

# DSM Press Release

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## **DSM's Dyneema fiber in first FAA-certified bulletproof cockpit door**

The first armored cockpit door to have been officially certified by the American FAA (Federal Aviation Administration) contains the super strong fiber Dyneema produced by DSM. Dyneema from DSM has been used in various protective applications for many years, but the fiber's use in the civil aircraft industry is new.

The door was designed by C&D Aerospace in California, the largest builder of aircraft interiors in the aircraft industry. The first door panels will be used aboard Boeing 737 and 757 and planes manufactured by Bombardier and Embraer, which both fit their aircraft exclusively with doors made by C&D, and various types of McDonnell Douglas aircraft.

"C&D has elected to use the Ultra High Molecular Weight Polyethylene material (Dyneema) due to its superior structural, ballistic, and weight characteristics. When coupled with ease of manufacturing, it was the logical choice", says Scott Savian, Marketing, C&D Aerospace.

C&D has concluded contracts with virtually all of the world's major airlines (including American Airlines, United Airlines, Delta, Lufthansa, British Airways, and KLM) and three of the four largest airframe manufacturers. Some of the planes used by those airlines were recently fitted with door parts made of Dyneema.

"We are very proud that Dyneema has been selected by C&D Aerospace and other companies for the protection of cockpit doors. This proves again the outstanding combination of properties of Dyneema in products for ballistic protection", says Pieter Greidanus, DSM's High Performance Fibers Business Director.

Since September 11<sup>th</sup> 2001 cockpit protection has ranked high on the list of priorities of aviation authorities. The American Federal Aviation Administration has taken the lead by issuing the regulation that all domestic and foreign aircrafts flying into and in the US must from April 9<sup>th</sup> 2003 onwards be fitted with a bulletproof cockpit door certified by the agency. The International Civil Aviation Organization (ICAO) recently announced that its members (187 countries) will be required to meet similar standards by November 2003. In Europe, Fokker Services, AIM Aviation, Fairchild Dornier and other companies are working on the certification of cockpit doors incorporating Dyneema fibers.

DSM's super strong fiber Dyneema has for many years been used in various applications, e.g. for armoring vehicles and for bullet-resistant vests. Its high strength and light weight also make it very suitable for use in for example marine ropes and

fishing lines. Dyneema is 15 times stronger than steel on a weight-for-weight basis. The fiber's use in the civil aircraft industry is new. DSM expects that this segment for Dyneema will grow substantially. The demand for lighter and better protection of humans and vehicles has increased tremendously over the past few years and is still growing. DSM is responding to this development by more than doubling its Dyneema production capacity – a step the company started in 2000 and will complete by the end of 2002. Further investments are in the pipeline. These plans are in line with DSM's Vision 2005 strategy through which the company aims to acquire leading positions in several fields, including performance materials (such as Dyneema).

### **DSM High Performance Fibers**

DSM High Performance Fibers, a DSM business unit, is the producer of Dyneema, the strongest fiber in the world. This superstrong polyethylene fiber is produced by DSM's patented gel spinning process and applied in ropes, cordage, nets, protective clothing and ballistic protection (e.g. in armored vehicles). Dyneema is also applied in bullet resistant vests worn by policemen and soldiers all over the world.

### **DSM**

DSM is active worldwide in life science products, performance materials and industrial chemicals. The group has annual sales of close to EUR 6 billion and employs about 20,000 people at more than 200 sites across the world.

DSM ranks among the global leaders in many of its fields. The company's strategic aim is to grow its sales – partly through acquisitions – to a level of approx. EUR 10 billion by 2005. By that time at least 80% of sales should be generated by specialties, i.e. advanced chemical and biotechnological products for the life science industry and performance materials. This strategy represents a continuation of the company's ongoing transformation and concentration on global leadership positions in high-added-value activities characterized by high growth and more stable profit levels.

For more information: [www.dsm.com](http://www.dsm.com) and [www.dyneema.com](http://www.dyneema.com)

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An armoured cockpit has to fulfill normal functions.

(By courtesy of Fokker Services)



A very thin and light Dyneema panel as part of the door design.

(By courtesy of Fokker Services)