANSWERS | | |
|--|---------|----------|-----|
| | Good | Moderate | Bad |
| Correctly viewing the information and elements necessary to perform the tasks. | | | |
| Correctly hearing signals, warnings and conversations. | | | |

Environment and work conditions

| QUESTIONS | ANSWERS | | |
|--|---------|----------|-----|
| | Good | Moderate | Bad |
| Tolerating high-noise situations. | | | |
| Tolerating situations of great heat or cold, or sudden changes in temperature. | | | |
| Tolerating exposure to vibrations (using machines/tools, driving vehicles, etc.). | | | |
| Tolerating the work pace imposed. | | | |
| Tolerating shift work or night work. | | | |
| Spending long time doing the same activity. | | | |
| Adapting to organizational changes (introduction of technologies, new work methods, etc.). | | | |

Age management

Worker's opinion on the company's age management.

| QUESTIONS | ANSWERS | | |
|---|---------|---------|------------|
| | I agree | Neutral | I disagree |
| The company carries out adequate actions to promote health or to encourage healthy lifestyles. | | | |
| Health check-ups are adequate and performed often enough. | | | |
| Measures are taken to make it easier for me to return to my tasks after an injury. | | | |
| The training offered by the company is adequate for my needs. | | | |
| My experience and skills are taken advantage of to improve the company processes and/or to train young workers. | | | |
| There are adequate measures and activities to facilitate the transition to retirement. | | | |

ErgoMater

(1 of 4)

Task:

Company:

Date:

Worker:

Gestational week in which the assessment is performed: _____

Type of pregnancy (choose): Single Multiple

Worker's opinion

How would you score the physical effort in your work (related to postures, movements, applied force, handling loads, work pace, etc.)?:

heavy normal light

Have you noted any change in working ability from the beginning of pregnancy?:

.....
.....
.....
.....

Postures and movements

The task requires prolonged, continuous standing in a static position.

- Time of exposure
 - Less than 2 hours/day
 - Between 2 and 3 hours/day
 - Between 3 and 5 hours/day
 - More than 5 hours/day

The task requires intermittent, discontinuous standing in a dynamic position.

- Time of exposure
 - Less than 2 hours/day
 - Between 2 and 3 hours/day
 - Between 3 and 5 hours/day
 - More than 5 hours/day

Trunk bending forward $>20^\circ$ or trunk bending sideways or twisting clearly visible, in a row or repeatedly (>2 times/min)

ErgoMater

(2 of 4)

- The task requires inadequate trunk flexion > 60°
 - Frequency
 - Intermittently (less than 2 times/hour)
 - Intermittently (between 2 and 10 times/hour)
 - Repeatedly (more than 10 times/hour)
 - Time of exposure
 - Less than 2 hours/day
 - Between 2 and 3 hours/day
 - Between 3 and 5 hours/day
 - More than 5 hours/day

- Kneeling or squatting

- Wrist flexion, extension, lateral deviation and/or twisting clearly visible, in a sustained manner (>1 minute in a row), repeatedly (>2 times/min) and/or applying force

- The task requires sitting with or without the possibility of changing posture.
 - Sitting
 - Without the possibility of changing posture
 - With the possibility of changing posture
 - Time of exposure
 - Less than 2 hours/day
 - Between 2 and 3 hours/day
 - Between 3 and 5 hours/day
 - More than 5 hours/day

- Sitting with legs hanging off the seat and no support for the feet

- Sitting without suitable backrest for the trunk

- Sitting without enough space under the work surface to comfortably move the legs

Manual materials handling

- Handling loads over the **ACCEPTABLE MASS**.
(record the **handling conditions** on the attached sheet)

- Pushing or pulling forces over 10 kg

- Handling loads >3 kg or applying considerable force while sitting

Environment

- The task requires working on raised surfaces (platforms, ladders or vertical posters).
 - Distance from the floor:
 - More than 1 meter
 - Less than 1 meter
 - Frequency (number of times /8-hour day):
 - less than 4
 - 4-8 times
 - more than 8 times

- The task requires using ladders.
 - Distance from the floor:
 - More than 1 meter
 - Less than 1 meter
 - Frequency (number of times/8-hour day):
 - less than 4
 - 4-8 times
 - more than 8 times

- Moving on unstable, irregular or slippery surfaces (floors with obstacles or holes, slippery areas, etc.)

- Risk of blows or compression to the abdomen (confined spaces, moving objects, constrictive belts or safety harnesses, sudden starts and stops in vehicles, etc.)

Organization

- Working >40 hours/week
- Night work, either fixed or in rotating shifts
- Paced work without self-selected breaks

Observations:

.....

.....

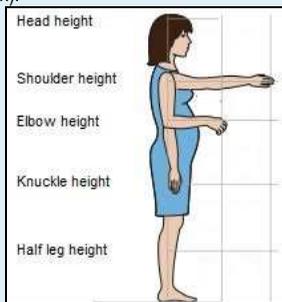
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ErgoMater – ACCEPTABLE MASS

(4 of 4)

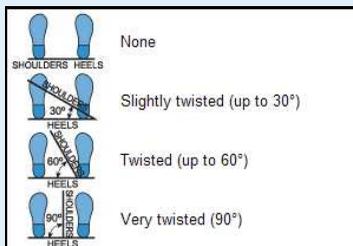
Handling conditions

- **Weight handled:** _____ Kg
- **Handling zone** (mark on the illustration):

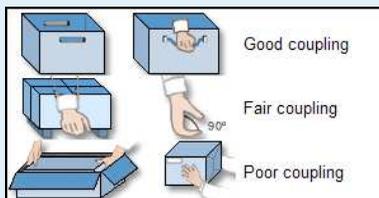


- **Vertical displacement:**
 - up to 25 cm
 - up to 50 cm
 - up to 100 cm
 - up to 175 cm
 - >175 cm

- **Trunk twisting** (mark on the illustration):



- **Coupling** (mark on the illustration):



- **Duration:** hours/day
- **Frequency:** times/min