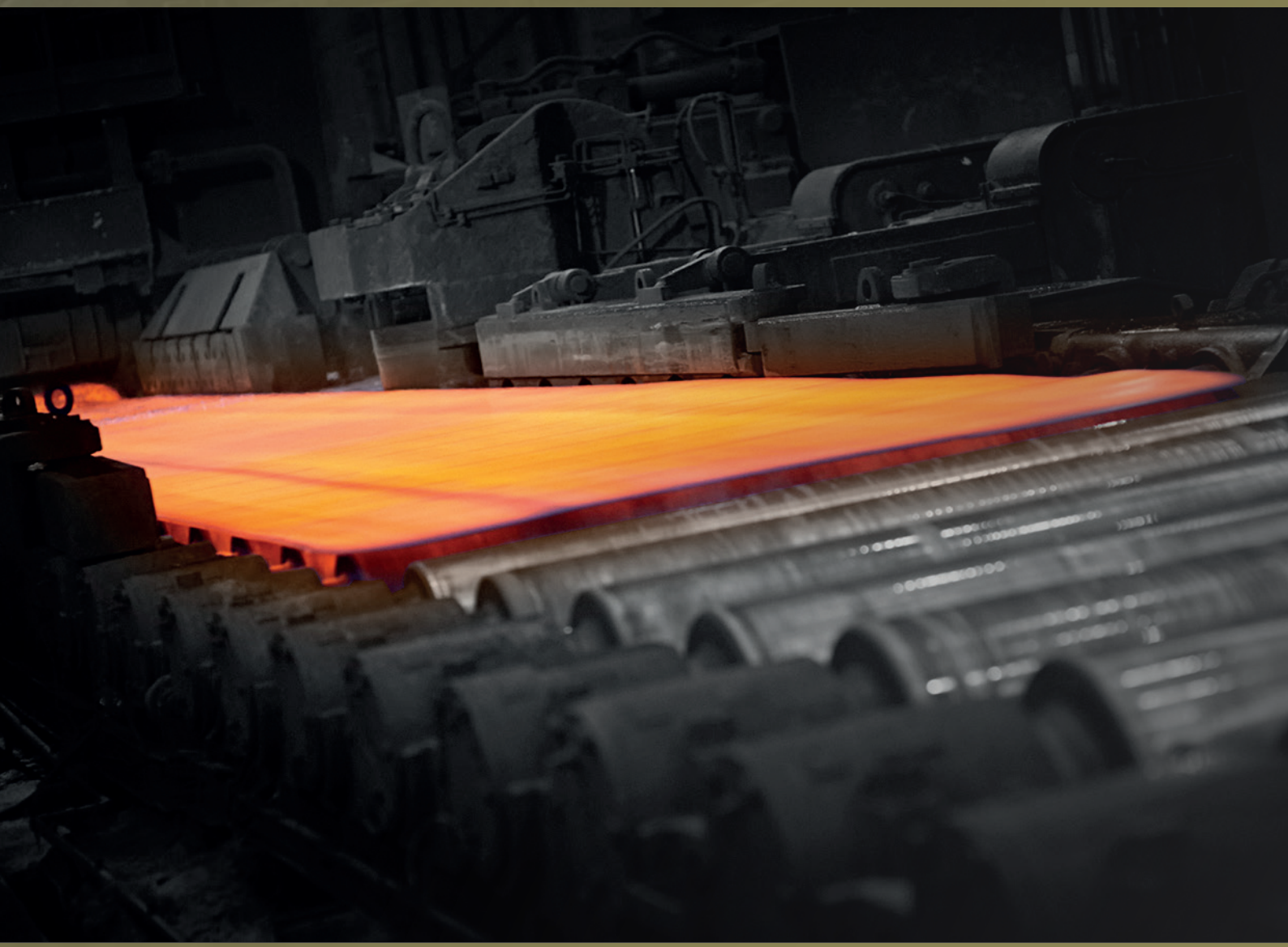
STEEL SOLUTIONS FOR THE DEFENCE INDUSTRY









sij | acroni



From protection to mobility, SIJ Acroni supplies specialised flat steels for defence applications where material performance, consistency and traceability matter. Our portfolio includes ballistic and blast-protection steels, armour steels, deep-drawing steel for ammunition shells and non-oriented electrical steel for compact electric motors.

In collaboration with our partners, we also provide prefabricated components and complete protective facade solutions – from steel production to design, prefabrication and installation.

SIJ Acroni is Slovenia's largest steel producer, manufacturing stainless, armour, wear-resistant, high-strength structural, electrical, special and tool steels. We produce our steel in Slovenia using 100% recycled scrap in an electric arc furnace.

PROTAC is our range of high-strength protection steels developed for demanding ballistic and blast-protection applications. The grades combine high strength and hardness with impact toughness and suitable workshop properties, providing reliable performance against impact, penetration or blasts.

APPLICATIONS

PROTAC grades are used for armoured vehicles, critical infrastructure, buildings, safe rooms, shelters and accommodation containers.

GRADES
ballistic protection steel PROTAC 500, PROTAC 550, PROTAC 600, PROTAC 650 ballistic protection according to standards VPAM-PM 2007, STANAG 4569, NIJ 0108.01, and MIL
blast protection steel PROTAC 440

DIMENSIONS	Ballistic protection steel		Blast protection steel
Thickness [mm]	3–6	6,01–25	6–50
Width [mm]	max. 1000	1000–2500	1000–2500
Length [mm]	max. 6000	max. 12,500	max. 12,500

CONDITION	Ballistic and blast protection steel
Delivery condition	quenched & tempered
Surface condition	shot-blasted and anti-corrosion painted upon agreement* *Coating thickness: 20–60 µm. Maximum width of anti-corrosion painted plates: 2000 mm.

BENEFITS

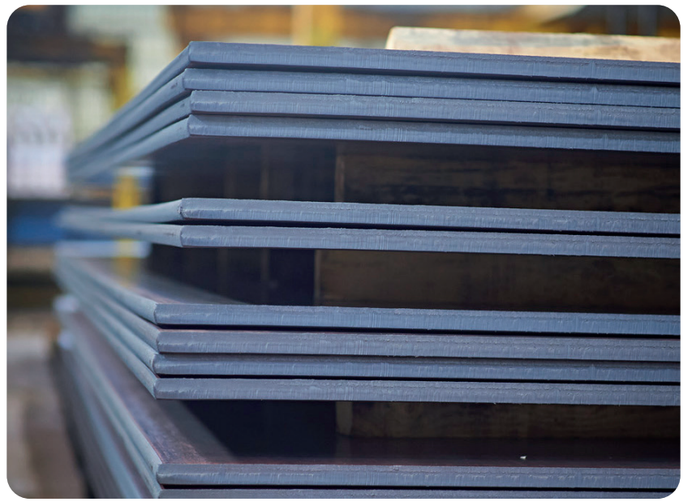
- Reliable ballistic protection in line with relevant standards
- High strength and hardness combined with impact toughness, maintaining the required performance even at low operating temperatures
- Consistent material properties for predictable processing and performance
- Suitable workshop properties for efficient fabrication and assembly
- Expert technical support for material selection, application, processing, and testing
- Production and testing in the EU

INCREASE THE RESILIENCE OF YOUR CRITICAL INFRASTRUCTURE

Critical infrastructure requires protection tailored to specific threats and applications. SIJ Acroni supplies specialised steel for ballistic and blast protection, with partner capabilities extending our offer to processed components and complete protective solutions.

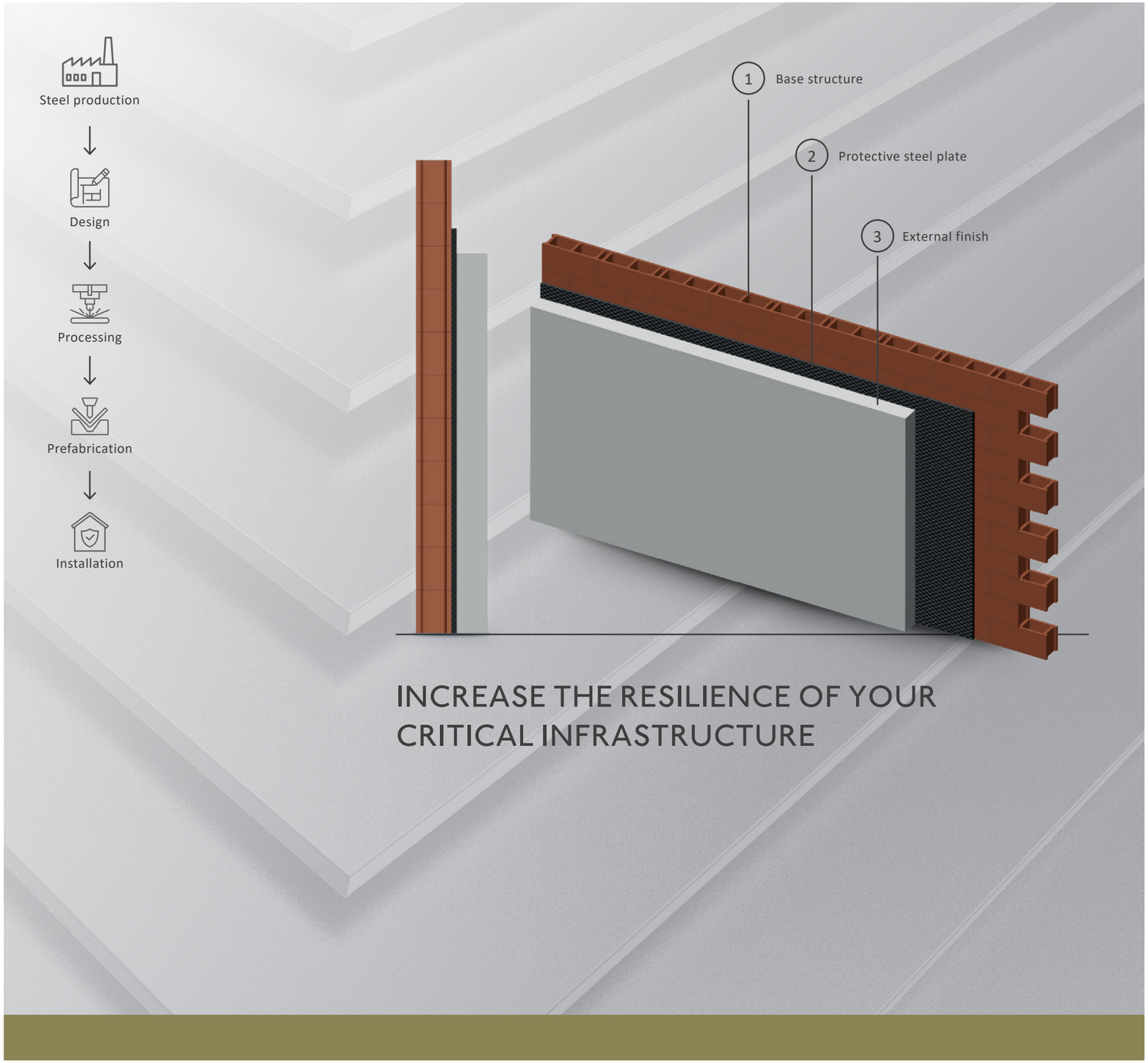
In collaboration with Kolektor KOV, we provide processed steel components and assemblies for protective structures and vehicles, including cut-to-size, machined, cold-formed and welded parts.

For selected projects, we can also provide complete protective facade systems, from steel production and design to prefabrication and installation.



APPLICATIONS

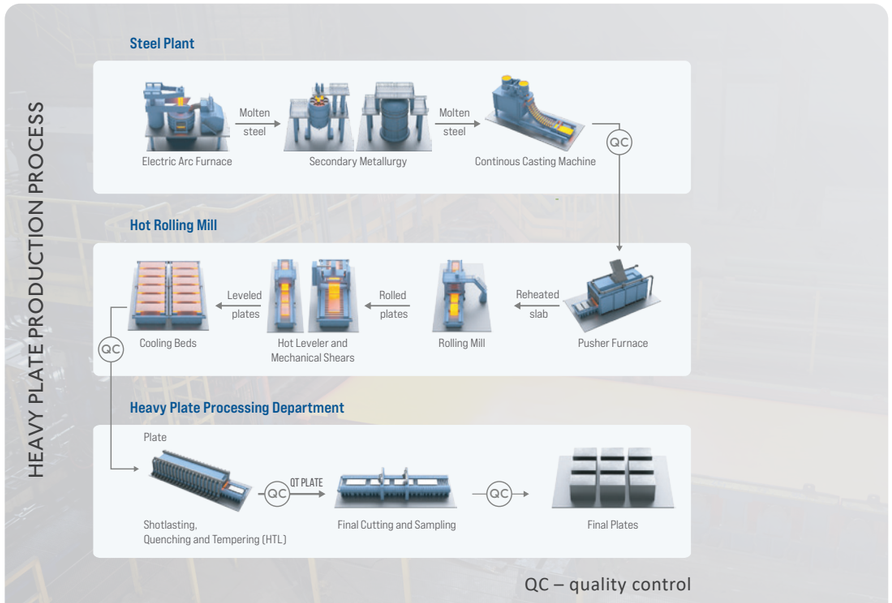
- Energy infrastructure, including transformers, power plants, gas distribution infrastructure, oil storage facilities
- Data centres
- Hospitals
- Drinking water distribution systems
- Airport infrastructure and equipment
- Protective shelters and safe rooms
- Modular and container-based facilities
- Protective perimeters for mobile and fixed military and dual-use bases
- Government buildings



INCREASE THE RESILIENCE OF YOUR CRITICAL INFRASTRUCTURE

CONTROLLED PRODUCTION. CONSISTENT PERFORMANCE.

Protection applications demand more than high hardness. Consistent chemical composition, clean steel, homogeneous properties and controlled heat treatment are essential for reliable performance. Our production process is designed around these requirements.



STRICTLY CONTROLLED CHEMICAL COMPOSITION

We carefully control the chemical composition throughout production to achieve the required material properties.

- Low phosphorus, sulphur, nitrogen and hydrogen content
- Controlled trace elements
- Controlled non-metallic inclusions
- Adjusted casting practice

SLAB PREPARATION & HEAT TREATMENT

After casting, slabs undergo controlled preparation and heat treatment to achieve the required mechanical properties and surface quality.

- Slab grinding and scale removal
- Controlled heat treatment in an inert atmosphere
- Low decarburisation
- Additional low-temperature tempering

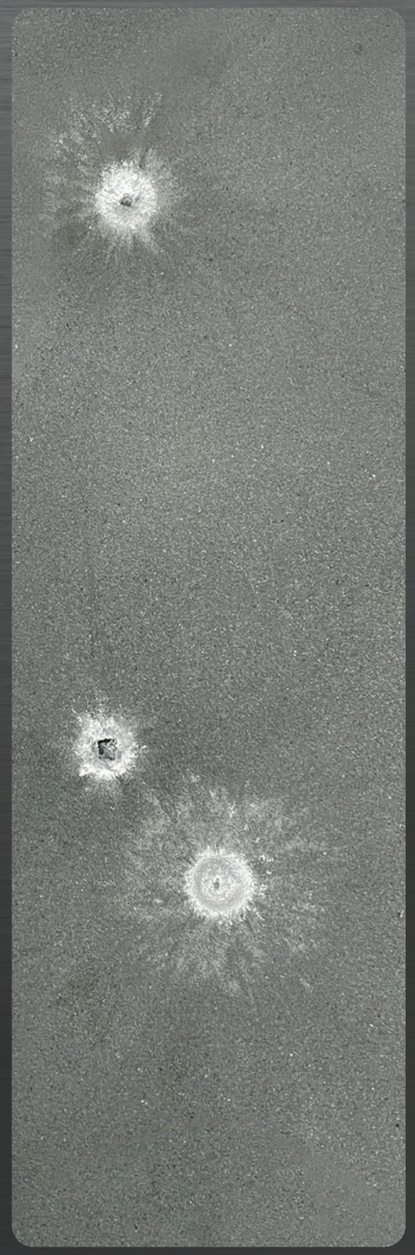
WATERJET CUTTING

Waterjet cutting provides clean, high-quality cut edges without a heat-affected zone, helping reduce the risk of cracking during subsequent processing.

WORKSHOP RECOMMENDATIONS

Find practical guidance for cutting, forming, and welding PROTAC steels.

BALLISTIC TESTING & QUALITY CONTROL



We combine extensive internal testing with independent ballistic testing to verify material properties and ballistic performance.

INTERNAL TESTING

- Chemical composition
- Dimensions
- Transverse and longitudinal testing of tensile and impact properties
- Bending tests on 500 × 500 mm test pieces
- Surface and through-thickness hardness

INDEPENDENT BALLISTIC TESTING

Ballistic testing is carried out at recognised independent testing facilities, including Beschussamt Ulm, Beschussamt Mellrichstadt and Beschussamt München.

Ballistic testing is performed once per thickness and heat as standard practice. A ballistic test certificate is issued for the tested material.

STANDARDS & COMPLIANCE

PROTAC ballistic protection grades meet demanding protection requirements under relevant standards, including STANAG 4569, VPAM-PM 2007, NIJ 0108.01 and MIL standards.

TEST RESULTS

Access detailed ballistic test results and technical data.

SPECIALISED STEEL SOLUTIONS

Beyond our standard product portfolio, our metallurgical expertise and advanced production capabilities enable us to provide specialised steel solutions tailored to demanding defence applications and specific customer requirements.

ROLLED HOMOGENEOUS ARMOUR

Our long-standing experience in producing rolled homogeneous armour (RHA) grades supports demanding applications in armoured vehicles. RHA grades provide the combination of hardness, strength, and toughness required for reliable protection, with controlled and homogeneous material properties.

PLATES FOR TESTING MILITARY WARHEADS

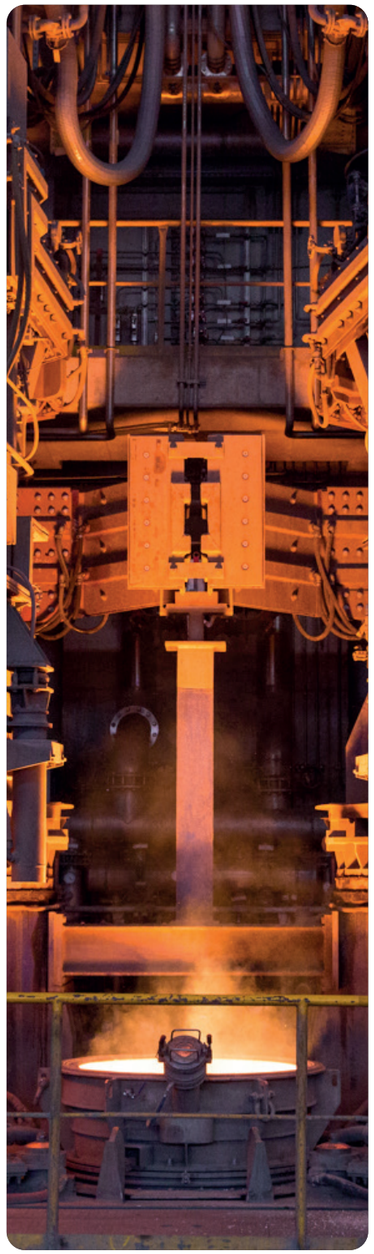
We also supply specialised plates for testing military warheads, produced according to defined material and dimensional requirements to support reliable and repeatable testing.

ELECTROSLAG REMELTING

Drawing on the production capabilities within SIJ Group, SIJ Acroni can offer PROTAC ballistic, blast, and RHA grades produced using electroslag remelting (ESR). ESR further improves steel cleanliness and structural homogeneity, reducing non-metallic inclusions and supporting consistent mechanical properties. For defence applications, this translates into greater reliability and predictable performance in components exposed to demanding ballistic and mechanical loads.

TAILORED TO YOUR REQUIREMENTS

Our metallurgical expertise and advanced production capabilities enable us to tailor material solutions to specific customer requirements and demanding international standards.



CHANGE YOUR TACTIC

Protection is only one part of the defence ecosystem.
Our specialised steels also support ammunition production and advanced electric mobility.

DEEP-DRAWING STEEL

PROTAC DD11Mod (i.e. ČR2) is a modified version of the mild, unalloyed DD11 grade, developed for demanding cold-forming applications.

Its fine-grained microstructure, good ageing resistance and consistent quality enable reliable processing in ammunition shell production.

DIMENSIONS	
Thickness [mm]	8–30
Width [mm]	1000–2060
Length [mm]	1000–6000

CONDITION	
Delivery condition	quenched and annealed Upon request, plates can be waterjet-cut into customer-defined shapes, including round blanks. Waterjet provides clean cuts without a heat-affected zone. Cutting tolerances and shapes are agreed upon with the customer.
Surface condition	shot-blasted shot-blasted and anti-corrosion painted* *Thickness of the coating 20–60 µm, max. width of the anti-corrosion painted plates is 2000 mm.

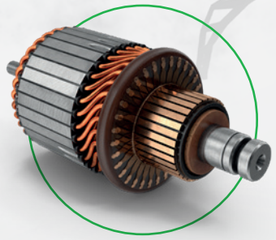


APPLICATION

Cold-formed ammunition shells

BENEFITS

- Consistent material properties for predictable processing
- Waterjet cutting available



The growing use of drones and other electrically powered defence systems is driving demand for efficient, compact, and reliable electric motors.

SIWATT non-oriented electrical steels are designed for efficient and reliable electric motors, including drone motors. They combine low core losses and strong magnetic performance with suitable processing properties and consistent material quality.

Grades	Thickness [mm]	Core loss at 1.0 T and 400 Hz [W/kg]	Magnetic polarization at 5000 A/m and 50 Hz [T]	Yield strength $R_{p0.2}$ [MPa]
NO 20-12	0.20	max. 12.00	min. 1.58	420–490
NO 20-15	0.20	max. 15.00	min. 1.59	270–350
NO 25-13	0.25	max. 13.00	min. 1.59	420–490
NO 27-14	0.27	max. 14.00	min. 1.59	420–490
NO 27-15	0.27	max. 15.00	min. 1.59	420–490
NO 30-15	0.30	max. 15.00	min. 1.59	420–490
NO 30-16	0.30	max. 16.00	min. 1.59	420–490
NO 35-18	0.35	max. 18.00	min. 1.60	400–470
NO 35-19	0.35	max. 19.00	min. 1.60	370–470
NO 35-22	0.35	max. 22.00	min. 1.60	320–420

NON-ORIENTED ELECTRICAL STEEL FOR E-MOBILITY

SIWATT – GO THE DISTANCE

TECHNICAL EXPERTISE.
PRACTICAL SUPPORT.

Need support with material selection,
processing, testing, or a specific application?

Our team combines metallurgical knowledge with practical
experience to help you meet the demands of defence applications.

Get in touch.

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