

High Protect SECURE Plate for Safer Air Travel

No one will have forgotten the events of September 11, 2001. The appalling attack on the World Trade Center in New York two years ago, in which two aircraft were flown into the twin towers of the American metropolis, shocked the entire world. In order to prevent similar catastrophes in future, or at least to make them less likely, numerous safety-related measures have already been implemented. In this connection, ThyssenKrupp Stahl has also made its contribution to making air travel safer against terrorist attacks.

▼ The world's biggest aircraft constructor, Airbus, had to upgrade over 3000 aircraft. ThyssenKrupp Stahl supplied the right safety steel for the job – MS Secure special.



Review: Since April of this year, American Aviation Authority regulations have required that US landing permits are to be granted only to airlines that have bullet-proof cockpit doors which are secure against intruders as well. This means that all airlines flying to the USA have had to equip their machines with security doors. The world's biggest aircraft builder, for example, had to upgrade over 3000 aircraft, with little time to do it. In addition to the door, which for reasons of weight has to be constructed of organic safety fibers, it was necessary in particular to make the frames bulletproof, and with them the edge sections mounted on the door posts. Here, because of its outstanding performance relative to its thickness, steel was the only realistic option, even though its use on the inside of aircraft is generally considered somewhat of a rarity because of its high relative density. However, just three millimeters of steel is enough to resist any threat from hand-held firearms, while it is so flexible that it can be cold-folded with tight radii.



Welcome on board ThyssenKrupp Stahl

In consultation with Airbus, the Plate Profit Center developed the high-hardness multiphase steel MS Secure special from the Secure series of safety steels. This is used for the protection of cockpit doors. Barely three millimeters thick, this thin hot-rolled sheet is produced on the wide hot strip mill in Bochum. The manufacturers were able to draw on the experience accumulated in the production of hot strip from hard steel for crash-related parts in cars. But it was only after the new sheet had withstood the ballistic test that they could be certain that the solution to the problem was found.

Of course, with a hardness of up to 400 HB, Secure MS special could also be used for the construction of protected cars and sedans of the lower protection categories – automobile manufacturers have already expressed an interest. The advantage of this new steel over conventional materials is that it offers excellent value for money. The production of the Secure steel by means of thermo-mechanical rolling followed by targeted cooling eliminates the need for any further thermal treatment. Moreover, the material can also be produced in dimensions of less than three millimeters and is also ideal for cold-forming, which contributes to further weight-savings on the vehicle. Should the ballistic protection offered by this type of thin sheet still be inadequate, ThyssenKrupp Stahl also offers enhanced types of steel which have a hardness of up to 600 HB for even higher categories of protection.

Dr. H.-Jürgen Kaiser



▲ Bullet-proof cockpit doors are a must if an Airbus is to land in the USA. These are the new regulations of the American Aviation Authority, which came into force in April this year.