

ARTICLE REVUE TECHNIQUE

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INTRODUCTION

MEMBRES PROTECTEURS | REVUE TECHNIQUE LUXEMBOURGEOISE 41/2009 41

Blast Furnace Ironmaking remains to be the most efficient large-scale industrial process for transforming iron ore into hot metal, the liquid ferrous base material for the production of almost the complete range of high-quality steel. This article gives an overview about some of the most modern blast furnaces being currently constructed around the World and which are going to be commissioned in the coming years 2010 and 2011.

TITRE

LOGO  **PAUL WURTH**

TECHNOLOGY AND PROJECT MANAGEMENT



description


In Brazil, the construction of ThyssenKrupp's new integrated steel plant at Sepetiba (Rio de Janeiro state) is in a very advanced stage. For the ironmaking facilities, ThyssenKrupp CSA Companhia Siderurgica do Algodão awarded contracts to Paul Wurth for the delivery of two new blast furnaces and all their subplants. Steel at 12 m hearth diameter each, these furnaces will jointly deliver 5,3m tpy of hot metal to the steelmaking shop. The order to Paul Wurth contains, inter alia, stockhouse and charging systems, blast furnace cooling, re-cooling and water treatment plants, hot blast furnaces, top gas cleaning system, pulverized coal injection, ladles systems as well as stockhouse and caphouse dusting plants. Both blast furnaces will have two tap holes; the tapping equipment will be of TMT design and ready. Electric equipment, instrumentation and automation for all mentioned systems are also part of the order. In addition, Paul Wurth provides advisory services for construction and erection as well as supervision of commissioning of all plant units. The scope of the advisory activities has been recently extended, taking into account the demonstrated performance of Paul Wurth in managing the project execution.

TEXTE

Special care is given to environmental aspects; i.e. most state-of-the-art emission control methods have been incorporated into the plant design as well as a maximum of process recording means and the highest degree of plant automation including mathematical modeling of processes and plant condition. The project schedule, being a challenge from the very beginning, has never been subject to re-adjustments; subsequently, BF No. 7 has been successfully commissioned on 09th of January 2010, BF No. 2 is to follow by beginning of 2011.

In Russia, a new, modern blast furnace, becoming No. 7 is the centerpiece of NLMK's hot metal capacity expansion within the modernization programme of their existing integrated plant at Lipetsk. This new furnace is sized at 13.1 m hearth diameter and will produce 3.4m tpy of hot metal. OAO "Novolipetskij metalurgicheskij kombinat" (NLMK) decided to go for innovative technologies combined with reliable project management and awarded the contract for design and supply of this furnace and important subplants to the Paul Wurth Group. This order comprises the complete blast furnace proper including shell and tower structures, all refractory lining and all cooling members. The built-in furnace will feature a new generation two-hopper BCFW charging system. The 4 ladles will be fitted with full-hydraulic castoff machinery, including runner cover manipulators. Numerous measuring and sampling devices as well as a SAC-EM expert system will ensure a state-of-the-art operation of this blast furnace. The order comprises the engineering and supply of a modern blast furnace gas cleaning system with cyclone and annular gap scrubber and, on the blast side, the cold blast blower. Electric equipment, instrumentation and automation for the mentioned systems are also included. The new BF No. 7 will use PCI technology; the pulverized coal will be produced by coal grinding and drying facilities which will serve also the neighbouring existing BF No. 6. This new coal grinding, drying and injection plant is entirely designed by Paul Wurth. The start up of BF 7 will allow abandoning some older ironmaking facilities at NLMK Lipetsk which will contribute to pollution reduction and energy efficiency.

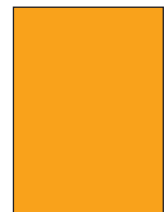
GRAPHIQUE



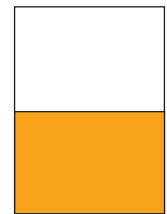
just company of Dangli & An/Vishakhapatnam, Andhra Pradesh, Rashtriya Ispat Nigam Ltd (RINL) is currently building its new Blast Furnace No. 3 which is of similar size (3,800 m³) for a yearly production of 2.5 million tons and design. The same applies to the construction of the new Blast Furnace No. 2 of Shubhan Steel at Meeranabad, Orissa. Both projects include most of Paul Wurth's advanced technological solutions, such as last generation BCFW copper cooling elements, pulverized coal injection, slag granulation, cast house equipment and products of TMT design, top gas cleaning, stockhouse including dusting facilities, hot stoves with heat recovery system as well as the instrumentation, control and automation means (level 1 & level 2, intelligent supervisory assistance tools for efficient BF operation).

Jens Mäijens

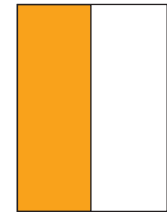
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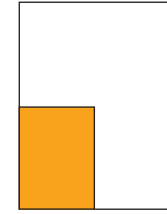
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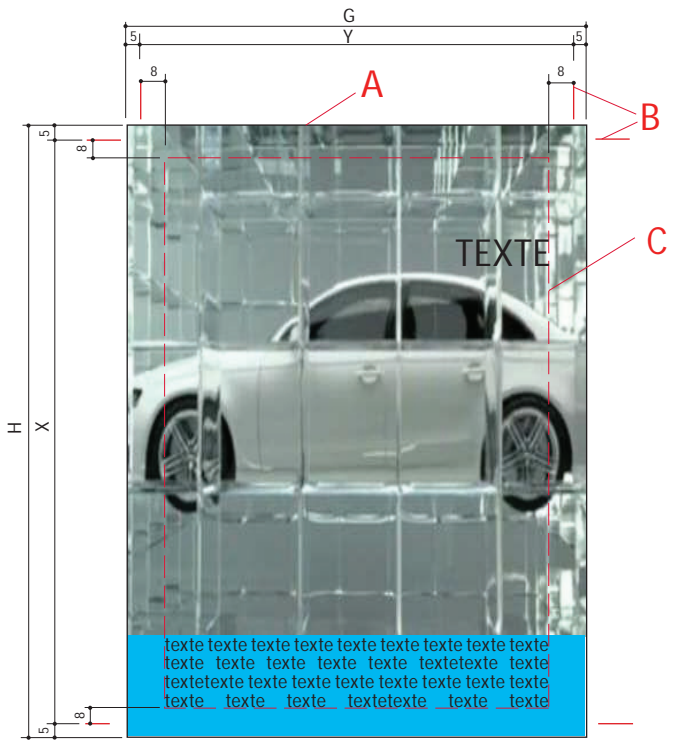
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1/2 page verticale	307 x 115	297 x 105	8 verticale, 5 horizontale
1/4 page A6 verticale	158 x 115	148 x 105	8 verticale, 5 horizontale