

**EXPLOSION MITIGATION BY WATER MIST – RING MESH WITH  
WATER CURTAIN**

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City planners, civil engineers and architects, have the objective to develop cities as safe and worth living urban environments. Recent terror attacks revealed that it is necessary to think about creative methods to increase the safety in our cities. The vulnerability of European cities was demonstrated several times within the last few years. The attacks in Paris in 2015, in Brussels, Nice and Berlin in 2016 and in Stockholm and London in 2017 were directed against soft targets. Therefore, physical protection measures are needed for urban areas. Innovative protective solutions with an appealing design and hidden protective properties should be integrated within the public places. Thus the public life will be influenced by these measures as little as possible. In case of an explosive threat a protective element should withstand both the incoming blast wave and possibly impacting fragments. It has to reduce the initial overpressure of the blast wave below a certain overpressure limit and to stop or to decelerate fragments. Such an innovative solution made of stainless steel ring mesh in combination with a flowing water layer (water curtain) was successfully tested in a full scale experiment. Conducted explosion tests showed that the initial side-on overpressure was reduced up to 56 % and the initial positive impulse was reduced up to 31 %. These results show the protective capability of the ring-mesh-water-barrier and will be presented and discussed in the presentation.