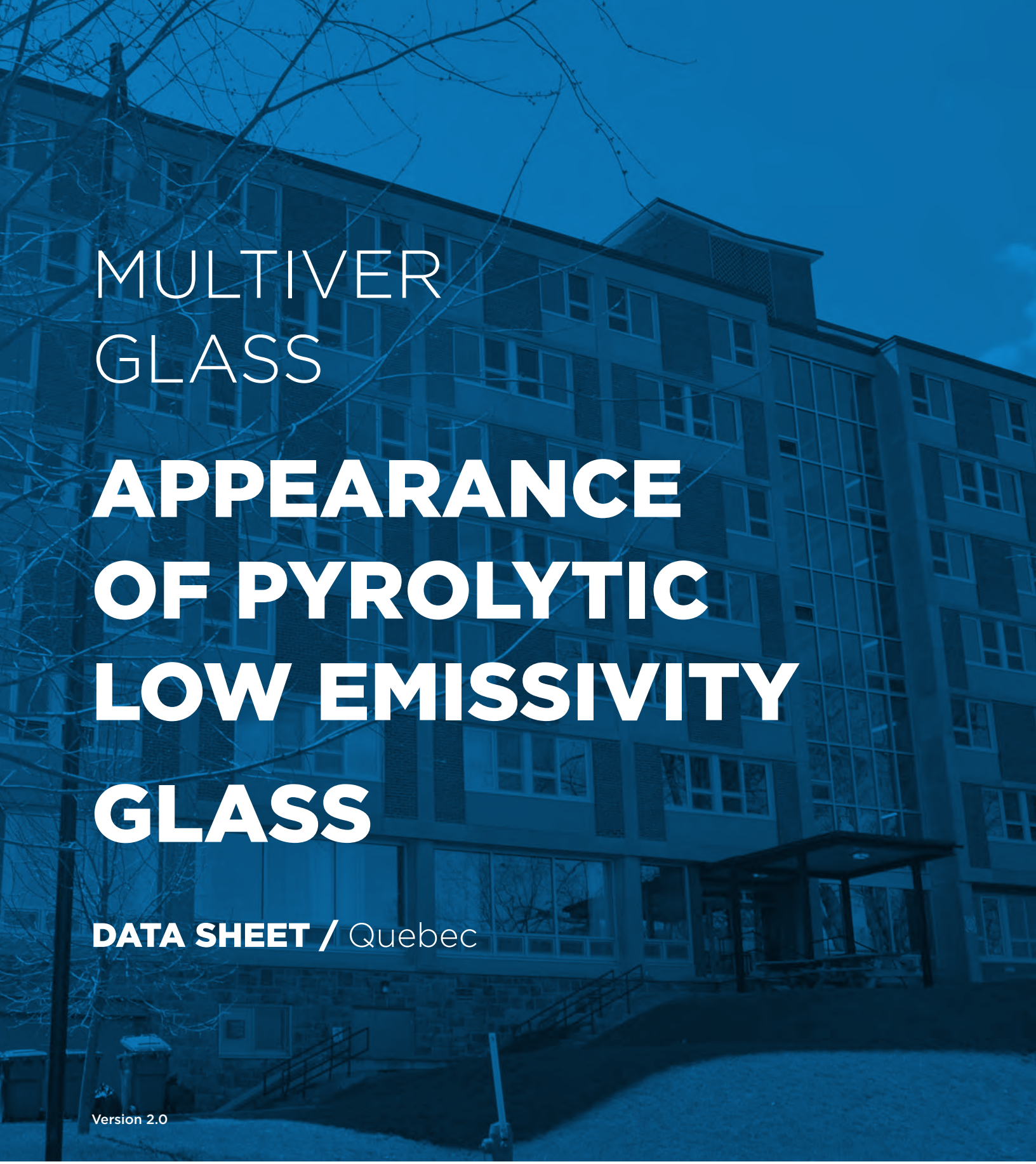

MULTIVER GLASS

APPEARANCE OF PYROLYTIC LOW EMISSIVITY GLASS

DATA SHEET / Quebec

Version 2.0

MULTIVER Ltd
436, Berube Street, Quebec (Quebec) G1M 1C8
tel. : 1 800 463-2810 and fax : 418 687-0804

MULTIVER
Cutting edge of the glass industry

Appearance under Certain Lighting Conditions of **PYROLYTIC LOW EMISSIVITY GLASS**

Low emissivity (low-e) is the result of a thin layer of tin oxides deposited onto the glass. In an electron microscope picture, the polycrystalline structure of the surface of the tin oxide coat can be seen as a layer of closely packed grains. Daylight can easily pass, with less than 1 % scattering, through this coating because each grain is actually smaller than the wavelength of visible light. The illustration below shows the surface of the coating magnified 20,000 times.

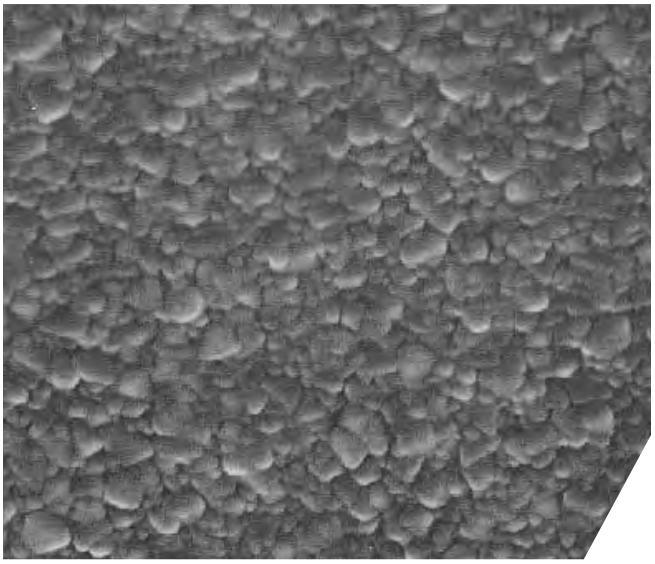

Figure 1. Typical grain structure

The extremely small size of the grains makes them invisible in most lighting conditions. The following electron microscope image shows a cross-section through a glass with a pyrolytic low-e coating of tin oxides. The polycrystalline nature of the coating contrasts with the non-crystalline nature of the solid glass underneath the coating.

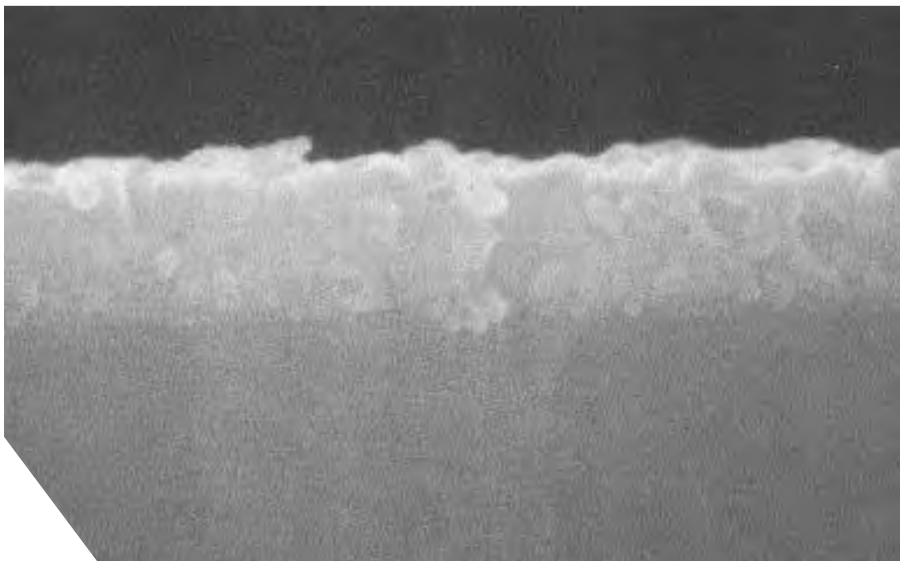

Figure 2. Cross-section showing coating uniformity

MULTIVER Ltd
436, Berube Street, Quebec (Quebec) G1M 1C8
tel. : 1 800 463-2810 and fax : 418 687-0804

Appearance under Certain Lighting Conditions of **PYROLYTIC LOW EMISSIVITY GLASS**

It is possible to discern the presence of the pyrolytic low-e coating under certain lighting conditions, such as when bright sunlight shines directly onto partly shaded glass and there is deep shade on both sides of the glass. When looking out through the glass towards a deeply shaded background, the short wavelength component (blue) of the sunlight appears slightly scattered. This gives the coating a uniform, very faint blue appearance visible in the sunlit area. Longer wavelength red light is less scattered.

Light scattering (haze) is controlled throughout the manufacture of the glass, and the haze value is usually 0.5 % of the light. In comparison, the haze of the windshield of an automobile that has travelled 100,000 km on regular roads is ten times more visible. Light scattering from dirt on a window is around 1 % to 2 % or higher. There is usually no haze visible; haze is only noticeable under certain specific lighting conditions. Light is scattered by the tin oxide coating that gives the glass its low emissivity properties. It should however be taken into account that using pyrolytic low-e glass improves the thermal resistance of your project.

MULTIVER Ltd
436, Berube Street, Quebec (Quebec) G1M 1C8
tel. : 1 800 463-2810 and fax : 418 687-0804

This document gives a general description of the product. For further information, please contact an authorized supplier of Multiver products. The use of any of the products mentioned herein is the sole responsibility of the users. Multiver assumes no responsibility for the use of its products.

MULTIVER Ltd
436, Berube Street, Quebec (Quebec) G1M 1C8
tel. : 1 800 463-2810 and fax : 418 687-0804

MULTIVER
Cutting edge of the glass industry