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Advanced SZ-stranding technology for flexible conductors

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1. Introduction

Cable makers call for highly economic manufacturing processes is clearly audible everywhere in the world. Especially combined SZ stranding and jacketing processes have become increasingly interesting because there are significant capabilities for saving costs on production, material, personnel, storage area and transports.

Well-known in the field of optical fibre cables, SZ stranding technology started to capture copper cables too. The permanent call for most economic manufacturing processes in the field of building wires, flexible cables and power cables has made that advanced technology more and more significant.

Conventional processes and technologies used by producers of copper cables have been reviewed and possibilities for savings have been analysed. A very big chance for economizing and improving the production of such cables has been introduced by in the combined stranding and jacketing process.

In order to achieve the set objectives and to meet today's and future requirements, new machinery such as a new type of SZ strander and several ancillary units has been developed to be integrated into new lines and to upgrade existing production lines. Higher efficiency, enhanced range of applications and uncomplicated integration have been the basic design aspects.

A new high-speed SZ stranding machine with a stretched disk accumulator driven by a centrally positioned elastic torsion shaft has been developed to achieve the new market requirements.

Additionally to the SZ strander also other key components are influencing performance, efficiency and product quality. These are a new combined torsion lock and powdering system placed in a dusting chamber with minimized space requirements and a special crosshead design.

While combined SZ stranding and jacketing for building wires with solid and stranded conductors has been used in the cable industry for several years, the application of that technology for power cords and control cables with flexible conductors represented a new and incomparable higher challenge. Due to the "dynamic" and individual behaviour of flexible conductors compared with solid or stranded conductors, the combined stranding and jacketing process becomes much more difficult.

Rosendahl represents a very wide product spectrum by using the combined SZ stranding and jacketing process. Following range of products can be covered:

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| ▪ solid conductors | up to 16 mm ² | (Class 1) |
| ▪ stranded conductors | up to 35 mm ² | (Class 2) |
| ▪ flexible conductors | up to 6 mm ² | (Class 5) |