

Tinning line for production of solar ribbon for North America

Howar Equipment and Plasmait introduced the PlasmaPreplate Tinning Line to the North American market at Interwire in May.

PlasmaPreplate tinning process can be used for production of tinned copper conductors such as solar ribbon. Since its introduction in 2007 it has become the process of choice for the leaders in the PV ribbon industry in Europe and increasingly in Asia. Solar ribbon is fast becoming of interest also in America due to the increasing interest for solar energy in the US and Canada.

Solar ribbon (also called PV ribbon) is an essential component in every mainstream solar panel. It is soldered directly onto a solar cell to collect electrical current generated in the cell. PV ribbon is tinned copper ribbon between 1mm and 6mm wide and 0.08mm-0.5mm thick with a 10-30 micron thick tin coat.

PV ribbon is required to retain high degrees of conductivity throughout the life-time of a solar panel – typically 20-25 year. Its solder contact with the cell must withstand outdoor weather conditions that mean constant fluctuation of temperature and humidity.

PV ribbon therefore commonly requires a high degree of softness with YS (Rp0.2% < 90MPa and elongation > 25%). A good solder coating is necessary to ensure long-term corrosion protection and durable solder joint. PV ribbon also requires camber less than 0.3% and low dimensional tolerances.

The PlasmaPreplate process has been rapidly adopted by the PV ribbon industry since its introduction in 2007. Its multiple rollouts by the leaders in the industry were due to its superiority compared to the conventional tinning process.

The main advantage of the process is in the quality of the finished product. The process allows a production of a ribbon with a high degree of softness and tin coat quality. The line runs at up to five times the speed of a conventional line whilst performing annealing and cleaning inline with tinning in a single run. Such a high output line requires considerably less manpower to operate than the conventional tinning line. The plasma production is also environment and operator friendly without fluxing and chemical treatments.

Companies interested in testing their own material on PlasmaPreplate tinning line are welcome to contact Howar Equipment to discuss a trial.

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Bound for South American client

Queins & Co, Germany, is currently manufacturing another big planetary stranding machine for a South-American customer to be used for subsea cables/umbilicals.

The machine will handle power cable, stainless steel tubes, signal cables

and hoses. Pay-off reel weight is 30 tons each, with a reel flange diameter of 3,000mm.

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▲ The planetary stranding machine from Queins

Authority level of visitors to wire Russia 2011 suggest things are moving in Russian and CIS markets

IWMA exhibiting members at wire Russia in Moscow in May, questioned by staff, felt that their contacts had been of a higher level than in 2010 – despite attendance figures appearing quiet. There appeared to be progress at last on potential investments in new

technology, justifying exhibitors' participation costs.

The IWMA stand secured 35 firm enquiries as well as new memberships, thanks to the good work undertaken by executive board members Joerg Inhelder and Stuart

Duff. There was also strong interest in the IWMA's CabWire World Conference 2011 in Düsseldorf in November.

The association expects to secure a number of new memberships in its follow up of the enquiries received.

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Wire & Cable News

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Autumn 2011
www.iwma.org

WCN



Ready to succeed the best-seller?

When you are looking for a robust and powerful timing belt drive that also is a paradigm for successful industrial design, you cannot help checking out the Joachim Uhing KG portfolio.

You will find an innovation launched by the internationally renowned engineering company: the motorised AZ 1040. It succeeds the tried and tested AZ 2004 the company based at Mielkendorf has been selling since 1991. The new timing belt drive was developed for all applications in mechanical engineering.

The AZ 1040 has the potential to quickly take the place of its predecessor in the Uhing product range and to become the bestseller. Even at first glance, it convinces by its design, giving you an idea of optimal applicability: the one-piece profile with integrated carriage guide allows for greater free stroke lengths than were possible with AZ 2004.

Compared to the previous model, several installation and attachment options were added to the AZ 1040. For this purpose, head pieces made of the same profile as the drive itself were integrated. The T-slots are integral part of the profile and facilitate mounting of additional attachments. Slide blocks can be inserted laterally.

Like all Uhing timing belt drives, the AZ 1040 is made of a bend-proof and torsion-proof aluminium profile. A belt lock fastened to the roller-mounted load carriage transmits the power from the timing belt to the load carriage running

on round, corrosion-proof and hardened guide bars mounted on the aluminium profile.

Uhing offers the new timing belt drive as a complete pre-assembled unit with motor, making assembly and installation fast and smooth. The AZ1040 proves to be particularly practical because its motor can be mounted in several positions.

This feature more or less excludes space issues design engineers have often to deal with when integrating such units. During operation, the AZ 1040 proves to be particularly robust and powerful. The carriage covers a distance of 200mm per shaft rotation. The motorised drive features a maximum traversing speed of 5m /s and an idling torque of 0.7Nm. The dead weight of the drive for a stroke of 0mm is 9.1kg, the weight per 100mm stroke is 0.9kg. The carriage weighs 2.3kg.

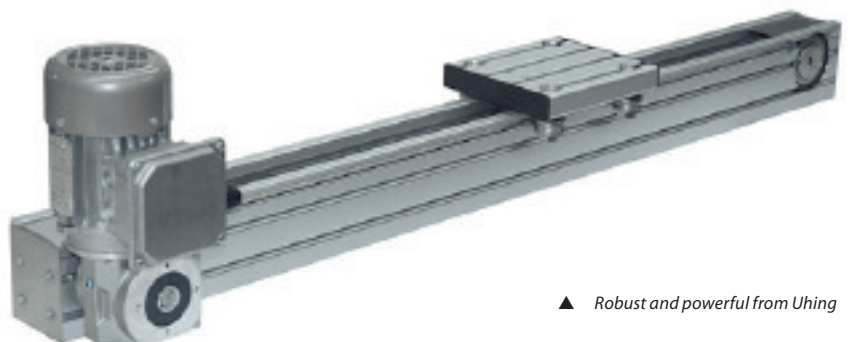
The wide range of accessories for AZ 1040 comprises: a coupling shaft assembly, motor cones, overload slip clutches, elastic couplings, rotary encoders, cable chains, guide units for multi-axis systems, and position read-outs. Special accessories available for the AZ 1040 are: proximity switches, wipers, lubrication and wiper unit, increased corrosion protection, an enclosure, and carriages with special threads.

Joachim Uhing KG GmbH & Co – Germany

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Email: weber@uhing.com

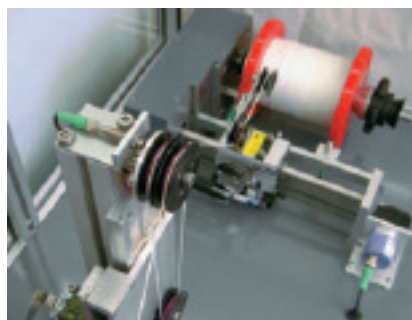
Website: www.uhing.com



▲ Robust and powerful from Uhing



▲ The FA series: Non-contact flange detection winding systems



▲ The AVS series: Automatic winding width control systems

Cutting the costs

Traversing systems continuously laying material between spool flanges can become a significant cost factor when an operator is required to make frequent adjustments, for example, if spools are not in exactly the same position after a material changeover, or when spool width tolerances are too large.

The re-use of spools with bent or deformed flanges, for further winding, requires frequent adjustment of the traversing width, resulting in escalating production costs and staff productivity processes.

To address these problems, Techna introduced two systems from Joachim Uhing KG, inventors and manufacturer of the world's largest and most sophisticated range of Rolling-Ring Linear Drives.

The "FA" System provides a cost-effective method of automatically compensating and adapting the reversal points to changed conditions, by ensuring that there is no required re-adjustment of reversal points following spool changes or during the winding process.

Based on the "tried and tested" Rolling-Ring Linear Drive principle, the "FA" System provides a pneumatic reversal triggered by a light-barrier sensor, which travels on the system and is located such that the spool flanges interrupt the light-beam, at the end of each stroke, so triggering the reversal mechanism.

As there are no pre-set stops, the spool flanges limit the stroke and positioning errors while spool width variations are automatically detected and the reversal points adapted. Adjusting the light barrier to different

flange diameters is easily achieved without affecting previous settings.

AVS Series: Automatic Winding-Width Control System.

The "AVS" system prevents the occurrence of winding flaws, such as bulges and dents, arising in the wound flange areas of spools and relieves personnel from unproductive monitoring and adjustment operations.

The system has been trial proven at one of the world's largest tyre manufacturers on spools which are continuously re-used and which, during their service life, become deformed, dented and bent, at the flanges.

The "AVS" system was developed to provide a smooth winding pattern in the critical flange areas, by utilising two sensors to monitor the material line speed and the spool speed, such that when a dent forms at the end of a stroke, the spool speed slightly increases in relation to the constant material speed.

A third sensor reports the fault to the controller which increases the material in the dent area by widening the traversing width at this stroke-end until the flaw has been corrected, thus ensuring an optimum pattern on the spool and providing smooth unwinding when required.

This robust system utilises commonly available standard control components and sensors which can be sourced locally.

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September 2011

13-15 wire/Tube Southeast Asia 2011
 Bangkok, Thailand

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 www.wire-southeastasia.com

October 2011

4-6 WiCAB/Tubotech 2011
 São Paulo, Brazil

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November 2011

7-8 CabWire World Conference 2011
 Congress Center, Düsseldorf, Germany

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 Website: www.iwma.org

March 2012

26-30 wire/Tube Düsseldorf 2012
 Düsseldorf, Germany

Contact: Messe Düsseldorf GmbH
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 Website: www.wire.de

September 2012

25-28 wire/Tube China 2012
 Shanghai, China

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October 2012

29 Supporting conference at Wire & Cable India, Mumbai

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30-1 Nov Wire & Cable India, Mumbai, India

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RX5 completes Rosendahl's crosshead series RX, fit for single crosshead sales



▲ The Rosendahl Crosshead

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 and helping to save material.

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 as well.

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Amended dates for Wire & Cable India 2012

The dates of Wire & Cable India 2012 in Mumbai have been amended from 29th-31st October to new dates of 30th October to 1st November 2012 inclusive.

This change will facilitate the organisation of a supporting technical conference on Monday, 29th October 2012. Sister trade associations the IWMA and IWCEA hope to play a role in co-organising the conference on the eve of the exhibition with the previous organiser, the Confederation of Indian Industry. The Tube India 2012 exhibition will also now take place in the same Mumbai venue, the Bombay Exhibition Centre, Goregaon (East), on the revised dates.

English webinars

Since 2009 data M Sheet Metal Solutions has been staging webinars – web-based seminars – for its German-speaking customers.

These are set in a virtual classroom with customers sat in front of their own computers, watching and taking part in the demonstration.

This free online training has proved so popular that the company is now running the webinars in English and further details are available at www.datam.de/en/training-support/webinars

data M Sheet Metal Solutions GmbH – Germany

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Marldon airwipes for cable

Following the extrusion process, air wipes are used to remove cooling water, either droplets or films. Wiping is necessary to ensure proper operation of such equipment as spark testers, in-line printers and dimension gauges.



▲ High Speed Air Wipe Model 838 A

Marldon air wipes achieve maximum wiping action because the wipe orifice can be easily changed to the optimum diameter for efficient water removal for a given product diameter. Because this orifice is adjustable, a wide range of product sizes can be accommodated with a single wipe.

Other brands of air wipes use a fixed orifice, which is efficient for only one product diameter. Different units must then be used to optimally wipe the full range of product diameters

manufactured on a single production line.

All Marldon air wipes allow the passage of lumps by use of hinging mechanisms that open to allow lumps through, and then close back when they have passed.

Marldon air wipes are constructed of durable materials, including stainless steel, aluminium and ceramics, depending on the model.

The model 838 is a high-speed air wipe for small products up to 8mm in diameter. Multiple air jets provide maximum wiping action. The spring-loaded upper assembly will lift allowing easy threading and the passage of lumps. Wear resistant ceramic inserts prolong the life of the unit and assist breaking the surface tension of water. The 838 is effective at line speeds of up to 1,000 metres/minute.

Marldon Adjustable Orifice Air Wipes have three sizes in the range, which can accommodate product diameters of up to 65mm. Made of stainless steel, they are effective at line speeds commensurate with most production line speeds.

Two wheels are mounted to a sturdy support bracket; the lower

wheel is stationary and the upper wheel hinged to facilitate loading



▲ Adjustable Orifice Air Wipes B

and to allow the passage of lumps. Adjusting the orifice is accomplished by rotating the indexed wheels to the appropriate diameter marking on the circumference then locking them in place. Air is supplied at an "upstream" angle only to the orifice through which the cable passes to efficiently provide maximum wiping action all around the cable.

Marldon Group Ltd – UK
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Email: sales@marldon.com
Website: www.marldon.com

Heading into Europe

Mount Joy Wire is excited to announce it's new agreement with Stanaway Wire Consulting. John Stanaway will represent the product line throughout Europe.

Mount Joy Wire is in its 20th year and is working with John to expand its market presence in Europe.

The core products he will represent include brush wire, oil tempered wire, chrome silicon wire, music wire and hard drawn wire.

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IWMA Educational Trust Fund supports research at Advanced Steel Processing and Products Research Centre

Following an application by Research Assistant Professor Emmanuel De Moor at the ASPPRC, the trustees of the IWMA Educational Trust Fund have agreed to provide two years of funding for research projects at the establishment.

The funding award is also supported by IWMA member company Bekaert.

The two research projects are: "Study of boron and vanadium alloying of high carbon steel wire to improve properties" and "Determination of free nitrogen in wire steels". Professor De Moor has accepted an invitation

from the organisers of the CabWire World Conference 2011 in Düsseldorf, Germany, on 7th November to present a technical paper based on the research: "Effect of boron alloying on microstructural evolution and mechanical properties of high carbon wire".

The IWMA is always interested in supporting education and research through its Educational Trust Fund and for more information about scholarships, research grants and travel awards to wire Düsseldorf 2012 please visit the association's website at www.iwma.org

Atlanta debut for LayScan

Beta LaserMike debuted its new LayScan measurement system at the Interwire 2011 Trade Exposition in Atlanta, Georgia.

The LayScan system (patent pending) accurately and consistently measures the lay length of twisted pairs used in telecommunication cables.

The system uses optical, non-contact measurement technology to perform on-line, high-speed lay length measurements with the highest precision to within 1mm.

Providing high-data rate capabilities, LayScan precisely determines the variations in lay length within each lay. Systematic lay variations that are typically caused by twinning and cabling operations can be readily observed and measured.

A data acquisition system effectively collects and processes the lay length data, and reports the measurement results.

Beta LaserMike's LayScan measurement system delivers many benefits to cable manufacturers:

Improves product performance by better controlling lay lengths and delivering a higher level of cross-talk performance.

Minimises product cost and scrap by optimising the lay set and provides the ability to consistently control lay lengths over time.

▼ The new LayScan from Beta LaserMike



Reduces the product development cycle through precise measurements of lay length values during design trials and experiments.

Allows standardised pair lays across various twinning systems and reduces the need to limit production scheduling to qualified equipment.

Beta LaserMike – USA

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Email: sales@betalasermike.com

Website: www.betalasermike.com

IWMA new members

Fushi Copperweld	www.copperweld.com
August Strecker GmbH & Co KG	www.strecker-limbudg.de
ICE Wire Line Equipment Inc	www.icewireline.com
Plasmait GmbH	www.plasmait.com
Xiamen New Steel Metal Products Ltd Co	
Three Sixty Extrusion Technology Ltd	www.360extrusion.com
Integer Research Ltd	www.integer-research.com
Mount Joy Wire Corporation	www.mjwire.com
Assomac Machines	www.assomac.in
SAMP S.p.A. - Sampsistemi Division	www.sampsistemi.com
A. Appiani Srl	www.appiani.reels.it
Smeets S.A.	www.smeets1921.com
United Wire Inc	www.unitedwirecompany.com



◀ IWMA Chairman Colin Dawson now presides over 350 full and associate corporate members

The IWMA is pleased to welcome these companies as new members to the Association.

If your company would like to join the world's largest corporate membership organisation for the wire, cable and wire product industries, just visit www.iwma.org and click 'Join the IWMA'

Interwire 2011 benefits from return to its traditional home in Atlanta

This year the Interwire exhibition in the USA, at the show and conference centre in Atlanta, was attended by the IWMA chairman Colin Dawson and his wife Elizabeth, and supported by board member John Stanaway and Phillip Knight, the executive secretary who organised the building and fitting of a new-style booth.

Travelling over to Interwire 2011, Mr Knight met various wire and cable industry colleagues all of whom were pleased that the exhibition was returning to Atlanta for the first time since 2005 after two appearances in Cleveland.

This support for the move back to Atlanta was reinforced by many similar comments made both by visitors to the association booth and fellow exhibitors during the event.

In a new format the exhibition was reduced from four to three days and located in a smaller hall than recent editions, which created a good, compact feel to the event. The IWMA understands that total exhibitor space was 100,000 ft² with pre-registered visitor numbers of nearly 4,000.

The exhibition was quiet by European standards but most exhibitors were reasonably satisfied with the results and said that it was much better than the 2009 exhibition in Cleveland. In particular, IWMA board members who exhibited, Amanda Shehab, of Cimteq Ltd, and Sean Harrington, of Ceeco Bartell Products, both said that the exhibition had been useful in renewing contacts with existing customers and talking to potential new customers. Member company AIM inc, whose booth was in a prime location, reported a very busy and worthwhile exhibition.

Despite the reduction in exhibit days the IWMA enjoyed a more positive experience than in Cleveland in 2009, signing new member companies, attracting interest from potential new members and selling table tops for the CabWire World Conference in Düsseldorf in November this year. It was also noticeable that there is increasing interest in the IWMA-sponsored WICAB 2011 exhibition in Brazil in October.

Interwire 2013 will again take place in Atlanta.

Going from strength to strength

Formed in March 1999, Xiamen New Steel Metal Products produces epoxy resin coated steel bar.

The main technicians in the company all have more than ten years' experience and provide strong support for the company's development.

Production quality is continually advancing and both quality and service get regularly praised by end-users. The company obtained ISO9001:2000 certification in March 2002, when it also secured the title of "China quality feels relieved the brand of building materials".

In August 2003, it won production certification for China: "National Authority of the State Standards Testing of Products - National Quality Testing".

The company possesses numerous national patents in epoxy resin coated steel bar and epoxy resin coated steel using sterepsinema. "Xin Steel Brand" insulating coat steel bar has become a well-known brand after years of development.

Xiamen New Steel Metal Products Co Ltd - China

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Email: newsteel@126.com

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Launching a new borax-free alternative

Environmental legislations are constantly evolving; among the latest European regulations governing REACH and the use of Biocides, the European authorities have implemented a new classification, which aims at reducing the use of Borax.

A new borax-free alternative for the safest pre-coating is now available from Condat - Vicafil TS 7101.



▲ Precoating with Vicafil

Vicafil TS 7101 is an environmentally friendly salt coating, containing no boron salts. It performs an even coating, dries quickly and prevents from corrosion as per Borax. Vicafil TS 7101 can be used after

acid cleaning or after mechanical descaling processes, in batch or in line. It provides high drawing performances and can substitute phosphate conversion coatings. Vicafil TS 7101 is a versatile coating

which can be used on both carbon steel and stainless steel wires.

Main applications include: tyre-cord (metal reinforcements for pneumatic tyres), saw wire, bead wire, pre-stressed concrete wire, mattress spring wire, etc.

Its formulation without Borax ensures no exposure for the operators, zero boron in effluents and a safer working environment.

Condat - France

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Obituary: Huib Claushuis

▼ *Huib Claushuis*



Huib Claushuis, the well respected marketing and sales manager at MKM Mansfelder Kupfer and Messing GmbH, one of Germany's largest copper rod and wire producers, has died at the age of 62.

Huib had a long and successful career in the copper and alloy wire business starting with the position of planning

manager at Drahtwerk Waidhaus in Germany. In October 1996 he joined Lamitref Metals in Belgium as technical sales manager and was actively involved in the transfer of the copper business from Lamitref to MKM in Hettstedt. He eventually transferred to MKM in March 2001.

In addition to his native Dutch, Huib, a talented linguist, was fluent in German and English with a good level of French. He had a real talent for bridging national boundaries and brought an excellent technical knowledge to understanding customer needs.

He was a man with an infectious sense of humour who was genuinely liked by his customers in many countries and was affectionately known as "Herbie" in the English-speaking world.

Huib was an accomplished sailor and an enthusiastic if erratic golfer. He will be greatly missed by his four children and all his family, colleagues and customers.

MKM Mansfelder Kupfer and Messing GmbH – Germany

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Forthcoming IWMA Social Events

IWMA Dinner Dance 2011

Friday 25th November 2011, Royal Garden Hotel, London, UK.

IWMA AGM and Industry Lunch 2012

Tuesday 6th March 2012, Mere Golf & Country Club, UK

IWMA Industry Dinner, Düsseldorf 2012

Tuesday 27th March 2012, Düsseldorf Congress Centre

Please contact the IWMA office for further details,

Tel: +44 1926 834680 Fax: +44 1926 314755

Email: info@iwma.org or visit the website www.iwma.org

PWM at Interwire

British company PWM, leading manufacturer of cold pressure welding equipment and dies, reported excellent sales leads from Interwire 2011.

"Interwire was a very successful show for us this year", said managing director Steve Mepsted.

"The mood in Atlanta was positive and both visitors and exhibitors were very upbeat about the event. Visitor traffic and quality were excellent throughout the show and we were pleased with the level of enquiries and leads we received."

PWM's range of cold welders was presented at the show by Amaral Automation Associates, PWM's exclusive distributor in the USA and Canada.

"The booth was busy throughout the show and our EP500 electro/pneumatic cold welder proved particularly popular with wire and cable manufacturers looking for a fast, cost-effective method of joining large non-ferrous rod sections," added Mr Mepsted.



▲ The EP500 electro/pneumatic rod welder from PWM

"The EP500 is reliable, energy efficient and easy to operate and offers manufacturers an economical and convenient alternative to electrical welding."

PWM Ltd – UK

Fax: +44 1233 820591

Email: pwm@btinternet.com

Website: www.coldpressurewelding.com

wire Southeast Asia attracts strong industry support

wire Southeast Asia and Tube Southeast Asia 2011 are shaping up to again be landmark events for the region's wire, cable, pipe and tube industries in September this year.

Exhibitors from more than 20 countries have already confirmed their presence at the events and the organisers are expecting final numbers of more than 300 exhibitors from 30 countries. National pavilions have also been confirmed from Austria, China, Germany, Italy, the USA, United Kingdom and Taiwan, lending the event a truly global flavour.

Backing up the global nature of this regional event, wire Southeast Asia also enjoys strong support from eminent industry organisations.

"This exhibition continues to play a great part with its outstanding quality and quantity of visitors. Moreover, Thailand is one of the most important industrial countries in Asia with a wide range of companies actively dealing in the wire and cable industries," said Italian Wire Machinery Manufacturers Association (ACIMAF) president, Ferruccio Bellina.

Another key supporter is the International Wire & Machinery Association (IWMA). IWMA chairman Colin Dawson said: "The IWMA is a long term industry partner to, and sponsor of, the wire Southeast Asia exhibition since its very inception. This support started with wire Singapore before it was re-located to Bangkok in 2007 and re-named wire Southeast Asia. The new location and title received the full support of

the IWMA and its members for very good reasons." "There is no doubt that, despite encountering difficulties from time to time, whether these are unexpected natural events, political situations or health-related concerns, a number of the economies of the Southeast Asia region are firmly on course to develop strongly through the decade, especially Thailand, Vietnam and Malaysia," he added.

"These economies are predicted to grow from between 5 to 7% this year, driven to a large extent by major infrastructure projects and strong domestic demand."

Based on this, he is confident that wire Southeast Asia 2011 will provide the wire and cable industry with an excellent forum to benefit from the opportunities arising from these and other economies in the region.

Heinz Rockenhäuser, president of the International Wire and Cable Exhibitors Association, notes that in contrast to the economic situation in October 2009, the wire and cable industry has been experiencing an upturn since the autumn of last year.

"Southeast Asia benefits especially also from its neighbours, growth locomotive China and highly industrialised Japan," he said.

"All participants in the Bangkok exhibition, ie the wire and cable industry together with their suppliers showcasing in the trade fair, will delve into the latest developments, beyond their currently growing own demands. The disaster in Japan will result in the accelerated development of renewable energies

worldwide with new business prospects for the wire and cable industry following from that."

As noted by key supporting organisations, host country Thailand and neighbouring Vietnam are major users of wire. Thailand has a well developed industrial infrastructure with large automotive, electrical/electronic, petroleum and petrochemical industries boosting demand. As income levels rise in the country, high levels of infrastructure spending will also be essential.

The need to develop infrastructure in Vietnam, meanwhile, is becoming increasingly pressing as the country emerges as a production base integrated with the global economy. Vietnam's Ministry of Planning and Investment estimates that between now and 2020, Vietnam will require some US\$150-160 billion for infrastructure development.

With their strong economic fundamentals and wide-ranging investment plans, Thailand's fellow ASEAN nations Indonesia and Malaysia further reinforce the significance of wire Southeast Asia with both demonstrating strong growth against a background of major infrastructure projects.

For more information on visiting wire Southeast Asia and gaining valuable first hand market information on what is developing in the region please log on to: www.wire-southeastasia.com

All IWMA members are invited to visit the Association booth number H-01 at the exhibition where a range of support services will be available.

Boosting sales force

Fort Wayne Wire Die Inc (FWWD) and its European sales office, Fortek GmbH, have announced the addition of a new Swiss-based independent agency to its global sales force, expanding its personal-service into Switzerland, France, Belgium, Algeria, Morocco and Tunisia.

The agency, known throughout the region as Cabeltec SA, brings a depth of wire die applications expertise to

customers and prospects by virtue of its 34-year history, selling a wide range of manufacturing and processing machinery into the wire and cable industry.

The company's full line includes equipment by Sictra, Mobac, Nova, CWA, GMM, Kabelmat and more.

By adding Fort Wayne Wire Die to its line, Cabeltec is able to round out its

"complete metallurgy sales programme offering" to the market, delivered with the value-added advantages of on-staff sales engineering capabilities. Cabeltec features experts who are fluent in French, English, German and Italian.

Cabeltec SA – Switzerland

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Email: david.baumann@cabeltec.com

Website: www.cabeltec.com

Fortek strengthens European sales team

Fortek GmbH, the European sales office of US-based Fort Wayne Wire Die has strengthened its European sales team by recruiting Russian-speaking sales representative, Elena Kerimov.

gives wire drawing companies in the former Russian Federation a lingual and technical conduit to US-quality wire drawing die engineering.

inside sales capabilities to bring the highest quality wire drawing die products and services to all of Europe – an initiative that is part of the company’s continued growth track following the celebration of its 30th anniversary.



▲ Pictured, from left, are administrative specialist Markus Kneip, European sales manager Louis Steffann, Eastern Europe account manager Elena Kerimov, and Western Europe account manager Ingrid Christian

In addition to Elena, Fortek has recently hired administrative specialist, Markus Kneip.

His addition enhances Fortek’s sales and service capabilities by allowing sales manager, Louis Steffann, and Western Europe account manager, Ingrid Christian, to dedicate more time to their core competencies and their customers.

“Being able to increase our internal manpower, Fortek is better prepared to deliver the kind of die engineering and applications expertise that wires drawing companies need today, through the kind of reliable, local and personalised service relationship they expect,” said Mr Steffann.

A dual Russian and German citizen who is also fluent in English, Elena

She represents the latest in Fortek’s efforts to expand its

Fortek GmbH – Germany
Fax: +49 619 225 029
Email: sales@fortekgmbh.com
Website: www.fortekgmbh.com

Specialist machines

GER sa, Belgium, specialises in the sale of new and second-hand machinery for wire and cable, tube and sheet works, for the ferrous and non-ferrous industry.

A large stock of machinery is immediately available and if machines are not available, GER will search for the plant to fit the customers’ needs.

machines before shipment, as well as installation and commissioning at the customers’ plant. Training for operators is also available.

For sale are single machines and complete plants for steel rod and wire non-ferrous wire, steel ropes, electrical insulated cables, etc.

Exporting worldwide, the machines can be sold as is or reconditioned and modernised. The company also undertakes test runs of the

GER sa – Belgium
Fax: +32 872 602 01
Email: ger@ger.be
Website: www.ger.be

Wide-ranging sizes

Sant Engineering Industries is one of the leading Indian manufacturers and exporters of all types of plastics and cable machines of wide-ranging sizes and specifications.

using a variety of latest technologies.

pursuing energy saving, economic and environment friendly techniques. It has supplied more than 4,000 plants to various customers worldwide.

Sant’s team of qualified and experienced technical personnel maintains strict quality standards

The company strategy is to place great emphasis on customer satisfaction; quality control; co-operation and innovation and technological advances in plant and machinery. Sant is dedicated to

Sant Engineering Industries – India
Email: santengginds@indiatimes.com
Website: www.santenggingdia.com

Countdown is on for first WiCAB



▲ Visitors flocked to Tubotech 2009 and are fully expected to be attracted to the first ever WiCAB

The first ever WiCAB will take place from 4th-6th October 2011 at the Centro de Exposições Imigrantes in São Paulo, Brazil.

Previously there has not been an exhibition in Brazil dedicated to the wire and cable industry although Metaltech, a concurrent metal forming show, did have wire drawing as a sub-sector of its exhibitor profile.

Although the ITA's sister association, the International Wire & Machinery Association (IWMA), sponsored Metaltech for two editions it was quickly recognised that there was considerable potential for a standalone event for the wire and cable industry in an important and expanding market.

The IWMA agreed to be the main international supporter of WiCAB. Despite some criticism about "another new wire show" the level of interest from potential exhibitors has justified the faith of the local organisers

CIPA FM and their partners Tarcom Promoções in establishing the event.

Like the concurrent and well established Tubotech exhibition, sponsored for a number of years by the ITA, WiCAB will benefit from the considerable international experience and expertise of Messe Düsseldorf, who is responsible for the organisation and promotion of the exhibition outside Brazil and the rest of South America.

Messe Düsseldorf's introduction to Tubotech in 2007, recommended by the ITA, has resulted in a rapid development of international exhibitor space at this show and the IWMA fully expects that WiCAB will do the same. These joint pipe & tube and wire & cable fairs now mirror the successful concurrent exhibitions established by Messe Düsseldorf in Southeast Asia, China, Russia and India.

The wire and cable industry in Brazil has a large turnover, measured in

billions of dollars, generating thousands of jobs and is a vital element in the development of the country. Nor should the rate of development in other South American countries, notably Argentina and Chile, be ignored.

The co-organisers say that an intensive campaign is being undertaken to attract purchasers of goods and services connected to wires, threads, cables, accessories, machinery and related equipment to see at first hand the latest local and foreign technological developments.

Further interest for visitors will be generated by other concurrent and related exhibitions such as Expobombas (pumps, motor pumps and accessories); Expoválvulas (industrial valves and accessories); Metaltech (drawing and rolling of metals, boiler making, forging and machining); Frebraman (tools, accessories and maintenance); Feigás (industrial gas); and Petrotech (oil, gas and bio-combustible industry).

Aid for earthquake relief in Japan



▲ Mr Kanazawa from Nippon Niehoff (left) presenting the donation to an officer of the Japanese Red Cross

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.

Niehoff, headquartered in Schwabach, Germany, develops and produces machinery and production systems for cable and wire manufacturers in more than 100 countries. Founded in 1951, the company currently has around 700 employees.

The company also undertakes test runs of the machines before shipment, as well as installation and commissioning at the customers' plant. Training for operators is also available.

Nippon Niehoff Co Ltd – Japan

Fax: +81 3 3257 0910

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

H&R ChemPharm – world leaders in cable filling compounds and dielectric fluids

Whenever there is a need for water blocking or insulation inside a cable, H&R ChemPharm has the solution.

H&R ChemPharm is the only manufacturer that can offer solutions for telecommunication, fibre-optic, medium and high voltage power cables, joints and accessories.

Based in the UK, the cable compound business benefits from additional production capability in Australia, South Africa and Thailand, as well as from investment in a new cable compound production facility in Ningbo, China.

Customers are supported worldwide by an experienced team and an extensive network of agents and distributors.

The product range originates from the globally recognised Dussek

Campbell and BP cable compound brands. These include Insojell, Dijell and Naptel petroleum jellies, Optifill and Rheogel thixotropic gels for filling and flooding, the T series of dielectric fluids for high voltage AC paper insulated cables, Napelec and ND impregnating compounds for MV DC cables, and T2015 for EHV DC paper insulated cables.

Innovative product development has yielded many new products in both the telecommunication and energy cable sectors, including the H2000 range of hydrogen-absorbing gels for OPGW, OPPC and submarine fibre optic cables.

Sahara product delivers particulate-free water-swelling coating technology enabling exciting new cable designs. Tracer technology solutions offer rapid leak location in low pressure oil-filled HV cable networks.

Latest developments include new strand blocking compounds for XLPE submarine cables, overhead conductor greases for corrosion protection and ETPR compounds designed for use in copper telephone cables.

H&R ChemPharm is a highly reputable company, renowned for high quality products.

All products are manufactured using well-defined process control techniques and are extensively tested in the company's state of the art laboratory facilities to ensure quality and performance.

H&R ChemPharm (UK) Ltd – UK

Fax: +44 121 522 0115

Email: info.uk@hur.com

Website: www.hur.com

CabWire World Conference 2011

Congress Center Düsseldorf, Germany
7-8 November 2011



Latest process and market developments



A technical conference co-organised by ACIMAF, CET, IWCEA, IWMA, WAI



- Keynote overviews of ferrous and non-ferrous sectors
- Research papers
- Latest technological developments
- Optional plant tours
- Table top exhibits
- Excellent networking opportunities
- Free beer reception
- Reduced fees for early bookers, members of co organiser associations, academics and students
- Concurrent pipe and tube conference and table top exhibition
- World class venue in the spiritual home of wire
- Special room rates at nearby hotels (subject to availability)

Central Administration:



INTERNATIONAL WIRE & MACHINERY ASSOCIATION

Conference Main Sponsor:



EDUCATIONAL TRUST FUND
Registered Charity No. 327408

www.cabwire-duesseldorf.com



CabWire World Conference 2011

Congress Center Düsseldorf, Germany
7-8 November 2011
Latest process and market developments

Registration procedure

Please complete the registration form and fax back to +44 1926 314755. Payment of registration fees can be made by cheque or bank transfer in €, US\$ or £. All payments must be made to 'International Wire Machinery Association' and must cover all bank charges. Payment by credit card – please complete all the details shown on the registration form including the signature of the identified cardholder. All payments will be receipted and confirmed to the registered delegates. Registrations will only be accepted in accordance with the terms and conditions below. Please indicate main area of interest, ferrous or non-ferrous.

Delegate entitlement for the conference:

- Documentation
- CD-ROM of technical presentations
- Refreshment breaks and lunch
- Lapel badge
- Delegate list (supplied after the conference)
- Attendance for all conference sessions
- Social event on 7 November
- 1 year's trial membership of IWMA for non-members
- Reduced fees for members of co organiser associations
- Optional plant tours (restricted numbers)

Joining instructions

Each registered delegate will receive written confirmation of registration, together with a timetable and programme showing the date and time of re-registration and collection of documentation. Registered delegates will not be permitted to participate in the conference unless all fees have been paid according to the invoiced amounts and prior to the commencement of the conference programme.

Free places for students/researchers

The IWMA Educational Trust Fund is sponsoring up to 12 free registrations to students engaged in study or research in the wire and cable sectors. Contact the IWMA office for details.

Tabletop displays 7 November 2011

An educational 'Tabletop' exhibition will complement the conference sessions, a great opportunity for one-to-one discussions with suppliers during breaks and lunch. As only a limited number of tabletops are available early booking is recommended. Each tabletop includes one full delegate registration, drape, electrical connection and chair. There is a loyalty discount for exhibitors at *Istanbul Cable & Wire 09*.

Plant tours Tuesday 8 November 2011

There will be a choice of tour to either Drahtwerk, Cologne or Leoni Kerpen, Stolberg. For safety reasons the number of delegates who can be accommodated on the plant tours is limited and therefore places are **strictly on a first come first served basis at time of booking**. Plant tours must be booked and paid for in advance together with delegate fees and cannot be booked at the conference registration desk.

Social and networking event

There will be a special event for all delegates immediately following the conference sessions on 7 November when Spring Tooling Ltd and Locton Ltd co host a beer reception at the Congress Center.

Hotel accommodation

The IWMA has negotiated special hotel room rates for speakers and delegates participating at CabWire World Conference and the concurrent Pipe & Tube World Conference event, subject to availability at time of booking, at the **Schnellenburg and Radisson Blu Scandinavia Hotels**. (See separate editorial about hotel deals on a following page)

FREE 1 year's trial membership of the IWMA

Every non-member delegate can obtain free trial membership of the IWMA for his/her company. This offer applies only to first time applicants or lapsed members of two years or more. To qualify for the trial offer a membership application form must be submitted before the end of the conference sessions on 7 November 2011

Sponsorship

A key element of the CabWire World Conference 2011 is the support of sponsors to whom the co organisers are very grateful:

- IWMA Educational Trust Fund (main sponsor)
- Niehoff Maschinenfabrik
- Spring Tooling Ltd
- Messe Düsseldorf
- Locton Ltd
- WAI, Inc
- Rosendahl Maschinen
- XL Technologies Ltd
- IWCEA
- ACIMAF

Terms & Conditions

All registration fees must be paid as invoiced and before 31 October 2011 and must be to the full currency amount excluding bank charges and exchange charges, as shown on the registration and booking forms and according to the invoice. No cancellations or refunds will be accepted after 21 October.

All cancellations must be made in writing and received by the organisers before that date. Up to 50% of the registration fee will be refunded against cancellations received between 1-20 October. Cancellations in writing received before 1 October 2011 will be refunded to the full amount of payment received.

The organisers reserve the right to vary and re-schedule the papers programme according to the availability of papers and speakers. The organisers reserve the right to refuse participation of delegates at the conference without assigning any reason therefore.

The organiser accepts no responsibility for the claims and accuracy of technical content of printed papers or spoken work by the author and presenters of papers, or any other claims made by attending corporations or personnel at this conference. The organisers will accept no responsibility for the safety and security of persons or their property whilst attending this international conference.

The organiser, sponsors, agents, managers, or representatives will accept no claim for refund or damages or other type of claim for persons attending or participating at the CabWire World Conference 2011. These conditions are deemed to be accepted by any person or corporation having signed the booking and registration form issued by the organisers or using their own order or registration documentation to be receivable by the organisers for this event. Confirmation of registration issued by the organisers is issued only on the understanding that applications and participations at the CabWire World Conference 2011 are accepted on these conditions.

Provisional Programme

Monday 7 November 2011

Non-Ferrous sessions from 09:45 hours

Keynote non-ferrous paper

"An overview of the global cables market"
– P Radbourne, Integer Research, UK

Latest technology for stranding and insulation of both standard and special cables

"Double twist stranding lines" – S Gorgels, Niehoff, Germany

"Foaming of fluor polymers"

– G Hofer, Rosendahl Maschinen, Austria

"Advanced technology in wire and cable manufacturing"

– G Albertazzi, SAMP S.p.A. – Sampisistemi Division, Italy

"Extended quality control of cable insulation by colour measurement during extrusion"

– Dr H Scheid, Siebe Engineering, Germany

"Keynote paper: New developments and trends in automotive wires" – Dr K Probst, Leoni, Germany

"Production of PV ribbon for photovoltaic panels: overview of product specifications and comparison of production processes" – I Rogelj, Plasmait, Austria

"Latest measuring and control technology for high-voltage cable production" – H Prunk, Sikora, Germany

"Latest developments in cable design technology"

– A Shehab, Cimtec, UK

Advances in optical fibre coating and cable construction equipment

"Energy saving" – B Lohmueller, Niehoff, Germany

"Latest technology for optical fibre coating and identification" – K Descovich, Medek & Schörner, Austria

"Integrated solution for PV ribbon application which comprises cold rolling mill, cleaning unit and induction annealer"

– S Nixdorf, Buehler Wuerz Kaltwalztechnik GmbH, Germany

"Metal tape forming and welding line for MV, HV and EHV power cables" – E Altmann, Rosendahl Maschinen, Austria

"Achieving optimal economy in the production of wire and cables by perfectly produced and reconditioned drawing die tools" – Dr K Eder, Eder Engineering GmbH, Austria

Ferrous sessions from 09:50 hours

Rod, wire and spring technology – latest developments and research

"Improvements in steel industry: cost control; defect reduction; general product improvements; drawability (without acid cleaning); higher tensiles; shorter lead times and innovation" – S Bullas, Tata Steel Europe, UK

"Effect of boron alloying on microstructural evolution and mechanical properties of high carbon wire"

– Professor E De Moor, Colorado School of Mines, USA

"Manufacturing highly loadable helical springs through optimization of tempering processes in both spring steel wire and spring production"

– R Lux, Ilmenau University, Germany

"Optimisation of spring designs"

– M Hayes, Institute of Spring Technology, UK

"Determining of parameters characterizing the functional behaviour of spring steel wire in helical springs"

– V Geinitz, Ilmenau University, Germany

Process and manufacture update

"The individual development of shaving technology by Kieselstein" – J Kieselstein, Kieselstein GmbH, Germany

"Quality of spring wire" – T Voss, Koch, Germany

"Strand compaction in steel wire ropes"

– Dr AG Stacey, Stonepark Consultancy, UK

"Major improvements in galvanizing heating systems"

– R Branders, FIB, Belgium

Equipment and manufacturing developments

"High speed and quality in wire forming processes"

– Dr U-P Weigmann, Wafios, Germany

"Fatigue test methods of high value wire products beyond basic static validation" – P Van Bogaert, Bogimac nv sa, Belgium

"Butt and cross wire welding as exemplified by industrial mesh and fences" – J Gerlitzki, IDEAL, Germany

"New coldforming technologies for the fastener industries"

– J Eisele, Wafios, Germany

"A new generation of lubricants and accessory products for wire drawing, free from substances that are potentially harmful or dangerous to persons and the environment"

– G Arrighetti, Tecnovo, Italy

Beer reception sponsored by Spring Tooling Ltd and Locton Ltd after end of technical sessions

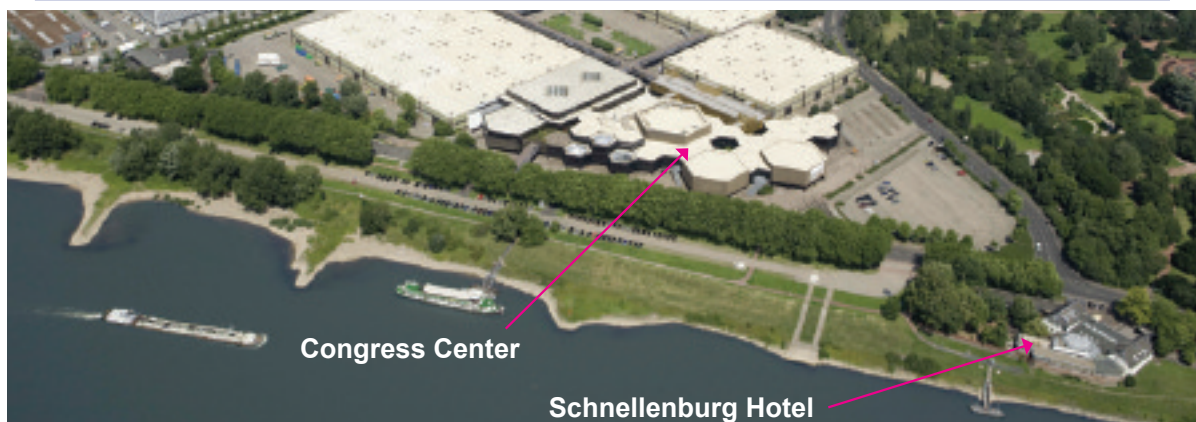
Tuesday 8 November 2011

Factory Tours

Plant Tours to Drahtwerk Köln, Cologne (Ferrous, Tour A) or Leoni Kerpen, Stolberg (Non-Ferrous, Tour B)

(Depart from Congress Center at 09:00 hours and return approximately 13:00 hours)

NB: places on tours subject to availability and must be pre-booked and pre-paid



CabWire World Conference 2011

Congress Center Düsseldorf, Germany
7-8 November 2011

Latest process and market developments



a technical conference co-organised by:



CONFERENCE REGISTRATION FORM

Please print in CAPITALS:

Company Name: _____

Address: _____

Zip/Postcode: _____ Country: _____

Tel: _____ Fax: _____

E-mail: _____

Authorised Company Signature: _____ Date: _____

REGISTRATION FEES		Euro (before 31 July 2011)	Euro (after 31 July 2011)
Registration 7 November	Member of Associations	€160	€170
	Non Member	€180	€190
Group Registration (Example)	10 for price of 9	€1,620	€1,710
Students & Academics		€80	€95
Optional Plant Tours (limited availability)	Must be pre-booked (not on sale at conference)	€35	€40
Tabletop Exhibit (includes 1 full registration)	Member of Associations & Speakers	€550	€550
	Non Member	€600	€600
Tabletop Exhibit (includes 1 full registration) <i>Istanbul 09 Exhibitor</i>	Member of Associations & Speakers	€350	€350
	Non Member	€400	€400

SPECIAL GROUP DISCOUNT: all parties of 10 or more delegates qualify for one FREE registration

	Regis- tration	Table top Exhibit	Plant Tour A Ferrous	Plant Tour B Non-Ferrous	Association Member	Non Member	Total
Delegate Name: _____ <small>Family Name First Name Initial</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Delegate Name: _____ <small>Family Name First Name Initial</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Delegate Name: _____ <small>Family Name First Name Initial</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
GRAND TOTAL: €							_____

WAI IWMA ACIMAF IWCEA CET Member
(please tick only if applicable)

My main interest is: Ferrous Non-Ferrous

PAYMENT OPTIONS

All payments must be made to **International Wire & Machinery Association** and payable in the currency stated exclusive of bank and currency exchange charges and must be paid on or before 31 October 2011

Payment by credit/debit card Cheque Herewith Please Invoice

Please charge my: Mastercard American Express Visa

(Please note that credit card transactions will be conducted in Pounds Sterling (£) at current €/£ exchange rates)

Card Number: [] CVV: [] [] [] Expiry date: [] [] [] []

Name on card: _____ Signature of cardholder: _____

PLEASE MAIL OR FAX THIS FORM TO: +44 1926 314755

International Wire & Machinery Association, 46 Holly Walk, Leamington Spa, Warwickshire CV32 4HY, UK
Tel: +44 1926 834680, Fax: +44 1926 314755, Email: info@iwma.org

Rautomead's boost for high speed rail link

The record-breaking test run for China's new high speed rail link between Beijing and the country's financial centre of Shanghai would not have been possible without the contribution of continuous casting technology specialist Rautomead Limited, of Dundee, Scotland.

The company supplied nkt cable factories in China for use in the production of copper magnesium wire rod for use in the high speed rail contact wire, and was significantly involved in setting in motion the chain of events that led to the 'Harmony' train, more prosaically known as CRH 380A, achieving a record speed for an unmodified passenger train of 486.1km/h or 303mph.

The Beijing-Shanghai high-speed rail link will be part of a nationwide network of high speed trains that will ease the pressure on China's airports and deliver a 'green dividend' in the form of an environmentally-friendly alternative to short haul internal flights between cities.

The Beijing-Shanghai link in itself has cost £21 billion and is expected to double the capacity of the current service to a staggering 80 million passengers a year and halve time of travel to a mere five hours.



▲ The Rautomead machines at work in China

And the world's fastest-growing economy has no intention of stopping there. By 2013, China will have the world's most comprehensive high-speed railway network with 800 sleek, grey-nosed bullet trains.

China's 4,706 miles of high-speed track, which already outstrips any other nation on earth, is expected to reach 10,000 miles by 2020. Its ambitions for the project even transcend its own national borders with plans already afoot for a service that will carry passengers all the way from London to Beijing in just two days.

Rautomead has established a long and harmonious relationship of trust with nkt cables, through its European operations at HFB Hettstedter Fahrleitungs-und Bronzedraht-GmbH, with the nkt cables group harnessing Rautomead technology for the production of copper-magnesium wire rod for over 15 years, largely for use as the contact wire in high-speed rail systems for the European market.

Rautomead Limited – UK
Fax: +44 1382 622941
Email: sales@rautomead.com
Website: www.rautomead.com

Heading for Texas

The Wire Association International (WAI) Inc will hold its WAI Operations Summit and Wire Expo on 22nd-23rd May 2012, at the Omni Dallas Hotel, Dallas, Texas, USA.

The new programme format will feature a plant operations focus, with local hosts Encore Wire Corp and Gerdau Ameristeel

Corp providing facility tours. The Wire Expo exhibition is expected to include participation from more than 250 companies displaying wire and cable making solutions and supplies.

WAI's event will be held in conjunction with the American Wire Producers Association (AWPA)

conference planned for 21st-22nd May. Further details in upcoming issues of Wire Journal International and at WAI's website.

Wire Association International – USA
Fax: +1 203 453 8384
Email: info@wirenet.org
Website: www.wirenet.org

Special wire South

Keeping up with cable production

IBA has entered into an agreement with Huber+Suhner for the supply of three Dynamitron® electron beam accelerators.

Two Dynamitrons® will be installed in the Huber+Suhner facility in China and one in Switzerland.

The supplied Dynamitrons® will mainly be used for the production of cross-linked Radox® cables for the fast growing photovoltaic and railway markets.

“Huber+Suhner is increasing its production capacity of Radox® cables. Photovoltaic cables require very long service life and must resist harsh environmental conditions such as extreme temperatures and UV radiation,” said Patrick Riederer, COO

of Huber+Suhner Low Frequency Division.

“In the railway market the cables are exposed to high mechanical stress and have to fulfil strict safety requirements. Electron beam cross-linked Radox® cables are the key for reaching these performances.”

The cables are also used in the field of automotive and other industrial applications, where cables have to fulfil similar requirements.

“Some of the reasons why we chose IBA are the quality of their global support organisation, their continuous product improvement programme and the ability to customise features for our specific needs,” added Mr Riederer.

“We are proud that Huber+Suhner renewed its trust in IBA for the supply of three electron beam accelerators,” said Jean-Louis Bol, VP sales at IBA.

“Global customers such as Huber+Suhner not only require quality products with high reliability. They also need to rely on a strong partner with a global technical support network including experts and spare parts available in key regions around the world.”

Huber+Suhner AG – Switzerland
Email: verkauf.ch@hubersuhner.com
Website: www.hubersuhner.ch

IBA Industrial – Belgium
Email: industrial.eu@iba-group.com
Website: www.iba-industrial.com

Niehoff presents double twist launching line

At wire Southeast Asia 2011, 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 multi-way spools.

Also present at the Niehoff booth will be the cold rolling mill manufacturer Bühler-Würz Kaltwalztechnik and the lead extruder and cable repair and recovery system manufacturer HFSAB.

The D series double twist bunchers, the NPS and NBAT: 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 0.013mm² to 50mm² and feature all the same technical advantages. Compared

to conventional bunchers, energy consumption and noise emission 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.

Maschinenfabrik Niehoff – Singapore
Fax: +65 633 640 70
Email: niehoff@pacific.net.sg
Website: www.niehoff.de

Maschinenfabrik Niehoff GmbH & Co KG – Germany
Fax: +49 9122 977 155
Email: info@niehoff.de
Website: www.niehoff.de

wire Southeast Asia, Booth F30



▲ Low cost wire and cable technology from Daloo

Daloo, a member of the Gauder Group, is dedicated to the design and manufacture of low cost wire and cable machinery. This new autonomous company was launched in China in 2008 in response to the growing market demand for this category of machinery – proven equipment at affordable prices. Daloo offers complete lines for the production of power and communication cables, rigid cage stranders, taping lines, rewinding lines, pay-offs and take-ups as well as pulling caterpillars.

Daloo – China
Fax: +86 519 8548 3557
Email: sales@daloo-machines.com
Website: www.daloo-machines.com

theast Asia show

Pourtier and Setic (Gauder Group) - comprehensive solutions



▲ Comprehensive solutions from Pourtier

Pourtier, France, develops comprehensive solutions to produce all kinds of high voltage and extra-high voltage power cables from overhead cable (including

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

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.

Pourtier – Gauder Group – Belgium
Fax: +32 4 367 87 98
Email: gauder@gaudergroup.com
Website: www.gauderonline.com

Setic offers double twist bunchers/stranders for PC and the 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.



Setic – Gauder Group – France
Fax: +33 4 77 71 10 85
Email: setic@gaudergroup.com
Website: www.gauderonline.com

Perfect winding with Roblon precision take-ups

At this year's wire Southeast Asia Roblon will present its range of industrial fibres and cable machines.

The Roblon take-ups offer precision winding. When fitted with a precision unit for winding of round and rectangular materials they ensure perfectly wound reels. The take-up is ideal for production of cables sensitive to indents and pressure from overlapping cable layers on the reels.

When the reel is traversing, the sensitive die holder controls automatically the traversing speed in order to obtain a correct position of the dies. A sensor detects the flanges of the reel and changes traversing direction when the dies reach the flanges. This means no settings of end stops even when changing reel size. During operation the lifting arms adjust the horizontal position of the drum in order to maintain a constant winding point.

The traversing reel and the automatic height adjustment have very little influence on the product. The take-up winder operates with a constant tensile force and is easily integrated into new or existing production lines. Visit Roblon's stand F22 at wire Southeast Asia.

Roblon A/S – Denmark
Fax: +45 962 033 99
Email: info@roblon.com
Website: www.roblon.com

The World's No.1 Wire & Cable Internet Directory

Search Free Anytime – No Login Required!

- Find manufacturers of wire & cable machinery
- Find manufacturers of wire & cable products & materials
- Find events and industry news and much, much more!
- Tens of thousands of UNIQUE visitors every week!
- Putting buyers in contact with suppliers since 2000

FREE Premium Registration for IWMA Members!

Register your company today @ www.wirefirst.com
 Tel./Fax: +44 1926 735720 • Email: info@wirefirst.com

Anniversary celebrations for AIM



▲ The Synchro AFM 3D8 S from AIM

In March AIM Inc celebrated its 19th anniversary.

Another great year with considerable technological innovations in CNC bending equipment helped AIM to grow

23%, while exports have risen to 49%. The new "Synchro" models have been proven to be the best available machines. The most sophisticated 3D CNC wire bending solution available, featuring a turret tool changer with

three satellite mandrel benders, offers the least forming limitations (Patent pending).

The pre-loaded graphics animation allows for program/data verification before even running a single production part. Part of an automation cell, along with a Fanuc robot it can provide the best production solutions for today's challenging market.

In all instances, wire can be fed directly from a coil, straightened, bent and cut using a software package that provides flexibility and simplicity in programming.

This comes complete with a two-plane straightener, 2,000Kg/automatic pay-off unit, maintenance-free servo quad-roller feeder, precision bender axes, unlimited arm (Z-Axis) rotation, industrial PC running Windows® XP Pro and SmartEditor® – plus a host of features.

AIM Inc has headquarters in the USA with a second support location in Europe.

AIM Inc – USA

Fax: +1 630 458 0730

Email: info@aimmachines.com

Website: www.aimmachines.com

Important update re access to BITEC, the exhibition venue

There is some encouraging news from BITEC. From August 12th the Skytrain extension of the Sukhumvit Line will open on a trial basis initially going on from the current end of the line On Nut station to the station for BITEC, Bang-Na. (about 700 metres from the site)

Hopefully any technical issues will have been resolved by the time exhibitors and visitors arrive in September.

This extension will make travel to and from BITEC to central Bangkok much simpler avoiding the city's legendary traffic jams.

A closer link between two internationally recognised corporate membership associations

The IWMA and the Institute of Spring Technology (IST) are pleased to announce a closer link between the two organisations.

This link offers IST members the opportunity to join the IWMA and enjoy the benefits of the association at a lower cost, with a reciprocal arrangement for IWMA members to join IST.

IST is the unique centre of excellence for all aspects of spring technology, offering all companies involved in the spring industry supply chain a wide range of specialist technical services, covering all aspects of research and development, training,

problem solving and testing from its independently accredited technical centre. IST supplies test equipment for spring wire manufacturers.

Organisations involved in any sector of the spring industry, from raw materials, production machinery and allied equipment and services to end products, should contact the IWMA Secretariat for full details or visit the website.

IST – UK

Fax: +44 114 252 7997

Email: ist@ist.org.uk

Website: www.ist.org.uk

Heading for Bangkok

Maillefer, the multi-national company, will present its portfolio of extrusion systems for energy cable, fibre optic cable, telecom cable and tube manufacturing systems at wire Southeast Asia, Bangkok, Thailand, on Stand F02 from September 13th-15th.

Expect to see a series of continued improvements in the area of rubber cable insulation, filling and jacketing. With the Super steam technology, experience a significant increase in line performance by 20%, 50% or even 100% more 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.

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

Sole agents for the UK

The Esteves Group has appointed XL Technologies UK Ltd as sales representatives for the UK and Ireland.

The Esteves Group is well known for the manufacture of high precision diamond wire drawing dies, as well as all kinds of diamond tools related to the wire and cable industry, such as: stranding and compacting dies, wire-guides and extrusion dies for cable insulating, tube calibrating and special PCD shaped dies.

The manufacturing programme also includes state-of-the-art die reconditioning equipment, measuring and control devices and all necessary consumables and ancillary equipment.

Today with the growing use of multi wire drawing machines, ie up to 48 wires drawn on a single machine, the importance of precision drawing die sets becomes an absolute criteria if drawing efficiency is to be maintained at a high level.

XL Technologies UK Ltd has been involved in wire drawing in all sectors, covering a multitude of drawn materials from 12 micron to 24mm diameter.

Esteves – USA
Fax: +1 260 728 9751
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Fax: +44 1457 765511
Email: sales@xltekuk.com
Website: www.xltekuk.com

NEXT ISSUE DEADLINE: 30th NOVEMBER 2011

MEMBERS: please send us your editorials for free publication in the first WCN newsletter of 2012, the all-important wire Düsseldorf edition (or on the IWMA website at any time between editions of WCN).

One of the strictly members-only benefits of belonging to the IWMA is the facility to publish your company's editorials in WCN, both the hard copy and electronic versions, completely free of charge, and reach thousands of readers worldwide.

In addition to worldwide distribution WCN is freely distributed at all major industry trade fairs and IWMA technical events. The next important upcoming exhibition is wire Düsseldorf 2012 (26th-30th March 2012) so member companies should ensure that they take full advantage of this totally free promotional tool.

Members should also bear in mind that the IWMA website can accept their editorials at any time during the year for posting in the "Latest News from IWMA

Members" section. Providing your editorial for WCN can help your company in many ways:

- Communicating important messages worldwide
- Attracting interest from the high number of worldwide visitors to wire Düsseldorf 2012
- Advising customers of personnel changes
- Announcing major new developments
- Celebrating winning of new contracts/orders
- Staying one step ahead of the competition

Please send your editorials (not advertisements) with supporting photos to: info@iwma.org

If marketing and public relations is not your area of responsibility please make sure that the relevant department/person is aware of this information.

DEADLINE DATE IS Monday 30th November 2011 TO CATCH THE FIRST 2012 EDITION IN TIME FOR WIRE DÜSSELDORF 2012

PWM to showcase handy cold welders

PWM, which has been at the forefront of cold welding technology for 25 years, will present its comprehensive range of high performance manual cold welders at wire Southeast Asia 2011 (stand J07).

Precision engineered in PWM's own UK workshops to stringent quality standards, PWM cold welders produce reliable permanent welds stronger than the parent materials. Dies are individually hand-made in matched sets by PWM's skilled craftsmen to tight tolerances and can be manufactured to suit round or profile wire.

PWM's manual range includes three hand-held, portable models, ideal

for repairing wire breaks quickly and efficiently in confined spaces. The compact M10, M25 and M30 machines, designed to be exceptionally comfortable to hold and easy to operate using finger or hand pressure, will weld wire sizes from 0.1mm to 1.8mm diameter copper/aluminium.

PWM's BM10 and BM30 models are durable, low maintenance machines which use industry standard dies to provide a reliable weld on non-ferrous wire from 0.1mm to 1.8mm in diameter. These 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 1mm to 3.6mm copper and 1mm 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.

PWM Ltd – UK

Fax: +44 1233 820591

Email: pwm@btinternet.com

Website: www.coldpressurewelding.com

Limited number of John C Hogg Travel Awards for wire Düsseldorf 2012

The IWMA Educational Trust still has a few travel awards available to qualifying applicants to attend the world's largest and most prestigious wire exhibition.

This scheme is available to students, apprentices or trainees recommended or sponsored by a member of the IWMA. The aim is to help individuals to visit wire Düsseldorf who would not normally have the opportunity to do so.

The award provides:

- Return economy air travel from country of domicile to Düsseldorf, Germany, during the period of the trade fair.
- A minimum of two nights' hotel accommodation in Düsseldorf, excluding meals and local travel expenses.
- Free entry and catalogue to wire/Tube Düsseldorf 2012.
- VIP guest ticket for the IWMA Industry Dinner on 27th March 2012.

Conditions of Application:

The applicant must be 18+ years of age on his/her last birthday. There is no upper age limit.

The applicant must be pursuing a training programme or career

(technical, engineering, production, management etc) related to the wire, cable, fibre optic or wire material and product industry.

Applicants are required to be employed by, sponsored or recommended or introduced by a member company of the International Wire & Machinery Association, and this must be verified on the application form.

The applicant must complete the official application form provided by the IWMA and be verified by the employer or the nominating organisation.

Applications must be returned to the IWMA before 19th September 2011. Successful applicants must agree to allow their names and photos to be published or reproduced in whatever form and media as determined by the IWMA.

Applications from established managers will not be accepted. Those from trainee managers will be considered on an individual basis. Applications that appear to subsidise normal staff travel costs for wire Düsseldorf will not be accepted.

All details provided by the successful applicant are subject to publication by the IWMA for publicity purposes

prior to, during or following the exhibition. The selection of applicants is entirely at the discretion of the IWMA executive committee and no reason or explanation is given for failure to select an applicant.

Successful applicants will be notified by the IWMA by 30th September 2011 and invited to accept the John C Hogg Travel Award as described in these conditions.

The IWMA is not responsible for costs or documentation for passports and visas, or medical, travel or other insurances or third party liability claims, applicable to those persons receiving the award or who travel under the award scheme who, in each case, should protect their own interests in all these matters.

All successful applicants are deemed to have accepted these terms and conditions applicable to this 2012 John C Hogg IWMA Travel Award scheme.

All members of the IWMA are invited to introduce this scheme to a suitable applicant whom they consider worthy and applicable according to the foregoing conditions. Application forms can be downloaded from the IWMA website or obtained from the Secretariat.

Great value booths for wire Düsseldorf 2012 through the IWMA – base prices held for third successive exhibition!

The IWMA is once again offering alternative exhibition stand schemes for the world's largest and most important wire and cable exhibition through its contractor Erberich Messestandbau + Design.



Thanks to its office location within the exhibition grounds and many years of experience of operating at the Messe site, Erberich is able to provide a highly attentive and premium service to exhibitors.

In 2008 and 2010 the IWMA negotiated prices for special value booths and is pleased to announce that the costs for the alternative A and B schemes will be the same for wire 2012. Scheme A is €67-80 per m² and the higher specification Scheme B is €83-70 per m² (plus German VAT at 19%, which is recoverable or can be exempted for organisations with EU VAT numbers).

IWMA members do not pay any management charge for the service and non-members are charged a €175 fee, which includes one year's free IWMA membership. As a service to the industry both schemes are supplied at cost to exhibitors. (For this particular exhibition there are separate space and portal charges payable direct to Messe Düsseldorf).

Drawings of both schemes are shown and full details of the specifications,



the catalogue of additional rental items and order form can be found on the IWMA website or are available from the IWMA Secretariat.

IWMA – UK
Fax: +44 1926 314755
Email: info@iwma.org
Website: www.iwma.org

Consulting company's US deals

Stanaway Wire Consulting has secured two major exclusive agency agreements and it 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.

Owner John Stanaway has been involved in the wire industry in a career spanning five decades.

His 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.

Stanaway Wire Consulting – UK
Email: john@stanawaywireconsulting.com
Website: www.stanawaywireconsulting.co.uk

▼ John Stanaway



Madem Reels completes customer satisfaction survey

In the first quarter of 2011 Madem Group conducted a customer satisfaction survey with 153 wire and cable manufacturers in 39 countries.

Madem received 86 responses from customers polled in the categories: bad, good and very good, 98.48% of responses falling into good and very good categories.

Madem polled the following services: claim response, quantities shipped X received, documentation, deliveries, quality inspections, performance, and packing.

"We are very proud of our product continuity, considering that we have manufacturing plants worldwide supplying products to almost 40 countries, each with their own special requirements. We are also pleased with the results of the survey, and will continue to work towards 100% customer satisfaction for all our global customers," said Leandro Mazzocato, corporate director of sales and marketing.

The next customer satisfaction survey will be conducted in January 2012.

Madem Group, with headquarters in Brazil, is the leading nailed wooden reels producer in the world. Madem Group has forests, sawmill and manufacturing plants in Brazil, Spain and Bahrain with more than 500 employees and produces more than 400 containers/trucks of knock down reels per month.

Madem – Brazil
Fax: +55 346 259 00
Email: madem@madem.com.br
Website: www.mademreels.com

Welding ribbed concrete reinforcement steel in the coil radius – innovations

An example from Strecker's wide range of special machinery are butt welding machines with which the ends of hanging wire coils can be connected, meaning that the welding axis is vertical.

The material to be welded is usually hot-rolled ribbed concrete reinforcement steel, but other material qualities, even including high-carbon and alloyed steels, can be connected in this method.

The demand for such machines increased about 15 years ago as possibilities for process optimisation and ways to relieve the operator of demanding physical labour were sought.

Especially with the dimensions of hot-rolled ribbed concrete reinforcement steel most commonly used, WR18mm/WR16mm/WR14mm/WR12mm, it is difficult to pull the wire ends to be connected far enough out of the line so that they can be positioned horizontally for joining in a conventional welding machine.

Additionally, the large wire loop resulting from welding must then be forcibly pushed back into the line, which frequently presents great problems – often the loop jams and continuous operation is interrupted. Strecker reacted to the situation with machines configured vertically, which allow the welding head to be positioned very close to the wire ends to be welded. This brought a great improvement to the entire work process.

The machine is designed so that the wire ends do not need to be straightened for welding, but instead the wires can be hydraulically clamped into the clamping device in the radius of the coil.

Soon these vertical welding machines were available in various configurations to support the most diverse on-site conditions in factories, thus meeting the individual needs of the end customer.

In October 2009, a significant leap forward in development was made at Strecker with the dual upset butt welding machines with automatic flash removal, the SS, configured vertically.

The advantages of the vertical SS welding machine:

- Excellent welding quality through the dual upset process, nearly all the heated and therefore molten material is pressed out of the joint so a weld with extremely high tensile strength is created.
- The automatic flash removal integrated into the process provides welded joints with exactly the same diameter as the original material. Reworking through manual flash removal is unnecessary. This is an enormous step forward considering that earlier, using conventional welding machines, the welding flash had to be removed through time-intensive manual work.

Automatic flash removal means not only enormous time savings, but also simplification of the operator's work. Additionally, there is no risk of wire breaks due to excessive deburring, ie reduction of the cross section at the welded joint.

- Exactly reproducible, same-diameter welded joints of the highest quality even with difficult materials form a solid, reliable foundation for further manufacturing processes and contribute to quality assurance.

- The machine offers simple, user-friendly operation even for personnel. This fact coupled with the relief from manual labour for the operator makes it possible to staff this position with just one man.

Machines from the SS series for vertical welding are also available in various configurations. Whether mounted swivelably on an additional

pillar at the horizontal pay-off, or whether motor-driven on flanged wheels – every option is available to ideally fit the welding machine to the most diverse on-site requirements of the customer.

At the same time, Strecker utilised this developmental step forward in the SS series with the advantages of dual upsetting and automatic deburring to completely modernise these machines. Equipped with modern technology such as a new electro-hydraulic controller, parameter and program monitoring via a large control panel on the front of the machine as well as modern hydraulics without complicated piping, these machines also now display a compact, space-saving, robust design.

August Strecker GmbH & Co KG – Germany
Email: info@strecker-limburg.de
Website: www.strecker-limburg.de



▲ Strecker SS 80-FPC-vertical, mounted on a column

Development of high-strength steel wire rod for bridge cable wire with 1870 N/mm² strength for 5mm diameter

By Toshiyuki Manabe and Shingo Yamasaki Nippon Steel Co Ltd, Japan (Presented at IWMA's Istanbul 2009 conference)

Abstract

Applying Direct in-Line Patenting (DLP) facilities using molten salt, a wire rod for galvanised wires with tensile strength of 1870 N/mm² for a 5mm diameter for bridge cables has been successfully developed. Since reheating and lead-patenting treatments are unnecessary, applying this wire rod contributes to a lead-free process and energy savings. Furthermore, the wire that the authors produced experimentally showed superior characteristics for bridge cables; notably, delamination under torsion testing did not occur.

Introduction

Galvanised high strength wires drawn pearlitic steels are used for bridge main cables.

Until the 1980s, galvanised wires with strength of 1570MPa had been applied for bridge cables for more than half a century.

In recent years, the needs of the huge bridge rose.

It is necessary to enlarge the withstand load for constructing bridges that have longer centre spans using larger diameter cables or higher strength wires. Applying a larger size of cable diameter has limitations from the viewpoint of construction. The wire, with a strength of 1770MPa,

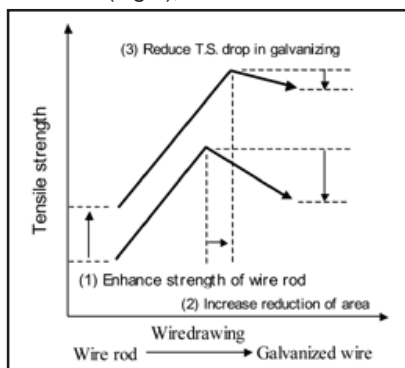
was developed and applied to Akashi-Strait Bridge of which the centre span is 1,991m. Long bridges with a centre span of over 2,000m are planned elsewhere in the world in the future, so developing higher strength wires is therefore necessary.

This paper presents the development of wire rod for bridge cable wire with strength of 1870MPa, which leads to a reduction in processes and saves energy in production.

Methods for strengthening and manufacturing of wire rod

2.1 Strengthening methods

For strengthening galvanised steel wire, the followings methods are effective (Fig.1);



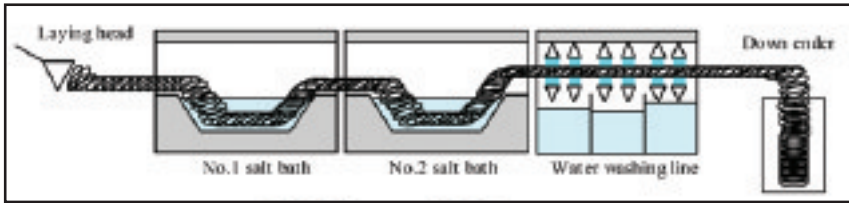
▲ Fig. 1 Diagram of galvanised wire strengthening methods

(1) Increase the strength of the patented wire rod

(2) Increase the total reduction of area in wire drawing

(3) Suppress the strength degradation in the galvanising process

The strength of wire rod increases by adding alloying elements (such as C, Si, Cr and V etc) and by increasing the undercooling from eutectoid temperature at patenting process. Increasing carbon (C), chromium (Cr) content and undercooling are effective to reduce lamellar spacing. Increasing silicon (Si) and vanadium (V) content are effective for solid solution hardening and for precipitation hardening, respectively. However, the addition of alloy elements brings about prolonging pearlite transformation time, and excess undercooling at patenting process causes formation of upper bainite. Therefore, to obtain a wire rod that has good metallographic structure, it is important to choose patenting conditions and alloy contents suitable for given facilities. The wire strength goes up as the reduction of area in wire drawing increases, but excess increase of the total reduction of the area causes deterioration of wire ductility. In the hot-dip galvanising process, wire strength decreases because of decoupling and spheroidizing of lamellar cementite. The addition of Si



▲ Fig. 2 Diagram of DLP process

and Cr is effective to preventing the softening of the wire by spheroidizing of cementite. Since Si is enriched at the ferrite-cementite interface and Cr is distributed into lamellar cementite during pearlite transformation, it is considered that decoupling and spheroidizing rate of lamellar cementite is constrained by the diffusion of Si and Cr [1].

To produce galvanised wires without decreasing ductibility, it is desirable to strengthen the wire rod by applying suitable addition of alloy elements and patenting conditions and to prevent a strength drop at the hot-dip galvanising process not by raising a reduction of area in wire drawing but by adding Si or Cr.

2.2 Manufacturing methods

There are three methods to manufacturing wire rod for bridge cable. The first one is applying lead-patenting (LP). It is a commonly used heat treatment. In this process, a reheated wire rod at austenite range temperature is dipped in a lead bath. The wire rod manufactured using this method has fine pearlite structure, high strength and low fluctuation of strength. But environmental load of this method is high because of usage of fuel for heat treatment and usage of lead that is an environmentally damaging substance.

The second one is applying stelmore process that is cooled after hot rolling of wire rod (DP; direct patenting). This method needs to heat-treat wire rod before wire drawing. However, it is difficult for DP wire rod to earn the strength as well as LP wire rod despite the addition of alloy elements to steels that enhance the strength of wire rod, because the cooling rate of DP is lower than LP. For this reason, DP wire rod is needed to increase reduction of area of wire rod in wire drawing to earn sufficient wire strength. And it may cause degradation of wire ductibility.

In addition, pro-eutectoid cementite easily precipitates at centre

segregation area of DP wire rod, because of the lower cooling rate compared by LP. Therefore, it has difficulty to increase C content for the steels applied DP.

The third one is applying DLP (Direct in-Line Patenting). This is to dip in molten salt immediately after the hot rolling of wire rod. Figure 2 shows the DLP process schematically. The strength of DLP wire rod is as well as LP wire rod. Additionally, for DLP wire rod, heat treatment is unnecessary before wire drawing is in common with

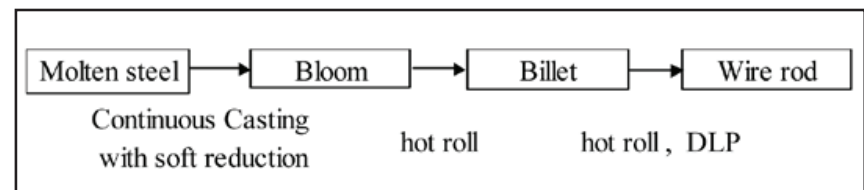
Strength grade of wire	C	Si	Mn
5mm-1870 MPa	0.88	0.90	0.75
ref. 5mm-1770 MPa	0.82	0.90	0.75
ref. 5mm-1570 MPa	0.78	0.25	0.75

▲ Table 1 Chemical compositions of steel used

DP wire rod. Hence, the lead-free process and saving energy in production is compassable by applying DLP. In this paper, wire rod was manufactured by DLP.

2.3 Manufacturing process

Table 1 shows chemical compositions of steel used. The manufacturing process of DLP wire rod is shown in Fig.3.



▲ Fig. 3 Manufacturing process

To enhance the strength of DLP wire rod, C content of this steel is increased more than conventional steel. In the bloom continuous casting process, soft reduction was conducted to reduce centre segregation of C and Mn. Bloom was reheated and hot-rolled to the billet. After billet heating, the steel was hot rolled to 12mm diameter wire rods, coiled and immediately dipped in molten salt.

Characteristic of wire rod

3.1 Metallographic observation

Figure 4 and 5 show the surface metallographic structures of DLP wire rod respectively observed by optical microscope and SEM. For both observations, samples were etched by picral. In Fig 4, white parts of the structure are ferrite or upper bainite. This wire rod had a small quantity of ferrite or bainite and sufficiently reaches the JIS (JIS G 3502) standard of depth of decarburisation. (JIS G 3502 is Japanese standard for piano wire rods and it is tough standard compared with ISO 16120-4.) At the centre segregation area, the wire rod had no retained austenite and martensite structure. In addition, there were little hypereutectoid cementite precipitated parts at the centre segregation area. And the sharps of hypereutectoid cementite were short and thin.

3.2 Mechanical property

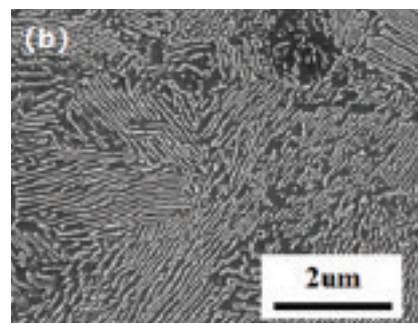
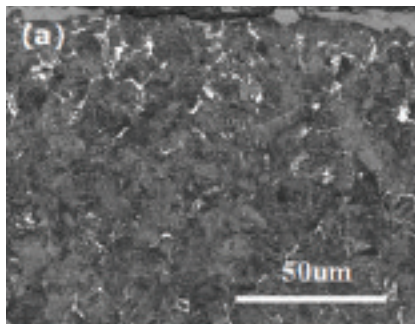
The mechanical property of DLP wire rod attained target strength and reductions of area (RA) of wire rod tensile test were over 30 per cent. In addition, longitudinal strength fluctuation of this wire rod was lower than DP wire rod.

Laboratory trial

4.1 Methods of fabrication of prototype in laboratory

The process of manufacturing prototype was shown in Fig.5. The wire rod was wire drawn from 12mm to 5.3mm and 5mm, sizes that are commonly used for cable suspension bridges. Wire drawing speed was 10m/min.

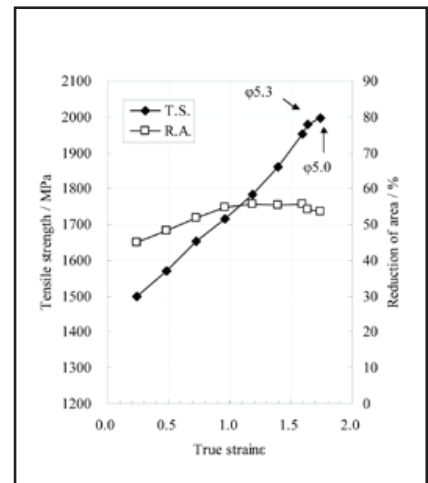
After wire drawing, the wire was hot-dipped in lead bath at 450 degrees so as to simulate hot-dip galvanising.



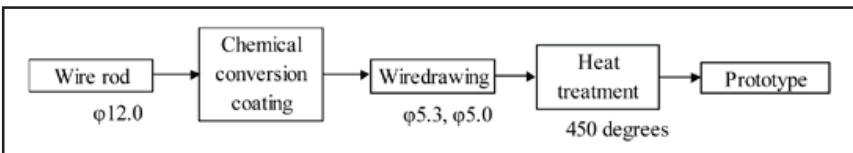
4.2 Mechanical property of prototype

Figure 6 shows work-hardening curve and RA measured by tensile test. There was no degradation of ductibility at target diameters. The mechanical property of prototype wire is shown in Table 2.

On the other hand, torsion testing is generally conducted as the evaluation method of ductibility of wire. If the wire is deteriorated, it delaminates along the wiredrawing direction at the beginning of torisonal deformation in the torsion test. In this trial, numbers of torsion (NT)



which could reduce the discharge of environmentally damaging substances and save fuel. DLP wire rod had low strength fluctuation, and microstructure at centre segregation spot was excellent.



▲ Fig. 5 Process of prototype in laboratory

It is required for bridge cable wire where plate thickness is over 300g/mm², and increases in diameter of wire by galvanising is about 0.1mm.

Thus, it is suitable for evaluating the tensile stress (TS) of prototype wire to use the corresponding value that is expressed as the maximum tensile load of the wire divided by the sectional area coupled with increase in diameter (0.1mm). The average TS of prototype wire is about 50MPa higher than 1870MPa that is the target strength.

were over 20 and delamination didn't occur. These results indicate that the prototype wire manufactured by DLP has sufficient basic property for the bridge cable.

Conclusion

In reference to a wire rod with a target of 5mm/1870 MPa grade galvanised wire for bridge cable, it was investigated to apply the DLP process that was to dip in molten salt after hot rolling of wire rod,

The strength of prototype wires manufactured by DLP wire rod was about 50MPa higher than 1870MPa that was the target strength. And prototype wires didn't delaminate in the torsion test. From these results, it was confirmed that prototype wires manufactured by DLP has sufficient basic property for the bridge cable.

Reference

[1] TARUI, T., OHASHI, S., TAKAHASHI, T., and UEMORI, R., "Effect of Silicon on the Age Softening of High Carbon Steel Wire", Iron & Steelmaker, Vol.25, Sep., 1994, p.25-30.

Diameter of wire	Heat treatment	T.S. (MPa)	Equivalent T.S.	R.A.(%)	NT	Delamination
5.3	None	1978	-	54.3	30.1	None
	Dipped in lead	1983	1910	51.5	22.6	None
5.0	None	1997	-	53.5	30.2	None
	Dipped in lead	2006	1929	46.4	21.6	None
Target value	Hot-dip galvanizing	-	1870 ~ 2070	-	>14	None

▲ Table 2 Mechanical property of prototype wire



INTERNATIONAL WIRE & MACHINERY ASSOCIATION

INTERNATIONALER DRAHT UND MASCHINEN VERBAND • ASSOCIATION INTERNATIONALE
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MEMBERSHIP APPLICATION FORM

We, the undersigned, wish to apply for membership of the above Association and, if elected, agree to pay the annual fee of US\$280, €245, £150.00 (+ VAT for UK companies).

Company/Firma/Nom de la Compagnie/Nome Ditta/Nombre de la Compañia/Компания/公司名称

Address/Anschrift/Adresse/Indirizzo/Dirección/Адрес/地址 _____

Tel/N° телефона/电话 _____ Fax/N° телефона/传真 _____

Email/电子邮件 _____ www _____

Name/Nom/Nome/Nombre/Ф.А.О./名字 _____

Signature/Unterschrift/Firma/Полпись/签名 _____

Date/Datum/Data/Fecha/Число/日期 _____

Production/Produktion/Produzione/Producción/Производство/产品 _____

TVA/VAT No _____

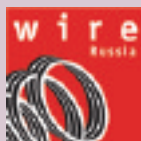
Return completed forms to: Ausgefüllte Formblätter bitte eisen den an: A retourner à:
Si prega rispndire i moduli compliati a: Sirvase remitir los formularios llenados a:
Активизировать в режиме онлайн либо переслать заполненную форму по адресу: 将填好的申请表发至

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