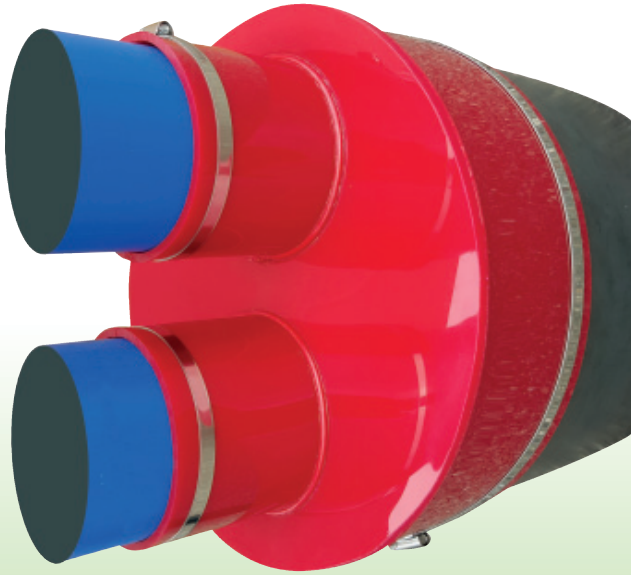
Casing End Seals
4 pipes

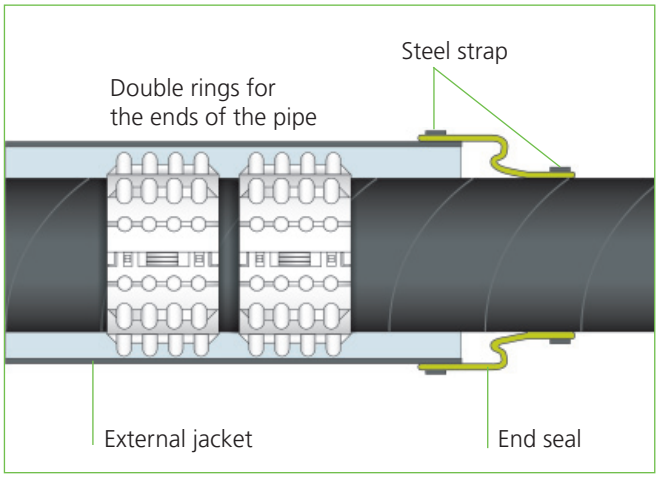


Pipeline Accessories

End Seals 4 pipes

Because of safety reasons, often casing pipes are, laid when pipelines are build.
Elastomeric casing-end seal serves as **pressure-less sealing** of annular space between casing pipe and carrier pipe. To protect the carrier pipe against corrosion, the inside of the casing pipe has to stay dry. Therefore, end seals are especially suitable for retrofit mounting and also for new constructions because they can be delivered individually (basic, multiple, conic, and split version). End seals 4pipes are closing the annular space at the end of the casing pipes towards the carrier pipe against dirt and moisture.
For pressure tight applications special measurements have to be taken e.g. type KMR.

When ordering we ask for **information of the real pipe dimensions and spacer types** so we can choose the ideal seal.



- Type ADU wave shape - fix dimensions
- Type AKT/AWM end seal multidiameter design
- Type AST step shape
- Type AKG/AKO conic shape, AKO split possible
- Type ASTM individual endseal
- Type heat-shrinkable end seal


End Seal Type AKG

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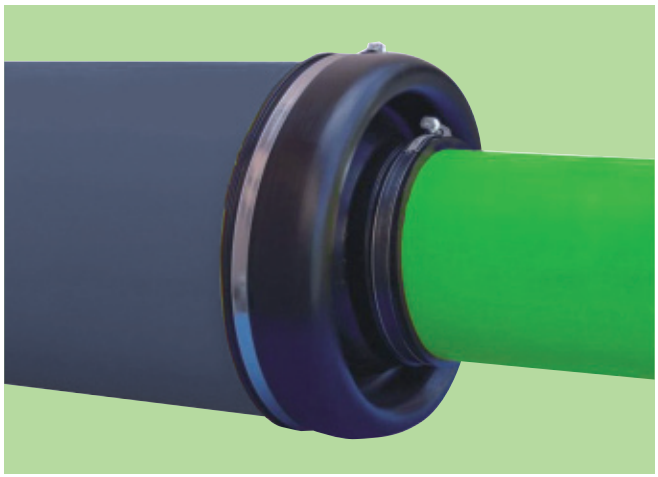
End Seals 4 pipes

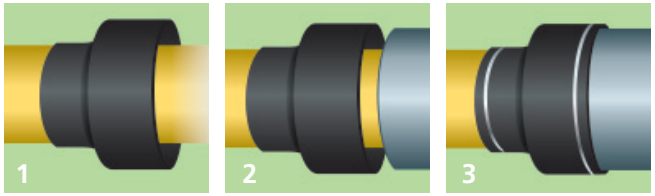
Type ADU end seals



End seals ADU are a high quality and well-priced possibility to seal **standard combinations** of casing and carrier pipes with a rubber molded part. **Integrated waves** allow great flexibility and enable also non-centric application. ADU end seals are stretchable up to 10%. For all standard sizes please have a look at our price list. A lot of further sizes are available on request. Using EPDM rubber and the suitable **stainless steel fasting straps** make the end seal a high quality product. Special qualities in silicone rubber are available on request.

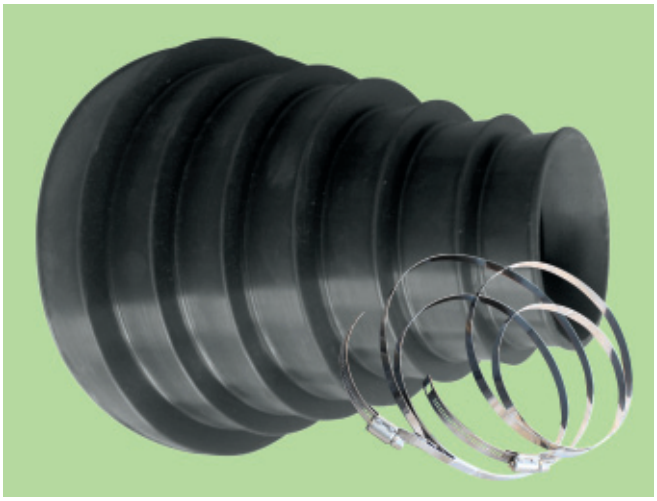
For all standard dimensions, please see our latest pricelist.

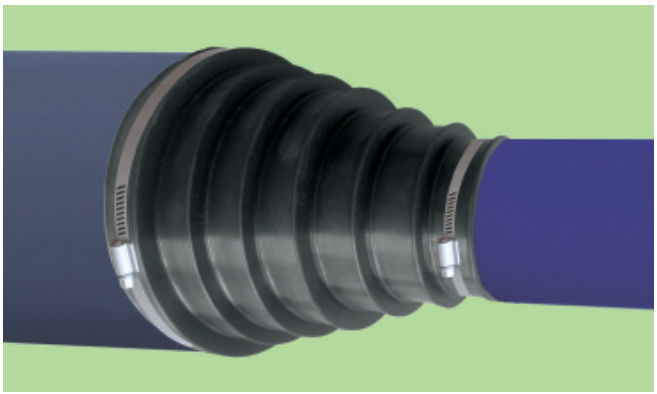
Installation Type ADU



1. Insert the end seal on the main pipe before inserting the casing pipe
2. Insert the end seal on the jacket pipe
3. Secure both pipes with the supplied straps

Type AST end seals





Type AST:

- Only two types for 25 mm - 160 mm range
- High quality EPDM rubber
- Dimensions perfect for plastic pipes
- Marks for cutting on site
- Supplied with stainless steel straps
- Low stock, high flexibility

Step dimensions in mm	DN	Art.-No.
Stepseal AST 25 - 110	25/32/40/50/ 63/75/90/110	18088
Stepseal AST 63 - 160	63/75/90/110 125/140/160	18089

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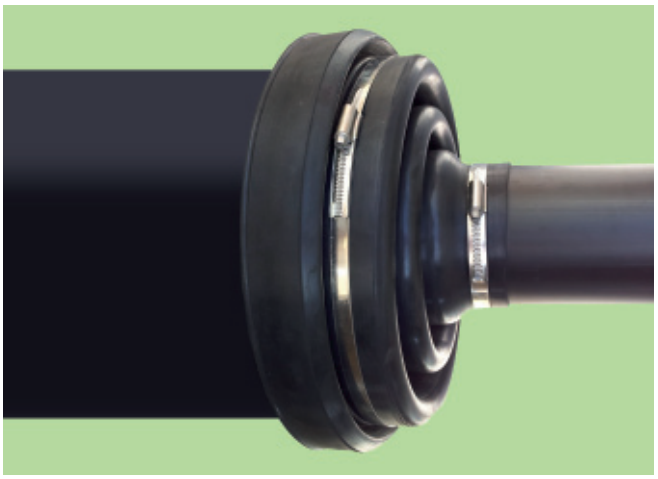
End Seals 4 pipes

End seals Type AKT/AWM



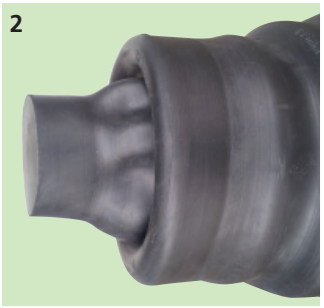
End seals AKT/AWM are made of high quality molded EPDM-rubber. The conic shape of the seal allows a flexible cutting on various pipe diameters. The innovative AWM-seal is also conic shaped however the conus is wave-shaped when delivered. AKT/AWM seals are available for a carrier pipes size up to 800 mm. Only a few sizes provide an attractive alternative for our stock keeping sales partners.

End seals Type AKT/AWM – Sizes

Dimensions in mm casing1/casing2 - min. OD carrier pipe	ND	Art.-No.
AKT 135/110-0	125/100-0	18090
AKT 215/165-0	200/150-0	18091
AWM 320/270-63	300/250-50	18092
AWM 402/350-80	400/350-80	18093
AWM 610/508-160	600/500-150	18094
AWM 810/710-273	800/700-250	18095

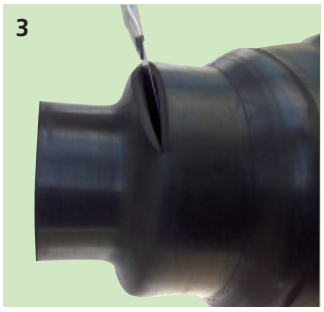
Installation

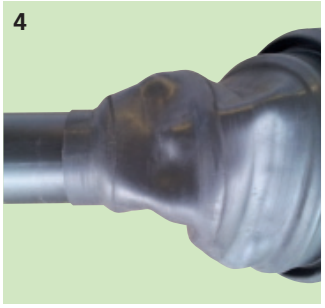
1. The end seal type AWM comes with two stainless steel straps. The steel straps are adjustable individually for the largest as well as smallest pipe diameters.



2. Pull the AWM-seal over the medium pipe up to the contour of the pipe clearly begins to show (elasticity of the seal about 10 %). Thereby the AWM-seal unfolds to a conic shape which balances the eccentricities of the medium pipe well.

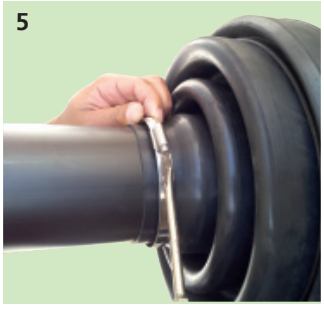
3. Cut seal around medium pipe's end.

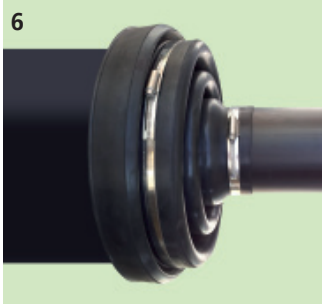




4. After that, push AWM-seal over medium and carrier pipe.

5. After pushing the AWM-seal over both pipes, move the rubber seal into annular space for protection.





6. Concluding, fix AWM-seal with steel straps at medium and carrier pipe.

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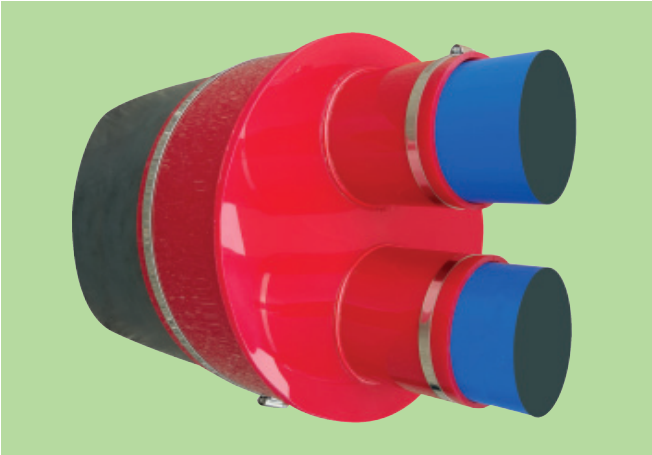
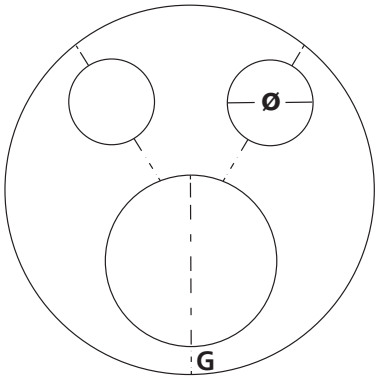
End Seals 4 pipes

End Seal Type ASTM



End seals type ASTM are **highest quality** and stable choice to seal between casing and carrier pipe. ASTM seals are made out of soft PVC.
Here you have the possibility to include **additional outlets** e.g. for further cable protection pipes. In special cases the welding of the seal on site for rehabitilation purposes is possible.
ASTM-seals are **made individually** and are not available from stock. The thickness of the seal is 5 mm.
A tightness against pressing water can be reached when using a special sealing glue and double tightening tapes (type ASTM-KMR). Standard colour is red.
Stainless steel tightening straps are also standard.

Example/Template



Necessary information:

- **OD casing**
- **Wall thickness casing**
- **Hight spacers**
- **OD carrier pipes**
- **Position carrier pipes**

Technical Data Type ASTM - soft PVC

Properties	Norm	Technical Data
Thickness	-	5 mm ± 0,30 mm
Break at cold	DIN EN 1876-2	ca. -35°C
Working temperature min.	JEDI 35.008 / 35.010	ca. -5°C
Working temperature max.	JEDI 35.008 / 35.010	ca. +60°C
Water absorbtion	DIN 53472	0,1 % - 1 %
Elongation at break	ISO 527	≥ 360 %
Tensile strength	ISO 527	≥ 18 N/mm²
Tear growth resistance	DIN 53515	≥ 5 N/mm
Inflammeability	DIN 53382 / DIN 4102/B2	Normally inflammable B2
Edge flaming	DIN 53382/2 / DIN 4102/B2	Self-extinguishing
Hardness Shore A	DIN 53505	77 ± 3
REACH-Conformity	-	Conform to (EG) Nr. 1272/2008 (REACH-regulation)
PAK-free	-	No polycyclic aromatic hydrocarbons are used in producktion
Silicone-free	-	Silicone is not part of the material and not used in the production process
RoHs	2011/65/EU the European Parliament	Raw materials meet the requirements of the Jedi-Dokument 35.012

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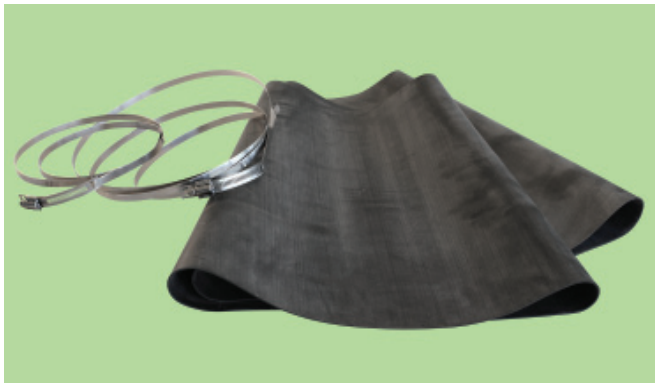
End Seals 4 pipes

End seals Type AKG/AKO



End seals AKG - AKO (split) are made for particular pipe combinations as a **conic cut**. The **individual made seal** is available **for nearly all pipe sizes**.
For all standard pipe combinations please have a look at our price list. Neoprene rubber constantly 2 mm thick and the corresponding stainless steel tapes make it to a high quality and flexible product. Silicone rubber on request available (not split).

Medium pipe DN (mm)	External jacket DN (mm)
25 up to 1300	37,5 up to 3000

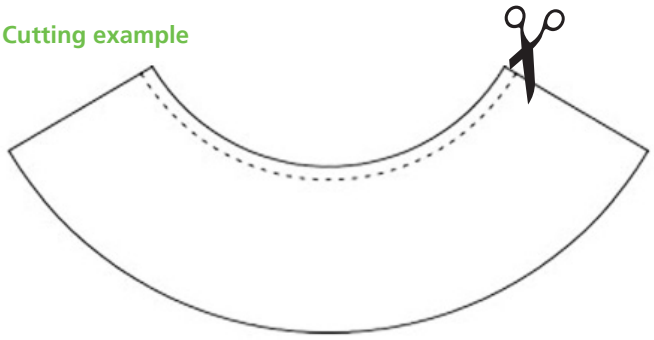
For standard sizes please have a look at our price list.

Application

AKG/AKO Casing-Endseal

1. Should the Endseal-diameter be too small on the carrier pipe side, it can be cut down on site. See cutting example.
   The seal should still be 2-5 % smaller than the actual carrier pipe OD to form out a wrinkle free collar when the seal is pushed over.

Cutting example



AKO-Endseal - open

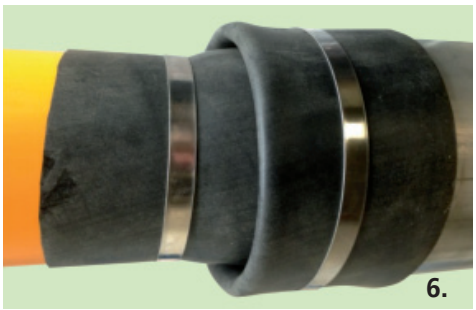
2. The roughened overlap area must be cleaned and dried before the gluing process.
3. The AKO-Endseal is now wrapped around the Carrier pipe and joined with contact adhesive as follows:
4. Apply a thin film of adhesive on both sides of the sharpened overlap area and allow a curing time of approx. 10-15 minutes.
   Apply a second layer of adhesive and let it cure again.
5. Finally pull the sleeve ends and join the overlap with high hand pressure.

AKG/AKO-Endseal

6. Pull the big opening of the endseal on the casing pipe until it sits firmly.
   Afterwards fold the endseal into the casing as far as possible.
   Finally apply and close the attached steel straps tightly.


4.


5.


6.

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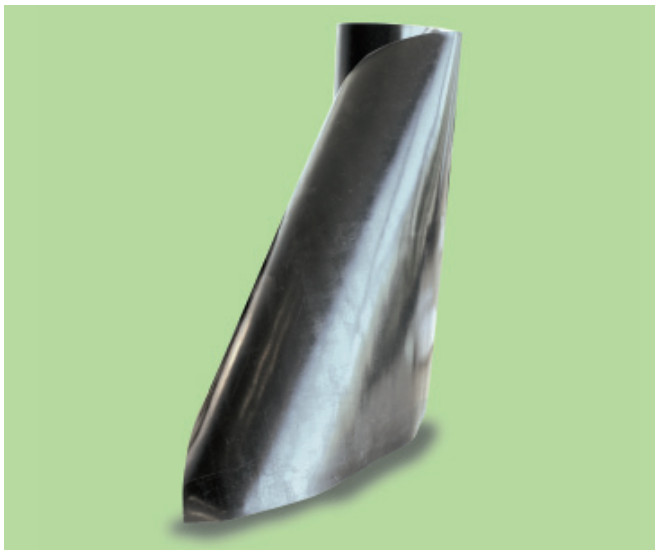
End Seals 4 pipes

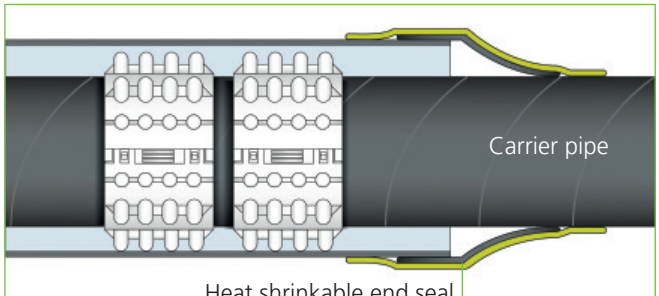
Shrinkable end seal



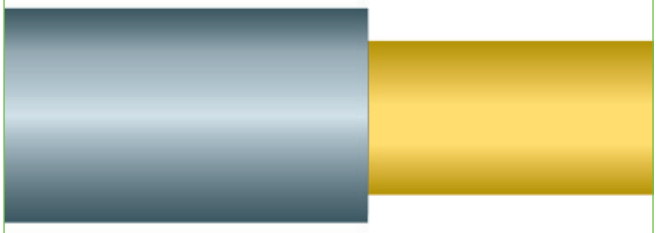
- Split shrinksleeve for differences in diameter up to 35 %
- Heat shrinkable system with integrated adhesive

H. (mm)	Main pipe DN (mm)	Casing DN (mm)
450	75 up to 400	125 up to 750
650	450 up to 750	800 up to 1400

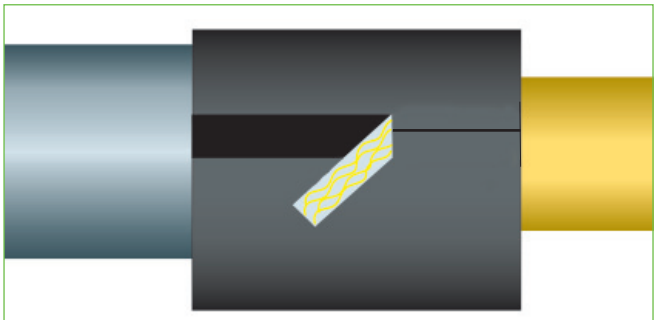
Other dimensions on request.



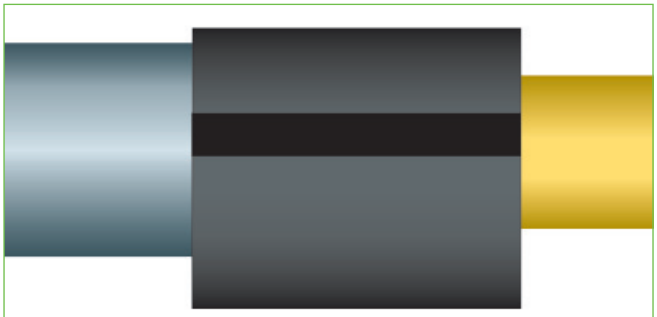
Application



1. Pipe surface should be clean, dry and fat free

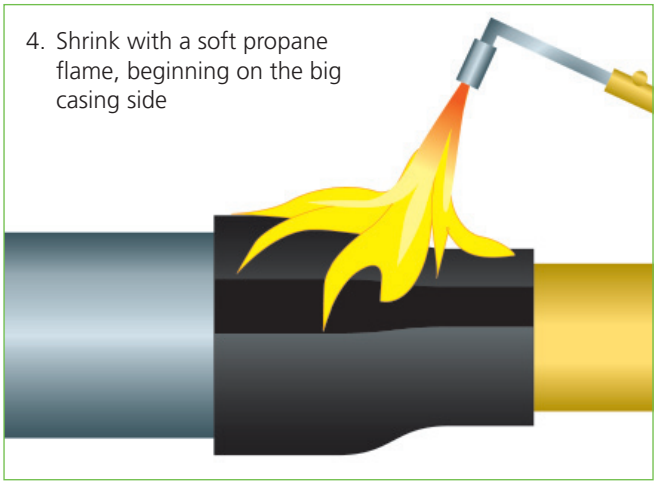


2. Place the sleeve tight with 1/3 length on the casing and apply closure strip



3. Heat and press closure strip firmly

4. Shrink with a soft propane flame, beginning on the big casing side



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