# Polycarbonate Hard Coating

## Weight Reduction & Design Freedom Through Glass Replacement

(under development)

## Water-based Hard Coating

Significant weight reduction and freedom of design: Asahi Kasei is currently developing a water-based coating that enables polycarbonate as a glass substitute in automotive front-, rear- and side window applications. Polycarbonate coated with this technology achieves an ECE R43-compliant abrasion resistance for front window applications without using a plasma-enhanced chemical vapor deposition. At the same time the material maintains the chemical and weather resistance required for automotive plastic side and rear windows.

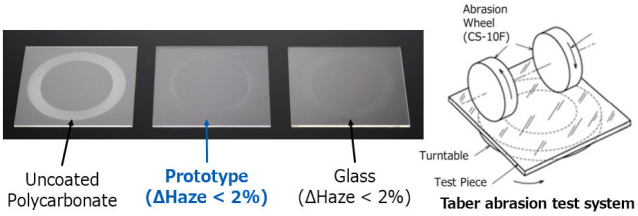
## Key Benefits

- Abrasion resistant
  - ΔHaze < 2% @1000 cycles
  - 2 coat process / does NOT use Plasma CVD
- Water-based
  - Less VOCs than solvent based coatings
  - No refrigeration required for storage
- High durability
  - Excellent weathering performance
  - Highly resistant to chemicals & UV light

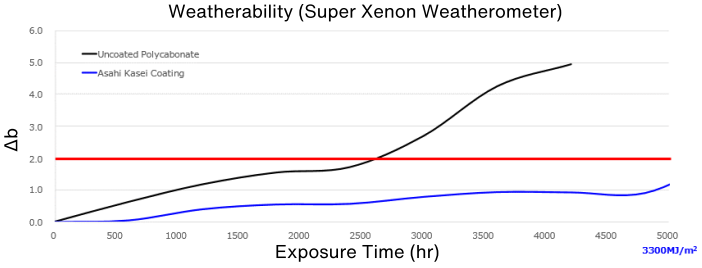
## Material Properties

### Abrasion Resistance comparable to glass

(ΔHaze < 2% @1000 cycles without Plasma CVD)




### Durability (Weatherability)




*Super Xenon Weather Meter (Suga Test Instruments)
Radiant exposures: 180 W/m² (300~400 nm)
Test conditions: 18 min (BPT: 38°C, 95% RH) + 102 min (BPT: 63°C, 50% RH)

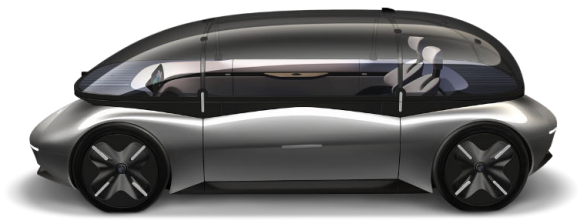
## Glass Replacement

Enables weight reduction and increases design flexibility in automotive applications.

Windshields

Rear & Side Windows

Sunroofs



Asahi Kasei's concept car AKXY2. Polycarbonate roof partially hard coated.

*Creating for Tomorrow*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