
THE IMPORTANCE OF

SEE & BE SEEN

Pedestrians - Vulnerable Road Users



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N.º 101006468



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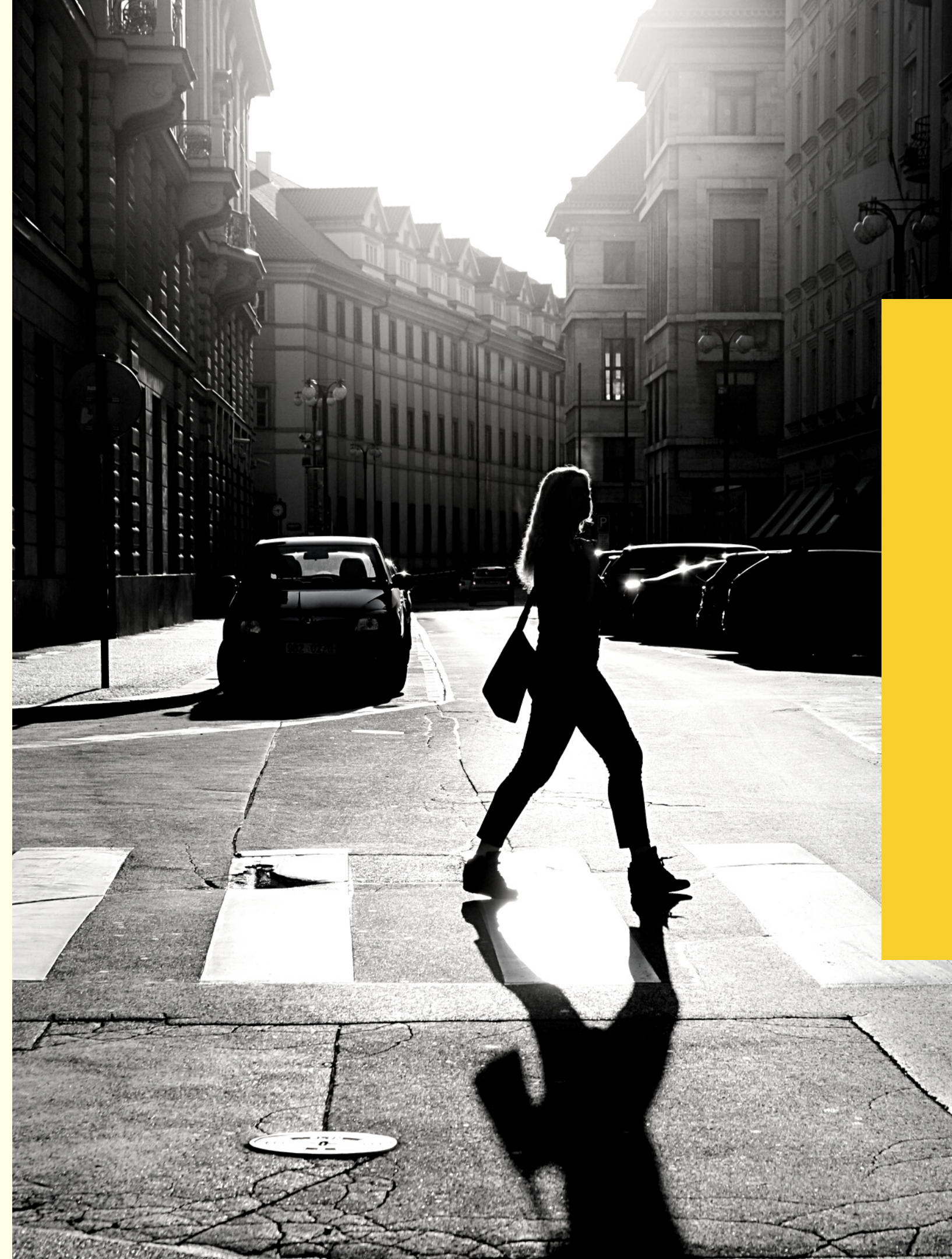
PEDESTRIANS

VULNERABLE ROAD USERS

Pedestrians are the most vulnerable group of road users, particularly the age group of children and the elderly.

In the documents published by the WHO on pedestrian safety, the key points for the implementation of a global policy to reduce pedestrian accidents and their consequences are identified:

- Reduce pedestrian exposure to motorized traffic;
- Reduce vehicle speed;
- Improve pedestrian visibility;
- Improve the relationship between pedestrians and drivers and their respective behaviors;
- Improve the design of vehicles to protect pedestrians in the event of being run over;
- Provide effective health care for pedestrians who have been run over.

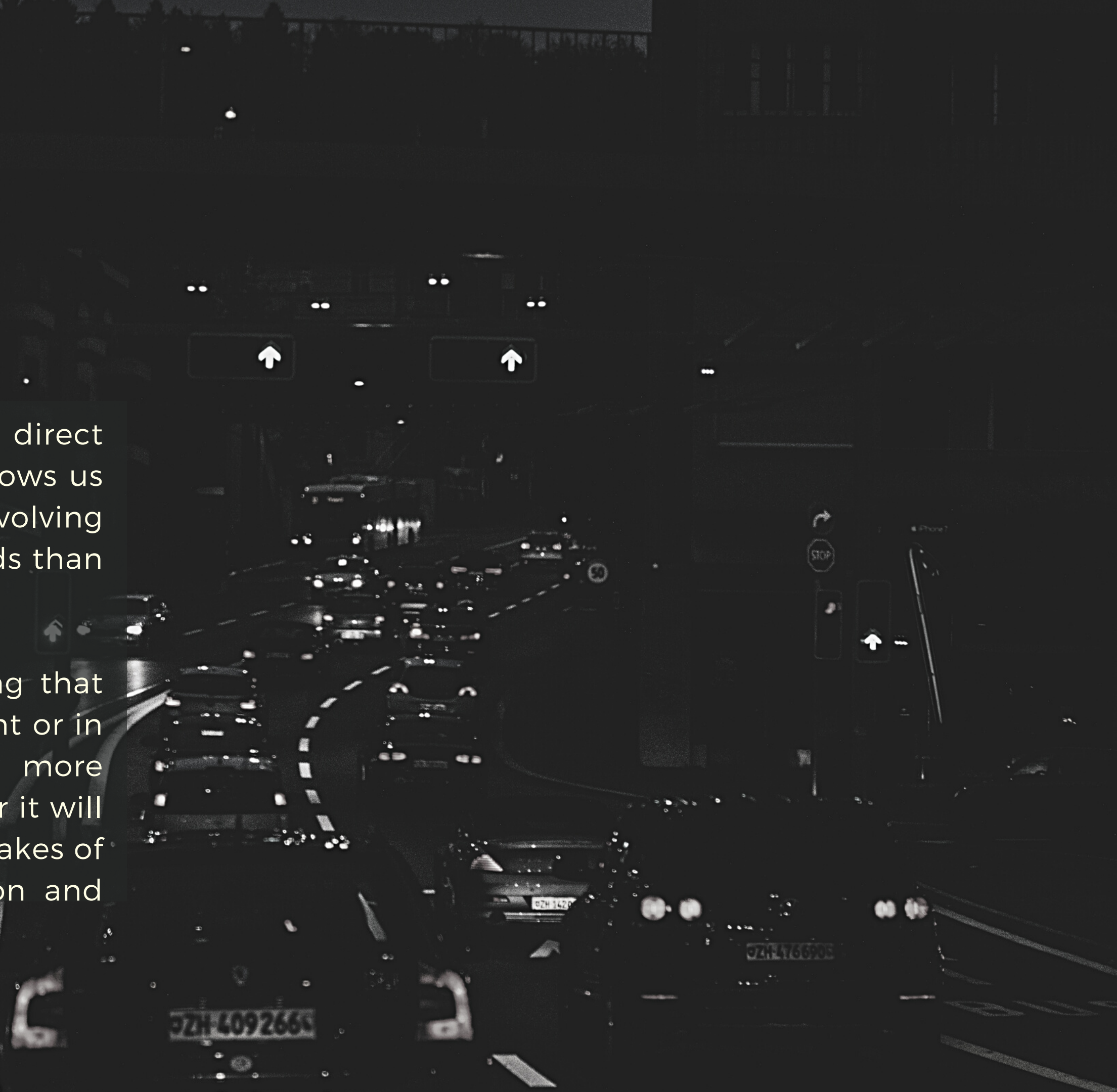


RELEVANT FACTS

PEDESTRIAN ACCIDENT RATE

The severity of road accidents is a direct consequence of the collision speed, which allows us to conclude that night-time accidents involving pedestrians occur at significantly higher speeds than those that occur during the day.

Pedestrians, when walking without something that help them to be seen earlier by drivers at night or in low-light conditions, will be exposed to more danger. The later they are detected, the longer it will take the driver to act, in this case, to hit the brakes of the vehicle, which causes a stronger collision and more serious consequences.





40% OF DRIVERS REVEAL DIFFICULTY SEEING THE PEDESTRIAN THEY RAN OVER

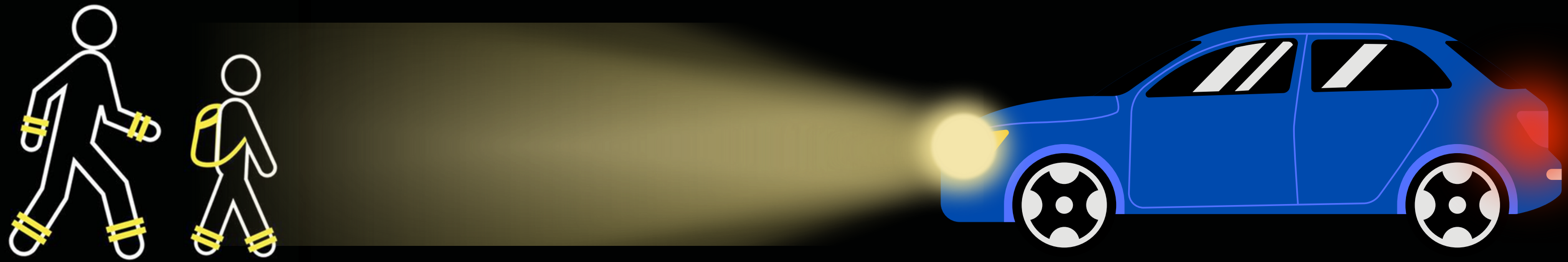
In fact, in studies that analyzed hundreds of pedestrians being run over, it is concluded that about 1/3 (33%) of pedestrians reveal difficulty in seeing the vehicle that hit them, and about 2/5 (40%) of drivers reveal difficulty seeing the pedestrian they ran over.

The higher the speed, the shorter the distance at which the pedestrian is detected, and greater the severity of the collision.

BE SEEN

At night, a pedestrian's visibility can only be guaranteed through good color contrast.

This can only be achieved through the use of retro-reflective material.



THE IMPORTANCE OF VISIBILITY IN ROAD SAFETY

VISIBILITY

Especially at night or in poor lighting conditions, the visibility of road users is a very important safety requirement.

RETROREFLECTION

Retro-reflective fabrics effectively reflect light from vehicle headlights, thus making people using them more visible and helping to prevent accidents.

APPLICABILITY

The proper use of retro-reflective materials plays an essential part in the design of high-visibility garments.



High visibility garments offer a brilliant contrast, both day and night, between the wearer and the environment that surrounds them, catching the driver's attention and thus making them recognizable in time.

Retroreflective materials provide nighttime visibility.

Fluorescent materials (yellow, orange, red) provide visibility.

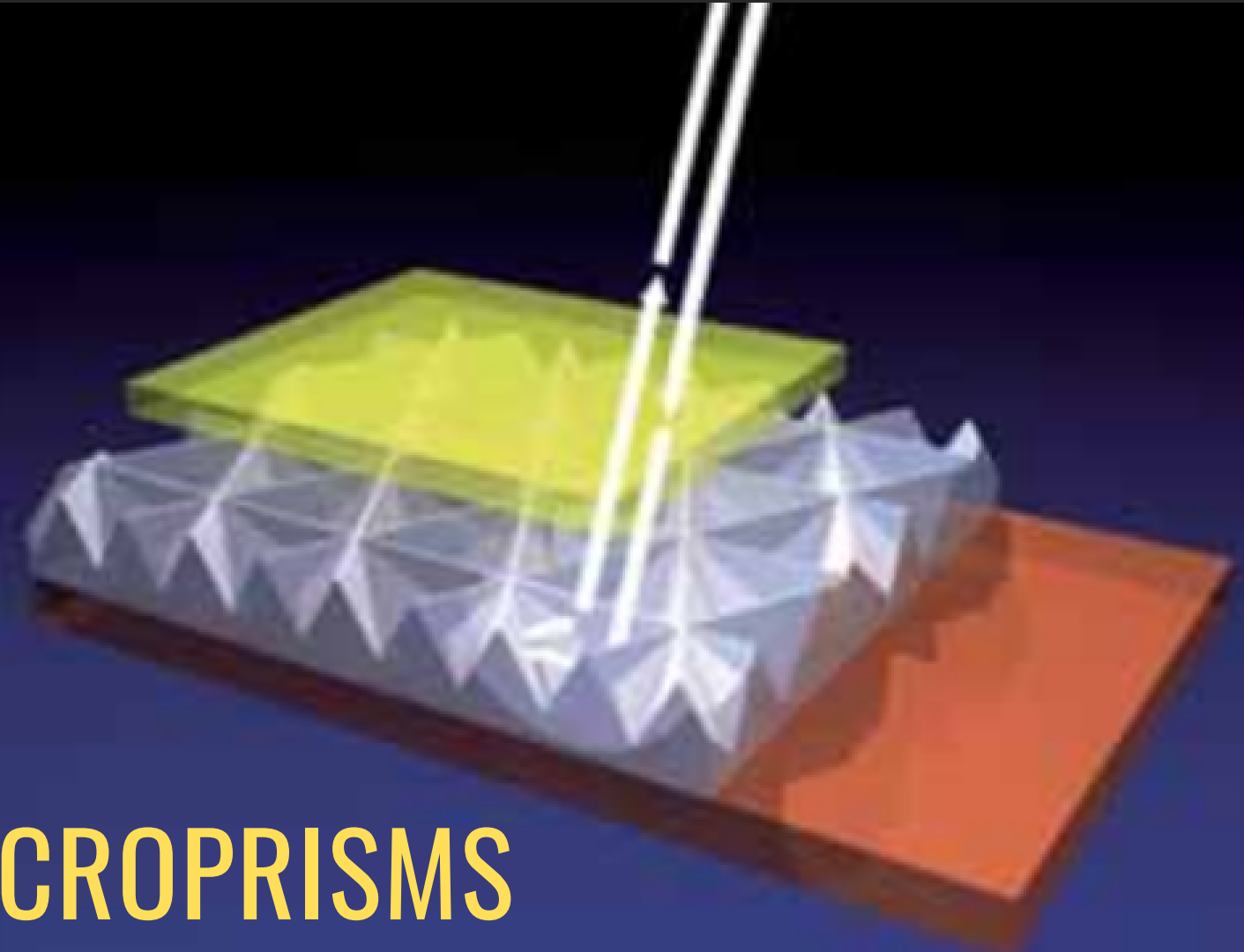


HIGH VISIBILITY CLOTHING

HOW IT WORKS

RETROREFLECTIVE MATERIAL

The retroreflective material is generally made of small glass microspheres or microprisms of an acrylic material, incorporated in it.



MICROPRISMS



MICROSPHERES

HOW DOES IT WORK?

When light from a vehicle's headlights illuminates a surface with these microspheres, the light is returned in the same direction as it originated.

MICROSPHERES

It consists of high-quality glass microspheres with a reflective layer, usually aluminum. The light beam is refracted as it passes through the glass sphere and is thus reflected on the reflective layer. The microsphere technology is presented in silver reflectors and a few other colors such as white, fluorescent yellow, and fluorescent orange. This type of material is not orientation sensitive.

MICROPRISMS

It consists of micro prisms of acrylic material. The light beam is reflected off the three perpendicular faces of the prism and is returned to the source. The micro prism technology is present in shiny-looking materials and can be found in different colors, white, fluorescent yellow, fluorescent orange, gray, etc.

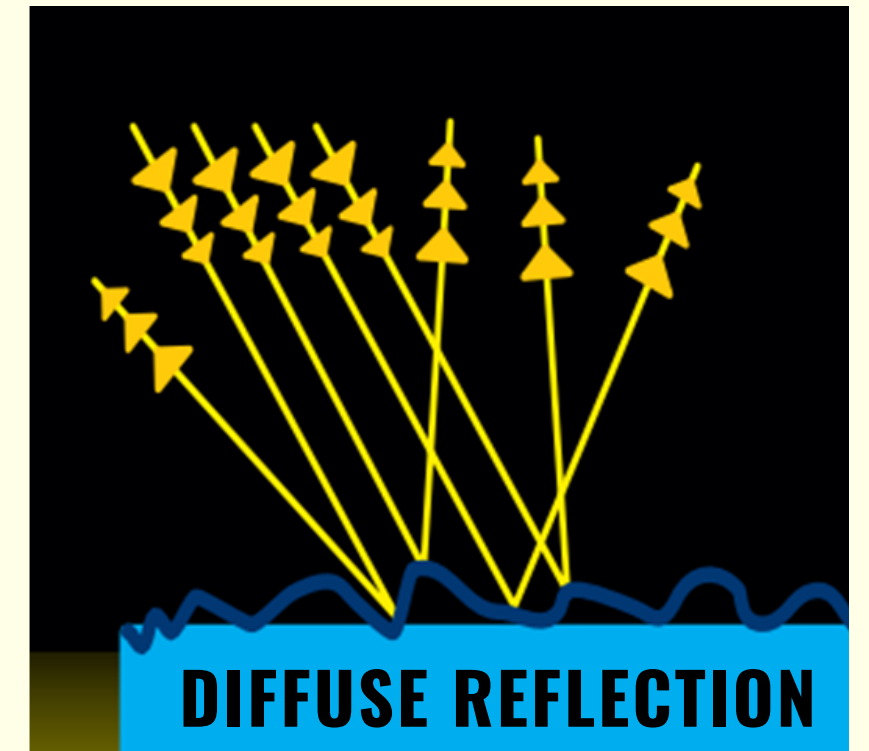
LIGHT REFLECTION

PHENOMENON

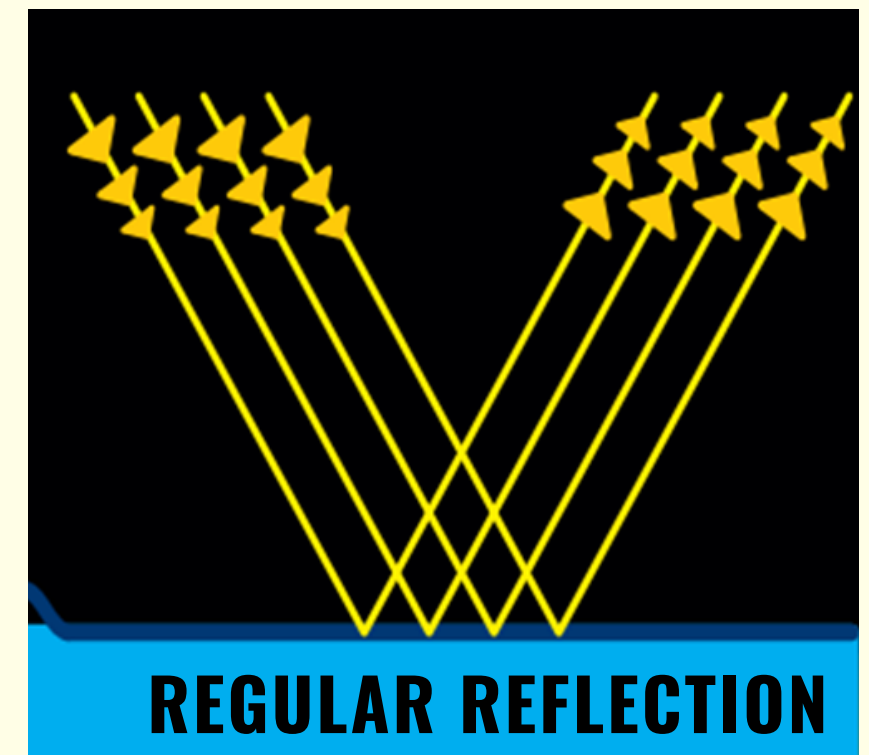
Light reflection is an optical phenomenon that occurs when light strikes a surface and is returned to its source.

Light reflection is a phenomenon classified into two types:

Also known as light diffusion, it occurs when light falls on an irregular (rough) surface, which reflects it.

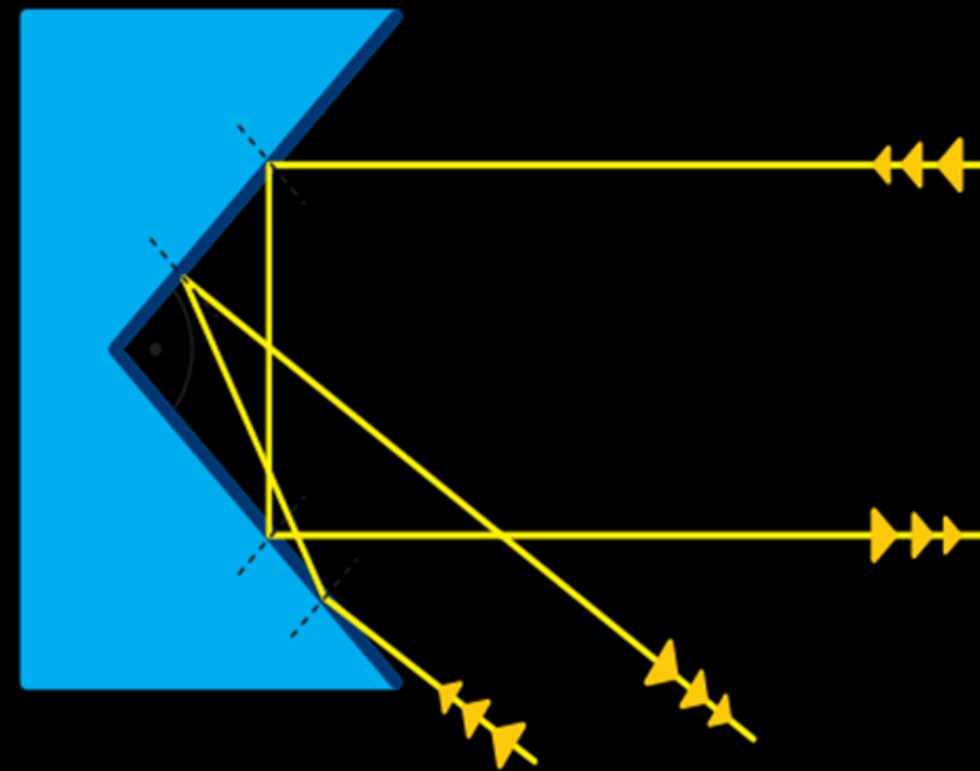


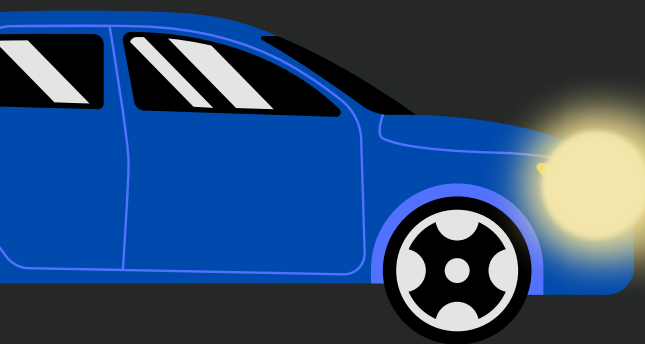
When light strikes a smooth, polished surface, the reflected rays are parallel to each other. It is this type of reflection that forms the image of highly polished surfaces, such as mirrors, metals, or the surface of a lake.



LIGHT REFLECTION PHENOMENON

Example that demonstrates that light incident on a surface with retro-reflective material is returned to the source that originated it in the same direction.





Dark clothes



Light clothes



Retroreflective material



0

50

100

150

DID YOU KNOW?

THE PEDESTRIAN IS SEEN UNDER THE HEADLIGHTS:

- If wearing dark clothes only 25 meters away;
- If wearing light clothing, this distance doubles (50 meters);
- If using retroreflective material, this distance is 6 times greater (150 meters).



THE IMPORTANCE OF BEING SEEN

There are many ways to explore and incorporate retroreflective material into clothes and accessories, discreetly integrating to enhance fashion and visibility.

ALWAYS USE RETROREFLECTIVE MATERIAL

50 m



Armbands; backpacks with retroreflective straps; clothing with applications of retroreflective material.



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