

Kalenborn's Exhibits at Systems, Packages and Specialties



POWTECH 2011
11 to 13 October

Kalenborn's array of products in the field of wear protection solutions is more comprehensive than ever before. In 2011 Kalenborn will present solutions at POWTECH that meet almost any requirement.

Kalenborn Systems

For many years Kalenborn has been offering wear protection systems that exceed the pure function of simple linings.

Examples on display include KALDETECT wear monitoring systems, KALFLEX flexible

People of Tomorrow

Hello,

Only recently experts excelled each other by announcing positive economic outlooks but now paint a gloomy picture of the situation.

Nevertheless, we can stay optimistic. The worldwide growth prompted by China, India and Latin America will continue thus providing stable capacity utilization in the primary industries.

This means that people planning and building new systems today or those who operate existing plants need to increase efforts to design all systems as maintenance free and operationally reliable as possible.

These requirements will be helped by using reliable wear protection. Kalenborn is ready to assist you any time in such endeavors. Let us jointly working on making sure that the people of today will also be the people of tomorrow.

With best regards,

Kalenborn Kalprotect GmbH & Co. KG

Yours

Michael W. Rokitta

Michael W. Rokitta
General Manager



Powtech 2011 will be held in Nuremberg at the well-known Trade Fair area from October 11th until October 13th. **Kalenborn will be present in hall 7, booth no. 165.** Tickets can be obtained either by means of our information voucher or via kalenborn@kalenborn.de.

Reference 1

pipe bends, KERAFLEX rubber bonded hard material and other Kalenborn products.

Kalenborn Package Solutions

Kalenborn offers complete material packages in a variety of applications. This is true both for ceramic and metallic materials.



KALOCER mosaics –
incl. KERAFLEX solutions

Kalenborn has completed the line of KALOCER high alumina ceramics. We now offer a complete range of standard solutions (see also page 3).

Kalenborn's Special Capabilities

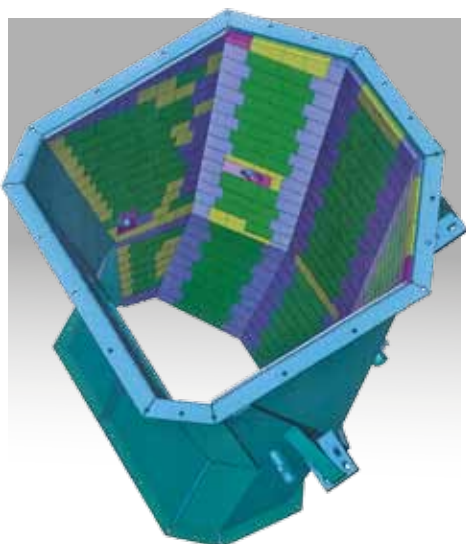
Kalenborn specializes in joining together the correct material or best possible material combination with an optimal fastening system. To a steadily growing extent customers are interested in complete, well functioning solutions for their specific problems. These solutions include engineering, the supply of all materials as well as safe and reliable installation on building sites all over the world.

Reference 2

Reports on Practical Applications

The reference numbers give more detailed information on the ideas and problem solutions described

KALOCER for Coal Handling



Kalenborn has lined different coal transfer stations with KALOCER high alumina ceramics in a harbor in Australia. The total surface measures approximately 800 m² made up of 13 and 25 mm thick tiles. Kalenborn's German office provided the engineering services and the complete supply of the KALOCER material originated from Europe. The equipment for the first unit was lined in Germany. For three subsequent stations, the linings were installed in Vietnam.

Reference 3

ABRESIST and KALCOR for Coal Preparation

Kalenborn delivered various components for a plant in South America. These included hydraulic pipes totaling a length of approximately 50 m. The diameters varied between 250 and 300 mm. The straight pipes were lined with ABRESIST, the pipe bends with extreme abrasion-proof KALCOR.



Reference 4

KALOCER Lining for Feed Hoppers and Bunkers



In addition to hopper and bunker housings other components in a steel plant have been lined with pre-shaped KALOCER elements. These elements have a thickness of 50 mm and 75 mm respectively. They are precise fitted linings with minimum joints.

Reference 5

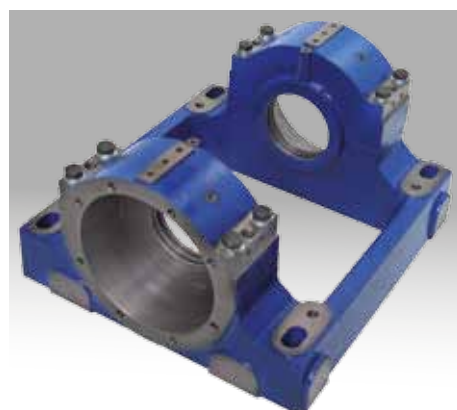
KALMETALL-W Pipes for an Oil Refinery



An interesting order has been completed for an oil refinery. KALMETALL-W 100 hard overlay welded pipes of 400 mm diameter have been installed for the hydraulic transport of petroleum coke. The wall thickness is 8 and 10 mm respectively, the overlay welding about 3 mm thick. The stainless steel can be used up to temperatures of 550 degrees centigrade.

Reference 7

Bearing Brackets made of Grey Cast Iron



The Kalenborn Group also manufactures grey iron castings and components. This example shows a bearing bracket for carrying the supporting rollers of a rotary kiln. The dimensions are approximately 1,000 x 1,000 x 800 mm and weighed about 700 kgs. Kalenborn is capable of supplying complete grey iron castings, including complete machining of the components.

Reference 6

Product Package for KALOCER

High alumina ceramics are among the most widely adopted materials for abrasion protection. The material is characterized



by an extreme hardness of 9 on the Mohs scale and by a multitude of product shapes. Kalenborn has gradually expanded the KALOCER product package and is now capable of offering a comprehensive tool kit for most variable applications:

■ Standard Tiles

Kalenborn offers standard tiles in a basic size of 100 x 150 mm and 100 x 100 mm with a thickness of 6, 12, 25, 50, 75 and 100 mm.

■ Mosaics

A wide range of rectangular and/or hexagonal KALOCER mosaics is offered. Their thickness ranges from 1.5 mm up to 12 mm.

■ Cylinder Shapes

Kalenborn offers cylinder shapes from 40 to 500 mm inside diameter. Their length goes up to 300 mm and the wall thickness varies between 10 and 25 mm.

■ Cones

Cones are delivered for a variety of applications. They are offered up to 200 mm/600 mm inside diameter. Their maximum length is up to 1,000 mm and their wall thickness between 10 and 25 mm.

■ Fitted Linings

Kalenborn is capable of supplying fitted linings for almost any application.

KALOCER can be combined with the complete range of Kalenborn wear protection products to design the best possible solution.

Reference 8

Impressum

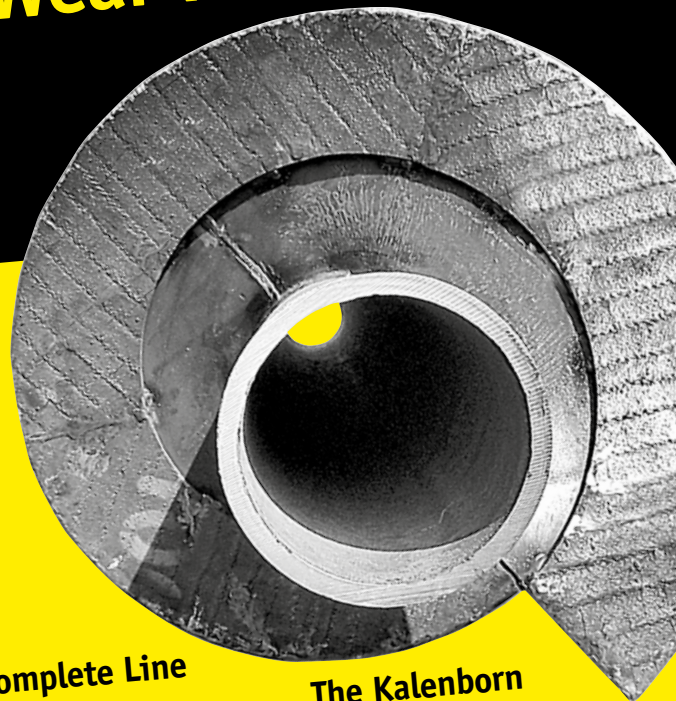
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Info Add: Reference 9

KALMETALL

Metallic Wear Protection



Complete Line for Many Applications

Kalenborn offer a complete range of metallic wear protection highlighted by long service cycles, flexible application, good impact resistance, low weight and an attractive price/performance ratio.

The Kalenborn Program:

- KALMETALL-C hard cast
- KALMETALL-HB hard steel
- KALMETALL-HM hard metal
- KALMETALL-S hard material spraying
- KALMETALL-W hard overlay welding

**Ask Kalenborn
for Metallic Wear Protection**



The Wear Protection People

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**Optimal solutions in combination with
Kalenborn ceramics**

KALMETALL-W Suction Boxes for an European Steel Making Plant

Suction boxes for dust collection of extremely abrasive hot sintered dust have been supplied as shown in the attached photo. The base metal is 8 mm thick S 235 JR with 4 mm thick KALMETALL-W 100 hard overlay welding. The total surface covered measures approximately 3,300 x 3,500 mm, its height is 2,000 mm at a maximum. Kalenborn completed the order to the customer's full satisfaction.



Suction boxes with KALMETALL-W 100 hard overlay welding to be installed in a steel making plant

Reference 10

Hard Coal Bunker lined with KALCRET

In 2004 and 2006 the vertical surfaces of coal bunkers set up in 2 power plants have been lined with sprayed-on KALCRET-BNS hard compound. The



Bunker lining with sprayable KALCRET-BNS

decision to use the KALCRET lining was made to protect already heavily worn and corroded bunker walls made of steel S 235 against further wear and corrosion. This avoided extensive repair work for the structural steel work.

The inclined surfaces of the two bunkers have been lined with KALINOX slide promotion steel and KALEN slide promotion plastics. These slide promoting surfaces are important to ensure an unhindered material flow over the inclined bunker surfaces.

After more than 5 and 7 years of service respectively, the current situation is as follows:

- ✓ The hard coal does not stick to the KALCRET surface.
- ✓ No wear of any kind can be detected.
- ✓ For this particular application KALCRET has proven an ideal protection against corrosion and wear.

Request for Information

E-mail to kalenborn@kalenborn.de
or fax to +49.(0)2645.18-112

Please,

- ☐ Send more information with regards to the following reference numbers (please mark):
1 2 3 4 5 6 7 8 9 10 11
- ☐ Provide the visit of a technical consultant after arrangement of the respective date

Sender

Name / First Name

Company

Department

Street

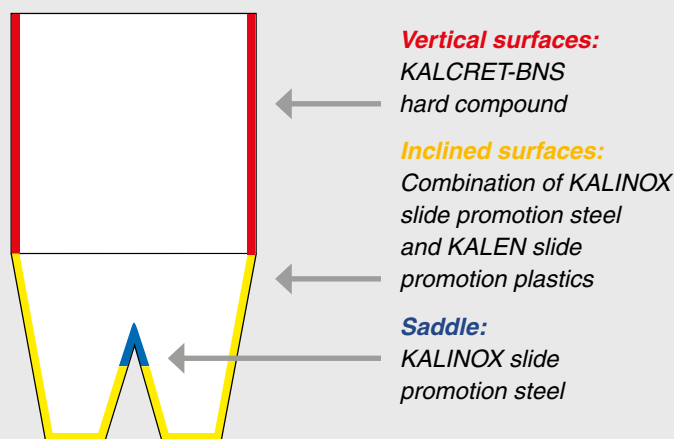
Postal Code / City / Country

Phone

Fax

E-mail

Hard coal bunker with combined lining



Reference 11