When rescue helicopters take off, a few seconds can make all the difference. Whether they’re responding to a car accident in a city center, flying on a rescue mission in the mountains, or battling strong winds at sea—the extreme conditions place very high demands on the material. The Eurocopter EC135 has proven its reliability in air rescue operations thanks to its optimal safety and stability.
The light and agile Eurocopter, produced since 1996 by the company with the same name, can handle all these requirements. The rotors are stable, yet flexible and lightweight; the engines are reliable and powerful. Often, it’s not only the pilots’ lives that depend on them. Another safety element is invisible, even though it’s right under their noses: the front windscreen. This provides a panoramic view, but it’s not made from glass. It is PLEXIGLAS® from Evonik that protects pilots from UV rays, offering them clear visibility and maximum safety during a rescue mission.

**Key advantages**

“PLEXIGLAS® is twice as light as traditional mineral glass,” says Gottfried Hornung, who is overseeing the completion of the EC135 at Eurocopter. This reduces fuel usage and means that rescue teams can stay in the air for longer. All the transparent glazing on the EC135 model—front, side, and rear—is made from this modern material. “For safety reasons, glass is unsuitable. If an accident occurs, such as a bird strike, glass breaks into thousands of tiny pieces and impairs visibility,” explains Hornung. “This risk doesn’t exist with PLEXIGLAS® – only the directly affected area is damaged.” There are more benefits: The sheets are especially easy to shape and provide pilots with a panoramic view—an important...
aspect in spherical helicopter canopies.

Certified quality and optical properties

By the time PLEXIGLAS® gets in the air, it has already come a long way. It all begins at the Evonik plant in Weiterstadt, Germany, where the material is produced in a special casting process. Then, each PLEXIGLAS® sheet waiting to be delivered is certified in accordance with aviation standards. The aviation industry imposes high standards on acrylic in terms of optical quality, thickness tolerance, and mechanical properties.

The material is then handed over to helicopter glazing specialists, Josef Weiss Plastic, to be processed further. The plastic is heated and stretched into the desired form. “This is crucial to ensure perfect visibility for the pilot,” says Hornung. Each sheet is checked down to the last detail: Are there any optical defects in the material? Are the size and shape ok? Even a millimeter can make a difference. Every month, around seven sets of the finished glazing arrive at Eurocopter’s German headquarters in Donauwörth. “If we order more material, it’s usually here within three days,” explains Hornung. Things soon start to get serious for the PLEXIGLAS®
sheets. Air rescue missions place great demands on the materials. Helicopters and their glazing have to withstand extreme changes in temperature, wind, and weather, as well as aggressive UV radiation.

**Reliable operation**
Germany’s largest automobile club, the ADAC (Allgemeine Deutsche Automobil Club), runs one of the two biggest air rescue squads in the country. The ADAC has 49 rescue helicopters in operation—rescue teams were called out a record number of times in 2012. Helicopters were dispatched 49,243 times, which equals 130 life-saving maneuvers a day. This means a lot of pressure for the rescue teams and the material, too.

Based in Europe, the Eurocopter company is a leading manufacturer of helicopters. The nimble EC135 model wins customers over mainly thanks to its high performance, wide range, flexibility, and reliability. And what about the PLEXIGLAS® sheet? It flies on board the more than 1,000 EC135 models in operation worldwide—always there when every second counts.

The photos may be used free of charge provided the source is referenced.