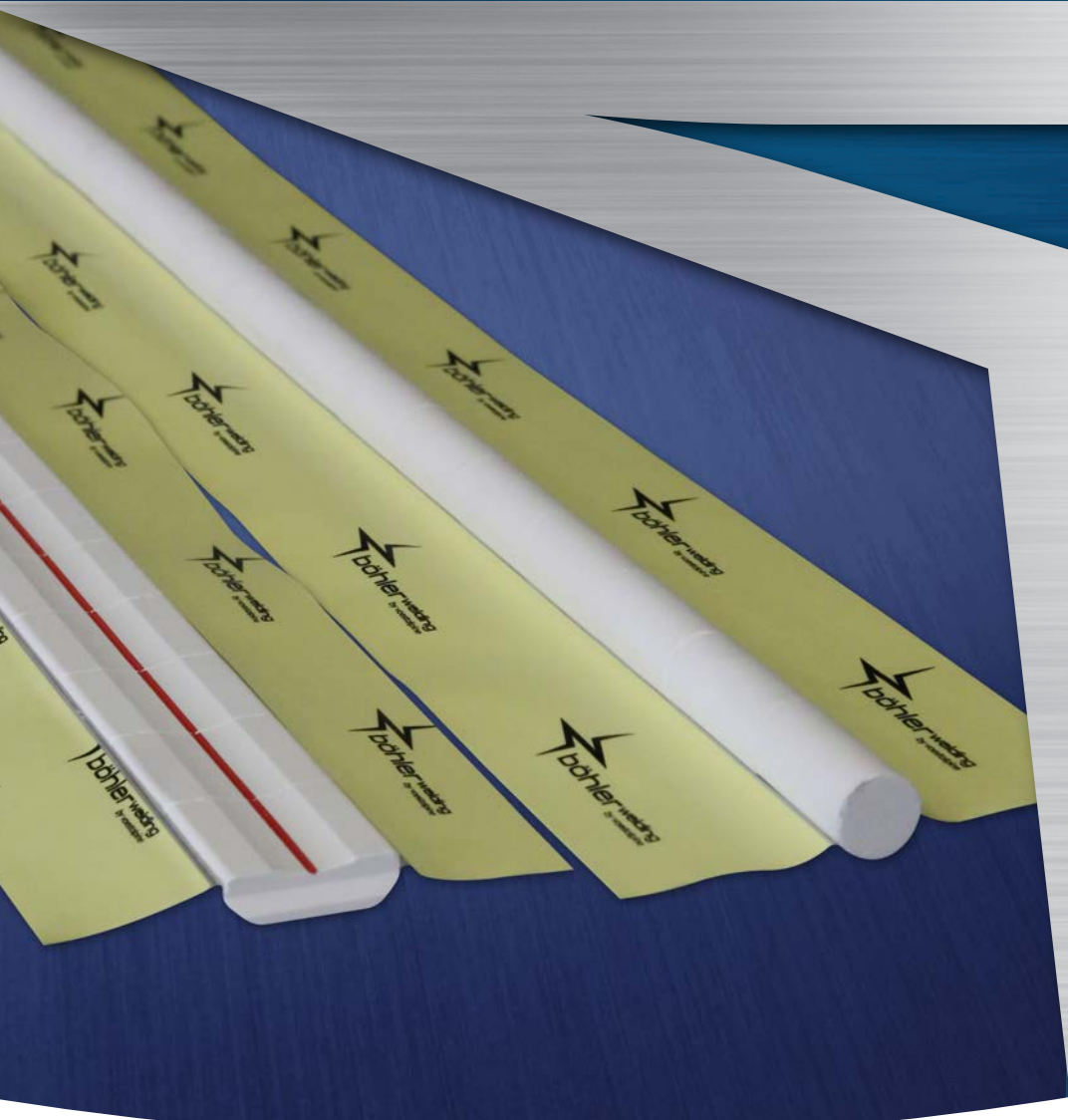


Lasting Connections

CERAMIC BACKINGS AND THEIR APPLICATIONS





LASTING CONNECTIONS

As a pioneer in innovative welding consumables, Böhler Welding offers a unique product portfolio for joint welding worldwide. More than 2000 products are adapted continuously to the current industry specifications and customer requirements, certified by well-respected institutes and thus approved for the most demanding welding applications. As a reliable partner for customers, “lasting connections” are the brand’s philosophy in terms of both welding and people.

Our clients benefit from a partner with

- » the highest expertise in joining, rendering the best application support globally available
- » specialized and best in class product solutions for their local and global challenges
- » an absolute focus on customer needs and their success
- » a worldwide presence through factories, offices and distributors

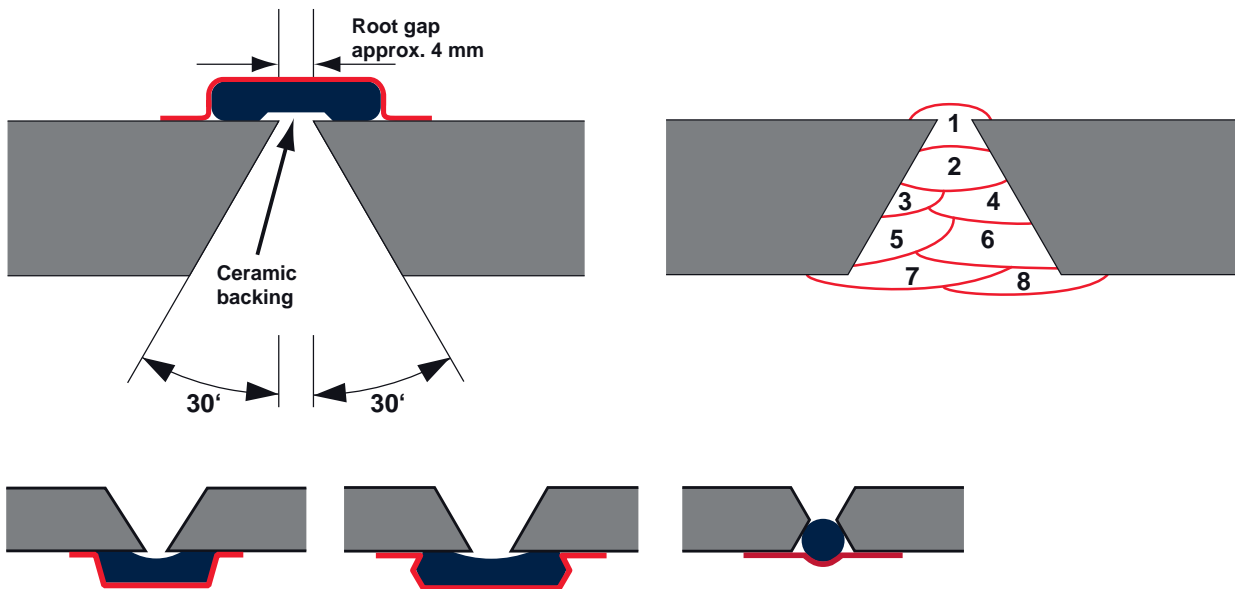
CERAMIC BACKINGS AND THEIR APPLICATIONS

Ceramic backings are made of sealed, high temperature resistant ceramic, from different mineral mixes (e.g. Al_2O_3 , SiO_2 , Fe_2O_3 , TiO_2). When they melt, they produce a glassy slag that forms the underside of the weld seam and seals it against air entering. They are chemically neutral in the weld pool. Ceramic backings are available as ceramic blocks (~2 cm long) on a flexible aluminum foil with an adhesive edge, that can be stuck to the underside of the weld seam. They are also available as single ceramic segments

(~10 to 15 cm long) for placement in metallic rails that are then attached to the work piece with magnets or other fixtures.

The ceramic backings offer special economic advantages for submerged arc welding and MAG welding with solid wires or metal-cored wires in the downhand position as well for positional MAG welding using rutile cored wires with fast freezing slag.

EXAMPLES OF CERAMIC BACKING APPLICATIONS

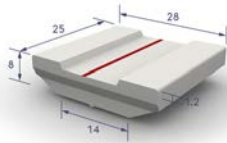
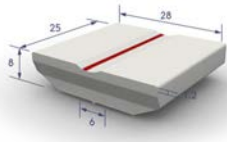
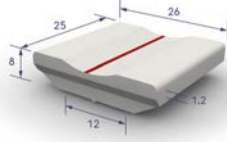
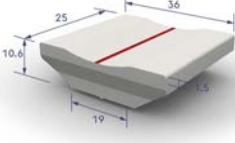



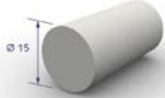



Ceramic backings are traditionally used in industry segments that are under pressure to keep costs low, such as ship-building. However, today they are increasingly used in pressure vessel fabrication, machine construction, general steel construction, tanks, bridges and plant engineering.

APPLICATION TIPS

- » Ideal for mechanized, one-sided welding with high currents and for manual welding of root runs with increased welding parameters (MAG solid wire and MAG cored wire).
- » Root runs can be produced in thicknesses that make it possible to weld filler layers (as from the second layer) with very high currents and deposition rate, without the risk of burn-through.
- » Suitable for compensating deviations in fit-up, without the need to significantly adjust the welding parameters, thereby ensuring a high quality root. Irregular root gaps can be welded without time-consuming adjustments.
- » In two-sided welding, expensive back grinding can usually be completely eliminated.
- » Root runs welded with ceramic backing normally have a lower incidence of insufficient penetration, undercut, pores, slag inclusions and restart errors.
- » One-sided welding with ceramic backing increases process reliability when root runs have to be notch-free, e.g. in the case of dynamic loading or stress corrosion.
- » Due to their moisture resistance, ceramic backings are also suitable for outdoor welding. One-sided welding at the construction site can often be carried out on the inside of the component so that weather conditions do not play a role.
- » Dense ceramics with low moisture content are ideal for welding high-strength, fine-grained steels that require weld metals with very low hydrogen content.

The most commonly used ceramic backings

Typ	Dimensions	Description	Length	Item No.	Packaging Unit
CERAshape T14		Ceramic with trapezoidal groove for butt welds and V-welds; attached with self-adhesive aluminum strip	600 mm	86890	40 Piece / Box 24 m / Box
CERAshape H6		Ceramic with trapezoidal groove for butt welds and V-welds; attached with self-adhesive aluminum strip	600 mm	86903	40 Piece / Box 24 m / Box
CERAshape H12		Ceramic with trapezoidal groove for butt welds and V-welds; attached with self-adhesive aluminum strip	600 mm	86907	40 Piece / Box 24 m / Box
CERAshape H19		Ceramic with trapezoidal groove for butt welds and V-welds; attached with self-adhesive aluminum strip	600 mm	86915	20 Piece / Box 12 m / Box
CERAshape S7		Ceramic with cylindrical shape for X-welds and fillet welds; attached with self-adhesive aluminum strip	600 mm	86917	80 Piece / Box 48 m / Box
CERAshape S10		Ceramic with cylindrical shape for X-welds and fillet welds; attached with self-adhesive aluminum strip	600 mm	86918	60 Piece / Box 36 m / Box
CERAshape S12		Ceramic with cylindrical shape for X-welds and fillet welds; attached with self-adhesive aluminum strip	600 mm	86919	48 Piece / Box 28.8 m / Box
CERAshape S15		Ceramic with cylindrical shape for X-welds and fillet welds; attached with self-adhesive aluminum strip	600 mm	86920	40 Piece / Box 24 m / Box
CERAshape S20		Ceramic with cylindrical shape for X-welds and fillet welds; attached with self-adhesive aluminum strip	600 mm	86921	24 Piece / Box 14.4 m / Box

This information is an aid for practitioners. It provides a simplified version of fundamental technical facts and does not claim to be complete. A guarantee of the suitability for a specific application requires an express written agreement in each case.

CERAshape T14

Ceramic Weld Backings

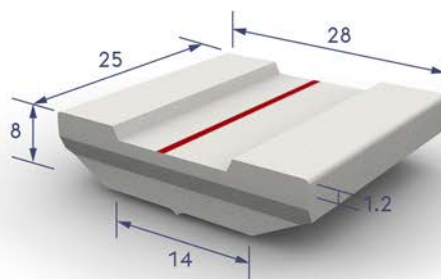
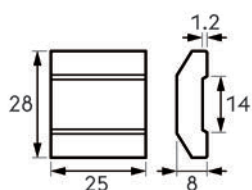
Product
Ceramic on self-adhesive aluminium tape with trapezoidal form groove. Coloration: white

Dimension			
Length	Groove width	Groove depth	Segment size
600 mm	14 mm	1.2 mm	28 x 25 mm

Article No.
86890

Packing			
Carton		Pallet	
Piece	Meter	Carton	Piece
40	24	98	3920

Dimension



CERAshape H6

Ceramic Weld Backings

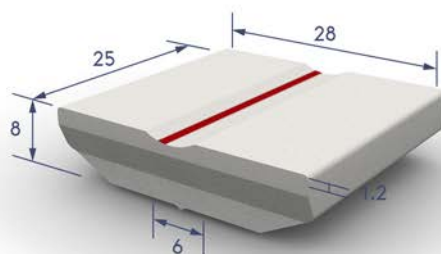
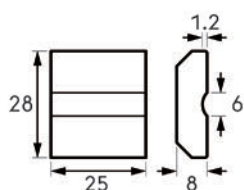
Product
Ceramic on self-adhesive aluminium tape with trapezoidal form groove. Coloration: white

Dimension			
Length	Groove width	Groove depth	Segment size
600 mm	6 mm	1.2 mm	28 x 25 mm

Article No.
86903

Packing			
Carton		Pallet	
Piece	Meter	Carton	Piece
40	24	98	3920

Dimension



CERAshape H12

Ceramic Weld Backings

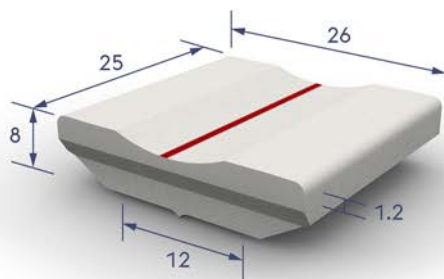
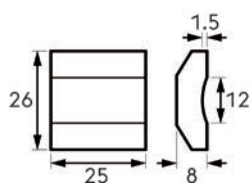
Product
Ceramic on self-adhesive aluminium tape with trapezoidal form groove. Coloration: white

Dimension			
Length	Groove width	Groove depth	Segment size
600 mm	12 mm	1.2 mm	26 x 25 mm

Article No.
86907

Packing			
Carton		Pallet	
Piece	Meter	Carton	Piece
40	24	98	3920

Dimension



CERAshape H19

Ceramic Weld Backings

Product

Ceramic on self-adhesive aluminium tape with trapezoidal form groove.
Coloration: white

Dimension

Length	Groove width	Groove depth	Segment size
600 mm	19 mm	1.5 mm	36 x 25 mm

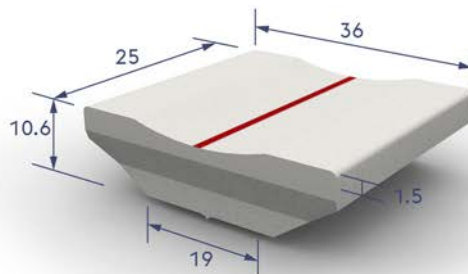
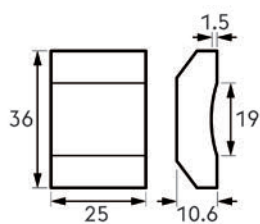
Article No.

86915

Packing

Carton		Pallet	
Piece	Meter	Carton	Piece
20	12	98	1960

Dimension



CERAshape S7

Ceramic Weld Backings

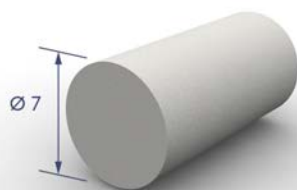
Product
Ceramic on self-adhesive aluminium tape cylindrical shape. Coloration: white

Dimension		
Length	Diameter	Segment size
600 mm	7.0 mm	25 mm

Article No.
86917

Packing			
Carton		Pallet	
Piece	Meter	Carton	Piece
80	48	98	7840

Dimension



CERAshape S10

Ceramic Weld Backings

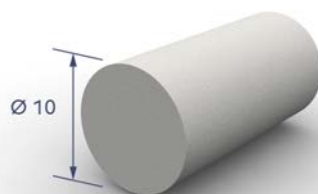
Product
Ceramic on self-adhesive aluminium tape cylindrical shape. Coloration: white

Dimension		
Length	Diameter	Segment size
600 mm	10.0 mm	25 mm

Article No.
86918

Packing			
Carton		Pallet	
Piece	Meter	Carton	Piece
60	36	98	5880

Dimension



CERAshape S12

Ceramic Weld Backings

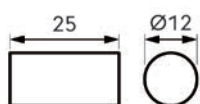
Product
Ceramic on self-adhesive aluminium tape cylindrical shape. Coloration: white

Dimension		
Length	Diameter	Segment size
600 mm	12.0 mm	25 mm

Article No.
86919

Packing			
Carton		Pallet	
Piece	Meter	Carton	Piece
48	28.8	98	4704

Dimension



CERAshape S15

Ceramic Weld Backings

Product

Ceramic on self-adhesive aluminium tape cylindrical shape.
Coloration: white

Dimension

Length	Diameter	Segment size
600 mm	15.0 mm	25 mm

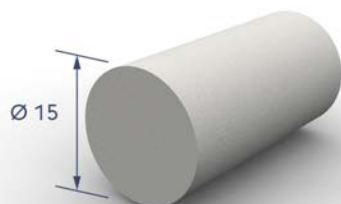
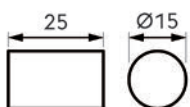
Article No.

86920

Packing

Carton		Pallet	
Piece	Meter	Carton	Piece
40	24	98	3920

Dimension



CERAshape S20

Ceramic Weld Backings

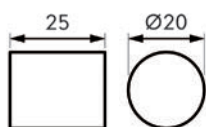
Product
Ceramic on self-adhesive aluminium tape cylindrical shape. Coloration: white

Dimension		
Length	Diameter	Segment size
600 mm	20 mm	25 mm

Article No.
86921

Packing			
Carton		Pallet	
Piece	Meter	Carton	Piece
24	14.4	98	2352

Dimension



Lasting Connections



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We are a leader in the welding industry with over 100 years of experience, more than 50 subsidiaries and more than 4,000 distribution partners around the world. Our extensive product portfolio and welding expertise combined with our global presence guarantees we are close when you need us. Having a profound understanding of your needs enables us to solve your demanding challenges with Full Welding Solutions - perfectly synchronized and as unique as your company.



Lasting Connections – Perfect alignment of welding machines, consumables and technologies combined with our renowned application and process know-how provide the best solution for your requirements: A true and proven connection between people, products and technologies. The result is what we promise: Full Welding Solutions for Lasting Connections.



Tailor-Made Protectivity™ – Proven under the toughest conditions: Our products protect metal surfaces from wear and corrosion. With over 70 years of experience and the broadest product portfolio in the industry, we are your preferred partner for Surface Protection solutions. We deliver what we promise: Surface Protection tailored to your needs.



In-Depth Know-How – As a manufacturer of soldering and brazing consumables, we offer proven solutions based on 60 years of industrial experience, tested processes and methods, made in Germany. This in-depth know-how makes us the internationally preferred partner to solve your soldering and brazing challenge through innovative solutions. The result is what we promise: Innovation based on in-depth know-how.

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