

The Survivability Experts

**IBD**  
Deisenroth Engineering



**AMAP™-T**  
Intelligent Transparent Armor



## **AMAP™ – the High-Technology Protection System**

AMAP is a synergistic modular High-Technology protection system. Developed and continuously improved by IBD (Ingenieur-büro Deisenroth / Germany), it is designed as a protection for all kinds of platforms: light vehicles up to heavy main battle tanks, vessels and aircrafts. The central goal of our AMAP-philosophy is the highest possible effectiveness. In order to achieve this we focus on high performance and flexible next-generation technologies in vehicle protection research and development.

Based on our experience in delivering 30,000 protection kits we know what actual challenges man and material are facing all over the world. Through AMAP we provide accurate, scalable and modular protection concepts for a wide range of vehicles, mission areas and threat scenarios. We always focus on one prime goal: to protect human lives in military operations and missions.

### **System Advantages:**

- Highest level of protection due to application of advanced technologies (e.g. nano-technologies, composite materials)
- Synergistic modular design – flexible protection concepts for almost every threat scenario
- Individually adaptable to each vehicle
- Considerable reduction in areal density due to combination of passive and active protection systems
- Easy integration of new solutions into vehicle concepts due to the modular approach

### **User Benefits:**

- Highest survivability for soldiers due to substantially reduced threat and risk potential
- AMAP significantly improves the protection of all kinds of platforms (land vehicles, vessels, aircrafts)
- High tactical mobility and payload due to the low weight of the AMAP system
- Substantially reduced damage related costs due to easy maintainability
- Top-of-the-line concepts due to continuous feedback from missions in operational areas

## **Intelligent Transparent Armor**

### **Threats:**

- Blast and Fragments
- Small arms (like 7.62 mm)
- Heavy machine guns (like 14.5 mm)

### **Vehicles protected with AMAP-T:**

- Trucks
- Light and medium military vehicles
- Armored Personal Carriers (APCs) – like Fuchs or VAB
- Engineering and logistic vehicles (like wheel-loaders)
- Naval vessels

## Transparent Armor – IBD Glass and Ceramic Compounds

### The classical IBD solution with insertion of new material technologies

AMAP-T consists of a wide range of different bulletproof glass products with high transparency to meet the most demanding protection levels as well as environmental requirements. This allows to protect also the most vulnerable areas of a platform.

The products are constructed with materials bonded together to be designed for specific demands. Also the inside surface is normally protected by a layer to prevent spall in case of being hit. Using new materials with very low areal density and improved impact resistance, also light vehicles can now be protected at the most vulnerable points – the transparent areas.



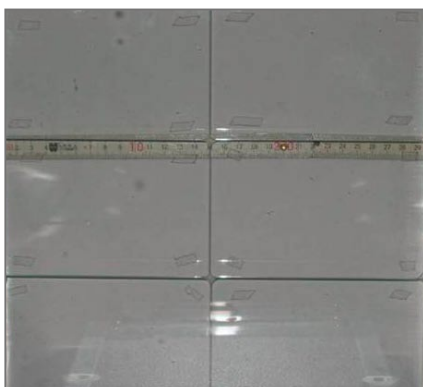
Bulletproof Glass

### Transparent Ceramic Armor – up to 50 % lower weight

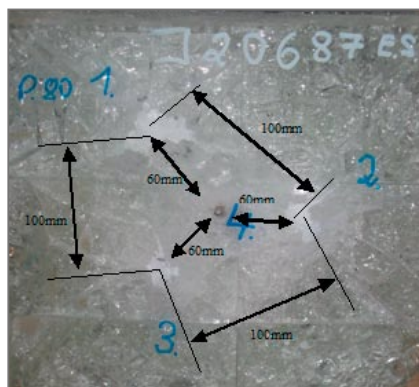
Ceramic Armor that can be used as Transparent Armor is a special High-Technology solution developed by IBD. With the new material the armor weight can be reduced by up to 50 % compared to conventional transparent armor. It meets the stringent protection requirements of STANAG Level 1 to 4 and the most demanding multi-hit capability. Furthermore the transparent armor is a white glass. Therefore it has excellent optical properties for the crew.

### The overall properties of AMAP-T provide:

- Maximum protection levels without “ballistic holes”
- Approved environmental performance which includes harsh temperature shocks
- Optimum optical properties for the crew
- Possibility to use night-vision goggles
- Signature reduction measures can be added
- Reduced wear and life cycle cost of the vehicle



AMAP-T



Impact side



Rear side

**Head Office:**  
IBD Ingenieurbüro Deisenroth  
Auf der Hardt 33-35  
53797 Lohmar  
Germany  
Phone: +49 2246 2745  
Fax: +49 2246 3540

**Technical Plant/  
Shipping address:**  
IBD Ingenieurbüro Deisenroth  
Im Rohnweiher 41  
53797 Lohmar  
Germany  
Phone: +49 2205 89408-0  
Fax: +49 2205 89408-580

**Internet:**  
[info@ibd-deisenroth.de](mailto:info@ibd-deisenroth.de)  
[www.ibd-deisenroth.de](http://www.ibd-deisenroth.de)