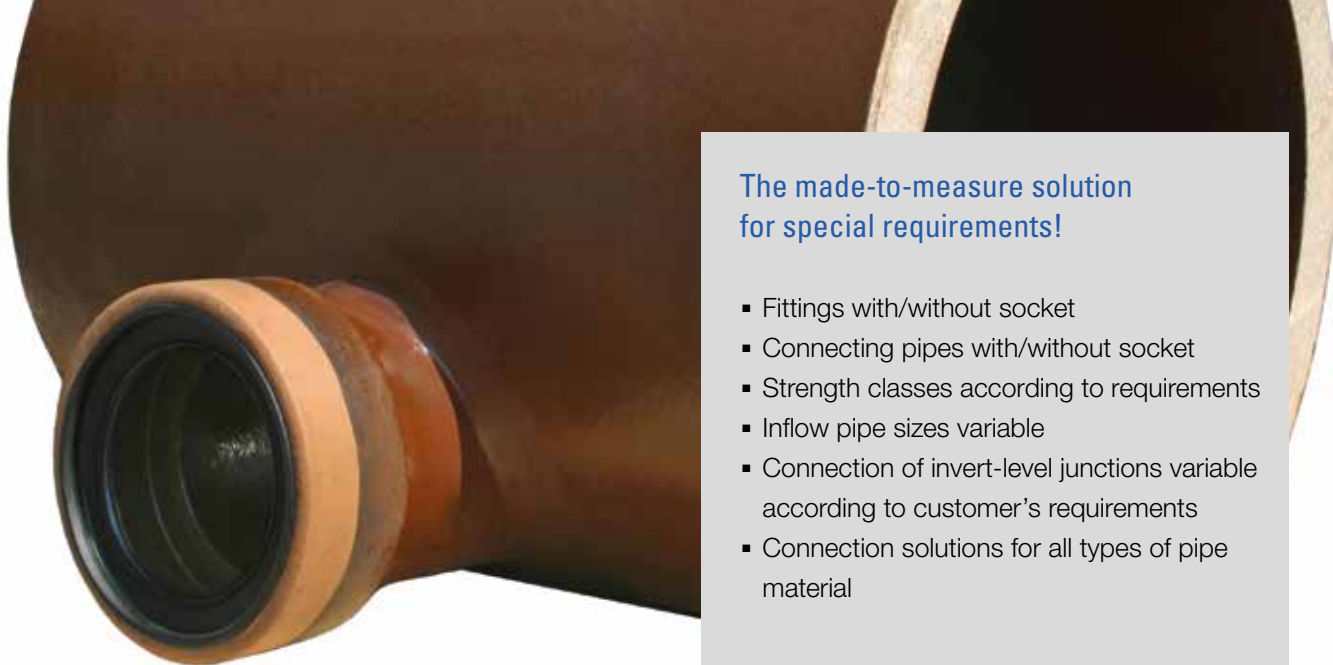




FITTINGS FOR SPECIAL APPLICATIONS
ECCENTRIC JUNCTIONS AND TRANSITION PIECES



The made-to-measure solution for special requirements!

- Fittings with/without socket
- Connecting pipes with/without socket
- Strength classes according to requirements
- Inflow pipe sizes variable
- Connection of invert-level junctions variable according to customer's requirements
- Connection solutions for all types of pipe material

FITTINGS FOR SPECIAL APPLICATIONS

EXCENTRIC JUNCTIONS AND TRANSITION PIECES

Eccentric and invert-level junctions are customer-friendly solutions for special situations in wastewater projects, and are suitable for both the installation of new systems as well as renewal projects.

Especially for the replacement of sewage pipes with inadequate dimensions by larger pipes, the constraints defined by the household connections remain. When other connections are installed afterwards, or when connections with a low-seated inflow to the main sewer are improperly installed, these can be replaced by the installation of socketless eccentric (repair) junctions. This calls for flexible connection options capable of meeting up to the variety of challenges in such situations, enabling valuable "altitude" to be won.

In addition, we offer special fittings manufactured exactly according to the dimensions demanded by the project, from DN 250 to DN 1400 with DN 150/200/250 inflow connections depending on the respective pipe diameter. Wherever necessary, other, larger diameters can also be considered. The inflow is manufactured at an angle of 90° to the main pipe axis. In special cases, a 45° version can also be provided for junctions up to the DN 350 diameter.

The junctions can be manufactured in four versions with the variable dimension "e", either with socketed or socketless connecting pipes. When choosing junctions with sockets, the different direction of the junction outlet (left or right, viewed from the direction of flow) must be borne in mind. Socketless junctions are installed with flexible couplings. Socketed junctions are fitted with the joint system C with "K" joint made of PU.

Joint system for inflow branch piece with socket:

DN 150 L joint (joint system F)/DN 200 L joint or K joint (joint system C)/DN 250 or greater K joint

Inflow strength classes: For DN 200 or greater, the inflows can be executed in the normal or extra strength versions.

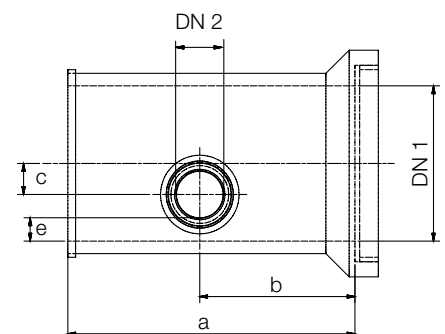
Corresponding adaptors/flexible couplings can be used to connect different materials.

JUNCTIONS WITH ECCENTRIC INFLOW

Eccentric junctions

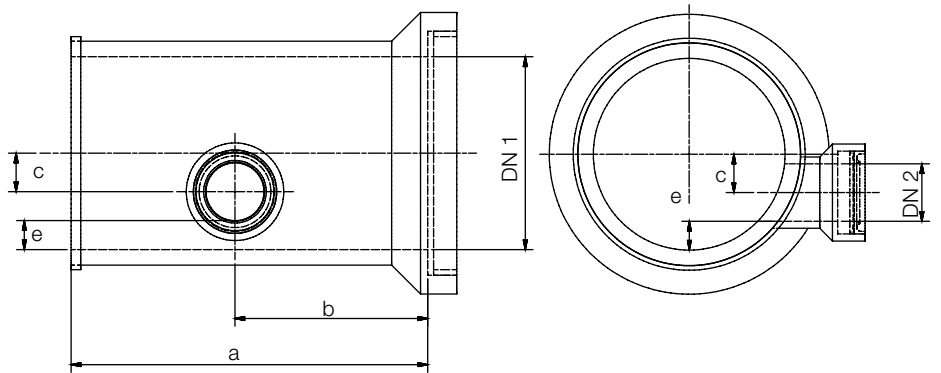
| DN 1 | FN (kN/m) N/H | DN 2 | a cm | b cm | max. gain in height c max. cm | | |
|------|------------------|-------------|---------|---------|----------------------------------|---------------|---------------|
| | | | | | DN 150 | DN 200 N/H | DN 250 N/H |
| 250 | 40 (N) | 150 | 60 | 30 | 5 | | |
| 250 | 60 (H) | 150 | 60 | 30 | 5 | | |
| 300 | 48 (N) | 150/200 | 60 | 30 | 7,5 | 5 | |
| 300 | 72 (H) | 150/200 | 60 | 30 | 7,5 | 5 | |
| 350 | 56 (N) | 150/200 | 75 | 37,5 | 10 | 7,5 | |
| 400 | 64 (N) | 150/200/250 | 75 | 37,5 | 12,4 | 9,9 | 7,5 |
| 400 | 80 (H) | 150/200/250 | 75 | 37,5 | 12,4 | 9,9 | 7,5 |
| 450 | 72 (H) | 150/200/250 | 75 | 37,5 | 14,9 | 12,4 | 9,9 |
| 500 | 60 (N) | 150/200/250 | 75 | 37,5 | 17,3 | 14,8 | 12,3 |
| 500 | 80 (H) | 150/200/250 | 75 | 37,5 | 17,3 | 14,8 | 12,3 |
| 600 | 57 (N) | 150/200/250 | 75 | 37,5 | 22,4 | 19,9 | 17,4 |
| 600 | 96 (H) | 150/200/250 | 75 | 37,5 | 22,4 | 19,9 | 17,4 |
| 700 | 140 (H) | 150/200/250 | 100 | 50 | 27,2 | 24,7 | 22,2 |
| 800 | 128 (H) | 150/200/250 | 100 | 50 | 32,1 | 29,6 | 27,1 |
| 900 | 106 (H) | 150/200/250 | 100 | 50 | 37,1 | 34,6 | 32,1 |
| 1000 | 120 (H) | 150/200/250 | 100 | 50 | 45,2 | 42,7 | 40,2 |
| 1200 | 114 | 150/200/250 | 100 | 50 | 55 | 52,5 | 50,0 |
| 1400 | 90 | 150/200/250 | 100 | 50 | 62,5 | 60,0 | 57,5 |

Remarks: The dimension $e_{min}=0$ is the reference point for the junction with the inflow at the level of the invert.
Dimension e can be freely selected. N=Normal strength/H = Extra strength

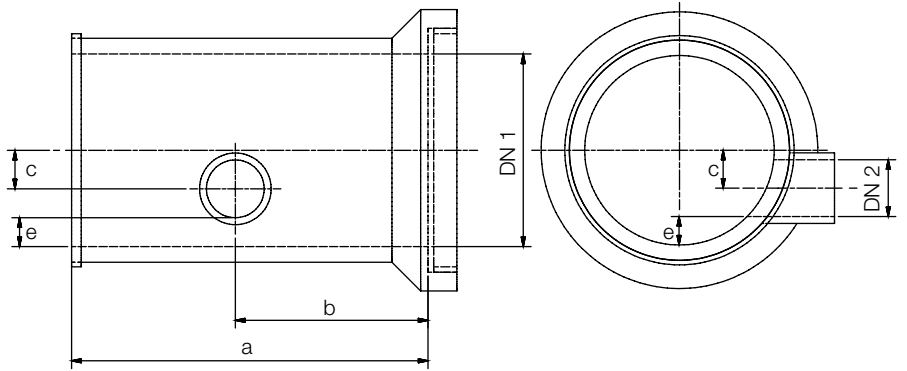


Socketless junction 90°, at level of invert with inflow detail

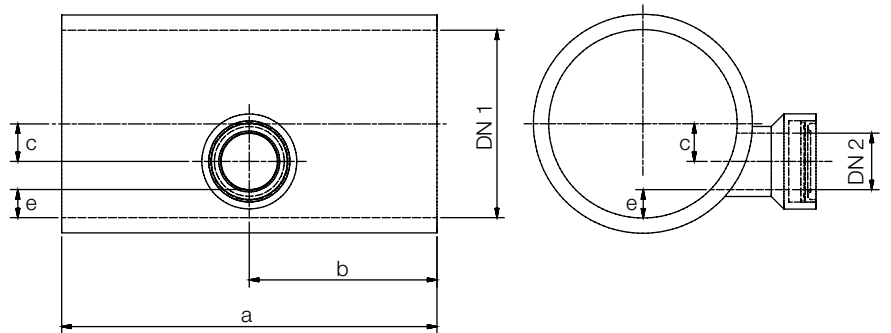
JUNCTIONS WITH ECCENTRIC INFLOW



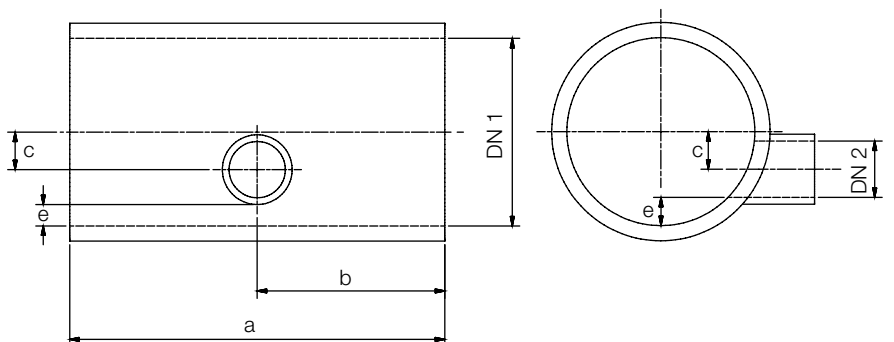
Version: Main pipe with socket / inflow with socket



Version: Main pipe with socket / inflow without socket



Version: Main pipe without socket / inflow with socket



Version: Main pipe without socket / inflow without socket

FITTINGS FOR SPECIAL APPLICATIONS

ECENTRIC TRANSITION PIECES

In addition to our concentric transition pieces we also offer our customers eccentric versions of our pipes for specific requirements. For many combinations of diameters, these pieces can be installed at the level of the invert. These fittings enable pipe systems to be both expanded and reduced.

The eccentric transition pieces are manufactured according to the customer's specifications for each individual project, meaning that they can be used for a wide range of applications. In inner-city reconstruction projects, for example, the old wastewater pipe system can be temporarily connected to a manhole with an altered pipe diameter as an interim solution. Another practical example is that of wastewater systems of a larger dimension, which can then be used as a wastewater reservoir with a reduced outflow.

The diameter transition can be freely selected by the customer. Please contact our Wastewater Competence Center for advice regarding your specific application. The components are individually manufactured according to the requirements of the strength class applicable for the intended application. In case of the socketless versions, the fittings are generally equipped with flexible couplings for the various pipe diameters. With the corresponding combinations of the flexible couplings and compensation elements, these transition pieces can also be used to connect pipes of other diameters. Solutions involving integrated joints acc. to joint system C or with the type O joint system are also possible.

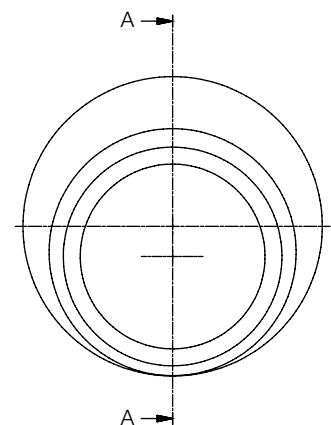
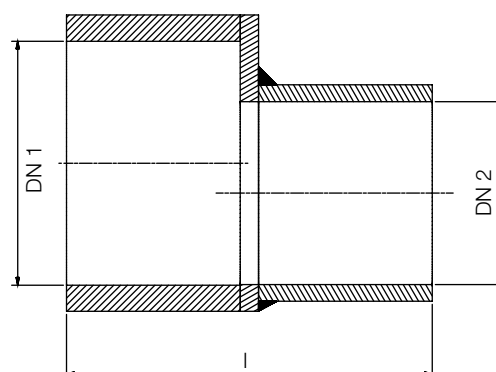
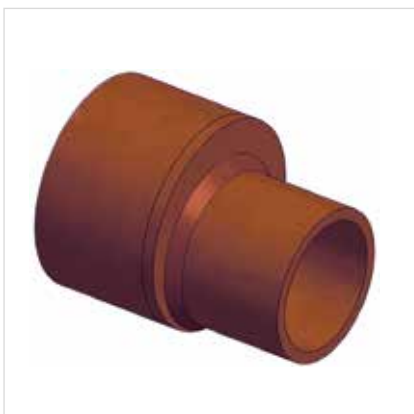


Transition piece DN 300/DN 500

Eccentric transition pieces

| DN 1 mm | DN 2 mm |
|------------|------------|
| 200 | 150 |
| 250 | 150 |
| 250 | 200 |
| 300 | 200 |
| 300 | 250 |
| 350 | 250 |
| 400 | 250 |
| 350 | 300 |
| 400 | 300 |
| 450 | 300 |
| 500 | 300 |
| 400 | 350 |
| 450 | 350 |
| 500 | 350 |
| 450 | 400 |
| 500 | 400 |
| 600 | 400 |

Other diameters available on request



TENDER SPECIFICATIONS

FITTINGS FOR SPECIAL APPLICATIONS

| Pos. | Quantity (number of pieces) | Description | Unit price (price per piece) | Total price |
|------|-----------------------------|---|------------------------------|-------------|
| 1.1 | | <p>Vitrified clay junctions with socket, eccentric design of inflow DN 250 - DN 1400, 90°, pipe length DN 250 - DN 300, 0.6 m/ DN 350 - DN 600, 0.75 m/ DN 700 - DN 1400, 1.0 m</p> <p>DN 1 <input type="checkbox"/> / DN 2 <input type="checkbox"/> Variant right <input type="checkbox"/> / left <input type="checkbox"/> Crushing strength FN _____ kN/m/ FN _____ kN/m with e= _____ cm (Invert of inflow above invert of main piper)</p> | | |
| 1.2 | | <p>Vitrified clay junctions with socket, eccentric design of inflow DN 250 - DN 1400, 90°, inflow pipe socketless, pipe length DN 250 - DN 300, 0.6 m/ DN 350 - DN 600, 0.75 m/ DN 700 - DN 1400, 1.0 m</p> <p>DN 1 <input type="checkbox"/> / DN 2 <input type="checkbox"/> Variant right <input type="checkbox"/> / left <input type="checkbox"/> Crushing strength FN _____ kN/m/ FN _____ kN/m with e= _____ cm (invert of inflow above invert of main pipe)</p> | | |
| 1.3 | | <p>Vitrified clay junctions without socket, eccentric design of inflow DN 250 - DN 1400, 90°, inflow pipe with socket, pipe length DN 250 - DN 300, 0.6 m/ DN 350 - DN 600, 0.75 m/ DN 700 - DN 1400, 1.0 m</p> <p>DN 1 <input type="checkbox"/> / DN 2 <input type="checkbox"/> Variant right <input type="checkbox"/> / left <input type="checkbox"/> Crushing strength FN _____ kN/m/ FN _____ kN/m with e= _____ cm (invert of inflow above invert of main pipe)</p> | | |
| 1.4 | | <p>Vitrified clay junctions without socket, eccentric design of inflow DN 250/ DN 300, 90°, pipe length DN 250 - DN 300, 0.6 m/ DN 350 - DN 600, 0.75 m/ DN 700 - DN 1400, 1.0 m</p> <p>DN 1 <input type="checkbox"/> / DN 2 <input type="checkbox"/> Variant right <input type="checkbox"/> / left <input type="checkbox"/> Crushing strength FN _____ kN/m/ FN _____ kN/m with e= _____ cm (invert of inflow above invert of main pipe)</p> | | |
| 1.5 | | <p>Vitrified clay junctions Type O joint system, eccentric design of inflow, DN 1200 - DN 1400, 90°, inflow pipe with socket, pipe length 1.0 m</p> <p>DN 1 <input type="checkbox"/> / DN 2 <input type="checkbox"/> Crushing strength FN _____ kN/m/ FN _____ kN/m with e= _____ cm (invert of inflow above invert of main pipe)</p> | | |
| 1.6 | | <p>Vitrified clay junctions Type O joint system, eccentric design of inflow, DN 1200 - DN 1400, 90°, inflow pipe socketless, pipe length 1.0 m</p> <p>DN 1 <input type="checkbox"/> / DN 2 <input type="checkbox"/> Crushing strength FN _____ kN/m/ FN _____ kN/m with e= _____ cm (invert of inflow above invert of main pipe)</p> | | |
| Pos. | Quantity (number of pieces) | Description | Unit price (price per piece) | Total price |
| 2.0 | | <p>Vitrified clay transition pieces, eccentric design, DN 200 - DN 1400, socketless, transition pieces length dependent on dimensions acc. to plan _____ m</p> <p>DN 1 <input type="checkbox"/> / DN 2 <input type="checkbox"/> Crushing strength FN _____ kN/m/ FN _____ kN/m</p> | | |



ECCENTRIC TRANSITION PIECES

ORDER FORM

Project: _____

Customer: _____

Contractor: _____

Contact person: _____

Phone: _____ **E-mail/fax:** _____

Diameter of junction DN 1: _____ mm **Strength class FN/(N/H)** _____

Diameter of inflow DN 2: _____ mm **Strength class FN/(N/H)** _____

Design of junction: with socket without socket

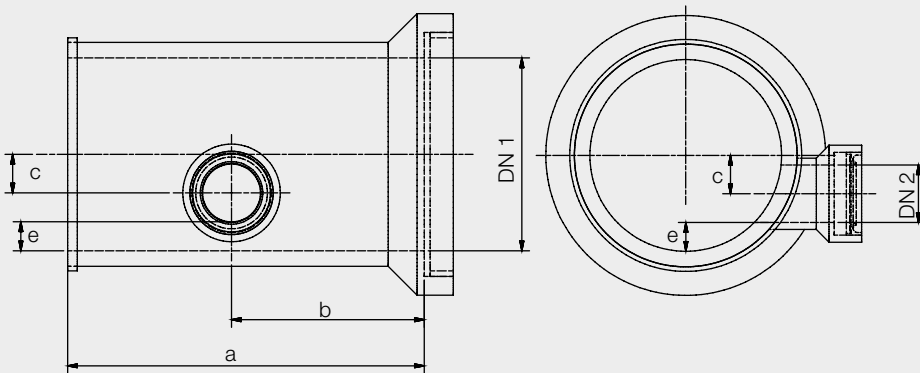
In case of the socket design, please note right/left direction of junction!

Design of inflow: with socket without socket

Branch piece of inflow vertical to junction 90°

45° design: Yes (for DN 250 only - DN 350 available as customized version!)

Dimension "e" (cm): _____



| Order quantity | Pieces | DN 2 |
|----------------|--------|---------------------------|
| Number right | | for junctions with socket |
| Number left | | for junctions with socket |
| Number | | for socketless junctions |

Place / Date / Signature: _____

ECCENTRIC TRANSITION PIECES

ORDER FORM

Project: _____

Customer: _____

Contractor: _____

Contact person: _____

Phone: _____ E-mail/fax: _____

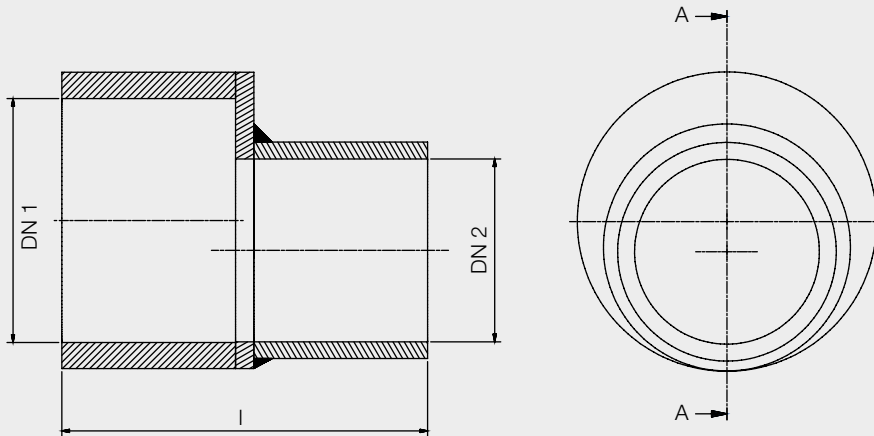
Transition piece: Diameter at side DN 1: _____ mm **Strength class:** FN / (N/H) _____

Diameter at side DN 2: _____ mm **Strength class:** FN / (N/H) _____

Design **Side DN 1:** with socket with spigot joint without socket

Side DN 2: with socket with spigot joint without socket

Dimension "l" acc. to plan (cm): _____



| Order quantity | Pieces |
|----------------|--------|
| Number | |

Place / Date / Signature: _____

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