

Abrasion Protection without Weight Problems...

## Ceramic Pipe Bends KALOCER-GFK without Steel are Lightweight and 100 % Corrosion-Resistant



Steel pipes used for pneumatic or hydraulic transport of bulk materials are often subject to high levels of abrasive wear.

Linings made from different mineral and ceramic abrasion-resistant materials have proven to be economic solutions.

They offer durable protection but at the same time are associated with larger outer diameters and greater weight.

Especially in the case of retrofit measures, aspects of weight and narrow space may be an obstacle to optimal solutions.

Pipe bends KALOCER-GFK without steel casings offered by Kalenborn turn out to be an ideal solution whenever a pipe shall be wear resistant, of light weight and corrosion proof.

Kalenborn lightweight pipe bends KALOCER-GFK without steel casings are:

- highly wear resistant
- corrosion proof and free of maintenance
- as light as an unprotected steel pipe of approximately 4 mm wall thickness
- no mortar required
- easy to install
- offered in many standard dimensions as well as tailored to specific requirements

**Kalenborn Lightweight Ceramic Pipe Bends KALOCER-GFK without Steel Casing**

**An Ideal Solution of Wear Protection whenever there are Problems of Weight, Corrosion and Lack of Space**

Kalenborn ceramic pipe bends can be made of a highly wear resistant inner pipe made from KALOCER oxide ceramics and a glass fibre reinforced plastic sheathing.

The result is a composite pipe characterized by unusually high resistance against abrasion at the inside while at the same time fulfilling all static requirements of a steel pipe.

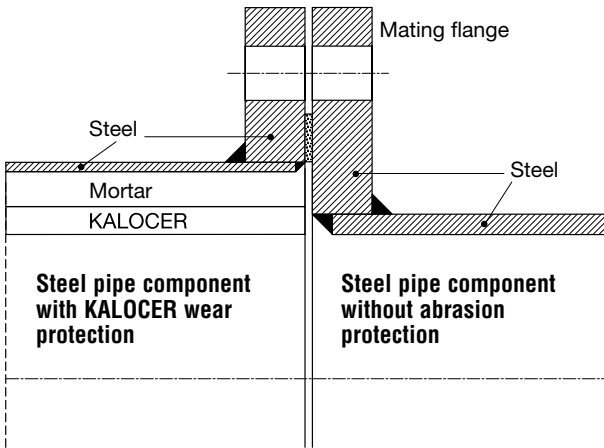
Flanges can be mounted during the production process by way of lamination.

Pipe components without steel casing are feasible for any plant function, such as:

- straight pipes
- pipe bends
- T- and transition pieces
- expansion joints

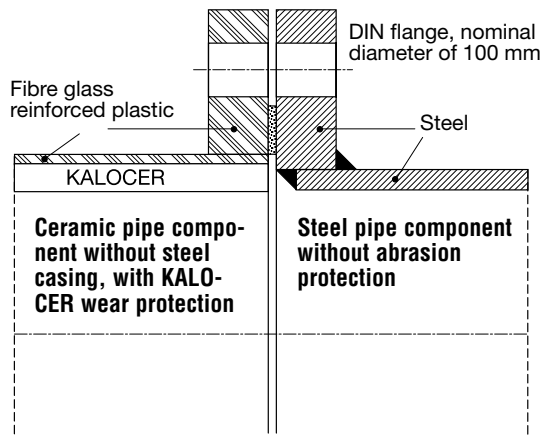
**Additional benefits**

- offered in all standard sizes and special versions
- suitable for standard flanges — normally no adapter flange required
- optimized expansion properties hardly ever require the use of expansion joints
- color identification possible by tinting the laminating resin
- also available in other abrasion-protection materials - matched to the specific duty



Steel pipe bend, R 1000, 45 degrees, nominal diameter of 100 mm with KALOCER abrasion protective lining

**total weight: approx. 47 kg**



Ceramic pipe bend without steel casing, R 1000, 45 degrees, nominal diameter of 100 mm with KALOCER abrasion protective lining

**total weight: approx. 16 kg**

Info KALOCER-GFK - GB - 2000 - K/WA - 3/00 - © Kalenborn 1999

**Get in touch with us:**  
We offer materials and know-how for an efficient wear protection — also for ceramic pipe bends without steel casing.