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**China**  
Shanghai, China  
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**Asia**  
Metro Manila, Philippines  
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# Contents

## in this issue



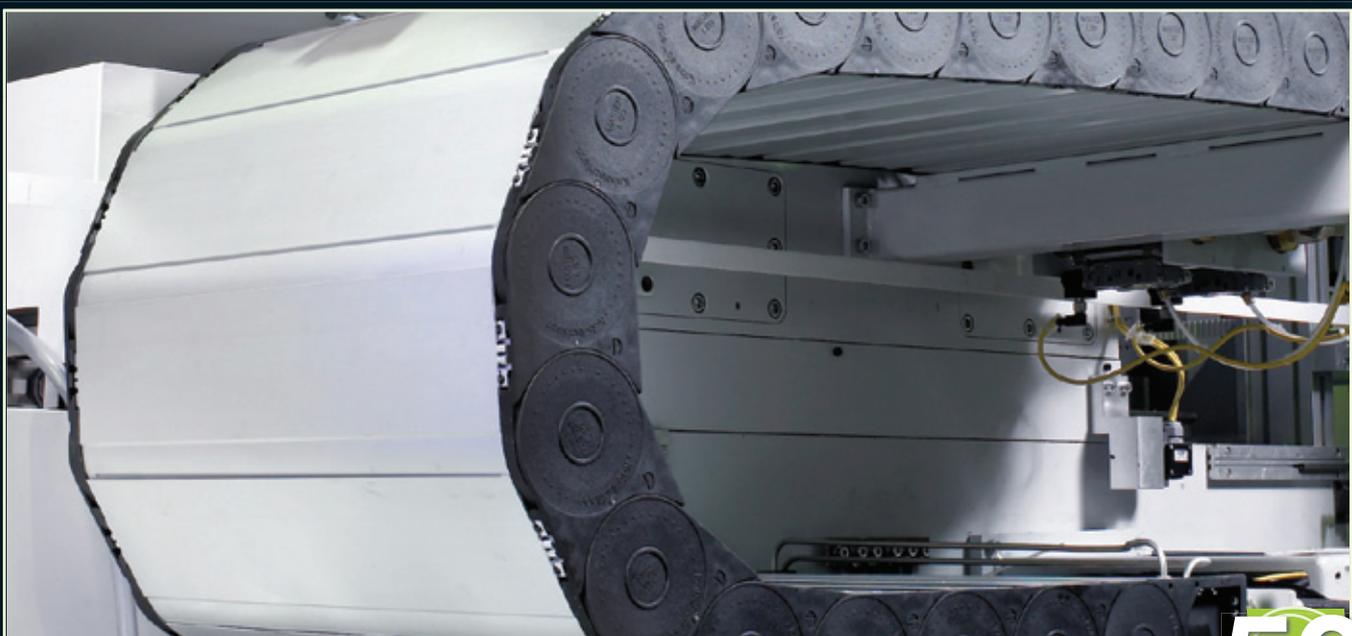
- 11 Industry News
- 32 行业新闻
- 41 Telecom News
- 43 通信新闻
- 44 From the Americas
- 50 来自美国的消息
- 52 Technology News
- 69 技术与产品
- 74 wire Southeast Asia 2011
- 114 Editorial Index
- 114 通讯目录
- 114 Advertisers Index
- 114 广告索引

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74



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## Technical Articles

**104** Reaction to fire performance of cables by Terence Journeaux,  
Prysmian Cables & Systems Limited, UK

**110** 电缆阻燃性能 撰文：英国Prysmian Cables & Systems Limited公司  
Terence Journeaux

Editor (编辑): ..... David Bell  
Features Editor – USA  
(专栏编辑 – 美国): ..... Dorothy Fabian  
Editorial Assistant  
(助理文字编辑): ..... Christian Bradley  
Design/Production (设计/制作): ..... Julie Tomlin  
Production (制作): ..... Lisa Benjamin

Translation (翻译经理): ..... Tony Zhou  
Jianye Yang  
Linda Li

Advertising/Marketing: ..... Jason Smith  
(广告/营销): ..... UK, ROW, USA, Canada  
Giuliana Benedetto  
Italy  
Hendrike Morriss  
Germany, Austria, Switzerland  
Linda Li  
中国  
Jeroo Vandrevala  
India/Pakistan

Advertisement Coordinator  
(广告联络人): ..... Liz Hughes  
Accounts Manager (财务经理): ..... Richard Babbedge  
Subscriptions (订阅) ..... Liz Hughes  
Publisher (发行人): ..... Caroline Sullens  
Founder (创办人): ..... John C Hogg

Europe (欧洲)  
Advertising/Marketing & Editorial  
(广告, 营销及编辑部)  
46 Holly Walk, Leamington Spa  
Warwickshire CV32 4HY, UK  
Tel (电话): ..... +44 1926 334137  
Fax (传真): ..... +44 1926 314755  
Email (电子邮箱): ..... wca@intras.co.uk  
Website (网站): ..... www.read-wca.com

USA (美国)  
Advertising/Marketing (广告/营销)  
Intras USA – Doug Zirkle  
Danbury Corporate Center, 107 Mill Plain  
Road, Danbury, CT 06811, USA  
Tel (电话): ..... +1 203 794 0444  
Email (电子邮箱): ..... doug@intras.co.uk

India (印度)  
Jintras Ltd – Jeroo Vandrevala  
Subarna (Ground Floor), P21/N, Block A  
New Alipore, Kolkata 700 053, India  
Tel (电话): ..... +91 33 2407 07 01  
Fax (传真): ..... +91 33 2407 07 00  
Email (电子邮箱): ..... jeroo@intras.co.uk

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# Go east, young man, go east . . .

“GO west, young man, and grow up with the country,” a rather famous quotation from 1851. It was, of course, an appeal for people to colonise the wild west of the US, but it may be preferable – for the next month at least – to turn the compass round and head east...

For it is time for the wire and cable bandwagon to roll into Bangkok – capital of Thailand and known as the city of angels, and home to wire Southeast Asia (p74-102) from 13<sup>th</sup>-15<sup>th</sup> September. Developing from a small trading post on the Chao Phraya River, Bangkok is today home to some 10 million residents in a thriving and bustling environment.

During the Asian investment boom of the 80s and 90s, Bangkok became an important political, financial and cultural centre that now attracts some 10 million international visitors each year – that's second only to London.

Development continues to pour into the city – generally neglecting of the rest of the country. Indeed, if claims by economists are to be believed, Bangkok accounts for 75 per cent of Thailand's service sector, and that's a shade over 45 per cent of the country's \$590 billion economy.

That investment running through the entire country is bolstered to the tune of \$10 billion each year with direct foreign investment.

And companies in the wire and cable industry are, quite naturally, eager to do business at an exhibition regarded as the leader in the region for the latest equipment and technology in the industry.

More than 300 of them will be making the journey to seize the opportunities generated in this developing and burgeoning market.

We wish them all well.

David Bell  
Editor



» We are working to see  
our products make  
a global impact.«

Katja Leese, International Controller at SIKORA

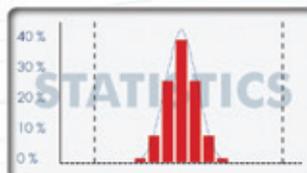


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# when and where



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## October 2011

4–6: **WiCAB** – trade exhibition – São Paulo, Brazil

**Organisers:**

Grupo CIPA Ltda

**Website:**

[www.wicabfair.com.br](http://www.wicabfair.com.br)

## November 2011

6–9: **IWCS 2011** – conference and symposium - Charlotte Convention Center, North Carolina, USA

**Organisers:** IWCS

**Fax:** +1 732 389 0991

**Email:** [phudak@iwcs.org](mailto:phudak@iwcs.org)

**Website:** [www.iwcs.org](http://www.iwcs.org)

## November 2011

7-8: **Cabwire World Conference 2011** – conference – Congress Center, Düsseldorf, Germany

**Organisers:** ACIMAF, CET, IWCEA, IWMA, WAI

**Email:** [info@iwma.org](mailto:info@iwma.org)

**Website:** [www.iwma.org](http://www.iwma.org)

## March 2012

26–30: **wire Düsseldorf** – trade exhibition – Düsseldorf, Germany

**Organisers:** Messe Düsseldorf

**Fax:** +49 211 45 60668

**Email:**

[wire@messe-duesseldorf.de](mailto:wire@messe-duesseldorf.de)

**Website:** [www.wire.de](http://www.wire.de)



○ From left, Col Abdul Aziz Al Qutainy – visa and residence manager (Department of Immigration Sharjah), Saeed Juma Al Suwaidi – public relations officer (Ministry of Labour Sharjah), Graham O'Geran BASEC, Dr Saad El Zaim, managing director, National Cables Industry, Mohammed Ahmed Amin – assistant director general of economic and international affairs (Sharjah Chamber of Commerce & Industry) and Fahad Ahmed Al Khamiri – director of registration and licenses department (Government of Sharjah - Economic Development Dept)

## It's approved . . .

NATIONAL Cables Industry (NCI), a cable manufacturer based in Sharjah, United Arab Emirates, hosted an awards ceremony at the Grand Hyatt in Dubai to receive four product licence certificates from the British Approvals Service for Cables (BASEC) and the Emirates Quality Mark from the Emirates Authority for Standardisation and Metrology (ESMA).

In the presence of over 100 invited guests including NCI clients, utility departments, Chamber of Commerce, Immigration, Labour and Economic Development representatives, BASEC operations manager, Graham O'Geran, gave a speech about the BASEC mark and what it represents.

"Unsafe or counterfeit cable costs tens of thousands of dollars each year," said Mr O'Geran. "BASEC is a specialised international body that ensures that cable and related products meet appropriate National, European and International standards.

"BASEC's product licence has several

advantages. Cables are always manufactured under an approved quality management system ensuring continuity of high quality levels.

"BASEC's approach guides cable manufacturers in tailoring cable making and is designed to assess an organisation's ability to produce cable consistently to specification and customer requirements, in a safe manner and with due regard to the environment.

"Having obtained this certification, NCI will strive to ensure that it continues to comply with BASEC requirements and the quality of its cables is maintained to high standards."

The certificates were presented to Dr Saad Zaim, of NCI which has been awarded with four BASEC products certificates, including two for thermosetting insulated, armoured cables and two for armoured cables with low emission of smoke and corrosive gases when affected by fire.

Dr Saad Zaim said: "It is a very difficult time, sectors have been hit hard which has resulted in a turbulent market.

"However, NCI has moved forward by upgrading business practices including both product and commercial services to customers.

"We endeavour to provide our customers with the highest quality and best value.

"We are delighted BASEC has awarded these certificates and applaud its continued commitment to promoting the UAE region."

National Cables Industry has supplied cable to some of the most prestigious developments in the UAE including the Burj Khalifa, The Atlantis, Silicon Oasis, Dubai Mall, Yas Island and Dubai and Sharjah Airports.

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## Niehoff boost for earthquake victims

GERMAN machinery manufacturer Niehoff has donated six million yen – around \$75,000 – in humanitarian aid for victims of the earthquake which struck Japan in March this year.

The Niehoff workforce, senior management team and shareholders are committed to actively helping people in Japan by providing financial assistance. The donation was passed on to the Japanese Red Cross in the hope that the aid will improve the situation of at least some of the people affected.

Niehoff has very strong ties with Japan. The company opened a sales office there in 1991 (Nippon Niehoff Co Ltd), and it has developed a very close relationship with Japanese customers over the years. Niehoff immediately contacted its staff in Japan as soon as media reports on the catastrophe began coming through.

### Nippon Niehoff Co Ltd – Japan

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**Email:** s-kanazawa@nippon-niehoff.co.jp

### Maschinenfabrik Niehoff GmbH & Co KG – Germany

**Fax:** +49 9122 977 155

**Email:** info@niehoff.de

**Website:** www.niehoff.de

## PV ribbon – integrated production from rolling to tinning

Plasmait, a supplier of plasma heat and surface treatment lines for wire tube and strip production, has introduced a new fully integrated line for production of interconnect ribbon.

PV ribbon is tinned copper ribbon installed in photovoltaic or solar panels. Interconnect ribbon is soldered onto silicon cells in order to interconnect arrays of solar cells in the solar panel. The interconnect ribbon carries the current generated in the solar cells to the PV bus bar, which in turn carries the current out of the solar panel.

Interconnect ribbons are 1-2mm wide and 0.1-0.2mm thick. They are coated with a 10 to 20 micron thick layer of solder. This summer Plasmait introduced a fully integrated line for the production of interconnect ribbon. The PlasmaPreplate Tinning Line includes four production steps from rolling, annealing to tinning and spooling.

The line can produce ribbons with yield strength softness down to 55MPa (Rp0.2%). Camber below 3mm in 1m length is achieved. These super-soft ribbons are spooled onto the latest version of a single head take-up at the speed of up to 150m/min.

### Plasmait GmbH – Austria

**Fax:** +43 318 252 4754

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HD-Ø630/800/1000/1250mm PLC High speed rotate frame type single twister(cabler)



HD-Ø630/800/1000/1250mm PLC 高速懸臂式單絞機 (成纜機)  
HD-Ø630/800/1000/1250mm PLC High speed cantilever type single twister(cabler)



HD-Ø250B/300B/400B/500B/630B mm PLC高速絞纜機 (束絲機)  
HD-Ø250B/300B/400B/500B/630B mm PLC High speed bunching machine  
最新日式機型 The latest Japanese type



HD-Ø500mm PLC 高精度數據纜逆扭對絞機組  
HD-Ø500mm PLC High precision data cable back-twist and pair-twist units



HD-Ø630/800mm 單層雙層三層繞包機  
HD-Ø630/800mm Single layer,two layers and three layers wrapping machine(for mica,aluminum foil)  
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# Signing on the dotted line

ITRI, the global tin industry body, has signed a Memorandum of Understanding (MOU) with the China Non-Ferrous Metals Industry Association (CNIA) to cover cooperation in a number of key areas.

CNIA is a major association within China representing the non-ferrous metals sector, functioning as a bridge between government and industry. It has approximately 750 members and actively develops international cooperation and development. The primary and secondary producers of tin and tin products form part of the CNIA membership.

ITRI and CNIA will work together to support the use of tin in China and will promote a sustainable, stable, and healthy industry.

This will be accomplished by sharing data and information and by cooperation on issues such as recycling, health and safety, community development and the environment.

At a meeting in Hangzhou, China, the two organisations signed the MOU and committed to initiatives in the following areas:

- **Statistics:** Integrate tin statistics from China into the global ones that are collected and disseminated by ITRI
- **Health & Safety:** Cooperate on projects that extend scientific knowledge on the behaviour of tin in humans and the environment and ensure the safe use of the metal and its compounds; consider projects to share information on best working practices
- **Standards:** Exchange information on national and international tin related standards on environmental management and human health
- **Environment:** Exchange information on tin production and process management to promote clean and sustainable production
- **Recycling:** Cooperate on studies to

understand and promote tin recycling and projects aimed at efficient use of natural resources

The leaders and management of CNIA and ITRI will meet periodically and report annually to their respective boards on the status of cooperation in these areas.

David Bishop, chief executive of ITRI, speaking from Hangzhou commented as follows:

“ITRI and CNIA have joint goals in supporting a healthy tin industry based on economic growth, sound environment, and community benefit. China is the world’s largest tin producing country and the biggest user of the metal. We are therefore delighted to be strengthening our ties with CNIA and working to the mutual benefit of the industry.”

**ITRI – China**  
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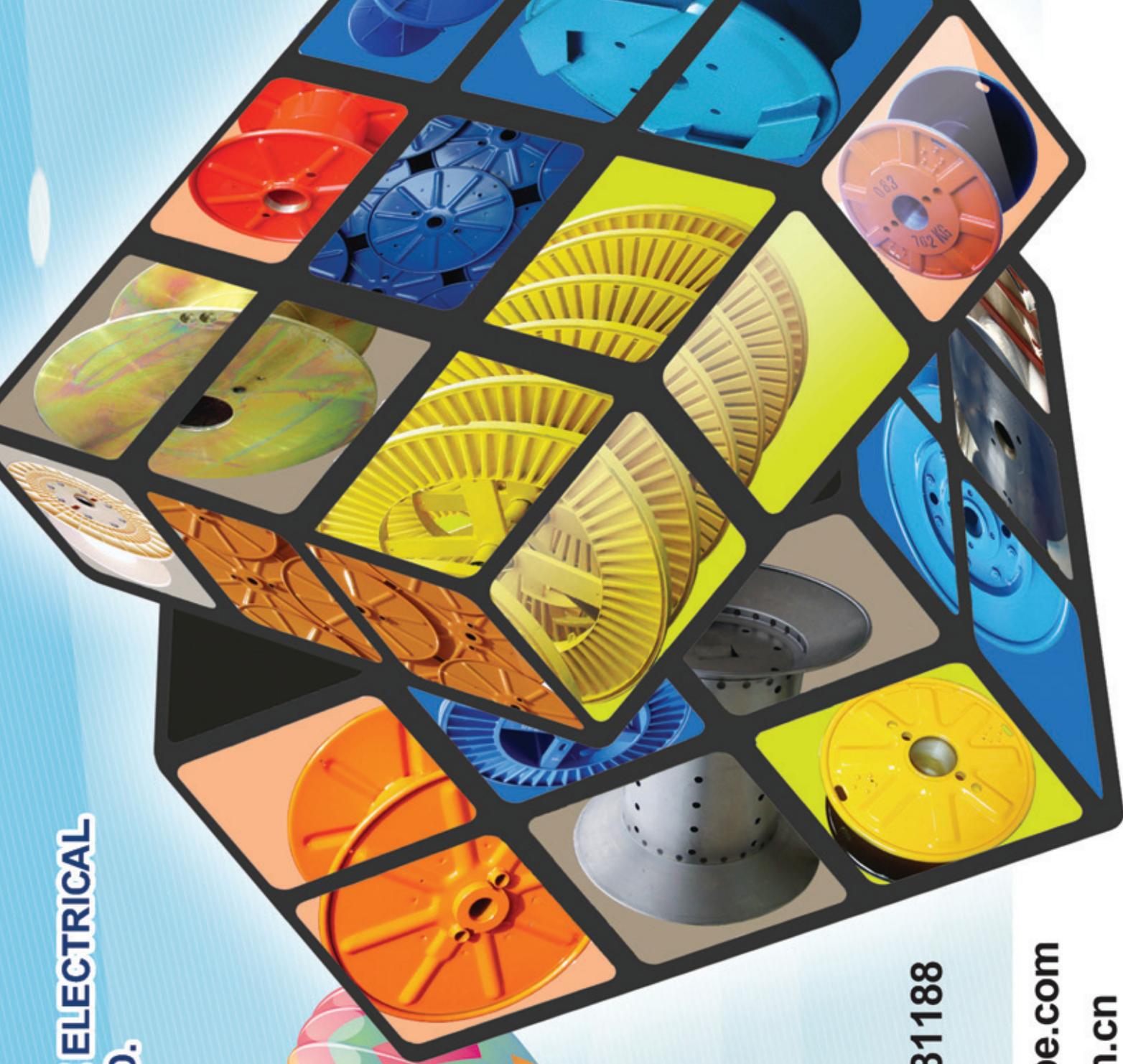


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# Quicker on the markets

CABLE & Wireless Worldwide, a leading provider of mission critical communications based in Singapore, has further expanded its Asia-Pacific financial markets network infrastructure with reliable, high-speed connectivity to Singapore Exchange (SGX).

"Gaining an advantage in the financial sector has moved beyond milliseconds to microseconds, making fast connections between financial hubs imperative. As a network provider of mission critical communications, we are committed to supporting the financial sector as it moves towards high frequency trading," said Nick Lambert, managing director, global markets.

"SGX aims to deliver our broad range securities and derivatives products to our customers globally. We are therefore delighted to work with service providers such as Cable & Wireless Worldwide to enable fast and secure connectivity from global financial centres directly to our

matching facility in Singapore. This is in line with our strategy to offer the financial community in Asia with global reach," said Dominic Lim, vice president and head of market access at SGX.

C&W Worldwide already operates its Points of Presence (POPs) at SGX which provides its financial sector customers with access into the exchange.

The newly installed network will further expand C&W Worldwide's global financial network infrastructure connectivity to key venues across the Asia-Pacific region, positioning the company's Algorithmic trading network as one of the preferred platforms for traders and provide a secure, high-speed communications solution for inter-regional trading activities.

This connection to SGX will provide C&W Worldwide's financial services customers with a direct route between the exchange and its trading sites, helping to reduce latency. Low latency

connections are an important competitive parameter in today's trading environment. Essential to high frequency trading, these connections between financial trading hubs enable financial institutions to increase trading volume, gain an edge in price discovery and improve market efficiency.

In 2009, C&W Worldwide signed a Network Connectivity Agreement with SGX that enables the exchange's financial services customers to gain access to SGX's securities and derivatives market data.

Global financial traders, brokers and investment firms are able to subscribe to SGX's market data services, namely SGX SecuritiesBook, SGX Securities Market Direct Feed, SGX DerivativesQuote and SGXNews, and receive the information they need in real time via C&W Worldwide's network.

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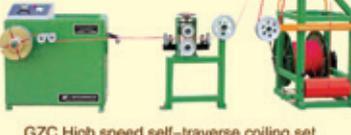
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C type series traverse drive



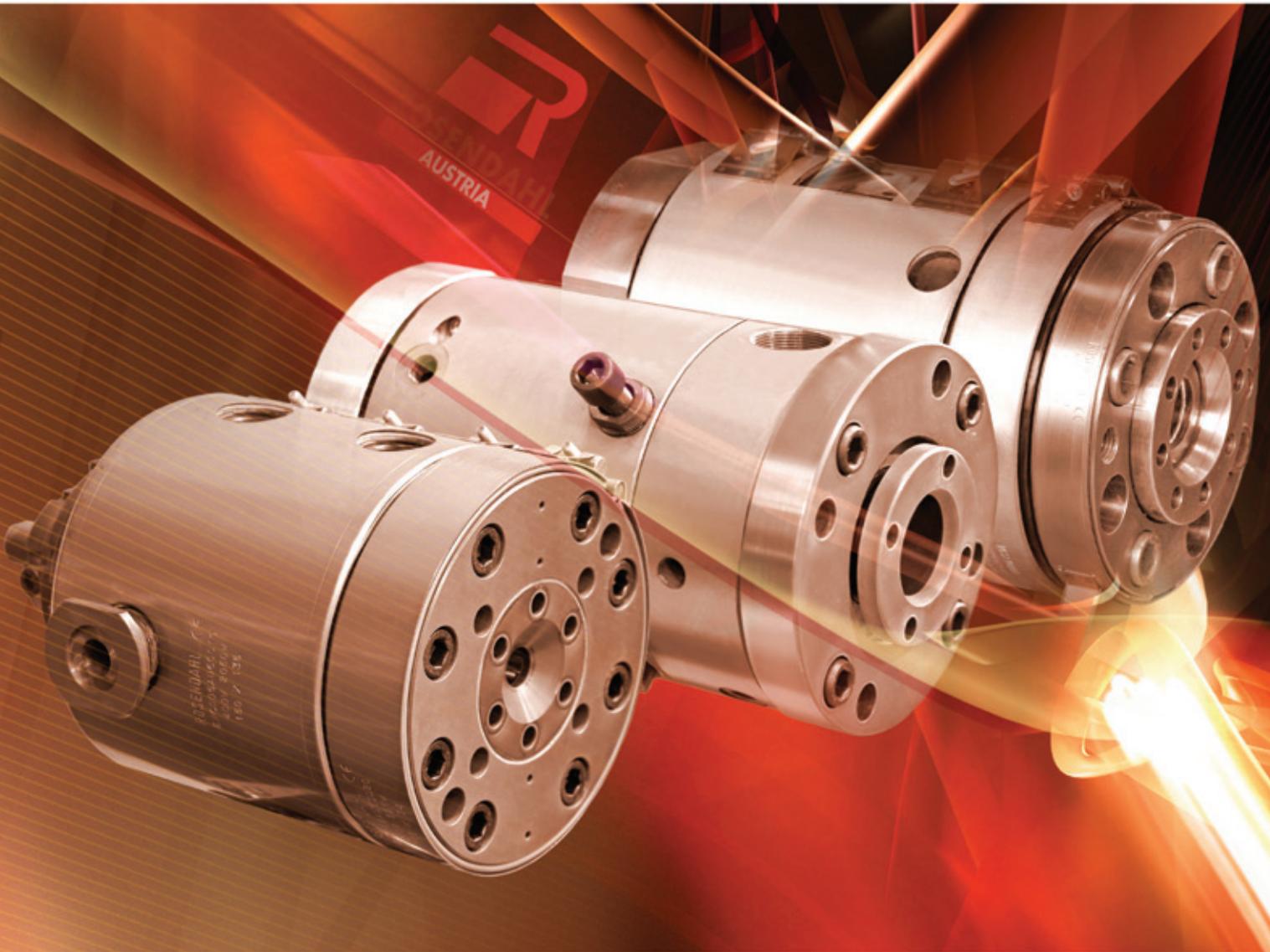
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# Heading for Spain

The issue of renewable energy and its transmission through cable and wire will be the key theme of the Bahrain-based Arab Cable Manufacturers Association's seventh annual ArabCab conference. For the first time the association, which represents 70 countries across the region, will be hosting the event outside the Arab world.

The event, from 25<sup>th</sup> to 28<sup>th</sup> September, will be hosted in Granada, Spain, partly because of Spain's involvement in solar energy and because it is perceived as the most Arab-friendly country in Europe.

The conference, "Renewable energy and its relation to the cable and wire world", is expected to be attended by manufacturers of electrical and telephone cables in the Arab world, in addition to a significant number of international cable manufacturers, associated partners and customers. It will focus on examining and building awareness of alternative energy solutions and opportunities for investing



○ Participants at last year's ArabCab conference in the Lebanon

in alternative energy sources with a focus on the cable industry in the Arab world and beyond.

"We are delighted to announce the seventh annual ArabCab conference," said ArabCab president Hamid Al Zayani. "We have chosen Spain for a number of reasons, including its long historical relationship with the Arab

culture and markets and its position among the leading centres for the development and use of alternative energy sources," Mr Al Zayani said.

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## Pacific Fibre agrees cable deal

PACIFIC Fibre has signed a deal with a US-based cable company to build New Zealand's second international internet link.

TE SubCom, who developed the world's first transatlantic fibre optic cable in 1988, will design, construct and lay Pacific Fibre's 12,750km internet pipe between Auckland, Sydney and Los Angeles.

SubCom is a subsidiary of TE Connectivity, an electronics company worth US\$12.1 billion.

Pacific Fibre's trans-Tasman cable, linking Australia and New Zealand, will be 2,150km (1,355 miles) long and the trans-Pacific cable, linking New Zealand to California, will be 10,600km (6,585 miles) long.

The company argues the cable system is needed to bring competition to the international capacity market, allowing New Zealand to take full advantage of the Government's ultra-fast broadband scheme.

"Demand for international capacity in Australia and New Zealand is sharply increasing and is on track to continue growing for years to come," said Pacific Fibre chief executive Mark Rushworth.

"The Pacific Fibre cable will not only provide unsurpassed high speed international connectivity to satisfy the growth in broadband demand, but it will also help Australia and New Zealand realise the potential of both countries' multi-billion dollar broadband initiatives."

According to Mr Rushworth, the Pacific Fibre system will be the highest-capacity-per-fibre-pair system ever built. The cables will each have two fibre pairs, with an ultimate capacity of 12.8 terabits and, if all goes to schedule, the cable is due to be operational by the first quarter of 2014.

**Pacific Fibre – New Zealand**  
**Email:** [info@pacificfibre.net](mailto:info@pacificfibre.net)  
**Website:** [www.pacificfibre.net](http://www.pacificfibre.net)

## \$13m profits leap

Asia Pacific Wire & Cable Corporation Limited increased its revenue to \$121.8m in its first quarter results – a rise of over 16 per cent. Gross profit also increased to \$13m, a jump of 13.5 per cent from the first quarter of 2010.

The company recently completed its annual audit by the leading global firm, Ernst & Young, and filed its annual report on form 20-F ahead deadline.

The company also recently improved its corporate governance by appointing a highly qualified independent director, who serves on the company's Audit Committee, in addition to improving its standing with investors through its upgrade to the NASDAQ Capital Market exchange.

**Asia Pacific Wire & Cable Corporation Ltd – Taiwan**  
**Email:** [info@apwcc.com](mailto:info@apwcc.com)  
**Website:** [www.apwcc.com](http://www.apwcc.com)

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# Low voltage cables from Turkey's Sartel

SARTEL Kablo operates from a 17,000m<sup>2</sup> factory in Nazilli, Turkey, and has the capacity to produce 30,000 tonnes of cable.

The company manufactures all low voltage energy groups like H07V-U/R, H07V-K, 6181Y, 6491X/B, H05VV-F, YVV and NVV, steel armoured cables, halogen free cables, flat cable, twin-earth cables, N2XY RO2V cables, submersible coil wire and many more.

Sartel Kablo produces the cables with Turkish and international standards, and quality and system certificates such as TSE, ISO, HAR, CE from Turkey, BASEC from England, NF from France and international Standard certificates from Israel, Ukraine and Russia, are in place.



○ The Sartel Kablo factory

The company, formed in 1999, now exports to many countries across the globe and has a loyal customer base.

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# Tenova opens Vietnam office

TENOVA Group has officially opened its representative office in Ho Chi Minh City, Vietnam, with an inauguration ceremony at the Legend Hotel.

The ceremony was attended by more than 100 delegates representing different Vietnamese steel companies as well as officials of the steel industry in Vietnam.

A large delegation of Tenova officers led by Mauro Bianchi Ferri, vice president of Tenova Metal Making, and by Giuliano Fanutti, chief representative officer, did the honours at the event.

The inauguration was done in the presence of the Italian Ambassador Mr Lorenzo Angeloni, who welcomed the establishment of the office into the Italian business community of Vietnam.

Mr Tam, secretary general of the Vietnam Steel Association, highlighted the strategic role of Tenova in the growing steel industry in Vietnam.

Appreciation of Tenova technologies



○ Celebrations at the office opening

was expressed by Mr Thai, president of Thép Viet and Pomina Group that have selected Tenova for the supply of equipment in their two steel factories. The more recent Pomina project will be the largest steel plant in Vietnam with production of 1 million tons of steel per year.

Addressing those gathered, Mr Mauro Bianchi Ferri highlighted the mission of Tenova to deliver exceptional value to its customers by developing environmentally friendly technologies and improving the energy efficiency of its equipment. Several projects by

Tenova are being implemented in the areas of steelmaking, reheating furnaces, cold rolling mill processing lines and roll grinders recognising the Vietnam steel industry committed to value added solutions.

Finally he reaffirmed the commitment of Tenova to the growing market in Vietnam and in the surrounding ASEAN countries.

**Tenova – Italy**  
**Fax:** +39 024 693 026  
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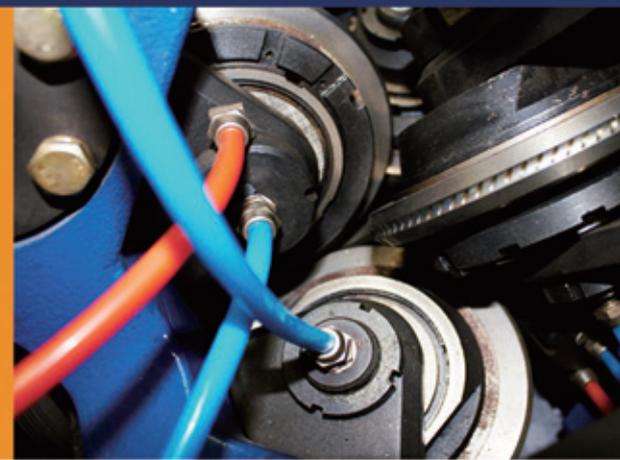
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# Two new orders for CTC Cable

COMPOSITE Technology Corporation has announced two new orders for its subsidiary, CTC Cable Corporation from one of its two stranding partners in Indonesia, PT KMI Wire and Cable Tbk (KMI).

CTC Cable Corporation will deliver the required ACCC® Core to KMI for KMI to fulfil these new orders. Both projects are scheduled for delivery and installation this year.

CTC will deliver 141km of its 7.11mm core to KMI for the manufacture of ACCC® Lisbon to be installed on the first circuit of the Pangkalan Berandan – Langsa Project. A further 108km of 7.75mm core will be delivered to KMI for use in manufacturing ACCC® Amsterdam Conductor to be installed on the Mranggen Incomer line.

PLN Sumatra Grid, the sole provider of electricity in Indonesia selected ACCC® technology due to its superior overall performance in terms of capacity, sag and losses.

Acceptance of ACCC® conductors in Indonesia continues to increase significantly due to the efforts of the two stranding partners, PT KMI Wire and Cable Tbk (KMI) and PT Tranka Kabel, as well as the representative in this market. The completion of these two projects will bring the total to five ACCC® conductor installations on PLN Sumatra's Grid.

Stewart Ramsay, president of CTC Cable, after meeting with a delegation from KMI visiting California last week, noted that CTC's relationship with KMI

is strong and pledged his full support to the continued sales efforts in the market.

"We are pleased to receive these orders at a critical time for CTC. They are the fruit of the careful nurturing of this market which has led to the increased adoption of ACCC® in Indonesia," he said.

CTC Cable is the major global supplier

of composite core conductor with over 10,000km (6,214 miles) of conductor ordered for over 160 commercial deployments on transmission and distribution lines.

**CTC Cable – USA**

**Fax:** +1 949 428 8515

**Email:** support@ctccable.com

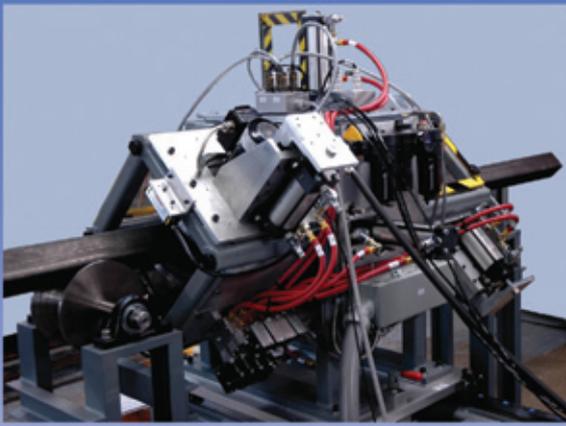
**Website:** www.ctccable.com

## Consulting company's exclusive US deals

Stanaway Wire Consulting has secured two major exclusive agency agreements and is now looking after the European sales and interests of two US-based companies, Leggett & Platt Wire Group (including L&P Wire International Europe and L&P Wire Tie Systems) and Mount Joy Corporation.

John Stanaway's open, ethical, integrous and honest approach to business has, he believes, won him the respect of colleagues, customers and competitors alike. John can be contacted on +44 7806 467 907 or via email at john@stanawaywireconsulting.com

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# Wugang produces test batch for sawing wire

WUHAN Iron & Steel (Wugang), in central China's Hubei province, has launched a pilot production of wire rod for making sawing wire, a high-specification wire rod that China has previously needed to import. Sawing wire is used for cutting silicon wafers for solar cells.

With demand likely to grow for mother rod for sawing wire, and in view of its high profitability, a number of Chinese mills have started to develop high-spec wire rod, including Qingdao Iron & Steel (Qinggang) in eastern China's Shandong province and Xingtai Iron & Steel in northern China's Hebei province, Steel Business Briefing advises.

SBB was informed that Wugang's first sample batch was below 100 tonnes, and was to be delivered to some major,

but un-named, sawing wire makers for trial use.

"We hope commercial production could be launched as early as possible. On pricing, our product should be more competitive than imported materials, which would help domestic users bring down their purchasing costs," a company source said.

SBB has reported that Qinggang is cooperating with Henan Hengxing Science and Technology Co, a wire maker in central China, to test its trial production of wire rod, but an industry source suggests that the test lot has yet to meet Hengxing's standards.

**Wuhan Iron & Steel – China**  
**Email:** info@wisco.com.cn  
**Website:** www.wisco.com.cn

## Cable manufacturing facility in Rajasthan

Cords Cable Industries has successfully commissioned a cable manufacturing facility at Kaharani, Rajasthan.

This new facility, moved from the original site at Pathredi, covers an area of 68,360m<sup>2</sup> and the approximate capacity of the company now stands at 65,000km cable.

**Cords Cable Industries – India**  
**Fax:** +91 112 695 1196  
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By David Bell

---

**THE** email came through. You have been invited on a press visit to Italy in June. “Do you want to go?” It’s a little like asking a football fan if they want tickets to the World Cup final.

A visit to the Fainplast factory and a little sight-seeing was part of the package. How could I turn this down? I was fortunate to meet some very genuine and astute people who clearly cared about the company they worked for, and held a deep-rooted respect for its founder.

# A passion for plastics

IN the course of your life you come across few people who will be indelibly printed on your memory.

I don't mean if you're lucky enough to meet some of your sporting or musical heroes. I mean the man or woman in the street. You know. The one who enters a room and there is a presence around them.

A person that other people look up to, listen to. Not out of fear, but out of respect.

Step forward Signor Battista Faraotti, founder and president of Fainplast, a plastics compound manufacturer in Ascoli Piceno, a rather pleasant little city in Le Marche region of Italy.

It took me – despite the language barrier – just a few minutes to understand why his employees put him in this bracket. He is a self-made man. He loves, clearly, his home city. He supports a wide range of initiatives involving the community – and sport features heavily in his company's promotional activities.

His employees are looked after. They have modern facilities, a gym, and a flexible approach to a working environment that works for the company, management and the ground-floor operatives. In other words, he invests his time, money and effort in

## Dateline

- 1993 – Fainplast founded and starts production in Assisi
- 1996 – The company moves to a new plant in Ascoli Piceno
- 1999 – The covered areas are doubled and new office premises are built
- 2001 – Production of halogen free compounds is started
- 2004 – Medical compounds production begins
- 2006 – Production of crosslinkable compounds starts

the people who work for him and the surrounding area in which they live.

I had been invited to spend three days on a fact-finding, factory-touring visit to discover everything about Fainplast. I saw everything from the testing stage – and there's a lot of that at the site on an industrial estate on the outskirts of the city – through to the final production.

These compounds – a staggering 620,000 tonnes each year – are then shipped off to customers who make

everything from electric cables, for pipes and profiles extrusion and for shoes and medical devices.

Fortunately everyone at the company had gone out of their way to make this as un-technical as possible. To put it all into layman's terms, if you like.

And it is a clear testament to the owner, his shrewd management and his board that has led to a record-breaking year for the company founded just 18 years ago.

Since then they have become a major player in the market, the biggest in the region and – despite what has been a tough time in the industry – one of the largest plastic compound manufacturers in Italy.

In 2010 the company increased its turnover by some 45 per cent to €71.8m – up from €49.5m the year before. Some would argue that a refreshing attitude to investing in new production lines might just be the reason for that success.

Continued on page 31

○ A warm welcome awaits at the Fainplast plant in Ascoli Piceno





○ The automatic feeding system, capable of running 24 hours a day, seven days a week

In addition to the investment in research and development, a further €3m can be expected for two new production lines, leading to a further 20 per cent increase in production and, no doubt, the creation of more job opportunities.

And that is something that the company expects to do every two years. Research the markets, invest and introduce new production lines to keep them one step ahead of the competition.

Given the economic climate experienced over the last few years, the figures make impressive reading for a company still in its teens.

Fainplast exports 40 per cent of its products and the market share on home soil is around 15 per cent. The growth it has seen offers employment opportunities for new staff – 10 have been recruited in the last year alone, taking it to an 85-strong workforce.

“Recently we are focusing on the sector of cables which connect solar panels to the grid,” explained Signor Faraotti.

“These are products that must guarantee maximum performance, although they remain exposed to the elements for decades.”

There is justifiable pride in the voice as he talks about those cables which form part of the range of halogen-free compounds (XLPO-HFFR) that Fainplast has recently launched onto the market.

This is in addition to the compounds produced for electric cables, pipes and profiles, for injection and blow moulding, and ‘tailor-made’ products giving the company – justifiably – the tag of ‘specialist’ producer. Flexibility is very much key as orders can be completed quickly, on time and very much to the customer’s satisfaction.

That flexibility and speed is, as always, backed up by a relentless quality control and testing. Fainplast is certified UNI EN ISO 9001-2000 but more importantly, instilled in the employees is the point that customer is king. Without quality the customer would not return and a rapid growth of 20 per cent each year would certainly not be achieved.

As for the future. The plant (22,000m<sup>2</sup>) sits on a site a

## Compounds produced

For electric cables

- PVC based
- Thermoplastic halogen free flame retardant (HFFR)
- Crosslinkable halogen free flame retardant (XL-HFFR)
- Polyethylene and Polypropylene-based compounds

For pipes and profiles extrusion

- PVC for rigid and flexible pipes

- PVC for shutters, electrical conduits and gaskets
- PVC for nets and fencing
- PVC for medical tubing

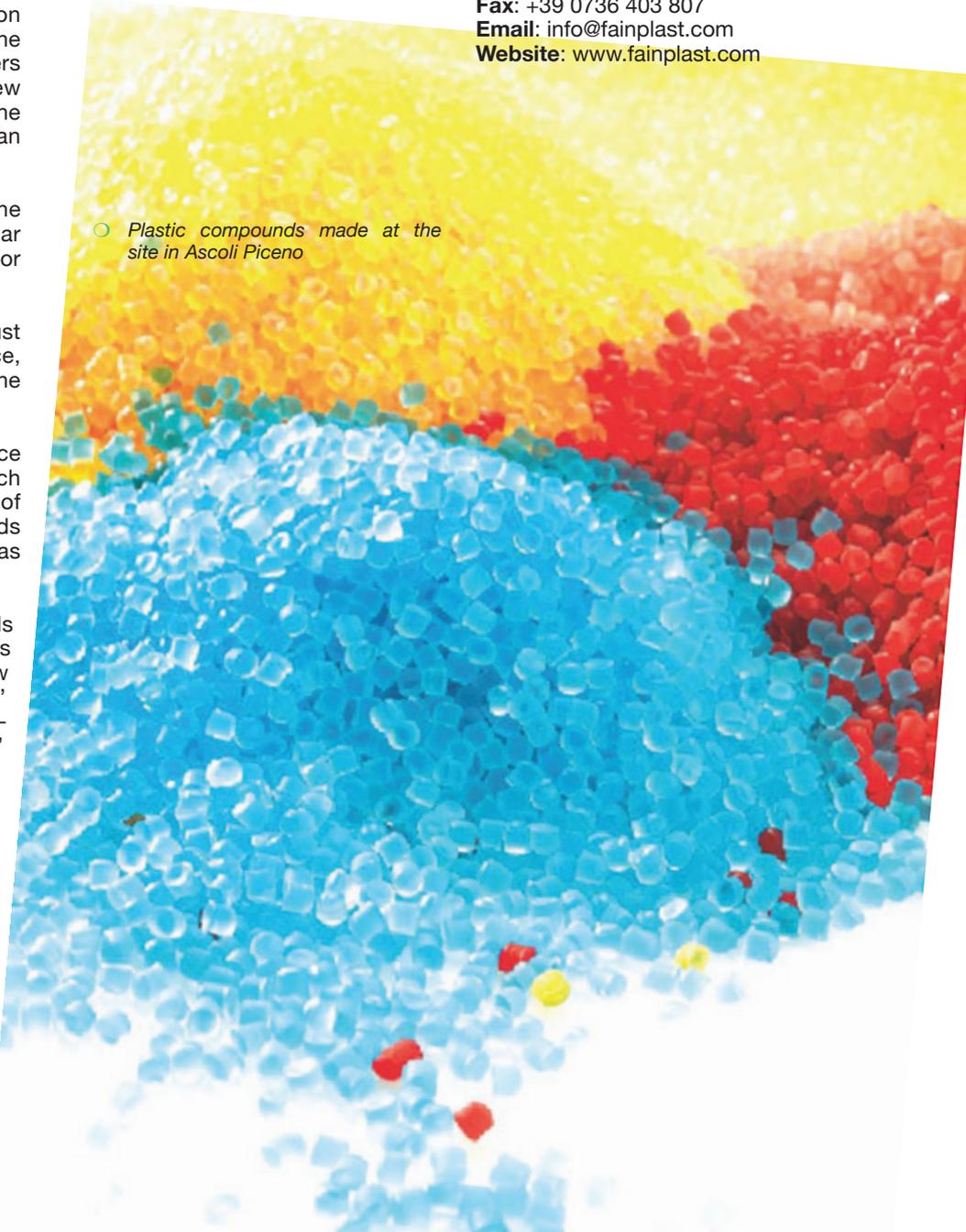
For injection and blow moulding

- PVC for junction boxes and fittings
- PVC for plugs
- PVC for shoes and other applications
- PVC for medical devices

shade over double that size so there is plenty of room for expansion. I’m sure that’s one thing Senor Faraotti ponders as he walks round his own corner of Ascoli Piceno.

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**Website: www.fainplast.com**

○ *Plastic compounds made at the site in Ascoli Piceno*





○ 左起, Col Abdul Aziz Al Qutainy - 签证和居留经理 (沙迦入境事务处), Saeed Juma Al Suwaidi - 公关人员 (沙迦劳工部), BASEC机构的Graham O'Geran, NCI公司总经理Saad El Zaim博士, Mohammed Ahmed Amin - (沙迦工商会)经济和国际贸易助理总干事, Fahad Ahmed Al Khamiri - 登记和许可证部主任(沙迦政府-经济发展部)

## 批准啦!

国家电缆工业(NCI), 电缆生产商, 位于阿拉伯联合酋长国的沙迦, 在迪拜君悦大酒店举行的颁奖典礼上收到来自英国电缆认证服务机构(BASEC)的四个产品许可证书, 以及阿联酋标准化和计量管理局(ESMA)颁发的阿联酋质量标志。在场的100多名特邀嘉宾包括NCI的客户, 公用事业部门, 商会, 入境事务处, 劳工处和经济发展领域的代表。BASEC业务经理Graham O'Geran就BASEC标志及其所代表的意义作了讲话。

“不安全或假冒电缆每年耗资数万美元”, O'Geran先生说。“BASEC是一个专门的国际机构, 以确保电缆和相关产品符合特定的国内、国际和欧洲标准。BASEC的产品许可证有如下优势: 电缆总是在被批准的质量管理体系下进行生产, 其质量永远得到保证。”

“BASEC能够为电缆制造商的生产加工提供向导, 同时也对相关组织是否具有在安全环保条件下生产各种规格的电缆来满足客户需求的能力作出评估。获得这一证书后, NCI将致力于保证产品符合BASEC的要求, 电缆的质量保持高标准。”

证书已提交给了NCI公司的Saad Zaim博士, 四个BASEC产品许可证, 其中两个适用于热固性绝缘铠装电缆, 另外两个适用于一旦遭遇火灾铠装电缆低排放烟雾和腐蚀性气体。Saad Zaim博士说: “这是一个非常艰难的时期, 行业受到重创, 导致市场动荡。然而, NCI通过升级产品质量和提高客户服务已经向前推进了一步。”

我们努力为客户提供品质最佳, 价格最优的产品。我们很高兴, BASEC授予我们这

些证书, 我们也很赞赏, BASEC将继续致力于推动阿联酋地区行业的发展。” NCI为阿联酋一些最负盛名的发展项目提供了电缆, 包括阿联酋的迪拜塔, 亚特兰蒂斯, 硅绿洲, 迪拜购物中心, 亚斯岛, 迪拜和沙迦机场。

**Basec - 英国**  
传真: +44 1908 267 255  
电子邮件: mail@basec.org.uk  
网址: www.basec.org.uk

## 第一季度创利1300万美元

亚洲太平洋电线电缆股份有限公司第一季度收入大幅增长, 达到1亿2180万美元, 上升超过16%。毛利润也增加了1300万美元, 与2010年第一季度相比, 增长了13.5%。全球领先的Ernst & Young 会计事务所最近完成了对该公司的年审, 在截止日期前提交了年度报告20-F表格。公司除了通过升级纳斯达克资本市场的汇率来改善投资者的状况以外, 最近还委任一支高素质的独立董事担任公司的审计委员会, 来改善企业管理。

**Asia Pacific Wire & Cable Corporation Ltd - 台湾**  
电子邮件: info@apwcc.com 网址: www.apwcc.com

## Pacific Fibre签署电缆合同

Pacific Fibre与美国电缆公司签署了一项合同，建设新西兰第二国际互联网连接。TE SubCom于1988年开发了世界第一跨大西洋光纤光缆，这次将负责设计、制造和铺设奥克兰、悉尼和洛杉矶之间的太平洋光纤12,750千米互联网管道。

TE Connectivity的子公司SubCom，是一家价值121亿美元的电子公司。Pacific Fibre的跨塔斯曼电缆，连接澳大利亚和新西兰，长约2,150千米(1,355英里)；

跨太平洋电缆，连接新西兰和加利福尼亚州，长约10,600千米(6,585英里)。

公司认为电缆系统需要为国际市场容量带来竞争，允许新西兰充分利用政府的超高速宽度线路。

“在澳大利亚和新西兰国际容量的需求急剧上涨，今后几年也将继续保持增长势头，” Pacific Fibre首席执行官Mark Rushworth说。

“Pacific Fibre电缆不仅提供卓越的国际高速连接，以满足宽带需求的增长，也将有助于澳大利亚和新西兰这两个国家实现数十亿美元宽带业务的开发潜能。”

Rushworth认为，Pacific Fibre系统将是自有史以来最高容量的光纤对系统。

电缆有两个光纤对，最终容量为12.8兆比特，如果一切顺利开展，电缆将于2014年第一季度投入运营。

**Pacific Fibre - 新西兰**  
电子邮件: info@pacificfibre.net  
网址: www.pacificfibre.net

## 毫不迟疑达成 共识

国际锡工业机构ITRI与中国有色金属工业协会(CNIA)就在重要领域进行合作签署了一项谅解备忘录(MOU)。

CNIA是代表中国有色金属行业的主要协会，在政府与行业之间发挥桥梁作用。协会约有750名成员，为国际间的合作与发展作出积极贡献。协会的部分成员来自锡和锡制品的一次与或二次生产者。

ITRI和CNIA共同努力，支持锡在中国的使用，促进锡行业可持续、稳定、健康发展。他们将共享数据和信息，在回收、健康、安全、社会发展和环境等问题上展开合作。

这两个组织在中国杭州签署了“谅解备忘录”MOU，并致力于在以下几个方面采取措施：

- 统计：整合中国和ITRI收集发布的国际锡统计数据
- 健康与安全：拓展人类使用锡的科学知识，环境，以及确保安全使用金属及其化合物等方面进行合作；并就分享最佳工作实践信息进行审议
- 标准：在环境管理和人类健康方面，国内国际锡相关标准交换信息
- 环境：在锡生产和加工管理，促进清洁和可持续发展领域交流信息
- 回收：共同研究了解和促进锡回收，旨在有效利用自然资源。

CNIA和ITRI的领导及管理层面定期会晤，每年向各自的董事会汇报在以上领域内的合作情况。ITRI 行政长官David Bishop先生，对杭州的发言作了如下评论：

“ITRI和CNIA拥有共同的目标：以经济增长、良好的环境和社会利益为基础，支持锡产业的健康发展。中国是世界上最大的锡生产国，也是最大的金属使用国。因此，我们很高兴发展和加强与CNIA 的关系，为互惠互利的产业共同努力。”

**ITRI - 中国**  
传真: +86 106 510 2206  
电子邮件: cuiilin@itri.co.uk  
网址: www.itri.co.uk

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Tel: +86-21-6653 1938

  
Measure & Control Instrument

**CERSA-MCI**  
13480 Cabriès, FRANCE  
Tel: +33 4 4202 6044  
Email: sale@cersa-mci.com  
Web: www.cersa-mci.com

# 第七届ArabCab年度会议

可再生能源和通过电线电缆传输将是巴林阿拉伯电缆生产商协会举办的第七届ArabCab年会的主题。该协会首次代表整个地区70多个国家举办阿拉伯世界以外的盛事。

年会将于9月25-28日在西班牙格拉纳达举行，之所以选择西班牙，部分原因是由于西班牙参与了太阳能事业，并且西班牙在欧洲被视为阿拉伯最友好的国家。

年会主题为“可再生能源与电线电缆业的联系”，与会者除了许多国际电缆制造商，相关的合作伙伴和客户，还包括来自阿拉伯世界的电力电缆和电话电缆生产商。会议将侧重于研究和建立人们对可替代能源

解决方案的认识，以及在可替代能源领域尤其阿拉伯世界及以外的电缆业的投资机遇。

“我们很高兴地宣布第七届ArabCab年度会议的召开，”ArabCab主席Hamid Al Zayani说。“我们之所以选择西班牙是有诸多原因的，首先西班牙与阿拉伯文化和市场有着悠久的历史关系，以及西班牙在可替代能源使用与发展领域内的核心地位，” Al Zayani先生说。

**Arab Cable Manufacturers Association – 巴林**  
 传真: +973 175 304 40  
 电子邮件: info@arabcab.org  
 网址: www.arabcab.org

参加去年在黎巴嫩举办的ArabCab会议的人员



# 更快捷的金融市场

Cable & Wireless Worldwide是新加坡重要通信设施供应商，进一步扩大了其在亚太地区金融市场的网络基础设施，从而可靠、高速连接到新加坡交易所 (SGX)。

“在金融领域的优势已经超越了毫秒到微秒，满足了金融中心之间迫切需要快速连接的要求。作为重要的通信网络供应商，我们致力于支持向高频交易发展的金融部门，”国际市场总经理Nick Lambert说。

“新交所旨在为全球客户提供广泛的证券及衍生产品。我们很高兴与 Cable & Wireless Worldwide合作，实现国际金融中心与我们在新加坡配套设施的快速安全连接。这与我们的战略不谋而合，在亚洲提供遍及全球的金融共同体，”副总裁兼市场准入领导人Dominic Lim说。

C&W Worldwide在新交所已设有分布点 (POPs)，为金融领域内的客户提供交换接入。

新安装的网络将穿越亚太地区，进一步扩大C&W Worldwide全球网络基础设施连接到关键场所，定位为公司的算法交易网

络，作为交易者的首选平台之一，为区域贸易活动提供安全高速的通信解决方案。

与新交所的连接将为C&W Worldwide的金融服务客户提供直接的线路之间的交流和交易网站，有助于减少延迟。低延迟连接是当今贸易环境的一个重要竞争参数。高频率交易的关键，这些金融贸易中心之间的连接，使金融机构增加交易量，争取价格发现的边缘，从而提高市场效率。

2009年，C&W Worldwide与新交所签署了一份网络连接协议，使该交易所的金融服务客户获得新交所的证券及衍生产品的市场数据。

全球金融交易者、经纪人和投资公司能够认购新交所的市场数据服务，即 SGX SecuritiesBook、SGX Securities Market Direct Feed、SGX DerivativesQuote和SGXNews，通过C&W Worldwide网络他们能够接收实时所需的信息。

**Cable & Wireless – 英国**  
 电子邮件: cwasiapac@cw.com  
 网址: www.cw.com

# CTC电缆获得两大新单

Composite Technology Corporation宣布其子公司CTC Cable Corporation获得两大新订单，合作伙伴是印尼PT KMI Wire and Cable Tbk (KMI)公司。CTC Cable Corporation将提供KMI所需的ACCC®线心。这两个项目都将于今年交付和安装。

CTC将提供141千米7.11毫米线心给KMI，用于生产ACCC®里斯本，安装在Pangkalan Berandan – Langsa项目的第一圈。另一108千米7.75毫米线心将交付给KMI，用作生产ACCC®阿姆斯特丹导体，安装在Mranggen Incomer生产线上。印尼唯一的电力供应商PLN Sumatra Grid也选定了ACCC®技术，因为就其容量、垂度和损耗而言，该技术表现出卓越的综合性能。

由于合作双方的共同努力，接受ACCC®导体技术后，PT KMI Wire and Cable Tbk (KMI) 和 PT Tranka Kabel以及印尼这一市场的代表都将持续大幅增长。这两个项目的完成，使总数达到5个ACCC®导体安装在 PLN Sumatra电网上。CTC Cable 公司总裁Stewart Ramsay，上周会晤了KMI访问美国加州的代表团后指出，CTC与KMI 的合作关系是坚固的，并承诺全力支持创造市场销售佳绩。

“对于CTC来说，我们很高兴在关键时刻收到这些订单。这是我们精心培育市场，使得ACCC®在印尼显著增长的成果，”总裁先生说。CTC Cable是全球复合芯导线的主要供应商，160多个商业部署在输电线路路上使用了10,000多千米(6,214英里)该导线。

**CTC Cable – 美国**  
 传真: +1 949 428 8515  
 电子邮件: support@ctccable.com  
 网址: www.ctccable.com

# 印度拉贾斯坦邦电缆制造厂

Cords Cable Industries宣布，今年早些时候成功调试在印度拉贾斯坦邦Kaharani的电缆制造厂。该公司此前打算在拉贾斯坦邦的Pathredi投资建厂，可是遭到了当地的反对，后来公司就改变了项目地点，选址在更广阔更合适的拉贾斯坦邦Kaharani。

新工厂占地68,360平方米，调试后设备生产能力大约为65,000千米电缆。

**Cords Cable Industries – 印度**  
 传真: +91 112 695 1196  
 电子邮件: ccil@cordscable.com  
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这些生物基增塑剂不含邻苯二甲酸盐，并且符合RoHS规定。与您现在正使用的电线护套材料相比，**DOW ECOLIBRIUM™**能提供同等的性能和弹性，并且在耐火性和使用寿命结束后的更安全处理方面符合严格的法规要求。

无论您生产何种电源线，**DOW ECOLIBRIUM**都是您确保音乐节拍代代相传的有力保障。关于您所在区域的产品信息，请联络您的陶氏销售代表。



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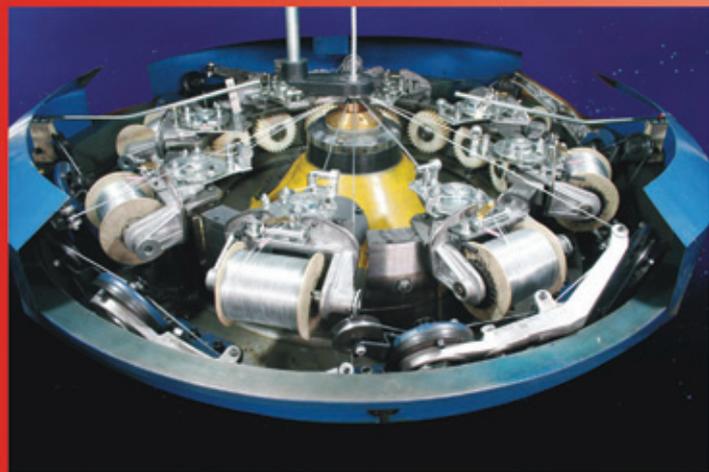
# NYDG

上海南洋电工器材有限公司主要从事于电线电缆机械的设计和制造，现主要产品为编织机，绕包机，印字机。其中，编织机按编织线径由小到大分为：轻型、标准型、重型。



GSB-1Q型

GSB-1Q型16锭高速编织机是目前我公司的最新产品.该机型适用于编织极细丝,应用行业包括微型电脑,移动通讯设施,航天航空及军事领域等.该机型的主要技术指标达到国内领先水平,接近国际先进水平,每分钟转速范围0~120米,无极调速;由交流伺服系统控制牵引.编织节距可在2~60mm范围内以精度0.1mm无级任意选择;可编织0.03~0.05mm的极细铜丝;恒张力收放线机构确保编织过程中的张力均衡;机器工作噪音 $\leq 75$ 分贝。



GSB-Z系列

重型机方面，GSB-Z系列高速编织机主要适用于大直径、大长度线缆及管材的钢丝编织。GSB-1Z, 2Z, WGSB-3, WGSB-3B型（16锭，24锭，32锭卧式，36锭卧式钢丝编织机）的最大编织丝直径可达0.4mm\*12股（钢丝）。最大编织芯线直径 $\phi$ 100mm。



绕包机系列

本系列产品可分单头，双头或三头绕包，绕包分为卧式或立式，是生产通讯电缆、控制电缆、防火电缆等专用设备。绕包盘最大转速可达1500r.p.m，绕包节距0.5mm~30mm,绕包盘最大外径 $\phi$ 300mm。绕包带可分为片式和筒式两种。

## 上海南洋电工器材有限公司

地址: 上海南汇区鹿达路110号  
电话: 0086-21-33896306  
33896307 33896308

传真: 0086-21-33896305  
http: www.shanghai-nanyang.com  
E-mail: sales@shanghai-nanyang.sina.net

# Mt Cattlin 锂生产 超出预期

Mt Cattlin 在澳大利亚西部的锂辉石矿山生产能力超出预料，该矿山正在为中国江苏省的一个主要锂碳酸盐项目生产原料。

AIM-quoted Creat Resources Holdings Ltd通过其运营商 Galaxy Resources 拥有11.78%的股权，从而也持有矿井的间接利益，最近公布说其生产运行比预期要好。

Galaxy将第二批运往中国锂辉石的日程调整为6月，比最初预期的提前了1个月左右，并计划增加发货量。矿井位于澳大利亚西部Ravensthorpe附近，于去年10月才投入生产，但其运营却“既定，稳定，一致。”

**Creat Resources Holdings – 澳大利亚**  
 传真: +61 362 343 884  
 电子邮件: enquiries@creatresources.com  
 网址: www.zeehanzinc.com

# 韩国公司首次赢得海底电缆项目

韩国LS Cable & System公司赢得为美国电力供应商提供海底电缆的交钥匙工程。该电缆制造商已经敲定这笔交易，为电网覆盖美国东部地区的运营商国家电网，铺设35千伏容量的水下电缆。

此举可归功于该公司积极的投资举措，最近在那里建立了电缆厂。LS Cable & System希望借此项目来拓展在美国电力系统部门的业务。

该项目是为了提高长岛和纽约奥克比奇岛之间的电源效率。LS将负责电缆供应、埋设和完成后的测试。项目定于2011年底完成。

**LS Cable & System – 韩国**  
 电子邮件: webmaster@lscns.com  
 网址: www.lscns.com

# 收入跃增40%

Befut国际有限公司是中国线缆制品的开发商、生产商和分销商，2011年第三季度该公司的收入增长了40.8%，达到940万美元。

截止到2011年3月31日前的9个月公司收入跃升108%，达4,020万美金。今年第三季度毛利润250万美元，上涨46%，截止三月底前的9个月共创收1,070万美元。

主席兼首席执行官曹洪波（音译）先生说：“随着中国市场对电线电缆产品的

需求不断上涨，公司国内市场的占有率也显著提高，年销售额在本季度增长了41%。为了应对这一增长需求，我们最近增配了新的生产设施，从而显著扩大生产能力。我们目前的运营能力只占总能力的60%，这使得我们能够控制操纵杠杆，在增长的同时显著提高我们的盈利能力。”

“除了传统电缆，我们重点发展高端特种电缆产品。公司有非常强大的研发团队，根据客户的需求不断推出新产品。我们现

在拥有7个已获批准的专利和25个正在申请中的专利。”

“特别值得一提的是，我们的碳纤维以及其他特种电缆采用了独特的先进技术，产品重量更轻，但导电性更佳。公司将继续加强研发团队，开发新的高科技电缆。我们相信，这种理念将有助于我们进一步区别于竞争对手，使我们能够捕捉更多的中国市场份额。”

**Befut International Co Ltd – 中国**

Befut International 第三季度收益大增



图片: Bigstockphoto.com 上的 Mar Lee

## Tenova开设越南办事处

Tenova集团在越南胡志明市正式开设了办事处，落成典礼在飞天大酒店举行。出席仪式的100多名代表有的来自越南的各大钢铁企业，有的是越南钢铁行业的官员。金属制造部副主席Mauro Bianchi Ferri和首席代表Giuliano Fanutti率领Tenova代表团在典礼上向来宾致敬。

意大利大使Lorenzo Angeloni先生也出席了落成典礼，他欢迎意大利企业到越南投资创业。

越南钢铁协会秘书长谭先生充分肯定了Tenova对越南钢铁行业增长所起的战略作用。

Viet and Pomina集团主席泰先生对Tenova技术赞赏有加，旗下的两家钢铁

工厂使用的都是Tenova的设备。近期的Pomina项目将在越南最大的钢铁工厂投产，年产钢100万吨。

Mauro Bianchi Ferri先生做了总结发言，强调了Tenova的使命，通过开发环保技术和提高其设备的能源效率，为客户带来增值。Tenova的几个项目正在炼钢、加热炉、冷轧加工生产线和轧辊磨床等领域实施，致力于为越南钢铁行业提供增值解决方案。最后，他重申了Tenova在越南和东盟周边国家市场增长的承诺。

**Tenova - 意大利**  
 传真: +39 024 693 026  
 电子邮件: [tenova@tenovagroup.com](mailto:tenova@tenovagroup.com)  
 网址: [www.tenovagroup.com](http://www.tenovagroup.com)

○ 办公室开张庆典



## 武钢试产锯切线

武汉钢铁(武钢)位于中国中部的湖北省，将试产锯切线用线材，这是一种高规格的线材，之前中国一直靠进口。锯切线用于切割太阳能电池的硅片。

据钢铁企业简报介绍，预计锯切线主连杆的市场需求将上涨和其可预见性的高盈利能力，目前许多中国企业都在开发这种高规格线材，例如：中国东部山东青岛钢铁(青钢)和中国北部河北省邢台钢铁公司。

SBB获悉，武钢的首批样品不到100吨，届时将交付给一些重要的，但具体没提及名字，锯切线生产商试生产。

“我们希望尽快推出商业化生产。在价格上，我们的产品比进口材料更具竞争优势，这将有助于国内用户降低采购成本，”一位公司的消息人士说。

SBB报道，青钢正与中国中部的线材生产商河南恒星科技有限公司展开合作，测试试生产的线材，但业内人士认为，测试结果很多都没有达到恒星的标准。

**Wuhan Iron & Steel - 中国**  
 电子邮件: [info@wisco.com.cn](mailto:info@wisco.com.cn)  
 网址: [www.wisco.com.cn](http://www.wisco.com.cn)



上海申辰线缆设备有限公司

Shanghai Shenchen Wire & Cable Equipment Co., Ltd

— The Kingdom of Cold Welding Machines



SB-10



SB-1D



SB-11



J2-B



J3-B

Shanghai Shenchen Wire & Cable Equipment Co., Ltd(SCH) is located in the city of Shanghai in China, we are a world wide leader in the manufacture of cold welding machinery. Our products are sold internationally including Germany, Brazil, Britain, Russia, Turkey, India, Indonesia, Malaysia, Thailand, Vietnam, Japan, Korea, Egypt and the USA. Our customer service and products are provided to the highest standards. Our products are approved by Safenet Limited and have conferred the CE certificate.

Our products can weld Copper(Cu)wire from Ø0.06-Ø25mm, Aluminum (AL) wire from Ø0.08-Ø35mm; and flat strips maximum width 33 mm, minimum thickness 0.45mm.

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[jasonzhong@vnet.citiz.net](mailto:jasonzhong@vnet.citiz.net)

YJ4-A YJ5-B AC705



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**Nicholas Chua (Southeast Asia)**

Tel: +65 6745 0585

Fax: +65 6741 2166

[nicholas.chua@betalasermike.com](mailto:nicholas.chua@betalasermike.com)

**Jacob Ge (China)**

Tel: +86 21 6113 3622

Fax: +86 21 6113 3616

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- 72 Bobbin, 90 Bobbin  
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The group has two manufacturing units at premium locations - Delhi NCR & M.P. (Heart of India) with four separate independent sheds equipped with state-of-the-art machinery to manufacture machines for Conductor, cable (HT/LT) & rope industry. It also has an independent high tech machine design and drawing office equipped with US software Networked CAD, CAM, Workstation & fully integrated process are standardized. The Company has further acquired 80,000 sq. mts. area to meet its capacity expansion plans in future.

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## Operators are responding to rising interest in gigabit broadband worldwide

Swedish broadband equipment maker Tilgin has launched Simba, a platform for home gateways that can handle gigabit speeds. The company said that lower-priced computer chips enable it to offer gateways running at 1Gbps per second for the price of 100Mbps models. Tilgin told Mikael Ricknäs of the IDG News Service that it expects the first operators to offer products based on Simba with broadband subscriptions at 1Gbps before the New Year. In *Network World* (27<sup>th</sup> June), Mr Ricknäs noted that Tilgin is not the only vendor pushing gigabit broadband. In the US in March, Google announced plans to offer broadband at 1Gbps to residents of Kansas City.

Google technology evangelist and TCP/IP co-creator Vint Cerf said in a mid-June speech that the purpose of the project is, in Mr Ricknäs's paraphrase, "to demonstrate what happens when you have gigabit speeds available."

In Japan and Hong Kong, gigabit speeds are already on offer. *Network World* mentioned these initiatives elsewhere:

- ⌚ Also in June, the American cable operator Comcast demonstrated a 1Gbps connection over a live broadband network by downloading 23 episodes of a TV show – close to nine hours of content – in about 90 seconds
- ⌚ Britain's BT Group has announced plans to test broadband at downstream speeds of 1Gbps and upstream speeds of 400Mbps this year
- ⌚ According to the marketing manager of Bredbandsbolaget, the Swedish operator is planning to launch a gigabit broadband service this Autumn

## Five European operators take notice that the biggest buyers of telecom services are serious about energy and the environment

"Our study found that telecoms operators who can't communicate their own energy, environment, and sustainability performance are now at a competitive disadvantage. This is particularly true when bidding for public sector telecom contracts." The reference, by director David Metcalfe of Verdantix, was to "Green Quadrant Sustainable Telecoms Europe 2011," published 13<sup>th</sup> June. The London-based independent analyst firm reviewed 18 of the largest telecom operators in the European market, across 50 criteria. The key finding is that AT&T, BT, Orange, Swisscom, and Telefónica will improve their ability to win contracts for services like telepresence, cloud computing, smart meters, and Web hosting because of their superior energy and environmental performance.

Interviews with 15 senior IT and telecoms buyers with combined revenues of over \$247.9 billion disclosed a growing trend for these powerful buying constituencies to inquire into energy and environmental responsiveness. Two global banks told Verdantix they require telecoms to have ISO14001 certification before spending money with them.

In the European market, AT&T, BT, Orange, Swisscom, and Telefónica were found to lead their peer group on energy, environment, and social metrics. According to Verdantix, these providers boast the broadest portfolio of services that target sustainability growth markets like electricity and gas smart-metering.

The five leaders also have invested more than their competitors in measuring and communicating to their customers the benefits they deliver. Swisscom has a "green tool" that enables customers to assess savings in energy and CO<sub>2</sub> emissions consistently across all services.

AT&T, Orange, and Telefónica each has a chief sustainability officer who reports at board level.

- ⌚ While Verdantix sees a big market opportunity for telecoms to act as sustainability "enablers" to their customers, it also acknowledges a need to more effectively define the benefits of sustainability in financial terms. "Right now there is a gaping disconnect between the ambitions of the

telcos and the quality of their eco-marketing," said Phil Sayer, the company's principal analyst. "Europe's telcos need to work much harder to articulate how sustainability performance adds value to core telecoms services."

## Purpose-built switches hold their own in a decelerating data centre equipment market

After tremendous growth of over 50% in 2010, the data centre network equipment market has slowed in 2011. As reported by Infonetics Research (24<sup>th</sup> June), that market grew to \$8 billion last year and is forecast to top \$10 billion by 2015.

Now, however, some 2010 drivers (like pent-up demand) have disappeared; and new challenges (such as slowing public sector spending) have arisen. In the first quarter, sales were down and year-over-year increases were moving down.

There is a bright spot, however. Matthias Machowinski, the Infonetics directing analyst for enterprise networks, noted that purpose-built data centre Ethernet switches continue to enjoy strong growth "as buyers transition to these devices to better address performance requirements in their data centres."

In addition to data centre Ethernet switches, the market analysed by Infonetics includes application delivery controllers (ADCs) and WAN optimisation appliances.

The international market research and consulting firm noted that:

- ⌚ Driven by emerging economies, the data centre equipment markets in Asia Pacific (APAC) and Central and Latin America (CALA) posted strong year-over-year growth in IQ11
- ⌚ With a market share of over 80%, Cisco Systems (San Jose, California) continues to lead the data centre Ethernet switching market
- ⌚ ADC market leader F5 Networks (Seattle Washington) increased its revenue only slightly in the first quarter, but gained four points of market share as rivals Cisco and Citrix (Fort Lauderdale, Florida) declined

## Elsewhere in telecom . . .

① Oman Telecommunications Company (Omantel) has signed a contract in Tehran with three international telecom partners – Iran, the United Kingdom, and Russia – to provide a new cable system that will ultimately link the Persian Gulf with the German city of Frankfurt.

The agreement will help Oman to become a gateway hub for the region in the delivery of high-speed telecommunication services through the new Europe Persia Express Gateway (EPEG) system.

Each of the four partners in EPEG will have responsibility for construction and development of that section of the network that runs through its own country.

Reporting from Muscat in the Oman Times (19<sup>th</sup> June), A E James said that a major benefit of the EPEG system will be an alternative cable route between the Gulf region and Europe. Current routes go through Egypt and the Gulf of Suez.

The Tokyo-based investment bank Nomura predicted in early June that South Korea's Samsung would become the world's leading smartphone vendor in the second quarter, taking the crown from Finland's Nokia after 15 years.

Citing a research note by Nomura analysts, Reuters reported that Nokia was also expected to surrender the No 2 spot to Apple, of the US, in the third quarter.

The analysts wrote, "Further emphasising the shift in power to Asia is our forecast for HTC to almost match Nokia during 2012." Mobile Business Briefing (13<sup>th</sup> June) took note of a major shift in strategy by Nokia, which in recent months had moved from Symbian to Windows Phone as its primary smartphone software system.

Although research firms such as IDC, Canalys, and Gartner had forecast a falling share for Nokia in the smartphone space over the next few quarters, the GSMA publication observed that

Nomura's reported prediction "is the most damning for the Finnish company to date." The negative forecasts do not, however, impact Nokia's position as the world's largest mobile handset manufacturer, bolstered by its strength in basic devices and its wide distribution network in emerging countries.

② In other, happier, news for Nokia, the Finnish company on 14<sup>th</sup> June announced it had settled a two-year-old global patent fight with Apple over smartphone technology.

Their agreement commits its US rival to making a one-time payment to Nokia and, as a Nokia licensee, to begin paying regular royalties.

Since 2009 the mobile phone makers had engaged each other in more than 40 patent lawsuits in Germany, England, and the US over basic technologies relating to a handset's user interface, power management, antenna and camera. The financial terms of the settlement were not disclosed, but Nokia's reference to a positive financial impact on its revised quarterly results suggests what one German analyst termed "serious money."

While Apple emphasised that the patent settlement does not extend to most of the unique features of its iPhone, the world's best-selling smartphone, the outcome marks an early success for a Nokia strategy of more aggressively defending its patent archive.

The trove includes more than 10,000 groups of handset "patent families" developed over two decades at a reported cost of over \$62 billion.

If Nokia now turns its attention to Google – maker of the popular Android open-source phone operating system, which bears certain similarities to the iPhone system – another American company will be devoting some study to the lessons of Apple's capitulation.

③ In a cash deal that will help it meet explosive global growth in smartphone and broadband-Internet use, Sweden's Ericsson

on 14<sup>th</sup> June said it had agreed to buy privately owned telecommunications software company Telcordia Technologies Inc (Piscataway, New Jersey) for \$1.15 billion. Ericsson CEO Hans Vestberg described Telcordia in a statement as a "perfect fit" for the world's largest maker of equipment for mobile phone networks. Missing the mark, industry speculation had centred on Hewlett-Packard Co (Palo Alto, California) as the likely buyer.

As noted by Ray Le Maistre of Light Reading, the acquisition will make Ericsson one of the biggest SPIT (service provider information technology) vendors in the global market as its existing OSS and BSS capabilities are added to Telcordia's extensive suite of software and services to fixed-line and wireless carriers. These generated revenues of \$739 million in the year through January. About 2,600 US staff will join Ericsson as part of the deal.

④ The British wireless-sector analyst firm Juniper Research Ltd expects the number of users of mobile IM (instant messaging) to exceed 1.3 billion by 2016. The threefold increase of users from 2010 would be driven by the arrival of new services (such as Apple's iMessage) and continued growth in existing services: among them, BlackBerry Messenger, Skype, and Yahoo. However, Daniel Ashdown, who led the Juniper study on mobile messaging markets, does not believe that IM will challenge SMS (short message service, via standardised protocols) as the primary means of text communication on mobiles.

Mr Ashdown wrote: "SMS has one distinct advantage over 'over-the-top' services: its ubiquity. With an SMS I know I can reach almost any handset in the world, if I have its number. While IM services have some advantages, such as real-time communication, the market is fragmented by different services which cannot communicate [with one another]." Details of the report "Mobile Messaging Markets: SMS, MMS, IM & Email Strategies 2011-2016" are available at the website [www.juniperresearch.com](http://www.juniperresearch.com)

## 运营商们正对吉比特宽带网络日渐兴起的兴趣做出反应

瑞典宽带设备制造商Tilgin已经研发出Simba, 一种使家庭门户可以使用吉比特网络的平台。公司表示低价的计算机芯片使公司能够以100Mbps的价格为家庭用户提供1G比特每秒的服务。Tilgin告诉IDG新闻社的Mikael Ricknas道, 它们期待第一个运营商能在新年前将以Simba为基础的宽带设备产品交付使用。

Network World (6月27日) 报道, Ricknas先生注意到Tilgin并不是唯一一家正在推出吉比特宽带的供应商。在美国, 三月份, 谷歌宣布将向堪萨斯城的居民提供1G的宽带服务。谷歌的科技传教士们和TCP/IP的共同缔造者Vint Cerf 在六月中旬的演讲中表示, 这个项目的目的, 以Ricknas的话说, 就是“向你展现有吉比特网络下会发生什么。”

在日本和香港, 吉比特网速已经有了。Network World在各地都提及到这些创新举动。

- ① 同样是在六月, 美国有线运营商Comcast通过使用在线宽带网络, 在大约90秒内, 下载23个电视剧集——相当于9小时的播放内容——展现了1Gbps的力量。
- ② 在今年, 英国的BT 集团已宣布一项下载速度为1G, 上传速度为400M的宽带测试计划。
- ③ 据Bredbandsbolaget的市场部经理所说, 瑞典运营商计划于今年秋天开展吉比特网络宽带服务。

## 五家欧洲运营商已经注意到电信服务的最大买家最为关心的是能源和环境

“我们的研究发现那些无法就自身能源, 环境和可持续发展表现进行信息交流的电信运营商往往都处于竞争弱势地位。这点在竞标公共电信合同时特别体现出来。”

参考资料由Verdantix的总监David Metcalfe撰写, 出版于6月13日的“2011欧洲绿色可持续发展电信”一文。位于伦敦的独立分析事务所依据50条标准, 对欧洲市场上最大的电信运营商上的18家进行了回顾分析。核心发现表明AT&T、BT、Orange、Swisscom和Telefónica将提高它们的能力以赢得远端呈现, 云计算, 智能仪表和虚拟主机之类业务的合同。原因是它们有着出色的能源和环境项目的表现。

对15家总计收益超过2479亿美元的高级IT和电信买家的采访揭示出这样一个趋势, 强有力的买家正对能源和环境领域的反应进行调查。两家世界级银行告诉Verdantix, 它们需要在为电信服务买单之前让它们得到ISO14001证书。

## 为特定目的而建造的交换器在江河日下的数据中心设备市场中表现得泰然自若

在经历2010年超过50%的巨大增长后, 数据中心网络设备市场在2011年已经开始减速。据Infonetics Research (6月24日) 的报导, 去年这个市场增长到了80亿美元, 预计到2015年将达到100亿美元。现在, 然而, 一些2010年中的驱

动因素(例如被压抑的需求)已经消失了; 并且新的挑战(诸如公共支出的减少)已经出现了。在第一个季度, 销售额出现下降并且同比增长已出现放缓。

然而这里存在一个亮点。Infonetics的企业网络的指导分析师Matthias Machowinski, 注意到为特定目的而建造的中心以太网交换器仍在高速增长中, “因为买家正处于需要让其在他们的数据中心内表现得更加出色的时期。”

除了数据中心以太网交换器外, Infonetics的市场分析还包括交货控制器应用和广域网优化设备。国际市场分析咨询公司注意到:

- ① 受复苏的经济驱动, 亚太地区以及中美, 拉丁美洲的数据中心设备市场在2011年第一季度呈现出同比强劲增长。
- ② 拥有80%的市场份额, Cisco Systems (圣琼斯, 加利福尼亚州) 继续领跑数据中心以太网交换器市场。
- ③ ADC市场领先公司F5 Networks (西雅图, 华盛顿州) 在第一季度的收入只有些微增长, 但是在商市场份额领域从对手Cisco 和Citrix (劳德代尔堡, 佛罗里达州) 手中夺取了4个点的市场份额。

## 电信行业的其他事件.....

- ④ Oman电信公司与三个电信合作伙伴——伊朗, 英国和俄罗斯在德黑兰签订了合约——为波斯湾和德国的法兰克福之间提供一个新型的有线系统。这项合约将会帮助Oman成为整个欧洲波斯高速体系内的快速电信服务区域中心。

EPEG中的四个合作伙伴中的每一个都有责任建设并发展体系中穿越自己国家的那部分网络。根据位于马斯喀特的阿曼时报报导(6月19日), A E James认为EPEG体系的主要好处为连接海湾地区和欧洲的一条替代性有线通道。现有的通道为贯穿埃及, 从海湾至苏伊士。

- ⑤ 位于东京的投资银行Nomura在6月的早些时候预测韩国的三星公司在第二季度会成为世界领先的智能手机供应商, 取走芬兰诺基亚拥有的长达15年的桂冠。以一份Nomura分析师署名的研究为举证, Reuters认为在第三季度, 在美国, 诺基亚也将会将第一宝座交给Apple公司。分析师还写道, “HTC想在2012年与诺基亚持平相当, 必须将重心转移至亚洲。”

Mobile Business Briefing (6月13日) 注意到诺基亚一项战略上的转变, 即在最近几个月内将其主要的智能手机软件系统从塞班转向手机版窗口操作系统。尽管研究机构如IDC, Canals, 和Gartner等预测在未来的几个季度内诺基亚智能手机的市场份额将缩水, GSMA出版的刊物认为Nomura的预测“是在诺基亚迄今为止最坏的情况下才会出现的。”

然而, 这项负面的报告并不影响诺基亚作为世界最大移动手机制造商, 因为其有着强大的基础设施和在新兴国家庞大的分销网络。

- ⑥ 另一方面, 对于诺基亚来说的一个好消息是, 它在6月14日宣布它已与苹果公司在智能手机技术领域, 一项为期两年的全球产权纠纷中达成了协议。这项协议要求其美国竞争对手一次性向诺基亚付款, 作为支付给诺基亚的授权费用, 并使之成为定期专利费用。自从2009年起, 移动手机厂商在德国、英国、美国已经参与了超过40项专利诉讼中, 涉及手机用户界面, 电源管理, 天线和照相机相关的基础科技领域。协议的财务部分没有得到透露, 但是根据诺基亚对其修改的季度报告持积极态度来看, 就如德国分析师所言, “应该是一个不小的数字。”

尽管苹果强调这项协议并不会触及iPhone手机——现今全世界最畅销的智能手机——的特性, 这项结果标志着诺基亚更加积极保护其产权战略的初步成功。诺基亚的知识产权库内包括有10,000项手机相关的知识产权, 这些都是在过去二十年内, 斥资超过620亿美元所研发的技术。如果诺基亚将它的矛头指向谷歌——受人们欢迎, 与iPhone的系统有着相似之处的Android开源手机操作系统的制造商——另一家美国公司将从苹果公司的协议中学习一些东西。

## The Boeing Dreamliner

### The world's first composite-plastic jet arrives in Japan to a warm welcome and very high expectations

"It's been a long wait," said Hidetaka Sakai, who watched the Boeing 787 "Dreamliner" touch down at Tokyo's Haneda airport. "We want to compete with global air companies with this plane." (Bloomberg News, 3<sup>rd</sup> July). The All Nippon Airways Co spokesman had sounded the two main themes of the company's relationship with Chicago-based Boeing: the three-year delay since the plane maker missed its original May 2008 delivery target, and ANA's conviction – evidenced by the exuberant celebration on the tarmac – that "this plane" was worth the wait. With 55 Dreamliners on order, the Tokyo-based carrier hopes to take delivery of the first one in August or September.

ANA is counting on the twin-engine 787 to justify adding flights to China, Europe, and the US, even as the plane's lighter weight and its expected greater fuel efficiency help to spare costs. The sense of urgency is understandable. ANA, Asia's largest listed airline by sales, suffered a 20% drop in domestic travel in April, the month after air service in Japan was disrupted by the earthquake and tsunami. Demand for air travel has not yet rebounded.

From Tokyo, Bloomberg reporter Chris Cooper described the busy week awaiting both sets of celebrants. Crews from Boeing would begin tests for extended operations and function and reliability as they worked toward flight certification by US and Japanese authorities. Boeing and ANA planned joint tests, with flights between Tokyo's Haneda and Osaka's Itami and Kansai airports, as well as Okayama and Hiroshima. According to Boeing's website the companies scripted the trials to the half-hour in meetings that ran seven hours a day for five days.

As noted by Bloomberg News, the intensive week in Japan would be one of the final validations for the 787's planned entry into service. For Boeing, getting its fastest-selling plane in play in the third quarter would end a series of seven postponements that led to late penalties and a stock slide, through 30<sup>th</sup> June, almost twice that of the Standard & Poor's 500 Index. The company could finally begin to see some return on a model with an average list price of \$202 million.

- ❖ The 787 is the first airliner with a fuselage and wings made of composite-plastic materials instead of aluminium, making it lighter and 20% more fuel-efficient than other mid-sized airliners, according to Boeing. The company marketed the 210- to 250-seat plane for long-haul routes not busy enough to fill a larger aircraft. Boeing suppliers around the world build whole sections and fly them to the company's operations in Everett, Washington, where the planes are assembled.
- ❖ Boeing has taken orders for 835 Dreamliners. The Australian carrier Qantas Airways is in the queue. And Japan Airlines Co, with 35 of the 787s on order, has said it will start Dreamliner service from Tokyo to Boston next year. This would be the first direct link between that American city and Asia.

Boeing's European rival Airbus is expected to have its competitor to the 787, the A350, ready to enter service with Qatar Airways in 2013. Airbus has gathered nearly 600 orders for the new jetliner, which also is made mainly of carbon-fibre polymers.

### Elsewhere in aviation . . .

- ❖ Expanding its reach into the growing Chinese travel market, Atlanta-based Delta Air Lines said on 1<sup>st</sup> July that it had started non-stop flights between Detroit and Beijing. The Detroit-Beijing flight will run five days a week on 269-seat Boeing 777 jets. Delta was already flying non-stop from Detroit to Shanghai and Hong Kong.

## Automotive

### "Doctor Z" of Daimler and Mercedes-Benz has developed a marked partiality for China

"Dr Zetsche's address resembled a United Nations Security Council roll call at times, with China, India, Russia, Germany, and, obligingly, the United States, receiving mentions. But some garnered more attention than others."

The reporter is Jonathan Schultz, who writes the "Wheels" blog in the *New York Times*. The speaker was, of course, Dieter Zetsche, CEO and chairman of the management board at Daimler AG and head of Mercedes-Benz. The event was a gathering of journalists in Manhattan on the first day of spring to hear "Doctor Z" expound the product strategy for his luxury marque. ("In New York, Dieter Zetsche Delivers a China-Centric Prospectus for Mercedes-Benz," 21<sup>st</sup> June).

Dr Zetsche said that in China, where his German company is opening dealerships at a rate of one a week, long-wheelbase E-Class sedans are used widely as limousines by the executive class. Acknowledging the existence of non-Chinese markets, he commented that the more substantial S-Class would be preferred by Westerners; then it was quickly back to those who "garner more attention than others."

Dr Zetsche expects new-vehicle sales in China to exceed those in the US and Germany, respectively, by 2015. To meet those projections, Mercedes will build an engine factory in China, the brand's first passenger-car engine plant outside of Germany.

Mr Schultz also took note of plans for marketing the F-Cell, a hydrogen fuel-cell vehicle based on the Mercedes B-Class, in Germany and possibly Japan in 2014 – at the price of a diesel hybrid. While Mercedes does not currently produce a diesel-hybrid power train, volume-oriented European manufacturers like Peugeot-Citroën are preparing them. Mr Schultz wrote: "Given the don't-ask price points and vague production prospects of other fuel-cell vehicles, like the Honda FCX Clarity, Dr Zetsche's pledge was significant."

Currently, Daimler does not intend the F-Cell for the North American market. What little attention Dr Zetsche could

spare for the host country was devoted to his company's plans to move production of the Mercedes C-Class for the North American market to its facility in Alabama in 2014. He also mentioned the opening of a new dealership on the West Side of Manhattan, the only company-owned Mercedes location in the United States.

❖ An announcement of Daimler's joint venture with Aston Martin to revive the moribund Maybach nameplate could be expected within the month, Dr Zetsche told the roomful of journalists in June. Otherwise, Mr Schultz reported, everything said by the Daimler chairman was to do with emerging markets. While buyers for a low-volume luxury limo might come from the West, Dr Z made plain his expectation that the customers who will support Mercedes "for another 125 years" would be sought and found in the East.

## Volkswagen, having regained some ground in the US, raises its goal: sales of more than a million vehicles per year by 2018

If the misbegotten DaimlerChrysler merger and breakup have left Daimler AG with a jaundiced view of the United States, another important German car maker has no such qualms. Volkswagen intends to rebuild its brand in the US

with a Passat for the American market, and it is setting the bar very high at its new \$1-billion factory in Chattanooga, Tennessee. "We know what we have to do here," Hans-Herbert Jagla, who heads human resources at the plant, told the *Los Angeles Times* at the opening in June. "Everyone should know that the customer is expecting a perfect car."

Reporting from Chattanooga, the *Times's* Jerry Hirsch noted that Volkswagen, the world's third-largest auto maker, is looking to triple its US sales over the next seven years. To do so, the company must reverse a troubled history. A previous project to manufacture cars in the US was an acknowledged debacle. Over two decades ago, quality problems and slumping sales prompted VW to close its first US factory, in Westmoreland County, Pennsylvania.

Mr Hirsch, who covers the automotive industry for the Los Angeles paper, wrote: "It was a huge setback for the company that brought the iconic Beetle across the Atlantic, making VW America's first import darling."

Now, however, having made a commitment to remedy management and production problems that plagued its first American factory, VW is beginning again in the United States.

Its target for US sales is more than a million vehicles per year by 2018, within which time frame the company wants to command a US market share of 6%. ("VW Opens Tennessee Plant with New Focus on Quality," 3<sup>rd</sup> June).



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Mr Hirsch offered a current status report on Volkswagen in the US, where recently the company has recovered some ground.

According to Autodata Corp, the VW brand sold 256,830 vehicles there last year, a 20% gain from 2009 but only about half of the annual total during the boom years of the 1970s.

Over the first four months of this year, the company's US sales were up 17%. The VW nameplate ranked 29<sup>th</sup> of 34 brands in the J D Power and Associates' 2011 reliability rankings of cars after three years of ownership. It ranked 31<sup>st</sup> of 33 brands in Power's 2010 initial quality survey of vehicles three months old.

❖ But, as Frank Fischer, chief executive of Volkswagen Group of America, Chattanooga Operations, told Mr Hirsch: "We have really tried to draw our lessons from the Westmoreland experience."

The Chattanooga plant, in a 1,400-acre complex on the site of a former explosives factory, has a different management structure from that at VW's previous location. As described by Mr Hirsch, managers of the failed factory closeted themselves in Detroit and were rarely present in Pennsylvania.

This time, he wrote: "VW pulled in more than 200 company experts from operations around the world, including its high-end Audi and Bentley divisions, to work at the factory."

❖ As for the product, present plans call for Chattanooga to produce 56,000 vehicles during its first year of operation, although VW officials say the number could change. The Passat to be built there was designed specifically for the US buyer and will not be sold in Europe. It has an additional three inches of rear seat room, and the standard model offers options believed to be expected by Americans, such as Bluetooth wireless and dual-zone climate control.

It starts at 170 horsepower, providing the type of merging and freeway acceleration American drivers often associate with safety and security. The sticker price of a model with manual transmission will be about \$20,000. Automatic-transmission models and versions with larger engines, including a turbocharged diesel expected to allow 43 miles of highway driving per gallon of fuel, will be priced at about \$26,000. The *Los Angeles Times's* man in Chattanooga observed: "VW needs [this] vehicle to be a success."

## Elsewhere in automotive . . .

❖ Honda Motor Co, the third-largest Japanese car maker, said on 27<sup>th</sup> May that its North American production would return to normal in August as parts suppliers recovered from the tsunami and earthquake that hit Japan in March.

In the US, only production of Honda's Civic cars will continue to be slowed by limited supplies of some parts, the Tokyo-based company said in a statement. Production of the 2012 Civic, which reached US dealers' showrooms in April, will be at about 50%, Honda said.

## Economics

### Does the US offer a more favourable economic climate for small and new businesses than appears from Paris?

Recently, the "Economix" blog of the *International Herald Tribune* looked at some new data from the Organisation for Economic Cooperation and Development. The Paris-based OECD, a forum of 34 democracies dedicated to the promotion of world trade, found the small-business presence in the United States to be somewhat weaker than in peer countries.

Catherine Rampell, who posted the blog, begged to differ. She wrote: "By many measurements America appears to have an economic environment that is far friendlier to small and new companies." ("Nurturing Start-Ups and Small Businesses around the World," 30<sup>th</sup> June). Ms Rampell cited the administrative burden required to start a new company, which by the OECD's own reckoning is relatively low in the United States.

A composite measure of the "procedures, time, and costs necessary to incorporate and register a new firm with up to 50 employees and start-up capital of 10 times the economy's per-capita gross national income" was applied. This metric found Mexico and China to be the most restrictive; Ireland and Germany, the least. The US is on the less-restrictive end of the spectrum.

And, according to a Brussels-based agency of the European Commission and an OECD neighbour, entrepreneurs are looked upon especially favourably by Americans.

The latest annual survey by the Directorate General Enterprise and Industry was conducted between 10<sup>th</sup> December 2009 and 16<sup>th</sup> January 2010, and covered 36 countries. In response to a request for "your opinion about entrepreneurs (self-employed, business owners)," 73.4% of Americans polled said they had a "rather favourable" attitude toward this group. That was among the most positive responses gathered by the survey.

❖ In closing, "Economix" asked: "Given a climate so favourable to entrepreneurs, what might account for the fact that self-employment and other measures of entrepreneurship are lower in the United States than in many other developed countries?"

### Many American companies too young or too small for access to capital markets in the US are finding investors overseas

A possible answer to the rhetorical question posed at the end of the previous item may be that, however favourable their other circumstances, fledgling and small American enterprises need money – and this essential commodity is in tighter supply at home than abroad. Graham Bowley of the *International Herald Tribune* has written: "Nearly one in ten American companies that went public last year did so outside



the United States. Besides Australia, they turned to stock markets in Britain, Taiwan, South Korea and Canada.” Citing data from the accounting firm Grant Thornton (Chicago) and the British-based consultancy Dealogic, Mr Bowley noted that the 10 US companies that went public abroad in 2010 – and 75 from 2000 to 2009 – compare with only two US companies choosing foreign exchanges from 1991 to 1999. The trend, he believes, reflects a decidedly global outlook toward stocks, just as the number of public companies in the US is shrinking.

According to the World Federation of Exchanges, from a peak of more than 8,800 American companies at the end of 1997, that number fell to about 5,100 by the end of 2009: a 40% decline. (“Fast-Growing Companies Look Abroad for Investors,” 7<sup>th</sup> June).

The former Brussels bureau chief for the *Herald Tribune* pointed out that some companies have merged, or gone out of business, or been taken private by private equity firms.

Other young businesses have chosen to sell themselves to bigger companies rather than go public. And, certainly, as the economy improves and investors shaken by the financial crisis begin to regain confidence, American stock markets may once again open up for companies trying to go public. Listings may rise.

Right now, however, nearly three years since the financial crisis began, markets in the United States are barely open to many companies, leading them to turn to investors abroad. As Mr Bowley wrote: “Denied a chance to list their stock and go public [at home], they are finding ready buyers of their shares on foreign markets.”

## The jobs connection

❖ As with all business trends in the US in a period of persistent unemployment, the venture capital quest is being monitored for its jobs-related significance. Executives and analysts consulted by the *Herald Tribune* expressed concern that, as young, fast-growing companies are forced to look overseas for public status and investors, they may increasingly shift their geographic focus. As a result, any jobs they create will be abroad.

David Weild, a former vice-chairman of the New York-based securities exchange NASDAQ, told Mr Bowley: “Issuers have to put themselves through a grinder to go overseas, so any significant percentage of overseas listings is a sign that our markets have become hostile to innovation and job formation.”

❖ Small business is also a worry point in Canada, in an otherwise favourable outlook for employment. The Canadian jobless rate fell to its lowest level in more than two years in May as a combination of more jobs and fewer people seeking work pushed the rate to 7.4%. Statistics Canada said 22,300 new jobs were created in the month, the most recent for which data is available. This was slightly above consensus estimates.

But, as noted by Julian Beltrame of the Canadian Press, while all the jobs were full-time, they came in the self-employment category, which could indicate that many Canadians turned to creating their own occupation



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because they were unable to find more traditional work. "Small business is of vital importance to the Canadian economy," said Derek Holt, vice-president of economics for Scotiabank, in a note to clients. "But job creation within this category in a soft spot for the economy is always a knock against the quality of the headline gain." Still, Mr Beltrame observed, Canada is doing far better in this area than its southern neighbour and biggest trading partner. He wrote (11<sup>th</sup> June): "In the past year, Canada has created 273,000 new jobs, most full time and in the private sector, while the US has struggled to post solid gains."

## Manufacturing

### Factory activity continues to be a sweet spot in the US economic recovery, but commodity prices are a worry

At midyear, the rate of growth in US manufacturing was helping to ease concerns that the nation's economic recovery would remain sluggish, and fuelling optimism that the economic slowdown of the first half would be temporary.

In its latest available Report On Business, the Institute for Supply Management (ISM) reported that economic activity in the manufacturing sector expanded in June for the 23<sup>rd</sup> consecutive month.

According to data supplied to ISM by a 35,000-strong network of supply executives, new orders and production were both modestly up from May. The rate of increase in prices slowed for the second consecutive month, and was at its lowest since August 2010. Even so, and while the list of commodities up in price had shortened, ISM said that "commodity and input prices continue to be a concern across several industries."

ISM grouped its information on commodities into these three categories: (\*Reported as both up and down in price)

- ❖ Commodities up in price: aluminium, castings, caustic soda, copper,\* copper-based products,\* packaging materials, plastic products, plastics, polyethylene, polypropylene, resins, rubber products, steel,\* steel products, and titanium dioxide
- ❖ Commodities down in price: copper,\* copper-based products,\* nickel, stainless steel and steel\*
- ❖ Commodities in short supply: capacitors, electric/electronic components, and rubber products

Anecdotal responses published 1<sup>st</sup> July by the Tempe, Arizona-based ISM include the following:

- ❖ "We continue to see inflation, though at a reduced rate [compared to] earlier months." (Chemical products)
- ❖ "Slight slowdown in overall business in both domestic and international markets, although still above 2010 at the same date." (Electrical equipment, appliances, and components)
- ❖ "The earthquake and related issues in Japan have caused shortages of some automotive equipment, negatively impacting global automotive production." (Fabricated metal products)
- ❖ "Customers are still being cautious with their buying. Certain plastics and metal prices continue to rise." (Machinery)

## Metals

### Thieves target Chicago, destroying expensive air conditioners for their copper content

An item in the pilot issue of our sister publication wiredInUSA opened with the reminder that copper theft has always been a problem, the red metal's "value to marauders" of the mid-1800s precluding its use in overhead telegraph lines. Submarine cables are safe – protected by "the ocean depths." No such protection extends to air conditioners, and this summer the a/c-equipped homes and businesses of Chicago's South Shore neighbourhood have been especially hard-hit by plunderers.

Police say that the big units are ripped from windows and pulled apart, their copper innards snipped out and sold for cash. One resident, pointing out the remnants of several such operations throughout the neighbourhood, told NBCchicago.com, "They come between two and three in the morning, and by 6 o'clock they're at the junk yard selling the copper." ("ACs Busted, Stolen for Copper Inside: Police," 28<sup>th</sup> June).

Proactive measures can add considerably to the cost of an air conditioner. One theft victim told the TV station that he paid \$500 for a steel cage to enclose his replacement unit, and had it bolted to the ground.

On 1<sup>st</sup> July, the *Chicago Tribune* carried news of one especially callous attack: on the main air conditioning units atop the Animal Welfare League intake centre, which houses some 120 dogs and cats awaiting adoption. One unit was destroyed completely, the other torn apart – wires cut and the copper piping and coils taken. Large industrial fans had to be brought in to keep the vulnerable animals alive in the blistering heat of a Midwest summer. The estimated cost of repairing the salvageable unit is \$25,000, unaffordable by the shelter.

- ❖ Because stolen or stripped commercial and residential a/c units need to be replaced or repaired, heating and cooling contractors and their suppliers obviously stand to benefit from this source. But it would be difficult to find an HVAC professional who welcomes business generated from such depredations as that visited on the Animal Welfare League of Chicago.

### Elsewhere in metals . . .

- ❖ On an environmental note, the Ohio metals service centre Olympic Steel Inc said on 15<sup>th</sup> June that it had installed a \$550,000 100kW wind turbine to supplement electricity to the company's corporate office and attached temper mill facility in Bedford Heights. The unit is expected to provide approximately 15% of the electric power consumed at the location, with any excess directed to the local energy grid. The gearless, direct-drive design turbine, supplied by Wind Turbines of Ohio under a state-supported programme of grants for renewable energy initiatives, is mounted on a 120ft pole and features a 69ft diameter rotor.

Dorothy Fabian – Features Editor

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## 波音梦幻飞机

### 世界首架复合材料飞机在日本获得热烈欢迎并 给予厚望

“这是一个漫长的等待”，Hidetaka Sakai在观看波音787“梦幻飞机”降落东京羽田机场后说：“我们希望用这架飞机与全球的航空公司竞争。”（彭博新闻社，7月3日）

全日本空输株式会社发言人声明了公司与芝加哥波音公司关系发展的两大主题：自上次飞机制造商错过了其原来的2008年5月的交付目标已经3年了，ANA相信此架飞机值得等待，停机坪上盛大的庆祝仪式证明了这一信念。东京方面订购了55架梦幻飞机，并希望在8月或9月能够交付第一架。ANA希望依靠这架双引擎787飞机证明当飞机的重量更轻并且其预期的燃料效率更高时增加飞往中国、欧洲和美国的航班有助于削减成本。这种紧迫感是可以理解的。亚洲销量最大的上市航空公司ANA，在日本的航空服务遭受地震和海啸的打击之后，四月份的国内旅游下降了20%。航空旅行的需求尚未回升。

东京的彭博社播报员Chris Cooper讲述了等待两次盛典的繁忙一周。来自波音公司的员工将要按照美国和日本当地的飞行验证标准开始扩展操作、功能和可靠性测试。波音公司和ANA计划对东京的羽田机场和大阪的伊丹机场、关西机场以及冈山和广岛之间的航班进行联合测试。如波音公司网站所示，公司在会上将进行了5天每天7小时的测试编辑成了半个小时的内容。

据彭博新闻社指出，在日本紧张的一周将会是波音787计划投入服务的最终验证之一。对于波音公司来说，在第三季度搞定其最畅销的飞机，将会结束导致了延迟罪和股票下跌的一系列七个推迟。到6月30日止，股票下跌接近标准普尔500指数的两倍。公司终于可以从该型号的平均标价2.02亿美元中看到一些回报。

据波音公司说，787飞机是第一架机身和机翼用复合材料而非铝制成的飞机，这使得更轻并且燃油效率超过其他中型客机的20%。公司经营销售座位数在210到250个之间的飞机用于不太繁忙的长途航线以充当更大的飞机。波音公司在世界各地的供应商建造飞机的各个部分，并将其运往埃弗里特和华盛顿进行组装。

波音公司已经接下835架梦幻飞机的订单。澳大利亚快达航空公司也在其列。订购了35架787飞机的日本航空公司说他们将在明年启动从东京飞往波士顿的梦幻客机飞行服务。这将是波士顿和亚洲之间的首次直接联系。波音欧洲的竞争对手空中客车公司预计将获得能与波音787相竞争的新型机A350，该机准备于2013年在卡塔尔航空公司服役。空中客车公司已经为该新喷气客机获得了将近600个订单，该机也是主要由碳纤维高分子材料制成。

## 汽车

### 戴姆勒和梅赛德斯-奔驰公司总裁蔡澈对中国 市场偏爱明显

“有时候蔡澈总裁的演讲就像联合国安理会的点名，中国、印度、俄罗斯、德国还有美国经常被提及，但有些国家获得的关注比其它国家要多。”

报道者是舒尔茨先生，他为《纽约时报》撰写题为“车轮”的博客。发言人当然是蔡澈，他是戴姆勒股份公司管理委员会首席执行官兼董事长梅赛德斯-奔驰汽车集团总裁。事件是3月21日在曼哈顿举办的记者招待会上听取蔡澈总裁阐述他的豪华汽车的产品战略报告。（“在纽约，蔡澈为梅赛德斯-奔驰发表以中国为核心的章程”，6月21日）。

蔡澈说，他的德国公司每周都会在中国开一家新的经销店，长轴距E级轿车被中国行政阶层广泛用作豪华公务用车。在承认非中国市场的存在时，他评论说更为实用的S级汽车更受西方人青睐；然后他的评论主题又很快回到“获得的关注比其它国家要多”的那些国家上面。蔡澈预计，到2015年止，新车在中国的销量将分别超过美国和德国。为了达到这一目标，奔驰将在中国建立一个发动机厂；这是该品牌在德国以外的第一个汽车发动机厂。

舒尔茨先生也注意到F-Cell的市场推进计划。F-Cell是以奔驰B级车为基础的氢燃料电池汽车，该型号车计划将于2014年在德国或日本上市，其价格与柴油混合动力车的价格持平。但是奔驰目前不生产柴油混合动力车，以容积为导向的欧洲制造商正致力于该类车的生产，例如标致雪铁龙。

舒尔茨先生写道：“鉴于其一口价特点和其他燃料电池车（像本田FCX清晰）模糊的生产前景，蔡澈的计划很有意义”。目前，戴姆勒公司并不打算在北美市场投入F-Cell。蔡澈计划在2014年将北美市场奔驰C级车的生产移至阿拉巴马州基地，这是他给予东道国的仅有关注。他也提到在曼哈顿西区开一个新的汽车经销店，该店也是奔驰品牌在美国拥有的唯一一家自有直营店。

蔡澈在六月份告诉记者，戴姆勒和阿斯顿·马丁重振垂死边缘的迈巴赫品牌的联合投资声明将在月内发布。此外，舒尔茨先生报道，戴姆勒总裁所说的一切都与新兴市场设计有关。虽然低排量的豪华汽车的买主也可能来自西方，但是蔡澈明确表明他期望东方消费者将支撑起奔驰未来125年发展。

### 大众重获部分美国市场，提升销售目标：到 2018年年销量超过一百万辆

如果说戴姆勒-克莱斯勒的合并和解体使德国汽车制造商戴姆勒对美国心存偏见，那么另一个重要的德国汽车制造商则没有这样的困扰。大众计划用专为美国市场设计的帕萨特汽车在美国重建品牌，并且制定了高标准——在田纳西州查塔努加市投资10亿建工厂。“我们知道我们得在这做什么，”公司人力资源总监Hans-Herbert Jagla在6月份的开幕式上告诉《洛杉矶时报》的记者：“每个人都知道消费者渴望拥有一辆完美的汽车。”

《洛杉矶时报》记者Jerry Hirsch从查塔努加市来报，世界上第三大汽车生产商大众正寻求方法使其在美国的销量在未来七年内翻三倍。要做到这一点，公司必须要扭转一段多灾多难的历史。大众曾经在美国生产汽车的一个项目被认为是一次溃败。20年前，质量问题和不断下降的销量迫使大众关闭其位于宾夕法尼亚州威斯特摩兰县的第一家美国工厂。

Hirsch先生一直为《洛杉矶时报》报道汽车工业的新闻，他写道：“这对于这个将明星产品甲壳虫带至大西洋彼岸使大众成为美国第一大进口宠儿的公司来说是一次巨大的挫折。”然而现在，大众正在美国重振旗鼓，它承诺努力补救造成第一家美国工厂关闭的生产管理问题。大众在美国的销售目标是到2018年年销量超过一百万，公司希望在这段时间内控制6%的美国市场份额。（“聚焦质量——大众在开田纳西州开办新厂”，6月3日）

Hirsch先生提供了关于大众美国的现状报告。最近大众公司在美国重获部分市场。根据市场研究公司Autodata Corp的调查，大众去年在美国卖出256,830辆汽车，比2009年增长了20%，但也是繁荣的70年代年销量的一半。在今年头四个月内，公司在美国的销量增涨了17%。大众品牌在J D Power and Associates 2011年34个汽车信赖品牌排名中位居第29位（需在汽车使用三年后接受调查）。在Power 2010年汽车前期质量调查中，大众在33个品牌中排名第31位（需在汽车使用三个月后接受调查）。

但是，正如大众美国公司查塔努加基地总裁Frank Fischer对Hirsch先生所说：“我们的确已经努力从威斯特摩兰的经验中吸取教训。”查塔努加工厂建在一个炸药厂的旧址上，占地1,400英

亩,管理结构与大众以前的工厂不同。Hirsch先生说,倒闭的那家工厂的经理们把自己禁足在底特律,很少出现在宾夕法尼亚。这一次他写道:“大众从世界各地的公司中引进200多个公司专家在此工厂工作,包括高端奥迪(Audi)和宾利分部。”至于产品方面,查塔努加工厂目前计划在运营的第一年内生产56,000辆汽车,不过大众高层说可能会更改数据。

即将在那生产的帕萨特是为美国买主设计的,并且不会销往欧洲。此款帕萨特有一个额外的三英寸的后座空间,并且标准款提供了美国人所期待的多种选择,例如无线蓝牙和双区温度控制。此款帕萨特为170马力,更加智能化,美国司机经常将其与安全性能联系在一起。

带手动档的车款标价约为2万美元。自动挡车款和发动机引擎较大的车款(包括柴油涡轮增压发动机——它有望使每加仑燃油行驶43英里公路)价格在26,000美元左右。《洛杉矶时报》查塔努加新闻人评论说:“大众需要此车成功。”

## 经济

### 美国为新兴小企业提供的经济环境比欧洲更好吗?

最近,《国际先驱论坛报》的Economix博客观察了一些来自经济合作发展组织的新数据。总部位于巴黎的OECD是由34个致力于推进世界贸易的民主国家组成的论坛,它发现美国的小企业在一定程度上比同类国家要弱。博客的发表人Catherine Rampell的看法却不同。她写道:“从多方面衡量,对于新兴小企业来说,美国的经济环境似乎比其他国家要好的多。”(《在世界范围内培育新创企业和小企业》,6月30日)

Rampell女士以开办一家新公司的行政负担为证,OECD认为在美国开办新公司的行政负担相对较轻。“组建和注册一家雇员多达50名且启动资金10倍于国家人均国民收入的公司所需的程序、时间和费用”这一系列综合指标被采用。按照这种衡量标准,墨西哥和中国是最严格的;爱尔兰和德国限制最少。美国属于限制较少这一类。另外,根据欧盟委员会布鲁塞尔总部和OECD的一个邻近组织所说,企业家们尤其为美国人所称赞。

Directorate General Enterprise and Industry于2009年12月10日到2010年1月16日间进行了最近一次的年度调查,该调查覆盖了36个国家。调查中,在回答“你对于企业家(个体户、企业主)的观点看法”这个问题时,73.4%的美国投票人说他们对这群人持有非常好的看法。这是调查中收集到的最积极的反响之一。在结尾处,Economix问:“既然美国经济环境对于企业家来说如此之好,那么如何解释美国个体经营和其它创业方法比其它发达国家少这一事实?”

### 难以进入美国资本市场——美国新兴小企业寻求海外投资者

对于上节末尾提出的问题,答案可能是:虽然他们的其它环境良好,但是羽翼未丰的美国小企业需要资金——而这一重要商品在国内的供应比国外更紧张。《国际先驱论坛报》的Graham Bowley写道:“去年上市的公司中大约十分之一都是在海外上市,除澳大利亚以外,英国、台湾、韩国和加拿大的股票市场也成为他们的目标地。”

根据Grant Thornton会计事务所(芝加哥)和英国的咨询公司Dealogic的数据,Bowley先生指出,2010年有10家美国公司在海外上市,从2000年到2009共75家,而从1991年到1999年却只有两家。

选择在美国本土上市的上市公司数量正在减少。他相信,这一趋势明确反映了人们对股市前景的全球观。根据世界证券交易所联合会的数据显示,在美国上市的公司数量在1997年年底的顶峰时期是8,800多个,而到2009年年底,该数字降至5,100左右:下降了40%。(“快速发展的美国公司寻求海外投资者”,6月7日)。

《国际先驱论坛报》布鲁塞尔局前任主任指出,一些公司已经合并或歇业或被私募股权投资公司吞并。还有一些新公司没有选择上市,而是将自己卖给大公司。当然,随着经济的好转和在金融危机中受到重创的投资者开始重获信心,美国股市的大门可能为试图上市的公司再次开放。在本土上市的公司数量可能会上升。

然而眼下,自金融危机开始近三年以来,美国市场几乎没有对许多公司开放,导致他们转向海外投资者。正如Bowley先生所写:“在失去在国内市场筹资和上市的机会后,他们在海外市场寻找股票买家。”

## 就业连接

鉴于持续失业期间美国的商业发展趋势,风险投资追求由于其就业相关性受到监控。美国官员和分析师担心,随着年轻、快速发展的企业被迫转向海外寻求股票市场和投资者,他们可能会越来越多地转移其地理关注。结果就是,他们所创造的就业机会将会流向海外。总部位于纽约的纳斯达克证券交易所前副主席David Weild告诉Bowley先生:“公司费尽周折向海外寻求市场,海外上市公司的比例显著上升,这表明我们的市场已经变得很不利于创新和创造就业了。”

## 制造

### 工业活动继续成为美国经济复苏中的亮点,但商品价格令人担忧

在年中,美国制造业的增长速度缓解了人们对美国经济复苏迟缓的担忧,使人们乐观相信上半年的经济发展放缓只是暂时的。在最近一期的《商业报道》杂志上,美国供应管理协会(ISM)报道称制造部门的经济活动在6月份实现了连续23个月的增长。根据由35,000人组成的强有力的网络系统提供给ISM的数据显示,从5月份开始,新订单和产量都有所增长。价格上涨速度连续两个月放缓,并且达到2010年8月以来的最低点。即使如此,虽然价格上涨的商品数量减少,“商品价格和投入成本继续困扰着多个行业。”ISM说。

ISM将关于商品的相关信息分为三类:(\*报告称价格上下波动)

- ❖ 价格上涨的商品: 铝、铸件、烧碱、铜、\*铜产品、\*包装材料、塑料制品、塑料、聚乙烯、聚丙烯、树脂、橡胶制品、钢材、\*铜制品、和二氧化钛。
- ❖ 价格下降的商品: 铜、\*铜产品、\*镍、不锈钢、钢\*。
- ❖ 供应短缺的商品: 电容器、电气/电子零件、橡胶制品。

总部位于亚利桑那州坦佩(Tempe)的ISM 7月1日的出版资料包括以下内容:

- ❖ “我们将继续看到通货膨胀,虽然与前几个月相比速率有所下降。”(化工产品)
- ❖ “虽然高于2010年同期水平,但是国内外市场上商业发展仍然略微放缓。”(电气设备、家电和组件)
- ❖ “在日本发生的地震和相关事件致使一些汽车设备短缺,对全球汽车生产造成负面影响。”(金属产品)
- ❖ “消费者对购买仍持谨慎态度。某些塑料价格和金属价格继续上涨。”(机械)

专栏编辑: Dorothy Fabian



○ Covering it up! Part of Kableschlepp's closed cable carriers range

## Keeping it clean!

WOOD or metal chips, other rough dirt particles, even flying sparks, may considerably affect cable carriers' functionality in machines and installations.

In a worst case scenario, this may even result in a total breakdown.

Kableschlepp supplies closed cable carrier chains and systems which considerably improve operational safety.

In order to meet customers' requirements, the cable carrier specialist from Wenden, Germany, can rely on a great variety of materials in its portfolio.

Whether designs made of plastic, steel, or hybrid variants (plastic chain bands with aluminium stays), or economic versatile standard types, robust, weight-optimised, extremely stable fast or quiet cable carriers for large unsupported lengths, with fixed chain widths, or chain widths accurate to the millimetre, with a large internal height or special design requirements –

the portfolio offers the suitable solution for any need.

There are also plastic covers which, depending on the application, are mounted on one or on both sides. Aluminium covers are particularly light and strong and therefore have a better long-term heat resistance.

Steel chains are recommended for areas with extremely high mechanical loads, and maximum values of up to 600°C may be realised. In a stainless steel design chains may even be exposed to short-term peak temperatures of up to 1,000°C. In this instance, aluminium covers offer reliable protection without increasing the weight of the chain excessively. Steel band covers offer a lighter and above all more economical option. They are available up to a width of 1,000mm for all chain types.

The enclosed cable carrier CoverTrax is one of the most recent additions to the Tube series. Aside from performance and

functionality, the optical aspect plays a major role; for this purpose Kableschlepp has developed designer tubes.

Among them the Conduflex chain with a visually attractive appearance due to stainless steel brackets and frames made of fibreglass reinforced polyamide or the flexible metal spiral tube Mobiflex with a very dense construction, ideal for areas exposed to hot swarf.

Cover variants are designed for easy installation and can be easily and quickly opened, unfastened, unscrewed or unclipped. Different stay systems tailored to the application are available in order to reliably keep the installed cables in position – which is also particularly important for installations where the cable carrier is installed on its side.

**Kableschlepp – Germany**  
**Fax:** +49 276 2400 3220  
**Email:** info@kableschlepp.de  
**Website:** www.kableschlepp.de

# Meeting the tough demands

WITHIN the RX Crosshead Series – available in sizes from RX2 to RX110 – the latest product launch of RX5 made by Rosendahl meets the very wide-ranged demands in the field of cable applications between 0.1 and 5mm conductor diameter.

Perfectly balanced polymer distribution, temperature- and pressure-profiles guarantee a smooth and stable melt-flow across the outlet zone.

RX-Type Crossheads generally provide high-precision centricity, therefore preventing over-sizing cable wall-thickness.

Enhanced flow-channel geometry ensures short residence time of polymer melt and enables a quick and

easy change of colour or material. Easy handling is guaranteed by a compact and modular design, by high precision ball-centring over an adjustable and self-sealing tip-holder – or by the well-proven fine-tuning-centring which is not only requested especially in extrusion-lines for fibre-optic cables.

Advanced RX5-Crosshead design keeps away process-deviations and increases quality and efficiency in extrusion-lines for micro-coaxial-, LAN- and standard power cables for automotive and non-automotive applications.

**Rosendahl Maschinen GmbH – Austria**  
**Fax:** +43 3113 5100 51  
**Email:** office@rosendahlaustria.com  
**Website:** www.rosendahlaustria.com



○ The RX Crosshead Series from Rosendahl

## Saving time with new fibre flags

Silver Fox, a manufacturer of innovative, durable and time-saving labelling solutions, has launched its new range of Optical Fibre Flag labels suitable for data and telecoms, electrical and energy industries.

A new range of optical fibre flag labels are now available with a choice of four label sizes. These durable, long-lasting labels are supplied as pre-cut A4 sheets designed for printing on any standard office laser printer with label templates available to download from the company's Labacus Innovator labelling software.

**Silver Fox – UK**  
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# Optimising welding applications

SIMUFACT Engineering GmbH, a provider of software and services in the area of process simulation, has launched a new simulation environment – Simufact.welding for the process optimisation of welding applications.

Simufact.welding supports welding specialists and engineers in the layout and test of welding processes, and for the first time, the virtual process design and optimisation can be applied closely to production.

The use of Simufact.welding permits an accurately timed control of several robots, an easy modification of welding sequences, speed, heat input, stop times, or fastening devices. Quick evaluation of process variants by change of welding parameters leads to systematic optimisation of fusion zones, heat affected zones, residual stress and distortions.

The software provides extensive tools for reporting, among others, for the display of distortion, temperature distribution, residual stresses, curve progression of physical factors on fixed measuring points as well as several export interfaces.

Most different ways of description such as dynamic cuts through the welding seam, flexible views and detailed x-y-diagrams enable a quick and efficient analysis of the welding process.

The functions of Simufact.welding at a glance: Pre and post-processing within one GUI; no data conversion; fast presentation of results; result evaluation simultaneous to computation; interactive graphical sequence control of robots and

clamping tools; section views of all result values; "Weldmonitor" (trip to all welding seams in a 2D section); measuring point diagrams for comparison with test welds; progress indication of calculations with access to already calculated results during the analysis; context support for all input areas; interface to RoboCad as well as export interface to robots; Dual Solver Technology: optimised

MSC.Marc Solver, IFE WELDSIM Solver and different heat sources (Goldak model, cylindrical volume sources, surface heat sources with Gauss).

**Simufact Engineering GmbH – Germany**

**Fax:** +49 407 901 6222

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SHAPING the FUTURE with PLASTICS

# Shining through technology

HIGH surface quality and resistance to mechanical stress are requirements that polymer mouldings must fulfil – despite increasing functional integration in components and the resulting increase in complexity of component geometry.

An innovative induction heating technology from RocTool improves component quality by ensuring a high mould temperature during the injection phase and high cooling rates during the holding-pressure and cooling phases in the injection moulding process.

In combination with Vestakeep® Peek and Vestamid® HTplus high-performance polymers, this improves particularly the gloss level of moulded parts.

This highly dynamic temperature control selectively influences the formation of the morphology and surface structure.

While the gloss levels achieved for the high-performance thermoplastics investigated lie in the range for high-gloss surfaces, the mechanical properties in the tensile test remain almost unchanged as the mould temperature is varied.

Moreover, the wear rate of Vestakeep® moulded parts, as measured on a pin-disk test rig, is reduced when mould temperatures are sufficiently high.

This could, for example, increase the operating life of gears. Vestakeep® Peek polymers are distinguished by high mechanical strength as well as good electrical insulation and chemical resistance.

The polyphthalamide (PPA) Vestamid® HTplus is known for its high heat resistance and excellent mechanical properties.

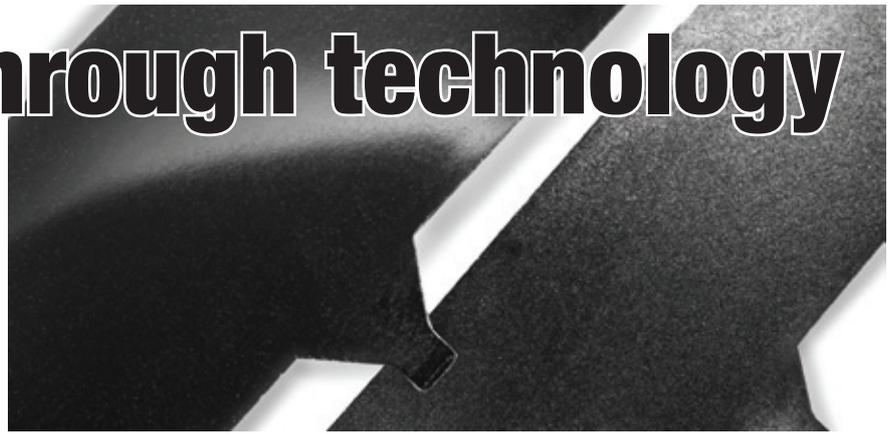
Vestamid® HTplus is used as a metal substitute and for fire protection, among other applications.

**Evonik Degussa GmbH – Germany**

**Email:** info@vestakeep.com

**Website:** www.vestakeep.com

- Top right. Matt or glossy: Vestakeep® Peek moulded parts have a wide range of gloss levels. The part on the left was produced at a mould temperature of 250°C, and that on the right at 180°C



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- Wire, Rod, Rope Making Machinery
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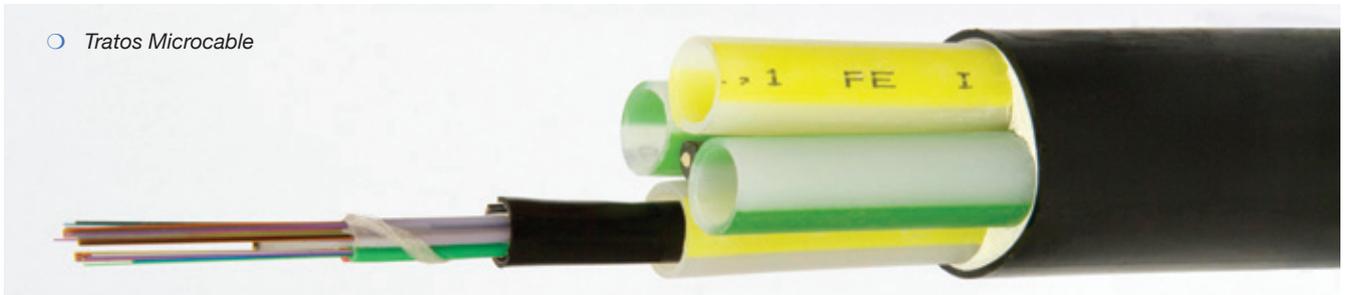
# The World's no. 1 directory for the wire and cable industry

线缆行业的门户网站

The screenshot shows the WireFirst.com website interface. At the top, there is a navigation bar with 'HOME', 'ADVERTISE ON WIREFIRST.COM', 'WIRE LINKS', 'HELP / FAQ', and a language selector. Below this is a 'SUPPLIER SEARCH' section with a search bar and a 'SEARCH' button. The search results are displayed in two columns. The left column lists 'Product Codes that match: aluminum' with several entries including 'Aluminum Alloy Wire 6200', 'Aluminum Cladding and Sheathing 1400', and 'Aluminum Cable 6200'. The right column is titled 'Industry News Headlines' and contains several news items, such as 'Rohde & Schwarz selected BSA for the supply of their electronic test equipment' and 'BSA Exhibits, Belgium'.

The screenshot shows the WireFirst.com website interface, specifically the search results for 'Aluminum Cladding and Sheathing 1400'. The top navigation bar is identical to the previous screenshot. The 'SUPPLIER SEARCH' section shows the search criteria and a 'SEARCH' button. The results are displayed in two columns. The left column lists 'Recommended Companies for Aluminum Cladding and Sheathing 1400' with a list of companies including 'Holon Crest Ltd, UK', 'WJ Attachments Ltd, UK', and 'Technology Extrusion Technology Ltd, UK'. The right column is titled 'Industry News Headlines' and contains several news items, such as 'Rohde & Schwarz selected BSA for the supply of their electronic test equipment' and 'BSA Exhibits, Belgium'.

# Flexible solution for broadband OSP applications



ELECTRIC and fibre optic cable manufacturer Tratos has launched the innovative and cost-effective Tratos Microcable solution for Open Settlement Protocol (OSP) applications in the broadband market.

Tratos Microcable contains a high-fibre density but is exceptionally compact and lightweight, thus maximising the fibre count available in a small cable diameter.

It is produced in stranded loose tube design and is available in fibre counts from 144 to 192, with outer diameters ranging between 4 and 7.5mm – the 7.5mm Tratos Microcable incorporating

192 fibres is claimed to be the smallest such cable in the world today.

Even with the maximum number of fibres incorporated, Tratos Microcable remains flexible (it has a minimum bending radius of 15 x outer diameter without tension) and is lightweight enough for air-blown installation in very small ducts or sub ducts using Tratos Microduct.

Tratos Microcable requires fewer joints in installation, providing reduced resistance when being passed through the ducting.

As a result, Tratos Microcable is ideal

for installations where duct space is at a premium and has the added benefit of being easy to handle and install. It also provides a simple, neat and commercially viable solution to upgrade a network at a later date as fibre is simply deployed as and when needed.

Tratos Microcable can be used in operating temperatures of -30°C/+60°C. It has been designed and manufactured to IEC 60794.

**Tratos – UK**  
**Fax:** +44 1246 858001  
**Email:** info@tratos.co.uk  
**Website:** www.tratos.co.uk

# Focus on small butt welders



AUGUST Strecker's focus this year is on small size electric strand butt welders.

With more than 75 years' experience, Strecker has gained an enviable reputation in manufacturing electric and cold pressure butt welding machines and large welding machines for medium or high voltage submarine cables.

Here the tendency is straight to welds without tubes, using dual upset welders with automatic flash removal system. A recent development is of machines powered by three-phase transformers, reducing the current consumption and facilitating machine installation in the individual cable factories.

○ The type SE1 from Strecker

Progress continues, as it is planned to enlarge the welding ranges for stranded copper up to 1,600 or even 2,000mm<sup>2</sup>.

There has been continuous demand this year for types SE 1, SE 2 and SE 4 butt welders.

These three units cover a total range for stranded copper from 0.08mm<sup>2</sup> to 35mm<sup>2</sup> or stranded aluminium from 1.5mm<sup>2</sup> to 50mm<sup>2</sup>, welds being made using ceramic tubes.

A typical application would be in the automotive industry or for electric installations.

**August Strecker GmbH & Co KG – Germany**  
**Fax:** +49 5431 44 221  
**Email:** sales@strecker-limburg.de  
**Website:** www.strecker-limburg.de

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**TJ400** continuous extrusion line for copper busbar and profile



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# Measuring and monitoring from Zumbach

ZUMBACH offers a wide range of dimensional measurement and quality monitoring systems for the plastics, rubber, wire, cable, steel and metal industries.

The systems described are designed to provide wire and cable manufacturers with the state-of-the-art in process control technology.

Specific parameters covered by these systems include diameter, ovality and wall thickness measurement.

Also new are processors designed to provide on-line measurement and data acquisition, control and display as well as quality monitoring.

Zumbach offers other instruments, such as on-line profile measuring systems of continuously manufactured profiles of any kind, X-ray measuring systems for CV lines, combined diameter and eccentricity measuring systems for communication cables and more.

The new ODAC® 63TRIO system

measuring head supplements the programme of three-axis laser measuring systems with a measuring field of 64mm (2.52").

The principle for the ODAC® 63TRIO is the same as for the smaller model ODAC® 33TRIO.

Since commissioning the first system, three-axis measurement has been hugely successful.

The accurate detection of out-of-round condition, regardless of the orientation of the product ovality, in combination with reliable and fast diameter measurement are all valuable features.

Advantages include synchronised measurement axes on one single plane, ultra compact design, reliable detection of mean value regardless of the orientation of the product ovality, accurate computation of circumference and cross section, increased measurement accuracy and reliability, integrated fault detector that offers three times higher detection certainty and sensitivity than two-axis models and available interfaces including J

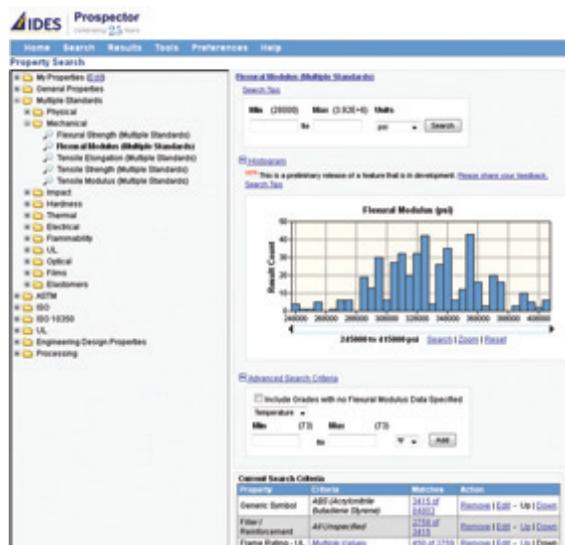


○ The ODAC® 63 TRIO from Zumbach

standard for USYS, RS-232/-422/-485, Profibus DP and Ethernet.

**Zumbach Electronic AG – Switzerland**  
**Fax:** +41 32 356 0430  
**Email:** sales@zumbach.ch  
**Website:** www.zumbach.com

# Back by popular demand



○ The Histogram – now available for download

By popular demand, IDES has just re-introduced the Histogram Search in Prospector. This feature has been available for years on CD but is now also available online.

When a user runs a Property Search on any numeric property in Prospector, they will have the choice of either entering min/max values or search using the Histogram.

The Histogram shows a graphical view of the plastics data for a given property.

For example, if a user does a property search on Flexural Modulus, the Histogram will show the number of plastic materials that are available at each increment of Flexural Modulus values.

“The beauty of the Histogram is that it can aid a user’s selection by making sure that people widen their search parameters to include the largest number of materials possible,” said Mike Kmetz, president of IDES.

**IDES – USA**  
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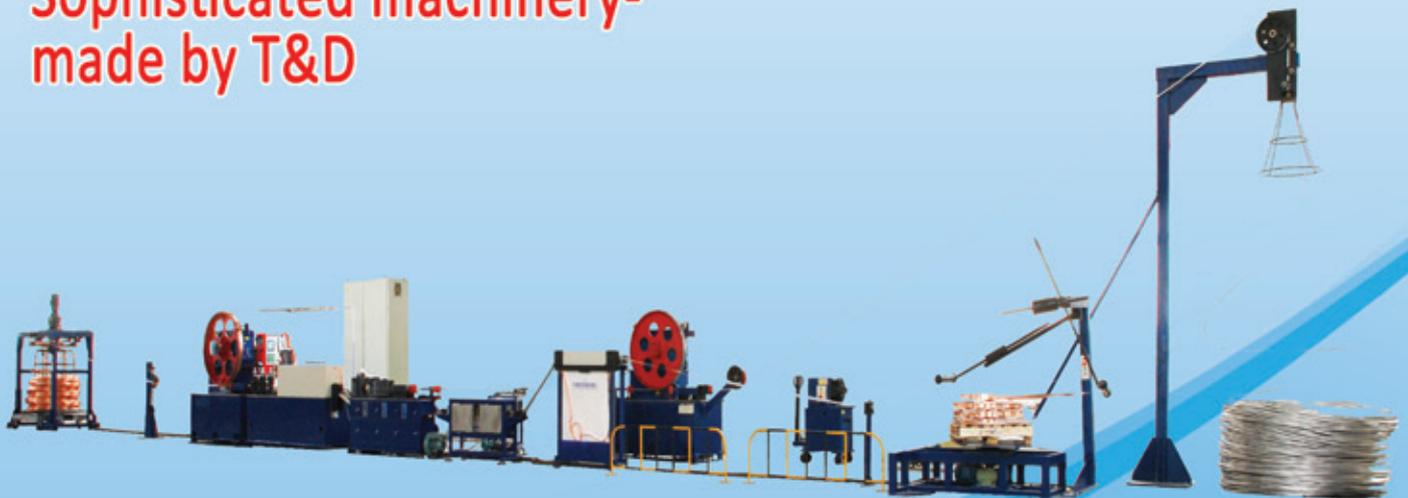
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# Launch of the Cable Count

H&S Engineering has recently launched the Cable Count, a new cable, wire and conduit measurement machine.

"Cable Count™ has been developed to satisfy a long-standing demand for more efficient mechanical measuring devices," said John Stitchman, managing director of the Norfolk, UK-based company which provides precision engineering and fabrication services in the food, medical devices, printing and energy sectors.

Cable Count utilises an innovative and proprietary roller box design to smoothly deliver the cable to the measuring head to aid accuracy.

It also uses a rack and spur gear arrangement and gas struts to assist in height adjustment.

H&S developed Cable Count after extensive research and development, and will support customers with a robust marketing and after-sales service campaign.

Andrew Howard, chief engineer in charge of research and development for Cable Count, added: "At the start of the R&D process, we set out a

number of targets for Cable Count. Apart from high levels of accuracy, we wanted to design a machine with a good range of adjustment in terms of cable diameter and operating height and angle."

Cable Count joins another recently introduced machine at H&S that is for hose and tube pricking.

Again with the industrial market in mind, it makes use of rollers to guide the tube through the pricking head. This innovation allows for efficient set-up on a wide range of tube diameters.

Cable Count sales and after-service in Europe and North America will be fulfilled directly by H&S Engineering, whilst sales in Asia will be through Aerocomp Precision Engineering, an AIV Group company in Bangalore, India.

**H&S Engineering Impactbond Ltd – UK**

**Fax:** +44 1553 769151

**Email:** [enquiries@hs-engineering.co.uk](mailto:enquiries@hs-engineering.co.uk)

**Website:** [www.hs-engineering.co.uk](http://www.hs-engineering.co.uk)

○ *The new Cable Count from H&S Engineering*

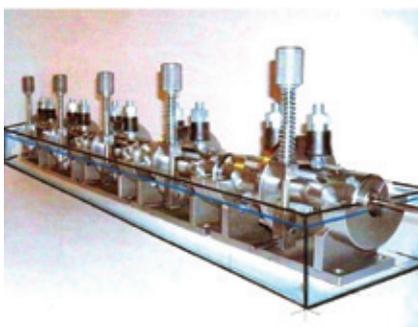


## It's a real clean-up. . .

*Advertorial on behalf of Decalub*

The BHW system incorporates new technology which enables normal plant water to be converted into a unique 'micro-abrading liquid' agent used for cleaning of drawn wire, in-line, at high speed, at virtually zero energy consumption, providing extra-clean wire. Basically, it is a sensitive multi-layer displace/fine scrub/flush cleaning system, benefiting from water immersed high density ultra-fine brush bristles performing as porous long-life abrading pads that smoothly impact wire surface separating lubricant residue from base material, washing away dispersed contaminants by moving wire, exiting the unit clean of white-metal appearance.

The BHW system provides the ultimate combination of simplicity and effectiveness: acid-free, caustic-free, without ultrasonic, without chemicals. Economical and environmentally friendly, the system provides significant process savings in production of clean H/C and L/C wires. The BHW wire



○ *Wire cleaning using the BHW system*

cleaning system is used in the most demanding applications, allowing the highest cleaning speed, with all carbon steel wires (including 0.90%), mechanically descaled or acid cleaned, bare or pre-coated, drawn with calcium or sodium lubricants.

The BHW system is particularly recommended for cleaning applications in which a conventional

process is inappropriate, especially with wires drawn upon severe conditions resulting in increased heat and burned lubricant tightly bound to the wire surface and embedded in microscopic cracks.

The BHW system cleans drawn wire from lubricant residue in applications prior to heat treatment or coating, including galvanising, annealing, patenting, plating, welding (chain, mesh), painting, plastic coating, Al or Cu cladding, etc.

In a typical application, the 2.6mm (0.102") drawn wire is cleaned in-line at 12m/s (2,400ft/min) with 5 x BHW units, obtaining a very clean wire with remaining residue of 0.1-0.21g/m<sup>2</sup>, enabling direct galvanising or other metallic or plastic coatings.

**Decalub – France**

**Fax:** +33 1 60 20 20 21

**Email:** [info@decalub.com](mailto:info@decalub.com)

**Website:** [www.decalub.com](http://www.decalub.com)

# Measurement that raises the bar: The Laser Series 6000



○ The diameter gauge heads of the Laser Series 6000

MEASURING precision combined with outstanding functionality and perfect design – these are the features of the diameter gauge heads of the Laser Series 6000 for continuous quality control in wire and cable production lines.

Regarding electronics of the gauges the Sikora-engineers raised the bar.

The devices have a measuring rate of 2,500 measurements per second with high single value precision independent from the position of the product within the measuring field, and thus ensure optimum line control and reliable statistical data.

The applicable design of the Laser devices, with small dimension and optional swivelling gauge head, includes a measuring value display directly at the gauge head for a further improvement.

Moreover, there are no external plugs. A universal interface module is directly integrated into the gauge head. As a result the plugs as well as the connection cables are protected from any production influences. In addition, the gauge head opening of the Laser Series 6000 is twice as big as the measuring range.

This wide opening as well as the big sight field allows for an easy product feeding. The gauge heads do not include moving parts and maintain their accuracy during the entire operation time. Calibration procedures or maintenance are not necessary.

The devices cover diameter ranges from 0.25 to 80mm. In addition, Sikora offers further 2-axis diameter gauge heads for products from 0.05 to 500mm as well as 3-axis measuring devices for product diameters from 0.2 to 100mm.

**Sikora AG – Germany** Fax: +49 421 4890 090  
**Email:** sales@sikora.net **Website:** www.sikora.net

## 1km distance for 12.5Gbit/s

VI Systems GmbH (VIS), a supplier of optical engines and components, has demonstrated an optical link operating a serial transmission at a data rate of 12.5 Gbit/s over 1km using Draka's MaxCap-OM4 (50/125 µm) multimode fibre.

**VI Systems GmbH – Germany**  
**Email:** office@v-i-systems.de  
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# New wire grips from Instron

INSTRON has recently developed two easy-handling grip series, specially designed for testing metals and wires. Instron® S4-5586, -5587, and -5588 is a family of pneumatic wedge action grips for maximum loads of 300, 400 and 600kN.

The new series of Instron® hydraulic side-acting grips for high-capacity testing with load capacities of 600 or 1,500kN uses innovative DuraSync® synchronisation technology for enhanced gripping performance. Both grip families provide a fully open-front design for rapid loading and unloading of specimens, increasing testing efficiency and safety.

The Instron® series S4 wedge action grips are equipped with an integrated pneumatic piston – using 6.2 to 8.5 bar air pressure – that applies force for the initial “bite” on the specimen, while the self-tightening wedge design of the pockets causes the gripping force to increase as tension is applied during a test, thus eliminating slippage.

Specially suited for industrial environments where dust and metal chips may be present, these grips come with protective dust covers that easily fit over the faces to shield the moving surfaces. For 300kN grips, jaw faces are available for round specimens up to 40mm in diameter (57mm for 400 and 600kN grips), and flat specimens up to 50mm thick × 70mm wide (60mm × 100mm for 400 and 600kN grips).

A jaw face mounting system with embedded magnets and circular centring disks simplifies jaw face loading and holds the jaws in position when no load is applied. The grips fit to Instron® SATEC™ Series LX and KN high-capacity universal testing machines, as well as to the Instron® 5988 or 5989 electromechanical floor models. When used with Instron® SATEC models, they can be adapted to use the load frame’s hydraulic power supply in lieu of air pressure.

Instron® hydraulic side-acting grips are an innovative solution for high-capacity testing, delivering enhanced gripping performance, usability, and operator safety over traditional grip designs. They maintain a constant clamping force on the specimen that acts perpendicular to the direction of testing and is independent of tensile loading. Adjustable clamping force alleviates specimen slippage and grip breaks.



○ The new grips from Instron

The series of dual side-acting grips for specimen diameters up to 85mm (rounds) and widths up to 120mm (flats) incorporate Instron’s patent pending DuraSync® mechanical synchronisation design, that provides many improvements over hydraulic synchronisers or common rack and pinion models, including opposing jaw faces, that repeatedly self-centre during specimen clamping, reducing testing time and eliminating the need to resynchronise the grip actuators between tests.

Built-in compensation for minor bends or irregular specimens (rebar, wire strand) reduces service issues associated with testing un-machined specimens.

Instron’s single side-acting grips include independent, hydraulic actuation for one side of the grip. This robust design accommodates bent and/or irregular specimens such as wire strand, rebar and welded joints.

The jaw faces of both dual and single side-acting grips are easily installed from the front side and require no maintenance beyond simple cleaning. Power is supplied by the machine’s hydraulic pumping unit, saving cost and floor space. The grips are field-serviceable, reducing down time and eliminating shipping costs.

**Instron – UK**  
**Fax:** +44 1494 456 815  
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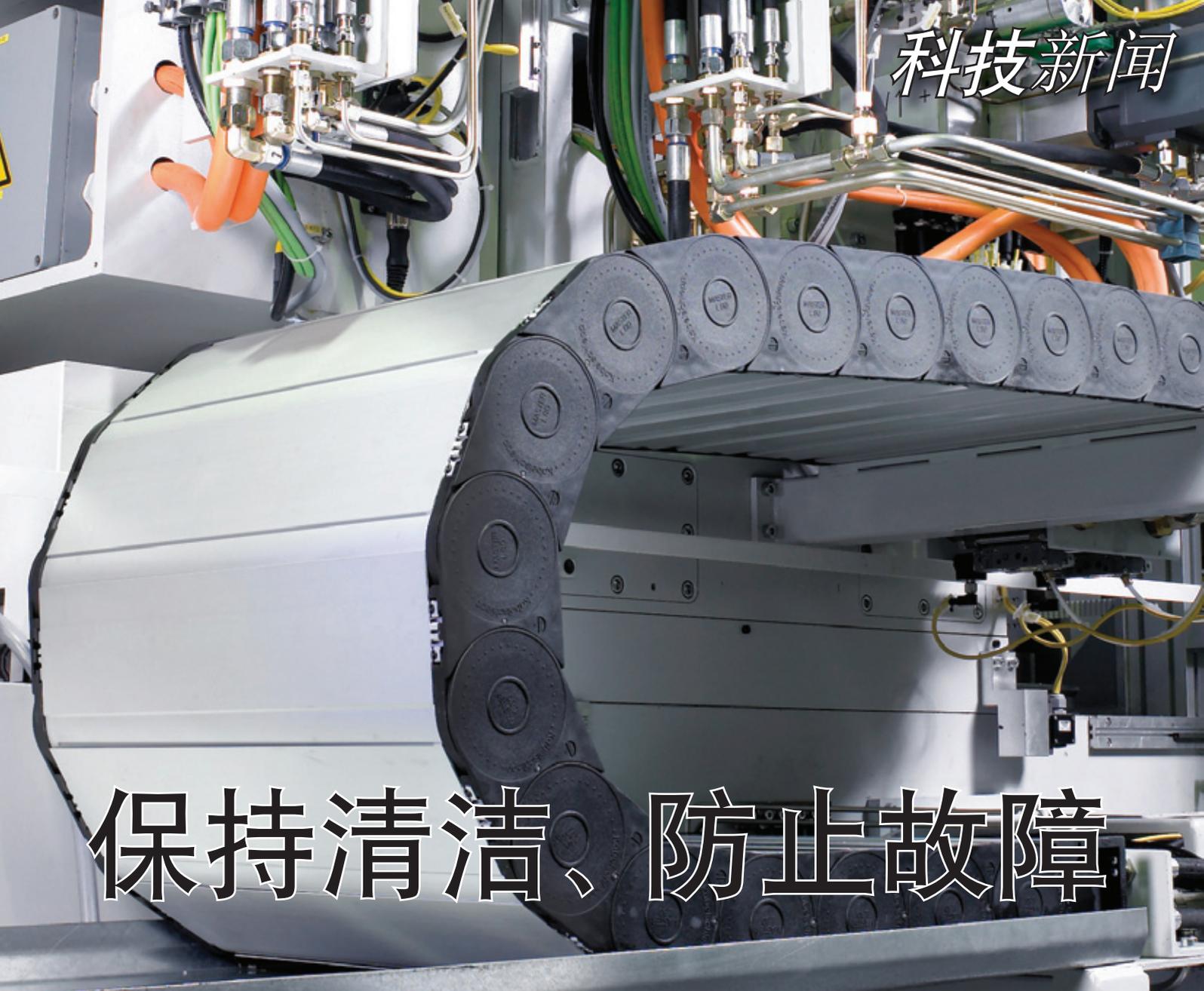
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Tel. +49 69 756081-0, Fax +49 69 756081-74 · [emo@vdw.de](mailto:emo@vdw.de) · [www.emo-hannover.de](http://www.emo-hannover.de)



## 保持清清、防止故障

○ 合上保护盖! Kabelschlepp的部分封闭式电缆载体产品

木屑或金属屑、其它粗糙脏颗粒、甚至是飞溅的火星,可能对机器和装置中的电缆载体功能造成很大的影响。甚至造成全线故障。

针对各种环境条件的应用, Kabelschlepp 提供封闭式电缆载体链和系统,尽可能达到最好的设计,它充分改进了操作安全。为了满足客户的要求,德国Wenden的电缆载体专家能依赖其产品范围中的各种材料。

不管设计采用塑料、钢材、或混合变体(塑料链带和铝挡)、还是采用经济的万能标准型,都能提供稳健、轻质优化、极其稳定快速或安静的电缆载体,无支撑大长度,固定链宽,链宽达到毫米精度,具有很大的内部高度或特别设计要求 - 产品范围为任何需要提供合适的解决方案。

例如,根据应用还可以提供塑料盖,安装在一侧或两侧。铝盖轻质强劲,拥有更好的长期抗热性能。有时,热屑或火星会短时间留在盖上,直到熄灭,所以,与特殊塑料相比,铝肯定是最好的选择。

建议在极高机械负荷的应用中采用钢链。钢链可解决长期负荷或按应用最大可达600°C的应用。在不锈钢链设计中,短期最高温度甚至可达到1000°C。

在这种情况下,铝盖提供可靠的保护,不会过度增加链重。钢带盖则是更轻、最经济的方案。对于所有链带盖类型,它们的宽度可达到1000毫米。钢带盖通过合适的支架紧固在链带上。封闭式电缆载体CoverTrax是Tube系列的一个最新产品,它能有效地防止粒屑、粉尘和脏污等外来物质进入电缆区。通过优化链条几何形状和增强保护盖外形,使得间隙宽度很小,即使是大型宽链的间隙也很小。

链条在运动时外来物质无法在狭隙中沉积,也不能渗透入电缆内部。脏污还转向两侧,因为保护盖还提供一于两侧平齐的密封罩。

而且,设计是令人信服的,由于采用其封闭式阻挡系统和内部阻尼,所以操作时非常安静。采用一种新型链接机理后,能快速方便地打开链条,可以完全卸除内侧

(60型)和外侧(080型)以及保护盖-这对快速的电缆安装是很重要的。

分开的挡块还归功于:它们能在链条横截面内移动;但是,它们也能快速固定,只要简单地转动它、锁定到位即可。

除性能和功能外,光学也起到一个主要作用;为此, Kabelschlepp开发了设计者Tubes。其中, Conduflex链带具有漂亮的外观,采用不锈钢托架和框架,它们采用玻璃纤维增强型聚酰胺或挠性金属螺旋管Mobiflex制成,结构紧密,对暴露于热屑的区域来说是很理想的。

保护盖变体的设计便于安装、快速打开、解除紧固、松开螺丝或解除卡钳。挡块系统按应用定制,保证所安装的电缆就位-它对电缆载体安装在侧面的装置来说尤为重要。

**Kabelschlepp - 德国**  
 传真: +49 276 2400 3220  
 电子邮件: info@kabelschlepp.de  
 网址: www.kabelschlepp.de

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## 提高测量标准: Laser Series 6000

测量精度加上杰出的功能和完美的设计 - 这些是Laser Series 6000直径测量仪的性能,用于线材和电缆生产线的连续质量控制。Sikora的工程师们提高了测量仪电子的标准。

测量仪的测量速率达到2500次/秒,具有很高的单值精度,而且与测量范围内的产品位置无关,保证了最优的生产线控制和可靠的统计数据。

激光装置的适用设计采用小尺寸和可选的旋转测量仪表头,它包括一个测量值显示,直接显示在表头上,以便做进一步改进。

而且,不需要外部插头。万用界面模块与表头一体化。结果,插头以及连接电缆得到了保护,不受生产的影响。另外,Laser Series 6000的表头开口是测量范围的两倍,这么大的开口和很大的视线范围便于产品喂入。表头没有移动部件,在整个操作时间内维持其精度。



○ Laser Series 6000的直径测量仪

不需要校准程序或维护。测量仪涵盖0.25到80mm直径范围。而且,Sikora进一步提供2轴直径表头,用于直径为0.05到500mm的产品,还提供三轴测量仪,用于直径为0.2到100mm的产品。

**Sikora AG - 德国**  
传真: +49 421 4890 090  
电子邮件: sales@sikora.net  
网址: www.sikora.net

## 省时的新型光纤标志

Silver Fox是一家创新的制造商,提供耐久、省时的标签解决方案,它推出新型Optical Fibre Flag (光纤标志)标签,适合于数据和通信、电气和能源工业。新型光纤标志标签有四种可供选择的标签尺寸。这些经久耐用的标签按预切的A4纸大小提供,可从公司Labacus Innovator标签软件上下载标签图案,在任何标准的办公激光打印机上打印。

**Silver Fox - 英国**  
传真: +44 1707 372 193  
电子邮件: sales@silfox.com  
网址: www.silfox.com

## 优化焊接应用

SIMUFACT Engineering GmbH是一家工艺模拟软件和服务提供商,它推出一个新模拟环境 - Simufact.welding,用于焊接工艺优化。

Simufact.welding支持焊接专家和工程师对焊接工艺进行放样和测试,而且这是第一次这么密切地将虚拟工艺设计和优化用于生产。

采用Simufact.welding后,可精确地控制若干机器人,方便地修改焊接程序、速度、热输入、停止次数、或紧固装置。通过改变焊接参数,能快速评价工艺变化,系统地优化熔融区域、热影响区域、残余应力和变形。

软件提供各种报告工具,包括变形显示、温度分布、残余应力、固定点物理因素曲线、以及若干输出界面。诸如焊缝动态切割、挠性视图、x-y-详图之类的各种描述方式能让你快速有效地分析焊接工艺。

Simufact.welding功能一瞥: 一个GUI内的前加工和后加工; 无数据转换; 快速显示结果; 与计算同步的结果评价; 机器人和夹具之间互动的图形顺序控制; 所有结果值剖视图: “Weldmonitor”(切入2D剖面的所有焊缝); 与测试焊接进行比较的测量点图; 计算进度显示,可在分析过程中进入已计算的结果; 对所有输入区域的文本支持; 与RoboCad的界面以及与机器人的输出界面; 双解算器技术; 优化的MSC.Marc解算器、IFEWELDSIM解算器; 不同热源(Goldak模型、圆柱体源、表面热源,含Gauss公式)。

**Simufact Engineering GmbH - 德国**  
电子邮件: info@simufact.de

传真: +49 407 901 6222  
网址: www.simufact.com

## 满足苛刻的要求

RX Crosshead Series (十字头系列)拥有RX2到RX110 - 由Rosendahl制造、最新推出的产品RX5满足0.1到5mm直径导体的电缆应用的各种需求。

完美平衡的聚合物分布、温度和压力分布保证了平滑、稳定的熔融体流出口区。RX-型十字头通常提供精度很高的对中度,所以能防止电缆壁过厚。

增强型流道几何形状保证了聚合物熔融体停留时间短,能够快速方便地改变颜色或材料。紧凑模块化设计还保证了方便的处

理,用高精度球与自我密封的可调前夹头对中 - 或通过成熟的细调对中(光缆挤出装置尤其需要)。

先进的RX5-十字头设计避免了工艺偏差,增加了汽车和非汽车应用的微型同轴、LAN-和标准电力电缆挤出装置的质量和效率。

**Rosendahl Maschinen GmbH - 奥地利**  
传真: +43 3113 5100 51  
电子邮件: office@rosendahlaustria.com  
网址: www.rosendahlaustria.com

○ Rosendahl的RX十字头系列





○ Strecker的SE1型

## 致力于小型对焊机

AUGUST Strecker今年的重点是小型电绞合对焊机。

公司拥有75多年的经验，在制造用于中压或高压海底电缆的电力和冷压对焊机 and 大型焊接设备方面赢得了令人羡慕的信誉。

现在的趋势是采用具有自动消弧系统的双电阻对焊机直接进行无管焊接。最近开发的一种是设备采用三相变压器驱动，降低了电流消耗，便于在各个电缆工厂安装设备。工作在继续推进，计划加大焊接范围，将其用于1600或甚至2000mm<sup>2</sup>的绞合铜线。

今年对SE1、SE2和SE4型对焊机有持续的需求。设备

这三种设备包括了绞合铜线的所有范围：从0.08mm<sup>2</sup>到35mm<sup>2</sup>，或绞合铝线：从1.5mm<sup>2</sup>到50mm<sup>2</sup>，采用陶瓷管进行焊接。一个典型的应用是汽车工业或电气装置。

**August Strecker GmbH & Co KG**  
- 德国  
传真: +49 5431 44 221  
电子邮件: sales@strecker-limburg.de  
网址: www.strecker-limburg.de

## 推出测量设备Cable Count

H&S Engineering最近推出一种新型电缆、线材和导管测量设备 - Cable Count。

“我们开发出Cable Count™，以满足长久以来对更有效的机械测量设备的需求，” Norfolk公司总经理John Stitchman说。该公司以英国为基地，为食品、医疗、打印和能源领域提供精密工程和制作服务。

Cable Count采用一种创新的专利辊轮箱设计，平滑地将电缆送到测量头，以提高测量精度。它还采用齿条和圆柱齿轮布置和气柱来帮助高度调整。

H&S经过广泛的研究和开发之后才开发出Cable Count，还将通过采用稳健的市场营销和售后服务来支持客户。Cable Count研发总工程师Andrew Howard补充道：“在开始研发时，我们就为Cable Count设定了许多目标。”

“除了高水平精度外，我们还设计出一种设备：在电缆直径、操作高度和角度方面，具有很好的调节范围。”

Cable Count与H&S的另一种设备 - 软管和管子穿刺机，最近一起推出。这种设备又是始终牢记工业市场要求，用辊轮引导管子通过穿刺头，这种创新使设备能有效地服务于各种管子直径。

Cable Count在欧洲和北美的销售和售后服务将由H&S Engineering直接完成，在亚洲的销售则通过Aerocomp Precision Engineering完成，这是在印度班加罗尔的一家AIV Group公司。

**H&S Engineering Impactbond Ltd** - 英国  
传真: +44 1553 769151  
电子邮件: enquiries@hs-engineering.co.uk  
网址: www.hs-engineering.co.uk



○ H&S Engineering的新型Cable Count

## 感应技术提高光泽度

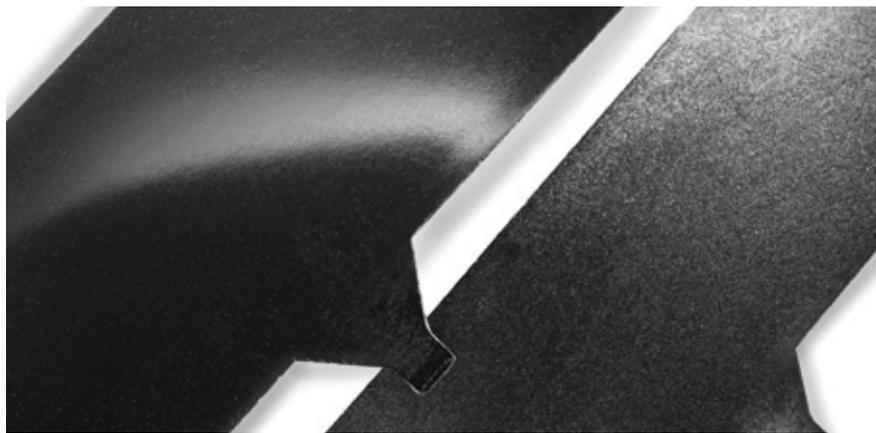
高表面质量和抗机械应力是聚合物成型必须达到的要求 - 不管部件功能整合是否增加，也不管部件几何形状复杂性是否增加。

RocTool的一种创新的感应加热技术改进了部件质量，它保证了注塑阶段的高模塑温度，也保证了注塑工艺中压力保持阶段以及各个冷却阶段的高冷却速率。

结合Vestakeep® Peek 和Vestamid® HTplus高性能聚合物，这尤其改进了模型件的光泽度。

这种高动态温度控制有选择地影响了形态和表面结构的形成。

所调查的高性能热塑材料所达到的光泽度取决于高光泽度表面的范围，抗张测试中的机械性能由于模塑温度的变化而几乎仍然不变。



○ 亚光或光泽度: Vestakeep® Peek 模塑件具有各种光泽度。左侧部件的模塑温度是250°C，右侧部件为180°C

然而，根据针盘试验台测量，当模塑温度足够高时，Vestakeep®模塑件的磨损率降低了，这能增加齿轮的操作寿命等。Vestakeep® Peek聚合物具有卓越的性能：高机械强度、优秀的电绝缘、抗化学性。聚邻苯二甲胺(PPA) Vestamid® HTplus具有著名的高抗

热性、优秀的机械性能。Vestamid® HTplus被用作一种金属替代物，并用于防火和其它应用。

**Evonik Degussa GmbH** - 德国  
电子邮件: info@vestakeep.com  
网址: www.vestakeep.com

# 宽带OSP应用的灵活的解决方案

电缆和光缆制造商Tratos推出一种创新经济的Tratos Microcable解决方案,用于宽带市场的开放结算协议(OSP)应用。

Tratos Microcable内含光纤密度高,格外紧凑,而且轻质,在小小的电缆直径中能容纳最多的光纤。它采用绞合松管设计,光纤数可达144到192,外径为4到7.5mm - 7.5mm Tratos Microcable能容纳192根光纤,这实际上是当今世界上最小的电缆。

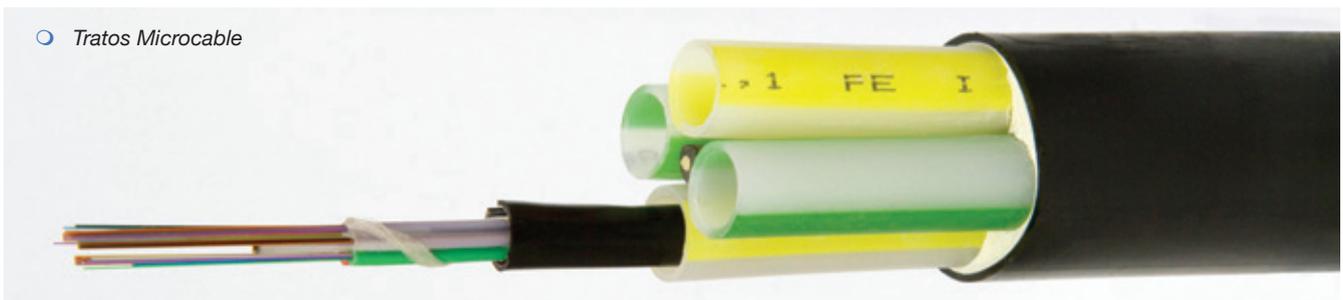
即使容纳了最大数量的光纤,Tratos Microcable仍然富有挠性(最小弯曲半径是15倍外径,没有张力),而且轻质,可充气安装在很小的采用Tratos Microduct的通道内或子通道内。安装Tratos Microcable时几乎不需要接头,这样在通过通道时抗力减少。

结果,Tratos Microcable对于通道空间的装置来说是很理想的,而且容易搬运和安装。在电缆被简单地铺设之后,在需要时,

它还是使网络升级的一种简单、整洁和商业可行的解决方案。

Tratos Microcable 能在操作温度为-30°C/+60°C环境下使用,它的设计和制造符合IEC 60794。

**Tratos - 英国**  
 传真: +44 1246 858001  
 电子邮件: info@tratos.co.uk  
 网址: www.tratos.co.uk

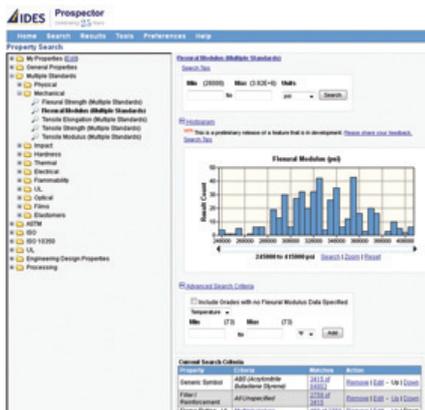


## 为应对需求而重返

鉴于大量需求,IDES在Prospector重新推出Histogram Search。这个性能在CD已有好几年了,现在重新在线。当用户在Prospector对数字性能执行性能搜索时,他们可能选择进入最小/最大值或用Histogram进行搜索。Histogram为给定性能显示一个塑性数据图形。例如,如果用户在Flexural Modulus上进行性能搜索时,Histogram则显示每次增加Flexural Modulus值时拥有的塑性材料数量。“Histogram的美妙之处在于它能帮助用户选择,确信人们扩展其搜索参数,尽可能多地包括最大的材料数量” IDES总裁Mike Kmetz说。

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柱状图一可以下载



## Zumbach的测量和监测系统

ZUMBACH提供各种尺寸测量和质量监测系统,用于塑料、橡胶、线材、电缆、钢铁和金属工业。

这些系统设计用于为线材和电缆制造商提供各种一流的工艺控制技术。这些系统所包含的特别参数包括直径、椭圆度、壁厚测量。新推出的还有处理器,它设计用提供在线测量、数据获得、控制、显示、质量监测。

Zumbach还提供其它仪表,例如:任何连续制造剖面的在线剖面测量系统、CV装置的X-光测量系统、通信电缆等的组合直径和偏心率测量系统。

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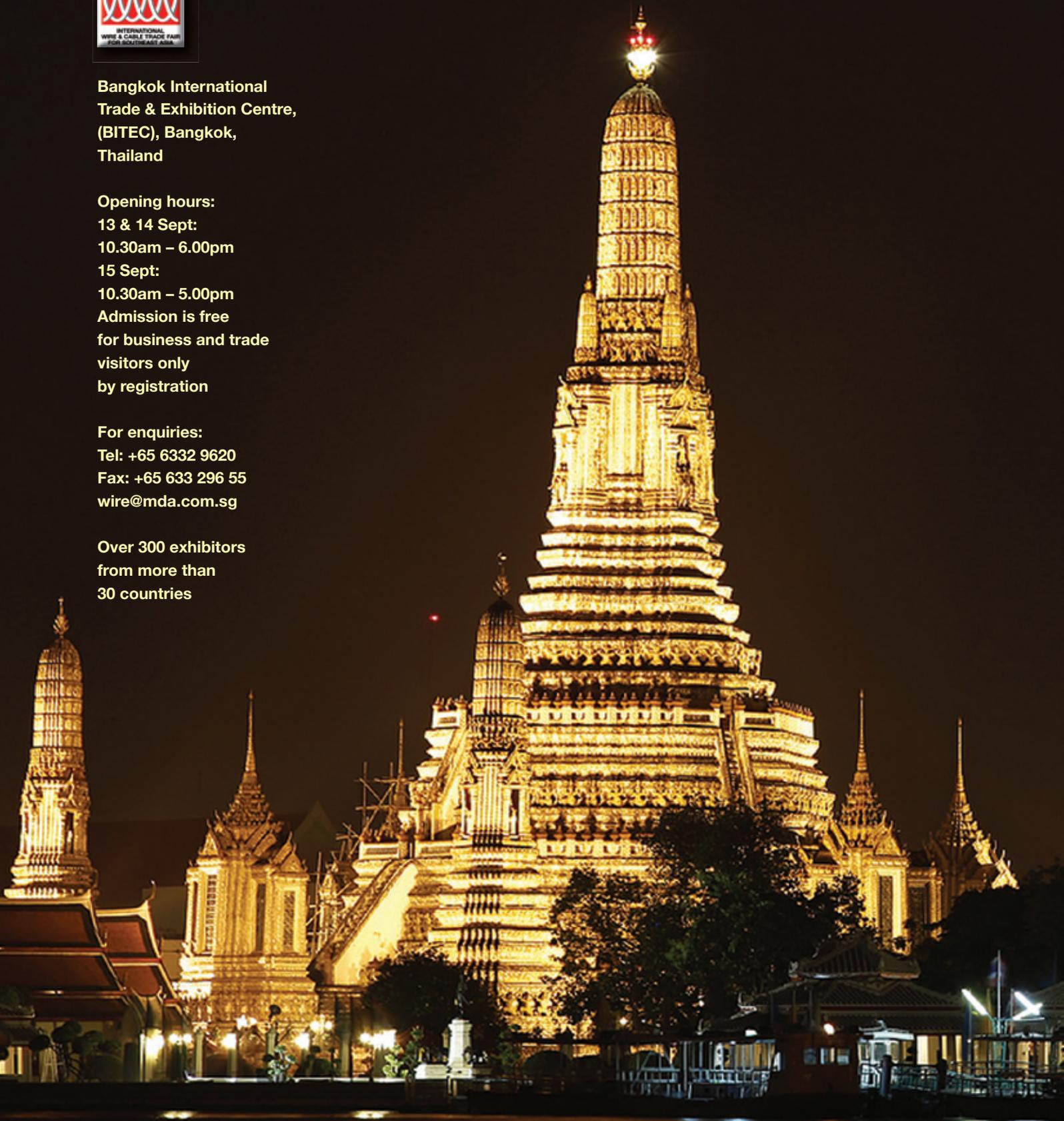
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Bangkok's BITEC centre will be the centre of attention for three days for the wire and cable industry as wire Southeast Asia opens its doors to more than 300 exhibitors from around the world between 13<sup>th</sup> and 15<sup>th</sup> September.

Some of the companies exhibiting in the 'city of angels' are listed inside. . .



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## and Cable Trade Fair for Southeast Asia



# Bound for Bangkok – city of angels

wire Southeast ASIA 2011 in Bangkok – the city of angels – is gearing up for a strong showing with preparations in full swing – just weeks ahead of the key industry networking, sourcing and knowledge sharing platform for the wire and cable sectors.

More than 300 exhibitors from 30 countries are expected to share their expertise and latest innovations with industry professionals and business visitors from around the world. In addition national pavilions and groups from Austria, China, Germany, Italy, Singapore, the USA, United Kingdom and Taiwan will contribute to the internationality and variety of both trade fairs.

A series of technical seminars for the wire, cable, tube and pipe industries in July in Jakarta, Indonesia; Taipei, Taiwan, and Seoul, South Korea, paved the way for another successful edition of wire and Tube Southeast ASIA in 2011.

Well-attended by industry professionals across the various sectors, the presentations highlighted the latest industry know-how on topics ranging from automotive wires, process filtration in wire drawing, metal tape shielding, and much more from some of world's best market leaders including: Eder Engineering, Mallefer, Maschinenfabrik Niehoff, Reber, Rosendahl and Sikora.

At this year's exhibitions in Bangkok, visitors can also look forward to:

## **A wide-range of new innovations**

Visitors can expect to see products and services from across a range of sectors including wire, cable, tube and

pipe manufacturers, machine manufacturers, inspection solution providers, raw material suppliers and many others. The stellar line-up of companies include; Beta LaserMike, Dow Chemical (China) Co Ltd, Gauder Group, Ke Kelit, Mallefer, Pan Chemicals, Stappert, VSMPO Titan Ukraine Ltd, Thermatool and Woywod to name a few.

## **Business matching service for serious buyers**

Working closely with exhibitors and visitors to ensure synergistic business matches and to enhance strategic capabilities, a business matching service will be provided. This complimentary service, which begins by registering online, will enable participants to view comprehensive exhibitor and visitor profiles or opt for automated business matches, and schedule appointments prior to the exhibition.

Onsite during the exhibition, there will also be a business matching lounge and qualified staff on-hand to assist in facilitating business matching opportunities to meet the buying needs of visitors and to ensure effective use of time whilst at the event.

With the impressive line-up of exhibitors and new innovations, and a comprehensive business matching service, the lead up to wire Southeast Asia 2011 is gaining momentum once again as Thailand's leading exhibitions for the wire and cable world.

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## Alphabetical list of Exhibitors

(Exhibitors list correct at time of going to press – July 2011)

<b>COMPANY</b> .....	<b>STAND</b>	
Adtech (Shenzhen) CNC Technology Co Ltd .....	<b>E36</b>	Cogebi Asia Sdn Bhd .....
Aeroel Srl .....	<b>L34</b>	Compamac Wire Machinery Srl.....
AESA SA.....	<b>G31</b>	Comsuc Technology Development Ltd .....
Agir Technology .....	<b>C25</b>	Condat.....
AKSH Technologies Limited .....	<b>A11</b>	Conductix .....
ALMT Corp .....	<b>A01</b>	Conoptica AS .....
An Chen Fa Machinery Co Ltd .....	<b>B02</b>	Construcciones Mecanicas Caballe SA .....
Anbao (Qinghuangdao)		Continuus Properzi SpA.....
Wire & Mesh Co Ltd .....	<b>F06A</b>	Coolmar-Ta Coating & System Pte Ltd .....
Anhui Baozhang Metal Products Co Ltd .....	<b>A35</b>	Cortinovis Machinery SpA.....
Anhui Changjiang Jinggong Wire & Cable		CPA Computer Process Automation GmbH .....
Machinery Co Ltd .....	<b>E17</b>	Daloo .....
Anhui Hermann Machinery Technology Co Ltd.....	<b>E34</b>	DEM Wire Rolling Technology .....
Arcelormittal Singapore Pte Ltd .....	<b>B36</b>	Deyang Dongfang Zhouyue Electrotechnical
Arvind Anticor Ltd.....	<b>R27</b>	Equipment Co Ltd .....
ASMAG UK Ltd .....	<b>J02</b>	Deyang Dongjiagang Mechanical.....
AWCMA.....	<b>C26</b>	Deyang Hongguang Machine Equipments Co Ltd.....
Balloffet .....	<b>C25</b>	Dong Guan Guan Biao Electrical Machinery Co Ltd.....
Carl Bechem GmbH .....	<b>H25</b>	Dongguan Zhangli Machine Fitting Co Ltd .....
Begra Trading GmbH & Co KG.....	<b>G19</b>	
Bekaert Singapore Pte Ltd .....	<b>K35</b>	
Beta Lasermike .....	<b>K12</b>	
Bongard Trading GmbH & Co KG .....	<b>G23</b>	
Boockmann GmbH.....	<b>K19</b>	
Borouge Pte Ltd .....	<b>C01</b>	
BRITX Wire Rope Ind Corp.....	<b>G35</b>	
Bühler Würz Kaltwalztechnik GmbH .....	<b>J21</b>	
Cairnhill Metrology Pte Ltd.....	<b>L34</b>	
Canatex Industrial Co Ltd.....	<b>P17</b>	
Candor Sweden AB.....	<b>F11</b>	
Ceeco Bartell Products,		
Bartell Machinery Systems.....	<b>J04</b>	
Chains Power & Machinery Technology Co Ltd.....	<b>F07</b>	
Changzhou Hongguang Optical Cable Accessory		
Manufacturing Co Ltd .....	<b>F33</b>	
Changzhou Jubilant Economic and Trading Co Ltd .....	<b>B27</b>	
Cheng I Machinery Co Ltd .....	<b>D27</b>	
Chengdu Centran Industrial Co Ltd .....	<b>E13</b>	
Chengdu Shuhong Machinery Corp Ltd .....	<b>H12</b>	
Chhaperia International Company.....	<b>C31</b>	
Chia Ta World Co Ltd .....	<b>B05</b>	
China Fastener Info –		
Golden Spider Network Co Ltd.....	<b>A21</b>	
China United Cable Engineering Co.....	<b>C08</b>	



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<<< Dow Chemical (China) Company Limited.....	<b>C13</b>	Innovites Software for Cable ERP and Design .....	<b>L04</b>
Drachs Technology (S) Pte Ltd.....	<b>L36</b>	International Machtronic Co Ltd .....	<b>E34</b>
DSR Wire Corp .....	<b>B13</b>	International Wire & Machinery Association	
Ebner Industrieofenbau GmbH.....	<b>D20</b>	(IWMA).....	<b>H01</b>
Eder Engineering .....	<b>C26</b>	ISA Technology Pte Ltd .....	<b>L31</b>
EJP Maschinen GmbH .....	<b>K14</b>	ITCO Industries Limited .....	<b>A11</b>
Enkotec A/S.....	<b>F25</b>	ITEC Co Ltd .....	<b>F09</b>
Esteves Group (Shanghai) Diamond Dies Co Ltd .....	<b>F01</b>	ITO-SIN (Deyang) Wire & Cable Equipment Co Ltd ....	<b>G11</b>
Eurolls SpA – Eurolls Group .....	<b>L01</b>	IVA .....	<b>C25</b>
EuroWire magazine .....	<b>J01</b>	IWCEA – France .....	<b>C25</b>
EVG Entwicklungs- u Verwertungs GmbH .....	<b>D13</b>	Jiangsu Qunye Electrical Co Ltd .....	<b>F17</b>
Fastener World Inc .....	<b>B09</b>	JiangYin Kangrui Stainless Steel Products Co Ltd .....	<b>A25</b>
FIB Belgium sa .....	<b>K27</b>	Juan Corporation Ltd .....	<b>E35</b>
Flymca & Flyro.....	<b>J12</b>	Jun Rong Machinery Equipment Co Ltd .....	<b>A09</b>
FMS Force Measuring Systems AG .....	<b>J09</b>	JYD Tech & Industry Co Ltd .....	<b>B19</b>
Fort Wayne Wire Die Inc.....	<b>K11</b>	Katec Katalysatoren GmbH + Co Vertriebs KG.....	<b>L27</b>
Foshan Shunde Hikingsim Machinery		Kieselstein International GmbH.....	<b>K18</b>
Equipment Co Ltd .....	<b>G07</b>	Koner Srl.....	<b>D12</b>
Fuhr GmbH & Co KG.....	<b>G25</b>	Klaus Merten GmbH.....	<b>G26</b>
Fushi Copperweld .....	<b>K07</b>	Ernst Koch GmbH & Co KG .....	<b>H20</b>
Gauder sa.....	<b>G27</b>	Kyoeisha Chemical Co Ltd.....	<b>Z06</b>
GCR Eurodraw SpA.....	<b>E11</b>	Lamnea Bruk AB .....	<b>F11</b>
Golden Spot Industry Inc .....	<b>C12</b>	Langfang Xinming Cable Machinery Industrial Co Ltd ...	<b>E33</b>
Golden Technologies Wire & Cable		Lenzing Plastics GmbH.....	<b>D18</b>
Equipments Co Ltd .....	<b>F06</b>	Lin'an Zhongyi Dongfang Aluminium Foil Co Ltd .....	<b>B10</b>
Gongyi Hengxing Hardware Co Ltd .....	<b>F28</b>	Lion Hower Industrial Co Ltd.....	<b>B01</b>
Gwo Lian Machinery Industry Co Ltd.....	<b>B11</b>	Liwei Electrical Machines Co Ltd .....	<b>G09</b>
Gwo Merg Co Ltd.....	<b>B08</b>	Lizhou Cemented Carbide Co Ltd .....	<b>B21</b>
H Folke Sandelin AB .....	<b>J21</b>	Locton Ltd .....	<b>H04</b>
Handuk Ultrasonic Co Ltd.....	<b>G28</b>	Lukas Anlagenbau GmbH .....	<b>H23</b>
Hangzhou Harbor Technology Co Ltd.....	<b>E21</b>	M+E Machine + Engineering Srl.....	<b>E07</b>
Hefei Smarter Technoloy Co Ltd .....	<b>C07</b>	Madem Gulf Industries WLL.....	<b>B32</b>
Henrich Maschinenfabrik GmbH.....	<b>G21</b>	Maillefer SA .....	<b>F02</b>
HMP Heinrich Müller Maschinenfabrik GmbH .....	<b>K18</b>	Mali GmbH .....	<b>C25</b>
Ideal-Werk C+E Jungeblodt GmbH + Co KG.....	<b>K13</b>	Mallinger Thomas (2M-tech).....	<b>D22</b>

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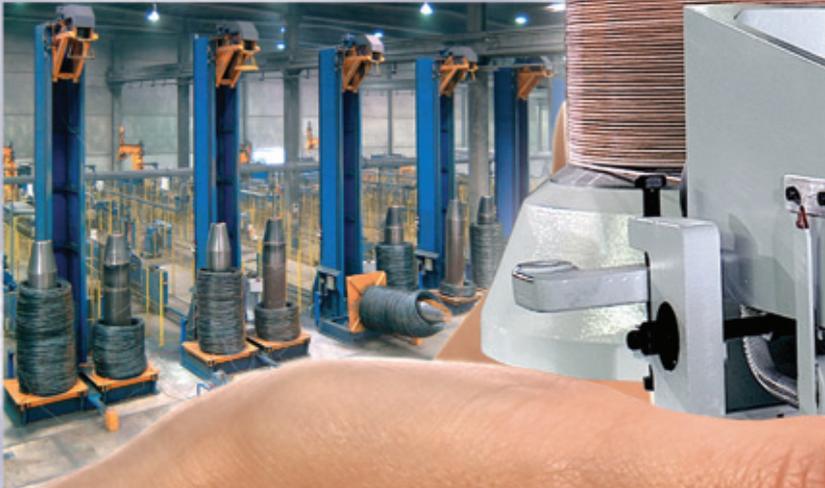
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←←← Mario Frigerio SpA.....	<b>D01</b>	PS Costruzioni Meccaniche .....	<b>E02</b>
Matherson Chemie Sdn Bhd .....	<b>C11</b>	PT Business Network (Pte) Ltd .....	<b>L27</b>
Medek & Schörner GmbH .....	<b>C25</b>	QED Wire Lines Ltd .....	<b>J08</b>
Menam Stainless Wire Public Co Ltd .....	<b>G01</b>	Queins & Co GmbH.....	<b>G13</b>
NDT Instruments Pte Ltd .....	<b>K36</b>	Quintain Steel Co Ltd .....	<b>B03</b>
Nextrom Oy .....	<b>D25</b>	Racer Wire Works Co Ltd .....	<b>Z10</b>
Maschinenfabrik Niehoff GmbH & Co KG .....	<b>J21</b>	Rautomead Limited .....	<b>E14</b>
No 23 Research Institute CETC .....	<b>G10</b>	Reber Systematic GmbH & Co KG .....	<b>H25</b>
Nuova Tecno Tav Srl.....	<b>L27</b>	Richards Apex Australasia .....	<b>K08</b>
OCN SpA.....	<b>E09</b>	RIK (Thailand) Co Ltd .....	<b>F10</b>
Officine Meccaniche di Lesmo SpA (OM Lesmo).....	<b>E08</b>	Ringier Trade Media Ltd .....	<b>A29</b>
OMCG .....	<b>D10</b>	Roblon A/S .....	<b>F22</b>
Orange Media Group.....	<b>A23</b>	Rosendahl Maschinen GmbH .....	<b>D25</b>
Otomec Srl .....	<b>E06</b>	RSD Technik GmbH .....	<b>K19</b>
Pan Chemicals SpA.....	<b>D06</b>	Samp SpA .....	<b>E01</b>
Panchmahal Steel Limited .....	<b>H09</b>	Sampat Heavy Engineering Ltd.....	<b>F04</b>
Paramount Die Company .....	<b>J13</b>	San Shing Fastech Corp .....	<b>C10</b>
Pioneer Machinery Co Ltd .....	<b>D27</b>	SAS SNC Engineering and Planning .....	<b>E05</b>
Plextech (Malaysia) Sdn Bhd.....	<b>F08</b>	Schlatter Industries AG .....	<b>A13</b>
Pourtier sas .....	<b>G27</b>	Schnell SpA.....	<b>D05</b>
Pressure Welding Machines Ltd.....	<b>J07</b>	Setic sas .....	<b>G27</b>
Promostar Srl .....	<b>D07</b>	Shanghai Hold Machinery Market Co Ltd .....	<b>F13</b>
Proton Products International .....	<b>J11</b>	Shanghai Lanpo High Voltage Technology & Equipment Co Ltd .....	<b>C06</b>

Shanghai Resources Industrial & Trading Co Ltd .....	<b>E20</b>
Shanghai Shenchen Wire & Cable Equipment Co Ltd .....	<b>E18</b>
Shanghai Silin Special Equipment Co Ltd .....	<b>F24</b>
Shanghai Yessjet Precise Machinery Co Ltd .....	<b>H06</b>
Shanghai Yinggon Cold Welder Manufacturing Co Ltd .....	<b>F19</b>
Shaoxing Kaichen Mica Material Co Ltd .....	<b>B28</b>
Sheng Chye Enterprise .....	<b>E25</b>
Shenyang Jinggong Cable Material Co Ltd .....	<b>F27</b>
Shenyang Tianrong Cable Materials Co Ltd .....	<b>F14</b>
Shin Tung Huei Metal Factory Co Ltd .....	<b>B07</b>
Siebe Engineering GmbH.....	<b>G20</b>
Sikora AG.....	<b>J26</b>
Sinoleader Industries Group Co Ltd .....	<b>C05</b>
Sirio Wire .....	<b>E07</b>
SKET Verseilmashinenbau GmbH.....	<b>G21</b>
Smart Trade Publications Ltd .....	<b>F30</b>
Sneham International .....	<b>H27</b>
Solvay Padanaplast .....	<b>C11</b>
Spazzoplastica .....	<b>D08</b>
Spring Tooling Ltd .....	<b>H04</b>
SPX Precision Components, Fenn Division .....	<b>K06</b>
August Strecker GmbH & Co KG.....	<b>G24</b>
Suzhou Zhihong Cable Material Co Ltd .....	<b>E15</b>

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Tang Enterprise Co Ltd .....	<b>L03</b>
Taymax Wire Rope Industry Corp Co Ltd .....	<b>G35</b>
Technology Promotion Association (Thailand-Japan) ...	<b>F29</b>
Tecnovo Srl.....	<b>D12</b>
Teknor Apex Company .....	<b>K02</b>
Tenglong Stainless Steel Group Co Ltd .....	<b>F03</b>
TES Global Pte Ltd.....	<b>L35</b>
Teurema SL.....	<b>L01</b>
Thai Trade and Industry Media Co Ltd.....	<b>A31</b>
The Itaya Engineering Ltd.....	<b>F35</b>
Tien Dat Company Ltd .....	<b>L09</b>
TJK Machinery Co Ltd .....	<b>D36</b>
TKT Group.....	<b>D12</b>
Tonglu Xingguan Cable Equipment Factory .....	<b>E22</b>
Traxit International GmbH .....	<b>J13</b>
Troester GmbH & Co KG.....	<b>H24</b>
TS Metal Co Ltd .....	<b>G36</b>
Tung Yi Steel Wire Co Ltd .....	<b>B06</b>
Unience Co Ltd .....	<b>B25</b>
Unitrading (Lianyungang) Ltd .....	<b>F26</b>
Upcast OY .....	<b>L11</b>
Verband österr Draht- und Kabelmaschinen- Hersteller - VOEDKM, AWCMA.....	<b>C26</b>
Vitari SpA.....	<b>L01</b>
Wafios AG.....	<b>H20</b>
Walson Woodburn Wire Die Pvt Ltd .....	<b>Z03</b>
WCISA Wire and Cable Industry Suppliers Association .....	<b>K10</b>
Welding Wire Machineries Srl.....	<b>E10</b>
Well Gain Cable Systems Ltd.....	<b>F21</b>
Windak AP.....	<b>C32</b>
Windak OU .....	<b>C32</b>
Wire & Cable ASIA Magazine (INTRAS Ltd) .....	<b>J01</b>
Wire & Cable Technology International .....	<b>K10</b>
Wire & Plastic Machinery Corp .....	<b>K01</b>
Wire Association International.....	<b>H03</b>
Wire Forming Technology International .....	<b>K10</b>
Wisebiz (Thailand) Co Ltd .....	<b>R17</b>
Woywod Kunststoffmaschinen GmbH & Co Vertriebs-KG .....	<b>K17</b>
Wuxi Quantong Cable Material Co Ltd .....	<b>E13</b>
Yixing City Hengjiu Mold Co Ltd .....	<b>F34</b>
Zhangjiagang Sanfeng Machinery & Electric Department Co Ltd .....	<b>F20</b>
Zhangjiagang Victor Textile Machinery Co Ltd .....	<b>F05/N10</b>
Zhejiang Rongtai Electric Material Co Ltd .....	<b>G05</b>
Zhongshan City Tian Hua Metals Machinery Co Ltd ...	<b>A19</b>
Zumbach Electronic AG .....	<b>H11</b>

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## Aeroel Srl Stand L34

Aeroel has introduced a new generation of Xactum intelligent laser micrometers featuring built-in electronics and intelligence, scan rate of up to 2,400 scans per second and high accuracy, with a three-year guarantee. The new XLS13XY has been designed to be used in the wire industry, for the on-line monitoring of steel wire on drawing benches.



○ XLS13XY gauge from Aeroel Srl

The gauge is completed by a patented protective device, which assures self-cleaning and long operational life even in very dusty environments. Being completely insensitive to wire vibration, the XLS13XY gauge can be used on-line, to check the wire during manufacturing.

Aeroel serves important multinational companies manufacturing steel cord for tyres, and other types of high-carbon wire makers. The company's products can be found at the stand of Cairnhill Metrology Sdn Bhd.

**Aeroel Srl – Italy**  
Fax: +39 0432 671543  
Email: [aeroel@aeroel.it](mailto:aeroel@aeroel.it)  
Website: [www.aeroel.it](http://www.aeroel.it)

## Anbao (Qinhuangdao) Wire & Mesh Co Ltd Stand F06A

Anbao's product range includes high quality galvanised steel wire, ACSR wire and strand, cable armouring wire, Galfan wire, aluminium clad steel wire, wire for scourers, hook and eye wire, stitching wire, cloth pin wire, baling wire, spring wire, garage gate spring wire and flexible duct wire.

The company can also supply stainless steel wire, woven wire mesh, welded wire mesh, architecture mesh,

gabion box, conveyor wire belt, wire containers, knitted mesh and demister, nails, barbed wire, and shaped metal wire and bars.

**Anbao (Qinhuangdao) Wire & Mesh Co Ltd – China**  
Fax: +86 335 3870760  
Email: [anbao@anbao.com](mailto:anbao@anbao.com)  
Website: [www.anbao.com](http://www.anbao.com)

## AWCMA Stand C26

The 'AWCMA' (Austrian Wire and Cable Machinery Manufacturers' Association), founded in 1988, consists of 20 member companies.

All AWCMA companies are continuously involved in research and development, making them a good first choice when finding your best partner in introducing the latest production methods in the wire and cable industry.



○ The AWCMA pavilion from a previous show

The Austrian Wire and Cable Machinery Manufacturers Association, 'AWCMA' will be joined by 12 of its member-companies, all offering leading technology.

The Austrian Pavilion in Bangkok, jointly organised with the WKO (Austrian Federal Economic Chamber), will have catalogues and other literature from non-exhibiting members as well.

**AWCMA – Austria**  
Fax: +43 367 494 949  
Email: [office@awcma.com](mailto:office@awcma.com)  
Website: [www.awcma.com](http://www.awcma.com)

## Bekaert Singapore Pte Ltd Stand K35

Bekaert will showcase its broad range of steel wire products and coatings, with a special focus on innovation and tailor-made solutions.

The company is a leader in drawn steel wire products and a technological leader in its two core competences: advanced metal transformation, and coatings and materials.

With 130 years of experience, Bekaert has the flexibility and technical know-how to create any steel wire, no matter what shape, composition or mechanical characteristics, which allows the company to offer customers of all industries a wire product that matches their needs.

To keep up with the evolving needs of the market, Bekaert works closely with its customers as well as with universities and research centres, enabling it to innovate faster, discover complementary knowledge and skills, and ensure R&D at lower cost.

In order to guarantee the quality of its research, the company has pilot lines and an in-house engineering department that develops its own machinery and process equipment.

**Bekaert Singapore Pte Ltd – Singapore**  
Fax: +65 6535 3578  
Email: [info@bekaert.com](mailto:info@bekaert.com)  
Website: [www.bekaert.com](http://www.bekaert.com)

## Beta LaserMike Stand K12

Visitors to the Beta LaserMike stand will get a first-hand view of the new CenterScan 2010 eccentricity gauge as well as the full line of measurement and control solutions.

The company will show manufacturers how its non-contact measurement solutions can help them control and improve product quality, reduce material consumption, and increase productivity.

The new CenterScan 2010 system provides on-line, high-speed eccentricity measurement of wire and cable insulation over a solid or stranded core without touching the product.

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Highly sensitive magnetic and optical technology precisely determines the location of the conductor and insulated wire. This information is instantly processed to provide eccentricity, diameter and ovality measurements, as well as to detect product flaws. The system has a compact design, includes robust electronics, is factory calibrated, and provides accurate product positioning to give manufacturers numerous production and competitive advantages.



○ CenterScan 2010 eccentricity gauge

Other measurement and control solutions being demonstrated will include: LaserSpeed, a non-contact laser encoder that directly measures length and speed to +0.05% accuracy, designed as a direct replacement for error-prone, high-maintenance contact tachometers; AccuScan, an advanced laser gauge that delivers non-contact measurement of diameter and ovality for increased manufacturing accuracy; UltraScan, a powerful and unique ultrasonic gauge that provides non-contact precision measurement of tube wall thickness, eccentricity, diameter, and ovality; and LN Detector, a sophisticated infrared gauge that instantly detects changes in cable diameter (lumps or neckdowns) to immediately alert operators of product faults.

Also on display will be: High-Frequency Spark Tester, a high-performance testing device that checks cable insulation quickly and accurately without slowing down the process; BenchMike, a table-top system that provides fast, accurate and repeatable measurements of cut cable samples and immediate feedback for out-of-tolerance conditions; and DataPro, a simple-to-operate process controller and data management system that continuously monitors tube and pipe dimensions and automatically controls the line to keep production processes and product quality under control.

**Beta LaserMike – USA**  
**Fax:** +1 937 233 7284  
**Email:** sales@betalasermike.com  
**Website:** www.betalasermike.com

**Bühler Würz Kaltwalztechnik GmbH**  
**Stand J21**

Bühler Würz is a special machinery manufacturer specialising in cold rolling mills for wire and strip. Steel application can be covered as well as non-ferrous alloys. >>>

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Italian Wire Machinery Manufacturers Association (ACIMAF)



IWCEA - International Wire & Cable Exhibitors Association

- Austrian Wire and Cable Machinery Manufacturers Association (VÖDKM-AWCHA)
- International Wire and Cable Exhibitors Association - France (IWCEA-France)
- German Wire and Cable Machine Manufacturers Association (VDKM)



WCISA  
 Wire and Cable Industry Suppliers Association

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Supported by:



- Hong Kong Screw & Fastener Council (HKSF)
- Japan Spring Manufacturers Association (JISMA)
- Malaysian Iron & Steel Industry Federation (MISIF)
- Steel Wire Association of Malaysia (SWAM)
- Philippine Metalcasting Association, Inc. (PMAI)
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### More information:

www.kjm-ag.de info@kjm-ag.de

or for China  
www.cdsplendor.com lily.143@163.com

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The main focus of the business is the strip and wire industry, the precious metal industry, and various special applications like PV ribbon for the solar industry.

**Bühler Würz Kaltwalztechnik GmbH – Germany**

**Fax:** +49 7231 7755 54

**Email:** info@buehler-wuerz.de

**Website:** www.buehler-wuerz.de



**Candor Sweden AB**  
Stand F11

Candor was founded in 1946 and is a specialist in processes and equipment for the surface treatment and metal finishing industry.

Candor supplies both single and multi-strand systems for ferrous and non-ferrous materials and all plants are tailor made to meet the customer requirements.



○ *Candor – specialist in equipment for the surface treatment and metal finishing industry*

The company will be highlighting the following plants:

- plating – for plating of brass, copper, chromium, nickel, silver, tin and zinc on ferrous and non-ferrous wire
- cleaning – single and multi-strand cleaning systems with bipolar electrolytic degreasing and ultrasonic cleaning or a combination of both technologies. These plants can be used for cleaning wires in line with drawing at high speed or as cleaning before annealing furnaces
- Candojet HW – patented high speed hot water cleaning system for high wire speeds in line with drawing process. Environmental friendly process using only water
- Copperjet – high speed copper coating unit for CO<sub>2</sub> welding wire using Inhibitor E1

- pickling – single and multi-strand acid pickling lines using hydrochloric or sulphuric acid in line with hot dip galvanising, phosphating and electroplating

**Candor Sweden AB – Sweden**

**Fax:** +46 111 263 12

**Email:** info@candorsweden.com

**Website:** www.candorsweden.com



**CETC/KC Machine –**  
No.23 Research Institute  
Stand G10

No.23 Research Institute, CETC specialises in transmission line technology, while KC Machine has grown from a machinery R&D department of No.23 RI into a professional designer and manufacturer of special-purpose machinery for wire and cable production.

The company will introduce its new and upgraded PBJ series high-speed skin-foam-skin physical foaming insulation extrusion tandem line, including PBJ-80/C.SFS, PBJ-60/C.SFS and PBJ-45/C.SFS. The purpose of the PBJ series lines is to skin-foam-skin triple-layer cores for high speed cables such as LAN cable cat 5, 5e, 6 and 7, mini coaxial cable, USB 3.0, HDMI, Infini Band cable and QSFR.

The PBJ series extrusion lines are equipped with components from international brands, including Siemens advanced monitoring and control system, Sikora online testers, Microdia skin-foam-skin crosshead, and Maximator gas injection system.

The extrusion lines can also achieve skin-foam-skin + stripe quadruple-layer extrusion by adopting Microdia skin-foam-skin + stripe crosshead as well as a 25mm stripe extruder.

**No.23 Research Institute, CETC – China**

**Fax:** +86 21 5156 1785

**Website:** www.kechencable.com



**CM Caballe SA**  
Stand H05

With over 60 years of experience in the design and manufacture of rotating machinery for the production of power and telecommunication cables as well as steel ropes, CM Caballe provides

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the cable industry with a wide array of stranding, twinning, bunching and cabling machinery. The firm is constantly developing new, high quality equipment to meet the ever-changing needs of the wire and cable industry.



○ Double twist strander CDT-2000

The company's portfolio includes equipment for: power cables (double twist stranders, rigid stranders, drum twisters, single twist stranders, bow skip stranders, tubular stranders, planetary stranders and SZ stranders); telecom and LAN cables (double twist pairing-quadding machines, single twist cabling lines, group twinners, drum twisters, shielding-jelly filling-sheathing lines and SZ stranders); steel ropes (double twist stranders, tubular stranders, planetary stranders, and bow skip stranders); and ancillary equipment such as payoffs, take-ups, capstans, caterpillars, taping machines and binders.

At wire Southeast Asia, Caballe will show its new developments, highlighting upgraded rigid stranders and drum twisters for HV energy cables (Milliken conductors, trapezoidal wires), a new range of double twist stranders to manufacture compacted conductors of Cu and Al up to 400mm<sup>2</sup>, a complete range of stranders and closers for steel ropes, and the latest improvements in existing stranders for all type of cables.

**CM Caballe SA – Spain**  
**Fax:** +34 93 399 00 08  
**Email:** caballe@cmcaballe.es  
**Website:** www.cmcaballe.es



Condat will present its latest developments in surface technologies for metal forming, and particularly for wire drawing and rolling operations:

- Vicafil®: range of surface coatings and lubricants for wire drawing
- Steelskin®: hi tech lubricant specialities for advanced drawing applications

- Galvasmooth®: charcoals for hot dip galvanising
- Condaclean: cleaners for all metal surfaces

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- reduction of dust in workshops,
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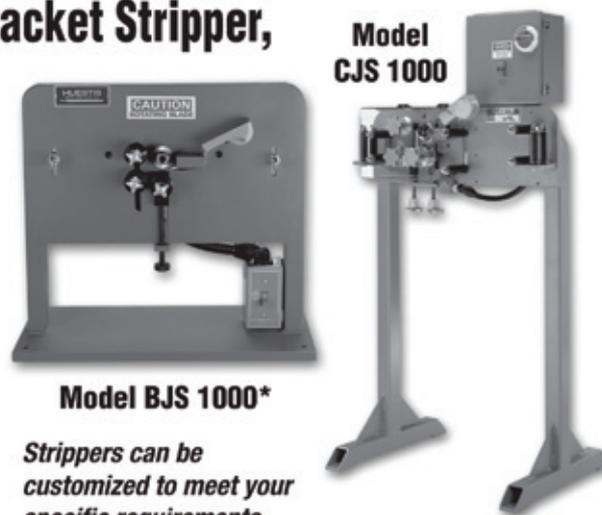


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Condat will also be displaying the new range of high performance Borax free surface coatings for low and high carbon steel (tyre cord, PC strands, spring wire, etc) Vicafil TS 7101 and Vicafil TS 7133.

For the growing market of saw wire the company is introducing the new wet drawing emulsion Vicafil SL 3400 which offers high tool life and good surface quality for very fine diameters and high steel grades.

## Condat – France

**Fax:** +33 478 073 800

**Email:** info@condat.fr

**Website:** www.condat-lubricants.com



## Cortinavis Machinery SpA Stand L01

Cortinavis, well-known machinery manufacturer for the wire and cable industry, includes the Sictra drawing division, and both companies have many years' experience in the field of advanced technologies.

With the integration of a further line of products which, starting from the copper or aluminium rod, arrive to the production of cables and to their laying-up and armouring, Cortinavis now offers a 'one stop shop'.



○ Cortinavis – a well known machine manufacturer globally

The customers of Cortinavis Machinery and the market in general, have appreciated the significance of this strategic decision so that Sictra has greatly expanded both the volume of product that the number of customers and the final markets.

Cortinavis produces power cables (double twist, rigid stranding, central tube, drum twister, Conotorsion, Monobitorsion machines; lines for rewinding, tape armouring, screening), control cables (planetary machines for laying-up (back twist), Monotorsion/conotorsion machines for laying-up/armouring/screening/laying-up machines SZ-ZS type for insulated

conductors), telephone cables (pairing, quadding machines and group twinners, laying-up drum twister mc), steel ropes (double twist), tubular machines for stranding/closing, bow type machines for stranding and planetary machines for stranding/closing.

Sictra is a key reference in the wire drawing industry and is specialised in the design and manufacture of large production ranges of wire drawing machinery for non-ferrous wires like copper, aluminium and alloys.

Sictra's production programme includes rod breakdown and multi-wire machines, intermediate fine wire drawing lines, spoolers, coilers and complete production lines to draw "Trolley" grooved contact wire.

## Cortinavis Machinery SpA – Italy

**Fax:** +39 035 312 523

**Email:**

cortinavis@cortinovismachinery.com

**Website:**

www.cortinovismachinery.com



## Daloo Stand A27

Daloo, a member of the Gauder Group, is dedicated to the design and manufacture of low cost wire and cable machinery for the international market. The company was launched in China in 2008, in response to the growing demand for proven equipment at an affordable price.



○ Machinery from Daloo

Daloo offers complete lines for the production of power and communication cables, including rigid cage stranders, taping lines, rewinding lines, payoffs and take-ups, and pulling caterpillars.

## Daloo – China

**Fax:** +86 519 8548 3557

**Email:** sales@daloo-machines.com

**Website:** www.daloo-machines.com



## Eder Engineering Stand C26

Eder Engineering offers efficient standard, semi-automatic and fully automatic machines for both the reconditioning and production of ultra hard precision tools made from tungsten carbide, natural diamond and synthetic PCD, drawing dies, as well as technical assistance for all Eder die-tool working equipment.



○ On display from Eder Engineering

The company will be displaying:

- information for machines to work precision diamond-/PCD dies
- information on equipment to work tungsten carbide dies
- ultrahard precision wire drawing die-tools (with round and profiled bores)
- die workshop ancillary equipment
- diamond powders/pastes/suspensions/grinding pins

Other products and specialities will be displayed in a multi-media show and the latest catalogues will be available.

## Eder Engineering GmbH – Austria

**Fax:** +43 367 494 949

**Email:** office@eder-eng.com

**Website:** www.eder-eng.com



## Enkotec Stand F25

Enkotec, a supplier of machinery for the manufacture of mass-produced nails as well as customised solutions, will focus on its newest nail machine model, the MI01, intended for small and mid-size

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Fax:+86(755)-26420390  
Email:sales@adwanteK.com  
Web:www.adwanteK.com

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capacity needs, producing 1,000 nails per minute at  $\phi$ 2.3-3.8mm and 50-90mm lengths. The MI01 is based on the Enkotec rotary forming principle, allowing the production of high-quality nails at high speed.



○ Enkotec's MI01 nail machine

Managing director of Enkotec A/S, Bent Petersen, commented, "When designing the new MI01 model, we have had a strong focus on assuring our customers optimal machine performance in relation to investment."

The MI01 nail machine features simple adjustments, quick tooling changeovers, easy access for cleaning and service, long tooling life, high stability, and low-noise production.

Mr Petersen added, "We see our MI01 model as a very strong alternative for our customers' capacity needs, whether they produce a single nail type or several different nails.

"The new MI01 combined with our high-end NX01 series allow us to offer a complete range of high-speed nail machines, where many tooling parts are common for all machine models, thus increasing their cost effectiveness."

### Enkotec A/S – Denmark

Fax: +45 8652 4199  
Email: sales@enkotec.dk  
Website: www.enkotec.com



### Eurolls SpA Stand L01



○ The LRR360 from Eurolls

Eurolls produces rolls for wire, cassettes for cold rolling of ferrous and non-ferrous round, shaped/profiled wires, multi-pass cold drawing/rolling wire production lines for low-medium-high carbon wires, welding wires, stainless steel, pc strand, pc wire, complete take-up and pay-off systems, reinforcement stretching lines, high speed straightening and cutting lines and lattice girder production lines.

### Eurolls SpA – Italy

Fax: +39 0432 796 501  
Email: info@eurolls.com  
Website: www.eurolls.com



### Gauder SA Stand G27

Gauder has in stock more than 1,000 second-hand machines, stored on 25,000m<sup>2</sup> premises in Belgium.

The member of the Gauder Group earned a leadership position providing fast and cost-effective solutions ready to manufacture wires, conductors, cables, ropes or steel products. Short delivery and services are the cornerstones of the company activity.

New heavy-duty Mapré extruders 38-150mm/25D are also available.

### Gauder Group – Belgium

Fax: +32 4 367 87 98  
Email: gauder@gaudergrupp.com  
Website: www.gauderonline.com



### H Folke Sandelin AB Stand J21

H Folke Sandelin's continuous lead extrusion equipment and experience helps provide trouble-free lead sheathing of cables, giving a perfect moisture barrier.

The latest design lead extruder from (HFSAB) is horizontal, floor standing, easy to install and maintain, fully automatic, extremely reliable with its state-of-the-art control system, enabling continuous operation for weeks with little or no variation in temperatures and wall thickness/concentricity.

The lead wall thickness can be kept to a minimum with corresponding savings in lead. A range of die blocks are available to cover an extensive

>>>

## HENRICH Wire Drawing Technology Boasts Competitive Edge through Innovation

A highly motivated and qualified workforce have always teamed up to join progress and tradition, with over 3,000 wire-drawing units in operation worldwide striking an excellent balance.



- The new generation of machinery and equipment available from HENRICH
- offers users benefits in terms of both economic efficiency and environmental compatibility,
  - allows notable savings to be achieved in power demand, and
  - sustainably guarantees a competitive lead.

### DOD Rod Breakdown Machine

Model SH-15-01-F

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### DC Resistance Annealer

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[www.eco-lines.de](http://www.eco-lines.de)



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Hasencleverstr. 39  
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E-Mail [info@stolberger.com](mailto:info@stolberger.com)  
Internet [www.stolberger.com](http://www.stolberger.com)



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◀◀◀ diameter range of 6mm-225mm (over lead), and a range of melting pots are available for 10, 18 and 35 tonne capacities.

Additional equipment includes the cable repair and recovery system CRRS, which has the possibility of removing individual layers, such as the outer jacket, lead sheath or triple layer XLPE insulation, without causing any damage to the subsequent layer below. This enables the outer jacket, lead sheath or triple layer XLPE to be reapplied and the cable repaired.

Even if the cable is just going to be scrapped, the metal price differences for insulated or un-insulated cables are very large and the equipment would have a very short pay-back period, if the metals are scrapped in their 'bright' form.



○ Lead extruder from HFSAB

H Folke Sandelin AB (HFSAB) is also able to supply second hand fully refurbished lead extruders to very high standards.

#### H Folke Sandelin AB – Sweden

**Fax:** +46 141 203 639  
**Email:** hfsab@hfsab.com  
**Website:** www.hfsab.com

#### Ideal-Werk German pavilion

Two experienced international companies supplying welding machines to service the wire industry will be jointly exhibiting at wire Southeast Asia. Ideal-Werk of Germany and Clifford Welding Systems of South Africa will have a combined stand in the German pavilion.

Ideal develops and manufactures wire mesh welding machines and jig welders for various wire articles. The machines are designed to assure high flexibility and short change-over times.

Clifford will demonstrate its capability in the reinforcement and off coil line wire and crosswire mesh production line areas.



○ Ideal butt welder type DSH 130 with accessories

The company manufactures a comprehensive range of mesh production machines covering high production reinforcing lines, heavy quick-change engineering mesh lines, precision off coil light mesh lines and grating welders.

Ideal also offers a wide range of butt welding machines for all branches of the wire industry.

The welders are used by wire drawing, cable manufacturing and wire fabricating companies, for butt welding of steel and non-ferrous wire from 0.15 to 18mm diameter.

A wide range of accessories is available for ease of the coil joining operation. Annealing devices are also available for annealing of the weld joints in carbon steel wire.

#### Ideal-Werk – Germany

**Fax:** +49 2941 206 169  
**Email:** info@ideal-werk.com  
**Website:** www.ideal-werk.com

#### Clifford Welding Systems (Pty) Ltd – South Africa

**Fax:** +27 33 355 34 34  
**Email:** sales@cliffeng.com  
**Website:** www.ideal-werk.com

#### ITEC Co Ltd Stand F09

ITEC Co Ltd is a manufacturer of insulating machines. The company's machines are used by customers who supply international manufacturers of



○ ITEC manufactures insulating machines transformers, wind mills, high velocity trains and motors.

ITEC's main products are paper taping machines, fibreglass covering machines, and thermal Kapton machines. The company is able to design and construct machines according to customer requirements.

#### ITEC Co Ltd – China

**Fax:** +86 21 33518029  
**Email:** sales@itec-china.com  
**Website:** www.itec-china.com

#### Kieselstein GmbH Stand K18

As a manufacturer of modern wire drawing and draw-peeling plants Kieselstein offers wire manufacturers individual machine solutions that are tailored to the customer's requirements and optimised for the requested purpose.



○ Draw-peeling unit

The company will present a draw-peeling unit for producing superior quality wire. Draw-peeling units can be delivered as a part of a draw-peeling plant, but can also be integrated into existing plant systems. It gives wire producers the opportunity to increase the wire quality considerably with low effort and using existing wire drawing plants.

#### Kieselstein GmbH – Germany

**Fax:** +49 371 910 4105  
**Email:** info@kieselstein-group.com  
**Website:** www.kieselstein-group.com

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**Koner Srl**  
Italian pavilion

Lubrication is one of the crucial factors for the quality of drawn wire. An interrupted lubrication in the steel wire drawing process causes an increase of surface tension in the wire, strong pressures inside the die, rapid die wear, breakage of the drawing nib and consequent non-programmed interruptions in the wire drawing process.

In order to avoid these problems, Koner has studied a new concept line of drawing dies: K.340 and K.370 pressure drawing dies (patented worldwide), specially constructed and designed to improve lubrication in dry drawing of steel wire.

For wet drawing the K.320 tool has been created, which allows with its particular inside geometry optimum wet drawing process characteristics and also economic saving.



○ Drawing die from Koner

The K.340/K.370/K.320 methods provide operating advantages that include production at maximum drawing speeds; less machine down-time for die replacement; better and more homogeneous wire quality; wire drawing under optimum quality control; increased nib life; overall costs reduced (only the nib is changed, rather than the entire die); and application of the requested quantity of lubricant coating to the wire.

The overall dimensions of the K.340/K.370/K.320 tools are the same as for traditional dies.

Transport costs are reduced, as even large quantities of nibs can be delivered rapidly in small packages directly to customers in any part of the world.

**Koner Srl – Italy**  
Fax: +39 0254 55832  
Email: tkt@tktgroup.it  
Website: www.tktgroup.it



**Lämneå Bruk AB**  
Stand F11

Lämneå Bruk AB specialises in the design and manufacture of machines for the ferrous and stainless steel wire industry and is a reliable supplier of pay-offs, mechanical de-scaling equipment, drawing machines and take-up units.

For the solid welding wire industry the company supplies complete lines including pay-offs, cleaning equipment, drawing machines, copper coating and take-ups.

For tubular wire or flux core wire Lämneå produces strip rewind lines, strip pay-offs, forming-filling-closing machines, drawing machines and take-ups, in addition to high speed rewinding lines including precision layer and drum packer (no twist coiler) for both solid and tubular wire.

For the low/high carbon and stainless steel wire industry Lämneå supplies rotating and/or over head pay-off systems, mechanical cleaning units (for carbon wire), drawing machines and take-ups.

The take up systems range from down coilers with controlled filling systems to automatic spoolers.

Lämneå Bruk also makes pay-offs and take-up systems for heat and surface treatment of high and low carbon wires as well as stainless steel wires, take-up coilers with live block or dead block depending on the requirements of the process.

**Lämneå Bruk AB – Sweden**  
Fax: +46 122 232 99  
Email: info@lamnea.se  
Website: www.lamnea.se



**Lukas Anlagenbau GmbH**  
Stand H23

Lukas will be introducing a vertical taping machine, suitable for nearly all types of tapes such as PTFE, Kapton, mica, polyester, fleece, laminated tapes and metal tapes.

The high speed and high precision taping is enabled by a closed loop tape tension control and a very precise speed synchronisation between the capstan and the taping heads.



○ Vertical taping machine with sintering oven

Depending on the application, machines can be equipped with a cooling unit for the taping area, inline sintering oven or equipment for quality control.

**Lukas Anlagenbau GmbH – Germany**  
Fax: +49 965 930 299  
Email: lukas.voh@lukas-anlagenbau.de  
Website: www.lukas-anlagenbau.de



**Maillefer SA**  
Stand F02

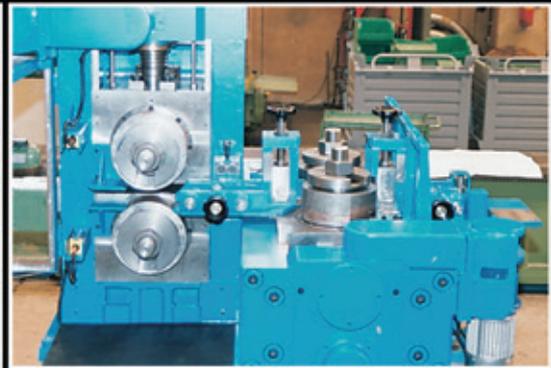
Maillefer will present its portfolio of extrusion systems for energy cable, fibre optic cable, telecom cable and tube manufacturing systems.

Visitors will see a series of continued improvements in the area of rubber cable insulation, filling and jacketing. The Super steam technology can provide a claimed increase in line performance of 20, 50 or even 100%, in relation to the type of cable produced on conventional equipment.

When fibre optic cables made their debut in the late 1970s, Maillefer was present with equipment for the leading players at the time. Today, Maillefer provides high-end manufacturing solutions for every stage of the fibre optic cable process. Tight buffering, secondary coating, SZ stranding and jacketing lines are available for producing all kinds of fibre optic cables including premises and totally gel free FTTx cable.

Technology like the compression caterpillar with tension feedback serves to keep accurate control of excess fibre length.





## Automated high technology machinery for ferrous and non-ferrous metal industry for bars and tubes

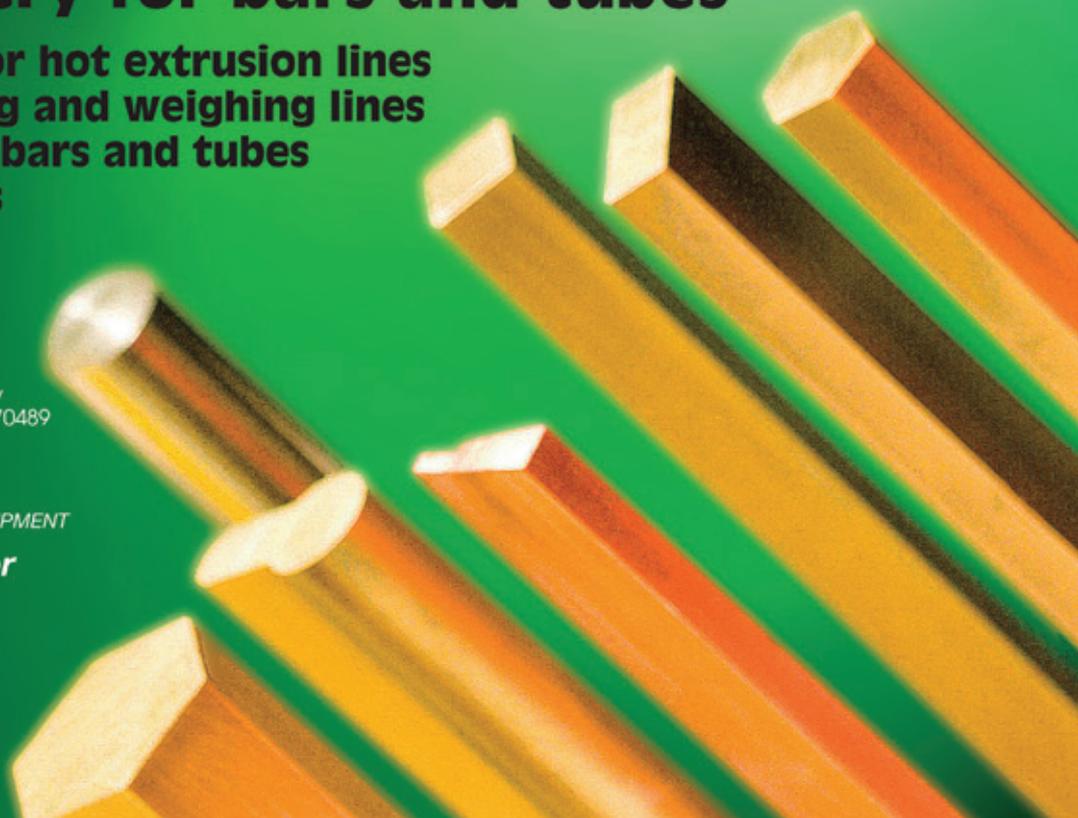
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web: [www.ocn.it](http://www.ocn.it)

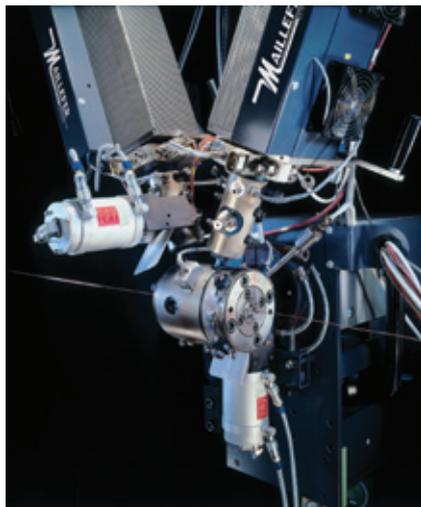
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# wire Southeast Asia 2011

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○ Extrusion technology from Maillefer

Coax and LAN cable manufacturing is quite demanding by the construction types and high frequency requirements. The TDL 40 line is a prime example of a versatile line that meets the market demands. It is configured for high performance production of LAN Cat 5E, 6 and 7 as well as RG 6 and 11 coax cables.

## Maillefer SA – Switzerland

Fax: +41 21 691 2143

Email: info@maillifer.net

Website: www.mailliferextrusion.com



## Medek & Schörner Austrian pavilion

Medek & Schörner will be presenting the following state-of-the-art cable marking machines at wire Southeast Asia:



○ CFU head

Cable marking machines: high quality gravure printers (LAN cables, control cables) for speeds up to 1,200m/min; water misting unit for the application of fine water dust for pre-cooling of the hot wire immediately after the extruder; embossing meter markers/hot foil sequential meter markers for high accuracy of length measurement

(power cables, telecommunication cables, optical fibre cables); high performance ring markers for marking telephone wires, switchboard wires, automotive cables, LAN cables; video system for monitoring the print quality of fast-running cable printing machines, eg allowing real-time inspection for bad quality and/or missing prints; and laser marking system for cables.

Optical fibre coating systems: optical fibre colour coding up to 3,000m/min; ring marking of optical fibres; tight buffering up to 1,300m/min; fibre ribbon production with excellent ribbon planarity and for speeds up to 1,000m/min; CFU production of compact fibre units; copper wire insulation with UV varnishes (enamelled wire); and manufacture of dimension-sensitive precision micro flexible flat cables (FFC) using UV resins.

Medek & Schörner covers virtually the entire spectrum of machines for marking cables and coding optical fibres; in particular for power, telecom and data cables.

## Medek & Schörner GmbH – Austria

Fax: +43 1 982 72 96

Email: m+s@medek.at

Website: www.medek.at



## Nextrom Oy Stand TBC

Nextrom is a supplier of optical fibreglass preform manufacturing equipment, fibre draw towers and associated machinery for the global fibre market using MCVD, OVD and VAD technologies. The company also supplies fibre optic cable production lines.

Together with Rosendahl, Nextrom offers products and turnkey solutions in the fields of extrusion, SZ-stranding, fibre optic, forming, welding and corrugation.

The cable market in Southeast Asia is showing a healthy growth, particularly in the fields of power cable and fibre optic cables, and the Nextrom and Rosendahl team is looking forward to discussing the latest developments and new technologies at wire Southeast Asia.

## Nextrom Oy – Finland

Fax: +358 9 5025 3003

Email: info@nextrom.com

Website: www.nextrom.com



## Maschinenfabrik Niehoff Stand J21

Maschinenfabrik Niehoff will present a double twist bunching line for stranding of bare and insulated conductors.

The line consists of two pay-offs with NPS spools and a D 631 type double twist bunching machine and emphasises the versatile applications of the demountable NPS multiway spools.

The D 631 is part of a series of six differently sized models available in left and right-hand versions which cover the cross sections from 0.013mm<sup>2</sup> to 50mm<sup>2</sup> and feature all the same technical advantages.

Compared to conventional bunchers, energy consumption and noise emissions of the D series machines are significantly reduced due to their one-bow design, the aerodynamically optimised Eco-bow, and a state-of-the-art energy saving drive technology.

By means of the automatically working optoelectronic NBAT (Niehoff Bunching Automatic Traverse) system, the spools are perfectly filled and can be paid off tangle-free and without wire damages even at very high speeds.

At the booth with staff from Germany will be colleagues from the Singapore representative office.

Also sharing the booth with Niehoff will be Bühler-Würz Kaltwalztechnik and H Folke Sandelin AB.

## Maschinenfabrik Niehoff GmbH & Co KG – Germany

Fax: +49 9122 977 155

Email: info@niehoff.de

Website: www.niehoff.de



## Poutier sas Stand G27

Poutier, a member of the Gauder Group, develops comprehensive solutions to produce all kinds of high voltage and extra-high voltage power cable.

Products include overhead cable (including ACCC™, ACSS-TW and ACSR-TW); insulated cable; AC type (using high quality Milliken conductor) or DC type (using large round compacted conductor or trapezoidal wires).

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Website: www.dgzhangli.com  
Email: zlf@changan.net



○ *Pourtier Milliken*

The company provides high quality stranders and cablers, made in Europe with the highest standards in design and manufacturing, leading the innovation for optimised wire and cable production. Aftersales and spare parts services are available accordingly.

**Pourtier sas – France**  
**Fax:** +33 1 64 26 61 10  
**Email:** pourtier@gaudergroup.com  
**Website:** www.gaudergroup.com

**PWM Ltd**  
**Stand J07**

PWM will present its comprehensive range of high performance manual cold welders. Precision engineered in PWM's own UK workshops to stringent quality standards, the cold welders produce reliable permanent welds stronger than the parent materials.

Dies are individually hand-made in matched sets by PWM's craftsmen to tight tolerances and can be manufactured to suit round or profile wire.

PWM's manual range includes three hand-held, portable models, suitable for repairing wire breaks quickly and efficiently in confined spaces. The compact M10, M25 and M30 machines, designed to be comfortable to hold and easy to operate using finger or hand pressure, will weld wire sizes from 0.1 to 1.8mm diameter copper/aluminium.

PWM's BM10 and BM30 models are durable, low maintenance machines that use industry standard dies to provide a reliable weld on non-ferrous wire from 0.1 to 1.8mm in diameter. The welders can be used either mounted on a workbench or a mobile trolley. Light hand pressure on the operating lever completes the weld in seconds.

The largest machine to be presented at the show is the versatile manual M101. This heavy-duty cold welder, which has a capacity of 1 to 3.6mm copper and 1 to 5mm EC aluminium, is one of

PWM's best-selling models. Durable, simple to operate, and easy to maintain due to the low number of component parts, the M101 can be either bench-mounted or mounted on a trolley for portability and convenience.

**Pressure Welding Machines Ltd – UK**  
**Fax:** +44 1233 820591  
**Email:** pwm@btinternet.com  
**Website:** www.coldpressurewelding.com

**Roblon A/S**  
**Stand F22**

Roblon will present its range of industrial fibre and cable machines. Company representatives will be available to discuss the latest developments in the cable industry and introduce new glass strength members, polyester binder yarns as well as machine developments, such as the use of Roblon eccentric binders for FTTH cables.

The Roblon Eccentric Binder is designed for stranding industrial yarns with constant tension around a cable. The Eccentric Binder has previously been equipped with four positions (EB-4), but the new EB-6 variant has six positions, making it suitable for applications such as FTTH production.



○ *Roblon EB-4 Eccentric Binder*

With the small rotating disc on the EB-4 it is possible to reach rotational speeds of up to 800rpm. The pay-off tension is controlled by means of electrical hysteresis brakes. As in most Roblon cable-making machines, variation in cop diameter during production is compensated for in yarn tension, which can be adjusted during operation.

The Eccentric Binder can be installed in and synchronised with existing machines. The machine measures less than 1.5m in all three dimensions, >>>

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TROESTER provides innovative cable and core coating solutions of a cutting-edge technological design aimed at efficiently supporting the sustainable and on-demand transmission of the clean energy through HV and EHV cables from anywhere in the world. Expertly protected against all environmental impacts.

TROESTER is ready for the future of energy production. The cable machines and systems are »made in Germany« to contribute to serving the needs of today's generation while giving future generations a chance of developing their own lifestyles. [www.troester.de](http://www.troester.de)

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making it very compact and easy to fit into most production lines.

Roblon Industrial Fiber develops and manufactures high-tech industrial fibres such as glass and aramid strength members, binder yarns and ripcords (standard and water-blocking). It is ISO 9001 and 14001 certified. Roblon Engineering develops and manufactures serving, binding, take-up and payoff equipment.

**Roblon A/S – Denmark**  
**Fax:** +45 9620 3399  
**Email:** info@roblon.com  
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 Fax +49 2378 915-300  
 info@bongard.de · www.bongard.de



**Rosendahl Maschinen GmbH**  
**Stand D25**

Rosendahl is a supplier of high-tech wire and cable manufacturing solutions for power cables, automotive wires, LAN cables, coaxial cables, fibre optic cables, crossheads and optical fibres.

Since the mid-1980s, Rosendahl has actively been supplying its solutions to Asian cable manufacturers, ranging from fluoro-polymer insulated cables, building wires, copper telephone insulated cores, optical fibre cable and RF cable systems.

Together with Nextrom, Rosendahl offers products and turnkey solutions in the fields of extrusion, SZ-stranding, fibre optic, forming, welding and corrugation.

The cable market in Southeast Asia is showing a healthy growth, particularly in the fields of power cable and fibre optic cables, and the Rosendahl and Nextrom team is looking forward to discussing the latest developments and new technologies at wire Southeast Asia.

**Rosendahl Maschinen GmbH – Austria**  
**Fax:** +43 3113 5100 51  
**Email:** office@rosendahlaustria.com  
**Website:** www.rosendahlaustria.com



**RSD Technik GmbH**  
**Stand K19**

RSD Technik Germany will be showing its extensive product range, comprising the well-known cable printers CP 4R and CP 1E, which are soon to be enhanced by a special low-budget version of the CP 1Z.

Any type of the company's cable printers can easily be integrated into complete extrusion lines and include a wide range of accessories to handle most applications.

Any consumables are available with a short delivery time from laser engraved printing wheels to high-speed doctor blades to achieve a high-quality marking and printing process for many types of cable, wire, hose and tube.

To stay in close contact with its customers and to initiate new business relationships RSD has already attended some international events in 2011

including Interwire in Atlanta, USA as well as wire Russia in Moscow in May 2011.

**RSD Technik GmbH – Germany**  
**Fax:** +49 762 880 280  
**Email:** sales@rsdtechnik.de  
**Website:** www.rsdtechnik.de



**Sampsistemi**  
**Italian pavilion**

Sampsistemi, a division of SAMP SpA and part of the multinational Maccaferri Industrial Group, offers innovative solutions for the wire and cable manufacturing industry.

The company's range of products includes rod break-down machines and multi-wire drawing lines, specifically developed to save energy costs thanks to a complete CNC control process and direct drive torque motors with direct shaft-to-hub connection for high flexural strength.

Sampsistemi has also introduced a new generation of MHV power cable insulation lines, featuring its Powerpack™ extruder drives, fully integrated packages fitted with highly efficient torque servo motors and completely integrated motor-speed reducer combinations.

The company also manufactures double twist bunching machines to strand copper wires and lay up insulated conductors, and innovative drawing technology, featuring zero-maintenance, plug-in machines for drawing copper, aluminium and relative alloys.



○ BM 800 C double twist bunching machine

Sampsistemi supports customers worldwide with extensive application know-how and local branch offices located in Italy, USA, China, Russia and India.

**SAMP SpA - Sampsistemi Division – Italy**  
**Fax:** +39 051 370860  
**Email:** info@sampsistemi.com  
**Website:** www.sampsistemi.com

# wire Southeast Asia 2011



## SETIC sas Stand G27

SETIC, a member of the Gauder Group, offers double twist bunchers/stranders for PC and automotive industry as well as complete solutions to produce high quality LAN cables with enhanced performances in one step or two steps according to product mix.

The company provides high quality machines made in France with the highest standards in design and manufacturing, leading the innovation for optimised wire and cable production.

Aftersales and spare parts services including high technology bows and accessories for all brands rotating machines are available accordingly.

### SETIC – France

**Fax:** +33 4 77 71 10 85

**Email:** setic@gaudergroup.com

**Website:** www.gaudergroup.com



## Shanghai ShenChen Wire & Cable Equipment Stand E18

Shanghai ShenChen Wire & Cable Equipment Co Ltd (originally Shanghai ShenChen Industry and Trading Company) is a company specialising in producing cold welding machines and dies.

Founded in 1993, the company possesses independent research and development, production and sales capacity. The company can produce welding copper wire ranging from 0.06 to 25mm, aluminium from 0.08 to 35mm, and flat cable ranging from 0.5x33mm to 12x120mm. All can be welded.

The company's SCH production has been sold to more than 40 countries and regions throughout the world.

The company is certified to be in conformity with the standards of the ISO9001 Quality Management System.

It is also inspected and proved to be up to standard Q/YQJT 1-2004 Production, and has passed European Union CE authentication.

In recent years, Shanghai ShenChen has gathered advanced foreign management concepts, and on the basis of absorbing the successful

experience of foreign corporations, has continually upgraded the quality of its products.

### Shanghai ShenChen Wire & Cable Equipment Co Ltd – China

**Fax:** +86 21 65199430

**Email:** schsc8@yahoo.com.cn

**Website:** www.sch.chinacable.com.cn



## Sheng Chyeen Enterprise Stand E25

Sheng Chyeen has established numerous cold processing lines in the domestic and international markets. Its machinery is used in countries that include Germany, USA, China, Russia, India, Turkey and the Middle-East. With constant development, the company engages in ferrous and non-ferrous metal fabrication, and will meet national and international customers' requirements with complete and qualified products.

Sheng Chyeen's products include drawing lines, combined drawing machines, chain type draw benches, flat rolling mill machines, peeling machines, chamfering machines, straightening machines, shot blasting machines, swaging machines, pointing machines, auto straightening machines, polishing and grinding machines, and portable hydraulic electric steel bar cutters and benders.

The company's machines are integrated with the advantages of machines from Germany and Japan. Quality parts and materials are used in its products, and it designs its machines with a higher grade of tolerance to increase durability. Fast processor units and software are used to ensure ease of use.



○ Combined drawing machine

The combined drawing machines can produce bars in high-efficiency, and ensure high quality finish. The company can offer all related devices in the processing line, for example coil opener, section straightening machine, straightening and polishing machine, and shot blasting machine.

### Sheng Chyeen Enterprise Co Ltd – Taiwan

**Fax:** +886 4 7588500

**Email:** 045@tw-sc.com.tw

**Website:** www.tw-sc.com.tw



## Shenyang Jinggong Stand F27

Shenyang Jinggong, a water-blocking tape manufacturer, has exported its tapes around the world since 2004.

The company's products include non-conductive water-blocking tapes, semi-conductive water-blocking tapes, semi-conductive tapes, water-blocking yarns and other tapes.

### Shenyang Jinggong – China

**Email:** office@jinggong-tapes.com

**Website:** www.jinggong-tapes.com



## Sikora AG Stand J26

Sikora AG, manufacturer and vendor of measuring and control technology for the wire and cable industry, will showcase the Centerview 8000, with 8-point-eccentricity and ovality measurement. The device is suitable for quality control during the production of communication, automotive and installation cables.



○ The X-Ray 6000 measures the eccentricity, wall thickness, diameter and ovality at insulating and jacketing lines

Also of interest will be the X-Ray 8000 NXT for eccentricity, wall thickness, ovality and diameter measurement of MV-, HV- and EHV- cables in CCV-, VCV- and MDCV-lines. The company will also present the new X-Ray 6000 series for eccentricity, wall thickness, outer diameter and ovality measurement at insulating and jacketing lines. The X-Ray 6000 includes XLL-X-ray tubes (eXtra-Long-Life tubes) and provides a measuring rate of 1 to 3Hz (optional 10, 100Hz). Another highlight on the Sikora stand will be the Length 6000 for

>>>

non-contact online measurement of cables. For this method, the product image and its movement are defined, and the speed and produced length calculated.

The company will also introduce the second generation of its diameter Laser gauge heads. The new Laser Series 6000 includes a number of technological innovations, including a measuring rate of 2.5kHz.

**Sikora AG – Germany**  
**Fax:** +49 421 48900 90  
**Email:** sales@sikora.net  
**Website:** www.sikora.net

## SPX Precision Components Stand K06

SPX Precision Components, Fenn Division, is a global supplier of metal forming machinery.

Established for over 100 years, it has a solid reputation and customer base, built on decades of engineering and machine building experience.

The company's extensive range includes rolling mills, wire flattening and shaping lines, turks heads, capstans, spoolers, wire and tube machinery, draw benches, swaging machines and feed units, impact cut-off machines, tube end-forming machines and Torin CNC spring coiling machines.

SPX recognises the growing need for total metal forming solutions, rather than just a piece of machinery, and is positioned to offer technical, process and engineering expertise to provide a solution that fits a company's needs.

**SPX Precision Components – USA**  
**Fax:** +1 860 667 4667  
**Email:** precision.fenn@spx.com  
**Website:** www.spxprecision.com

## August Strecker GmbH Stand G24

August Strecker was founded almost 80 years ago and has enjoyed an excellent reputation for its reliable machinery and excellent service. Since 2007, the company has been owned and directed by the Stock family. Strecker welders are well represented in many renowned national and international wire and cable factories.

The majority of the company's production is exported to more than 110 countries all over the world and the company has more than 40 representative offices worldwide.

The company produces:

- butt welding machines for all kinds of wires starting at 0.04mm dia up to 60mm dia for solid steel and 42mm dia for solid non-ferrous wires, including welders with automatic deburring cycle. For steel there are various annealing devices available, suiting the needs of the most varied steel grades
- butt welders for stranded conductors starting at 0.08mm<sup>2</sup> up to 2,000mm<sup>2</sup>. Welding by means of tubes or without any tubes at all (with automatic deburring)
- cold pressure butt welders with automatic deburring cycle



○ A LNV, welder for high carbon steel wires 5-16mm dia

The company also has a wide range for most varied applications, including:

- butt welding machines for steelcord
- battery-operated parting guns for steelcord or steel strands
- electric wire butt welding guns
- high-output butt welding machines for production of wire-made mass articles
- special purpose welding machines, tailored to the individual customer's needs

**August Strecker GmbH & Co KG – Germany**  
**Fax:** +49 643 144 221  
**Email:** sales@strecker-limburg.de  
**Website:** www.strecker-limburg.de

## Tecnovo Srl Italian pavilion

Tecnovo presents a new series of wire drawing lubricants that combine demands for high quality and performance with indispensable sustainability criteria: composed of natural raw materials and from renewable sources they have a low environmental impact.

Tecno ST/13 is a new salt for wire drawing preparation. It is 100% free from borax and from boron derivatives. Thanks to an exclusive formulation it interacts with the wire drawing lubricant and gives improved lubrication on the surface of wire and wire rod compared to normal products.

Tecno FM 913-915 sodium based wire drawing lubricants are also 100% free from borax, boron derivatives and from nitrites, and they reduce dust in the working environment, cut consumption and eliminate product waste. Tecno FM 195 is a calcium-based lubricant that is 100% free from titanium dioxide.

As demonstrated by rigorous tests conducted by leading companies, this substance causes serious difficulties with subsequent wire treatments including pickling, annealing, coating and wet wire drawing, and it exerts a severe abrasive action on capstan coatings. Titanium dioxide is also under observation for suspected danger to humans.

The Sintek FL line of emulsifiable oils for wet wire drawing are made from natural products and renewable sources, and include a broad range of products for different wire drawing applications.

**Tecnovo Srl – Italy**  
**Fax:** +39 0254 55832  
**Email:** tkt@tktgroup.it  
**Website:** www.tktgroup.it

## Traxit International GmbH Stand J13

Traxit International GmbH has always been at the forefront of product innovation and has provided the wire drawing industry with a complete range of lubricants to suit all types of wire for all applications, since 1881. Currently one of the largest manufacturers of drawing lubricants, coatings and

# wire Southeast Asia 2011

emulsions, Traxit operates from its manufacturing bases in Germany, China and the United States. In January 2011 the company launched its new research and development centre, assuring innovative and boron free lubricants.

This centre enables Traxit to find fast solutions for customers and their new developments and optimise the performance of the existing production.

The innovative and superior products offer the following improvements over some of the traditional boron containing products:

- longer die life
- higher drawing speeds
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- sodium-based lubricants with less moisture pick up

## Traxit International GmbH – Germany

**Fax:** +49 233 691 9101

**Email:** info@traxit.com

**Website:** www.traxit.com



## Troester GmbH & Co KG Stand H24

Troester GmbH & Co KG is a world-leading supplier of machines and complete lines for the cable manufacturing and rubber processing industry, comprising CV lines for XLPE and rubber cables, silane lines, sheathing and insulation lines.



○ Troester – leading supplier

The company will be presenting its technology and solutions in the fields of:

- high voltage CCV and VCV line concepts for XLPE power cables up to 500 kV
- medium voltage CCV lines (35 kV)
- sheathing lines for medium and high voltage cables

## Troester GmbH & Co KG – Germany

**Fax:** +49 511 864 028

**Email:** dirk.schmidt@troester.de

**Website:** www.troester.de



## Vitari SpA Stand L01

Since 1925 Vitari has been manufacturing high quality wire processing machinery and has gained a reputation for quality and excellence in engineering. The company continues the tradition by providing customers with innovative solutions as well as classic machines.



○ Part of the machinery on display from Vitari

The machinery range covers wire straightening machines for both industrial wire as well as reinforcing wire for the construction industry. Traditionally, though, Vitari is renowned worldwide for its chain bending-welding machines, nail and cold header machines for the fastener industry, chain link fencing, hexagonal mesh, barbed wire and dress-hanger making machines.

## Vitari SpA – Italy

**Fax:** +39 035 528 999

**Email:** vitari@vitari.com

**Website:** www.vitari.com



## Windak Stand C32

Windak specialises in automatic packaging solutions for the wire and cable industry and has offices in Sweden, USA, Australia, Estonia and Shanghai. The company will present information about its latest products, such as automatic coiler FC-5 and rewind lines.

The FC-5 coiler is a versatile and user-friendly fully automatic coiler. It can hold the coil together with stretch wrap, a binder material or strap, making it a multi-purpose coiling machine.

It can handle a wide range of cables from 3 to 25mm (0.12" to 1") diameter and coil size up to 480mm (19").

Windak rewind lines have been specifically designed for fast reel changes, accurate tension control, high line speed and superior winding quality.

The rewind lines can be built with many different configurations based on Windak's complete pay-off and take-up range, with either tyre driven or conventional drive pin design.



○ Intelligent solutions from Windak

The company will also show solutions for a large range of pay-off, take-up and other material handling and packaging machines.

## Windak – USA

**Email:** info@windakusa.com

**Website:** www.windakusa.com

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Warwickshire CV32 4HY



## Wire & Plastic Machinery Corp Stand K01

Wire & Plastic Machinery is a leading dealer of second-hand wire, cable, and optical fibre equipment.

The company will showcase pictures, video, and an interactive presentation of its extensive inventory offering.

Stand visitors will have access to a web-enabled station to search in-stock machines and receive detailed specifications and pictures.

Founded in 1981, WPMC has eight warehouse facilities and two reconditioning centres in the United States, and offers thousands of machines for immediate delivery and purchases single machines, complete lines and entire manufacturing facilities.

### Wire & Plastic Machinery Corp – USA

Fax: +1 860 589 5707

Email: info@wireandplastic.com

Website: www.wireandplastic.com



## Woywod Kunststoffmaschinen German pavilion

The Plasticolor product range of dosing units, mixing stations and hopper loaders will be shown at the German pavilion.

The range, manufactured by Woywod Kunststoffmaschinen GmbH, is known for precision, economical advantages and durability.

The precise dosing of each component can help cable manufacturers to

produce with better quality, but also to save money by using the minimum of necessary materials.

The reduction of downtime on the extrusion lines gives additional advantages to the producer.

Plasticolor mixing stations are used especially in high quality production of cross-linked insulations or in production with foamed layers.

The exact dosing of each component and the perfect mixture of the materials helps the screw of the extruder to homogenise the melt.

This will result in a better product quality and reduction in consumption of expensive materials such as catalysts or foaming agents.

### Woywod Kunststoffmaschinen GmbH & Co – Germany

Fax: +49 89 854 1336

Email: woywod@plasticolor.de

Website: www.plasticolor.de



## Zumbach Electronic AG Stand H11

Zumbach will again present many new developments and products. The following is a summary of the most important ones:

**Sensors:** The advanced ODEX® 10 concentricity and diameter gauge for wire extrusion. Extremely accurate and advanced, insensitive to environmental conditions.

Fully non-contact, based on magnetic and laser technology and a large 3-axis laser diameter gauge ODAC 63TRIO with incorporated fault detection.



○ Ultrasonic Wall Thickness Scanner of the UMAC® Z series and typical screen of a multilayer product

**New ultrasonic scanners of the novel UMAC® Z series** for wall thickness measurement with quick and easy adaptation to cable diameters and space-saving integration.

**Capacitance measuring systems CAPAC®** with ultra short measuring tubes, 3-axis lump and neckdown detectors KW TRIO.

**Data acquisition, processing and display units (processors):** Full new line of USYS processors, ranging from a low-cost basic model USYS 20 up to the high-end multi-sensor processor/controller USYS 8100. All USYS processors are extremely user-friendly, safe, stable and flexible for extension and upgrading.

**Complete measuring and control systems:** New systems for full process monitoring and control will be shown, such as the new Rayex® line of Zumbach's X-ray wall thickness eccentricity systems for CV lines. The main new features are:

- very economic pricing
- advanced software for easy operation and powerful control functions and data acquisition

**Wallmaster wall thickness and eccentricity measuring and control systems** for cable jackets and Dialcal option for fully automatic calibration and control.

**Cellmaster®, Jacketmaster and Multiline systems** for extrusion and wire drawing.

### Zumbach Electronic AG – Switzerland

Fax: +41 32 356 0430

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# Reaction to fire performance of cables

By Terence Journeaux, Prysmian Cables & Systems Limited, UK

## Abstract

This paper covers the European Commission decision of October 2006 implementing Council Directive 89/106/EEC with regard to the classification of the reaction to fire performance of construction products and the steps being taken toward implementation.

It reviews progress on various necessary standards for test methods, classification, products, and rules for extended application (EXAP); initial output from the Europacable-funded CEMAC II project to provide technical background for implementation; and the challenges of product development.

## Introduction

The objective of this paper is to give an overview of the current status and possible future direction in the way that regulators, specifiers and cable manufacturers address reaction to fire performance when cables burn. Specifically, it addresses the situation in the European Union. It is not intended to provide a detailed description of the test methods used or a discussion as to their validity.

The cable industry has had a long history in the development of test methods and products designed to lessen the hazards resulting from burning cables, going back to the 1960s. The industry was one of the first in the electrotechnical sector to develop tests for the assessment of the reaction to fire performance of its products and has continued to refine and improve these methods over the years.

Standards covering flame spread, heat release, opacity, corrosivity and toxicity of fire effluent are today in use and the industry continues to sponsor research into the improvement of the fire performance of its products and the definition of appropriate test methods.

In the fire area, there has been a longstanding commitment to international standards through the IEC (International Electrotechnical Commission) and many national and regional standards eg EN (European Standard) are based upon the IEC publications.

Within this international framework there are, of course, differences from region to region and country to country in the way that the hazards of combustion of cables are approached and the applications for which the established test methods are referenced. The cable industry therefore provides products with a wide range of reaction to fire performance to reflect the varying end user requirements.

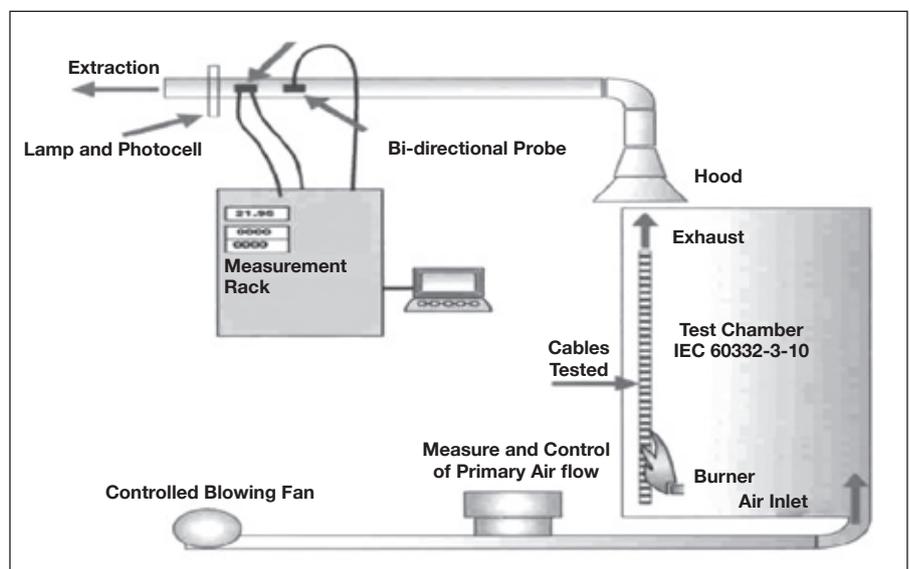
## Historical Development

Much of the early work relating to improvements in the fire performance of electric cables was carried out in the 1970s and 1980s<sup>(1,2,3)</sup>. A four stage approach was taken at the time:

- minimise the hazard by restricting the amount of burning and reducing the propagation of fire along cable runs
- minimise the emission of smoke leading to obscuration of exits and prevention of escape
- minimise the emission of acid gas leading to corrosion of equipment
- minimise the emission of harmful fumes leading to incapacity or irritation and prevention of escape by people

It was recognised that these factors would assume varying levels of importance according to the particular market sector and typical installation condition considered<sup>(4)</sup>.

Figure 1: Schematic of prEN50399 test apparatus



The cable industry also was aware that it would need to develop its own tests to properly assess the performance of its products. Although this early development led to a series of tests that could be said to lack integration, the approach when taken as a whole still sits well with current thinking.

Another important consideration was that large scale tests should be developed wherever relevant so as to assess performance of the total product in something approaching an “as installed” condition. The international work concentrated on the development of test methods so that these could be adopted as an “add on” to product standards such that the widest possible levels of fire performance could be achieved across the full range of product types.

## Current Situation

The relevant IEC test standards have remained largely unchanged over recent years but have been subject to ongoing refinement<sup>(5,6,7,8)</sup>. For example, IEC 332-3 has developed into a multipart standard with each part covering a different installation condition or time of exposure to the fire source.

The principles established in the early development of these standards still serve cable manufacturers and users well and the IEC standards are adopted in many countries. Based on the use of these tests, one can find in the market various types of cables. Reduced flame propagation (RP) cables which when installed in vertical bunches in accordance with the recommended procedures do

not propagate fire more than a limited distance from the source. Such cables have been well established in the market since the 1970s for cabling in areas where, because of installation conditions, eg vertically mounted bunched cables, the risk of propagation of fire is high. They are tested to the various parts of IEC60332-3.

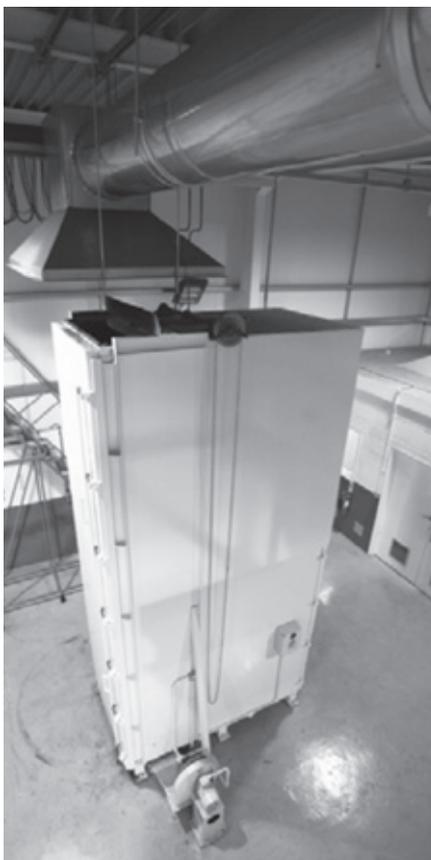
Low smoke cables which have limits on smoke evolution when assessed in the 3m cube smoke chamber with performance limits chosen to give visibility over 10m distance. They were introduced because cables containing conventional sheathing materials based on PVC were seen to give off large amounts of dense smoke when affected by fire.

Such cables have been manufactured since the 1970s, but it was not until advances were made in cable making material technology in the 1980s that cost effective designs became widely available on the market. They are tested to IEC61034-2.

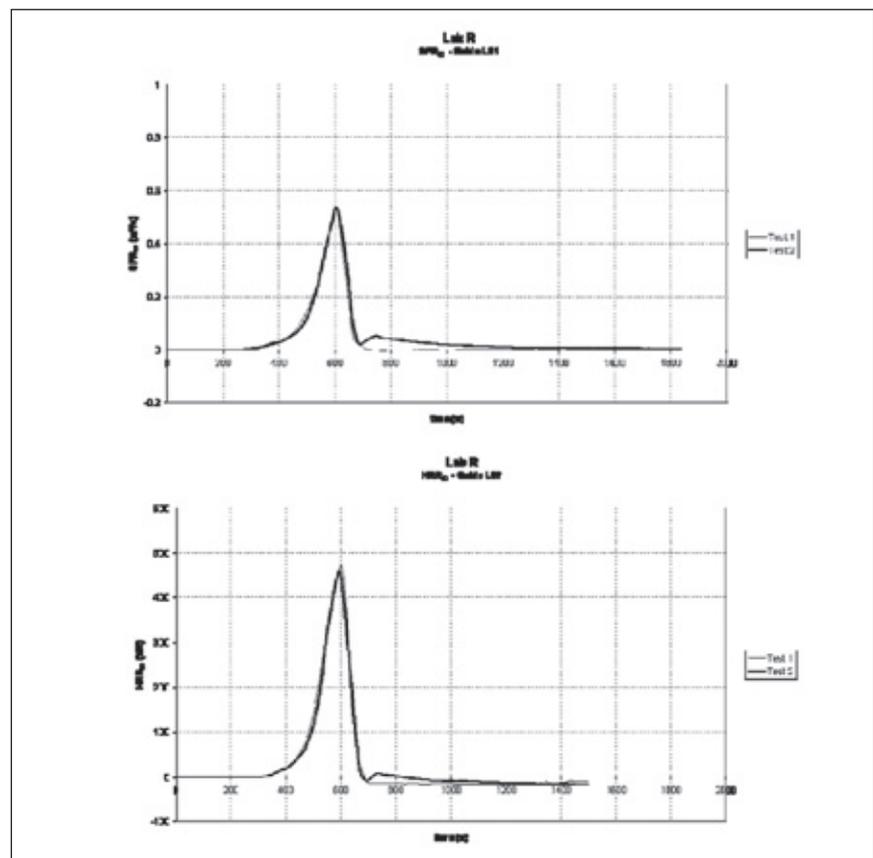
Generally cables of this type also combine the properties of low corrosive gas emission and are manufactured using “halogen free” materials.

Low corrosive gas emission cables which have limits on acid and corrosive gas emission when assessed by burning samples of materials in a bench tube furnace. They were first introduced when users began to raise concern over the large amounts of acid gas emissions from burning reduced propagation PVC cables. This corrosive and irritant gas had been seen to have devastating effects on electrical panels and instrumentation exposed to cable fire effluent<sup>(9,10)</sup>.

○ Figure 2: prEN50399 apparatus



○ Figure 3: Typical SPR and HHR curves



The acid gas emission test of IEC60754-1 and/or the indirect corrosivity test of IEC60754-2 may be used.

Products meeting the requirement of less than 0.5% acid gas emission when tested to IEC60754-1 are often referred to as “halogen free”. In some product standards, an additional test for fluorine content (IEC60684-2) is required.

Cables having low emission of toxic gases are generally restricted to specific applications where end users have imposed such a requirement. Such cables are particularly found in the rail sector. Users have their own “toxic emission” standards ranging from a simple restriction on certain elemental groups to indices derived from an analysis of the gases evolved and weighted according to the known mammalian toxicity factors of the gases present.

The lack of general use of toxicity testing for cables may be explained by early work carried out in the UK which concluded that “From this brief excursion into consequences it appears that the acidic gas concentrations likely to cause harm to people and plant are similar”<sup>(11,12)</sup>.

Current work<sup>(13)</sup> continues to demonstrate the large contribution of HCl to the fire hazard. Some interesting new work studying the effect of important irritant gases on animal lungs<sup>(14)</sup> has also found that HCl and PVC smoke inhalation caused an acute effect with a rapid decline in the lung physiology parameters.

This work would appear to support a cable industry position to offer for particular applications products not releasing important irritant gases (ie HCl from PVC compounds) due to the ability of such gases to hinder escape and damage lungs and reinforce the position of “acidity” as an “indicator” for important irritant toxic effects.

The generic description Low Fire Hazard has recently been adopted by European cable manufacturers to describe cables incorporating the performance characteristics of reduced flame propagation and low emission of smoke and harmful gases.

Although the existing suite of IEC TC20 standards allows a basic overall approach to fire safety when combining the various elements (it is common for product standards to call up IEC60332-3, IEC61034, IEC60754-1 and/or IEC60754-2), recent developments have been towards a

Class	Test method(s)	Classification criteria	Additional classification
A <sub>ca</sub>	EN ISO 1716	PCS ≤ 2,0 MJ/kg (1)	
B1 <sub>ca</sub>	FIPEC <sub>20</sub> Scen 2 (5) and	FS ≤ 1.75 m and THR <sub>1200s</sub> ≤ 10 MJ; and Peak HRR ≤ 20 kW; and FIGRA ≤ 120 Ws <sup>-1</sup>	Smoke production (2, 6) and Flaming droplets/particles (3) and Acidity (4, 8)
	EN 60332-1-2	H ≤ 425mm	
B2 <sub>ca</sub>	FIPEC <sub>20</sub> Scen 1 (5) and	FS ≤ 1.5 m; and THR <sub>1200s</sub> ≤ 15 MJ; and Peak HRR ≤ 30 k W; and FIGRA ≤ 150m Ws <sup>-1</sup>	Smoke production (2, 7) and Flaming droplets/particles (3) and Acidity (4, 8)
	EN 60332-1-2	H ≤ 425mm	
C <sub>ca</sub>	FIPEC <sub>20</sub> Scen 1 (5) and	FS ≤ 2.0 m; and THR <sub>1200s</sub> ≤ 30 MJ; and Peak HRR ≤ 60 k W; and FIGRA ≤ 300 Ws <sup>-1</sup>	Smoke production (2, 7) and Flaming droplets/particles (3) and Acidity (4, 8)
	EN 60332-1-2	H ≤ 425mm	
D <sub>ca</sub>	FIPEC <sub>20</sub> Scen 1 (5) and	THR <sub>1200s</sub> ≤ 70MJ; and Peak HRR ≤ 400 k W; and FIGRA ≤ 1300 Ws <sup>-1</sup>	Smoke production (2, 7) and Flaming droplets/particles (3) and Acidity (4, 8)
	EN60332-1-2	H ≤ 425mm	
E <sub>ca</sub>	EN 60332-1-2	H ≤ 425mm	
F <sub>ca</sub>	No performance		

- (1) For the product as a whole, excluding metallic materials, and for any external component (ie sheath) of the product
- (2) s1 = TSP1200 ≤ 50 m<sup>2</sup> and Peak SPR ≤ 0.25 m<sup>2</sup>/s  
s1a = s1 and transmittance in accordance with EN 61034-2 ≥ 80%  
s1b = s1 and transmittance in accordance with EN 61034-2 ≥ 60% < 80%  
s2 = TSP1200 ≤ 400 m<sup>2</sup> and Peak SPR ≤ 1.5 m<sup>2</sup>/s  
s3 = not s1 or s2
- (3) For FIPEC<sub>20</sub> Scenarios 1 and 2: d0 = No flaming droplets/particles within 1200 s; d1 = No flaming droplets/ particles persisting longer than 10 s within 1200 s; d2 = not d0 or d1
- (4) EN 50267-2-3: a1 = conductivity < 2.5 μS/mm and pH > 4.3; a2 = conductivity < 10 μSmm and pH>4.3; a3 = not a1 or a2. No declaration = No Performance Determined.
- (5) Air flow into chamber shall be set to 8000 ± 800 l/min  
FIPEC<sub>20</sub> Scenario 1 = prEN 50399-2-1 with mounting and fixing as below  
FIPEC<sub>20</sub> Scenario 2 = prEN 50399-2-2 with mounting and fixing as below
- (6) The smoke class declared for class B1ca cables must originate from the FIPEC<sub>20</sub> Scen 2 test
- (7) The smoke class declared for class B2ca, Cca, Dca cables must originate from the FIPEC<sub>20</sub> Scen 1 test
- (8) Measuring the hazardous properties of gases developed in the event of fire, which compromise the ability of the persons exposed to them to take effective action to accomplish escape, and not describing the toxicity of these gases

○ **Figure 4:** Classes or reaction-to-fire performance of electric cables

more integrated approach with test standards that have the potential to measure flame spread, heat release, smoke obscuration and combustion gas release.

## European Reaction to Fire Classification for Cables Under the CPD

Of particular importance to the European market is the development of prEN50399<sup>(15,16)</sup> which is a test standard based upon the apparatus of IEC60332-3-10 with the addition of an exhaust duct equipped to measure heat release rate and smoke production rate. prEN50399 has been developed to support the classification “Classes of reaction-to-fire for electric cables” given in Commission

Decision of 27<sup>th</sup> October 2006 amending Decision 2000/147/EC implementing Council Directive 89/106/EC as regards the classification of the reaction-to-fire performance of construction products. It defines the test methods "FIPEC<sub>20</sub> Scen 2" and "FIPEC<sub>20</sub> Scen 1" given in the Commission Decision.

The essential requirements of the Commission Decision are given in Figure 4.

Although the prEN50399 test equipment is based upon the pre-existing IEC60332-3 series, results from the two procedures are not comparable because the prEN50399 procedure is based upon a standardised "worse case" cable mounting as adopted in the Decision, whereas the IEC procedure is based upon an "as installed" cable mounting. Smoke production is measured in the dynamic prEN50399 test but the resolution is such that the test is not capable of measuring the low levels of smoke associated with state-of-the-art low smoke cables for metro applications and the like. The IEC(EN)61034-2 method is therefore included to assess the highest class. Acidity is assessed using the existing EN50267-2-3 method which is technically equivalent to IEC60754-2.

With the publication of the Commission Decision, the question as to the availability of classified cables becomes relevant. Although all the test methods required are available, at least in draft form, there can be no cables CE marked under the CPD for their reaction to fire performance on the market until all the standards required to support such marking are available.

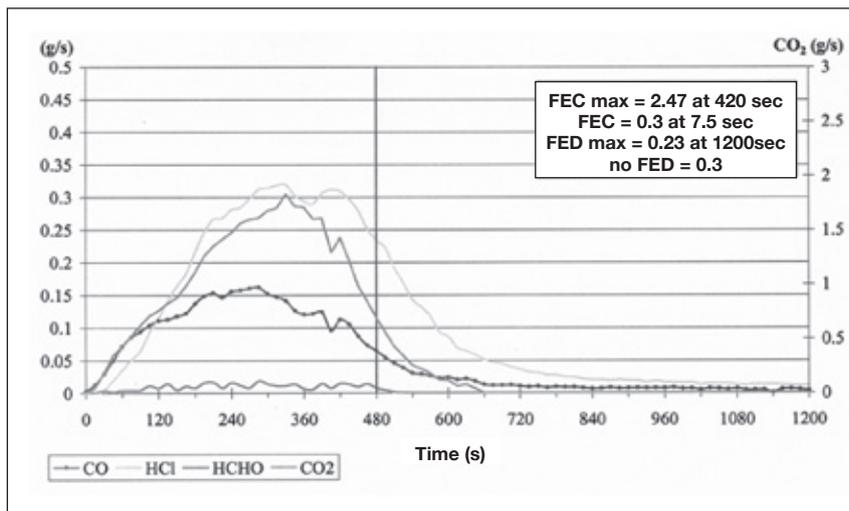
In order to enable Notified Bodies to issue certification of product conformity, it is necessary to prepare European Harmonised Product Standards (ENs) and other supporting standards under Mandate of the European Commission.

CENELEC has to develop and publish these standards and until the time of publication of these Mandated standards, it is not possible to officially issue any Certification for CE Marking under the CPD for reaction to fire performance of cables.

The Mandate (M/443)<sup>(17)</sup> for cables concerning standardisation work for harmonised standards was given to CEN/CENELEC in June 2009 with a scope covering power, control and communication, and optical fibre cables for use in buildings and other civil engineering works subject to regulation (all voltages included).

For performance characteristics, the scope covers reaction to fire, resistance to fire and dangerous substances. CENELEC had accepted the Mandate in principle and was expected to submit a detailed response with a work programme within 2009. The first phase of the work was focused on those documents needed to support marking for reaction to fire, but it is unlikely that these will be completed before late 2011.

The Harmonised Product standard is the key to CE marking under the CPD but development of such a standard presents a difficult problem as there being



○ Figure 5: Typical output of toxic gas production in an EN50399 test

many diverse cable types and the CPD only applies to their reaction to fire, resistance to fire and dangerous substances, with other safety parameters are covered under the LVD. A solution of a performance based standard that can be applied to any cable type and specifically covering aspects under the CPD is under consideration.

The classification standard is an important administrative document that links test results to a classification and includes information on the tests to be carried out, the number of tests for classification, the assessment of results and the classification criteria. It has been agreed in principle by CEN and CENELEC that cables will be included as an amendment to the existing EN 13501-1 so that all products under the CPD are included in one document.

The test method standard (EN 50399) has to ensure that the data necessary for classification can be obtained. The final draft standard is ready for formal vote in CENELEC.

As part of the development of the test method, more than 20 laboratories have taken part in a proving round robin and repeatability and reproducibility were found to be comparable with other large scale tests such as the SBI. Considerable experience (more than 200 tests on cables representing generic constructions widely used in Europe) has also been obtained with the test method during the CEMAC II project which has brought together cable manufacturers, research and testing laboratories and research establishments in the implementation process in order to create the technical background.

A specific objective of the CEMAC II project was to develop rules and procedures for extended application of test results (EXAP) that define which constructions should be tested in order to obtain classification for a defined family of cable constructions. The final report was expected before the end of 2009.

Definitive documented rules for extended application (EXAP) are necessary in order to prevent a situation where every individual cable design has to be tested for classification. It is necessary to establish which cables need to be tested to gain approval for a product range through rules which enable tests on defined products within a family to be extrapolated to other similar constructions within the family.

The EXAP rules have been developed through the CEMAC II research project and will be published by GENELEC.

## Possible Future Developments

It is clear that the European cable industry will be heavily involved with the new integrated reaction to fire test approach of EN50399 and this, together with the other test requirements of the European classification, will require considerable effort in the development of products to meet the various Euroclasses.

It is likely that EN50399 will be considered by IEC at the next major review of spread of flame test methods which is due to be conducted 2012 – 2015.

Although at present there is an absence of any strong regulatory of user driven impetus, the industry is beginning to give consideration as to suitable product tests that could be used to measure effluent and provide data that could be used in fire safety engineering studies such as escape modelling. The integrated EN50399 test could provide a good basis if further equipped to measure effluent quantity and quality.

The development of real time FTIR techniques for measuring effluent has led to some preliminary work being carried out to determine if it is possible to measure effluent quality during the EN50399 test.

Papers presented at the Europacable Seminar "Safety during fire" in May 2009<sup>(18,19,20)</sup> suggested that it was feasible to measure effluent from the EN50399 test using FTIR techniques, to use such techniques to investigate the smoke effluents and to use the input in a simulation of critical evacuation conditions in order to compare the use of different cable types. Determination of a FED and FEC index according to ISO TS13571 during the test could provide a useful measure.

Using such techniques, it was concluded from the simulation study that whereas critical conditions for some of the occupancies were achieved for the design fire when considering standard (PVC sheathed) cables due to the production of irritant gases (HCl, acrolein, formaldehydes) and smoke (reduction of visibility below 10m), critical conditions were not achieved for any occupancy when considering Low Fire Hazard cables.

## Conclusions

By reacting to the requirements of its customers with regards to the reaction to fire performance, the cable industry continues to offer a range of products with different levels of performance consistent with user's needs for particular applications and installation conditions.

The principles established more than 20 years ago of control the burning, control the smoke emission and control the emission of the most important corrosive and irritant gases still remain valid today although refinement and improvement in methodologies have been achieved in the intervening years. The advent of new requirements based on integrated tests involving heat release has been, and will continue to be, a major challenge particularly in Europe.

The effects of the new European regulatory framework for the classification of a cable's reaction to fire performance will be a major change from the existing voluntary position.

Just how the European classification and CE Marking of fire performance under the CPD will affect the cable market is difficult to predict. Implementation is strictly a National matter and whilst it is known that some countries that do not now regulate for the reaction to fire performance of cables have no intention of regulating in the future, other countries have indicated an intention to use the classification in regulation. However, which Euroclass is specified for any particular application is again a national matter.

At a European level, it is likely that the cable industry will continue to be required to supply many different levels of performance, although in time we may expect to see users moving towards the higher classes as cost effective cable designs become available.

Comparison of prEN50399 tests with results from existing IEC tests is difficult due to the different conditions selected for the tests and the multi-criteria approach of the classification.

Experience gained from the CEMAC II project has shown that prEN50399 results are in general greatly influenced by cable size – the smaller the cable, the more onerous the test.

Results for larger power cables (conductor sizes greater than 35mm<sup>2</sup>) can generally be predicted from IEC60332-3-24 (Category C) test results as the mounting in each test is similar but no such relationship exists for smaller cables due mainly to the totally different mounting in each test.

Recent work has demonstrated that real time measurement of effluent in a large scale fire test (such as prEN50399) is possible and that such results can be used as input into modelling studies. However, it is clear that further work would be necessary before any standardisation could take place.

Through its ongoing and demonstrated ability to invest in research, the cable industry will be in a good position to meet the challenges resulting from any new regulatory or end user demands on the fire performance of its products.

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**Prysmian Cables & Systems Ltd – UK**  
**Email:** cables.marketing.uk@prysmian.com  
**Fax:** +44 238 0295 335  
**Website:** www.prysmian.com

# 电缆阻燃性能

撰文：英国 Prysmian Cables & Systems Limited 公司 Terence Journeaux

## 摘要

本文报道了欧洲委员会2006年10月决定实施有关建筑材料阻燃性能分类的欧盟理事会指令89/106/EEC以及实施步骤。本文综述了各种必要的测试方法、分类和产品标准以及延伸应用规则 (EXAP) 的进展；由Europacable资助的为实施提供技术背景的CEMAC II项目的初步结果；以及产品开发面临的挑战。

## 前言

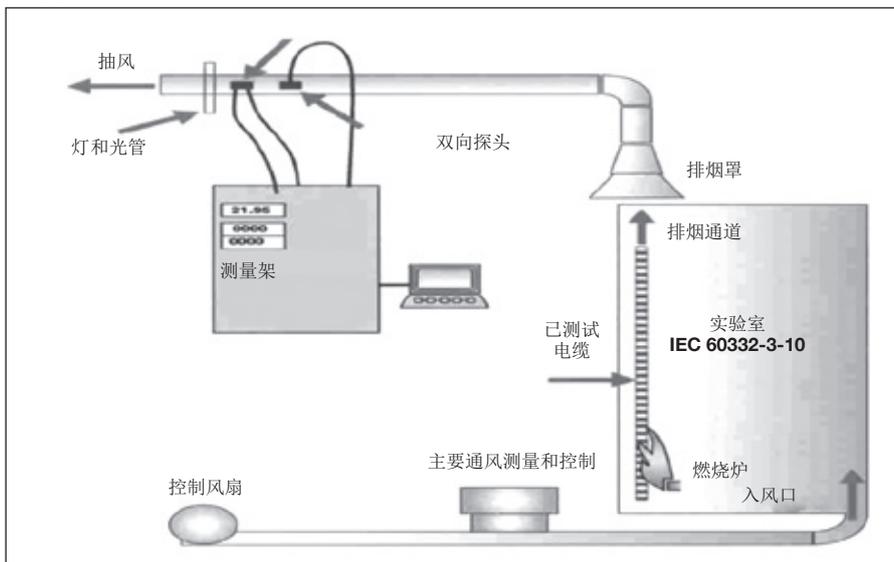
本文旨在概述立法、标准和电缆制造商解决电缆抗燃烧性能当前状况和可能的未来方向，尤其是欧共体的状况。本文并不对使用的测试方法或对测试方法的有效性讨论提供详细的说明。

在开发测试方法、设计低燃烧危害的电缆产品方面，电缆工业经历了漫长的历史，这要追溯到1960年代。在电气技术领域，电缆工业是率先开发测试方法来评价其产品抗燃烧性能的行业之一，而且，历年来一直在努力提炼和改进这些方法。如今正在使用的标准涵盖了燃烧排出物的火焰蔓延、热量释放，不透明性、腐蚀性和毒性。而且，电缆工业在继续发起研究，以改进其产品的抗燃烧性能以及合适的测试方法的定义。

在抗燃烧方面，通过IEC (国际电气技术委员会) 和许多国家和地区标准一直对国际标准有一个不懈的承诺，例如，EN (欧洲标准) 就以IEC出版物为基础。当然，在这种国际框架中，对于电缆燃烧危害途径以及基于所建立的测试方法的应用，区域和区域之间、国家与国家之间存在着不同。

所以，电缆工业提供的产品具有广泛的抗燃烧性能，反映了最终用户的各种要求。

图1: prEN50399测试设备示意图



当按照推荐的程序将降低火焰蔓延 (RP) 型电缆以垂直电缆束安装时，这种电缆从着火处蔓延的距离不会超过规定值。

这些电缆自1970年代起很好地建立了自己的市场，用于很多领域，由于安装条件，例如垂直安装的成束电缆，这些领域原来的火灾蔓延风险是高的。它们按照IEC60332-3各部分的要求通过了测试。

低烟雾型电缆限制了烟雾发展，根据在3立方米烟雾室的评价，所选择的性能指标能给出10米以上的能见度。引入它们是因为含传统护套材料的电缆基于PVC，受火灾影响后会发出大量浓密烟雾。自1970年代制造出这些电缆后，并未被使用，直到1980年代电缆制造材料技术取得进步后，经济的设计获得了广泛的市场。它们按照IEC61034-2要求通过了测试。

## 历史发展

1970年代和1980年代<sup>(1,2,3)</sup>开展的许多早期工作与改进电气电缆抗燃烧性能相关，当时采用了一个4阶段的途径：

- 通过限制燃烧数量和降低火灾沿电缆蔓延来尽量减少危害
- 尽量减少导致出口和逃生受阻的烟雾排放
- 尽量减少导致设备腐蚀的酸性气体排放
- 尽量减少导致人们失去逃生能力、或刺激和阻碍人们逃生的有害烟雾排放

人们认识到：根据所考虑的特定市场领域和典型安装条件<sup>(4)</sup>，这些因素假设可变的重要性水平。电缆工业还认识到：需要开发其自己的测试来合适地评价其产品性能。

尽管这种早期开发导致了一系列可以说是缺乏一体化的测试，但从总体上讲，所采取的途径从现在来看仍然是好的。

另一个重要考虑是：任何相关的因素都应当开发大规模的测试，以便评估最接近产品“实际安装”状态的性能。

国际工作致力于开发测试方法，这些测试方法可以被采纳为“增加”到产品的标准，这样，尽可能广泛地使所有产品类型达到阻燃性能。

## 当前状况

近几年，相关的IEC测试标准未大改，但在持续提炼<sup>(5,6,7,8)</sup>。例如，IEC 332-3发展成为一种由多部分组成的标准，每个部分涵盖一种暴露于火源的不同的安装条件或时间。

这些标准早期开发时建立的原则仍然很好地服务于电缆制造商和用户，而且，IEC标准被许多国家采纳。基于这些测试方法的使用，人们能在市场上找到各种类型的电缆。

一般而言，这种类型的电缆还综合了低腐蚀性气体排放性能，采用“无卤素”材料制造。根据材料样品在台管炉中的燃烧评价，低腐蚀性气体排放型电缆限制酸和腐蚀性气体排放。当用户开始关注降低蔓延型PVC电缆燃烧所释放的大量酸性气体时，人们开始使用这些电缆。

人们看到这种腐蚀和刺激性气体对暴露于电缆燃烧排出物的电气面板和仪表的惊人影响<sup>(9,10)</sup>。可能使用IEC60754-1的酸性气体排放测试和/或IEC60754-2的间接腐蚀性测试。当按照IEC60754-1进行测试，产品满足低于0.5%酸性气体排放的要求时，通常被称为“无卤素”。在有些产品标准中，还要要求进行一项附加测试 - 氟含量(IEC60684-2)。

低有毒气体排放的电缆一般受到具体应用的限制，如果最终用户有这种要求的话。这些电缆尤见于铁路领域。用户有其自己的“有毒排放”标准，包括从简单地限制有些元素基团，到分析气体得出的指标，这些指标根据暴露于这些气体的已知哺乳动物毒理因素加权和演绎得出。英国开展的那些早期工作可能对其解释为缺乏一般的电缆毒理测试，并得出结论：“从这个简单的偏离得出的后果”，看来酸性气体浓度对人和植物可能造成的危害是类似的<sup>(11,12)</sup>。

当前的工作<sup>(13)</sup>继续要证明HCL对燃烧危害的巨大贡献。有些令人感兴趣的新工作研究了重要刺激性气体对动物肺部的影响<sup>(14)</sup>，发现吸入HCL和PVC烟雾后会对肺生理参数的急速下降造成急性影响。这项工作看来支持电缆工业的立场，为特定应用提供不释放重要刺激性气体(即从PVC化合物产生的HCL)的产品，因为这些气体能够阻碍人们逃生，损坏肺部，增强了“酸性”作为重要刺激性有毒影响的一个“指标”的地位。

欧洲电缆制造商最近采纳了低燃烧危害的一般说明，以描述具有降低火焰蔓延、低烟雾和有害气体排放性能特征的电缆。

尽管在结合各种元素后(对产品标准来说，想起IEC60332-3、IEC61034、IEC60754-1和/或IEC60754-2是常见的)，现有的IEC TC20标准允许一种达到燃烧安全的基本的整体途径，但最近已朝着一个更加一体化的途径发展，这种途径拥有测试标准，有潜力来测量火焰蔓延、热量释放、烟雾阻碍和燃烧气体释放。

## 欧洲对CPD名下电缆阻燃性能分类

对欧洲市场尤为重要的是开发prEN50399<sup>(15,16)</sup>，这是一种基于IEC60332-3-10设备的测试标准，配备一个排烟通道，以测量热量释放量和烟雾产生量。

已经开发了prEN50399，支持欧洲委员会2006年10月决定给出的“电气电缆抗燃烧性能等级”的分类，该决定修订了实施有关建筑产品抗燃烧性能分类的欧盟理事会指令89/106/EEC的决定2000/147/EC。在委员会决定中，规定了测试方法“FIPEC<sub>20</sub> Scen 2”和“FIPEC<sub>20</sub> Scen 1”。

委员会决定的基本要求如下表所示。尽管prEN50399测试设备基于现有的IEC60332-3系列，从两种程序获得的结果是不可比的，因为prEN50399程序基于决定所采纳的一个标准化的“更差工况”电缆，而IEC程序基于“实际安装按”的电缆。动态prEN50399测试测量烟雾产生量，但分辨率不能测量地铁之类的应用所采用的一流的低烟雾电缆所产生的低水平烟雾。所以，包括了IEC(EN)61034-2方法来评价最高的等级。采用现有的IEC50267-2-3方法来评价酸度，这种方法在技术上与EN60754-2相当。委员会颁布决定后，出现了有关被分类的电缆可供性的问题。尽管拥有所要求的所有测试方法，至少处于草案形态，但在市场上CPD名下的电缆可能对它们的抗燃烧性能没有CE标志，直到要求的所有标准都支持这种标志。

图2: SprEN50399 设备

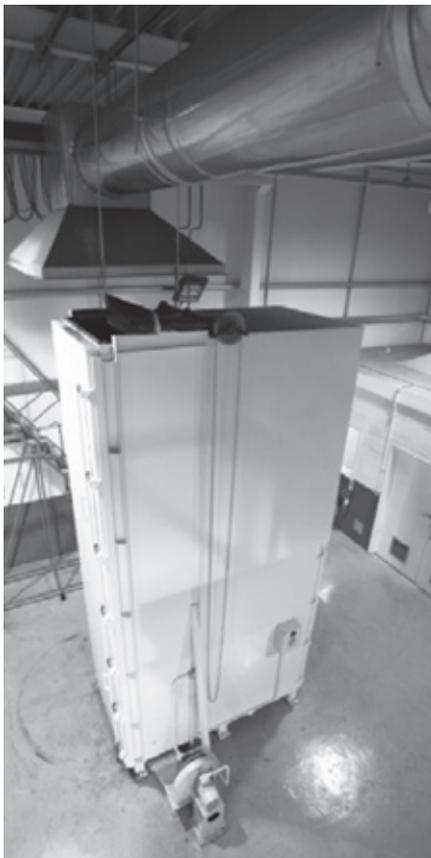
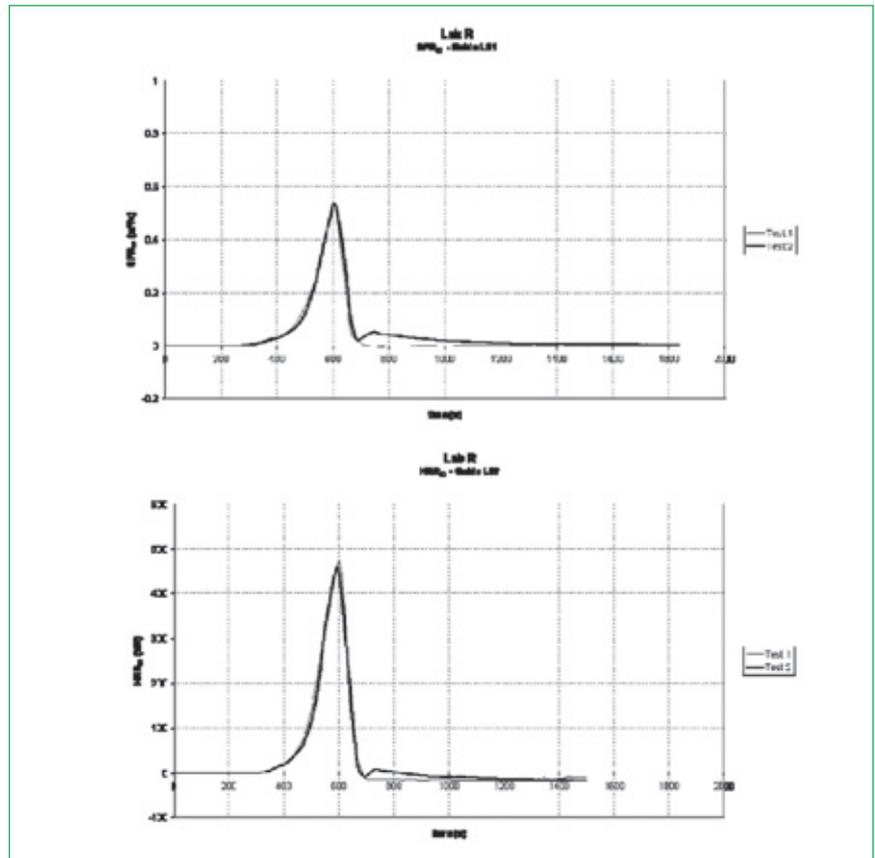


图3: 典型的SPR和HHR曲线



为了使认证机构出具产品符合证书，必须在欧洲委员会法令下制订欧洲统一产品标准(ENs)和其它支持标准。CENELEC必须开发和出版这些标准，而且，在这些法定标准出版前，不可能为CPD名下电缆的抗燃烧性能正式出具任何CE标志证书。

2009年6月，向CEN/CENELEC发出了涉及统一标准的标准化工作的电缆法令(M/443)<sup>(17)</sup>，依照法规(包括所有电压)，其范围包括建筑和其它土建工程的电力、控制、通讯、光缆。

对于性能特征，范围包括抗燃烧、抗燃烧和有害物质。CENELEC已在原则上接受这项法令，并被期望递交一份详细的响应计划，包括在2009年开展的工作。工作的第一阶段致力于那些用来支持抗燃烧性标志的文件，但看来在2011年底不大可能完成。

○ 图4: 电气电缆等级或抗燃烧性能

等级	测试方法	分类标准	附加分类
A <sub>ca</sub>	EN ISO 1716	PCS ≤ 2,0 MJ/kg (1)	
B1 <sub>ca</sub>	FIPEC <sub>20</sub> Scen 2 <sup>(6)</sup>	FS ≤ 1.75 m 和 THR <sub>1200s</sub> ≤ 10 MJ; 和 峰值 HRR ≤ 20 kW; 和 FIGRA ≤ 120 Ws <sup>-1</sup>	烟雾产生、火焰微滴/微粒和酸度 (2, 3, 4, 7, 8)
	EN 60332-1-2	H ≤ 425mm	
B2 <sub>ca</sub>	FIPEC <sub>20</sub> Scen 1 <sup>(6)</sup>	FS ≤ 1.5 m; 和 THR <sub>1200s</sub> ≤ 15 MJ; 和 峰值 HRR ≤ 30 k W; 和 FIGRA ≤ 150m Ws <sup>-1</sup>	烟雾产生、火焰微滴/微粒和酸度 (2, 3, 4, 7, 8)
	EN 60332-1-2	H ≤ 425mm	
C <sub>ca</sub>	FIPEC <sub>20</sub> Scen 1 <sup>(6)</sup>	FS ≤ 2.0 m; 和 THR <sub>1200s</sub> ≤ 30 MJ; 和 峰值 HRR ≤ 60 k W; 和 FIGRA ≤ 300 Ws <sup>-1</sup>	烟雾产生、火焰微滴/微粒和酸度 (2, 3, 4, 7, 8)
	EN 60332-1-2	H ≤ 425mm	
D <sub>ca</sub>	FIPEC <sub>20</sub> Scen 1 <sup>(6)</sup>	THR <sub>1200s</sub> ≤ 70MJ; 和 峰值 HRR ≤ 400 k W; 和 FIGRA ≤ 1300 Ws <sup>-1</sup>	烟雾产生、火焰微滴/微粒和酸度 (2, 3, 4, 7, 8)
	EN60332-1-2	H ≤ 425mm	
E <sub>ca</sub>	EN 60332-1-2	H ≤ 425mm	
F <sub>ca</sub>	未进行		

(1) 对于产品，从整体讲，不包括金属材料，以及对于产品的外部元件（即护套）

(2)  $s1 = TSP_{1200} \leq 50 m^2$  以及峰值  $SPR \leq 0.25 m^2/s$

$s1a = s1$  以及传输符合 EN 61034-2  $\geq 80\%$   
 $s1b = s1$  以及传输符合 EN 61034-2  $\geq 60\% < 80\%$   
 $s2 = TSP_{1200} \leq 400m^2$  以及峰值  $SPR \leq 1.5 m^2/s$   
 $s3 =$  不是  $s1$  或  $s2$

(3) 对于FIPEC<sub>20</sub> 情景 1 and 2:  $d0 =$ 在1200秒内无火焰液滴/颗粒;  
 $d1 =$ 无火焰液滴/颗粒, 在1200秒内坚持10秒以上;  $d2 =$  不是  $d0$  或  $d1$ .

(4) EN 50267-2-3:  $a1 =$  导电率  $< 2.5 \mu S/mm$  以及  $pH > 4.3$ ;  $a2 =$   
 导电率  $< 10 \mu S/mm$  以及  $pH > 4.3$ ;  $a3 =$  不是  $a1$ 或 $a2$ . 无下降=无性能测定。

(5) 流入测试室的空气应当设定到 $8000 \pm 800 l/min$ .  
 FIPEC<sub>20</sub> 情景 1 = prEN 50399-2-1 安装和固定同下  
 FIPEC<sub>20</sub> 情景 2 = prEN 50399-2-2 安装和固定同下

(6) B1<sub>ca</sub> 电缆的烟雾等级必须源于FIPEC<sub>20</sub> 情景 2 测试。

(7) B2<sub>ca</sub>、C<sub>ca</sub>、D<sub>ca</sub> 电缆的烟雾等级必须源于FIPEC<sub>20</sub> 情景 1 测试。

(8) 测量火灾产生气体的有害性，它影响了暴露其中的人员采取有效行动完成逃生的能力，并不描述这些气体的毒性。

统一产品标准是CPD名下电缆获得CE标志的关键，但制订这样一个标准有一个困难的问题，因为有许多电缆类型，而且CPD仅适用于它们的抗燃烧性能、抗燃烧和有害物质性能，而其它安全参数包括在LVD名下。正在考虑一个解决方案，即采用一种以性能为基础的标准，可以适用于任何电缆类型，而且特别包括CPD的各个方面。

分类标准是一份重要的管理文件，它将测试结果与一个分类连接，并包括要执行的测试的信息、分类测试数量、结果评价和分类基准。

CEN 和 CENELEC已原则同意：电缆将作为现有EN13501-1的一种修订而被包括在内，这样，CPD名下的所有产品都将被包括在一个文件内。

测试方法标准(EN 50399)必须保证能够获得分类所必需的数据。最终标准草案已经准备好，以便在CENELEC正式表决。

作为测试方法开发的一部分，20多个实验室参加了联合验证，发现重复性和可重复性可以与其它大规模测试相媲美，例如SBI。在CEMAC II项目期间，还获得了许多测试方法的经验(对在欧洲广泛使用的代表性电缆构造进行了200多次测试)，这个项目在实施过程中汇聚了电缆制造商、研究和测试实验室、研究机构，以便创造技术背景。

CEMAC II 的一个具体目标是制订测试结果延伸应用规则和程序(EXAP)，规定应当测试哪些电缆构造，以便对一定系列的电缆构造进行分类。预期在2009年底递交最终报告。

用文件明确的延伸应用规定(EXAP)是必要的，以便呈现一种状况，即每个电缆设计必须经过分类测试。必须建立哪些电缆要被测试，以便通过规则获得产品范围批准，这个规则能测试一个系列产品中一定的产品，以类推到系列中其它类似构造的产品。通过CEMAC II研究项目，已经制订了EXAP规则，将由CENELEC出版。

## 可能的未来发展

显然欧洲电缆工业将在很大程度上涉及新的一体化抗燃烧测试途径EN50399，再加上欧洲分类的其它测试要求，这将要求相当大的努力来开发产品，以满足各种欧洲等级。在对火焰蔓延测试方法的下一次主要审查中，IEC很可能考虑EN50399，因为它将在2012-2015年实施。

尽管目前还没有由用户驱动力推进的强劲法规，但工业正在考虑合适的产品测试，以测量排出物，并提供数据，以用于消防工程研究，例如逃生模型。一体化EN50399测试能提供一个好的基础，如果能进一步测量排出物数量和质量的的话。测量排出物的实时FTIR技术的开发已经推动了一些初步的工作，以确定在EN50399测试中可否测量排出物质量。在2009年5月

Europacable研讨会“火灾安全”发表的文章<sup>(18, 19, 20)</sup>建议：在EN50399测试中用FTIR技术来测量排出物是可行的，用这种技术来调查烟雾排出物，并使用关键撤退条件模拟的结果，来比较不同类型电缆的使用。

根据ISO TS13571，在测试期间确定一个FED和FEC指标，能提供一个有用的测量。

使用这种技术后，模拟研究结论表明：对于有些建筑物，当考虑标准电缆(PVC护套)时，由于产生刺激性气体(HCL、acrolein、甲醛)和烟雾(能见度降低到10米以下)，会达到关键条件。当考虑低燃烧危害电缆时，在任何建筑物中均不会达到关键条件。

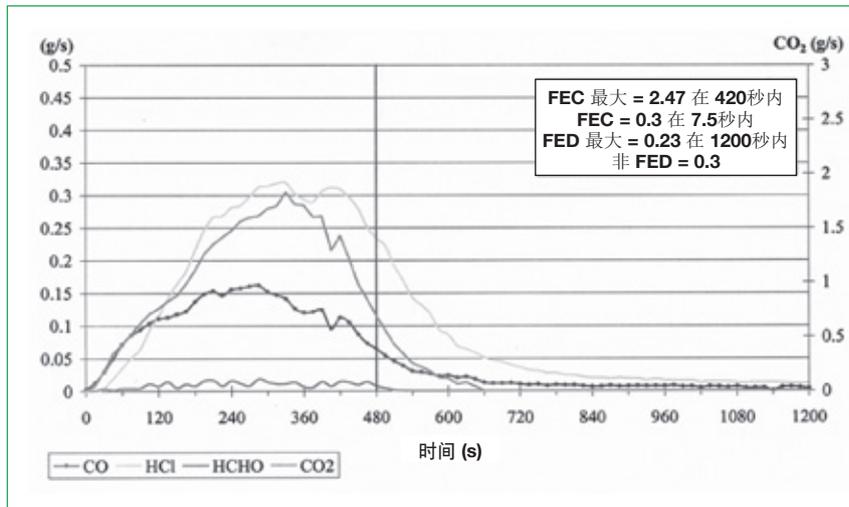


图5: 在EN50399试验中，所产生的有毒气体图表

## 结论

通过达到客户对抗燃烧性能的要求，电缆工业继续提供具有不同性能水平的各种产品，与用户需要一致，尤其是对应用和安装条件的需要。

20多年前建立的控制燃烧、控制烟雾排放以及控制最重要的腐蚀和刺激性气体排放的原则在今天仍然有效，尽管其间提炼和改进了方法。出现新的涉及热量释放、基于一体化测试的要求一直是，也将继续是一个主要的挑战，尤其是在欧洲。对于现有的自愿立场，新的有关电缆抗燃烧性能分类的欧洲法规框架的影响将是一个重大变化。

CPD名下电缆的欧洲分类以及抗燃烧性能的CE标志将如何影响电缆市场，这难以预测。实施严格地讲是一个国家问题，而且，有些国家不规定电缆抗燃烧性能，也没有在将来进行管理的意思，有些国家已表明意愿，要在法规中使用分类。但是，在任何秃项应用规定哪个欧洲等级又是一个国家问题。在欧洲，电缆工业很可能将继续被要求提供许多不同水平的性能，尽管现在我们可能看到用户们选择较高等级的电缆，因为市场上有经济的电缆设计。比较prEN50399测试与现有IEC测试的结果是困难的，因为测试所选择的条件不同以及多重的分类标准途径。

CEMAC II项目经验表明：prEN50399结果一般更大地受电缆尺寸的影响，电缆尺寸越小，测试越是繁重。较大电力电缆的结果(导体尺寸大于35mm<sup>2</sup>)一般预计来自IEC60332-3-24(C类)测试结果，因为每个测试的安装是类似的，但较小电缆则没有这种关系，主要因为每个测试的安装完全不同。

最近工作表明：在大规模燃烧测试中，实时测量排出物(例如prEN50399)是可能的，而且这些结果能作为模型研究的输入。但在可能发生标准化之前，显然还需要做进一步的工作。

电缆工业通过其持续可见的投资于研究的能力，能满足任何新法规或最终用户对其产品抗燃烧性能需求的挑战。

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Asia Pacific Wire & Cable Corporation Ltd .....	20, 32	IDES.....	62, 73	Sikora AG .....	66, 71
Basec .....	11, 32	Instron .....	67	Silver Fox.....	53, 71
Befut International Co Ltd.....	37	ITRI .....	14, 33	Simufact Engineering GmbH.....	55, 71
Cable & Wireless .....	16, 34	Kabelschlepp.....	52, 69	Stanaway Wire Consulting .....	25
Cords Cable Industries .....	26, 34	LS Cable & System .....	37	August Strecker GmbH & Co KG.....	60, 72
Creat Resource Holdings .....	37	Maschinenfabrik Niehoff GmbH & Co KG .....	12	Tenova .....	22, 38
CTC Cable.....	25, 34	Nippon Niehoff Co Ltd .....	12	Tratos.....	60, 73
Decalub .....	65	Pacific Fibre.....	20, 33	VI Systems GmbH.....	66
Evonik Degussa GmbH.....	57, 72	Plasmait GmbH.....	12	Wuhan Iron & Steel.....	26, 38
Fainplast.....	28-31	Rosendahl Maschinen GmbH .....	53, 71	Zumbach Electronic AG .....	62, 73

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AlphaGary Corporation .....	Back cover	Jiangsu Qunye Electrical Co Ltd.....	15
Anbao (Qinhuangdao) Wire & Mesh Co Ltd.....	18	Jingdezhen Tonphin Electrical Co Ltd .....	102
Arvind Anticor Ltd .....	96	KJM GmbH.....	84
ATE-Applicazioni Termo Elettroniche Srl.....	54	Ernst Koch GmbH & Co KG.....	79
Beta LaserMike Inc .....	39	Lämneå Bruk AB .....	49
Bongard Trading GmbH & Co KG.....	98	Locton Ltd .....	67
Borouge Pte Ltd.....	56	LUKAS Anlagenbau GmbH .....	18
Construcciones Mecánicas Caballé SA.....	27	Magnetic Analysis Corporation .....	25
Cable Tech Machines .....	40	Maschinenfabrik Niehoff GmbH & Co KG .....	Front cover
Candor Sweden AB.....	67	Messe Düsseldorf GmbH – wire Düsseldorf 2012.....	83
CERSA-MCI.....	33	Ningbo Kaite Machinery Co Ltd.....	23
Changzhou Aibang Machinery & Science Tech Co Ltd....	61	OCN SpA.....	94
Condat SA.....	81	Plasmait GmbH .....	12
Continuus-Properti SpA.....	86	Pressure Welding Machines Ltd.....	57
Dalian Tongda Equipment Technology Development Co Ltd .....	64	Rautomead Ltd.....	78
Daloo Machines.....	53	Roblon A/S .....	55
Dongguan Zhangli Machine Fittings Co Ltd .....	96	Rosendahl Maschinen GmbH .....	17
Dow Electrical & Telecommunications .....	19, 35	Setic – Gauder Group .....	45
EMO Hannover 2011.....	68	Shanghai Nanyang Equipment Factory .....	36
Enkotec A/S .....	Inside front cover	Shanghai Shenchen Wire & Cable Equipment Co Ltd.....	38
Eurolls Group.....	63	Shanxi Tianxiang Machinery Co Ltd .....	16
FA.IN.PLAST Srl .....	1	Sheng Chyeen Enterprise Co Ltd .....	Inside back cover
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Gimax Srl.....	4-5	Stolberger KMB GmbH .....	89
Guanbiao Electrical Machinery Co Ltd .....	22	Supermac Industries India Ltd.....	53
H & S Engineering Impactbond Ltd .....	77	Tianjin Jianke Mechanical Products Co Ltd .....	24
Henrich Maschinenfabrik GmbH.....	89	Troester GmbH & Co KG.....	97
Huestis Industrial .....	85	Upcast OY .....	3
Ideal-Werk C + E Jungeblodt & Co KG .....	47	www.wirefirst.com .....	58-59
Investment Opportunity.....	101	Wire & Plastic Machinery Corp .....	26
ITEC Co Ltd.....	66	Wirex Dies & Steel India Pvt Ltd .....	80
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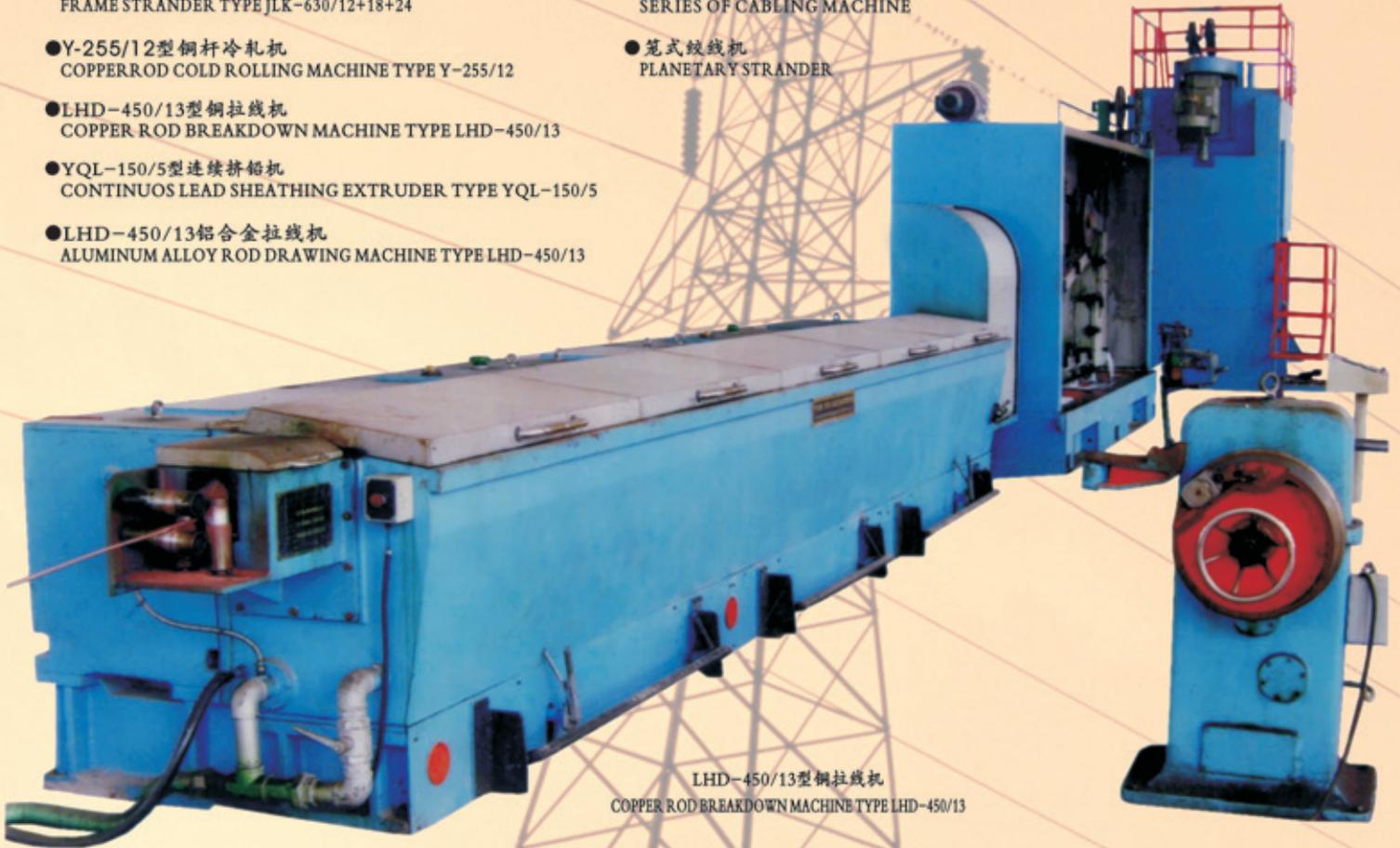
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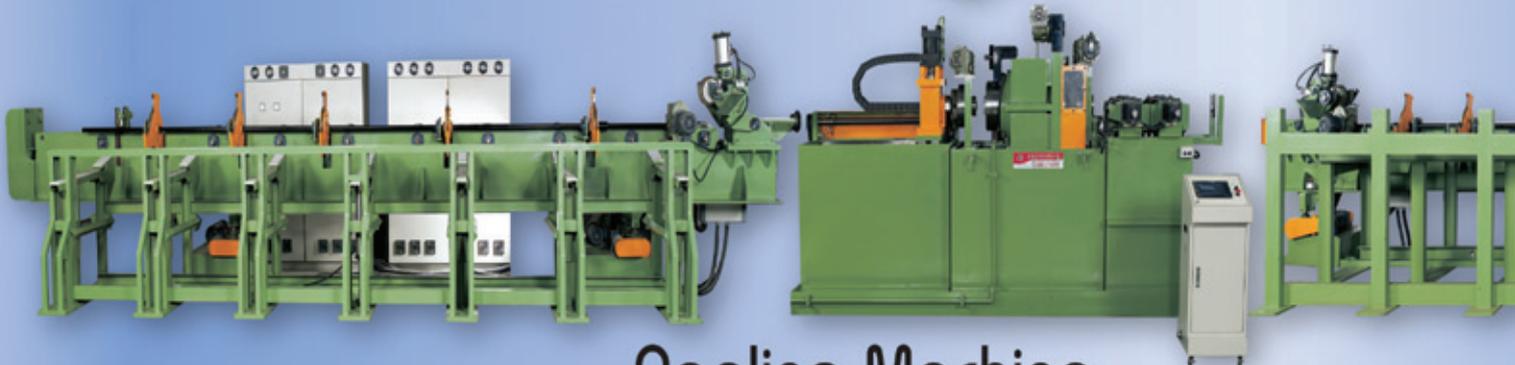


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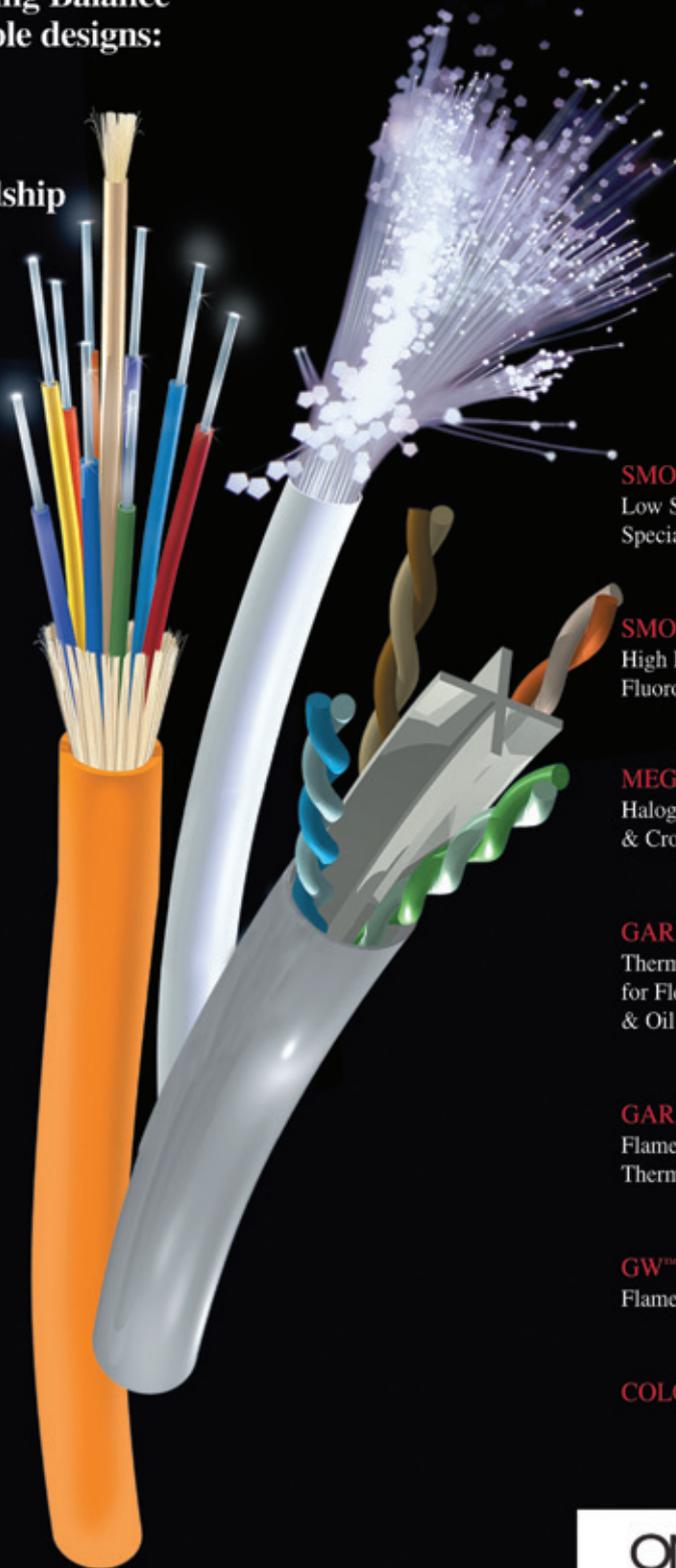
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