



TM Technologie

Established in 2002 in Cracov, over a couple years became one of top Polish manufacturer of emergency lighting. The main capital of our company are our employees. Our continuous development is underpinned by their knowledge and skills. At the beginning there were four of us. Today, our team consists of more than 170 people.



In our offer we have:

- Emergency lighting:
- Anti-panic lighting
- Evacuation road lighting
- Evacuation road direction
- Emergency kits
- Systems of emergency lighting:
- Diversified monitoring of emergency lighting
- Central battery systems

EUROPEN AND INTERNATIONAL REGULATION

Standards for emergency light

Specifying emergency light can very often be like stumbling through a minefield of different National and European standards. The installation of emergency luminaires and fire exit signs in premises must meet several legislations and also be agreeable with the business owner. The current requirements of legislation must then be met:

EN 1838 – EMERGENCY LIGHTING

EN 60598 – Emergency luminaires

EN 50171 – Central power supply systems

EN 50172 – Emergency light systems

Planning your emergency lighting installation does not have to be confusing. Whilst it can be easy to miss out important areas or locations in your premises, please use this emergency lighting overview to direct you in what to look out for and what needs to be addressed. The benefits with planning emergency lighting solutions with TM Technologie are that we are working with standardized systems and high quality products.

Projecting step by step:

- Locate fire cells and escape routes on drawings
- Locate essential areas in the project
 - Change of direction
 - Change of floor levels
 - Staircase
 - Rooms without windows
 - Fire technical equipment
- Decide type of system and product
 - ST – standard test (manual test)
 - AT – auto test
 - Data – Diversified Monitoring of Emergency Lighting
 - CB – Central Battery (addressable or not addressable)

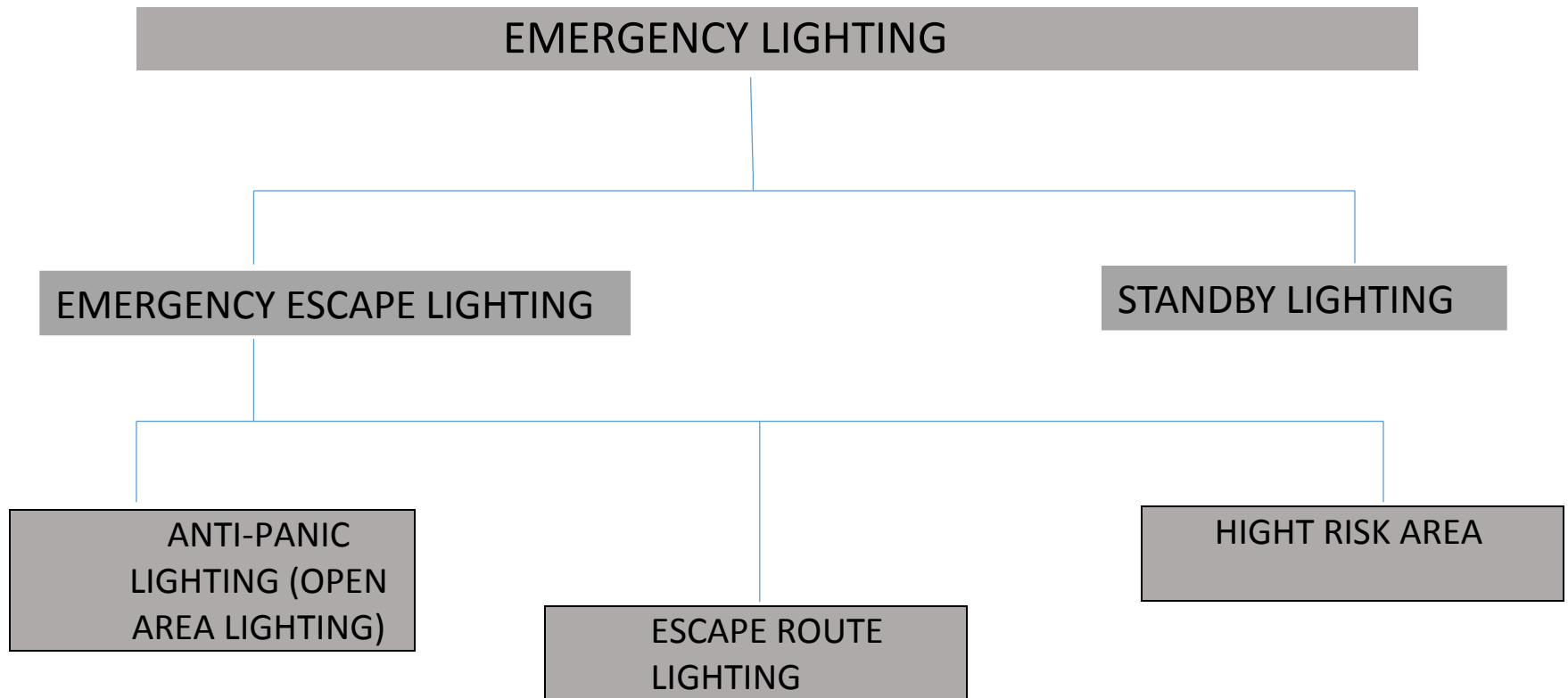
Areas to be covered emergency lighting:

Planning emergency lights in your projects is not just about showing users the escape route. Lights must be carefully located to provide sufficient illumination according to the different areas of premises and must conform to the latest legislation. An emergency escape lighting system should normally cover the following areas:

- Exit doors and escape routes
- Change of direction
- Changes in floor level
- Intersections of corridors
- Stairways so that each flight receives adequate light
- Anti-panic areas
- High risk areas
- Fire fighting equipment
- exit door and outside building

Each area has their own requirements and needs to be looked at individually.

Definition of „Emergency Lighting“



DEFINITION:

Escape route lighting:

Escape route lighting has a superior objective to contribute to a safe evacuation from an area when normal illumination fails. That part of the building, which is prepared for evacuation, should be easily identified and used with great safety. Luminaires prepared for escape route lighting are divided into route lighting and sign lighting.

Antipanic lighting:

An antipanic area is defined as an area bigger than 60 m², where a large number of persons are gathered. The illumination of this area should provide sufficient emergency lighting, not to raise panic and enable persons to arrive at a place where the escape route can be identified. For antipanic areas the horizontal illumination on the floor should not be less than 0.5 lux, and the ratio between maximum and minimum illumination level should not exceed 40:1.

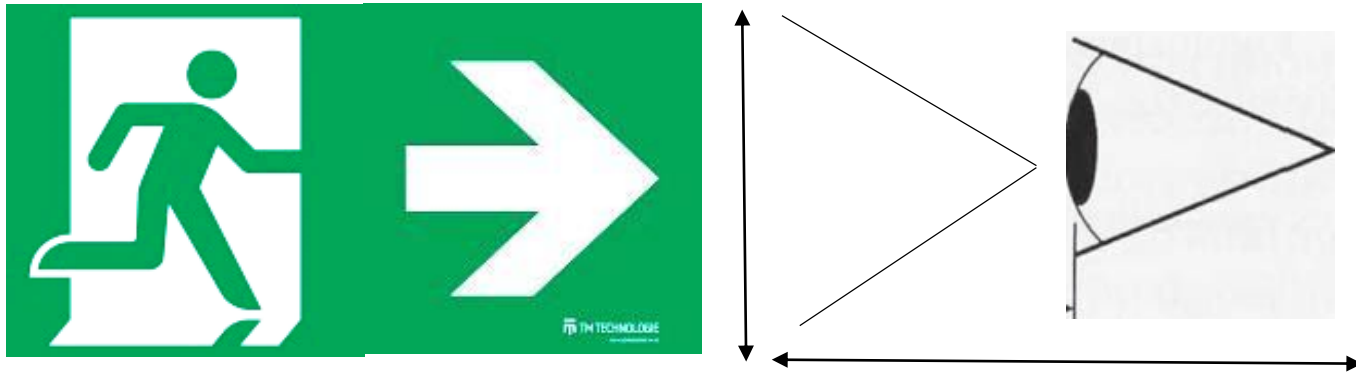
High-risk lighting:

In areas where high-risk operations are carried out, special requirements for emergency lighting prevail. For high-risk areas the emergency lighting should not be less than 10% of standard lighting and minimum 15 lux. The ratio between maximum and minimum illumination level should not exceed 10:1. Areas with heavy machinery and physical risk need to be kept well lit to allow the safe shutdown of machinery to avoid injury.

Viewing distances

Safety signs for escape routes must comply with the following requirements:

- Viewing distances (d) : formula: $d= s \times p$
- P – sign height
- S – distances factor 100 (externally illuminated signs) and distances factor 200 (internally lit signs)



Example:

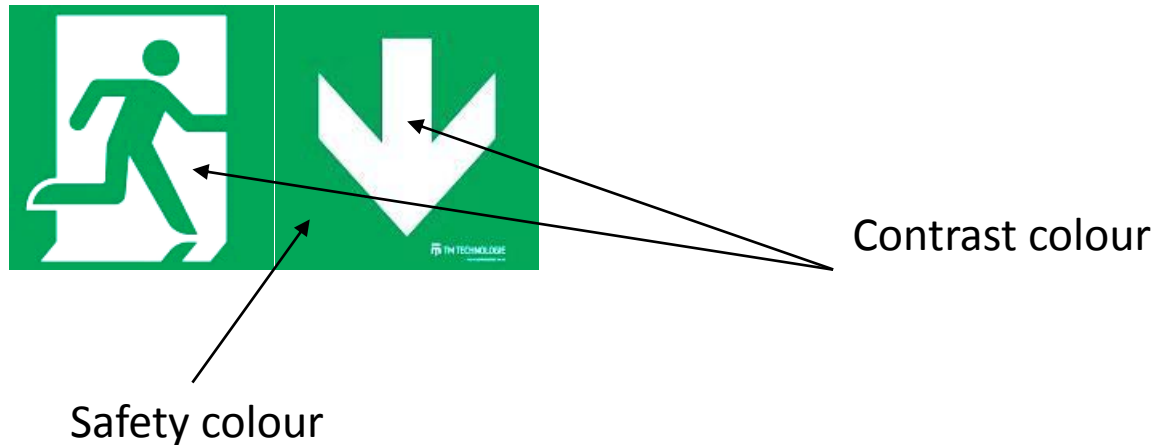
Calculation of an internally lit sign's height for a required viewing distance of 30m (d=30)

Applicable equation:

$$D = s \times p \quad \longrightarrow \quad p = d/s$$
$$P = 30/200 = 0.15\text{m (sign height)}$$

Legend

Safety signs for escape routes must comply with the following requirements:



Luminance:

The minimum luminance of any green area (safety colour) on the sign must be greater than 2 cd/square meters

The ratio of maximum to minimum luminance shall be less than 10:1 for each colour.

The ratio of white colour to green colour luminance must be between 5:1 and 15:1.

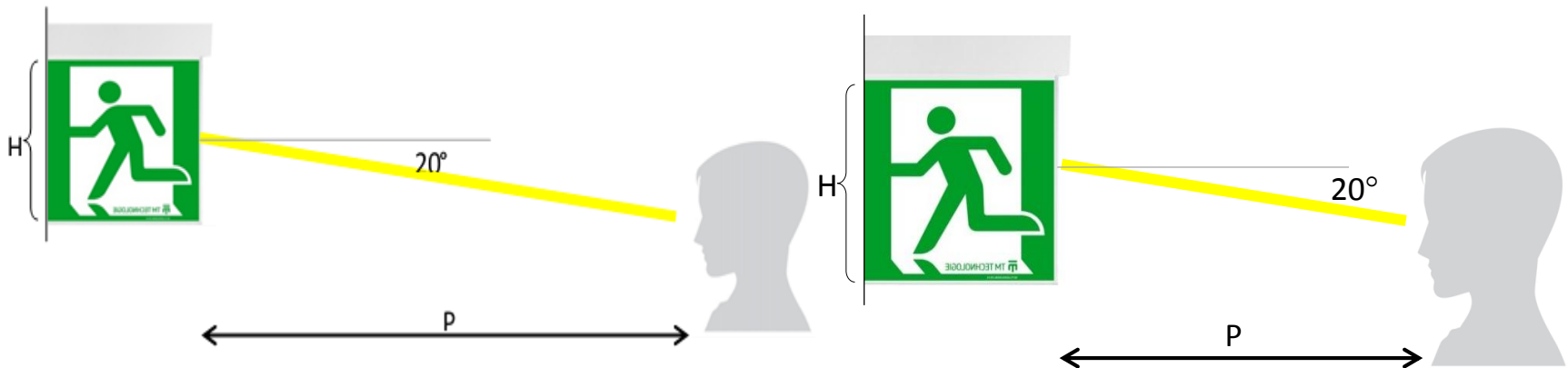
Emergency escape signs:

Exit direction signs should mark changes in direction of emergency exit escape routes where it is not possible to spot the emergency exit. Signs directing escape routes should be illuminated or externally illuminated.

Sign height “H” should consider the reading distance and be dimensioned according to the following formula:

- For internally illuminated signs:
Max reading distance = $200 \times H$

- For externally illuminated signs:
Max reading distance = $100 \times H$

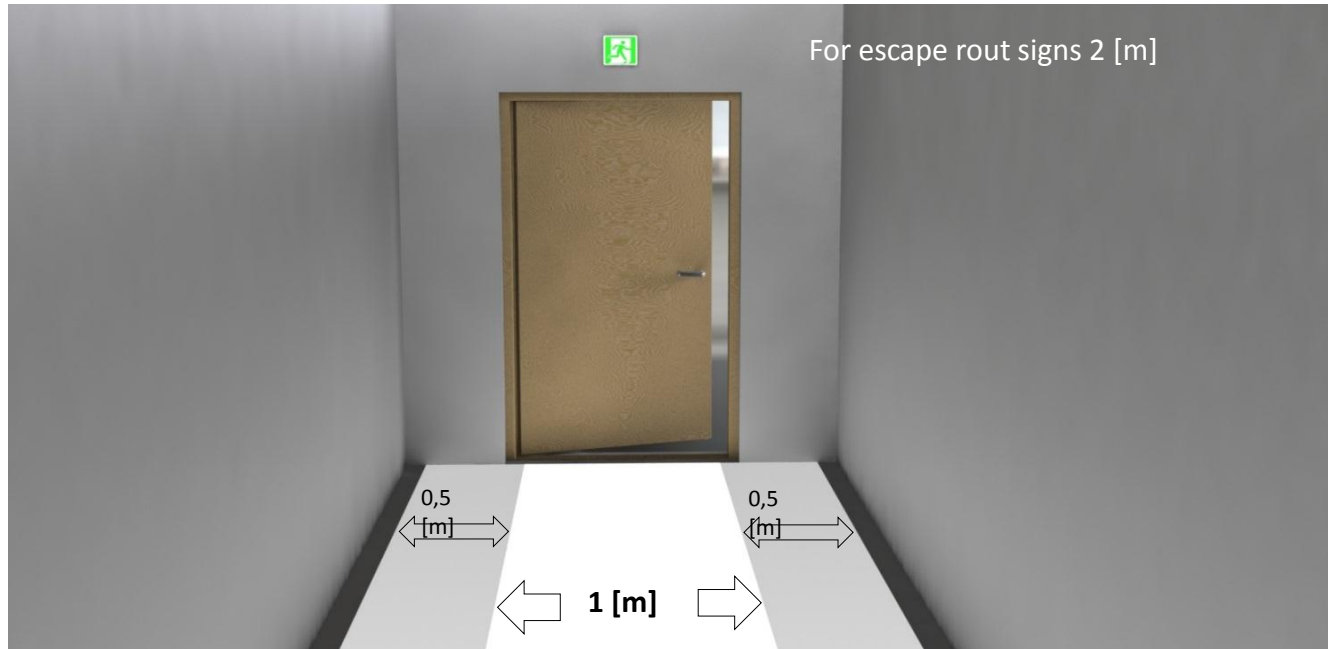


Along with route lighting the escape signs shall lead the users to safety.

Specific locations where a luminaire must be provide

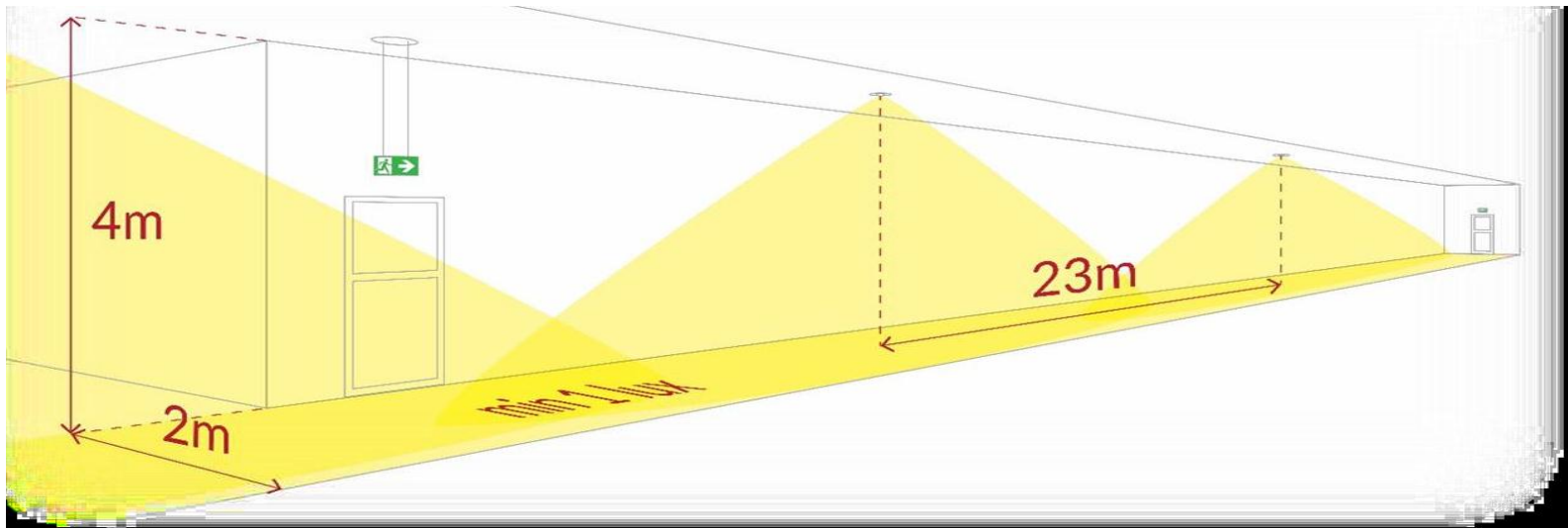
EXIT dors:

Ensuring that exit doors are well lit in an emergency can be the difference between evacuating a building and getting trapped inside. All exit doors need to be well lit to ensure that users can identify where to go at the end of escape routes



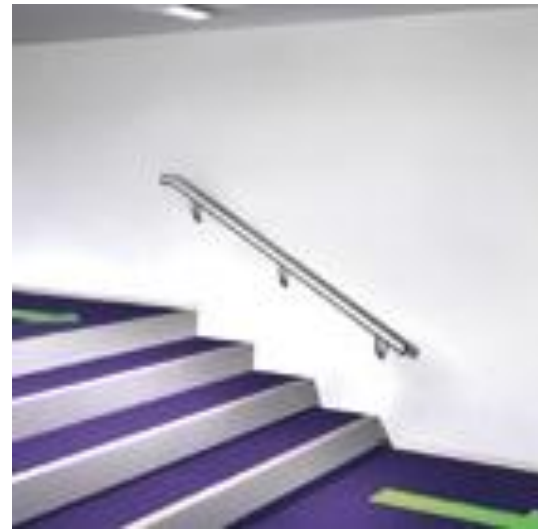
Corridors and interse actions of corridors:

In a building it is important to have emergency lighting that clearly illuminates the escape routes and where there are changes in direction. This allows users to clearly identify their means of escape and should highlight the escape route signs.



Changes in floor levels:

Uneven flooring on escape routes needs to be illuminated so that in emergency users can act accordingly. In areas where flooring may become uneven on an escape route, a lighting unit should be fitted, so that it does not prove a danger to users. Uneven flooring can consist of single steps, ramps, sloping floors etc.



Stairways:

Stairways and stairwells can present a potential hazard in an emergency. Emergency lights need to be fitted so that these challenging areas are made visible and safe to use.

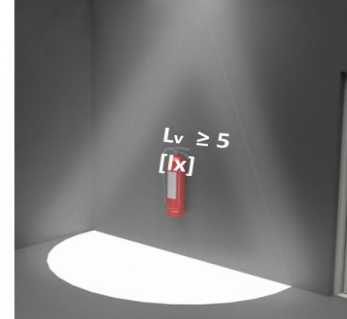
at each change of direction



at each intersection of corridors



***Near each Fire fighting equipment:**

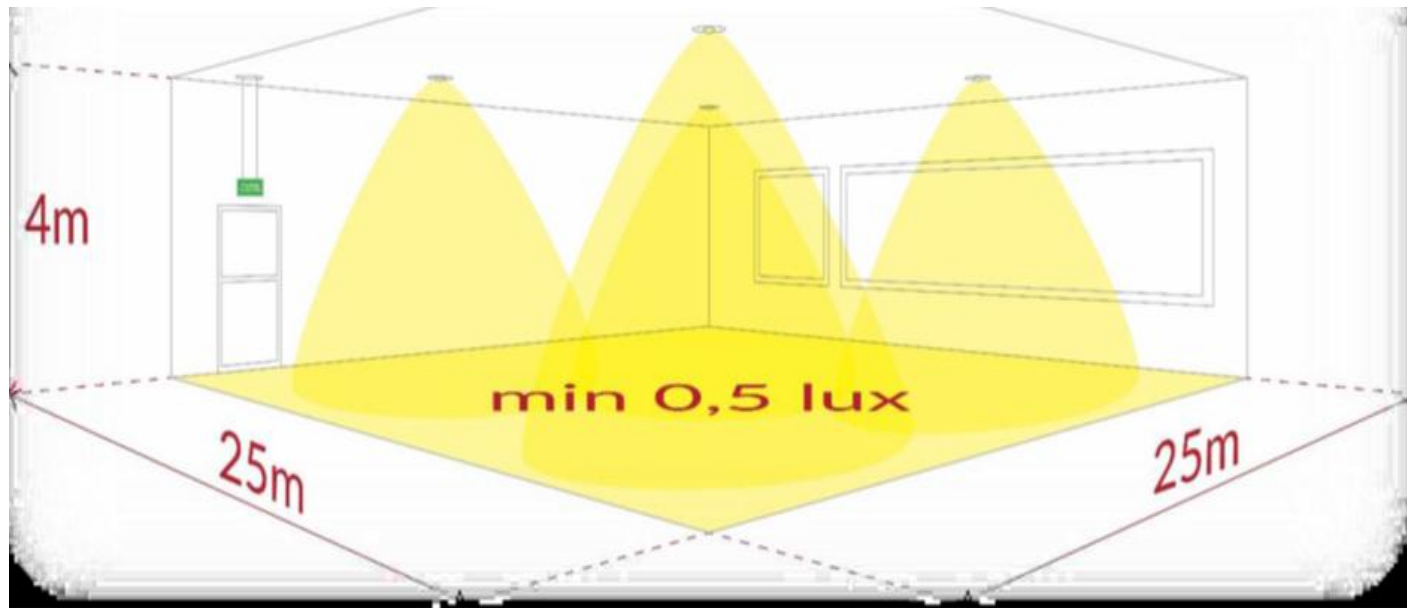


***Near each first aid post :**



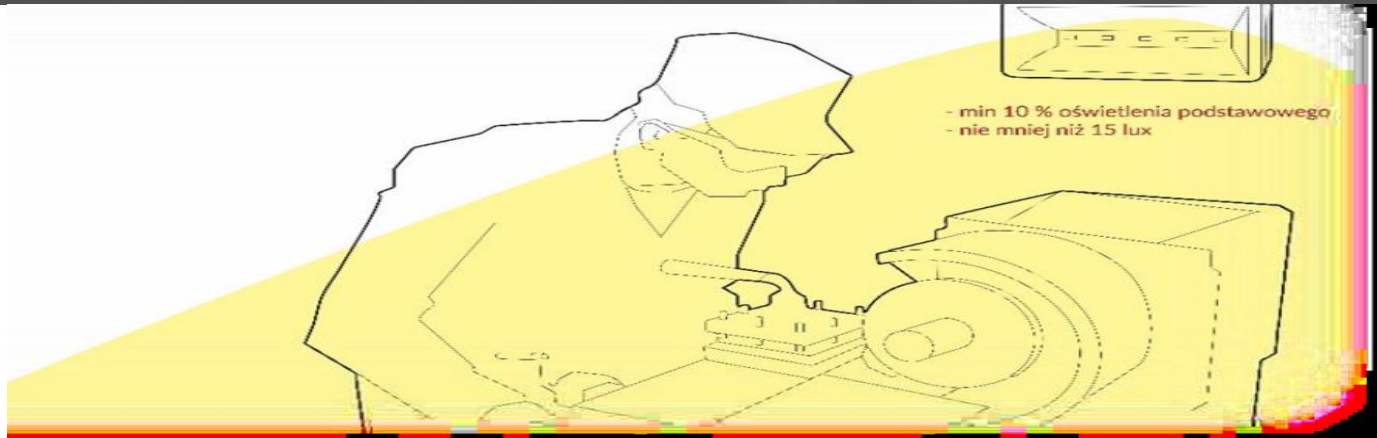
Antipanic lighting:

An antipanic area is defined as an area bigger than 60 m², where a large number of persons are gathered. The illumination of this area should provide sufficient emergency lighting, not to raise panic and enable persons to arrive at a place where the escape route can be identified. For antipanic areas the horizontal illumination on the floor should not be less than 0.5 lux, and the ratio between maximum and minimum illumination level should not exceed 40:1.



High-risk lighting:

In areas where high-risk operations are carried out, special requirements for emergency lighting prevail. For high-risk areas the emergency lighting should not be less than 10% of standard lighting and minimum 15 lux. The ratio between maximum and minimum illumination level should not exceed 10:1. Areas with heavy machinery and physical risk need to be kept well lit to allow the safe shutdown of machinery to avoid injury.



Thank you for your attention

Production facility:

TM Technologie Sp. z o.o.

32-084 Morawica 355

Bartłomiej Dąbkowski

+48 606 566 700

b.dabkowski@tmtechnologie.pl

<http://tmtechnologie.pl/>

