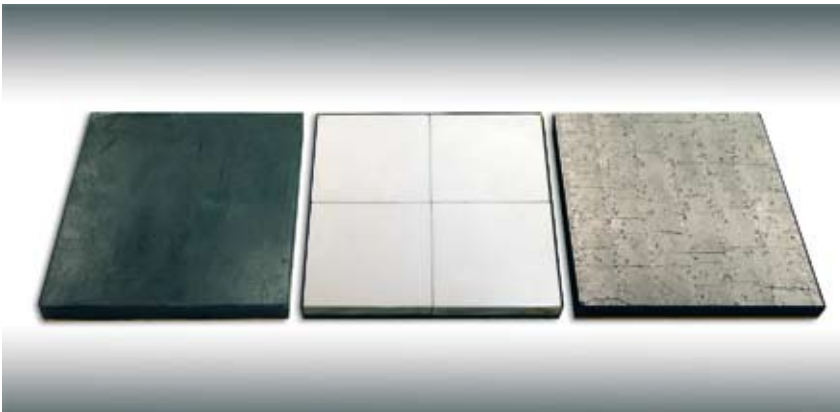


## KERAFLEX Combines Wear Resistant Hard Materials with Impact Resistant Rubber



*KERAFLEX-RM, KERAFLEX-KRM and KERAFLEX-WRM (from left to right)*

### Composite Construction of Hard Material and Rubber

KERAFLEX are hard materials like KALOCER high alumina ceramics or KALMETALL-W hard overlay welded plates vulcanized in rubber mats.

KERAFLEX elements are produced in standard dimensions ranging from 100 x 100 mm up to 500 x 500 mm.

The thickness of KERAFLEX elements ranges from 25 to 100 mm.

Their maximum application temperature measures 80° C / 176° F.

### Different Systems

#### ■ KERAFLEX-KRM

Composite construction of KALOCER high alumina ceramics, rubber and steel

#### ■ KERAFLEX-KR

Composite construction of KALOCER high alumina ceramics and rubber

#### ■ KERAFLEX-WRM

Composite construction of KALMETALL-W hard overlay welded plates, rubber and steel

#### ■ KERAFLEX-RM

Composite construction of rubber and steel

### Advantages

- impact resistant elements
- hard and wear resistant surface
- impact resistant thanks to customized strong rubber layer as well as optimal vulcanization of the system
- simple and reliable mechanical fixing and/or gluing
- elements easily replaceable
- optimal adaption to the specific requirements thanks to varying sizes, thickness and design
- good sound insulation

### KERAFLEX Offering Multiple Application

KERAFLEX elements are used, in particular, whenever intense abrasion is combined with high impact load.

### Fields of Application

- bunker surfaces subject to impact loads
- belt transfer points
- inlet chutes

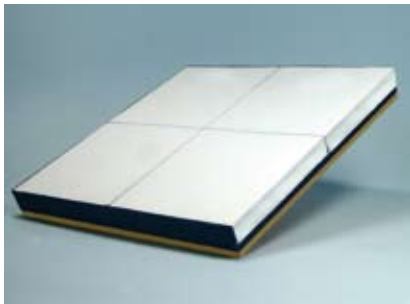
### Branches of Application

- blast furnace plants
- coal fired power plants
- cement works
- loading and unloading systems



*KERAFLEX-KRM installed as protection against abrasion and impact load in a discharge chute for coal and iron ore in a harbor loading and unloading plant*

## KALOCER High Alumina Ceramics Characterized by a Very Hard and Wear Resistant Surface



### **KERAFLEX-KRM**

KALOCER belongs to the group of high alumina ceramics. Its main constituent is alumina. Its particle size and size distribution have been matched to specifically high abrasion resistance.

KALOCER tiles are formed by pressing.

Cutting prior to firing allows the production of shaped elements for surfaces featuring complicated geometry.

### **The use of KALOCER high alumina ceramics in combination with KERAFLEX offers the following benefits:**

- impact resistant ceramic elements
- very hard and wear resistant surface

### **KERAFLEX-KRM for Simple and Reliable Fixing**

The system consists of KALOCER high alumina ceramics, rubber and steel that have been vulcanized functionally reliable in a single operating process.

The ceramic tiles may be of varying dimensions. Mosaic shapes of 20 x 20 mm are feasible just like standard tiles of 100 x 150 mm. The ceramics thickness is variable up to 50 mm. The thickness of the carrying steel plate can range from 3 to 10 mm. High-grade steel may be used as well. The rubber thickness depends on the impact stress that occurs.

The elements are mechanically connected to the subsurface by means of bolts by way of a time-tested fixing system.

The fixing elements are covered by ceramic stoppers of 42 mm diameter. They ensure reliable locking in the ceramic surface. The fixing points are completely covered by the stoppers.

KERAFLEX-KRM suggests itself, in particular, for use on flat bunker surfaces, etc. KERAFLEX-KRM can be adapted to the geometric requirements of the particular application.

The maximum dimensions of the elements are 500 x 500 mm with 4 fixing points. The minimum size is 100 x 100 mm with one fixing point.

### **KERAFLEX-KR for Flexible Connections**

The system consists of a combination of KALOCER high alumina ceramics and rubber.

The elements are flexible and can therefore be matched to surfaces of varying geometry.

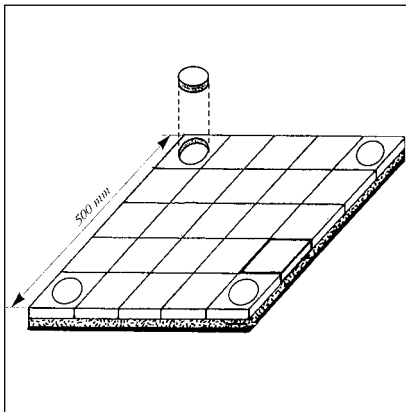
KERAFLEX-KR is offered as well as high alumina ceramic tiles of varying dimensions and thickness. The rubber thickness depends on the impact load that occurs. Contrary to KERAFLEX-KRM, KERAFLEX-KR does not include a carrying steel plate.

KERAFLEX-KR is normally glued. Different types of KALFIX are available for that purpose. The particular adhesive is chosen with due regard to the characteristics of the subsurface and the application temperature.

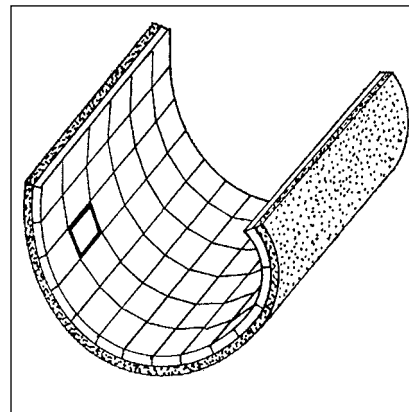
The KERAFLEX-KR system is especially suited for curved and uneven surfaces. The elements are offered in various dimensions. The element geometry is matched to the specific application.



**Bunker in a steel mill lined with KERAFLEX-KRM elements**



**KERAFLEX-KRM – a reliable solution that uses KALOCER high alumina ceramics, rubber and steel**



**KERAFLEX-KR is the universal solution; it combines KALOCER high alumina ceramics with rubber**

# KERAFLEX System Solutions

## KALMETALL-W Hard Overlay Welded Plates to Withstand High Impact Loads



### KERAFLEX-WRM

KALMETALL-W are hard overlay welded steel systems which consist of a tough basic body and the hard overlay welding. The base material is the strength carrier. The hard overlay welding is the wear layer. It consists of a C-Cr-Fe system with primary chromium carbides.

### KERAFLEX using KALMETALL-W offers the following advantages:

- metal elements characterized by high impact resistance
- hard and wear resistant surface

### KERAFLEX-WRM

The KERAFLEX-WRM system is made up of KALMETALL-W, rubber and steel. The system is vulcanized functionally reliable in a single process.

In general, the KALMETALL-W slabs have dimensions of 200 x 200 mm. However, other sizes may be used as well. Different geometric shapes can be produced by cutting.

The thickness of KALMETALL-W slabs can be chosen between 6 + 4 mm and 8 + 5 mm respectively. The thickness of the carrying steel plates ranges from 3 to 10 mm. The rubber thickness depends on the specific impact load.

The elements are mechanically connected to the subsurface by means of bolts by way of a time-tested fixing system.

KERAFLEX-WRM is particularly suitable for flat bunker surfaces, etc. KERAFLEX WRM can be adapted to the geometric requirements of the particular application.

The maximum element dimensions are 500 x 500 mm with four fixing points. The minimum dimension is 100 x 100 mm with one fixing point.



*Custom-fit mounting of KERAFLEX-WRM elements in a chute: their maximum size is 500 x 500 mm; the elements can be individually matched to the specific requirements*

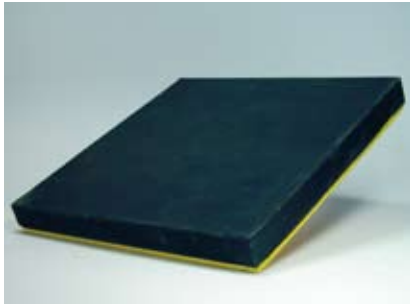


*Bunker in a cement plant: the KERAFLEX-WRM elements consist of 5 mm carrier plate, 5 mm rubber and 13 mm KALMETALL-W hard-overlay welding (8 + 5)*



*Mechanical fixing of the KERAFLEX-WRM elements to enable easy replacement; large elements have 4 fixing points*

## Composite Construction of Steel and Rubber to Withstand Extreme Impact Load



### **KERAFLEX-RM**

System components of steel rubber composite construction are offered for specific applications.

### **Advantage of KERAFLEX RM as system solution:**

- extremely impact resistant rubber elements

### **KERAFLEX-RM**

KERAFLEX-RM is a system of rubber and steel which is vulcanized functionally reliable in a single process.

The carrying steel plate has a thickness from 3 to 10 mm. High-grade steel plates can be chosen as well.

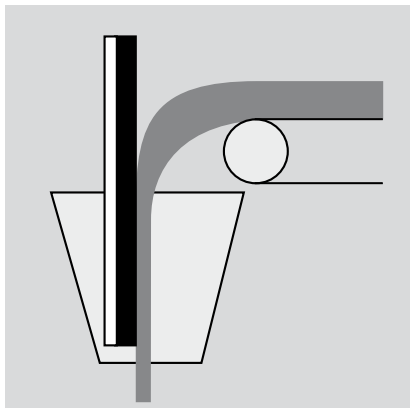
The thickness of rubber is governed by the impact load that occurs.

The elements are mechanically connected to the subsurface by means of bolts by way of a time-tested fixing system.

KERAFLEX-RM is particularly suitable for flat bunker surfaces, etc. KERAFLEX-RM can be adapted to the geometric requirements of the particular applications.

The maximum element dimensions are 500 x 500 mm with four fixing points. The minimum sizes measures 100 x 100 mm with one fixing point.

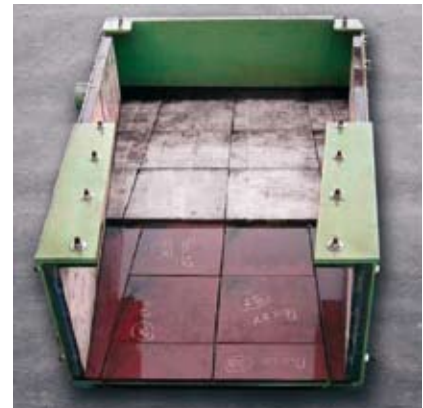
### **Excellent Results from the Practice**



**Material impinging on impact plate made of KERAFLEX which ensures a trouble-free material flow**



**KERAFLEX-KRM with fixing holes which are covered by KALOCER stoppers that protect against abrasion**



**KERAFLEX instead of hard steel: significantly extended duty cycles**

**Ask Kalenborn for further information**

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**The Wear Protection People**