



## Basotect® UL interior insulation of new Boeing 787 aircraft

### Case Study

#### Sound-absorbing foam in the interior insulation of new Boeing 787 aircraft

American aircraft manufacturer Boeing is insulating its new airplane series, the Dreamliner 787, with Basotect®, BASF's sound-absorbing and heat-insulating melamine resin foam. This is the first time that a BASF foam is used in the mass production of acoustic insulation for airplane cabin walls and environmental ducting. The outcome of the close cooperation between the two companies is the development of Basotect® UL (ultra light), which, at 6 g/l, is 30 % lighter than the conventional Basotect®. Boeing and BASF also developed new test methods for the use of this specialty foam in aviation.

#### New production and layout concept

According to Boeing, the lightweight BASF foam supports Boeing's efficiency targets and, thanks to its high sound-absorbing capacity and its good thermal-insulation properties, Basotect® is also instrumental in Boeing's concept for the layout of the Dreamliner 787 series. The new aircraft is quieter than aircraft of a comparable size.

Pieces cut of the elastic melamine resin foam can be installed in the cabin walls easily and quickly. The foam retains its flexibility even at extremely high temperatures as well as at very low temperatures without becoming brittle. In addition, the material is highly flame-retardant, so that Basotect® also complies with the strict fire protection standards stipulated by the aviation authorities.

#### Boeing – BASF development partnership

The goal of the collaboration between Boeing and BASF was the use of Basotect® as an insulating material for cabin walls. Since reducing weight is of paramount importance for aircraft nowadays, this cooperation ultimately led to the development of Basotect® UL, which is 30 % lighter in weight than the classic Basotect®, yet exhibits the same attractive combination of acoustic and mechanical properties.

Randy Smith, Boeing's interiors design engineer explains: "We investigated several material combinations, and our testing and analysis determined that a laminate containing Basotect® was the most weight-efficient system to reduce the interior noise in the forward fuselage of the 787. We will continue to work together with BASF to identify other uses of Basotect® in the thermal and acoustic insulation for future 787 airplanes."

Boeing is the largest aircraft manufacturer in the world. The company is headquartered in Chicago, Illinois, (USA) and has been producing aircraft for commercial aviation since 1916. Today, about 12,000 Boeing airplanes crisscross the world's skies, amounting to 75 % of all airplanes worldwide. The first model of the new Dreamliner 787 will take to the skies in 2008. More 787-series planes for different flying ranges and space for 210 to 330 passengers will follow in the years to come.

