



Avoid the danger of fire and explosion with TSS ProtecTank

Your vehicle
security specialist



TSS ProtecTank

- Explosion-suppressant
- Minimal additional weight
- Self-sealing/Flame retardant
- Prevents leakage caused by gunfire
- Original fuel tank applications
- Fuel Capacity reduction less than 3%
- Tested by TNO D&V Laboratories, Netherlands
- Tested by Beschußamt, Germany

www.protecttank.com





TSS ProtecTank for Vehicles, Shipping and Aviation

Your vehicle
security specialist

To meet explosion-suppressant demands a reticulated polyurethane open cell SAFECREST® Safety Foam or expanded aluminium EXPLOSAFE® sheets or spheres can be applied for improved protection. The use of these products virtually eliminates the danger of explosion caused by gunfire, lightning or electrical ignition. Sloshing caused by movement is also minimized, giving greater stability. Suitable for fuel tanks on any type of transportation (Vehicles, Shipping, Aviation). Fuel flow remains constant. Instead of retaining fuel, it is passed at a controlled rate predetermined by the size of the structure. TSS ProtecTanks are maintenance free and weight friendly. Fuel capacity is reduced by maximum 3%. Various materials available depending on type of fuel used.

Additional to the above specified explosion suppressant, existing tanks can also be equipped with a specially developed fuel-swellable rubber foam for maximum protection. This specifically developed

material prevents fuel leakage caused by ballistic or impact damage. Protection against all handguns, including .357 and .44 Magnum, 5.56 and 9 mm Nato and 7.62 AP ammunition.

An enhanced protective coating is available against the threat of the .50 calibre and the 12 calibre Brenneke® ammunition. TSS also offers an additional treatment against the threat of blasts and shrapnel. Certain applications will incorporate a number of layers of Twaron® or Dyneema®. All TSS fuel tanks are treated with a flame-retardant (UL94 standards) outer coating for maximum protection.

Modification possible to existing Steel, Alloy, HDPE, Crosslink HDPE or Bladder tanks. In 90% of all modifications the O.E.M. tanks can be used. However, TSS can also offer custom-made fuel tanks.



Self Sealing/Flame retardant material build-up

External flame retardant coating

Fuel deposit

Internal explosion-suppressant material (optional)

Intermediate layers of Twaron® or Dyneema® for additional strength

Fuel level indicator

Original fuel tank

Intermediate self-sealing layers

www.protectank.com





TSS ProtecTank for armoured cars

The external surface of the fuel tank is coated with self-sealing materials to prevent leakage, and the inside is filled with explosion-suppressant materials. The final outer coating is flame retardant according to UL94 Standards.

ProtecTanks have undergone ballistic tests with several types of ammunition:

- Caliber 5.56 NATO & AP • Caliber 7.62 NATO & AP • Caliber .44 Magnum
 - Caliber .357 Magnum • Caliber 9 mm NATO • Caliber 12.7 (optional)
 - Caliber 14.5 (new development)
- and with explosions against 2 each DM51 Hand Grenades**

Independent tests have been carried out by the TNO D&V Laboratory in Holland and the Beschubamt in Germany. Original fuel tanks can be modified to be able to survive ballistic and explosion attacks. The self-sealing materials are specifically developed and are capable of sealing entrance and exit holes caused by multiple shots and/or heavy fragmentation impacts.

Your vehicle
security specialist



Different levels of protection

Tank treatment	Protection level	Additional weight per 100 liter fuel tank	Life expectancy	Self Sealing properties	Explosion-Suppressant material
Explosion-Suppressant & Flame Retardant	All handguns	± 5 kilograms	> 10 years	N/A	Explosafe or Safety Foam Type IV
Explosion-Suppressant & Self-Sealing & Flame Retardant	All handguns	± 20 kilograms	> 10 years	All handguns	Explosafe or Safety Foam Type IV
Self-Sealing & Flame Retardant	All handguns	± 12 kilograms	> 10 years	All handguns	Optional
Self-Sealing & Flame Retardant	12.7 mm	± 25 kilograms	> 10 years	All handguns	Optional
Self-Sealing & Flame Retardant	14.5 mm New development				

TSS Explosion-Suppressant fuel tanks are manufactured using either a flexible, open-pored polyurethane safety foam, or a matrix of expanded aluminium alloy foil, cylinders or spheres.



TSS International BV

Zuideinde 30-34, 2991 LK Barendrecht. P.O. Box 2013, 2990 DA Barendrecht. The Netherlands

Phone: +31 (0)180-618 922. Fax: +31 (0)180-611 326. E-mail: sales@tssh.com www.tssh.com

