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PRESS RELEASE

No escape from EMS high-performance polymers

EMS-GRIVORY high-performance polymers are characterized by outstanding properties that make them ideally suited for metal replacement, particularly in the security sector. In intensive development partnerships with customers, EMS-GRIVORY high-performance polyamides are widely used in safety-related components where high strength, resistance to chemicals, toughness and precise dimensional stability are essential. This enables innovative, lightweight, and reliable solutions to be realized, that increase safety while providing impressive weight and cost savings.

EMS provides modern and safety-relevant metal replacement solutions

In cooperation with the customer, EMS has developed the world's first handcuffs made entirely of polymer materials, which comply with the guidelines of the American National Institute of Justice (NIJ) and are completely metal-free. In order to meet the demanding requirements of the NIJ standard, the handcuffs made from EMS specialty polymers were tested and certified for mechanical, handling-specific, and safety-related criteria.

These include precisely adjustable locking mechanisms and a double lock that prevents accidental and self-release. The innovative handcuffs, made of EMS specialty polymers, do not need to be removed when passing through metal detectors, thus minimizing risks for police and security forces worldwide. Another special advantage of the handcuffs is their extremely low weight compared to metal versions.

Each component of the versatile handcuffs must fulfil individual requirements, all of which are satisfied by the EMS metal-replacement materials. Thanks to the innovative material combination of carbon and glass fiber reinforced EMS polymers, functionality is maintained even under extreme climatic conditions. Whether at very low temperatures, such as in Arctic regions (-40 °C), or at high temperatures, such as in desert conditions (+70 °C), stability and safety of the handcuffs is guaranteed by the EMS solution. A further special feature is the manufacturing process for the connecting chain –assembly injection molding, which results in a homogeneous and flawless structure, minimizing weak points. This contributes significantly to the high resilience under actual conditions of use.

In summary, through the use of high-performance polymers, EMS was able to contribute again towards achieving weight savings and greater safety in challenging application areas.

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