

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

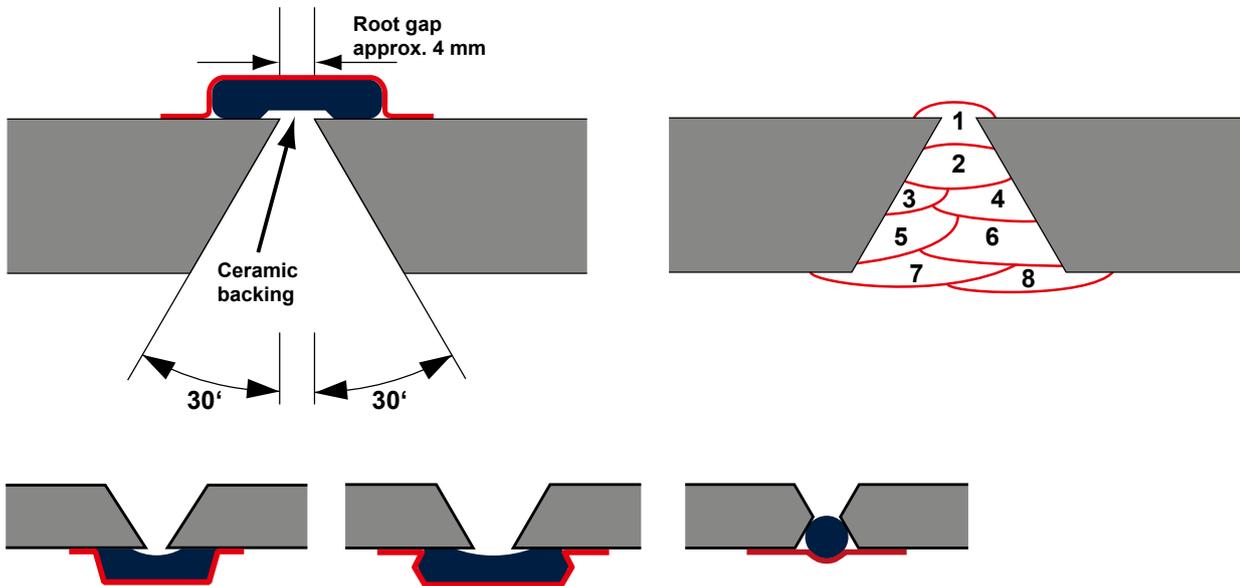
CERAMIC BACKINGS AND THEIR APPLICATIONS

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

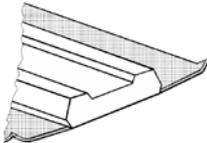
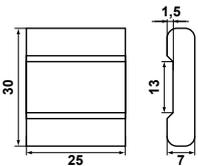
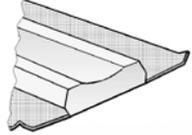
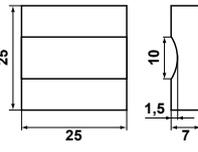
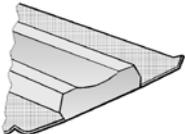
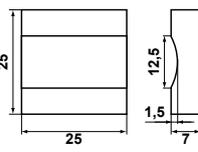
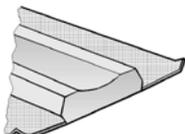
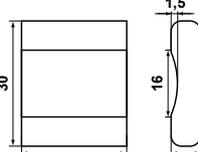
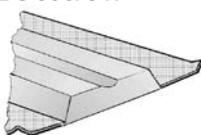
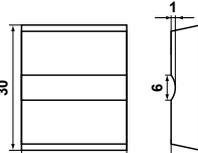
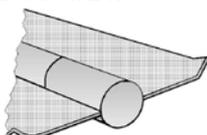
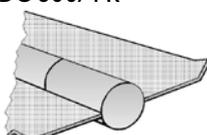
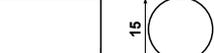
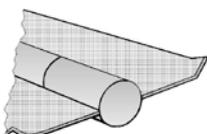


Ceramic backings are traditionally used in industry segments that are under pressure to keep costs low, such as ship-building. However, today they are increasingly used in pressure vessel fabrication, machine construction, general steel construction, tanks, bridges and plant engineering.

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; other Types on request

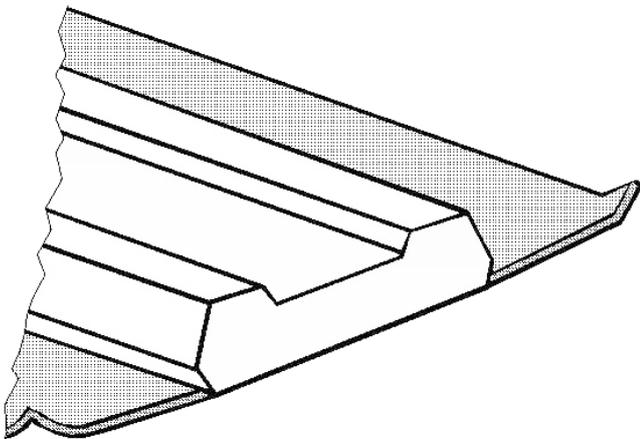
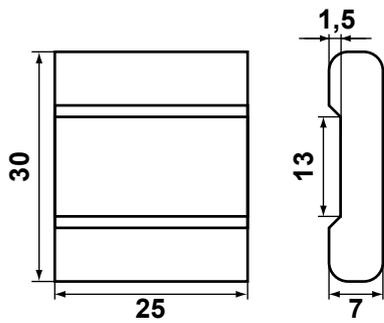
Type	Dimensions	Description	Length	Part-No.	Packaging Unit
AG 600/5 R 		Ceramic with trapezoidal groove for butt welds and V-welds; attached with self-adhesive aluminum strip).	600 mm	71325	42 Stck / Box 25,2 m / Box
BG 600/1 R 		Ceramic with round groove for butt welds and V-welds; attached with self-adhesive aluminum strip	600 mm	71111	42 Stck / Box 25,2 m / Box
BG 600/2 R 		Ceramic with round groove for butt welds and V-welds; attached with self-adhesive aluminum strip	600 mm	70893 on request	42 Stck / Box 25,2 m / Box
BG 600/4 R 		Ceramic with round groove for butt welds and V-welds; attached with self-adhesive aluminum strip	600 mm	70149 on request	42 Stck / Box 25,2 m / Box
BG 600/8 R 		Ceramic with round groove for butt welds and V-welds; attached with self-adhesive aluminum strip	600 mm	71110 on request	42 Stck / Box 25,2 m / Box
DG 600/1 R DG 600/2 R 	 	Ceramic with cylindrical shape for X-welds and fillet welds; attached with self-adhesive aluminum strip	600 mm	DG 600/1 R 70220	100 Stck / Box 60 m / Box
		DG 600/1 R = 20mm/6mm DG 600/2 R = 25mm/10mm		DG 600/2 R 70221	72 Stck / Box 43.2 m / Box
DG 600/3 R DG 600/4 R 	 	Ceramic with cylindrical shape for X-welds and fillet welds; attached with self-adhesive aluminum strip	600 mm	DG 600/3 R 70222	60 Stck / Box 36 m / Box
		DG 600/3 R = 25mm/12mm DG 600/4 R = 25mm/15mm		DG 600/4 R 70223 on request	36 Stck / Box 21.6 m / Box
DG 600/5 R 		Ceramic with cylindrical shape for X-welds and fillet welds; attached with self-adhesive aluminum strip	600 mm	71109 on request	27 Stck / Box 16.2 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

TYPE AG 600/5 R

Ceramic Weld Backings

Product				
Ceramic on self-adhesive aluminium tape with trapezoidal form groove. Coloration: grey				
Dimension				
Length	Groove width	Groove depth	Segment size	
600 mm	13 mm	1,5 mm	30 x 25 mm	
Article No.				
71325				
Packing				
Carton		Pallet		
Piece	Meter	Carton	Piece	
42	25,2	45	1890	
Dimension				



TYPE BG 600/1 R

Ceramic Weld Backings

Product

Ceramic on self-adhesive aluminium tape with half-circle groove.
Coloration: grey

Dimension

Length	Groove width	Groove depth	Segment size
600 mm	10 mm	1,5 mm	25 x 25 mm

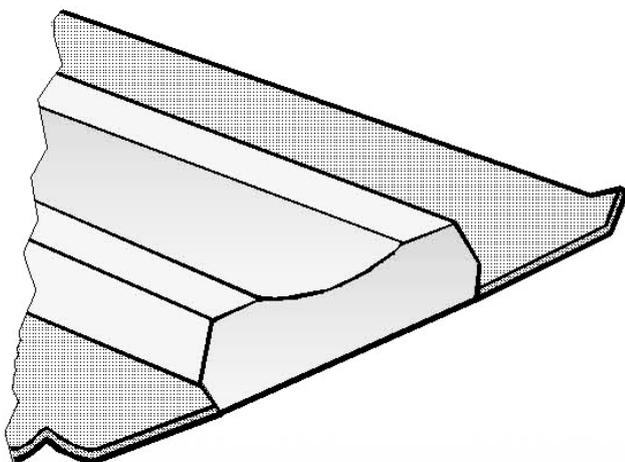
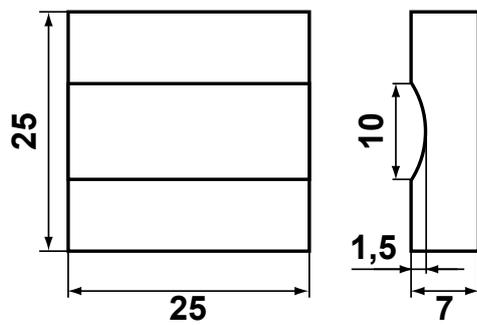
Article No.

71111

Packing

Carton		Pallet	
Piece	Meter	Carton	Piece
42	25,2	45	1890

Dimension



TYPE BG 600/2 R

Ceramic Weld Backings

Product

Ceramic on self-adhesive aluminium tape with half-circle groove.
Coloration: grey

Dimension

Length	Groove width	Groove depth	Segment size
600 mm	12,5 mm	1,5 mm	25 x 25 mm

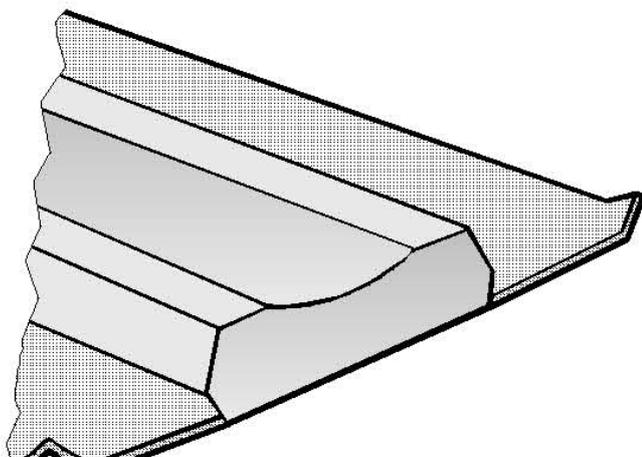
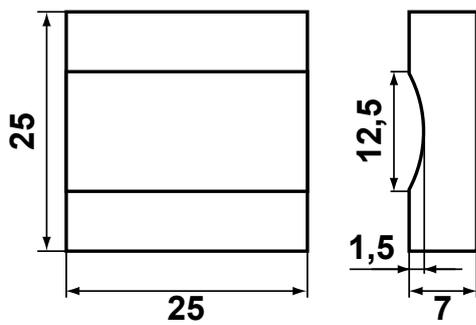
Article No.

70893

Packing

Carton		Pallet	
Piece	Meter	Carton	Piece
42	25,2	45	1890

Dimension



TYPE BG 600/4 R

Ceramic Weld Backings

Product

Ceramic on self-adhesive aluminium tape with half-circle groove.
Coloration: grey

Dimension

Length	Groove width	Groove depth	Segment size
600 mm	16 mm	1,5 mm	30 x 25 mm

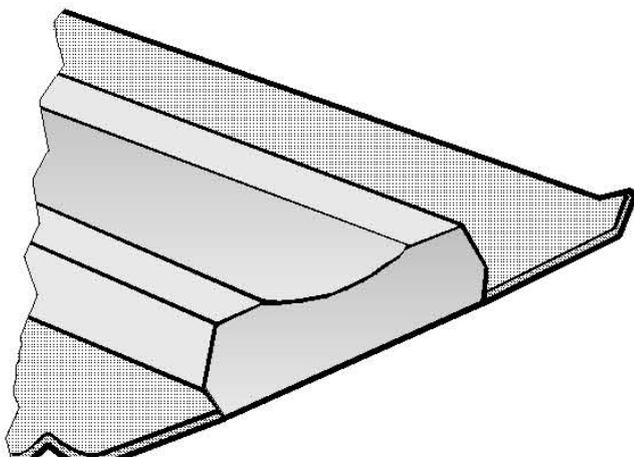
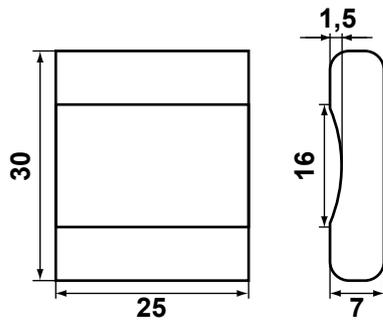
Article No.

70149

Packing

Carton		Pallet	
Piece	Meter	Carton	Piece
42	25,2	45	1890

Dimension



TYPE BG 600/8 R

Ceramic Weld Backings

Product

Ceramic on self-adhesive aluminium tape with half-circle groove.
Coloration: grey

Dimension

Length	Groove width	Groove depth	Segment size
600 mm	6 mm	1,0 mm	25 x 20 mm

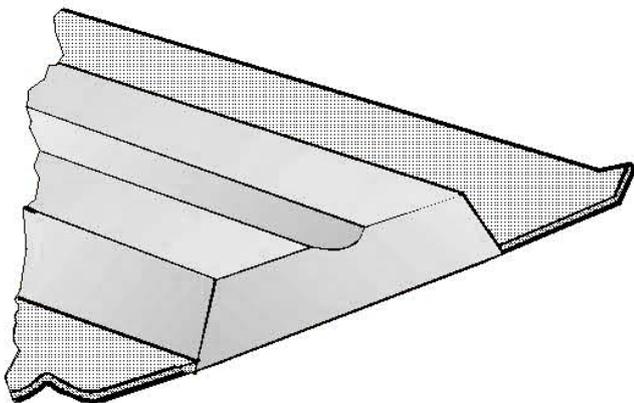
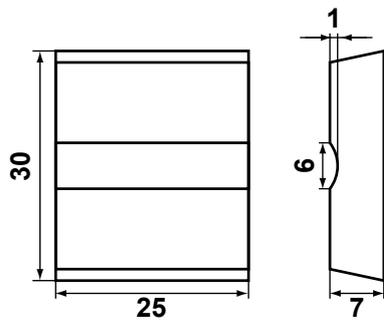
Article No.

71110

Packing

Carton		Pallet	
Piece	Meter	Carton	Piece
42	25,2	45	1890

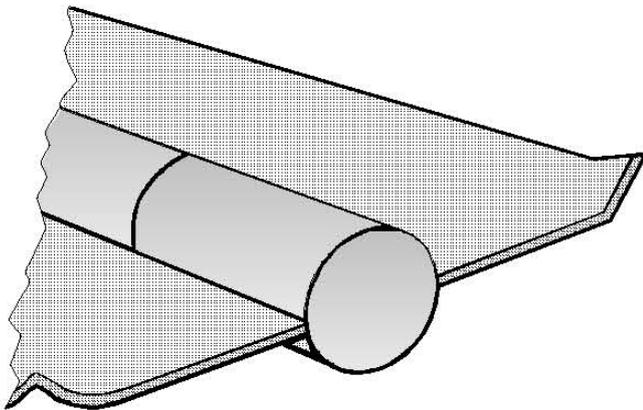
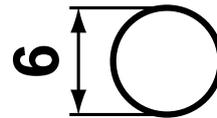
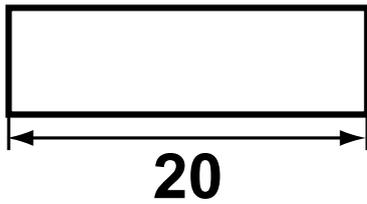
Dimension



TYPE DG 600/1 R

Ceramic Weld Backings

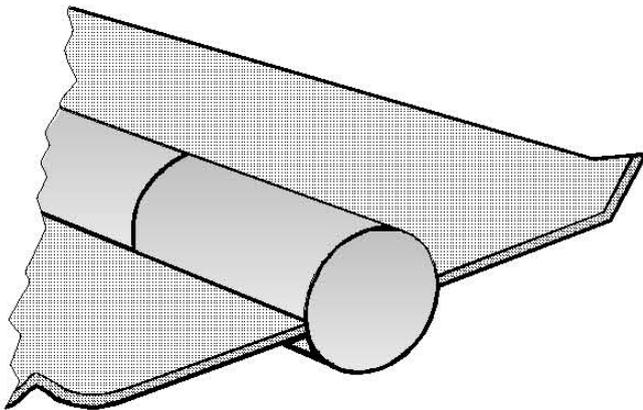
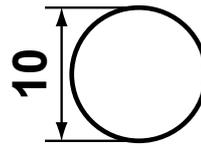
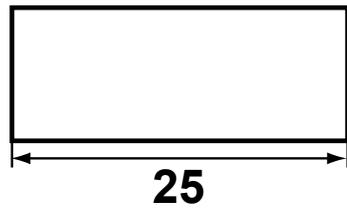
Product			
Ceramic on self-adhesive aluminium tape cylindrical shape. Coloration: grey			
Dimension			
Length	Diameter	Segment size	
600 mm	6,0 mm	20 mm	
Article No.			
70220			
Packing			
Carton		Pallet	
Piece	Meter	Carton	Piece
100	60	45	4500
Dimension			



TYPE DG 600/2 R

Ceramic Weld Backings

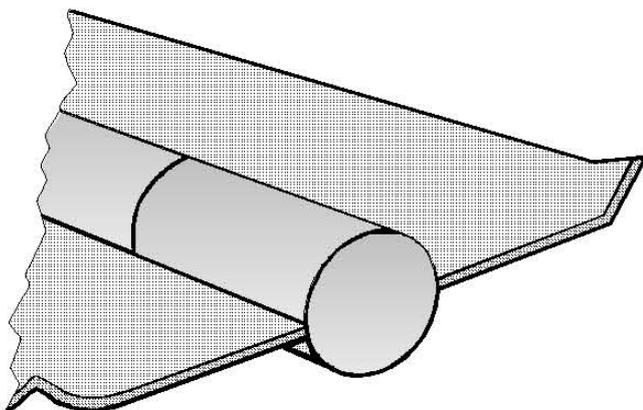
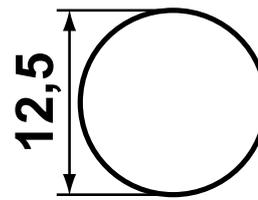
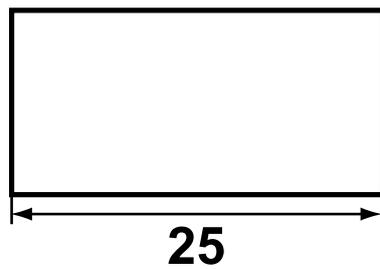
Product				
Ceramic on self-adhesive aluminium tape cylindrical shape. Coloration: grey				
Dimension				
Length		Diameter		Segment size
600 mm		10,0 mm		25 mm
Article No.				
70221				
Packing				
Carton			Pallet	
Piece	Meter		Carton	Piece
72	43,2		45	3240
Dimension				



TYPE DG 600/3 R

Ceramic Weld Backings

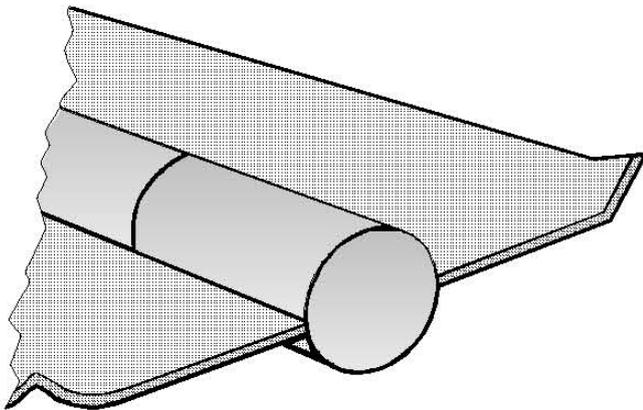
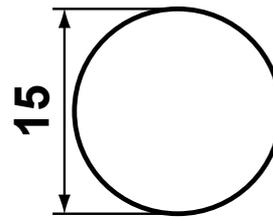
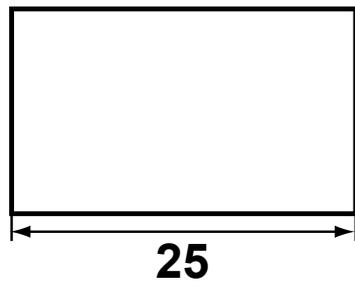
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Ceramic on self-adhesive aluminium tape cylindrical shape. Coloration: grey			
Dimension			
Length	Diameter	Segment size	
600 mm	12,0 mm	25 mm	
Article No.			
70222			
Packing			
Carton		Pallet	
Piece	Meter	Carton	Piece
60	36	45	2700
Dimension			



TYPE DG 600/4 R

Ceramic Weld Backings

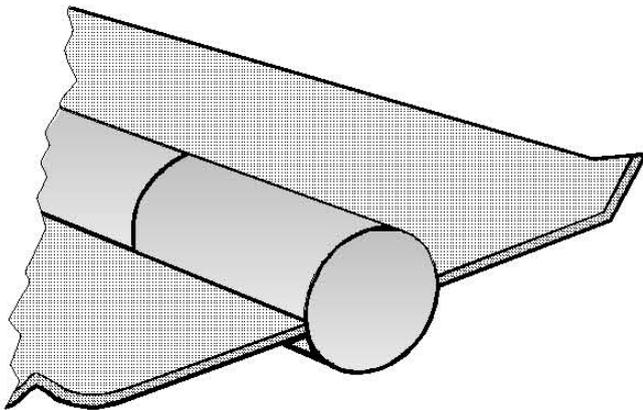
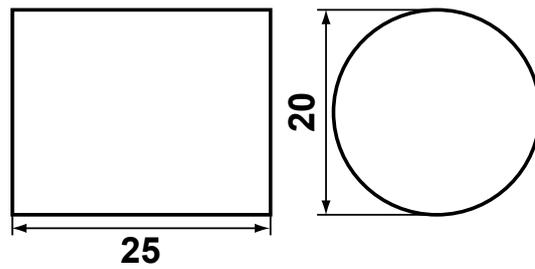
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Ceramic on self-adhesive aluminium tape cylindrical shape. Coloration: grey				
Dimension				
Length		Diameter		Segment size
600 mm		15,0 mm		25 mm
Article No.				
70223				
Packing				
Carton			Pallet	
Piece	Meter		Carton	Piece
36	21,6		45	1620
Dimension				



TYPE DG 600/5 R

Ceramic Weld Backings

Product			
Ceramic on self-adhesive aluminium tape cylindrical shape. Coloration: grey			
Dimension			
Length	Diameter	Segment size	
600 mm	20 mm	25 mm	
Article No.			
71109			
Packing			
Carton		Pallet	
Piece	Meter	Carton	Piece
27	16,2	45	1215
Dimension			



JOIN! voestalpine Böhler Welding

With over 100 years of experience, voestalpine Böhler Welding is the global top address for the daily challenges in the areas of joint welding, repair, hardfacing and cladding as well as brazing. Customer proximity is guaranteed by more than 40 subsidiaries in 25 countries, with the support of 2,200 employees, and through more than 1,000 distribution partners worldwide. With individual consultation by our application technicians and welding engineers, we make sure that our customers master the most demanding welding challenges. voestalpine Böhler Welding offers three specialized and dedicated brands to cater our customers' and partners' requirements.



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Tailor-Made Protectivity™ – UTP Maintenance ensures an optimum combination of protection and productivity with innovative and tailor-made solutions. Everything revolves around the customer and their individual requirements. That is expressed in the central performance promise: Tailor-Made Protectivity™.



In-Depth Know-How – As a leading brand of soldering and brazing consumables, Fontargen Brazing offers proven solutions based on 50 years of industrial experience, tried and tested processes and methods. This In-Depth Know-How has made Fontargen Brazing an internationally preferred partner for every soldering and brazing task.

The Management System of voestalpine Böhler Welding Group GmbH, Peter-Mueller-Strasse 14-14a, 40469 Duesseldorf, Germany has been approved by Lloyd's Register Quality Assurance to: ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007, applicable to: Development, Manufacturing and Supply of Welding and Brazing Consumables. More information: www.voestalpine.com/welding



