



## Why **FORMGLAS SPEZIAL**® ?

When thinking of ship safety, single-layer safety glass, thermally toughened, always comes to one's mind. However, this is no longer standard. Single safety glass received its name from its way to break (into thousands of pieces leaving a big hole) and its higher strength compared to not toughened glass. The car building industry therefore has used for many years only compound safety glass out of two float glasses.

With **FORMGLAS SPEZIAL**® we have consequently improved this idea. **FORMGLAS SPEZIAL**® is a high quality product providing triple safety. It consists of two chemically toughened panels of glass held together (without any tension) with 1.5 mm of very sophisticated UV and seawater-resistant resin (full UV absorption for interiors and clothes up to 361 nm without any yellowing, continuous heat resistance  $-10^{\circ}$  to  $+100^{\circ}\text{C}$ ). Tests on **FORMGLAS SPEZIAL**® have shown a considerably higher strength compared to single-layer safety glass, compound safety glass, acrylic glass, Lexan or Makrolon. It retains its form when broken due to its compound construction. If one layer of glass breaks, the second glass and the resin keep the whole glass together - there is no hole through which water can enter. Only under even higher pressure breaks the second glass layer. But even then the resin layer holds the broken glass in place and no water can enter.

In addition to the high safety advantages, **FORMGLAS SPEZIAL**® guarantees excellent vision without distortion or deformation (which cannot be achieved with thermally toughened glass). Glass sizes are limited to maximum 2000 x 3000 mm due to the size of the chemical bath used for production. The smallest bending radius is 150 mm  $r$  without any optical influences. **FORMGLAS SPEZIAL**® can be produced in cones, cylinders or spheres and can also be cut to shape using full-size templates.

**FORMGLAS SPEZIAL**® can be delivered in various colours such as white, clear, grey, bronze, green and in two blue colours.

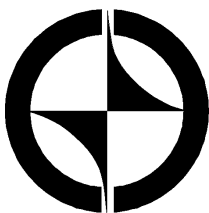
Bent glasses cannot be tested to ISO 614 as this is a test for plane glasses. We have tested **FORMGLAS SPEZIAL**® to ISO 614 as plane compound safety glass and under water pressure plane and bent compound glazing. The strength moments are 25 to 100 % higher compared to single-layer safety glass and compound safety glass out of thermally toughened glass, even with thinner glasses. This allows a considerable reduction in weight. Therefore **FORMGLAS SPEZIAL**® can be installed without storm shutters!

**FORMGLAS SPEZIAL**® is more and more installed also as plane compound safety glass (compound safety glass chemically treated) due to its high safety advantages and the excellent vision as well as the adjusted edges being very important when the glass is installed without frames.

*You should insist on the highest possible safety and should not accept less.*

**FORMGLAS SPEZIAL**® - Your safety and quality decision.

More information from



**TILSE Industrie- und Schiffstechnik GmbH**

Projecting – Design – Production of **FORMGLAS SPEZIAL**®

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Test nach ISO 614 mit 100%

