

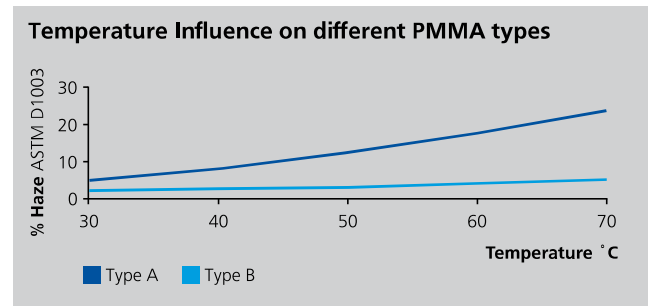
# Transparent Sheets

Light weight and high design flexibility make transparent plastic sheets attractive for use as “organic glass” in many different applications e.g. noise barriers, green houses, sport arenas, sky domes, solar panels or bus stop shelters. In addition, rigidity and impact resistance of acrylic (PMMA) and polycarbonate (PC) sheets were optimized expanding its usage for safety and architectural glazing as well as for automotive, aircraft, yacht or caravan applications. Depending on the application, the transparency requirements will be very different and need to be objectively controlled – often within very tight specification.

## Influence of material properties

Sheets for outdoor use need to withstand extreme weather conditions and require high rigidity over a long lifetime. As an example, PMMA typically shows increasing haze with higher temperatures and therefore, limits its use in e.g. automotive glazing where low haze is a crucial safety requirement. Material development has further allowed this behavior to improve and resulted in an optimized PMMA material with low temperature dependency ideal for automotive applications like rear windows.

Automotive glazing is tested and approved in accordance to international regulations like e.g. ECE R43 or ANSI Z 26.1 in regards to mechanical, chemical and fire resistance, and last but not least transmission properties.



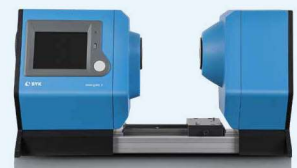
## BYK-Gardner Solution



Solid Color & Gloss  
spectro2guide



Gloss  
micro-gloss



Transparency  
haze-gard i

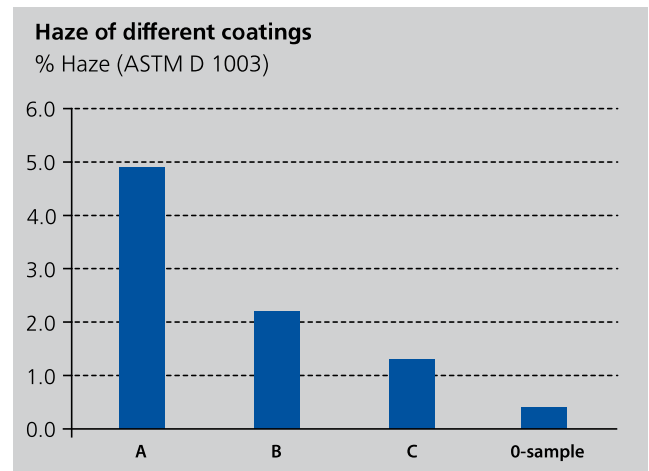


**Wiper resistance test**

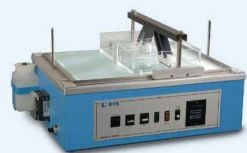
In specific applications it is necessary to adapt a test method to the typical stresses during its real-world use. The wiper resistance test was developed to simulate accelerated abrasion by automotive windshield wipers under controlled laboratory conditions. Instead of rotating abrasive wheels, a linear back and forth motion of a wiper blade is applied to the sample under test. The test specimen is placed in a box filled with a defined suspension according to ISO 12-103-1 A4 at ambient temperature.

The complete test should be done for 20.000 cycles. After the test, the samples are to be cleaned with water.

For the final evaluation, the transmission haze is measured with the haze-gard i. In order to generate a representative reading for abrasion resistance, the sample is measured at 9 positions within the center.



**BYK-Gardner Solution**



**Abrasion Scrub Test**  
Wet Abrasion Tester



**Abrasion Accessory**  
Modification Kit