

### 2.3.5.2 Walls

Higher reflectance of wall and partition surfaces will increase the perception of lightness in the interior. Walls with windows are a particular case. The surfaces surrounding the windows should have a reflectance of not less than 0.6 in order to reduce the contrast with the relatively bright outdoor view through the window during daytime. Windows at night form a dark specular surface, which should be covered with suitable curtains or blinds. Sharply defined patterns of light and shade ('scallopings') caused by hard-edged downlighting or wall-washing luminaires can cause a breakdown of brightness constancy, which can disrupt the visual continuity of wall surfaces.

The ratio of the average illuminance on the walls to the average illuminance on the horizontal working plane is related to the average vertical plane illuminance throughout the space. This has been shown to give good correlation with visual satisfaction for office lighting.

The recommendation is for the ratio of the average illuminance on any wall or major partition surface to the average illuminance on the horizontal working plane to be within the range 0.5–0.8.

In general, the effective reflectance of the principal walls should be between 0.3 and 0.7. The reflectance of window wall surface finishes should be at least 0.6.

### 2.3.5.3 Floor and working plane

The reflectance of the floor cavity plays an important role in the visual appearance of a room. With most lighting installations a proportion of the light on the ceiling will have been reflected from the floor cavity, and where this has a low reflectance it may be difficult to obtain satisfactory modelling effects without directly lighting other surfaces and so changing the luminance balance. Conversely, as the floor cavity may be one of the largest planes in a space, it is important that its luminance should not be so high as to dominate the appearance of the scene. It is therefore undesirable for the floor cavity to have an average reflectance of less than 0.20 or greater than 0.40.

The floor cavity consists of a number of surfaces: the floor, the lower parts of the walls (i.e. those below the level of the working plane), the top and sides of desks or benches, and the surfaces of other furniture or equipment. Each of these surfaces will have a particular reflectance, and its effect on the average reflectance will be in proportion to the unobscured area of the surface. It should be noted that in practical interiors it is extremely unlikely that the floor space will be unobstructed by furniture or machinery, and allowance should be made in calculating the average floor cavity reflectance (see Table 3.8). Low-reflectance bench and desk tops should generally be avoided, as these surfaces have a major influence on the average floor cavity reflectance as well as usually forming the immediate surround to the task.

In general, it is undesirable for the average floor cavity reflectance to exceed 0.40 or fall below 0.20, although it is recognised that in 'dirty' industries or heavily obstructed areas this latter figure may be difficult to achieve. In such cases, steps should be taken to avoid dark-coloured furniture and to keep working and