

STRUTFAST

The use of High Grade Structural steel in electrical cable ladder systems.

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Strutfast has lead the way in the South African market around the use of Structural Graded steel in the design & manufacture of electrical cable ladder systems. As a design lead organisation, Strutfast believes that the onus should not be on the consultant engineer to anticipate and carry potential risk of failure by specifying cable ladder products for arduous applications that are manufactured from Commercial Grade steels. As cable ladders are generally considered as an integral part of the infrastructure and may have to carry mission critical cabling systems, it make absolute sense that the ladder system is designed & manufactured with a steel whose properties are certified, traceable and most importantly, with totally predictable strength characteristics . This can only be achieved through the use of Structural Grade steel. Most of the current South African cable ladder manufacturers use a Commercial Grade steel as a means to offering a lower cost product, which in turn creates a potential risk to the integrity of the power cable installation.

Commercial Grade steel is most commonly used for general engineering work that does not require specified mechanical properties and carries no performance guarantees or product traceability. Therefore, it should only be used where no specific mechanical requirements exist and is not recommended for structures where any danger of “catastrophic failure” exists. This potential for failure obviously exists in cable ladders that are manufactured from products where the quality & integrity of the steel is not certified or guaranteed, as is the case with Commercial Grade steels. Some of these low cost steels are imported from countries where quality is not particularly high on the agenda and the origins are somewhat dubious. There is certainly no chance of certification! The inability to guarantee Yield & Tensile strength in Commercial Grade steel makes for an unpredictable load carrying capacity if used in a cable ladder product. For this reason it is important to check closely the documentation provided by your cable management supplier, as it will likely be noted in the manufacturer’s small print that load bearing capacity cannot be guaranteed. This should send an alarm to any responsible engineer.

Structural Grade steel is used where clear structural properties are required & specified. The chemical and mechanical properties can be specified, as the steel is always supplied with test certificates confirming the steel properties. Engineers can thus design structures and products confidently, using these certified properties, ensuring product strength predictability. With correct design and guaranteed structural steel, failures in the cable

ladder system should be avoided. At Strutfast, we believe that we are the only South African manufacturer of cable ladder systems that consistently uses Structural Graded steel and consequently the only company that guarantees the load bearing performance of cable ladder systems.

Some Key Points:

- The use of Structural Graded Steel allows thinner steel & hence, lighter structures, because of the higher Yield and Tensile strength of the graded steel.
- Less steel means that there can be considerable weight savings, around 15%, which allows for more efficient handling.
- Graded Structural Steel has much higher Yield & Tensile strength than Commercial Grade steel and is therefore a stronger steel.
- Less steel means a smaller carbon footprint. On average 0.76 Tonnes of CO2 is produced for every 1.0 Tonne of steel.
- The use of Structural Steel allows for a more consistent galvanising process. The galvanised coating is more even across the entire product, meaning the corrosion specification can be predictable. It is also more aesthetically pleasing.
- Using Graded Structural Steel makes economic, engineering and environmental sense.
- Strutfast has been manufacturing cable ladder systems in Graded Structural Steel since 2014.

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