

WhitePaper

Modular enclosure for ballistic payloads ver. 1.0

“protection against extreme aggression and violence”

Instead of using traditional bulletproof doors for its submerged shelter, Van Welleman Villas® decided to implement a heavyweight enclosure with modular ballistic payloads. This unique approach -a worlds first in the residential environment- protects against violent and persistent attacks with Kalasjnikov and lethal grenades. As such, the level of protection ranges from NATO armor piercing (!) ballistics (e.g. NATO 7.62 AP) for the “Basic” version, up to self healing protection against heavy armor piercing ballistics (e.g. .50 HC/AP) for the “High Security” version.

The major advantage of an enclosure with modular ballistic payloads over a “traditional” bulletproof door is that it is far more robust, that it supports a multitude of ballistic architectures, and that it also is upgradable afterwards.

Traditional bullet-proof doors protect against simple Magnum ballistics. Only the more complex variants of these doors will protect you against NATO ballistics, but that is about as good as it gets. Also note that NATO ballistics traveling at 850 m/s easily pierce Magnum-proof security doors. On top of that, these “traditional” solutions do not protect against violent persistent attacks.

The “Basic” modular enclosure we use, already offers a protection against NATO ballistics as well as grenade fragments! This entry system has a weight of over 1 Ton and is engineered to expand to a configuration with a weight of 3 Tons, hydraulics and locking mechanisms not included! The basic system uses a stainless steel enclosure with special alloy steel plates combined with a sandwich of carbon fibers.

The “High-Security” solution goes significantly further by protecting against armor piercing ballistics that easily penetrate a VK16 Leopard tank. It uses a stainless steel enclosure with titanium plates combined with self-healing ceramics and a sandwich of Kevlar® fibers.

Protection against hand-grenade blasts is also included in the High-Security version. The latter is done through a combination of mass inertia, shock-wave ducting and wave-energy absorption.

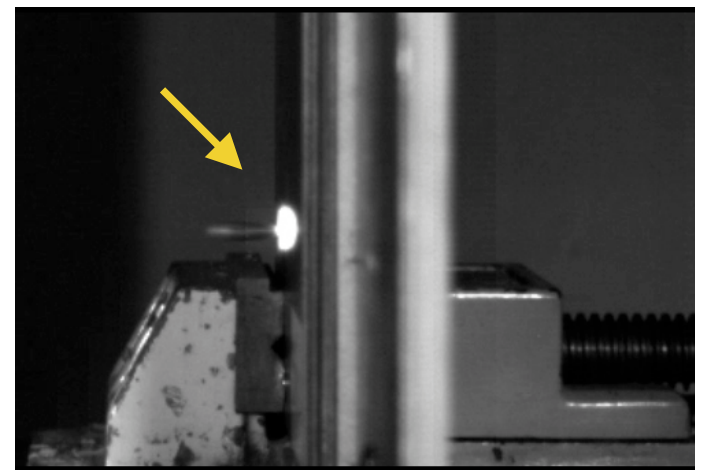
Van Welleman Villas® includes all of these extreme requirements into the engineering specifications of its constructions to ensure a maximal protection against potential future aggression.

These measures might seem extreme, but they do make the difference in a life threatening situation. This solution is part of the holistic security approach of Van Welleman Villas®.

The “Basic” solution is mandatory and thus always included in our offer, the self-healing “High-Security” version is optional.

NATO ballistics

Refers to the 7.62×51mm SC NATO bullets.
(picture: impact of 7.62SC on steel plate)

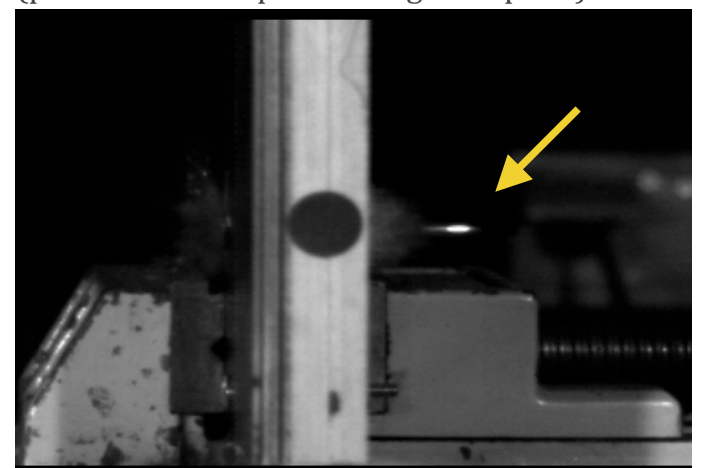


Grenade fragments

The grenades referred to are hand grenades of the types M26 / M26A1 / M61.

Armor piercing ballistics

Refers to the 7.62×51mm NATO HC/AP bullets.
(picture: 7.62HC penetrating steel plate)



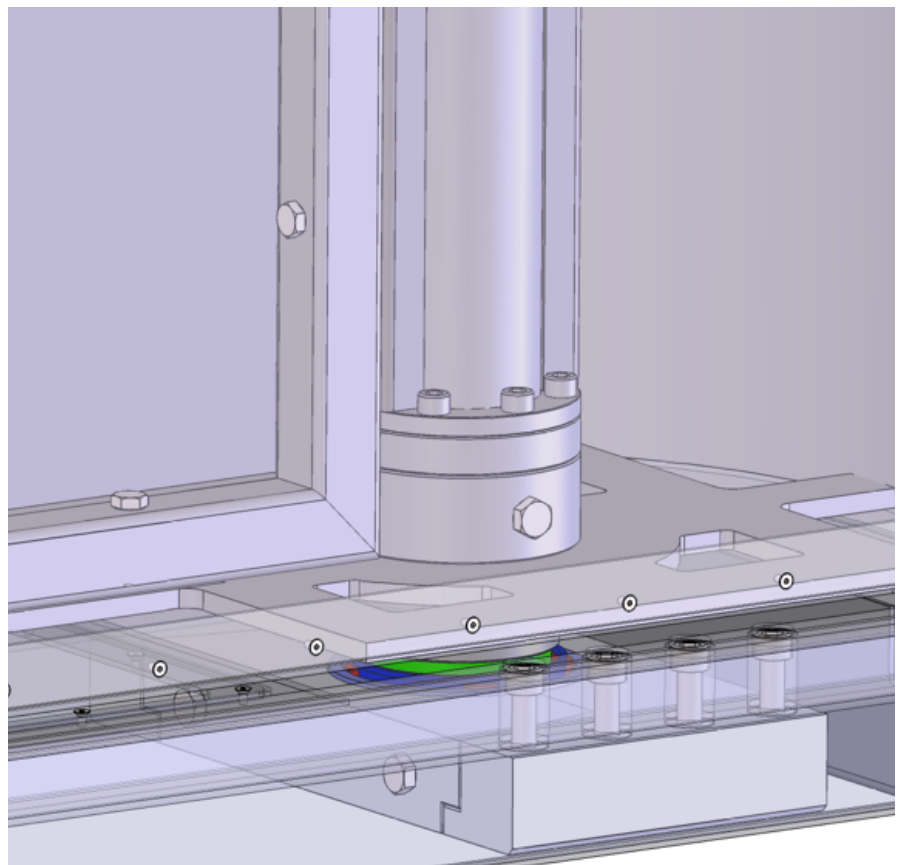
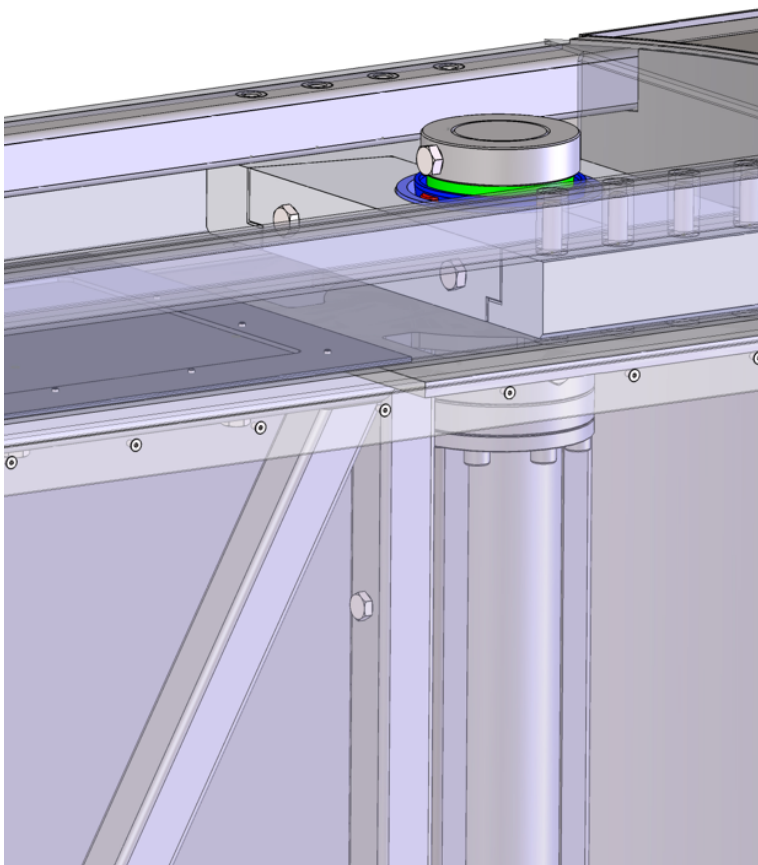
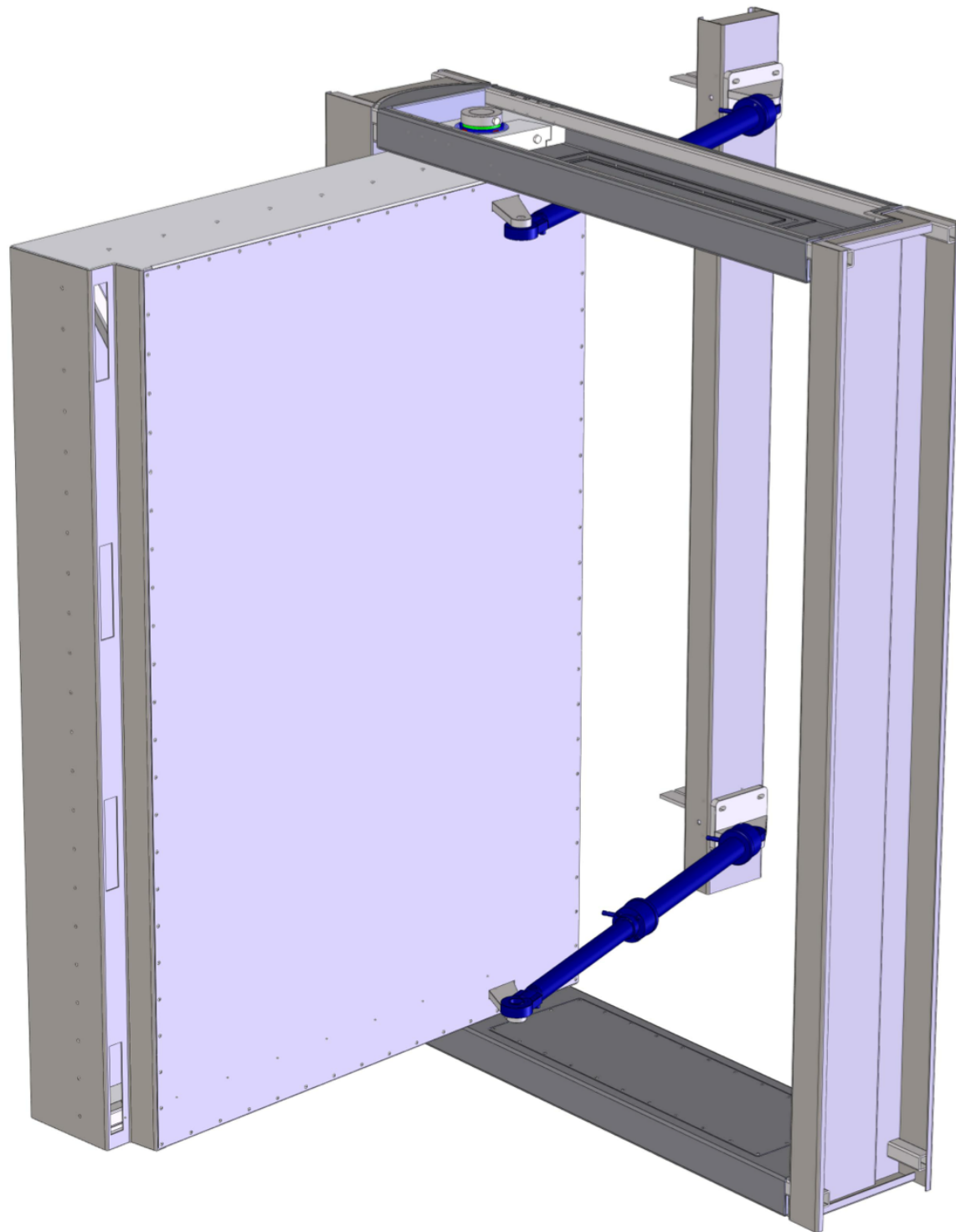
Explosion proof

Refers to hand grenades with a blast radius of 15m or less.

Bullet refracting

Bullet refraction is performed with NATO SC ballistics with an impact angle superior to 30°. Bullet refraction is strongly influenced by the type of ballistics.

Van Welleman Villas



Van Welleman Villas®

Tremelobaan 111
B-3140 Keerbergen
Belgium

www.VanWellemanVillas.com