

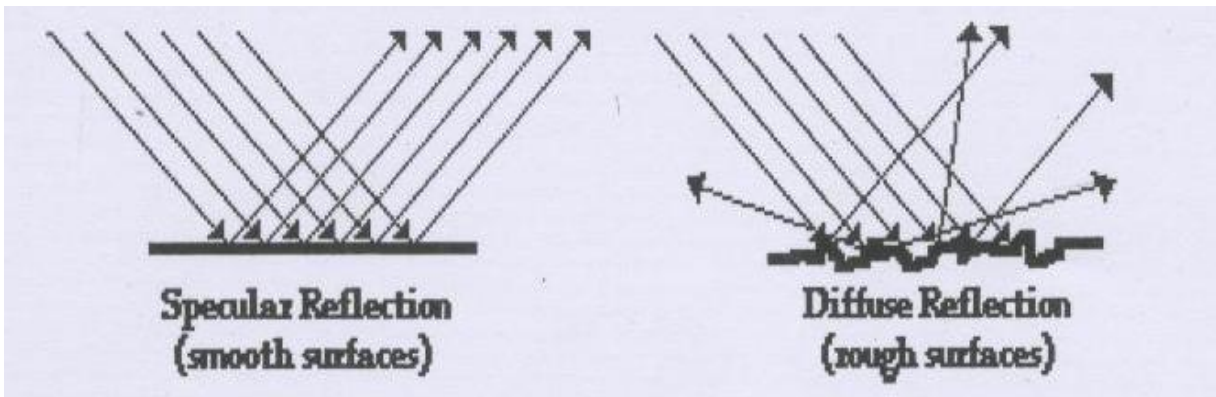
Optical Hazing on Polished Porcelain Tiles

What is Optical hazing? How does it present itself and what causes it?

Firstly it will present as a smoky, hazy, smudgy type of finish in the surface of polished porcelain tiles, it will only be visible when a direct light source reflects at a certain angle across the surface of the tile. It is readily seen on darker coloured polished porcelain tiles. Also, some polished porcelain tiles have visible “pores” in the surface, and this contributes.

It is **caused by light**. If you could observe a tray of light approaching a mirror you would see it also bouncing or reflecting from the mirror. Where and how it bounces or reflects is referred to as the “behavior of light as it reflects” and is known as the “law of reflection”. Reflection off a smooth surface such as a mirror is known as specular reflection.

Reflection off a rough surface such as ceramic tiles is known as diffuse reflection. Many consumers have expectations that their polished porcelain floor is going to have a mirror like finish. A polished porcelain tile is not a mirror. When the surface of a polished porcelain tile is examined under a microscope, small micro facets are found. Light strikes these micro facets reflects in a diffused manner giving a “Halo” or “Haze” effect.



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The amount of haze visible depends on several factors:

1. **Number of light sources** i.e. a single source of light would limit the number of positions available to observe any haze. The same surface when lit by a number of light sources will increase the amount of haze visible as there are more opportunities to see the reflected light.
2. **Bulk sunlight shining through large windows** and doors will increase the amount of haze visible.
3. **The size of clay particles and other ingredients** of the tile can also have an effect on the amount of haze visible.

Optical Haze on polished porcelain tiles is not related to cleaning or wax residue problems. It is an inherent characteristic of the tiles, stemming mainly from the mineral content and manufacture of the polished porcelain tile. It has no effect on the technical performance of the tile.

Optical Haze is not a defect!

To date it is not something the Australian Standards require to be tested. It is generally only visible in low angles of reflected light and is primarily an aesthetic issue.

SUMMARY:

Polished porcelain tiles are not mirrors and therefore a mirror like finish should not be expected from a polished porcelain tile. Optical hazing is an inherent feature in polished porcelain tiles, even though the degree and extent of the problem can vary between tile manufacturers and between colours.