

Light Reflectance Values (LRV)

In architecture, **Light Reflectance Value (LRV)** is a metric used to measure the percentage of visible and usable light that a surface reflects when illuminated by a light source. It plays a critical role in determining how light or dark a surface will appear and directly influences the design and functionality of spaces, particularly in terms of visibility and safety.

Under the **Equality Act 2010**, which replaced the **2004 Disability Discrimination Act**, all new and refurbished public buildings and workplaces must comply with regulations set forth in an "Access Statement." This ensures that everyone, regardless of disability, age, or gender, has safe and equal access to public spaces. The regulations specifically address the needs of people with visual impairments, requiring good visual contrast between different elements within a building.

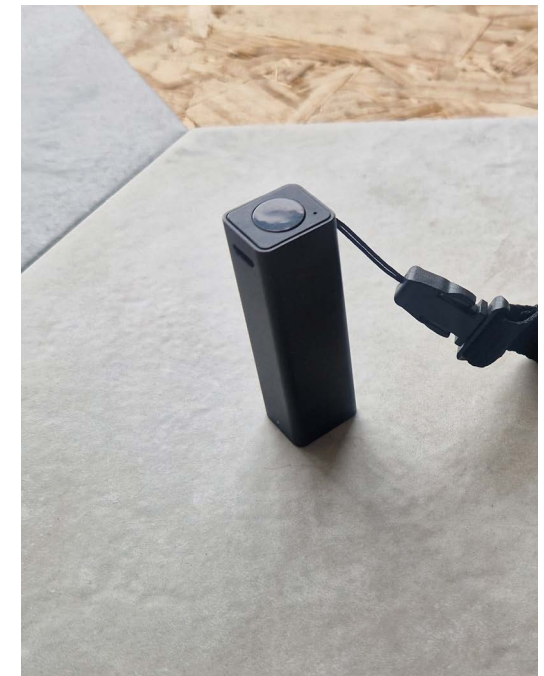
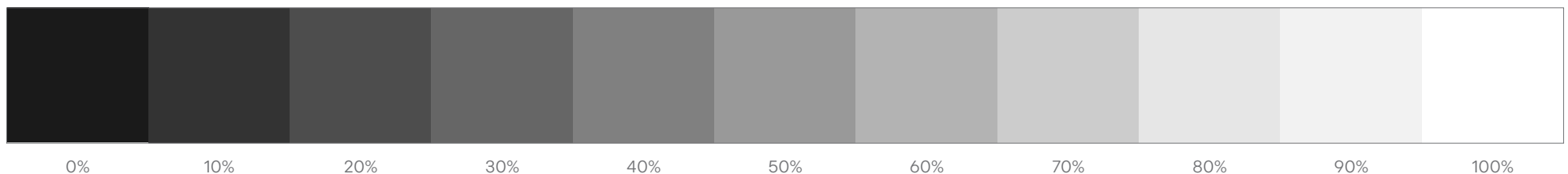
To achieve this, elements such as doorways, walls, floors, fixtures, and fittings must provide a clear contrast, aiding in the identification of key features and safe navigation. This visual contrast is measured using **Light Reflectance Value (LRV)**, which helps determine the difference in light reflection between adjacent surfaces. For example, the contrast between floors and walls must meet a specific LRV threshold to ensure visibility and accessibility, making it easier for visually impaired individuals to distinguish between surfaces and move safely through the building.

Compliance with LRV standards not only fulfills legal obligations but also promotes inclusive and accessible design, making public spaces safer and more welcoming for all.

What are Light Reflectance Values?

- LRV is a universal value for 'contrast'
- It measures the proportion of useful light reflected by a coloured object
- It represents a relative light and darkness value rather than an actual colour. Therefore dissimilar colours could have the same LRV
- LRV is measured on a scale of 0 to 100, 0 being perfect absorbing black and 100 being perfect reflecting white (in reality you never find these perfect objects - a bright white would typically have a result of an LRV of 85)

LRV Scale



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Why do we need Contrast?

The majority of registered blind individuals still retain some degree of vision, particularly the ability to perceive colours. In fact, only a small percentage—less than 5%—of blind people experience total blindness, where no vision is present. Even among this group, most individuals retain some level of sensitivity to light and shade. This means that ensuring visual accessibility through proper contrast is crucial in supporting the needs of visually impaired people.

To accommodate this, specifying a minimum Light Reflectance Value (LRV) difference of 30 points between adjacent surfaces—such as floors and walls—can significantly improve the ability of visually impaired individuals to navigate and interact with a space. This contrast allows them to better distinguish between different surfaces, such as doorways, staircases, and fixtures, ensuring that they can move safely and confidently within public environments.

By adhering to this LRV guideline, designers and architects can play a vital role in creating inclusive spaces that reduce the risk of discrimination against those with visual impairments. It also aligns with accessibility regulations, contributing to safer, more user-friendly environments for everyone, regardless of their level of vision.

Here are some key examples where visual contrast is essential to ensure accessibility for visually impaired individuals:

Door Faces and Frames to Walls: Clear contrast between the colour of doors (including doorframes) and the surrounding walls is crucial to help individuals easily identify entry and exit points. This ensures smoother navigation and reduces the risk of accidents.

Floors to Walls: Distinguishing between floors and walls through contrasting colours and textures is vital for safe movement. This is particularly important in areas with steps, ramps, or changes in elevation, helping to define the boundaries of walking surfaces.

Ceilings to Walls: Visual contrast between ceilings and walls aids in spatial orientation and depth perception, particularly in large rooms, hallways, or open spaces. It helps individuals with impaired vision to understand the proportions and layout of a room more clearly.

Handrails to Walls: Handrails must stand out from the surrounding walls, providing a visual cue for support, especially in staircases and corridors. A strong contrast ensures that people with limited vision can easily locate and grip the rail for added safety and stability.

Sanitary Fittings to Walls: Sanitary fixtures like sinks, toilets, and taps should have a noticeable contrast to the surrounding walls. This helps visually impaired individuals to locate these essential fittings in public restrooms, ensuring independence and ease of use.

Stair Treads: A contrasting strip of at least 55mm across the front edge of each stair tread and down the riser provides a clear indication of the step's boundaries. This contrast helps prevent trips and falls, making stairways safer to use for individuals with visual impairments.

Incorporating these visual contrasts, with at least 30 LRV points of difference, enhances the accessibility and safety of public spaces, ensuring compliance with regulations and promoting inclusive design.

