



# Over 30 years of experience in craftsmanship of highly advanced glass technology

## PORTFOLIO DAGLASS

#### **TECHNOLOGIES AND PRODUCTS**



#### ANTI-REFLECTIVE GLASS

By changing the surface morphology, this glass increases the light transmittance. Consequently, it improves the efficiency of lightning and significantly advances the quality of image on screens.





#### Mano-Barren<sup>™</sup> Antiseptic Glass

It is produced with the use of magnetron technology and has antifungal, self-cleaning and biostatic properties.



#### NON-GLARE GLASS

A type of glass with changed morphology in the nano scale. It is suitable for LED screens and LCD screens. The anti-finger print feature makes it an ideal solution for touch screens. It reduces light reflexes and improves the image.



#### DIFFUSIVE GLASS

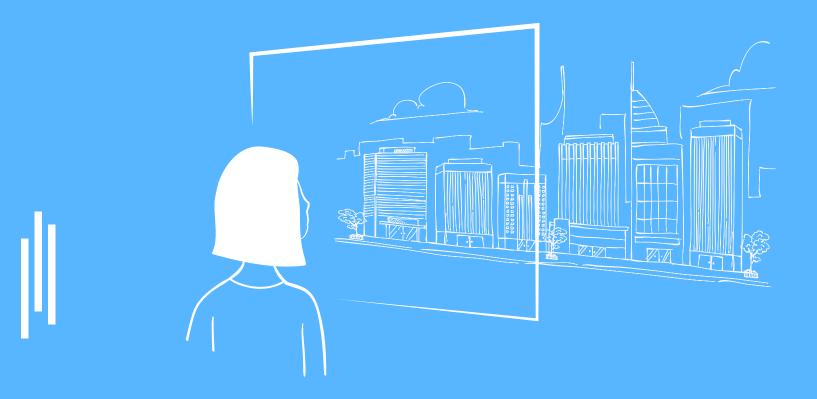
It scatters the light in a controlled and steady manner. Therefore, it removes shadows and gives more transparency in contact with water. It is a perfect solution for lightning and greenhouse sector.

#### DIAMOND GLASS

Hydrophobic, resistant to scratching. It is a great choice for partitions, partition walls, and shower cabinets.

#### THERMALLY TEMPERED, LAMINATED AND DOUBLE $\ensuremath{\mathsf{GLAZED}}$ GLASS

A wide range of applications in the construction industry.



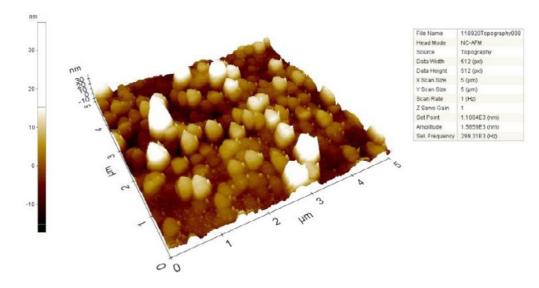
ANTI-REFLECTIVE GLASS is made according to a unique, patented technology. Due to a special chemical proces (chemical etching) a morphology of glass itself is modified. The changes in morphology of the glass give unique properties to a glass as increased light transmission and reduced sparkling effect.

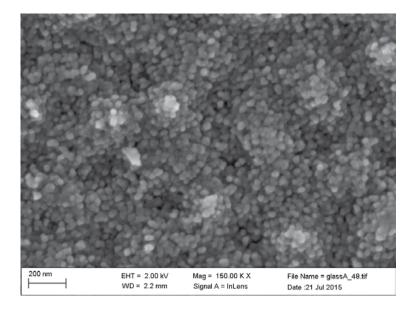
Because of the fact, that anti-reflective treatment interferes in a glass structure the function of the glass remains constant, what results in a very high durability in comparison with standard coatings, wherein an additional layer is deposited on a glass surface. Anti-reflective treatment may be performed both on low-iron and float glass in a thickness range between 2 and 19 mm with maximum size of single glass sheet of 2250 by 3210 mm. Additional mechanical treatment by a preparation of ready product as tempering and edges grinding is possible.

## THEORETICAL BACKGROUND

#### **ANTI-REFLECTIVE GLASS**

An anti-reflective structure of a nanometre range with defined thickness (in a range 50 till 150 nm) and refractive index (ca. 1.3) is formulated in a process of chemical etching (see pic. 1 and pic. 2 below).





Pic. 1 AFM picture of glass after AR treatment of DAGLASS

Pic. 2 Electron microscope picture of glass after AR treatment of DAGLASS

### OPTICAL PARAMETERS

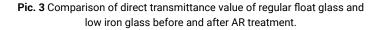
#### **ANTI-REFLECTIVE GLASS**

Thanks to this process the transmittance of low-iron glass may be raised from 91% up to 96 - 97 % as presented on the picture 3 below. This improvement of optical properties opens a broad spectrum of applications of AR Glass of DA-GLASS.



#### **Direct Transmittance**

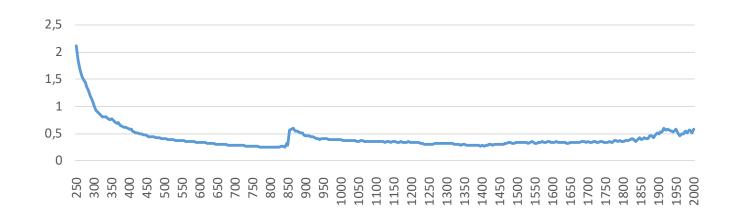
Wavelength [nm]



### OPTICAL PARAMETERS

#### **ANTI-REFLECTIVE GLASS**

As the light transmittance increases, its reflection decreases. Below graph concerns low-iron DAGLASS AR Glass and shows the value of transmitted light in relation to wavelength values. It is clearly noticeable that the value of reflectance goes down below 1 %.



Reflection value in a function of transmitted light wavelength [nm]

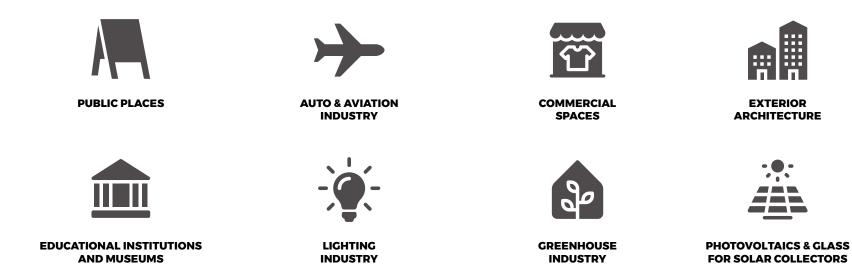
Reflection value in a function of transmitted light wavelength [nm]

# Applications of Anti-Reflective Glass

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#### **ANTI-REFLECTIVE GLASS**

Anti-Reflective Glass is produced with the use of advanced chemical technology. It is highly resistant to scratches and has exceptional properties - increases light transmission, and gives a clear image while reducing unwanted reflections. It may be subjected to mechanical and thermal treatment. DAGLASS AR Glass can be combined with other DAGLASS products, including NON-GLARE Glass and Diffused Glass.



#### ARCHITECTURAL

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DAGLASS

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(III)

- Window displaysSales stands in shopping centers
- Jewelry showcases
- Museum displays
- Railings





WINDOW DISPLAYS



**JEWELRY SHOWCASES** 



**MUSEUM DISPLAYS** 





# SPECIALIST APPLICATIONS

Windshields and dashboards
Optical filters

DA GLASS

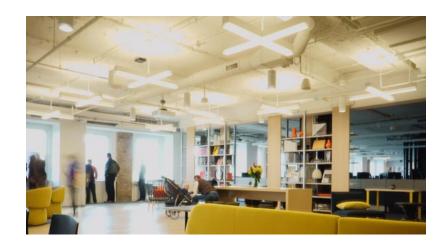
- Screens
- Lighting industry
- Zoos and aquariums
  Window displays

#### SCREENS



#### LIGHTING

**AVIONICS** 



#### **SHOP WINDOWS**





DA GLASS

#### RENEWABLE ENERGY

• PV panels • Sollar collectors

GREENHOUSE INDUSTRY

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