

ESA PROTECTION® COLD SOFT FOAMS

ESA utilizes a mix of patented, patent-pending, and proprietary technologies to produce rate-sensitive, soft, and flexible materials with excellent shock-absorbing capabilities. Our extensive portfolio of materials is designed to be compatible with a wide range of production processes, with each grade tailored to deliver specific performance properties.

ESA COLD SOFT FOAMS is an intelligent energy absorbing gel (non-Newtonian fluid) and a polymer composite made of a new type of impact resistant material, which can be hardened and softened under different impact forces. Under normal conditions, it has a soft and flexible touch, once impacted, the molecules immediately lock with each other and quickly tighten and harden to digest the external force, when the external force disappears, the material will return to its initial state of relaxation and soft elasticity. It can immediately absorb and disperse more than 90% of the energy generated by the impact, with excellent impact resistance and cushioning performance.

Products which produced with ESA COLD SOFT FOAMS offers excellent impact protection and resistance to bending and tearing, as well as excellent environmental resistance, remaining soft in -20°C environments.

ESA COLD SOFT FOAMS offers the ultimate in soft, flexible and lightweight impact protection. ESA COLD SOFT FOAMS solutions are developed for winter markets where high impact energies are experienced.

Performances	Method Reference*	ESA Cold Soft Foams
Density (g/cm ³)	DIN 53479	0.45-0.50
Hardness (Asker C)	ASTM D2240	50±5
Tensile Strength at Break (MPa)	DIN 53504	> 1.6
Tensile Elongation at Break (%)	DIN 53504	>160
Tear Strength (N/mm)	DIN ISO 34-1	>4.0
Permanent Compression Deformation (%)	ASTM D395:2003	<5
Rebound Rate (%)	ASTM D2632:2001	<15
Impact Value (10mm,50J) (kJ)	EN1621-1:2012	≤35

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*Values shown represent typical product characteristics

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