

Dear Customer, dear Partner,

"Satire is humour, which has lost its patience."

We do not know the author of this quote and we leave this statement – contrary to our habits – with nothing more to add. In the crisis year 2009, we have already lost patience a couple of times, both with the fair-weather promises, and also with the doom-mongers. However, we kept our humour and we hope that this is also the case with you. We therefore believe that we can amuse you with an exaggerated commentary on the latest figures and reports about the economic crisis. (p. 5)

We approach 2010 with confidence, demonstrated by our new slogan: "EMG. moving ahead." With the security of long lasting world market leadership and the dynamic of an innovation driver, we are pushing new developments for even greater efficiency and cost savings in your production. A first insight into our plans for spring 2010 can also be found in this newsletter.

Further topics are:

- Return on investment with IMPOCpro
- Installation of EMG-eMASS at ArcelorMittal Cleveland, USA in just one day
- SWOp and BREIMO in use at ThyssenKrupp Steel Europe in Dortmund, Germany.

Thank you for your humour, your optimism regarding the future and for the excellent cooperation. We wish you and your families a Merry Christmas and a prosperous 2010.

Jürgen Koch
Vice President
Automation

EMG in motion – at the forefront in 2010 as well

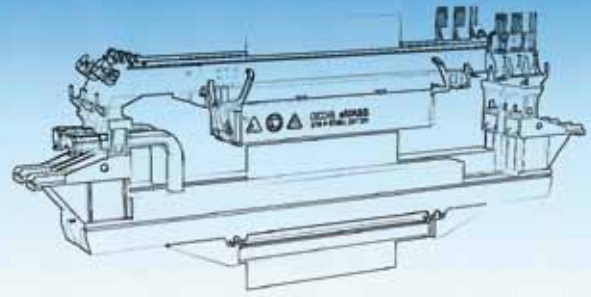


Efficiency means achieving the maximum result from a minimum of effort. In the metal industry and the steel industry in particular it means minimizing energy, raw materials and labor expenditures in order to reach sustainable savings in production. Knowledge about plant conditions and the product at each stage of processing is the key to significant gains in efficiency. In order to provide our customers with every advantage in this case, EMG invests heavily in the continuous and targeted new development and advancement of its systems.

In cooperation with a development partner, EMG is currently working on expanding its product portfolio. Goals for 2010 are innovative systems for hole detection, edge crack detection and width measurement. One of

the first results of this development work will be a system that combines proven EMG width measurement with two quick line scan cameras for scanning the strip for edge cracks and defect holes with a diameter greater than 1 mm.

Under the name SMI (Strip Inductive Measurement) a new generation of the successful BMI strip centre guiding system will be available as early as the second quarter of 2010. The complete revision of the system leads to improved midpoint accuracy, optimization of the measuring frame profile as well as more modern and efficient sensor electronics, among other things. Overall, the system represents a modular, future-oriented concept which is able to respond better to →



individual requirements. A prototype will already be available in the first quarter of 2010, and it will be made ready for the market by May 2010.

The WD1 weld seam detector is used for detecting and tracking weld seam position in existing plants. With an innovative optical sensor the detection of weld seams with strip speeds of up to 600 m/min is easily possible even without marking with a punched hole, and thus it is ideal even for conveyors without a hole punch. The system is currently being optimized in field tests and will be available in the spring of 2010.

EMG makes developments targeted for the demands of the market. Ideas and suggestions based on practice are thus always welcome. If you have an interest or a need for innovative solutions for your production which pay for themselves quickly, we will gladly work out a customized solution with you. Please contact our product manager for strip guiding systems directly:

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Mission: Save Costs – EMG at ThyssenKrupp Steel Europe

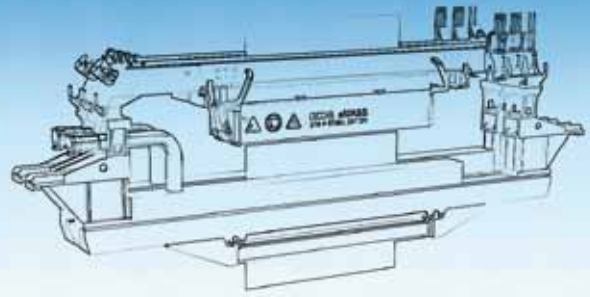


ThyssenKrupp Steel Europe achieves more efficient processes and saves costly resources through the use of EMG's BREIMO strip width measurement system and EMG-SWOp (Strip Width Optimization) for eliminating unnecessary trimming cuts. After a six-month period of data collection the processes on hot-dip coating line 8 (FBA 8) at ThyssenKrupp Steel Europe with BREIMO and SWOp have meanwhile been optimized to the extent that excess trimming could be reduced on average by around 3 mm. This represents a considerable quantity of about 950 tons per year. This is material that does not have to be paid for and processed, or end up as scrap. **In this way the investment in BREIMO and SWOp clearly pays for itself in less than 6 months.**

In its Dortmund location ThyssenKrupp Steel Europe operates a cold rolling mill in which high-quality hot-dip galvanized and electrogalvanized thin sheet is produced. The products from the FBA 8 situated there range from flexible IF steel to high-strength TRIP steels.

During the production process the strip shows a constricting behavior due to thermal and mechanical treatment – it shrinks depending on steel quality, strip width and strip thickness. To compensate for this behavior, the source material is ordered with a safety margin. This is so measured that even at maximum constriction, the finished strip is still wide enough to be safely trimmed. This rather unnecessary trimming cut likewise runs through all production steps in hot-dip galvanizing. It is pickled, rolled and also galvanized, but collects at the end of the production chain as "finished" scrap.

To reduce this material yield ThyssenKrupp Steel Europe relies on the EMG-BREIMO width measurement system and EMG-SWOp. BREIMO is an optical system for detecting strip edges by high frequency alternating light-measuring sensors that are insensitive to ambient light, and which, by means of adjustable slides, are movable and steadily follow the respective strip edge. First, the average deviation of the supplied width from the ordered width and the contraction in the particular production line for the most diverse materials is determined with EMG-BREIMO. From this data the reserve is then calculated for the customer ordered width, allowing for the strictly observed minimum trimming span. →



Through the combination of installing BREIMO width measurement along with SWOp data processing and visualization, an overall system for strip width optimization is formed. In addition, with SWOp the measured data from the BREIMO systems are recorded, analyzed and visualized. Furthermore, in case of strip widths smaller than the minimum trimming span the equipment operator receives an early warning signal that allows him to direct the strip to a rewinder unit where still smaller trimming is possible. With the EMG system, risk management is thereby possible for the first time for deviations in width at hot-dip coating line 8, as it can predict malfunctions and offers opportunities for timely intervention.

All of ThyssenKrupp Steel Europe's expectations of the system have been fully met. The scrap output for hot-dip coating line 8 has been minimized, and at the same time the material yield has been increased according to the above-referenced figures. Furthermore, plant operational safety has been increased and the staff is greatly relieved. Due to the similarity to the set of problems the system was designed not only for hot-dip coating line 8, but also the continuous annealing line. In the meantime it was also able to be put into operation there. A third installation of the EMG-SWOp solution is taking place at hot-dip galvanizing line 7 (FBA 7) in Bochum.

The optimization of strip width with EMG-BREIMO and EMG-SWOp is worthwhile wherever strip material is trimmed and a trimming span that is too narrow would result in plant problems. In addition, strip width inspection at the intake allows for evaluation of the delivered strip width on the pre-aggregate side (e.g. hot rolling mill, pickling line, tandem), and thus an optimization of the ordered width. The entire production's efficiency is increased and unnecessary costs are saved, so that investments made pay for themselves within a short time. ■

Everything is new – EMG.moving ahead.

EMG.moving ahead.

EMG provides its customers with uncompromising reliability coupled with intelligent innovation. Significant increases in the efficiency of all production steps in the metal industry are the focus of our services. Our solutions in the field of strip guiding and quality assurance systems offer the security of the long-standing world market leader and the dynamics of the innovation driver.

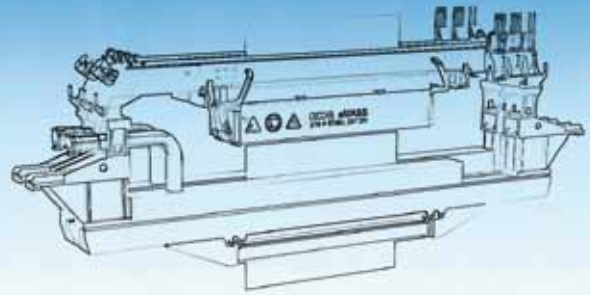
Based on a deep understanding of the requirements of the market, we pave the way as a team player for new applications and business segments of the future together with our customers. In this way we actively shape the market with the high quality of our services and our innovative ideas.

This alignment of our company is reflected in our new slogan:

"EMG.moving ahead."

This self-conception particularly finds its expression in the graphic design of the EMG's external image. A first example is already available to you. Our newly designed newsletter already gives you taste of what is coming.

The kick-off for the new EMG-website takes place in early 2010. Our modern layout and revised navigation provide for better orientation as well as easy and fast access to desired information. At the same time personal contact is very important for us. For each subject area you will find personal contact people who are always glad to advise you and provide further information. →



EMG's image, as presented in our newsletter and website for example, is a reflection of our company. All of the subject matter is designed for our customers. If you have any requests and suggestions for its further refinement, please feel free to contact us at any time:

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New White Paper Efficiency booster – Return on investment with EMG-IMPOCpro



With EMG-IMPOCpro the efficiency of existing production equipment is increased in a variety of ways, since IMPOCpro provides a high potential for savings and process optimization. **Past experience from the use of EMG-IMPOCpro shows that the total investment already pays for itself within 12 to 24 months at the latest.** In our white paper, possible starting points are broadly identified, and rough financial calculations are made. It thus serves as a basis for a detailed, line-specific analysis by the specialists at EMG.

EMG-IMPOCpro is a system for the non-destructive online measurement of tensile strength and yield point primarily in hot-dip galvanizing and continuous annealing lines. The decision about the sensible use of such technology raises many questions in advance. One of the most important is probably:

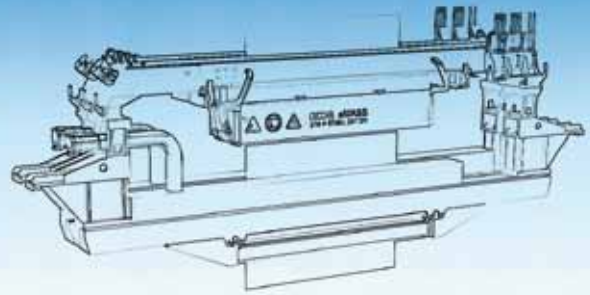
Is the whole thing even worth it?

The aim is to identify where potential savings within your production lie, and to what extent IMPOCpro can help realize these.

But where are the problems in manufacturing where savings can be achieved? Several starting points arise in hot-dip galvanizing plants and in continuous annealing lines: the cost of taking samples and the expenses associated with inspection play just as important a role as packaging production errors and a too slow response to variations in production. The new "white paper", available from EMG starting in January 2010, describes the typical weak points, illustrates potential savings based on EMG's diverse project experiences, and roughly calculates these savings.

First of all, this paper deals with those production processes for which precise figures are relatively easy to estimate. All of the results can be applied to individual processes from which you as the decision-maker obtain a basis for an initial estimate on the "return on investment" from EMG-IMPOCpro.

The results of these rough estimates already show that, as a rule, the annual savings potential with IMPOCpro is considerable. It is based primarily on the time gained waiting for test results, the reduction of possible reworking and the increase in material yield. In addition, there are uncalculated positive influences on the entire production. Aside from directly →



controlled intervention in production processes, the immediately available knowledge about the condition of the entire strip primarily allows enduring optimization which, last but not least, makes the production of new, higher quality products possible. Optimized plant operation saves energy costs and produces fewer emissions. All in all, the available raw material is used more efficiently.

For a detailed analysis of the possibilities from the use of EMG-IMPOCpro and the resulting savings to be made, EMG offers anyone interested an in-depth consideration of the line-specific basic conditions. Our specialists analyze your production and quality assurance processes together with you and develop scenarios for the appropriate use of IMPOCpro which are specifically geared to your line conditions, needs and goals. A cost estimate will also be prepared which reflects detailed considerations for your "return on investment".

Should you be interested in detailed consultation from EMG please contact us directly:
sales@emg-automation.com

This offer is without any obligation and it incurs no costs.

Our product manager is also happy to answer technical questions about IMPOCpro.

Dr. Klaus Herrmann, Product Manager IMPOCpro.
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ArcelorMittal Cleveland, USA – eMASS in only one day

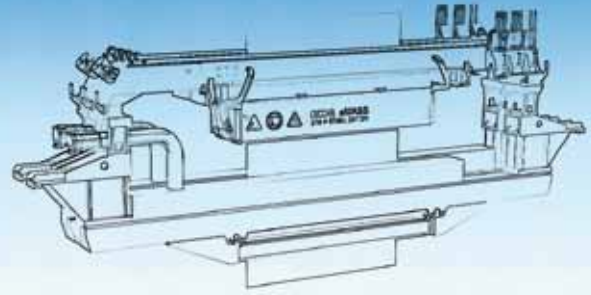
An EMG-eMASS-system was installed and successfully put into operation in just less than one day at ArcelorMittal in Cleveland. Many years of experience went hand in hand with close cooperation with the customer. On ArcelorMittal's part the wiring was precisely pre-assembled in cooperation with EMG employees on site, and the eMASS-system was tailored for use in Cleveland by EMG in Wenden. Without these perfect preparations this record start-up operation would not have been possible.

With the installation at Cleveland there are now 6 EMG-eMASS installations at ArcelorMittal around the world which prove their potential to reduce costs in the production of hot-dip galvanized steel strips on a daily basis. In 2010 another eMASS-system will be delivered to an ArcelorMittal plant.

At this point there are a total of 21 eMASS-systems in use in 8 different countries worldwide. ■

Caution: Vicious – EMG's commentary

There have been many reports on the crisis. Recently, they have once again even been positive. We have overcome the bottom. New orders are rising again. Even the automobile industry is scheduling additional shifts. Signs everywhere show a small but decisive upward trend from the very bottom. In addition GM (with state aid of 1.5 billion Euros) and the Bank of America (with state aid of 45 billion U.S. dollars) are paying back their debts without a murmur. →



This begs the question: Is this really the end of the story? Apparently, business is running again. Everything is going along its normal course. With their bad-mouthing, the pessimists have made fools of themselves and can go home now. We look towards the future with a positive attitude. We can get the job done!!

Credit crunch? Actually, such a thing doesn't exist. Nevertheless, one thinks about banking funds, hoping that those companies who now need money for their upswing do not always hear only a "no" answer, but rather get some real credit for a change.

Short-time work? The system is still working. The 1.056 million short-time workers registered in September¹ show that the whole topic is well received. A high demand is always positive. Empty, tidy production facilities, and - given the potential loss of one's livelihood - highly motivated workers are the ideal starting points for leaving the crisis behind.

Crude steel production? 8% growth² in Germany compared to November 2008, is nonetheless still growth, which was only seen in emerging countries in the last few years. Blast furnaces are running again. That overall production of pig iron went down 34.9% and crude iron declined by 31.7% over the first eleven months compared to the same time frame a year ago, can also be seen as healthy downsizing in the industry. Of course, globally, one should also praise the reduced CO₂ emissions resulting from this development. The steel industry pays its contribution to climate protection with joy.

And Dubai? Again it appears that the pessimists have found something to spoil our holiday mood. However, as Hochtief CEO Herbert Lütkestratkötter succinctly expressed to the press: "Dubai has about as much debt as the city of Berlin, and Berlin has no oil."³ And with oil everything runs like clockwork.

Conclusion:

Due to the conflicting reports that are circulating, an ordinary person wonders if he really needs to understand them or not? We conclude that we should continue on the trodden path of high quality cutting-edge technology for safeguarding production and to purposefully utilize increases in efficiency, thus continually increasing added value. In the long run the "hype" of this world (whether over- or understatement) will lose in weight and sustainability will win. ■

¹ Federal Employment Agency, Press Release: 082, 01.12.2009

² Federal Statistical Office, Press Notice No 470 of 07.12.2009

³ <http://www.wiwo.de/unternehmen-maerkte/dubai-ist-wie-berlin-416196/>

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