

Quality starts with intelligent tool design

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Specifiers rely on the quality of their enclosures to deliver safe, reliable results that stand the test of time. The quality of an enclosure includes the materials used in its design and creation, its impact and ingress protection ratings, the quality of its testing and its ease of installation among a host of other considerations. With no two projects ever looking the same, each enclosure must also consider the daily demands put on the enclosure as well as potential future modifications and specific safety or regulatory requirements.

This holistic approach to design is central to Spelsberg's enclosure and switchgear development. At its main factory in Schalksmühle, Germany, the customisation process starts with initial customer requests and flows through to a certified housing unit. Developers work hand-in-hand with customers to establish the requirements together before creating an initial 3D CAD model, allowing mechanical details, mounting arrangements, cable entries and any project-specific considerations to be resolved before production.

Tool design and construction are an important part of this process. Qualified specialists use state-of-the-art manufacturing equipment such as two-component injection moulding and foamed thermoplastic moulding. The short transitions between development, tooling, production and testing enable greater consistency and shorter production timelines.

Spelsberg's GEOS series exemplifies this approach. One installation for an electronics specialist included the requirement for standard functionality but also the ability to perform reliably while exposed to extreme temperatures and heavy vibration. The lightweight GEOS polycarbonate design made it fast and easy to install, with an impact rating of IK09, while its innovative 'Drain Protect' system for channelling moisture away from seals delivers reliable ingress protection up to IP67. The variety of sizes and accessories on offer across the GEOS range was an additional benefit to the project, alongside Spelsberg experts available at each stage to ensure high-quality results.

The benefits of plastic enclosures

While metal can deliver substantial mechanical protection, its weight and conductivity can be problematic for many installations, and its capacity for corrosion linked to environmental factors makes it sub-optimal for some project environments.

Plastics can offer a compelling alternative. Impact-proof polystyrene is a cost-effective, durable, lightweight option for indoor or protected outdoor use, while polycarbonate provides high mechanical strength, UV resistance and wide temperature tolerance for more demanding environments as well as lower weight than metal alternatives. Polypropylene is a sound choice for recyclable junction boxes and conduit-sealing applications.

Designing the enclosure around the application

A high-quality enclosure should speed up installation and make the final product more reliable, meaning customisation can be as important as the basic enclosure specification.

Depending on the application, manufacturers can provide internal mounting provisions for DIN rail, terminals, PCBs or electronic displays, while specialist

products can address requirements such as fire-critical installations or photovoltaic connections. Cable entry arrangements can also be machined to suit each installation's specific needs.

External design can contribute to both usability and protection. A recessed lid, for example, can accommodate membrane keypads or labels flush with the enclosure surface, reducing the likelihood of accidental damage. Transparent lids can make inspection faster and more reliable without the need to open the enclosure.

Pre-assembly takes customisation a step further. Instead of delivering an empty box, Spelsberg can supply anything from a DIN-mounted terminal arrangement to a fully wired, tested and ready-to-install solution that minimises on-site installation time. This means customers are supported directly by working with a manufacturer while also benefiting from collaboration with an in-country specialist supplier.

Specifiers need reliable, long-lasting enclosures that do more than the numbers on their datasheet. Materials, tool design, manufacturing skill, engineering expertise and project-specific support are all part of an end result that starts with a commitment to quality.

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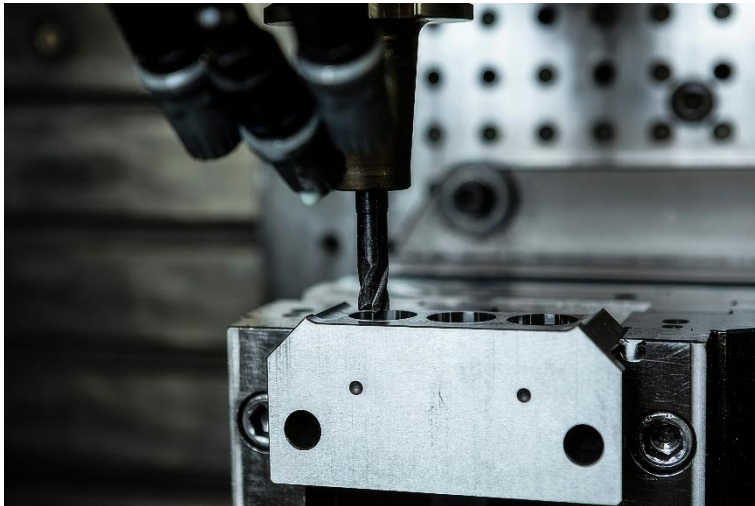


Image 1: Spelsberg uses state-of-the-art CNC-controlled machines and systems to ensure precise results.



Image 2: Spelsberg offers specialist milling services in addition to drilling, countersinking and tapping.

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Spelsberg

Spelsberg is one of the largest manufacturers of electrical enclosures in the world. With over 4,000 enclosures available as standard and further customisation possible, it offers solutions for almost any application.

With the largest supply of non-metallic enclosures, ex-stock in the UK, its products are often available for delivery within 24 hours; customisation is possible on any product, including bespoke entries, engraved corporate logos or fitted terminals, within 48 hours. Products can be ordered direct from Spelsberg or from most leading supply specialists including RS, Rapid, Farnell and CPC.

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