

Antireflective coating for protecting glass

Advanced Materials Research Division

1. Introduction

Our antireflective coating for protective glass contains low refractive material dispersed in the binder and is applied by spraying to form a non-glare coat on a protective glass shield in front of a display, etc. The use of a chemically stable inorganic filler gives excellent weatherability to the formed coat.

2. Product Characteristics

Conventionally, a non-glare effect was obtained by etching the glass surface with fluorine, etc., and an antireflective effect by forming a multi-layered coat by evaporation. But they all have some drawbacks. Etching causes poor balance between the reflectance and screen resolution. Evaporation reduces the reflectance in the visible light region but does not give views free of fluorescent lamp or external light.

Our antireflective coating for protective glass is sprayed to form a coat and produces two desired effects; non-glare effect taking advantage of surface scattering and antireflective effect due to the addition of low refractive material. This reduces annoying reflection of fluorescent lamp or external light on the glass surface and minimizes burden to the operator's eyes.

The use of inorganic fillers also gives added protection against water and weathering.

3. Properties of Antireflective Coating

- 1) The reflectance can be regulated by changing the amount of low refractive material content (Figure 1).

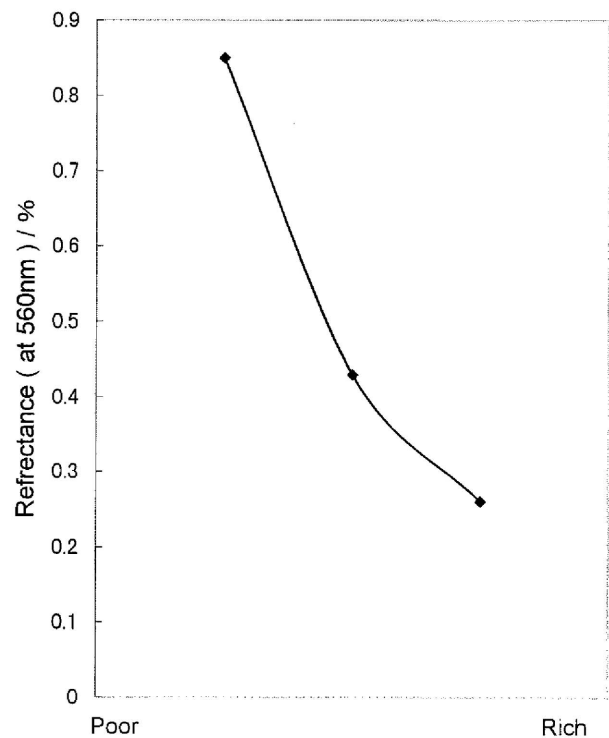


Fig. 1 Content of Low Refractive Material vs. reflectance

2) The haze (cloudiness) can be regulated by changing the spraying conditions. A higher haze increases the surface scattering effect, thereby reducing the reflectance to a more desirable level (Figure 2).

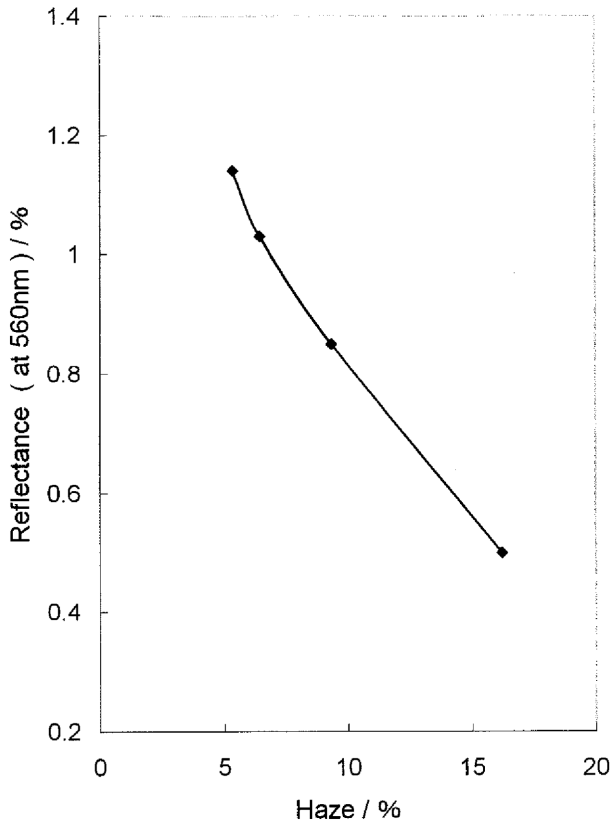


Fig. 2 Haze vs. reflectance

3) The synergism between the non-glare effect taking advantage of surface scattering and antireflective effect due to the addition of low refractive material ensures excellent antireflective performance in a wide range of wavelength (Figure 3).

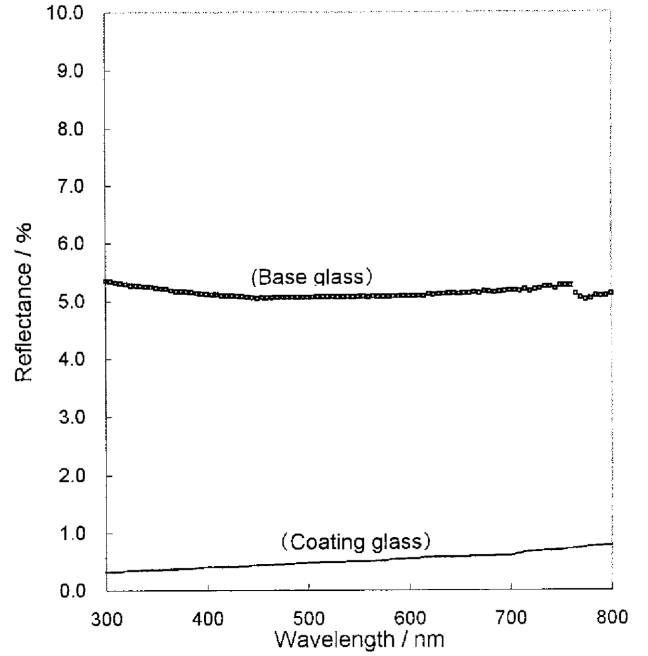


Fig. 3 Reflectance vs. wavelength (AR coated glass)

4) The reduction of annoying reflection of fluorescent lamp or external light on the glass surface enhances the screen visibility and minimizes burden to the operator's eyes.

5) Coat hardness

Pencil hardness 3H to 5H on 1kg load