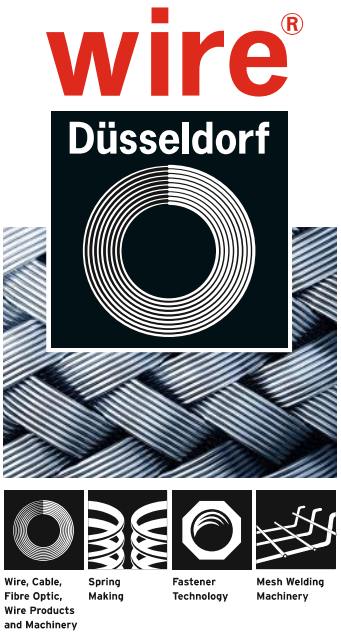
FA 06: Nothing would roll without them: wire products in railway technology

The wire, cable and wire-processing industry and the wire 2016 trade fair

It is now impossible to envisage today's world without trains and other railborne vehicles. In the 19th century they made a key contribution to industrialization and today are fully integrated in the globalization of markets and growing urbanization. Rail-mounted vehicles can transport large volumes of people and goods quickly, safely and efficiently even over great distances and, when electrically powered, are very environment-friendly in their use of electricity obtained from regenerative sources. The prerequisite for rail systems being able to function at all, however, is the products manufactured by the wire and wire-processing industry. They are to be found in all technical systems, for example in the wheel bearings and brakes, the drive systems and other engines, in on-board electronics, air-conditioning systems, lighting and information systems, door mechanisms, seats and interior cladding…

At first glance the most obvious wire products we would expect to find are the compression springs in the carriage bogies and, in the case of electrified lines, the overhead catenaries or power lines. The springs mentioned are part of a complexly structured suspension system, which protects the vehicles together with all occupants from physical shocks, jolts, vibrations and noise, improves the smooth operation of the vehicles, reduces wear and tear and helps to efficiently transmit traction.

Many components require electrical power to be able to function. It is supplied through cables comprising wire as the central element with high electrical conductivity. Around 3 km of cables for example is installed in a double-deck carriage. The power supply is controlled by contact and circuit elements, in which innumerable springs, flexible parts and screws all play a part. Around 15,000 electrical clamping points are fitted in the carriage already mentioned. The figures relating to a modern high-speed locomotive such as the 109E from Škoda are even more impressive: The E-locomotive, which is authorized for speeds up to 200 km/h and can travel though areas with different power feed systems, contains cables with a total length of around 30 km.



International Wire and Cable Trade Fair
Internationale Fachmesse Draht und Kabel

4 – 8 April 2016 I www.wire.de

Messe Düsseldorf

Messe Düsseldorf GmbH
Postfach 10 10 06
40001 Düsseldorf
Messeplatz
40474 Düsseldorf
Germany

Telefon +49 (0) 2 11/45 60-01
Telefax +49 (0) 2 11/45 60-6 68
Internet www.messe-duesseldorf.de
E-Mail info@messe-duesseldorf.de

Geschäftsführung:
Werner M. Dornscheidt (Vorsitzender)
Hans Werner Reinhard
Joachim Schäfer
Bernhard Stempfle
Vorsitzender des Aufsichtsrates:
Thomas Geisel

Amtsgericht Düsseldorf HRB 63
USt-IdNr. DE 119 360 948
St.Nr. 105/5830/0663

Mitgliedschaften der
Messe Düsseldorf:

ufi The global Association of the Exhibition Industry

AUMA Ausstellungs- und Messe-Ausschuss der Deutschen Wirtschaft

FKM FKM – Gesellschaft zur Freiwilligen Kontrolle von Messe- und Ausstellungszahlen

Öffentliche Verkehrsmittel:
U78, U79: Messe Ost/Stockumer Kirchstr.
Bus 722: Messe-Center Verwaltung

Such an E-loco is supplied with the electrical power it needs to operate from the catenary lines positioned above the tracks. In addition to masts and crossbeams, the catenary system also comprises supporting cables and droppers, which are used to suspend the contact wire on the supporting cable. Both components are also produced from wire. If we take a look down towards the track installation, we notice further wire products: In this connection, a cable is positioned between the rails, the “track (line) conductor”, which ensures the inductive transmission of data to the rail-mounted vehicles and remote-controlled intervention in the train control system for example, if necessary, to iniate emergency braking.

Wire has been an indispensable communication component in the rail transport system right from the start, a fact which is also apparent from the title of a trade magazine on the subject: “Signal + Draht. Rail Signalling and Telekommunication“. Other wire products instantly recognizable in track installations include screws, springs and flexible elements, which are used – in the case of specific platform design – to fasten the rails to the sleepers. Railways are dependent on wire products, which, upon closer inspection, also applies in equal measure for all areas of transport technology.

The wire 2016 trade fair

The manufacturers of wire products as mentioned above require special processes, machines and tools. Information on this and in general about the current developments and trends in the wire and wire-processing industry is provided by the international leading sector trade fair wire, which is held every two years together with the International Tube Fair, Tube; the next date is 4 to 8 April 2016 in Düsseldorf.

wire press contact for 2016:
Petra Hartmann-Bresgen M.A.
Ulrike Osahon
Tel.: +49 (0)211/4560-541/-992
Fax: +49 (0)211/4560-87 541
E-Mail: HartmannP@messe-duesseldorf.de