

SEWER MANHOLES AND INSPECTION CHAMBERS

# DIAMIR

RELIABLE COMPONENTS  
OF SEWER AND DRAINAGE SYSTEMS



ENVIRONMENTAL FRIENDLY SOLUTIONS

ISO 14001

ISO 9001









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### Intended use

DIAMIR manholes are intended for construction of gravitational sewer systems (sanitary, storm-water, combined, industrial sewage systems) and drainage.

The offer includes the following manhole types:

- non-entry inspection chambers, allowing for access to the storm water or sanitary sewage systems with inspection or cleaning devices,
- entry manholes (inspection manholes) enabling staff to have access to storm-water or sanitary sewage systems
- catch basins with sumps are used in storm-water drainage systems If “blind” base units are applied, chambers are used as, e.g., tanks, sewage pumping stations or wells.

### Standards, approvals

**PN-EN 13598-2:2009** Plastics piping systems for non-pressure underground drainage and sewerage - Unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) - Part 2: Specifications for manholes and inspection chambers in traffic areas and deep underground installations

**PN-EN 124:2000** Gully tops and manhole tops for vehicular and pedestrian areas – Design requirements, type testing, marking, quality control

**PN-EN 476:2011** General requirements for components used in drains and sewers

**PN-EN 681-1 :2002** Elastomeric seals. material requirements for pipe joint seals used in water and drainage applications — Part 1 : Rubber

Technical Approval **AT/2010-02-0830** “DIAMIR” Manholes and inspection chambers made of polypropylene (PP), poly(vinyl chloride)(PCV) and polyethylene (PE) issued by the Road and Bridge Research Institute in Warsaw

Technical Approval **AT/07-2011-0242-00** „DIAMIR” Manholes and inspection chambers made of polypropylene (PP), poly(vinyl chloride)(PCV) and polyethylene (PE) issued by the Railway Institute in Warsaw

Technical Approval **AT/2011-02-2706** Reinforced concrete tops for plastic gullies and manholes issued by the Road and Bridge Research Institute in Warsaw

### Production technology

DIAMIR manhole base units are manufactured of polypropylene (PP) with the injection method. The method ensures very high accuracy and repeatability of the production process. Riser pipes and telescope pipes are manufactured of polypropylene (PP) and polyvinyl chloride (PVC) with the method of extrusion.

### Resistance

Polypropylene is material of exceptional resistance to chemical substances, strokes, very low and high temperatures and stress corrosion. The maximum temperature of flowing sewage for PP base units equals 95 °C, and the minimum ambient temperature during installation of manhole components made of PP is – 20 °C. Manhole/inspection chamber components made of PVC should not be assembled at temperature below zero. All manhole elements made of PP or PVC and elastomeric gaskets are resistant to domestic sewage and storm water. However, if industrial sewage is involved, its chemical composition, concentration and temperature should be analysed. Resistance of PP and PVC is specified in the ISO/TR 10358 guidelines, whereas resistance of elastomeric seals – in ISO/TR 7620. In case of any doubts please do not hesitate to consult our technical advisor.



### Merits

Use of **DIAMIR** manholes ensures:

- cost savings resulting from low weight of individual chamber components, which makes it possible to reduce to the minimum use of heavy equipment and construction of access roads,
- total tightness against infiltration of groundwater and extrafiltration of sewage into the ground which might contaminate the environment



- excellent hydraulic properties, low sewage flow resistance and no pollutants sedimentation in the base unit,

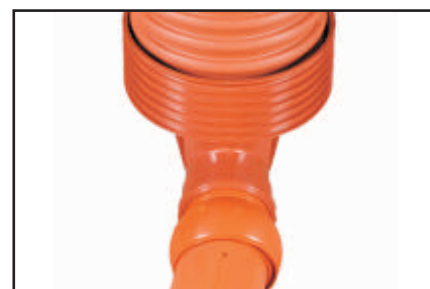
- high durability, inspection and cleaning are easy thanks to the optimised manhole design
- high resistance to ground water uplift pressure and adaptation to variable climatic conditions thanks to fins on manhole components,
- speedy and easy assembly thanks to push-on pipe joints with gaskets



- a potential for attaining essentially any height up to 6 meters and the telescopic top section of a chamber makes it possible to adjust accurately its height matching the pavement level,

- a wide range of base units makes design and construction easier and use of ball-and-socket joints in connection hubs makes it possible to change pipeline direction by  $\pm 7,5^\circ$  and to connect a manhole to a steep sewer,

- at least 100 – year lifetime thanks to the application of cutting edge technologies, plastics resistant to abrasion, aggressive sewage as well as high impact resistance and elongation at break.



### Quality control

All the types of the offered manholes/chambers are subjected to laboratory and field tests for durability, tightness and resistance to static and dynamic loads. The management system based on EN ISO 9001 implemented in Barbara Kaczmarek enterprise ensures rigorous supervision over quality of our products.





### Selection of a top

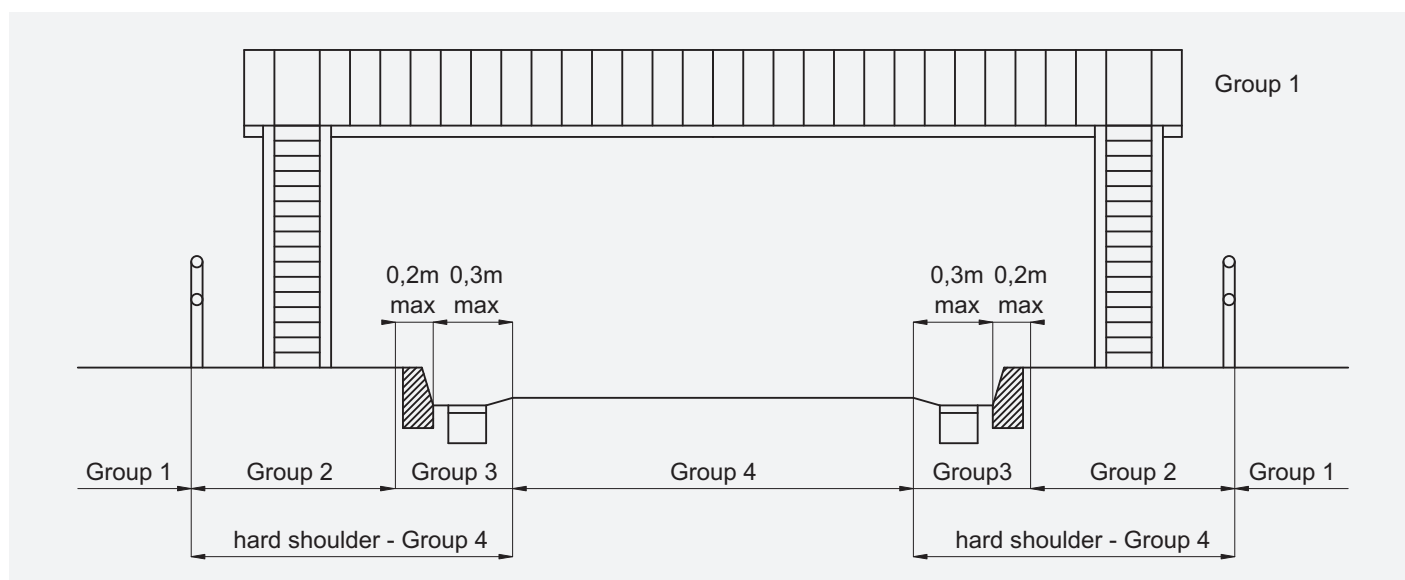
Location of a manhole affects a choice of an appropriate gully or manhole top adapted to the local load conditions. A top class should be specified in a technical design. For DIAMIR manholes/chambers, tops of A, B, C, and D classes (according to EN 124:2000) are used in road ROWs. In green areas, where small loads occur, unclassified tops may be applied.

**Group 1 (min. Class A15)** Areas intended solely for pedestrians and pedal cyclists;

**Group 2 (min. Class B125)** Roads and areas for pedestrians, and comparable areas, parking lots or places where cars are parked;

**Group 3 (min. Class C250)** Applies solely do sewer gully tops installed in the area of kerbside channels of roads, which extends a maximum of 0,5 m into a carriageway and a maximum of 0,2 m into the footway when measured from the kerb edge;

**Group 4 (min. Class D400)** Carriageways of roads (including pedestrian streets) hard shoulders, and parking areas for all types of road vehicles



### Classification

Our company offers five state-of-the-art manhole systems called DIAMIR. The number after the name stands for a diameter of a riser pipe or a chamber of modular sections.

The systems offered include the following:

- DIAMIR 315
- DIAMIR 400
- DIAMIR 425
- DIAMIR 600
- DIAMIR 1000



### Technical features

Non-entry inspection chambers **DIAMIR 315**

Main components of a chamber:

-**base unit, a base of an inspection chamber**, allowing for direct connection of storm water drainage or sanitary sewer systems installed in the ground, including incorporated channels with possible branches

-**a riser pipe** of internal diameter equalling 315

-**a telescope section**, allowing for compensation of settlement which may take place after installation and making it possible to adjust the chamber height. A telescope pipe is installed to the depth of 0,8 m below the ground level.



Standards:

-DIAMIR 315 inspection chamber is compliant with

**EN 13598-2:2009**

**EN 476:2011**

-approval for use in road ROWs

Technical Approval **IBDiM AT/2010-02-0830**

Technical Approval **IK AT/07-2011-0242-00**

Technical Approval **IBDiM AT/2011-02-2706**

-GIG (Central Mining Institute) Opinion approving their use in the areas of mining damages up to the 4<sup>th</sup> category;

-Resistance of PP chamber components to chemical substances is compliant with the guidelines issued by

**ISO/TR 10358**

-Gully tops and manhole tops meet the requirements of standard

**EN 124:2000**

-Seals meet the requirements of standard

**EN 681-1:2002**

-Chemical resistance of elastomeric seals to chemical substances is compliant with the requirements of the

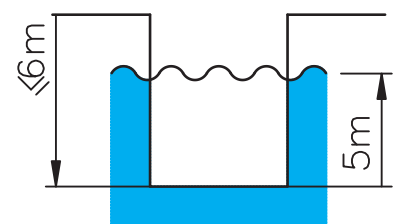
**ISO/TR 7620** Guidelines

Usage:

-maximum installation depth 6 m

-acceptable ground water table 5 m

-acceptable load caused by traffic SLW60 according to ATV-A127P

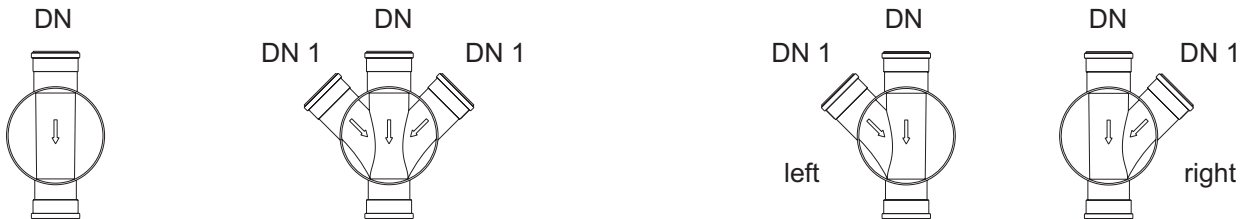




### Technical features

#### Technical data

Base units are made of polypropylene (PP), with reinforcing ribs. They are adapted to connection with vertical riser pipes. There is a horizontal channel in the base unit with one or a few inlet connector pipes and one outlet connector pipe ending with hubs for connection with plain wall pipes made of PVC-U, PP or PE.



| Type 1 | Type 2 |     | Type 3 |      | Type 4 |     |      |
|--------|--------|-----|--------|------|--------|-----|------|
| DN     | DN 1   | DN  | DN 1   | DN 1 | DN     | DN  | DN 1 |
| 110    | 110    | 110 | 110    | 110  | 110    | 110 | 110  |
| 160    | 160    | 160 | 160    | 160  | 160    | 160 | 160  |
| 200    | 200    | 200 | 200    | 200  | 200    | 200 | 200  |

A ball-and-socket joints  $\pm 7,5^\circ$  may be used in connection bells 160, 200 (page 28)

### Height adjustment

#### Non-entry inspection chambers **DIAMIR 315**

#### Specifications and height adjustment

In specifications for materials required for an investment total numbers of individual inspection chamber components should be indicated:

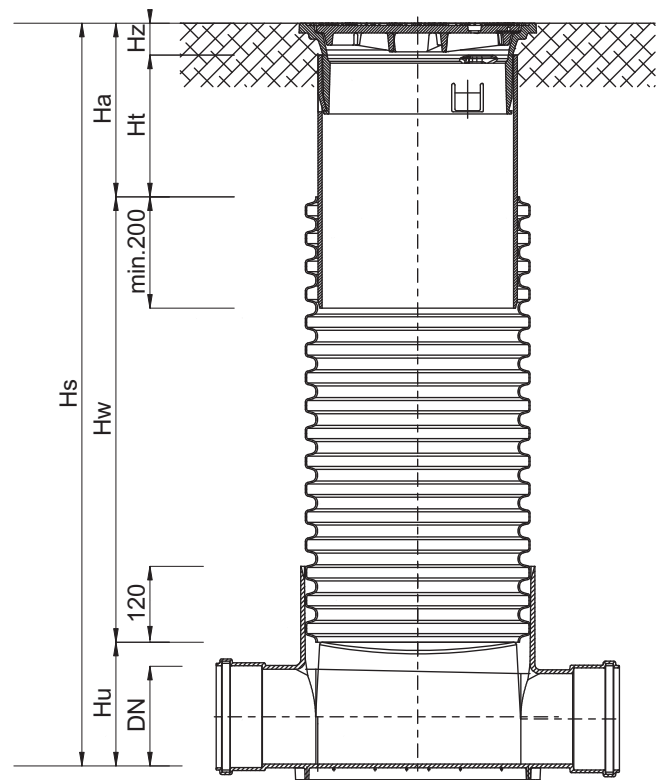
- base units
- riser pipes
- tops

The input parameter is chamber height specified in the design – the difference between the ground level and the chamber invert (base unit level). We label it as **Hs**. In order to make calculations easier, there is effective height (**Hu**) specified for each base unit type, that is, the distance between the bottom of a base unit and the bottom of base unit bell in which a riser pipe is installed.

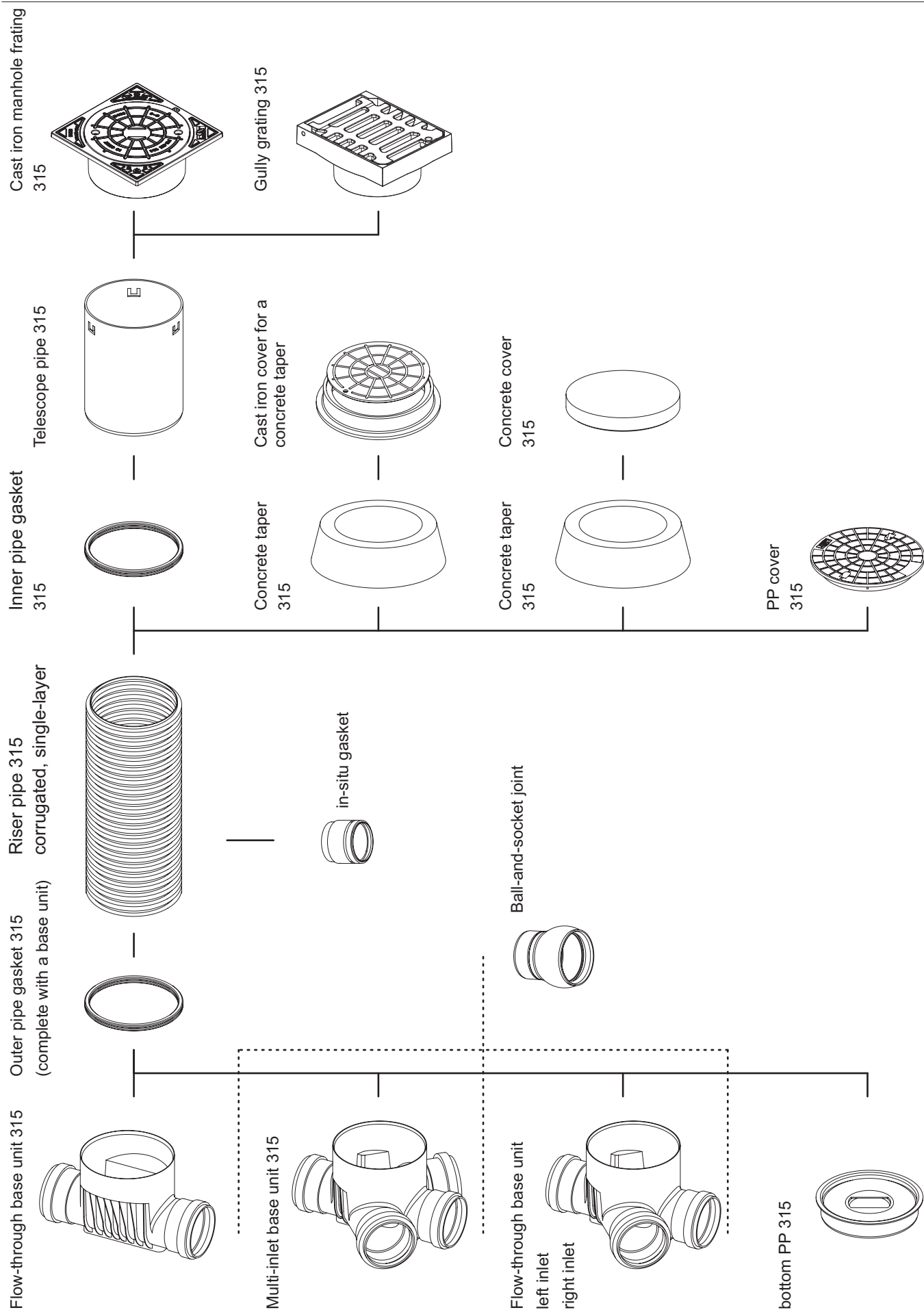
For calculations, we label the height of a riser pipe as **Hw**. The effective height of a top section (telescope) will be **Ha**. One should bear in mind that the effective height of the telescope must not be smaller than thickness of the structural pavement layer. Height of a non-entry inspection chamber **DIAMIR 315**

$$H_s = H_u + H_w + H_a$$

$$H_a = H_t + H_z$$





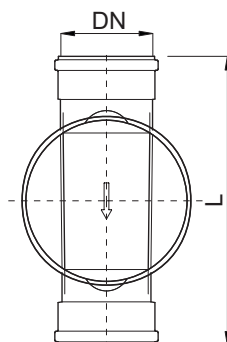
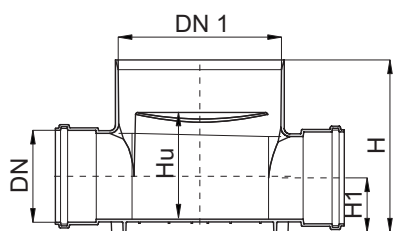




### Flow-through base unit

with a gasket

#### Type 1

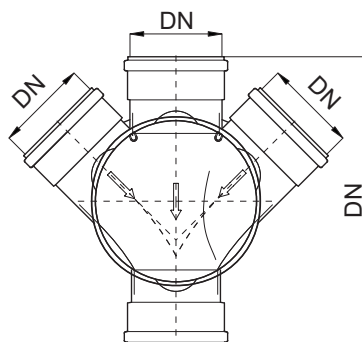
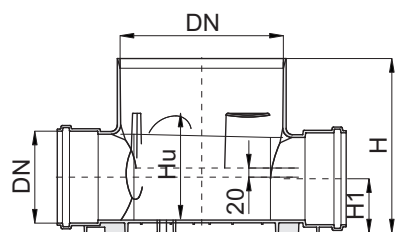


| DN<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|-----------|------------|------------|-----------|----------------|------------|
| 110        | 355          | 282       | 145        | 68         | 564       | 2,9            | 2531110300 |
| 160        | 355          | 337       | 192        | 100        | 636       | 3,6            | 2531120300 |
| 200        | 355          | 382       | 234        | 122        | 632       | 4,1            | 2531130300 |

### Kineta zbiorcza 315

with a gasket

#### Type 2



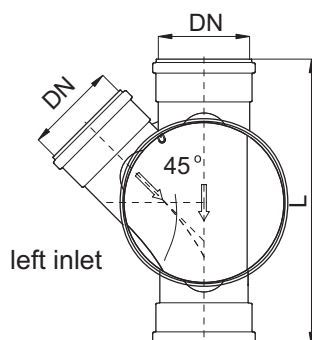
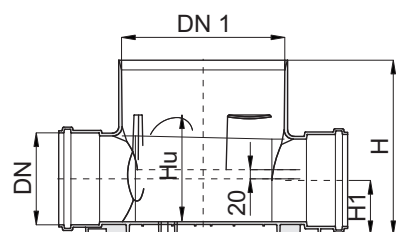
| DN<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|-----------|------------|------------|-----------|----------------|------------|
| 110        | 355          | 282       | 148        | 68         | 564       | 3,3            | 2532110300 |
| 160        | 355          | 337       | 192        | 100        | 636       | 4,4            | 2532120300 |
| 200        | 355          | 377       | 234        | 122        | 632       | 5,3            | 2532130300 |



### Flow-through base unit 315

with a gasket  
with left inlet

#### Type 3

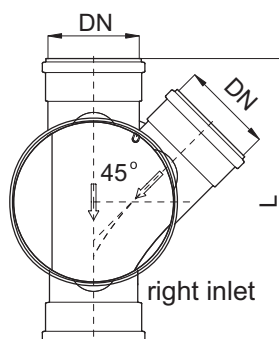
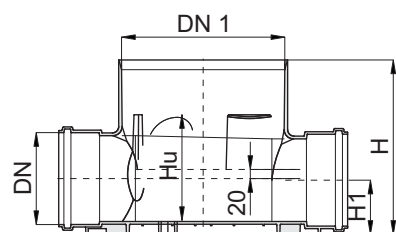


| DN<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|-----------|------------|------------|-----------|----------------|------------|
| 110        | 355          | 282       | 145        | 68         | 564       | 3,1            | 2533113300 |
| 160        | 355          | 337       | 192        | 100        | 636       | 4,0            | 2533123300 |
| 200        | 355          | 382       | 234        | 122        | 632       | 4,5            | 2533133300 |

### Flow-through base unit 315

with a gasket  
with right inlet

#### Type 4

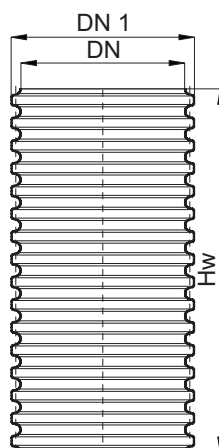


| DN<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|-----------|------------|------------|-----------|----------------|------------|
| 110        | 355          | 282       | 145        | 68         | 564       | 3,1            | 2534113300 |
| 160        | 355          | 337       | 192        | 100        | 636       | 4,0            | 2534123300 |
| 200        | 355          | 382       | 234        | 122        | 632       | 4,5            | 2534133300 |



### Riser pipe 315

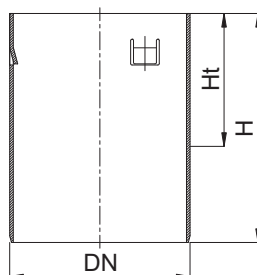
corrugated, single-layer  
SN 4



| DN<br>[mm] | DN 1<br>[mm] | Hw<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|------------|----------------|------------|
| 315        | 355          | 1000       | 4,0            | 2713312100 |
| 315        | 355          | 2000       | 8,0            | 2713312200 |
| 315        | 355          | 3000       | 12,0           | 2713312300 |
| 315        | 355          | 6000       | 24,0           | 2713312600 |

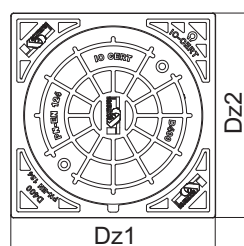
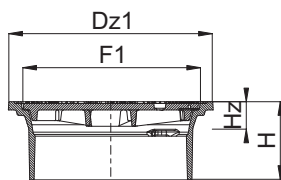
### Telescope pipe 315

for cast iron chamber cover 315



| DN<br>[mm] | H<br>[mm] | Ht<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|-----------|------------|----------------|------------|
| 315        | 400       | 200        | 3,7            | 2781321040 |
| 315        | 800       | 600        | 7,4            | 2781321080 |

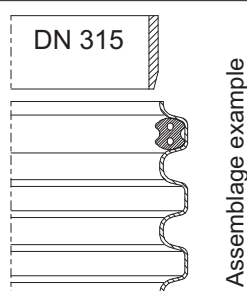
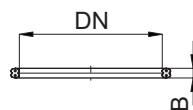
### Cast iron chamber cover 315



|        | Dz1<br>[mm] | Dz2<br>[mm] | F1<br>[mm] | H<br>[mm] | Hz<br>[mm] | Weight<br>[kg] | index<br>- |
|--------|-------------|-------------|------------|-----------|------------|----------------|------------|
| A15    | 375         | 375         | 320        | 143       | 50         | 20,5           | 2901131100 |
| B125   | 375         | 375         | 320        | 143       | 50         | 22,9           | 2901132100 |
| B125 K | 375         | 375         | 320        | 143       | 50         | 22,3           | 2902132100 |
| D400   | 375         | 375         | 320        | 143       | 50         | 31,5           | 2901134100 |
| D400 K | 420         | 340         | 395/320    | 150       | 60         | 40,0           | 2902134100 |

### Corrugated pipe gasket 315

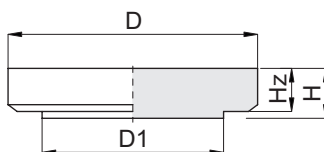
all-purpose



| DN<br>[mm] | B<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|-----------|----------------|------------|
| 315        | 20        | 0,3            | 5162131050 |

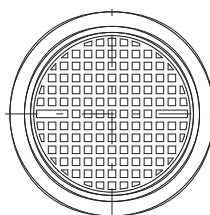
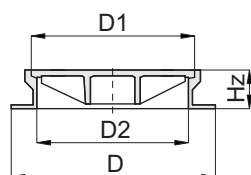
a gasket installed outside or inside a riser pipe groove

### Concrete cover 315



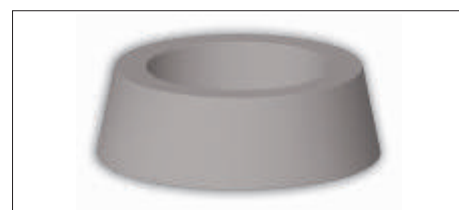
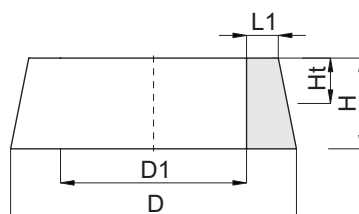
| DN<br>[mm] | D<br>[mm] | D1<br>[mm] | H<br>[mm] | Hz<br>[mm] | Weight<br>[kg] | index<br>- |            |
|------------|-----------|------------|-----------|------------|----------------|------------|------------|
| A15        | 315       | 510        | 355       | 110        | 95             | 51,3       | 2952131000 |

### Cast iron chamber cover 315



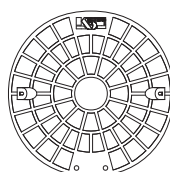
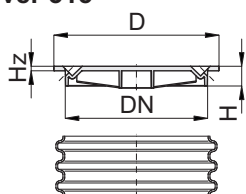
| DN<br>[mm] | D<br>[mm] | D1<br>[mm] | D2<br>[mm] | Hz<br>[mm] | Weight<br>[kg] | index<br>- |            |
|------------|-----------|------------|------------|------------|----------------|------------|------------|
| B125       | 315       | 450        | 375        | 325        | 70             | 26,0       | 2901142500 |

### Concrete taper 315



| DN<br>[mm] | D<br>[mm] | D1<br>[mm] | L1<br>[mm] | H<br>[mm] | Ht<br>[mm] | Weight<br>[kg] | index<br>- |            |
|------------|-----------|------------|------------|-----------|------------|----------------|------------|------------|
| B125       | 315       | 565        | 365        | 70        | 220        | 110            | 65,6       | 2951132000 |

### PP Cover 315



| DN<br>[mm] | D<br>[mm] | H<br>[mm] | Hz<br>[mm] | Weight<br>[kg] | index<br>- |            |
|------------|-----------|-----------|------------|----------------|------------|------------|
| A15        | 315       | 364       | 110        | 95             | 1,3        | 2539405090 |



### Technical features

#### Technical features

Non-entry inspection chambers **DIAMIR 400**

Main components of a chamber

-a **base unit, a base of an inspection chamber**, allowing for direct connection of storm water drainage or sanitary sewer systems installed in the ground, including incorporated channels with possible branches

-a **riser pipe** of external diameter equalling 400

-a **telescope section**, allowing for compensation of settlement which may take place after installation and making it possible to adjust the chamber height. A telescope pipe is installed to the depth of 0,8 m below the ground level.



#### Standards:

-DIAMIR 400 inspection chamber is compliant with

**EN 13598-2:2009**

**EN 476:2011**

-approval for use in road ROWs

Technical Approval **IBDiM AT/2010-02-0830**

Technical Approval **IK AT/07-2011-0242-00**

Technical Approval **IBDiM AT/2011-02-2706**

-GIG (Central Mining Institute) Opinion approving their use in the areas of mining damages up to the 4<sup>th</sup> category;

-Resistance of PP chamber components to chemical substances is compliant with the guidelines issued by

**ISO/TR 10358**

-Gully tops and manhole tops meet the requirements of standard

**EN 124:2000**

-Seals meet the requirements of standard

**EN 681-1:2002**

-Chemical resistance of elastomeric seals to chemical substances is compliant with the requirements of the

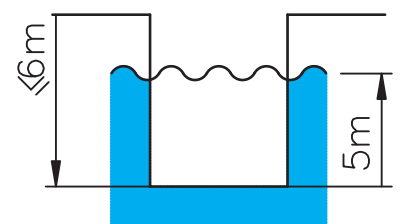
**ISO/TR 7620** Guidelines

#### Usage:

-maximum installation depth 6 m

-acceptable ground water table 5 m

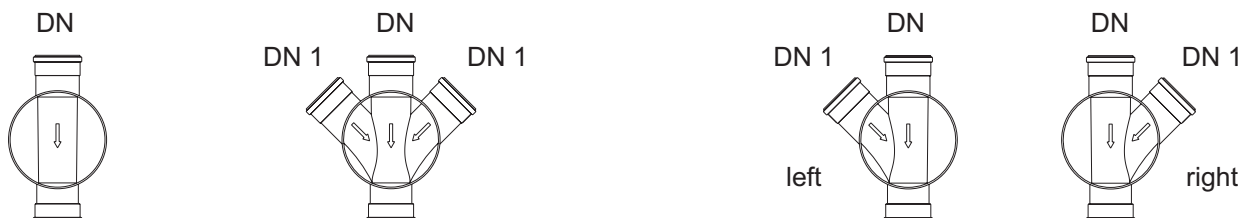
-acceptable load caused by traffic SLW60 according to ATV-A127P



### Technical features

#### Technical data

Base units are manufactured of polypropylene, with reinforcing ribs. They are adapted to connection with vertical riser pipes. There is a horizontal channel in the base unit with one or a few inlet connector pipes and one outlet connector pipe ending with hubs for connection with plain wall pipes made of PVC-U, PP or PE or connector pipes adapted to connection with structural pipes K2-KAN.



| Type 1    | Type 2    |           | Type 3    |           | Type 4    |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| DN        | DN 1      | DN        | DN 1      | DN 1      | DN        | DN        | DN 1      |
| 110       | 110       | 110       | 110       | 110       | 110       | 110       | 110       |
| 160       | 160       | 160       | 160       | 160       | 160       | 160       | 160       |
| 200       | 200       | 200       | 200       | 200       | 200       | 200       | 200       |
| 250       | 250       | 250       | 250       | 250       | 250       | 250       | 250       |
| 315       | 315       | 315       | 315       | 315       | 315       | 315       | 315       |
| 400       | 200-315   | 400       | 200-315   | 200-315   | 400       | 400       | 200-315   |
| 200K2-Kan | 200K2-Kan | 200K2-Kan | 200K2-Kan | 200K2-Kan | 200K2-Kan | 200K2-Kan | 200K2-Kan |
| 250K2-Kan | 250K2-Kan | 250K2-Kan | 250K2-Kan | 250K2-Kan | 250K2-Kan | 250K2-Kan | 250K2-Kan |
| 300K2-Kan | 300K2-Kan | 300K2-Kan | 300K2-Kan | 300K2-Kan | 300K2-Kan | 300K2-Kan | 300K2-Kan |
| 400K2-Kan | 200-300   | 400K2-Kan | 200-300   | 200-300   | 400K2-Kan | 400K2-Kan | 200-300   |

A ball-and-socket joints  $\pm 7,5^\circ$  may be used in connection bells 160, 200, 250, 315 (page 28)

### Height adjustment

#### Non-entry inspection chambers DIAMIR 400

##### Specifications and height adjustment

Preparing specifications for materials required for an investment, total numbers of individual inspection chamber components should be indicated:

-base units, -riser pipes, -tops

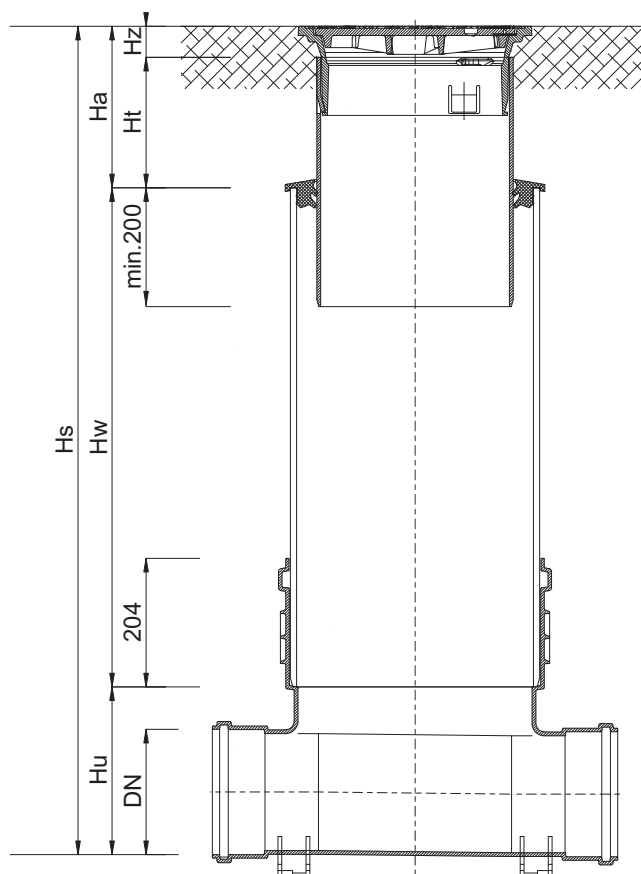
The input parameter is chamber height specified in the design – the distance between the ground level and the chamber invert (base unit level). We label it as **Hs**. In order to make calculations easier, there is effective height (**Hu**) specified for each base unit type, that is, the distance between the bottom of a base unit and the bottom of base unit bell in which a riser pipe is installed.

For calculations, we label the height of a riser pipe as **Hw**. The effective height of a top section (telescope) will be **Ha**. One should bear in mind that the useful height of the telescope must not be smaller than thickness of the structural pavement layer.

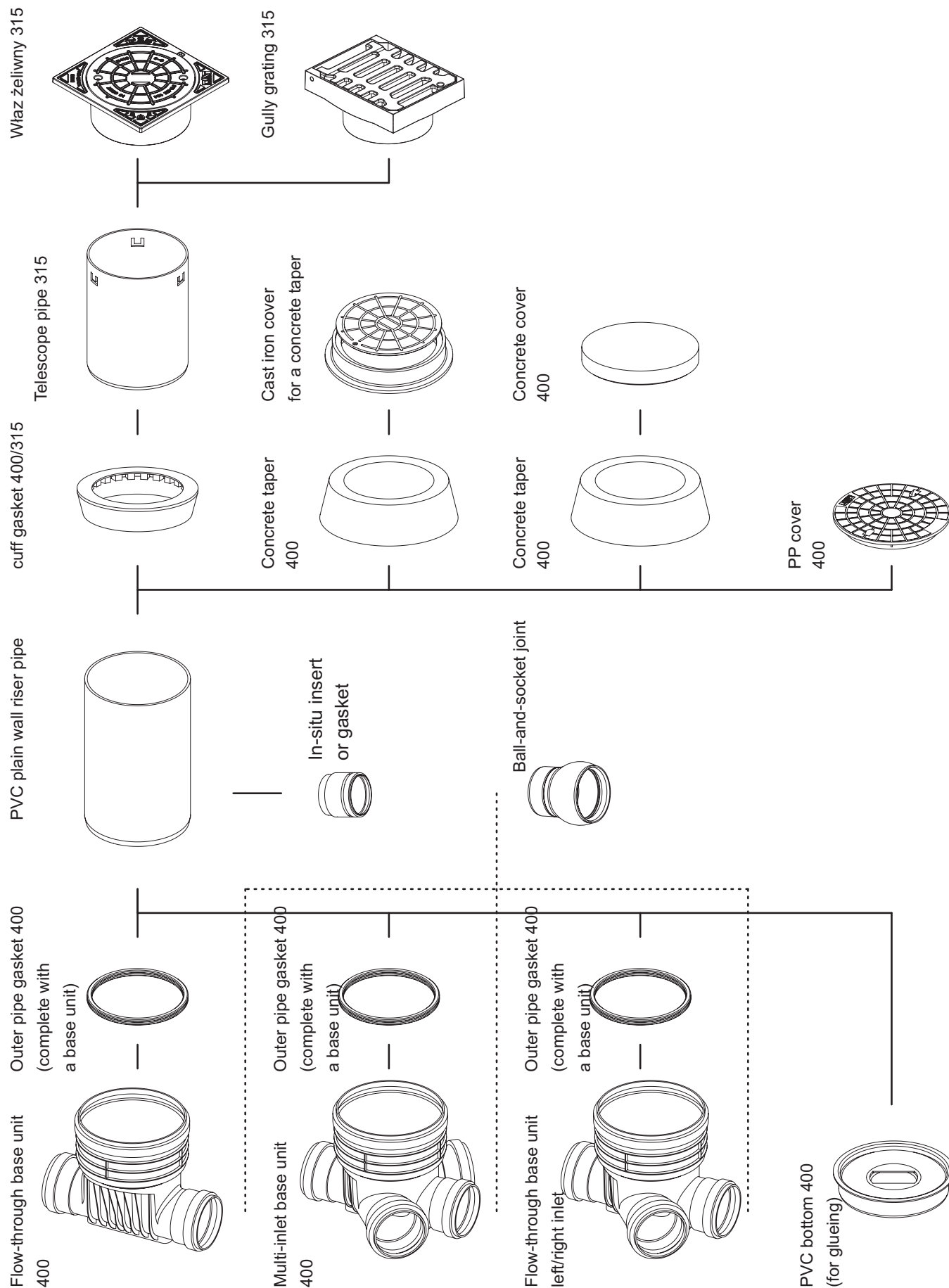
Height of a non-entry inspection chamber DIAMIR 400

$$H_s = H_u + H_w + H_a$$

$$H_a = H_t + H_z$$



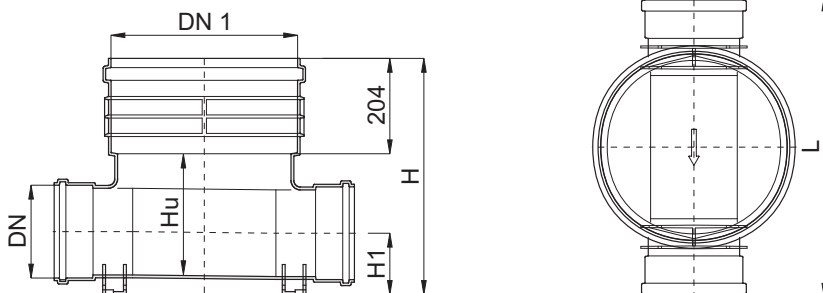




### Flow-through base unit 400

with a gasket

#### Type 1



| DN<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|-----------|------------|------------|-----------|----------------|------------|
| 110        | 400          | 400       | 180        | 68         | 564       | 4,2            | 2541110300 |
| 160        | 400          | 492       | 244        | 116        | 622       | 4,0            | 2541120300 |
| 200        | 400          | 511       | 263        | 136        | 650       | 4,7            | 2541130300 |
| 250        | 400          | 714       | 455        | 168        | 1154      | 14,2           | 2541140300 |
| 315 **     | 400          | 714       | 455        | 198        | 1072      | 13,7           | 2541150300 |
| 400 **     | 400          | 714       | 455        | 238        | 1076      | 14,8           | 2541160300 |
| 200 K2 *   | 400          | 511       | 263        | 136        | 680       | 4,7            | 2541530300 |
| 250 K2 *   | 400          | 714       | 455        | 174        | 1074      | 14,1           | 2541540300 |
| 300 K2 *   | 400          | 714       | 455        | 198        | 1070      | 14,0           | 2541550300 |
| 400 K2 *   | 400          | 714       | 455        | 250        | 984       | 14,1           | 2541560300 |

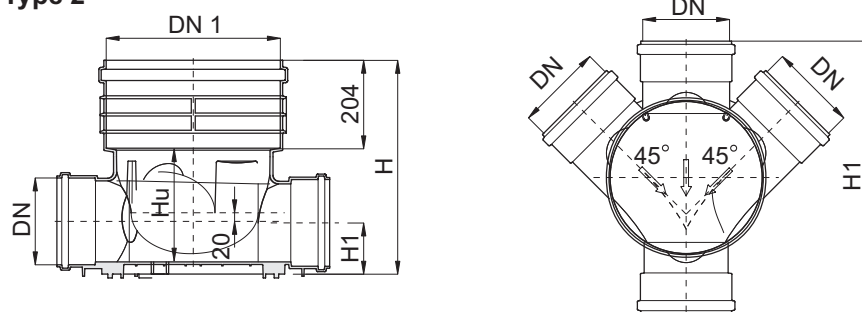
\* no gaskets in connection bells

\*\* base unit outlet – bare end

### Multi-inlet base 400

with a gasket

#### Type 2



| DN<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|-----------|------------|------------|-----------|----------------|------------|
| 110        | 400          | 400       | 180        | 58         | 564       | 4,6            | 2541110300 |
| 160        | 400          | 456       | 222        | 100        | 636       | 5,4            | 2541120300 |
| 200        | 400          | 496       | 259        | 122        | 632       | 6,1            | 2541130300 |
| 250        | 400          | 714       | 455        | 168        | 1154      | 17,0           | 2541140300 |
| 315 **     | 400          | 714       | 455        | 198        | 1072      | 19,1           | 2541150300 |
| 200 K2 *   | 400          | 496       | 259        | 122        | 732       | 6,3            | 2541530300 |
| 250 K2 *   | 400          | 714       | 455        | 174        | 1074      | 16,9           | 2541540300 |
| 300 K2 *   | 400          | 714       | 455        | 198        | 1070      | 19,4           | 2541550300 |

\* no gaskets in connection bells

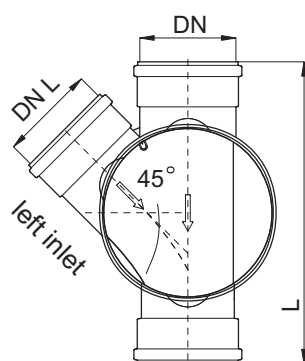
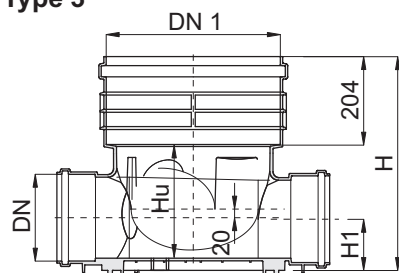
\*\* base unit outlet – bare end



### Flow-through base unit 400

with a gasket, with left inlet

#### Type 3



| DN<br>[mm] | DN L<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|--------------|-----------|------------|------------|-----------|----------------|------------|
| 110        | 110          | 400          | 492       | 246        | 116        | 622       | 4,3            | 2543113300 |
| 160        | 160          | 400          | 492       | 246        | 116        | 622       | 4,6            | 2543123300 |
| 200        | 200          | 400          | 511       | 264        | 136        | 650       | 5,2            | 2543133300 |
| 250        | 250          | 400          | 720       | 462        | 168        | 1154      | 14,7           | 2543143300 |
| 315 **     | 315          | 400          | 720       | 462        | 198        | 1072      | 14,2           | 2543153300 |
| 200K2 *    | 200K2 *      | 400          | 400       | 180        | 68         | 564       | 4,5            | 2543533300 |
| 250K2 *    | 250K2 *      | 400          | 720       | 462        | 198        | 1072      | 14,2           | 2543543300 |
| 300K2 *    | 300K2 *      | 400          | 720       | 462        | 198        | 1072      | 14,2           | 2543553300 |

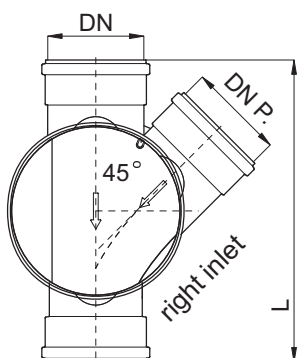
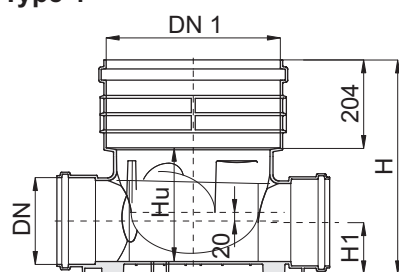
\* no gaskets in connection bells

\*\* base unit outlet – bare end

### Flow-through base unit 400

with a gasket, with right inlet

#### Type 4



| DN<br>[mm] | DN L<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|--------------|-----------|------------|------------|-----------|----------------|------------|
| 110        | 110          | 400          | 492       | 246        | 116        | 622       | 4,3            | 2544113300 |
| 160        | 160          | 400          | 492       | 246        | 116        | 622       | 4,6            | 2544123300 |
| 200        | 200          | 400          | 511       | 264        | 136        | 650       | 5,2            | 2544133300 |
| 250        | 250          | 400          | 720       | 462        | 168        | 1154      | 14,7           | 2544143300 |
| 315 **     | 315          | 400          | 720       | 462        | 198        | 1072      | 14,2           | 2544153300 |
| 200K2 *    | 200K2 *      | 400          | 400       | 180        | 68         | 564       | 4,5            | 2544533300 |
| 250K2 *    | 250K2 *      | 400          | 720       | 462        | 198        | 1072      | 14,2           | 2544543300 |
| 300K2 *    | 300K2 *      | 400          | 720       | 462        | 198        | 1072      | 14,2           | 2544553300 |

\* no gaskets in connection bells

\*\* base unit outlet – bare end

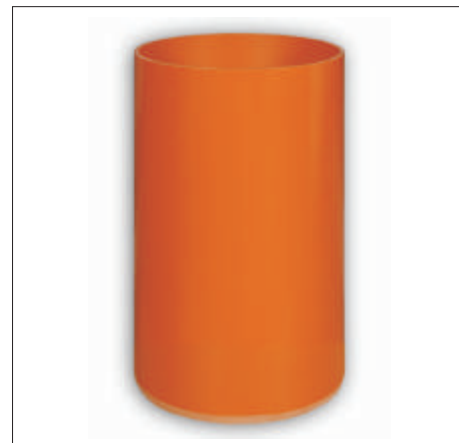
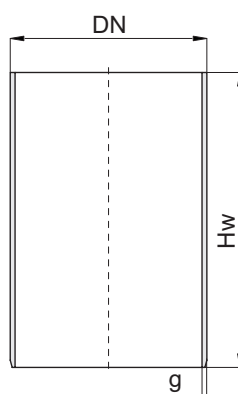
### Unit base with additional inlets

with left or right inlet (45° or 90°)

with left and right inlet (45° or 90°)

| DN<br>[mm] | DN L<br>[mm] | DN P.<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] |
|------------|--------------|---------------|--------------|-----------|------------|------------|-----------|
| 400        | 200-300      | 200-300       | 400          | 720       | 462        | 198        | 1154      |
| 400        | 400 (90°)    | 400 (90°)     | 400          | 720       | 462        | 198        | 1154      |
| 400 K2     | 200-300      | 200-300       | 400          | 720       | 462        | 198        | 1154      |
| 400 K2     | 400 (90°)    | 400 (90°)     | 400          | 720       | 462        | 198        | 1154      |

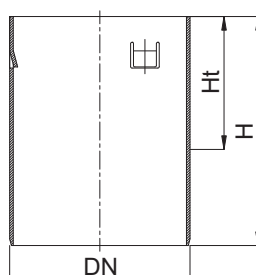
### Riser pipe 400



| DN [mm] | g [mm] | L [mm] | Weight [kg] | index -    |
|---------|--------|--------|-------------|------------|
| 400     | 7,9    | 1000   | 14,7        | 271341100  |
| 400     | 7,9    | 2000   | 29,3        | 2713411200 |
| 400     | 7,9    | 3000   | 43,9        | 2713411300 |
| 400     | 7,9    | 6000   | 87,7        | 2713411600 |
| 400     | 9,8    | 3000   | 56,1        | 2713421300 |
| 400     | 9,8    | 6000   | 112,3       | 2713421600 |

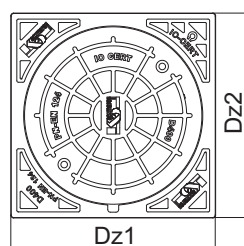
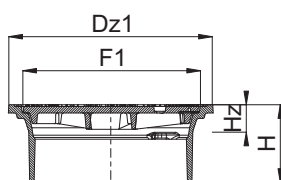
### Telescope pipe 315

for a cast iron manhole top



| DN [mm] | H [mm] | Ht [mm] | Weight [kg] | index -    |
|---------|--------|---------|-------------|------------|
| 315     | 400    | 200     | 3,7         | 2781321040 |
| 315     | 800    | 600     | 7,4         | 2781321080 |

### Cast iron chamber cover 315

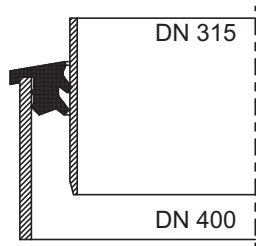
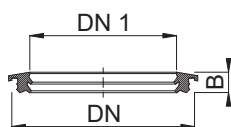


|        | Dz1 [mm] | Dz2 [mm] | F1 [mm] | H [mm] | H <sub>z</sub> [mm] | Weight [kg] | index -    |
|--------|----------|----------|---------|--------|---------------------|-------------|------------|
| A15    | 375      | 375      | 320     | 143    | 50                  | 20,5        | 2901131100 |
| B125   | 375      | 375      | 320     | 143    | 50                  | 22,9        | 2901132100 |
| B125 K | 375      | 375      | 320     | 143    | 50                  | 22,3        | 2902132100 |
| D400   | 375      | 375      | 320     | 143    | 50                  | 31,5        | 2901134100 |
| D400 K | 420      | 340      | 395/320 | 150    | 60                  | 40,0        | 2902134100 |



### Cuff gasket 400/315

for a telescope pipe

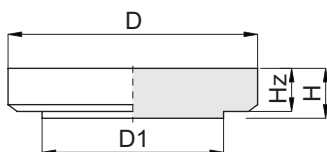


Installation example



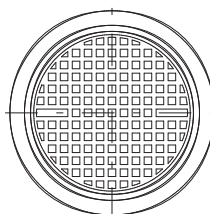
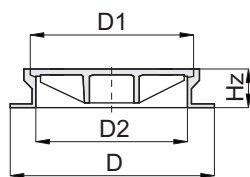
| DN<br>[mm] | DN 1<br>[mm] | B<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|-----------|----------------|------------|
| 400        | 315          | 45        | 2,2            | 5165311060 |

### Concrete cover 400



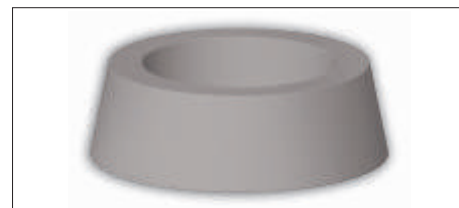
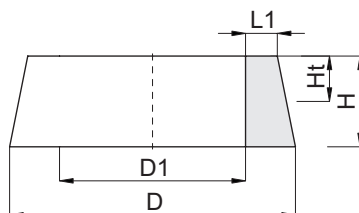
| DN<br>[mm] | D<br>[mm] | D1<br>[mm] | H<br>[mm] | Hz<br>[mm] | Weight<br>[kg] | index<br>- |            |
|------------|-----------|------------|-----------|------------|----------------|------------|------------|
| A15        | 400       | 550        | 400       | 110        | 95             | 59,7       | 2952141000 |

### Cast iron chamber cover 400



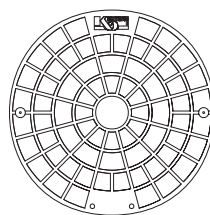
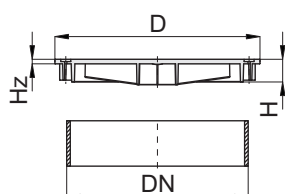
| DN<br>[mm] | D<br>[mm] | D1<br>[mm] | D2<br>[mm] | Hz<br>[mm] | Weight<br>[kg] | index<br>- |            |
|------------|-----------|------------|------------|------------|----------------|------------|------------|
| B125       | 315       | 450        | 375        | 325        | 70             | 26,0       | 2901142500 |

### Concrete taper 400



| DN<br>[mm] | D<br>[mm] | D1<br>[mm] | L1<br>[mm] | H<br>[mm] | Ht<br>[mm] | Weight<br>[kg] | index<br>- |            |
|------------|-----------|------------|------------|-----------|------------|----------------|------------|------------|
| B125       | 400       | 630        | 410        | 70        | 200        | 100            | 65,6       | 2951142000 |

### PP Cover 400



| DN<br>[mm] | D<br>[mm] | H<br>[mm] | Hz<br>[mm] | Weight<br>[kg] | index<br>- |            |
|------------|-----------|-----------|------------|----------------|------------|------------|
| A15        | 400       | 452       | 50         | 10             | 1,8        | 2549405090 |

### Technical features

Non-entry inspection chambers **DIAMIR 425 NW**

Main components of a chamber

-a **base unit, a base of an inspection chamber**, allowing for direct connection of storm water drainage or sanitary sewer systems installed in the ground, including incorporated channels with possible branches

-a **riser pipe of internal diameter equalling 425**

-a **telescope section, allowing for compensation of settlement** which may take place after installation and making it possible to adjust the chamber height. A telescope pipe is installed to the depth of 0,8 m below the ground level.



Standards:

-DIAMIR 425 NW inspection chamber is compliant with **EN 13598-2:2009**

**EN 476:2011**

-approval for use in road ROWs

Technical Approval **IBDiM AT/2010-02-0830**

Technical Approval **IK AT/07-2011-0242-00**

Technical Approval **IBDiM AT/2011-02-2706**

-GIG (Central Mining Institute) Opinion approving their use in the areas of mining damages up to the 4<sup>th</sup> category;

-Resistance of PP chamber components to chemical substances is compliant with the guidelines issued by

**ISO/TR 10358**

-Gully tops and manhole tops meet the requirements of standard

**EN 124:2000**

-Seals meet the requirements of standard

**EN 681-1:2002**

-Chemical resistance of elastomeric seals to chemical substances is compliant with the requirements of the

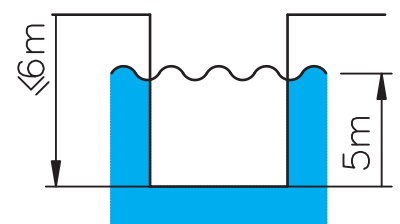
**ISO/TR 7620** Guidelines

Usage:

-maximum installation depth 6 m

-acceptable ground water table 5 m

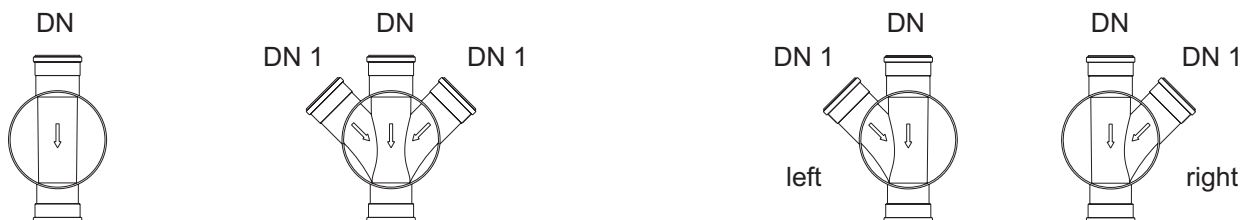
-acceptable load caused by traffic SLW60 according to ATV-A127P



### Technical features

#### Technical data

Base units are made of polypropylene (PP), with reinforcing ribs. They are adapted to connection with vertical riser pipes. There is a horizontal channel in the base unit with one or a few inlet connector pipes and one outlet connector pipe ending with bells for connection with plain wall pipes made of PVC-U, PP or PE or connector pipes adapted to connection with structural pipes K2-KAN.



| Type 1    | Type 2    |           | Type 3    |           | Type 4    |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| DN        | DN 1      | DN        | DN 1      | DN 1      | DN        | DN        | DN 1      |
| 110       | 110       | 110       | 110       | 110       | 110       | 110       | 110       |
| 160       | 160       | 160       | 160       | 160       | 160       | 160       | 160       |
| 200       | 200       | 200       | 200       | 200       | 200       | 200       | 200       |
| 250       | 250       | 250       | 250       | 250       | 250       | 250       | 250       |
| 315       | 315       | 315       | 315       | 315       | 315       | 315       | 315       |
| 400       | 200-400   | 400       | 200-400   | 200-400   | 400       | 400       | 200-400   |
| 200K2-Kan | 200K2-Kan | 200K2-Kan | 200K2-Kan | 200K2-Kan | 200K2-Kan | 200K2-Kan | 200K2-Kan |
| 250K2-Kan | 250K2-Kan | 250K2-Kan | 250K2-Kan | 250K2-Kan | 250K2-Kan | 250K2-Kan | 250K2-Kan |
| 300K2-Kan | 300K2-Kan | 300K2-Kan | 300K2-Kan | 300K2-Kan | 300K2-Kan | 300K2-Kan | 300K2-Kan |
| 400K2-Kan | 200-400   | 400K2-Kan | 200-400   | 200-400   | 400K2-Kan | 400K2-Kan | 200-400   |

A ball-and-socket joints  $\pm 7,5^\circ$  may be used in connection bells 160; 200; 250; 315 (page 28)

### Height adjustment

#### Non-entry inspection chambers DIAMIR 425

##### Specifications and height adjustment

Preparing specifications for materials required for an investment, total numbers of individual inspection chamber components should be indicated:

-base units, -riser pipes, -tops

The input parameter is chamber height specified in the design – the distance between the ground level and the chamber invert (base unit level). We label it as **Hs**.

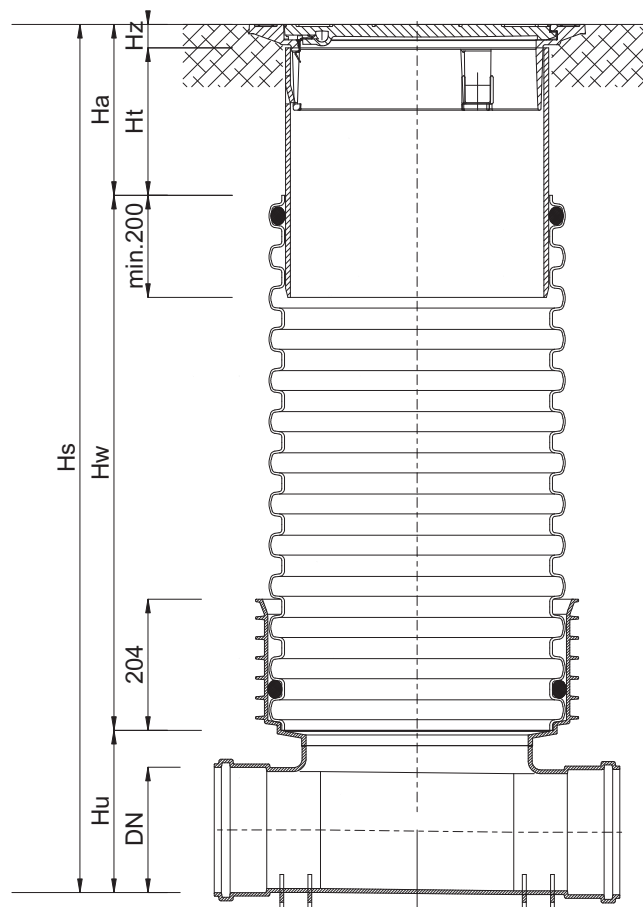
In order to make calculations easier, there is useful height (**Hu**) specified for each base unit type, that is, the difference between the bottom of a base unit and the bottom of base unit bell in which a riser pipe is installed.

For calculations, we label the height of a riser pipe as **Hw**. The height of a top section (telescope) will be **Ha**. One should bear in mind that the useful height of the telescope must not be smaller than thickness of the structural pavement layer.

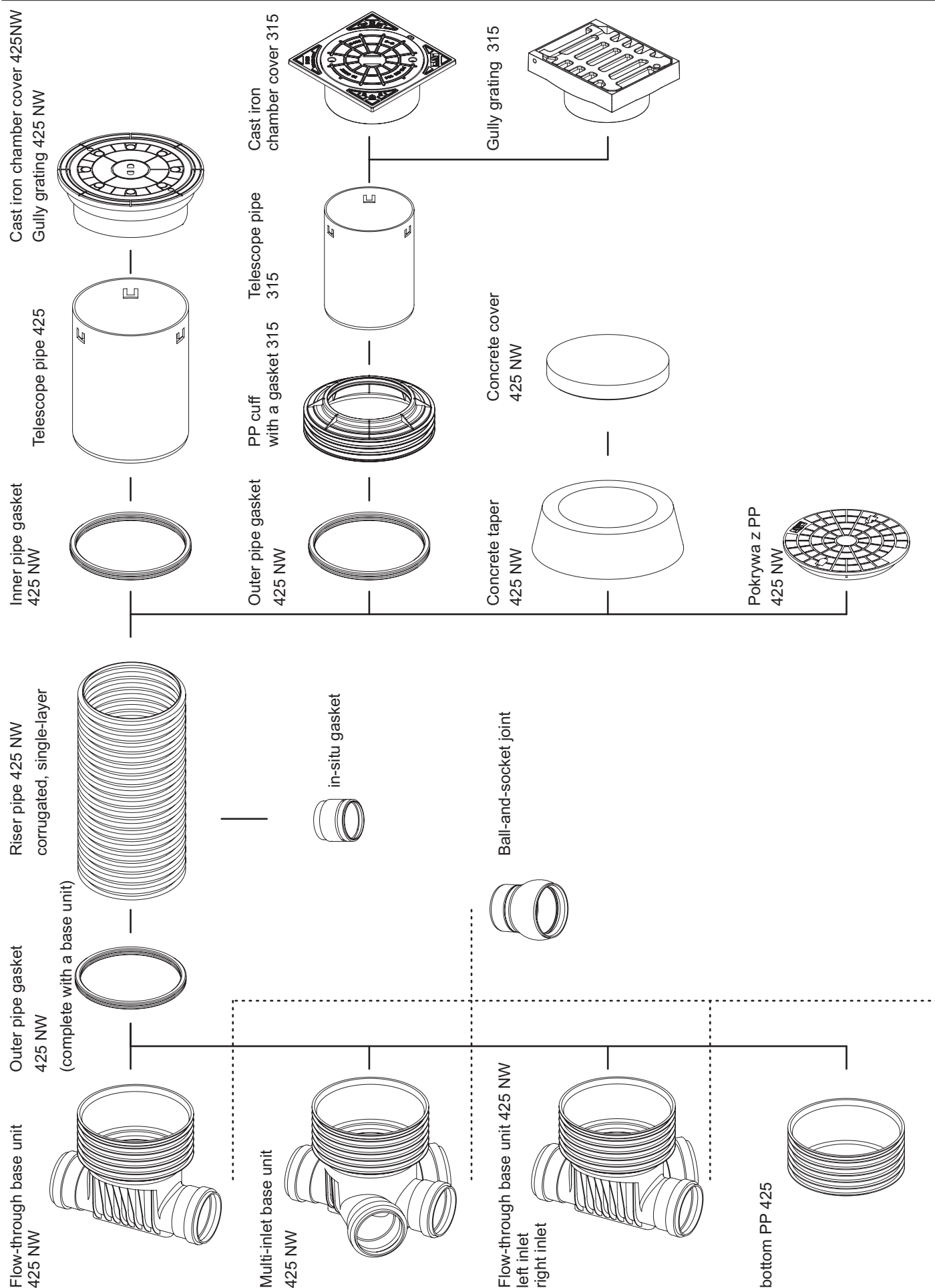
No-entry inspection chamber DIAMIR 425

$$H_s = H_u + H_w + H_a$$

$$H_a = H_t + H_z$$



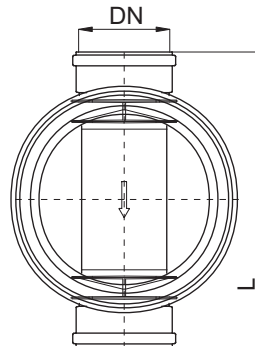
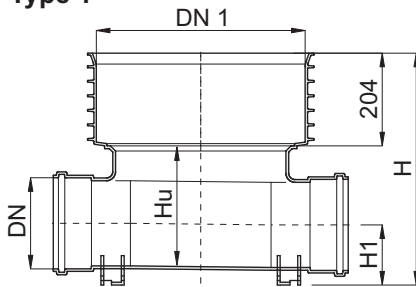




### Flow-through base unit 425 NW

with a gasket

Type 1



| DN<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|-----------|------------|------------|-----------|----------------|------------|
| 110        | 478          | 452       | 206        | 96         | 622       | 4,1            | 2561110300 |
| 160        | 478          | 492       | 246        | 116        | 622       | 4,6            | 2561120300 |
| 200        | 478          | 511       | 264        | 136        | 650       | 5,2            | 2561130300 |
| 250        | 478          | 720       | 462        | 168        | 1154      | 14,7           | 2561140300 |
| 315 **     | 478          | 720       | 462        | 198        | 1072      | 14,2           | 2561150300 |
| 400 **     | 478          | 720       | 462        | 238        | 1076      | 15,3           | 2561160300 |
| 200 K2 *   | 478          | 511       | 264        | 136        | 680       | 5,3            | 2561530300 |
| 250 K2 *   | 478          | 720       | 462        | 174        | 1074      | 14,6           | 2561540300 |
| 300 K2 *   | 478          | 720       | 462        | 198        | 1070      | 14,5           | 2561550300 |
| 400 K2 *   | 478          | 720       | 462        | 250        | 984       | 14,6           | 2561560300 |

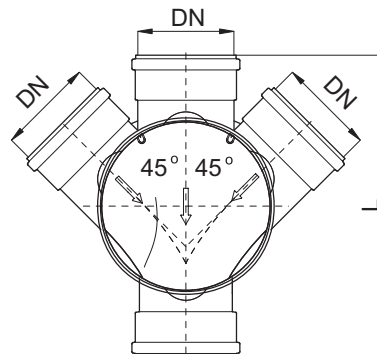
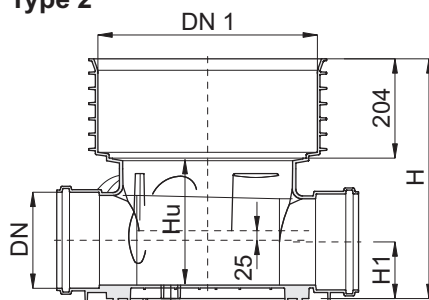
\* no gaskets in connection bells

\*\* base unit outlet – bare end

### Multi-inlet base unit 425 NW

with a gasket

Type 2



| DN<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|-----------|------------|------------|-----------|----------------|------------|
| 110        | 478          | 422       | 190        | 60         | 596       | 5,2            | 2561110300 |
| 160        | 478          | 462       | 230        | 100        | 636       | 5,9            | 2561120300 |
| 200        | 478          | 496       | 266        | 122        | 632       | 6,6            | 2561130300 |
| 250        | 478          | 720       | 462        | 168        | 1154      | 17,5           | 2561140300 |
| 315 **     | 478          | 720       | 462        | 198        | 1072      | 19,6           | 2561150300 |
| 200 K2 *   | 478          | 502       | 266        | 122        | 732       | 6,8            | 2561530300 |
| 250 K2 *   | 478          | 720       | 462        | 174        | 1074      | 17,4           | 2561540300 |
| 300 K2 *   | 478          | 720       | 462        | 198        | 1070      | 19,8           | 2561550300 |

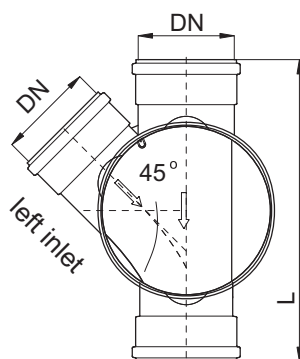
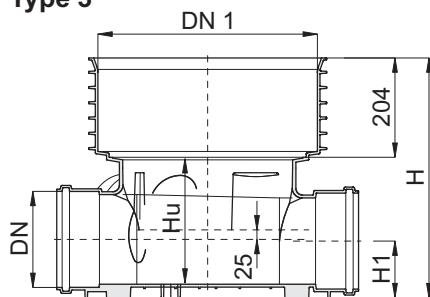
\* no gaskets in connection bells

\*\* base unit outlet – bare end

### Flow-through base unit 425 NW

with a gasket, with left inlet

#### Type 3



| DN<br>[mm] | DN L<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|--------------|-----------|------------|------------|-----------|----------------|------------|
| 110        | 110          | 478          | 492       | 246        | 116        | 622       | 4,6            | 2563113300 |
| 160        | 160          | 478          | 492       | 246        | 116        | 622       | 4,6            | 2563123300 |
| 200        | 200          | 478          | 511       | 264        | 136        | 650       | 5,2            | 2563133300 |
| 250        | 250          | 478          | 720       | 462        | 168        | 1154      | 14,7           | 2563143300 |
| 315 **     | 315          | 478          | 720       | 462        | 168        | 1154      | 14,7           | 2563153300 |
| 200K2 *    | 200K2 *      | 478          | 511       | 264        | 136        | 680       | 5,3            | 2563533300 |
| 250K2 *    | 250K2 *      | 478          | 720       | 462        | 198        | 1072      | 14,2           | 2563543300 |
| 300K2 *    | 300K2 *      | 478          | 720       | 462        | 198        | 1072      | 14,2           | 2563553300 |

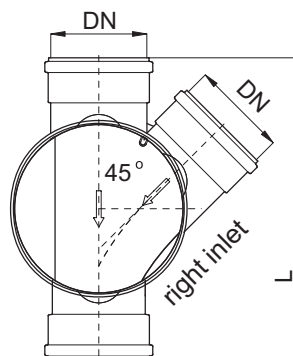
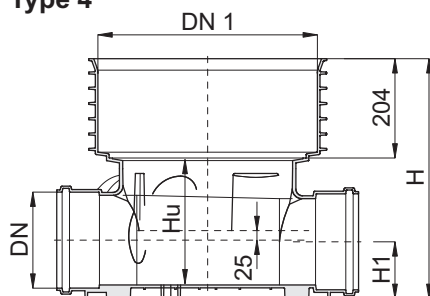
\* no gaskets in connection bells

\*\* base unit outlet – bare end

### Flow-through base unit 425 NW

with a gasket, with right inlet

#### Type 4



| DN<br>[mm] | DN L<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|--------------|-----------|------------|------------|-----------|----------------|------------|
| 110        | 110          | 478          | 492       | 246        | 116        | 622       | 4,6            | 2564113300 |
| 160        | 160          | 478          | 492       | 246        | 116        | 622       | 4,6            | 2564123300 |
| 200        | 200          | 478          | 511       | 264        | 136        | 650       | 5,2            | 2564133300 |
| 250        | 250          | 478          | 720       | 462        | 168        | 1154      | 14,7           | 2564143300 |
| 315 **     | 315          | 478          | 720       | 462        | 168        | 1154      | 14,7           | 2564153300 |
| 200K2 *    | 200K2 *      | 478          | 511       | 264        | 136        | 680       | 5,3            | 2564533300 |
| 250K2 *    | 250K2 *      | 478          | 720       | 462        | 198        | 1072      | 14,2           | 2564543300 |
| 300K2 *    | 300K2 *      | 478          | 720       | 462        | 198        | 1072      | 14,2           | 2564553300 |

\* no gaskets in connection bells

\*\* base unit outlet – bare end

### Flow-through base unit with additional inlets

with left or right inlet (45° or 90°)

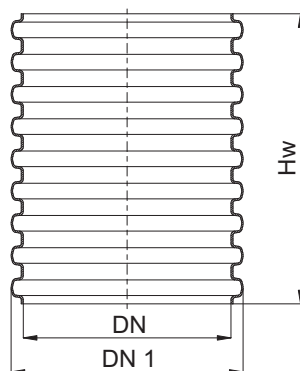
with left and right inlet (45° or 90°)

| DN<br>[mm] | DN L<br>[mm] | DN P.<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] |
|------------|--------------|---------------|--------------|-----------|------------|------------|-----------|
| 400        | 200-300      | 200-300       | 478          | 720       | 462        | 198        | 1154      |
| 400        | 400 (90°)    | 400 (90°)     | 478          | 720       | 462        | 198        | 1154      |
| 400 K2     | 200-300      | 200-300       | 478          | 720       | 462        | 198        | 1154      |
| 400 K2     | 400 (90°)    | 400 (90°)     | 478          | 720       | 462        | 198        | 1154      |



### Riser pipe 425 NW

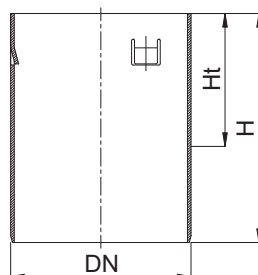
corrugated, single layer  
SN 4



| DN<br>[mm] | DN 1<br>[mm] | Hw<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|------------|----------------|------------|
| 425        | 475          | 1000       | 6,7            | 2713632100 |
| 425        | 475          | 2000       | 13,4           | 2713632200 |
| 425        | 475          | 3000       | 20,1           | 2713632300 |
| 425        | 475          | 6000       | 40,2           | 2713632600 |

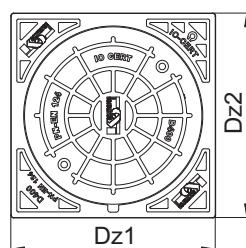
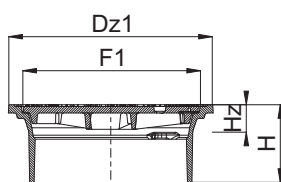
### Telescope pipe 315

for a cast iron chamber cover



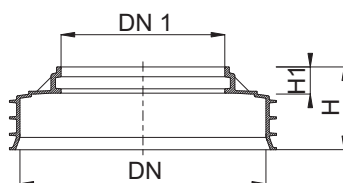
| DN<br>[mm] | H<br>[mm] | Ht<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|-----------|------------|----------------|------------|
| 315        | 400       | 200        | 3,7            | 2781321040 |
| 315        | 800       | 600        | 7,4            | 2781321080 |

### Cast iron chamber cover 315



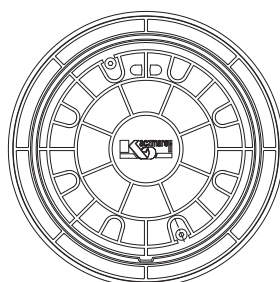
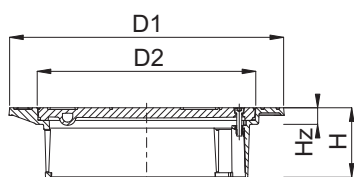
|        | Dz1<br>[mm] | Dz2<br>[mm] | F1<br>[mm] | H<br>[mm] | H1<br>[mm] | Weight<br>[kg] | index<br>- |
|--------|-------------|-------------|------------|-----------|------------|----------------|------------|
| A15    | 375         | 375         | 320        | 143       | 50         | 20,5           | 2901131100 |
| B125   | 375         | 375         | 320        | 143       | 50         | 22,9           | 2901132100 |
| B125 K | 375         | 375         | 320        | 143       | 50         | 22,3           | 2902132100 |
| D400   | 375         | 375         | 320        | 143       | 50         | 31,5           | 2901134100 |
| D400 K | 420         | 470         | 340/340    | 150       | 60         | 40,0           | 2902134100 |

### PP cuff 425 NW with a gasket 315



| DN<br>[mm] | DN 1<br>[mm] | H<br>[mm] | H1<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|-----------|------------|----------------|------------|
| 425        | 315          | 161       | 52         | 2,6            | 2569250090 |

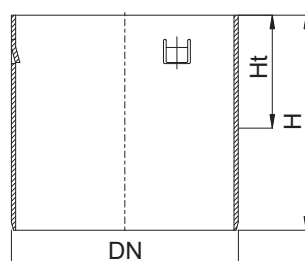
### Cast iron chamber cover 425 NW



| D400 | D1<br>[mm] | D2<br>[mm] | H<br>[mm] | H <sub>z</sub><br>[mm] | Weight<br>[kg] | index<br>- |
|------|------------|------------|-----------|------------------------|----------------|------------|
| D400 | 540        | 428        | 138       | 35                     | 36,0           | 2901164100 |

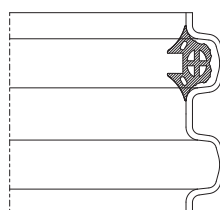
### Telescope pipe 425

for a cast iron chamber cover 425 NW



| DN<br>[mm] | H<br>[mm] | H <sub>t</sub><br>[mm] | Weight<br>[kg] | index<br>- |
|------------|-----------|------------------------|----------------|------------|
| 425        | 400       | 200                    | 6,3            | 2781612040 |
| 425        | 800       | 600                    | 12,6           | 2781612080 |

### Corrugated pipe gasket 425 NW all-purpose



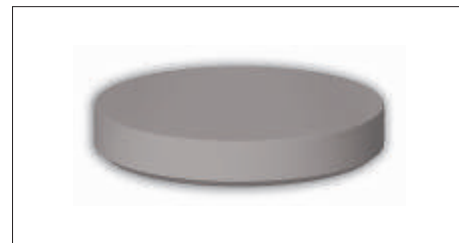
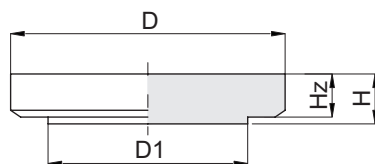
Assemblage example



| DN<br>[mm] | B<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|-----------|----------------|------------|
| 425        | 49        | 1,0            | 5162151050 |

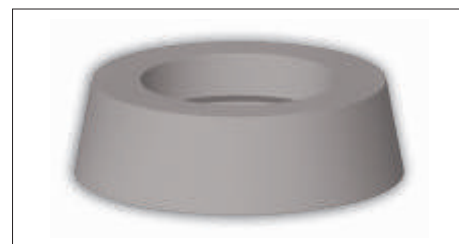
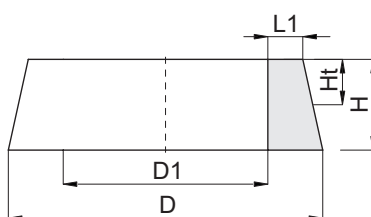
gasket installed outside or inside riser pipe groove

### Concrete cover 425 NW



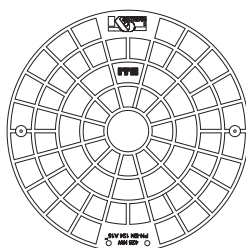
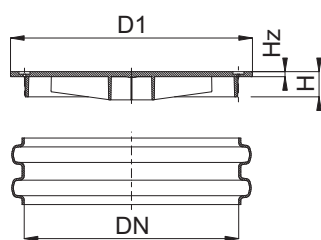
|     | DN<br>[mm] | D<br>[mm] | D1<br>[mm] | H<br>[mm] | H <sub>z</sub><br>[mm] | Weight<br>[kg] | index<br>- |
|-----|------------|-----------|------------|-----------|------------------------|----------------|------------|
| A15 | 425        | 650       | 475        | 110       | 95                     | 64,5           | 2952161000 |

### Concrete taper 425 NW



|      | DN<br>[mm] | D<br>[mm] | D1<br>[mm] | L1<br>[mm] | H<br>[mm] | H <sub>t</sub><br>[mm] | Weight<br>[kg] | index<br>- |
|------|------------|-----------|------------|------------|-----------|------------------------|----------------|------------|
| B125 | 425        | 715       | 485        | 80         | 220       | 110                    | 75,4           | 2951162000 |

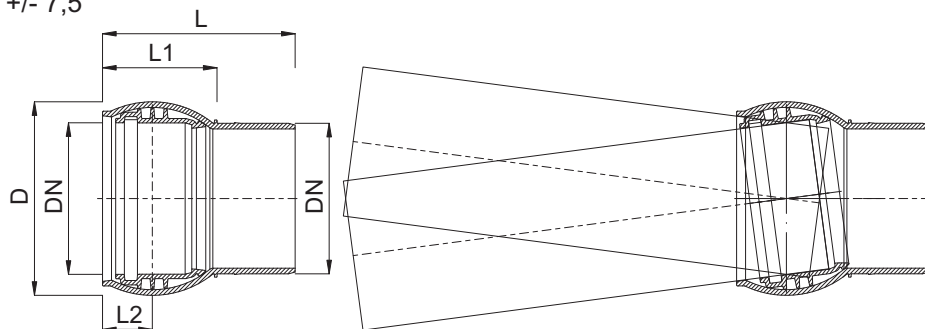
### PP cover 425 NW



|     | DN<br>[mm] | D1<br>[mm] | H<br>[mm] | H <sub>z</sub><br>[mm] | Weight<br>[kg] | index<br>- |
|-----|------------|------------|-----------|------------------------|----------------|------------|
| A15 | 425        | 480        | 50        | 10                     | 2,1            | 2569405090 |

### Ball-and-socket joint

+/- 7,5°

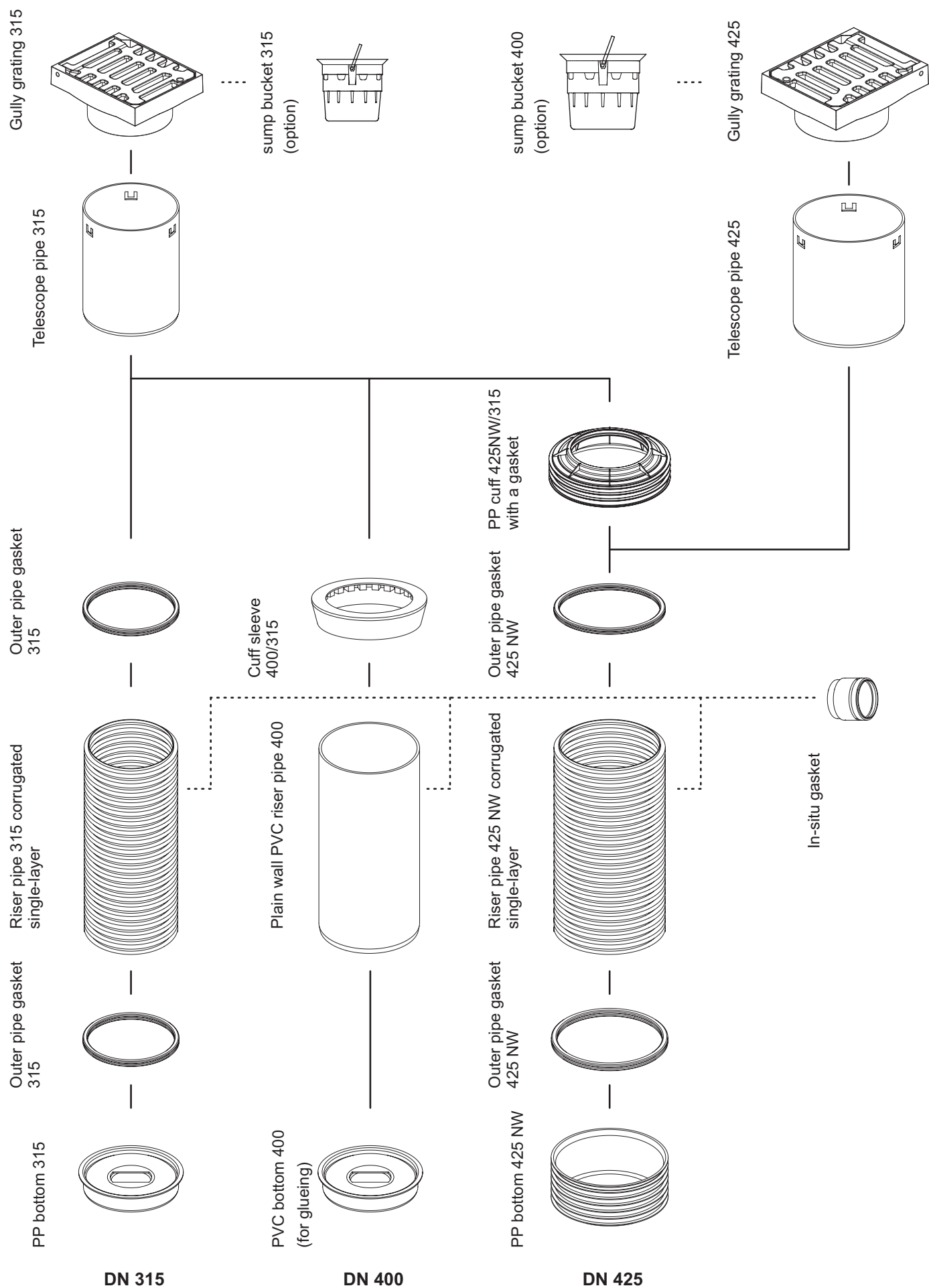


| DN<br>[mm] | D<br>[mm] | L1<br>[mm] | L2<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|-----------|------------|------------|-----------|----------------|------------|
| 160        | 206       | 122        | 53         | 205       | 0,9            | 0718233310 |
| 200        | 254       | 146        | 63         | 245       | 1,7            | 0718253310 |
| 250        | 320       | 186        | 80         | 305       | 3,4            | 0718273310 |
| 315        | 395       | 217        | 92         | 362       | 6,1            | 0718293310 |



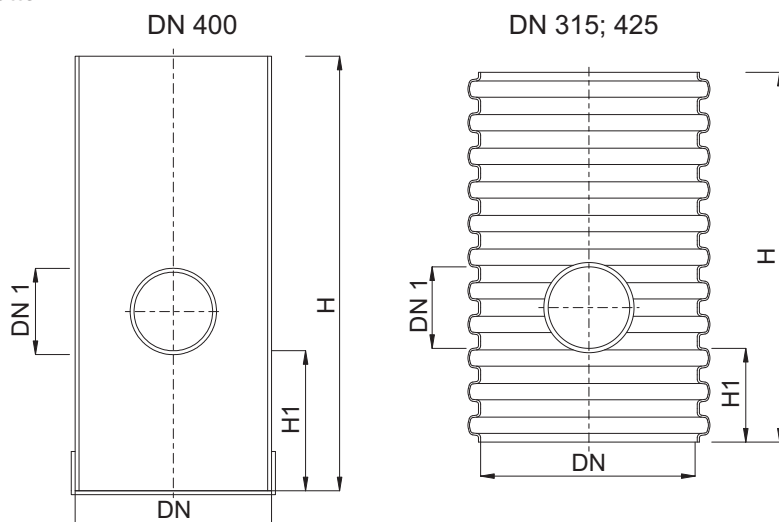
# Catch basins with a sump **DIAMIR 315; 400; 425**

Solution options



### Catch basin with a sump

with a bottom

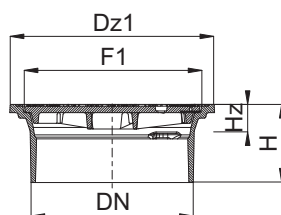
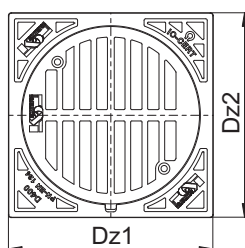


| DN  | Dw<br>[mm] | Dz<br>[mm] | D1<br>[mm] | H1<br>[mm] | H *<br>[mm] | Weightindex<br>[kg] | -          |
|-----|------------|------------|------------|------------|-------------|---------------------|------------|
| 315 | 315        | 355        | 110        | 500        | 2000        | 9,0                 | 2813110200 |
| 315 | 315        | 355        | 160        | 500        | 2000        | 9,9                 | 2813120200 |
| 400 | 380        | 400        | 110        | 320        | 2000        | 48,3                | 2814110200 |
| 400 | 380        | 400        | 160        | 320        | 2000        | 49,0                | 2814120200 |
| 425 | 425        | 475        | 110        | 320        | 2000        | 15,5                | 2816110200 |
| 425 | 425        | 475        | 160        | 320        | 2000        | 16,1                | 2816120200 |

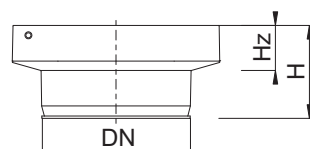
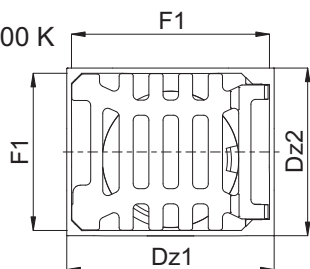
\* other chamber heights are available on request

### Stormwater gully

B125 K

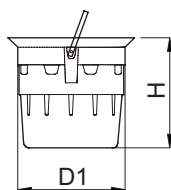


D400 K



|        | DN<br>[mm] | Dz1<br>[mm] | Dz2<br>[mm] | F1<br>[mm] | H<br>[mm] | Hz<br>[mm] | Inlet area<br>[dm <sup>2</sup> ] | Weight<br>[kg] | index      |
|--------|------------|-------------|-------------|------------|-----------|------------|----------------------------------|----------------|------------|
| B125 K | 315        | 375         | 375         | 320        | 143       | 50         | 3,3                              | 22,3           | 2902132100 |
| D400 K | 315        | 420         | 340         | 395/320    | 185       | 90         | 5,3                              | 40,0           | 2902134100 |
| D400 K | 425        | 500         | 500         | 474/474    | 210       | 115        | 9,0                              | 76,4           | 2902164100 |

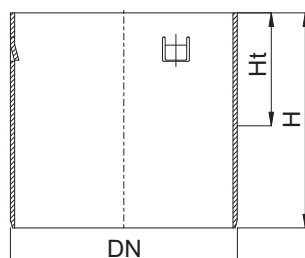
### Sump bucket



| DN  | D1<br>[mm] | H<br>[mm] | Weight<br>[kg] | index<br>- |
|-----|------------|-----------|----------------|------------|
| 315 | 315        | 250       | 1,0            | 2981133100 |
| 400 | 400        | 240       | 3,0            | 2981163100 |

### Telescope pipe

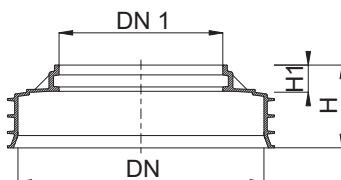
for a cast iron chamber cover



| DN<br>[mm] | H<br>[mm] | Ht<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|-----------|------------|----------------|------------|
| 315        | 400       | 200        | 3,7            | 2781612040 |
| 315        | 800       | 600        | 7,4            | 2781612080 |
| 425        | 400       | 200        | 6,3            | 2781612040 |
| 425        | 800       | 600        | 12,6           | 2781612080 |

### PP cuff 425 NW

with gasket 315



| DN<br>[mm] | DN 1<br>[mm] | H<br>[mm] | H1<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|-----------|------------|----------------|------------|
| 425        | 315          | 161       | 52         | 2,6            | 2569250090 |



### Sump bottom



| DN    | D1<br>[mm] | H<br>[mm] | Weight<br>[kg] | index<br>- |
|-------|------------|-----------|----------------|------------|
| 315   | 315        | 80        | 0,6            | 2539911090 |
| 400 * | 400        | 105       | 4,0            | 2549921030 |
| 425   | 425        | 160       | 3,6            | 2569911030 |

\* for gluing

### Sump chamber gasket

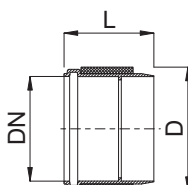
all-purpose



| DN  | B<br>[mm] | Weight<br>[kg] | index<br>- |
|-----|-----------|----------------|------------|
| 315 | 20        | 0,3            | 5162131050 |
| 425 | 49        | 1,0            | 5162151050 |

a gasket installed outside or inside riser pipe groove

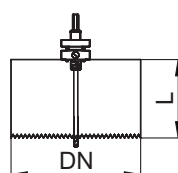
### In-situ gasket



| DN  | D1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|-----|------------|-----------|----------------|------------|
| 110 | 138        | 120       | 0,5            | 5168201010 |
| 160 | 177        | 120       | 0,8            | 5168231010 |

### Hole cutter

Cutter holder – all-purpose



| DN  | D1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index      |
|-----|------------|-----------|----------------|------------|
| 110 | 138        | 90        | 0,8            | 5191202100 |
| 160 | 177        | 90        | 1,2            | 5191231100 |

|             |   |   |     |            |
|-------------|---|---|-----|------------|
| all purpose | - | - | 0,6 | 5191000100 |
|-------------|---|---|-----|------------|

### Installation instructions

DIAMIR inspection chambers should be installed in conditions specified in the technical design. The ground around chambers (0.3 m) should be composed of compactable soil, approved for use in road construction according to standard PN-S-02205:1998. Earthworks should be carried out in accordance with standard PN-EN 1610:2002/Ap1:2007. Soil compaction should be performed in layers as specified in standard PN-ENV 1046:2007 to prevent from excessive ovalisation of a chamber cross-section.



1 Prepare a trench in an inspection chamber location removing large and sharp-edged stones. On the trench bottom prepare bedding composed of compactable soil, preferably sand (coarse- medium- or fine-grained) of minimum 10 cm thickness. An inspection chamber zone should include an area of at least a 30 cm wide strip around the chamber.



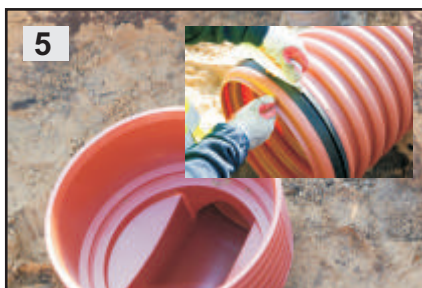
2 Place a base unit on a prepared earlier sand bedding and level it and then connect sewage pipes to the chamber.



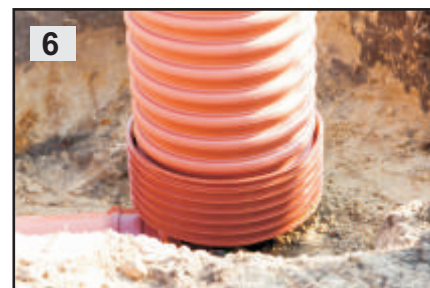
3 Fill up the trench with preliminary backfill (10 cm above the pipe level). Compaction should be performed manually, in layers every 15 cm or with light mechanical equipment (each layer up to 30 cm). Base unit socket should protrude above the backfill level.



4 Prepare a corrugated riser pipe of the required length. The pipe can be cut to the required chamber height. Install a gasket in the lowest groove on the outside of the riser pipe. The gasket is delivered along with a base unit.



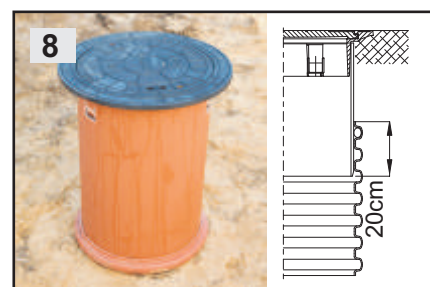
5 Lubricant should be applied on the inner side of a base unit socket and gasket. Products approved for rubber gaskets and plastic should be used.



6 Insert a riser pipe with an installed gasket into a base unit.



7 Compact the area around the pipe. Compaction should be performed manually, in layers every 15 cm or with light mechanical equipment (each layer up to 30 cm) in open areas to at least 90% of the Proctor compaction test and for inspection chambers located in a carriageway or road shoulder backfill should meet the requirements specified for compaction index resulting from the installation depth, road construction type (cutting, embankment) or traffic intensity category.



8 For inspection chambers equipped with riser pipes connected with telescope pipes with a gasket, ensure a telescope pipe is inserted into a riser pipe to the depth of approximately 20 cm.

### Inspection chamber tops

Location of a DIAMIR chamber and expected load caused by traffic are the basis for selection of riser and telescope pipe stiffness and a choice of cast iron covers.

Depending on the chamber location within a ROW and a traffic intensity category, different manhole/gully tops are used, also construction requirements and top type which are classified into the following groups may differ.

Group 1 - Class A15 - green areas intended solely for pedestrians and pedal cyclists

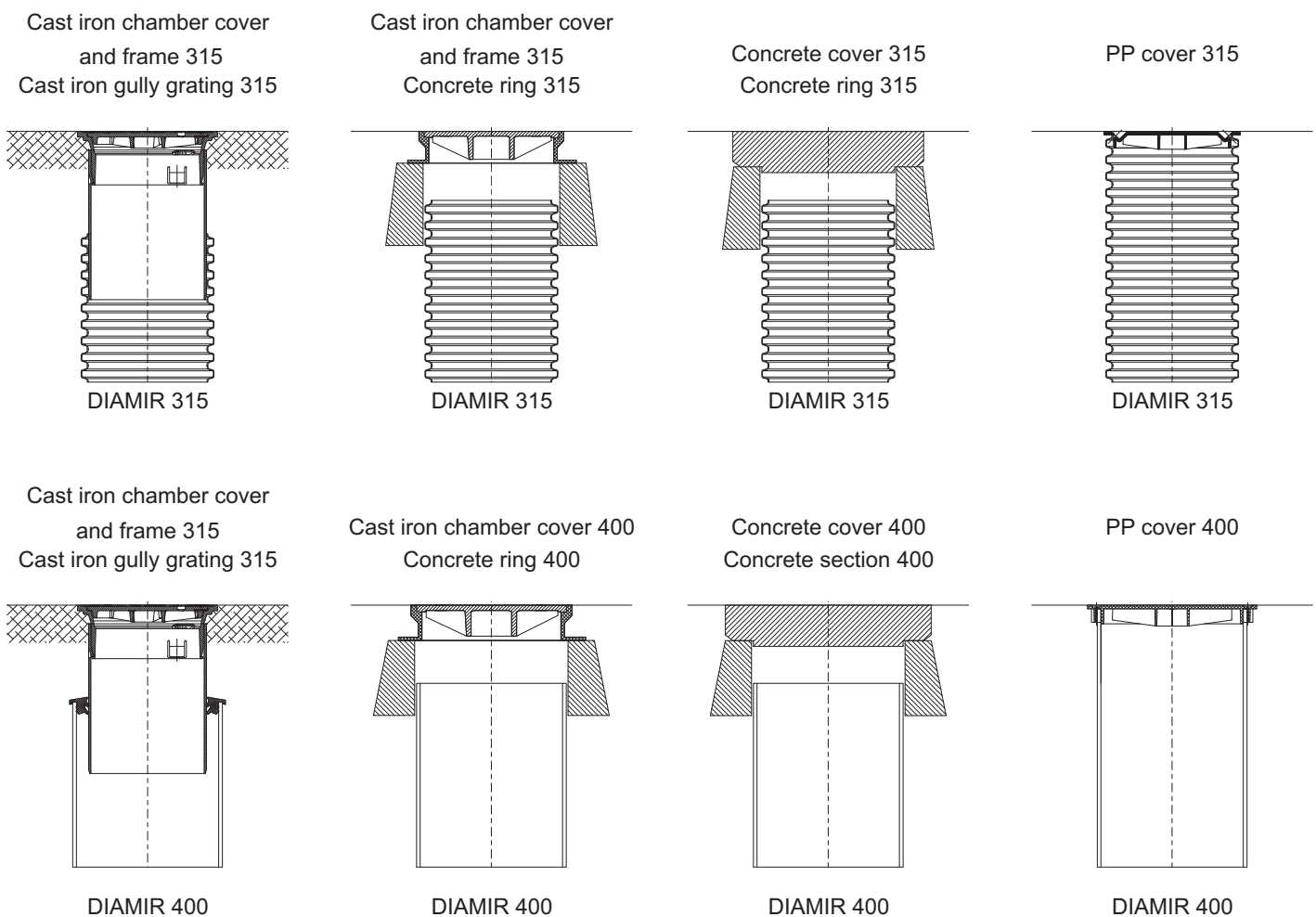
Group 2 - Class B125 - Roads and areas for pedestrians, and comparable areas, parking lots or places where cars are parked

Group 3 - Class C250 - Applies solely do sewer gully tops installed in the area of kerbside channels of roads and road shoulders

Group 4 - Class D400 - Carriageways of roads (including pedestrian streets) hard shoulders, and parking areas for all types of road vehicles

There are different rules of the manhole/gully top support depending on their type and class, and soil conditions. A manhole/gully top should sit on a reinforced concrete slab which is supported by an appropriately constructed load bearing structure adapted to loads caused by traffic. That may be reinforced bedding made of well compacted soil or a precast load-relieving slab made of reinforced concrete.

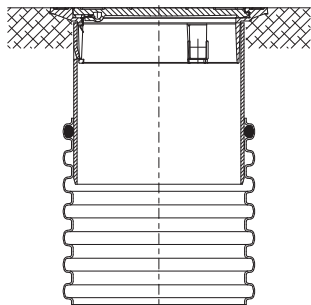
For very heavy load caused by traffic or doubts about compaction of soil constituting the top base, a slab with the chamber top should be based on a B30 concrete ring of minimum height of 20 cast on the building site





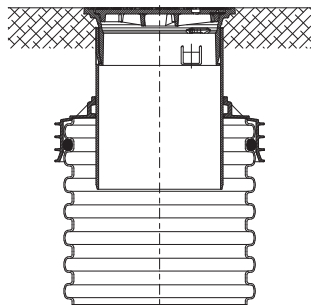
### Inspection chamber tops

Cast iron cover and frame 425  
Gully grating 425



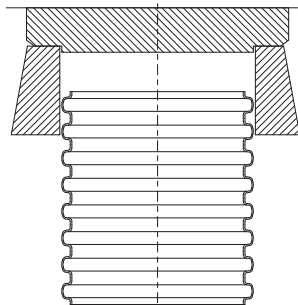
DIAMIR 425

Cast iron cover and frame 315  
Gully grating 315



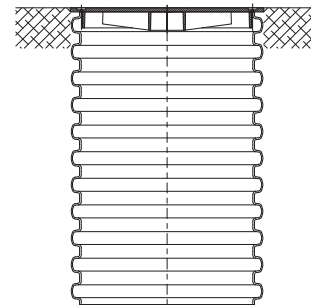
DIAMIR 425

Concrete cover 425  
Concrete ring 425



DIAMIR 425

PP cover 425



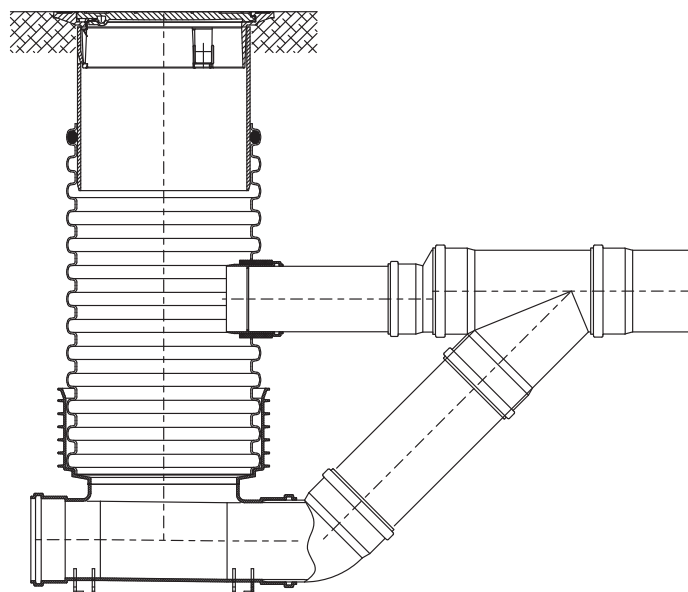
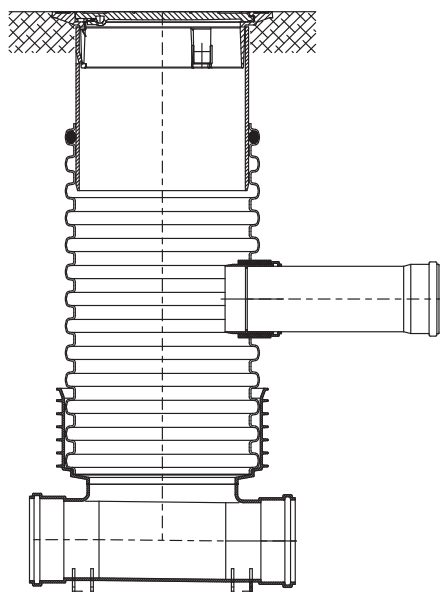
DIAMIR 425

### Backdrop manholes

Sometimes it is necessary to connect a channel to a manhole above a base unit. Then, a so called backdrop manhole is constructed. According to standard PN-B-10729 "backdrop manholes in channels of diameters up to 0,40 m and drop height from 0,5 – 4,0 m may be constructed with a backdrop pipe placed inside or outside of a manhole. In a non-entry inspection chamber a drop pipe may be not installed.

That means that for non-entry inspection chambers, if a channel diameter does not exceed 160 mm, connection may be made through a hole in a riser pipe.

Appropriate in-situ gaskets are installed in the hole. If a channel is a K2-Kan structured pipe, a special fitting (adapter to a PVC socket) should be inserted into the in-situ insert. A backdrop pipe is not used. However, if a channel diameter exceeds 200 mm, a backdrop pipe has to be used and it should be connected to a chamber base unit. A T-branch connection is fitted to the channel. One of T-branches is connected to the backdrop pipe and the second (after diameter reduction to 60 mm) is connected to a riser pipe (a hole with an in-situ gasket).



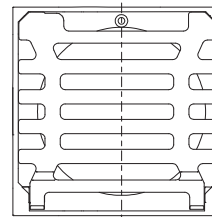
### Catch basins with sumps

A catch basin is constructed using a corrugated riser pipe DN 315, 425 or plain wall pipe 400. A pre-blinded pipe of appropriate length should be ordered, it may be also blinded on a building site. A tight basin bottom blinds the pipe. For storm water chambers, a top is a cast iron grating mounted on a telescope pipe. For a drainage chambers all other tops specified in the catalogue of DIAMIR manholes/chambers are applied. They are used depending on the existing loads and investor preferences. In a riser pipe holes are made to construct appropriate outlets or inlets. Appropriate in-situ gaskets should be installed in the holes. In-situ gasket tightness depends on the riser pipe used. See the Declaration of Conformity for details.

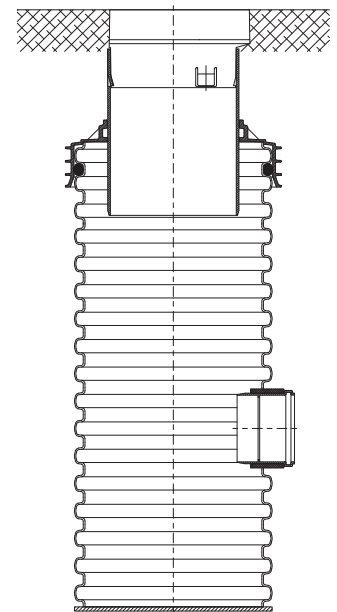
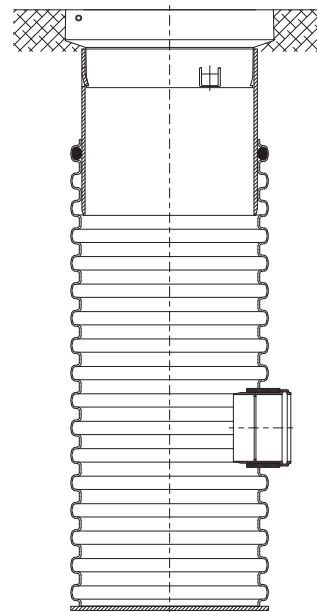
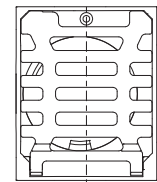
In drainage chambers gaskets are mounted in situ and connectors are inserted to drainage pipes.

Note: There are precast drainage and storm water chambers available.

Gully grating 425 D400  
500x500



Gully grating 315 D400  
420x340



### “In situ” gasket installation instructions

Intended use:

-“in-situ” gaskets 110 i 160 are used for connecting plastic pipes to riser pipes of inspection chambers DIAMIR 315, 400, 425, 600, 1000;

-“in-situ” gasket 200 is used for connecting plastic pipes to risers of inspection chambers DIAMIR 600, 1000.



Bore a hole of the required diameter in the chamber riser and then remove remaining burrs.

NOTE! A hole for an in-situ gasket may be made only outside the base unit socket.



Insert the “in-situ” gasket so that an outer flange will adjoin a riser outer wall. The in-situ gasket should be coated with lubricant from inside.



Press in a hub into an “in-situ” gasket to its end. Connect a sewage pipe of an appropriate diameter.

### Technical features

Non-entry inspection chambers **DIAMIR 600**

Main components of a chamber

-**base unit, a base of an inspection chamber**, allowing for direct connection of storm water drainage or sanitary sewer systems installed in the ground, including incorporated channels with possible branches along with possible branches

-**a riser, riser pipe** of internal diameter equalling 600

-**a telescope** section, allowing for compensation of settlement which may take place after installation and making it possible to adjust the chamber height A telescope pipe is installed to the depth of 0,8 m below the ground level.

Standards:

-DIAMIR 600 inspection chamber is compliant with

**EN 13598-2:2009**

**EN 476:2011**

-approval for use in road ROWs

Technical Approval **IBDiM AT/2010-02-2706**

Technical approval **IK AT/07-2011-0242-00**

Technical Approval **IBDiM AT/2011-02-2706**

-**GIG (Central Mining Institute) Opinion approving their use in the areas** of mining damages up to the 4th category

-Chemical resistance of chamber PP components to chemical substances is compliant with

**the ISO/TR 10358 Guidelines**

-Gully tops and manhole tops meet the requirements of standard

**EN 124:2000**

Seals meet the requirements of standard

**EN 681-1:2002**

-Chemical resistance of elastomeric seals to chemical substances is compliant with

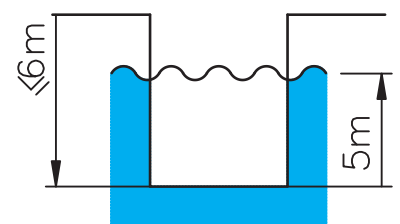
**the ISO/TR 7620 Guidelines**

Usage:

-maximum installation depth 6 m

-acceptable ground water table 5 m

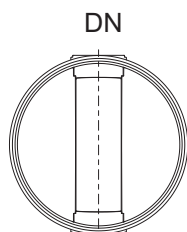
-acceptable load caused by traffic SLW60 according to ATV-A127P



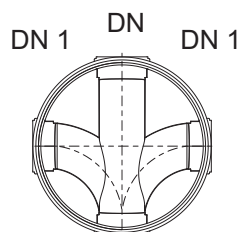
### Technical features

#### Technical data

Base units are made of polypropylene, with reinforcing ribs. They are adapted to connection with vertical riser pipes vertical riser pipes. There is a horizontal channel in the base unit with one or a few inlet connector pipes and one outlet connector pipe ending with bells for connection with plain wall pipes made of PVC-U, PP or PE or connector pipes adapted to connection with structural pipes K2-KAN.



Type 1 0°



Type 2 90°

| Type 1 0° | Type 2 90° |           |           |
|-----------|------------|-----------|-----------|
| DN        | DN 1       | DN        | DN 1      |
| 160       | 160        | 160       | 160       |
| 200       | 200        | 200       | 200       |
| 250       | 250        | 250       | 250       |
| 315       | 315        | 315       | 315       |
| 400       | -          | -         | -         |
| 200K2-Kan | 200K2-Kan  | 200K2-Kan | 200K2-Kan |
| 250K2-Kan | 250K2-Kan  | 250K2-Kan | 250K2-Kan |
| 300K2-Kan | 300K2-Kan  | 300K2-Kan | 300K2-Kan |
| 400K2-Kan | -          | -         | -         |

A ball-and-socket joints  $\pm 7,5^\circ$  may be used in connection bells 160; 200; 250; 315 (page 28)  
- for other base unit variants consult the manufacturer

### Height adjustment

#### Non-entry inspection chambers DIAMIR 600

##### Specifications and height adjustment

Preparing specifications for materials required for an investment, total numbers of individual inspection chamber components should be indicated:

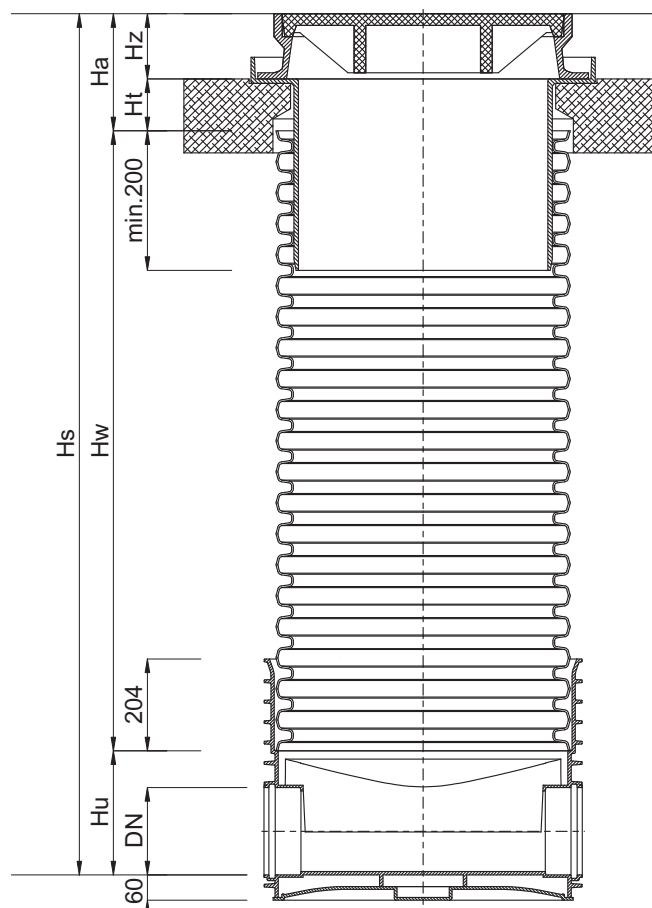
-base units, -riser pipes, -tops

The input parameter is chamber height specified in the design – the distance between the ground level and the chamber bottom (base unit level). We label it as **Hs**. In order to make calculations easier, there is useful height (**Hu**) specified for each base unit type, that is, the difference between the bottom of a base unit and the bottom of base unit socket in which a riser pipe is installed. For calculations, we label the height of a riser pipe as **Hw**. The height of a top section (telescope) will be **Ha**. One should bear in mind that the useful height of the telescope must not be smaller than thickness of the structural pavement layer.

No-entry inspection chamber DIAMIR 600

$$H_s = H_u + H_w + H_a$$

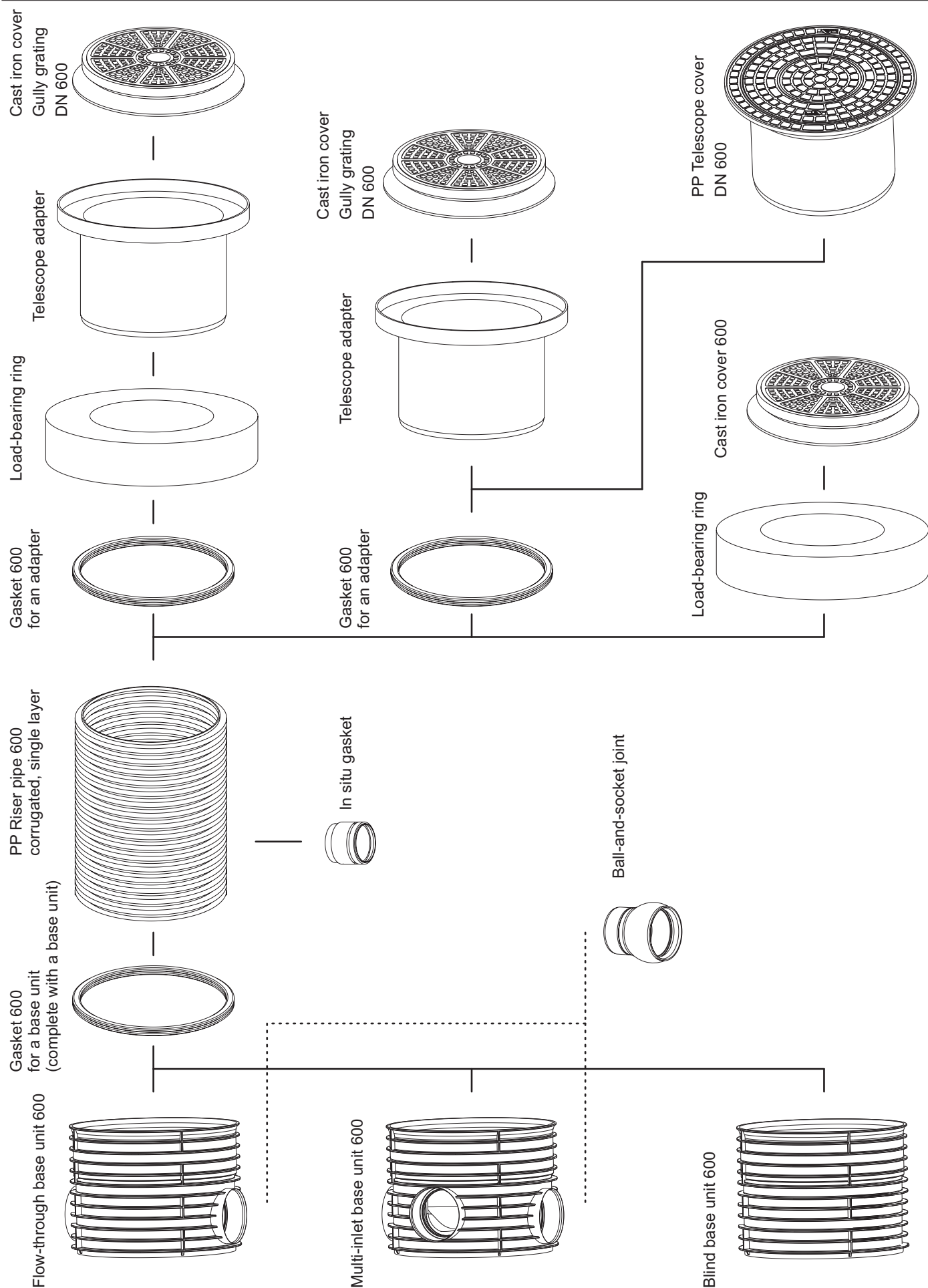
$$H_a = H_t + H_z$$





# Non-entry inspection chambers DIAMIR 600

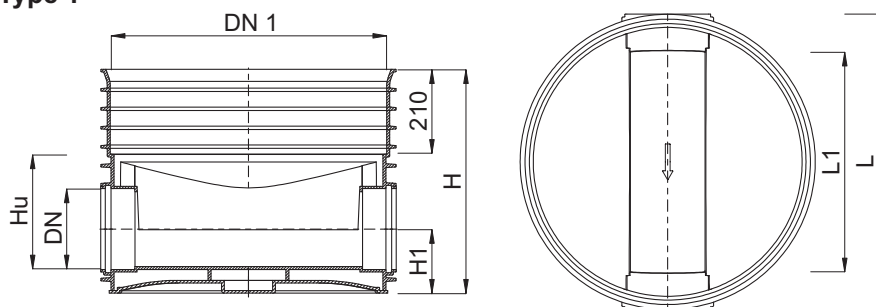
## Solution options



### Flow-through base unit 600

with a gasket

#### Type 1



| DN<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] | L1<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|-----------|------------|------------|-----------|------------|----------------|------------|
| 160        | 685          | 556       | 260        | 160        | 732       | 572        | 19,1           | 2581120300 |
| 200        | 685          | 556       | 278        | 160        | 732       | 552        | 21,7           | 2581130300 |
| 250        | 865          | 704       | 378        | 233        | 739       | 508        | 23,1           | 2581140300 |
| 315        | 685          | 704       | 407        | 233        | 739       | 475        | 23,6           | 2581150300 |
| 400        | 685          | 704       | 432        | 248        | 1218      | 544        | 28,2           | 2581160300 |
| 200 K2 *   | 685          | 556       | 278        | 165        | 753       | 552        | 21,7           | 2581530300 |
| 250 K2 *   | 685          | 704       | 378        | 240        | 762       | 508        | 23,1           | 2581540300 |
| 300 K2 *   | 685          | 704       | 407        | 235        | 778       | 475        | 23,6           | 2581550300 |
| 400 K2 *   | 685          | 704       | 432        | 260        | 1230      | 544        | 29,2           | 2581560300 |

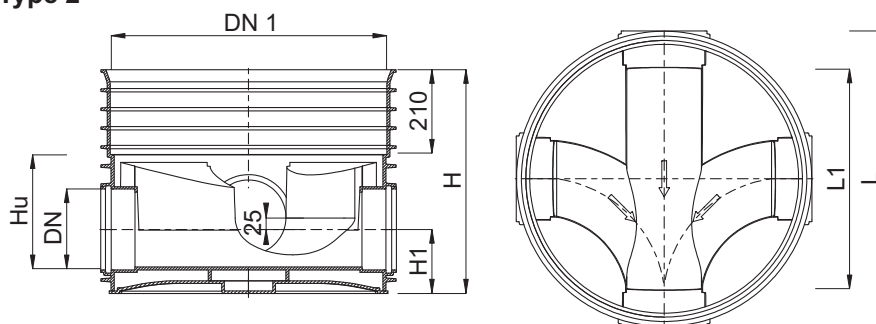
\* no gaskets in connection sockets

for other base unit variants consult the manufacturer

### Multi-inlet base unit

with a gasket

#### Type 2



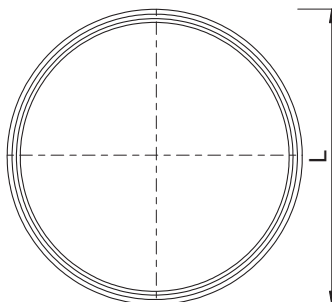
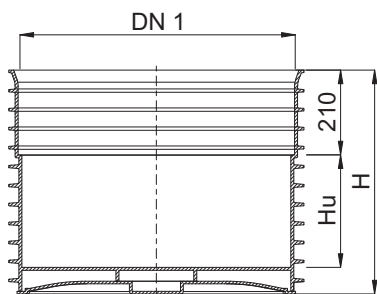
| DN<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] | L1<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|-----------|------------|------------|-----------|------------|----------------|------------|
| 160        | 685          | 556       | 260        | 160        | 732       | 572        | 19,7           | 2582126300 |
| 200        | 685          | 556       | 278        | 160        | 732       | 552        | 21,9           | 2582136300 |
| 250        | 865          | 704       | 378        | 233        | 739       | 508        | 23,5           | 2582146300 |
| 315        | 685          | 704       | 407        | 233        | 739       | 475        | 24,3           | 2582156300 |
| 200 K2 *   | 685          | 556       | 278        | 165        | 753       | 552        | 21,9           | 2582536300 |
| 250 K2 *   | 685          | 704       | 378        | 240        | 762       | 508        | 23,5           | 2582546300 |
| 300 K2 *   | 685          | 704       | 407        | 235        | 778       | 475        | 24,3           | 2582556300 |

\* no gaskets in connection sockets

other base unit variants to be discussed with the manufacturer

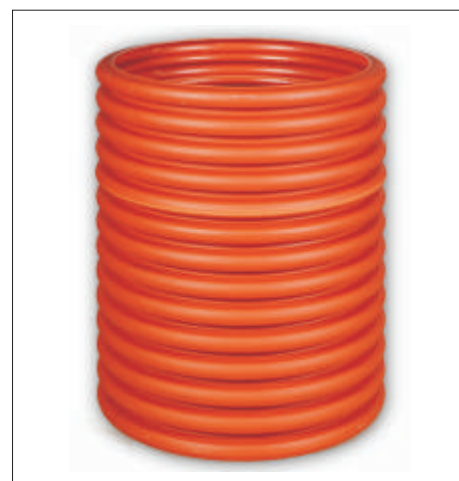
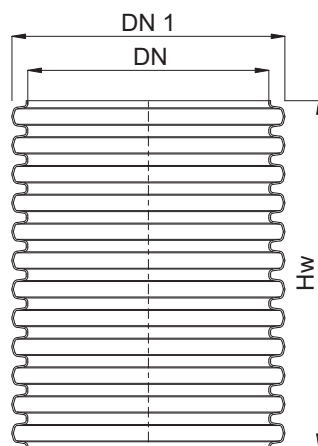
### Blind base unit 600

with a gasket



| DN<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|-----------|------------|-----------|----------------|------------|
| 600        | 685          | 618       | 268        | 732       | 21,1           | 2580000300 |

### Single-layer riser pipe 600



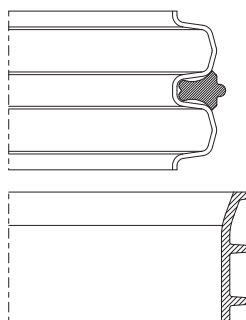
| DN<br>[mm] | DN 1<br>[mm] | Hw<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|------------|----------------|------------|
| 600        | 683          | 1000       | 6,2            | 2713832100 |
| 600        | 683          | 2000       | 12,3           | 2713832200 |
| 600        | 683          | 3000       | 18,9           | 2713832300 |
| 600        | 683          | 6000       | 37,8           | 2713832600 |

### Gasket 600

for a base unit



Pipe DN 600



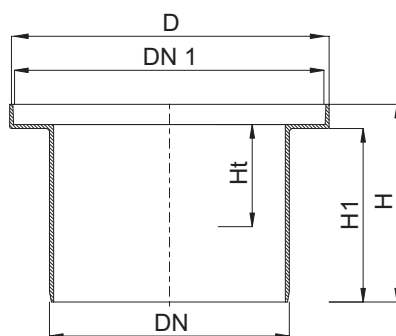
Base unit DN 600



| DN<br>[mm] | H<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|-----------|----------------|------------|
| 600        | 35        | 2,0            | 5161181010 |

### Telescope adapter 600

with a gasket

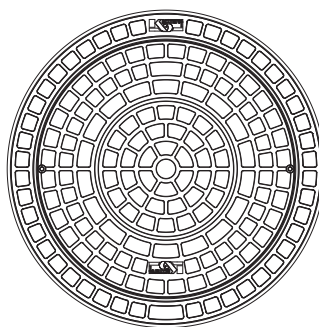
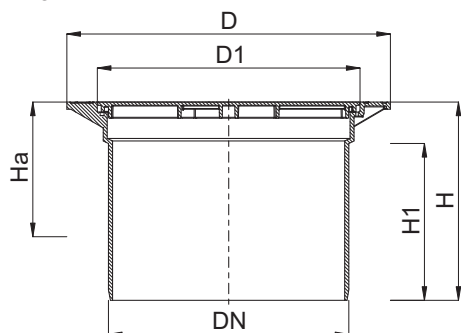


| DN<br>[mm] | DN 1<br>[mm] | D<br>[mm] | H<br>[mm] | H1<br>[mm] | Ht<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|-----------|-----------|------------|------------|----------------|------------|
| 600        | 770          | 800       | 490       | 440        | 290        | 9,6            | 2589120090 |
| 600        | 850          | 870       | 490       | 440        | 290        | 10,6           | 2589140090 |

### PP Telescope cover 600

with a gasket

A15

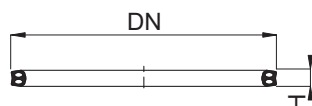


| DN<br>[mm] | D<br>[mm] | D1<br>[mm] | H<br>[mm] | H1<br>[mm] | Ha<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|-----------|------------|-----------|------------|------------|----------------|------------|
| 600        | 800       | 650        | 490       | 390        | 290        | 13,9           | 2589411090 |

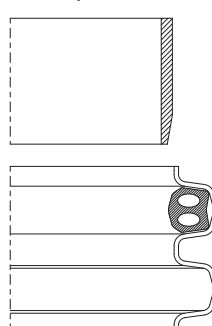
### Gasket 600

- for adapter 600

- for PP telescope cover 600



Adapter DN 600



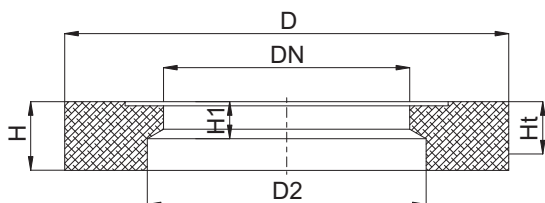
Pipe DN 600



| DN<br>[mm] | H<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|-----------|----------------|------------|
| 600        | 40        | 2,3            | 5163181010 |

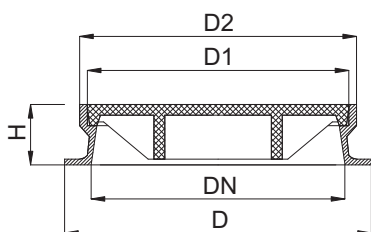


### Load bearing ring 600



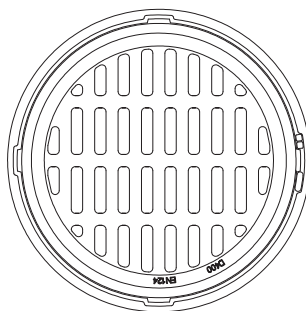
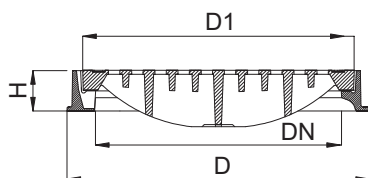
| DN<br>[mm] | D<br>[mm] | D2<br>[mm] | H<br>[mm] | H1<br>[mm] | Ht<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|-----------|------------|-----------|------------|------------|----------------|------------|
| 600        | 1100      | 690        | 170       | 90         | 120        | 220,0          | 2953184000 |

### Cast iron cover 600



|      | DN<br>[mm] | DN 1<br>[mm] | D1<br>[mm] | D2<br>[mm] | H<br>[mm] | Weight<br>[kg] | index<br>- |
|------|------------|--------------|------------|------------|-----------|----------------|------------|
| A15  | 600        | 680          | 630        | 670        | 50        | 35,9           | 2901281500 |
| B125 | 600        | 750          | 640        | 680        | 150       | 103,5          | 2901282500 |
| C250 | 600        | 750          | 640        | 680        | 150       | 112,0          | 2901283500 |
| D400 | 600        | 760          | 640        | 680        | 150       | 145,0          | 2901284500 |

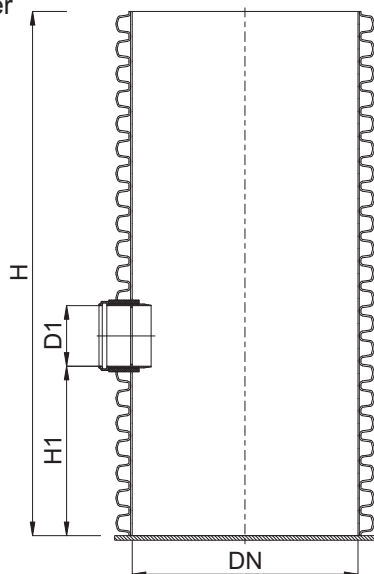
### Gully grating



|      | DN<br>[mm] | DN 1<br>[mm] | D1<br>[mm] | H<br>[mm] | Weight<br>[kg] | index<br>- |
|------|------------|--------------|------------|-----------|----------------|------------|
| D400 | 600        | 750          | 680        | 100       | 119,0          | 2902284500 |

### Sewer manhole

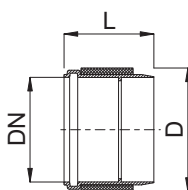
with a sedimentation tank for stormwater



| DN  | DN 1<br>[mm] | D1<br>[mm] | H *<br>[mm] | H1<br>[mm] | Weight<br>[kg] | index<br>- |
|-----|--------------|------------|-------------|------------|----------------|------------|
| 600 | 683          | 160        | 2000        | 500        | 40,9           | 2818120200 |
| 600 | 683          | 200        | 2000        | 500        | 41,7           | 2818130200 |

\* other manhole heights available on request

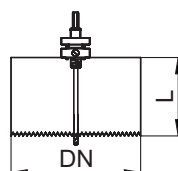
### "In situ" gasket



| DN  | D1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|-----|------------|-----------|----------------|------------|
| 110 | 138        | 120       | 0,5            | 5168201010 |
| 160 | 177        | 120       | 0,8            | 5168231010 |
| 200 | 226        | 120       | 1,6            | 5168251010 |

### Hole cutter

Cutter holder – all-purpose



| DN          | D1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index      |
|-------------|------------|-----------|----------------|------------|
| 110         | 138        | 90        | 0,8            | 5191201100 |
| 160         | 177        | 90        | 1,2            | 5191231100 |
| 200         | 226        | 90        | 1,7            | 5191252100 |
| uniwersalny | -          | -         | 0,6            | 5191000100 |

### Installation instructions

DIAMIR inspection chambers should be installed in conditions specified in the technical design. The ground around chambers (0,3 m) should be composed of compactable soil, approved for use in road construction according to standard PN-S-02205:1998. Earthworks should be carried out in accordance with standard PN-EN 1610: 2002/Ap1:2007. Soil compaction should be performed in layers as specified in standard PN-ENV 1046:2007 to prevent from excessive ovalisation of a chamber cross-section.



1 Prepare a trench in an inspection chamber location removing large and sharp-edged stones. On the trench bottom prepare bedding composed of compactable soil, preferably sand (coarse- medium- or fine-grained) of minimum 10 cm thickness. An inspection chamber zone should include an area of at least a 30 cm wide strip around the chamber.



2 Place a base unit on a prepared earlier sand bedding and level it and then connect sewage pipes to the chamber.



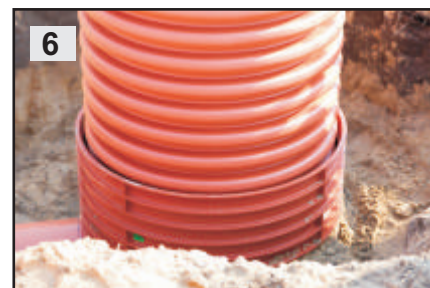
3 Fill up the trench with preliminary backfill (10 cm above the pipe level). Compaction should be performed manually, in layers every 15 cm or with light mechanical equipment (each layer up to 30 cm). Base unit socket 600 should protrude above the backfill level.



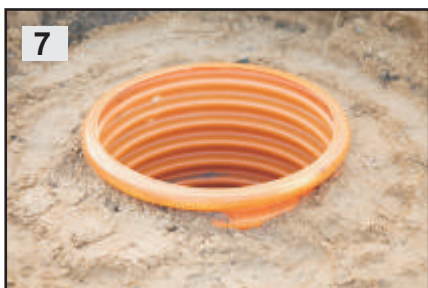
4 Prepare a corrugated riser pipe of the required length. The pipe can be cut to the required chamber height. Install a gasket in the lowest groove on the outside of the riser pipe. The gasket is delivered along with a base unit.



5 Lubricant should be applied on the inner side of a base unit socket 600 and gasket. Products approved for rubber gaskets and plastic should be used.



6 Insert a riser pipe with an installed gasket 600 into a base unit.



7 Compact the area around the pipe. Compaction should be performed manually, in layers every 15 cm or with light mechanical equipment (each layer up to 30 cm) in open areas to at least 90% of the Proctor compaction test and for inspection chambers located in a carriageway or road shoulder backfill should meet the requirements specified for compaction index resulting from the installation depth, road construction type (cutting, embankment) or traffic intensity category.



8 For inspection chambers equipped with riser pipes connected with telescope pipes with a cuff gasket, ensure a telescope pipe is inserted into a riser pipe to the depth of approximately 20 cm.

### Chamber tops

Location of a DIAMIR chamber and expected load caused by traffic are the basis for selection of riser and telescope pipe stiffness and a choice of cast iron covers.

Depending on the chamber location within a ROW and a traffic intensity category, different manhole/gully tops are used, also construction requirements and top type which are classified into the following groups may differ.

Group 1 - Class A15 - green areas intended solely for pedestrians and pedal cyclists

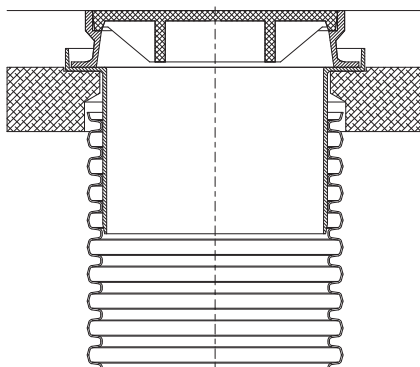
Group 2 - Class B125 - Roads and areas for pedestrians, and comparable areas, parking lots or places where cars are parked

Group 3 - Class C250 - Applies solely do sewer gully tops installed in the area of kerbside channels of roads and road shoulders

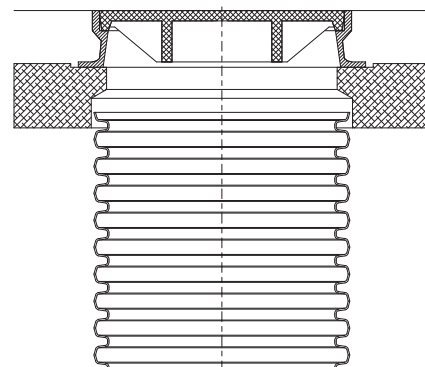
Group 4 - Class D400 - Carriageways of roads (including pedestrian streets) hard shoulders, and parking areas for all types of road vehicles

There are different rules of the manhole/gully top support depending on their type and class, and soil conditions. A manhole/gully top should sit on a reinforced concrete slab which is supported by an appropriately constructed load bearing structure adapted to loads caused by traffic. That may be reinforced bedding made of well compacted soil or a precast load-relieving slab made of reinforced concrete. For very heavy load caused by traffic or doubts about compaction of soil constituting top base, a slab should be based on B30 concrete ring of minimum height of 20 cm cast on the building site

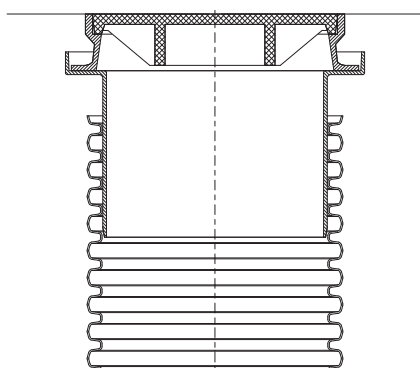
Cast iron chamber cover 600  
Telescope adapter 600  
Load bearing concrete ring 600



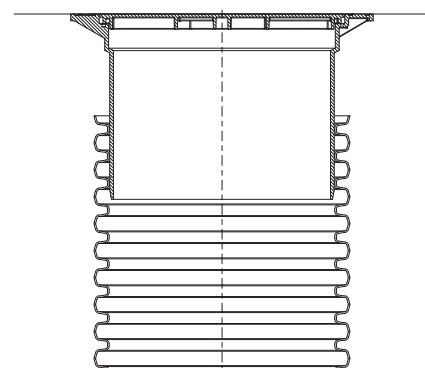
Cast iron chamber cover 600  
Load bearing concrete ring 600



Cast iron chamber cover 600  
Telescope adapter 600



PP Telescope cover 600

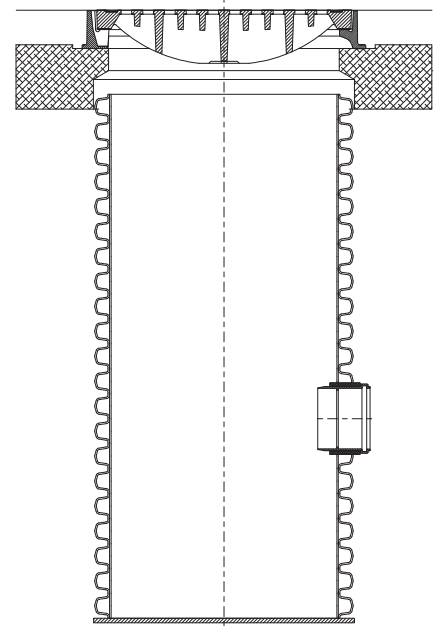




### Catch basins 600

A catch basin is constructed using a corrugated riser pipe DN 315, 425 or plain wall pipe 400. A pre-blinded pipe of appropriate length should be ordered, it may be also blinded on a building site. A tight basin bottom blinds the pipe. For stormwater chambers, a top is a cast iron grating mounted on a telescope pipe. For a drainage chambers all other tops specified in the catalogue of DIAMIR manholes/chambers are applied. They are used depending on the existing loads and investor preferences. In a riser pipe holes are made to construct appropriate outlets or inlets. Appropriate in-situ gasket should be installed in the holes. Insert in-situ gasket depends on the riser pipe used (single- or double-layer). See the Declaration of Conformity for details. In drainage chambers gaskets are mounted in situ and connectors are inserted to drainage pipes.

Note: There are precast drainage and storm water chambers available.



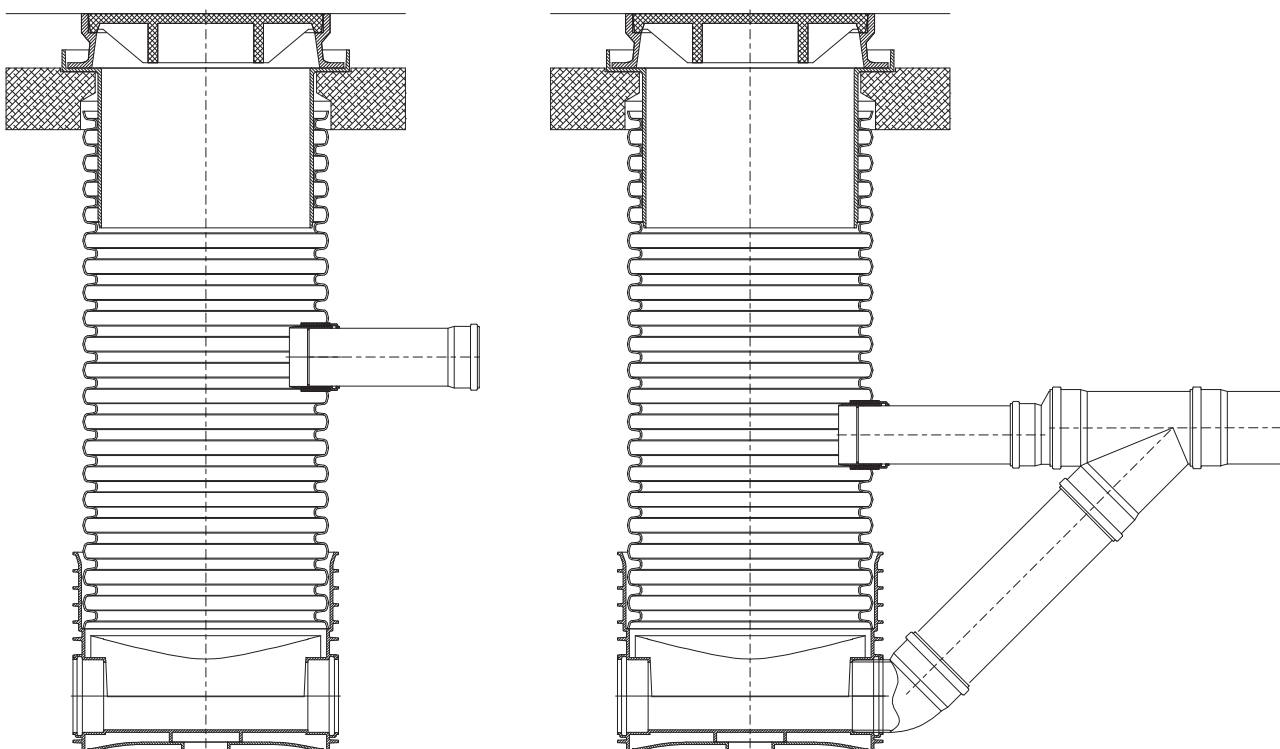
### Backdrop manholes

Sometimes it is necessary to connect a channel to a manhole above a base unit.

Then, a so called backdrop manhole is constructed. According to standard PN-B-10729 "backdrop manholes in channels of diameters up to 0.40 m and drop height from 0,5 - 4,0 m may be constructed with a backdrop pipe placed inside or outside of a manhole. In a non-entry inspection chamber a drop pipe may be not installed.

That means that for non-entry inspection chambers, if a channel diameter does not exceed 160 mm, connection may be made through a hole in a riser pipe.

Appropriate in-situ gaskets are installed in the hole. If a channel is a K2-Kan structured pipe, a special fitting (adapter to a PVC socket) should be inserted into the in situ gasket. A backdrop pipe is not used. However, if a channel diameter exceeds 200 mm, a backdrop pipe has to be used and it should be connected to a chamber base unit. A T-branch connection is fitted to the channel. One of T-branches is connected to the backdrop pipe and the second one (after diameter reduction to 60 mm) is connected to a riser pipe (hole with an in situ gasket).



### Technical features

#### Entry manholes **DIAMIR 1000**

Main components of a chamber

-**base unit, a base of an entry manhole**, allowing for direct connection of storm water drainage or sanitary sewer systems installed in the ground, including incorporated channels with possible branches along with possible branches

-**shaft, a chamber built of modular PP sections**, of the internal diameter 1000, equipped with access steps

-**reduction cone PP 1000/600** allowing for adjustment of the manhole height. The cone is equipped with access steps



Standards:

-DIAMIR 1000 inspection chamber is compliant with

**PN-EN 13598-2:2009**

**PN-EN 476:2011**

-approval for use in road ROWs

Technical Approval **IBDIM AT/2010-02-2830**

Technical approval **IK AT/07-2011-0242-00**

Technical Approval **IBDIM AT/2011-02-2706**

-**GIG (Central Mining Institute) Opinion approving their use in the areas** of mining damages up to the 4th category

-Chemical resistance of chamber PP components to chemical substances is compliant with

**the ISO/TR 10358 Guidelines**

-Gully tops and manhole tops meet the requirements of standard

**PN-EN 124:2000**

-manhole steps meet the requirements of standard

**PN-EN 13101:2005**

-Seals meet the requirements of standard

**PN-EN 681-1:2002**

-Chemical resistance of elastomeric seals to chemical substances is compliant with

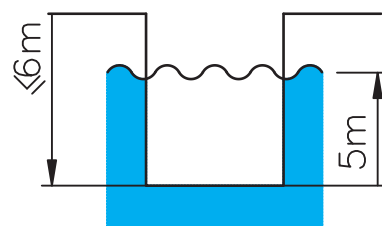
**the ISO/TR 7620 Guidelines**

Usage:

-maximum installation depth 6 m

-acceptable ground water table 5 m

-acceptable load caused by traffic SLW60 according to ATV-A127P



### Technical features

#### Technical data

Base units are made of polypropylene, with reinforcing ribs. They are adapted to connection with vertical riser pipes. There is a horizontal channel in the base unit with one or a few inlet connector pipes and one outlet connector pipe ending with bells for connection with plain wall pipes made of PVC-U, PP or PE or connector pipes adapted to connection with structural pipes K2-KAN.



| Type 1 0° | Type 1 15° | Type 1 30° | Type 1 45° | Type 1 90° | Type 2 45° 90° |           |           |
|-----------|------------|------------|------------|------------|----------------|-----------|-----------|
| DN        | DN         | DN         | DN         | DN         | DN 1           | DN        | DN 1      |
| 200       | 200        | 200        | 200        | 200        | 200            | 200       | 200       |
| 250       | 250        | 250        | 250        | 250        | 250            | 250       | 250       |
| 315       | 315        | 315        | 315        | 315        | 315            | 315       | 315       |
| 400       | 400        | 400        | 400        | 400        | 400            | 400       | 400       |
| 500       | 500        | 500        | 500        | -          | -              | -         | -         |
| 200K2-Kan | 200K2-Kan  | 200K2-Kan  | 200K2-Kan  | 200K2-Kan  | 200K2-Kan      | 200K2-Kan | 200K2-Kan |
| 250K2-Kan | 250K2-Kan  | 250K2-Kan  | 250K2-Kan  | 250K2-Kan  | 250K2-Kan      | 250K2-Kan | 250K2-Kan |
| 300K2-Kan | 300K2-Kan  | 300K2-Kan  | 300K2-Kan  | 300K2-Kan  | 300K2-Kan      | 300K2-Kan | 300K2-Kan |
| 400K2-Kan | 400K2-Kan  | 400K2-Kan  | 400K2-Kan  | 400K2-Kan  | 400K2-Kan      | 400K2-Kan | 400K2-Kan |
| 500K2-Kan | 500K2-Kan  | 500K2-Kan  | 500K2-Kan  | -          | -              | -         | -         |
| 600K2-Kan | 600K2-Kan  | 600K2-Kan  | -          | -          | -              | -         | -         |

A ball-and-socket joints  $\pm 7,5^\circ$  may be used in connection bells 160; 200; 250; 315 (page 28)

### Height adjustment

#### Entry manholes DIAMIR 1000

#### Specifications and height adjustment

Preparing specifications for materials required for an investment, total numbers of individual inspection chamber components should be indicated:

-base units, -riser pipes, -tops

The input parameter is chamber height specified in the design – the distance between the ground level and the chamber invert (base unit level). We label it as **Hs**.

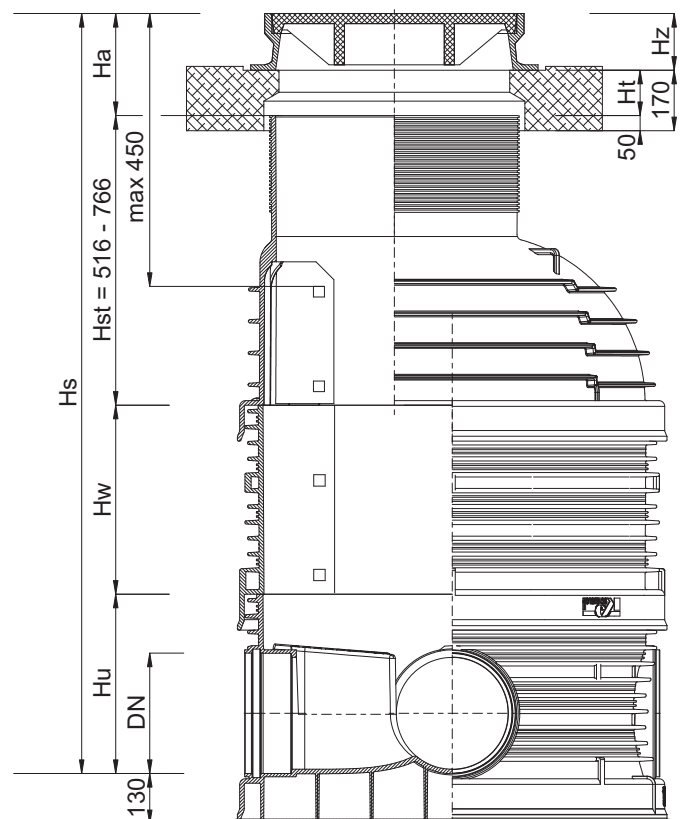
In order to make calculations easier, there is useful height (**Hu**) specified for each base unit type, that is, the distance between the bottom of a base unit and the bottom of base unit bell in which a riser pipe is installed.

For calculations, we label the height of vertical chamber sections as **Hw**. Taper height will be **Hst**. The effective height of a top section (telescope) will be **Ha**.

Entry manhole DIAMIR 1000

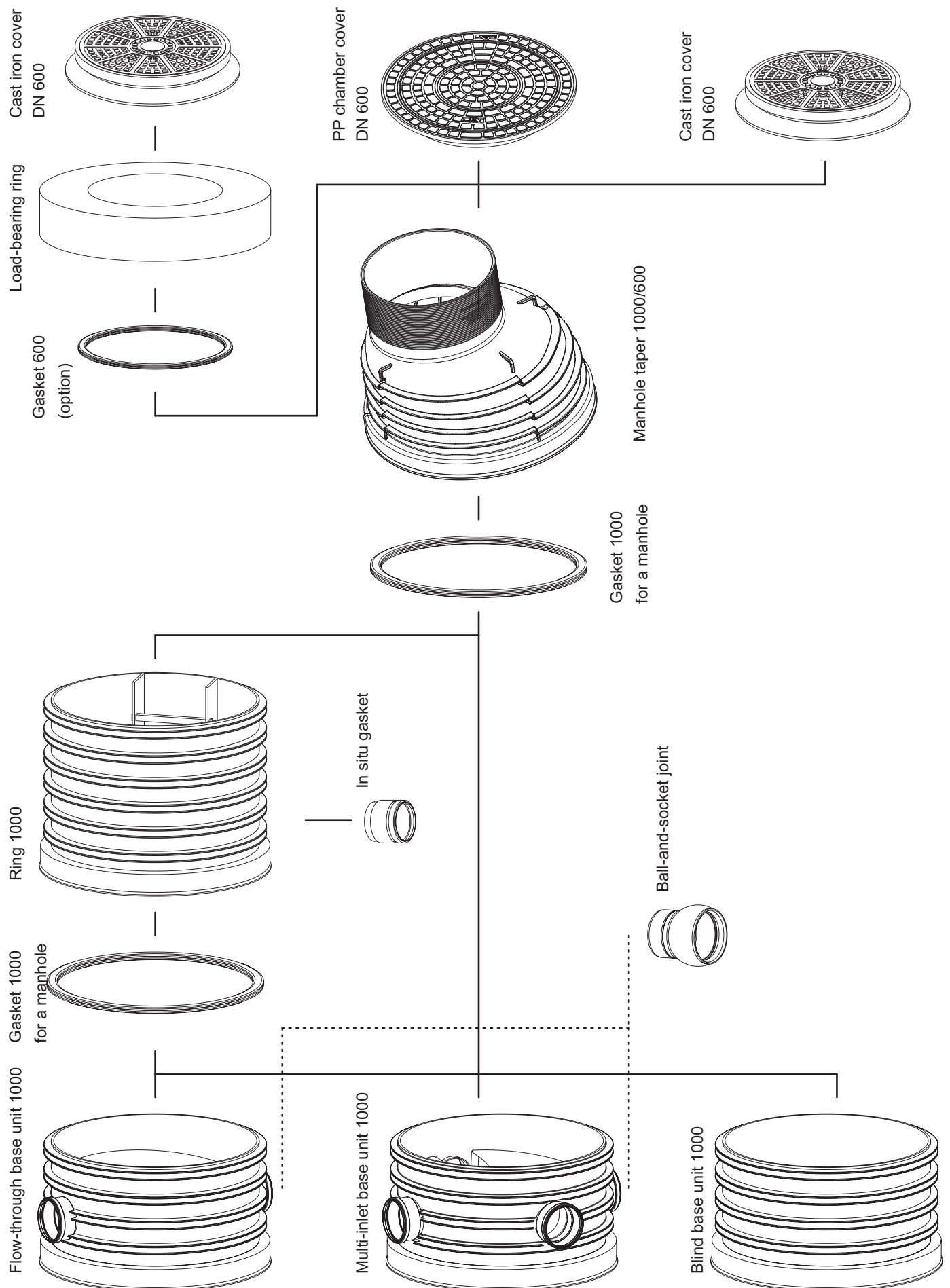
$$H_s = H_u + H_w + H_{st} + H_a$$

$$H_a = H_t + H_z$$



# Entry manholes DIAMIR 1000

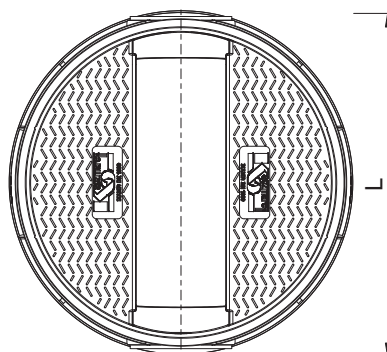
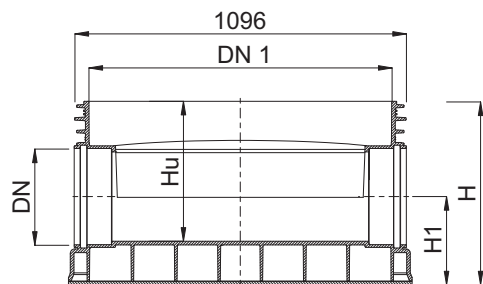
Solution options





### Flow-through base unit 1000

#### Type 1

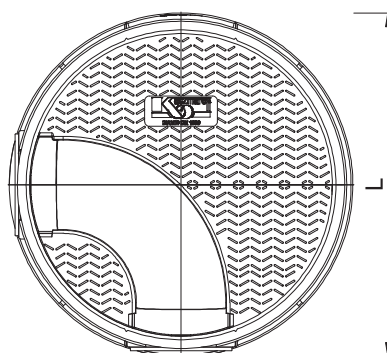
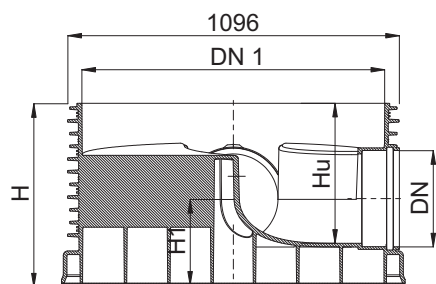


| DN<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|-----------|------------|------------|-----------|----------------|------------|
| 200        | 1000         | 595       | 444        | 252        | 1136      | 73,4           | 2631130030 |
| 250        | 1000         | 595       | 460        | 260        | 1136      | 76,4           | 2631140030 |
| 315        | 1000         | 595       | 475        | 280        | 1136      | 76,4           | 2631150030 |
| 400        | 1000         | 595       | 496        | 300        | 1440      | 91,6           | 2631160030 |
| 500        | 1000         | 845       | 665        | 440        | 1496      | 94,5           | 2631170030 |
| 200 K2 *   | 1000         | 595       | 438        | 259        | 1230      | 73,4           | 2631530030 |
| 250 K2 *   | 1000         | 595       | 432        | 291        | 1272      | 76,4           | 2631540030 |
| 300 K2 *   | 1000         | 595       | 435        | 320        | 1320      | 76,4           | 2631550030 |
| 400 K2 *   | 1000         | 595       | 495        | 382        | 1430      | 93,1           | 2631560030 |
| 500 K2 *   | 1000         | 845       | 658        | 440        | 1516      | 94,8           | 2631570030 |
| 600 K2 *   | 1000         | 845       | 665        | 498        | 1576      | 123,5          | 2631580030 |

\* no gaskets in connection bells

### Flow-through base unit 1000

#### Type 1

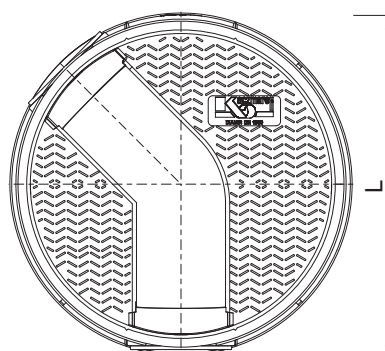
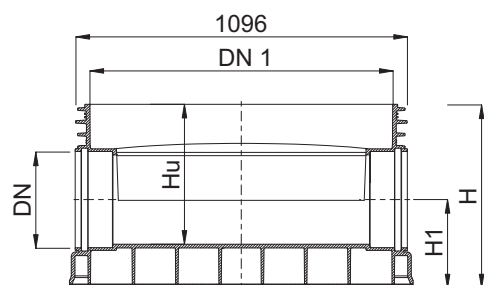


| DN<br>[mm]  | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|-------------|--------------|-----------|------------|------------|-----------|----------------|------------|
| 200x90°     | 1000         | 595       | 444        | 252        | 1136      | 73,8           | 2631139030 |
| 250x90°     | 1000         | 595       | 460        | 260        | 1136      | 76,8           | 2631149030 |
| 315x90°     | 1000         | 595       | 475        | 280        | 1136      | 76,4           | 2631159030 |
| 400x90°     | 1000         | 595       | 496        | 300        | 1440      | 91,6           | 2631169030 |
| 200K2-90° * | 1000         | 595       | 444        | 252        | 1136      | 52,2           | 2631539030 |
| 250K2-90° * | 1000         | 595       | 460        | 260        | 1136      | 55,0           | 2631549030 |
| 300K2-90° * | 1000         | 595       | 475        | 280        | 1136      | 57,5           | 2631559030 |
| 400K2-90° * | 1000         | 595       | 496        | 300        | 1440      | 91,6           | 2631569030 |

\* no gaskets in connection bells

### Flow-through base unit 1000

#### Type 1

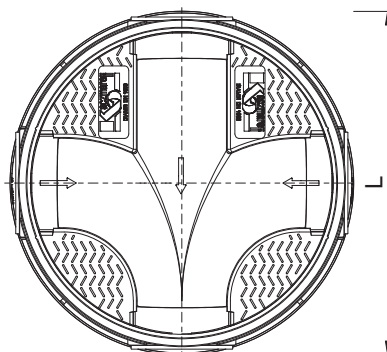
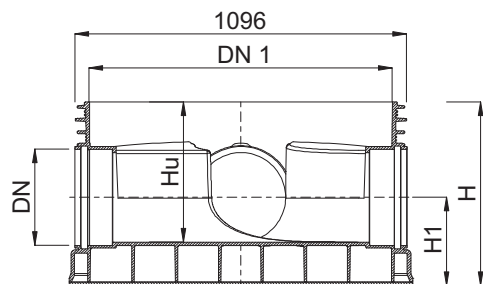


| DN<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|-----------|------------|------------|-----------|----------------|------------|
| 200x15°    | 1000         | 595       | 444        | 252        | 1136      | 73,8           | 2631131530 |
| 250x15°    | 1000         | 595       | 460        | 260        | 1136      | 76,8           | 2631141530 |
| 315x15°    | 1000         | 595       | 475        | 280        | 1136      | 76,4           | 2631151530 |
| 400x15°    | 1000         | 595       | 496        | 300        | 1440      | 91,6           | 2631161530 |
| 500x15°    | 1000         | 845       | 665        | 440        | 1496      | 94,5           | 2631161530 |
| 200K2-15°* | 1000         | 595       | 444        | 252        | 1136      | 52,2           | 2631531530 |
| 250K2-15°* | 1000         | 595       | 460        | 260        | 1136      | 55,0           | 2631541530 |
| 300K2-15°* | 1000         | 595       | 475        | 280        | 1136      | 57,5           | 2631551530 |
| 400K2-15°* | 1000         | 595       | 496        | 300        | 1440      | 91,6           | 2631561530 |
| 500K2-15°* | 1000         | 845       | 658        | 440        | 1430      | 94,8           | 2631561530 |
| 600K2-15°* | 1000         | 845       | 665        | 498        | 1516      | 123,5          | 2631561530 |
| 200x30°    | 1000         | 595       | 444        | 252        | 1136      | 73,8           | 2631133030 |
| 250x30°    | 1000         | 595       | 460        | 260        | 1136      | 76,8           | 2631143030 |
| 315x30°    | 1000         | 595       | 475        | 280        | 1136      | 76,4           | 2631153030 |
| 400x30°    | 1000         | 595       | 496        | 300        | 1440      | 91,6           | 2631163030 |
| 500x30°    | 1000         | 845       | 665        | 440        | 1496      | 94,5           | 2631163030 |
| 200K2-30°* | 1000         | 595       | 444        | 252        | 1136      | 52,2           | 2631533030 |
| 250K2-30°* | 1000         | 595       | 460        | 260        | 1136      | 55,0           | 2631543030 |
| 300K2-30°* | 1000         | 595       | 475        | 280        | 1136      | 57,5           | 2631553030 |
| 400K2-30°* | 1000         | 595       | 496        | 300        | 1440      | 91,6           | 2631563030 |
| 500K2-30°* | 1000         | 845       | 658        | 440        | 1430      | 94,8           | 2631563030 |
| 600K2-30°* | 1000         | 845       | 665        | 498        | 1516      | 123,5          | 2631563030 |
| 200x45°    | 1000         | 595       | 444        | 252        | 1136      | 73,8           | 2631134530 |
| 250x45°    | 1000         | 595       | 460        | 260        | 1136      | 76,8           | 2631144530 |
| 315x45°    | 1000         | 595       | 475        | 280        | 1136      | 76,4           | 2631154530 |
| 400x45°    | 1000         | 595       | 496        | 300        | 1440      | 91,6           | 2631164530 |
| 500x45°    | 1000         | 845       | 665        | 440        | 1496      | 94,5           | 2631164530 |
| 200K2-45°* | 1000         | 595       | 444        | 252        | 1136      | 52,2           | 2631534530 |
| 250K2-45°* | 1000         | 595       | 460        | 260        | 1136      | 55,0           | 2631544530 |
| 300K2-45°* | 1000         | 595       | 475        | 280        | 1136      | 57,5           | 2631554530 |
| 400K2-45°* | 1000         | 595       | 496        | 300        | 1440      | 91,6           | 2631564530 |
| 500K2-45°* | 1000         | 845       | 658        | 440        | 1430      | 94,8           | 2631564530 |

\* no gaskets in connection bells

### Multi-inlet base unit 1000

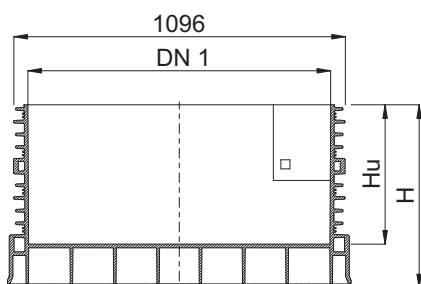
#### Type 2



| DN<br>[mm] | DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | H1<br>[mm] | L<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|-----------|------------|------------|-----------|----------------|------------|
| 200        | 1000         | 595       | 444        | 252        | 1136      | 52,9           | 2632139030 |
| 250        | 1000         | 595       | 460        | 260        | 1136      | 56,3           | 2632149030 |
| 315        | 1000         | 595       | 475        | 280        | 1136      | 59,3           | 2632159030 |
| 400        | 1000         | 595       | 496        | 300        | 1440      | 95,6           | 2632169030 |
| 500        | 1000         | 845       | 705        | 440        | 1496      | 101,3          | 2632179030 |
| 200 K2 *   | 1000         | 595       | 438        | 259        | 1230      | 53,3           | 2632539030 |
| 250 K2 *   | 1000         | 595       | 432        | 291        | 1272      | 57,1           | 2632549030 |
| 300 K2 *   | 1000         | 595       | 435        | 320        | 1320      | 60,2           | 2632559030 |
| 400 K2 *   | 1000         | 595       | 495        | 382        | 1430      | 97,7           | 2632569030 |
| 500 K2 *   | 1000         | 845       | 705        | 440        | 1516      | 103,4          | 2632579030 |

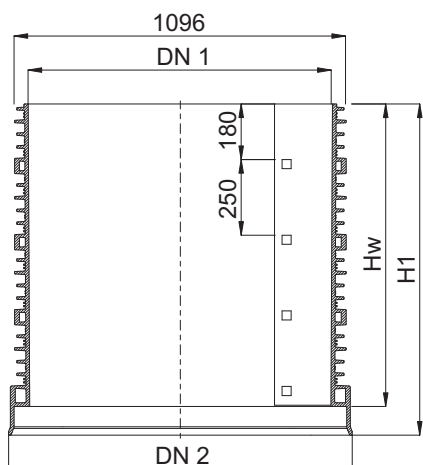
\* no gaskets in connection bells

### Blind base unit 1000



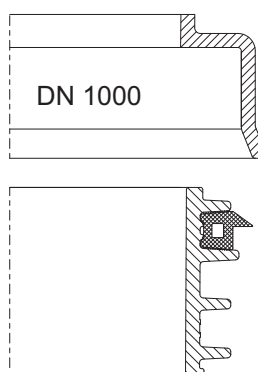
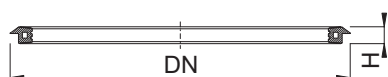
| DN 1<br>[mm] | H<br>[mm] | Hu<br>[mm] | Weight<br>[kg] | index<br>- |
|--------------|-----------|------------|----------------|------------|
| 1000         | 595       | 480        | 66,0           | 2630040030 |
| 1000         | 1095      | 980        | 82,5           | 2630080030 |

### Ring 1000



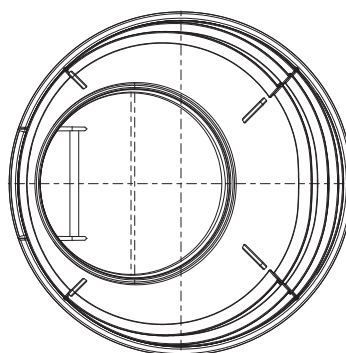
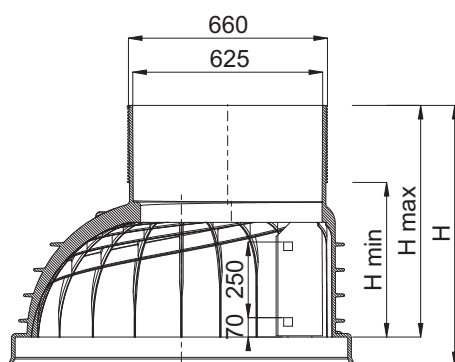
| Hw<br>[mm] | H1<br>[mm] | DN 1<br>[mm] | DN 2<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|------------|--------------|--------------|----------------|------------|
| 250        | 345        | 1000         | 1136         | 21,0           | 2639120030 |
| 500        | 595        | 1000         | 1136         | 36,0           | 2639140030 |
| 750        | 845        | 1000         | 1136         | 52,5           | 2639160030 |
| 1000       | 1095       | 1000         | 1136         | 68,0           | 2639180030 |

### Manhole gasket 1000



| DN<br>[mm] | H<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|-----------|----------------|------------|
| 1000       | 30        | 3,8            | 5161231010 |

### Manhole taper 1000



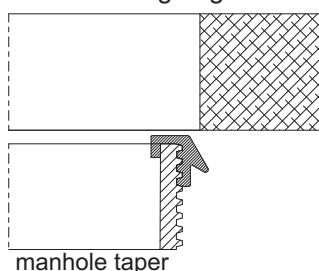
| DN<br>[mm] | DN 2<br>[mm] | H min<br>[mm] | H max<br>[mm] | H<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|--------------|---------------|---------------|-----------|----------------|------------|
| 1000/625   | 1100         | 516           | 766           | 861       | 43,0           | 2639220030 |



### Manhole gasket 1000/600 for a manhole taper

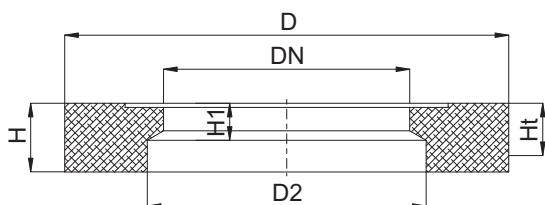


### Load-bearing ring



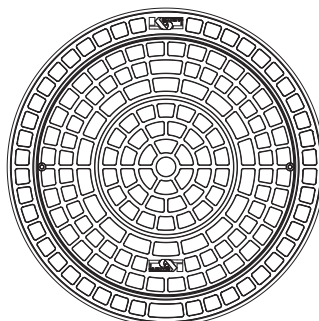
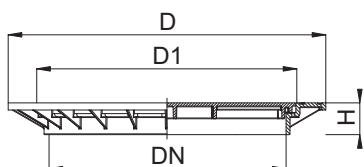
| DN<br>[mm] | H<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|-----------|----------------|------------|
| 1000       | 30        | 2,1            | 5164181010 |

### Load-bearing ring



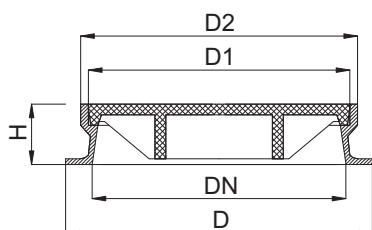
| DN<br>[mm] | D<br>[mm] | D2<br>[mm] | H<br>[mm] | H1<br>[mm] | Ht<br>[mm] | Weight<br>[kg] | index<br>- |
|------------|-----------|------------|-----------|------------|------------|----------------|------------|
| 600        | 1100      | 690        | 170       | 90         | 120        | 220,0          | 2953184000 |

### PP chamber cover DN 600



|     | DN<br>[mm] | D<br>[mm] | D1<br>[mm] | H<br>[mm] | Weight<br>[kg] | index<br>- |
|-----|------------|-----------|------------|-----------|----------------|------------|
| A15 | 600        | 800       | 650        | 80        | 8,4            | 2589421090 |

### Cast iron chamber cover DN 600



|                    | DN<br>[mm] | DN 1<br>[mm] | D1<br>[mm] | D2<br>[mm] | H<br>[mm] | Weight<br>[kg] | index<br>- |
|--------------------|------------|--------------|------------|------------|-----------|----------------|------------|
| A15                | 600        | 680          | 630        | 670        | 50        | 35,9           | 2901281500 |
| B125               | 600        | 750          | 640        | 680        | 150       | 103,5          | 2901282500 |
| C250               | 600        | 750          | 640        | 680        | 150       | 112,0          | 2901283500 |
| D400               | 600        | 760          | 640        | 680        | 150       | 145,0          | 2901284500 |
| D400 Gully grating | 600        | 750          | 680        | 710        | 100       | 119,0          | 2902284500 |

### Installation instructions

DIAMIR inspection chambers should be installed in conditions specified in the technical design. The ground around chambers (0,3 m) should be composed of compactable soil, approved for use in road construction according to standard PN-S-02205:1998. Earthworks should be carried out in accordance with standard PN-EN 1610:2002/Ap1:2007. Soil compaction should be performed in layers as specified in standard PN-ENV 1046:2007 to prevent from excessive ovalisation of a chamber cross-section.



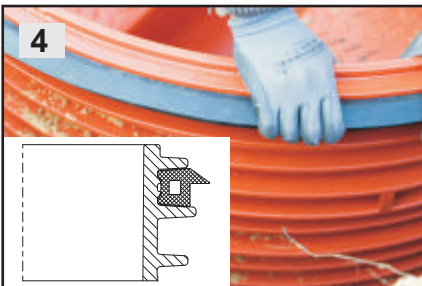
1 Prepare a trench in an inspection chamber location removing large and sharp-edged stones. On the trench bottom prepare bedding composed of compactable soil, preferably sand (coarse- medium- or fine-grained) of minimum 10 cm thickness. An inspection chamber zone should include an area of at least a 30 cm wide strip around the chamber.



2 Place a base unit on a prepared earlier sand bedding and level it and then connect sewage pipes to the chamber. A place where a manhole is located should be lowered by approximately 10 cm. Connect sewage pipes.



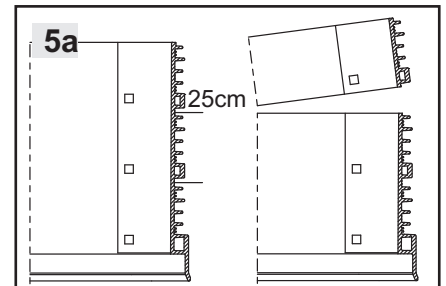
3 Fill up the trench with preliminary backfill (10 cm above the pipe level). Compaction should be performed manually, in layers every 15 cm or with light mechanical equipment (each layer up to 30 cm). Base unit 1000 should protrude above the backfill level.



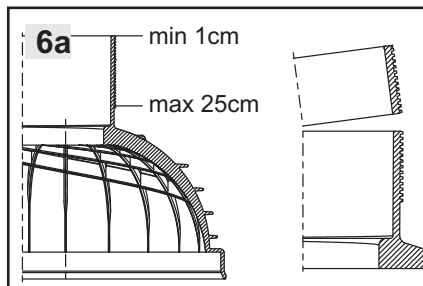
4 Install a gasket  $\text{Ø}1000$  in the lowest groove on the outside of the ring. The groove should be thoroughly cleaned before gasket installation.



5 Lubricant should be applied onto a gasket  $\text{Ø}1000$  before jointing with another manhole section. Products approved for rubber gaskets and plastic should be used. Note! If there are no rings of diversified heights on a building site, rings of standard heights may be cut. Rings may be cut only at marked places every 25 cm.



6 A taper should be installed similarly to other manhole components (rings  $\text{Ø}1000$ ). A cylindrical section of the taper (from the minimum of 1 to the maximum of 25 cm) may be cut to achieve the required manhole height.



Note! A gasket may be installed in the cylindrical taper section (between the taper and a concrete ring).



7 For shallow installations, taper 1000/600 may be connected directly to a base unit with no ring used.

### Installation instructions



Compact the area around the pipe. Compaction should be performed manually, in layers every 15 cm or with light mechanical equipment (each layer up to 30 cm) in open areas to at least 90% of the Proctor compaction test and for inspection chambers located in a carriageway or road shoulder backfill should meet the requirements specified for compaction index resulting from the installation depth, road construction type (cutting, embankment) or traffic intensity category.

The manhole cover should be secured against shifting by means of anchoring or concreting.

### Manhole tops

Location of a DIAMIR 1000 manhole and expected load caused by traffic are the basis for selection of riser and telescope pipe stiffness and a choice of cast iron covers.

Depending on the chamber location within a ROW and a traffic intensity category, different manhole/gully tops are used, also construction requirements and top type which are classified into the following groups may differ.

Group 1 - Class A15 - green areas intended solely for pedestrians and pedal cyclists

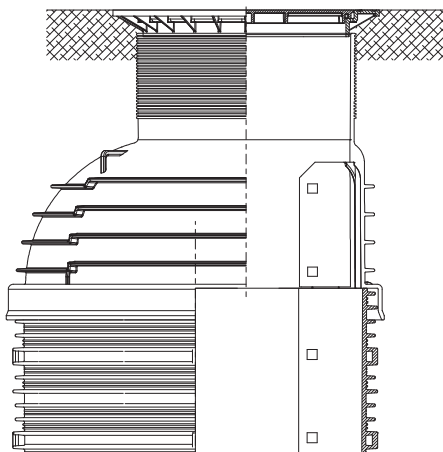
Group 2 - Class B125 - Roads and areas for pedestrians, and comparable areas, parking lots or places where cars are parked

Group 3 - Class C250 - Applies solely do sewer gully tops installed in the area of kerbside channels of roads and road shoulders

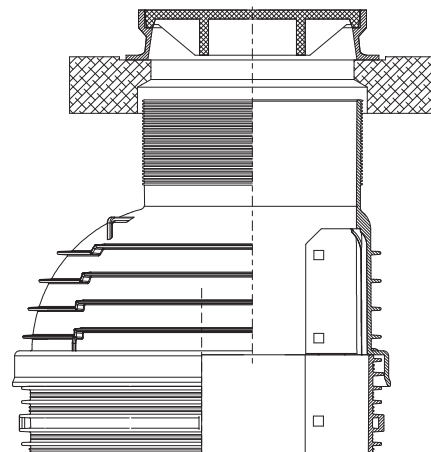
Group 4 - Class D400 - Carriageways of roads (including pedestrian streets) hard shoulders, and parking areas for all types of road vehicles

There are different rules of the manhole/gully top support depending on their type and class, and soil conditions. A manhole/gully top should sit on a reinforced concrete slab which is supported by an appropriately constructed load bearing structure adapted to loads caused by traffic. That may be reinforced bedding made of well compacted soil or a precast load-relieving slab made of reinforced concrete. For very heavy load caused by traffic or doubts about compaction of soil constituting the top base, a slab should be based on B30 concrete ring of minimum height of 20 cm cast on a building site

PP chamber cover DN 600



Cast iron cover DN 600



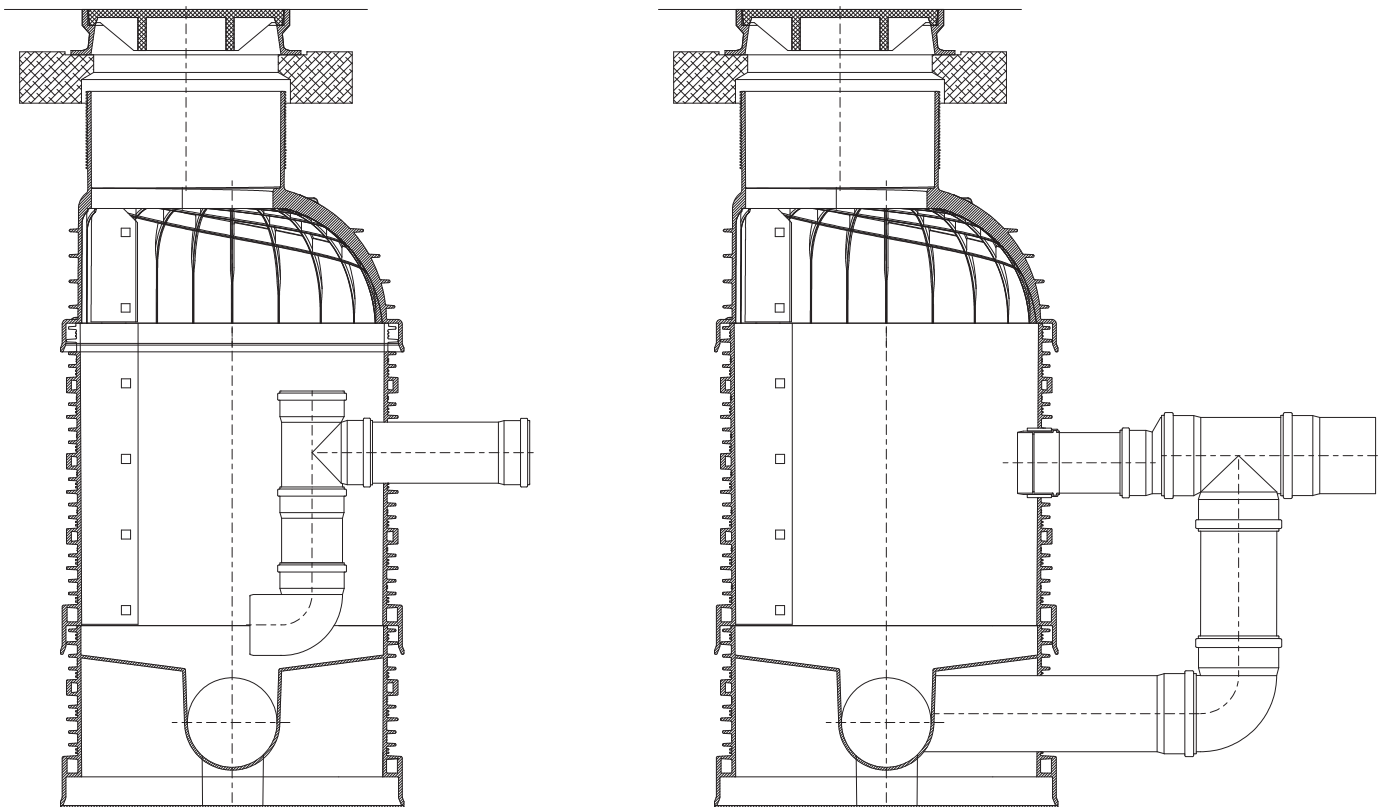
### Backdrop manholes

Sometimes it is necessary to connect a channel to a manhole above a base unit.

Then, a so called backdrop manhole is constructed. According to standard PN-B-10729 "backdrop manholes in channels of diameters up to 0,40 m and drop height from 0,5 - 4,0 m may be constructed with a backdrop pipe placed inside or outside of a manhole. In a non-entry inspection chamber a drop pipe may be not installed.

That means that for non-entry inspection chambers, if a channel diameter does not exceed 160 mm, connection may be made through a hole in a riser pipe.

Appropriate in-situ gaskets are installed in the hole. If a channel is a K2-Kan structured pipe, a special fitting (adapter to a PVC socket) should be inserted into the in-situ gasket. A backdrop pipe is not used. However, if a channel diameter exceeds 200 mm, a backdrop pipe has to be used and it should be connected to a chamber base unit. A T-branch connection is fitted to the channel. One of T-connections is connected to the backdrop pipe and the second (after diameter reduction to 60 mm) is connected to a riser pipe (hole with an in-situ gasket).





### Special manhole/inspection chambers **DIAMIR**

Sewer manholes/inspection chambers **DIAMIR** may be manufactured of polypropylene (PP), polyethylene (PE) or vinyl polychloride (PVC-U) on individual requests. Intended for construction of gravitational sewerage systems (sanitary, stormwater, combined sewage, industrial) and installation systems (water meters, fixtures, pump stations).

Variants on special manhole solutions

- sewerage flow-through and angular flow-through manhole/inspection chambers
- collecting sewerage wells;
- catch basins;
- discharge manholes, reducing sewer energy;
- chambers for installation systems (water meters, fixtures, etc.);
- underground reservoirs;

Ranges of manhole/chamber riser diameters:

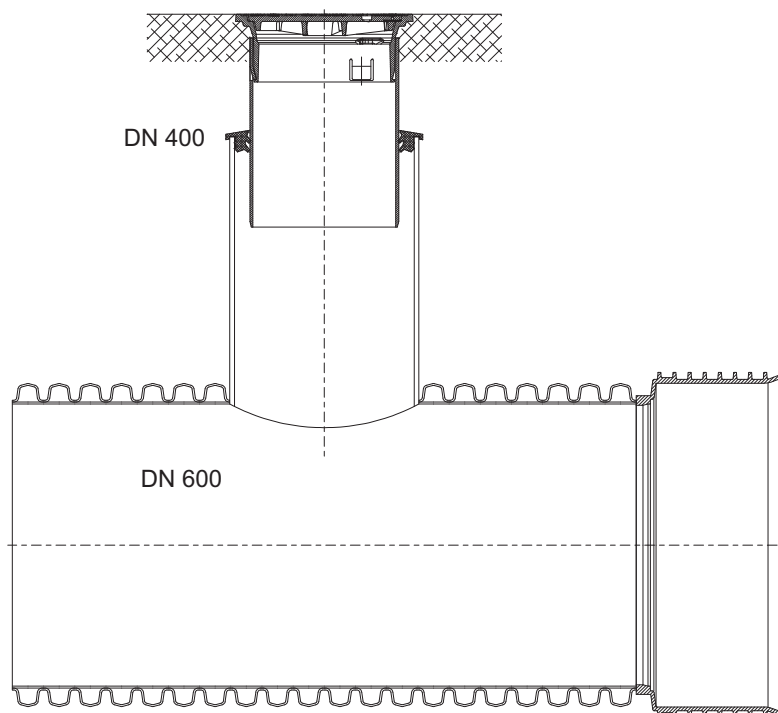
- of double-layer corrugated pipes from DN/ID300 to DN/ID 1000
- of single-layer corrugated pipes DN/ID425, DN/ID600
- of single-layer, plain-wall pipes DN/OD400

Ranges of diameters of connection sockets:

- plain-wall pipes from DN/OD110 DN/OD500
- K2 sewer pipes from DN/OD160 DN/OD1000

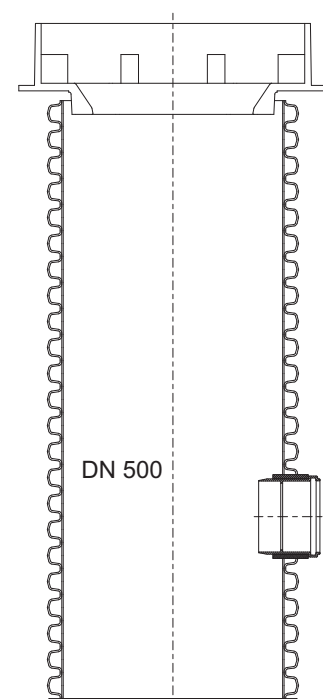
### Flow-through manhole **DIAMIR 400**

- different options available: flow-through, angular flow-through, collecting;
- channel diameter up to DN 1000;
- flare or flareless stub pipes;



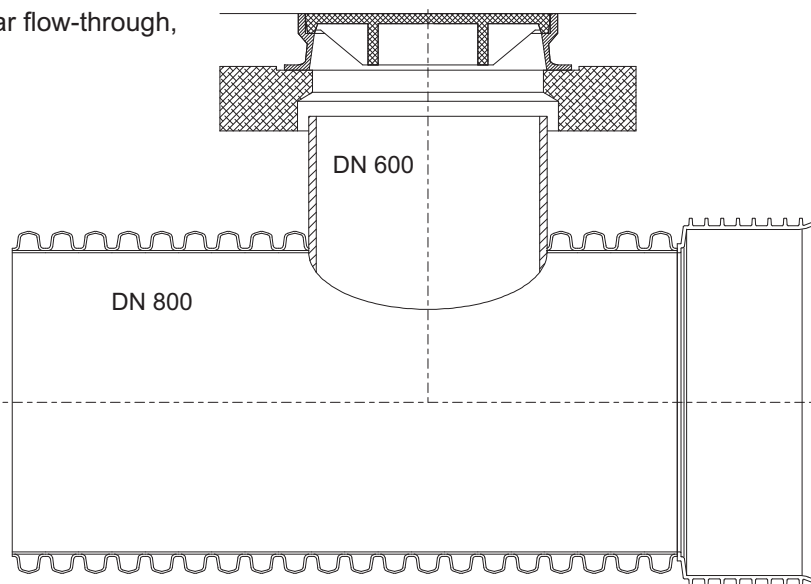
### Catch basin with a sump **500**

- riser diameter up to DN 1000;
- outlet diameter DN 110 - DN 200 (in-situ gasket);
- flare or flareless stub pipes;



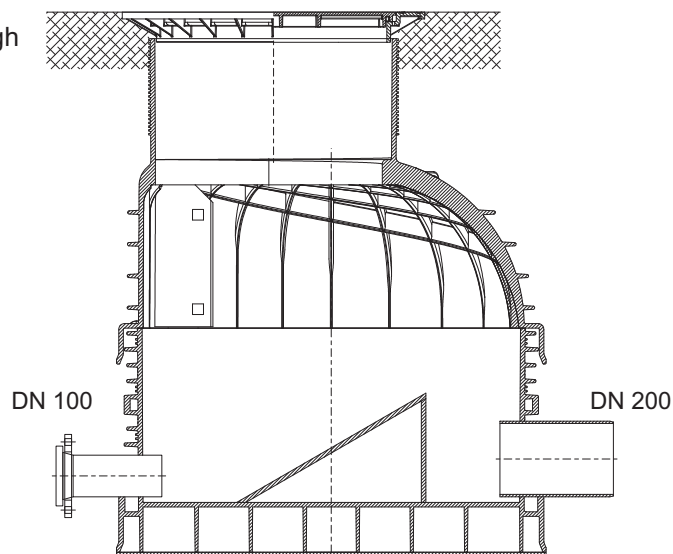
### Flow-through manhole DIAMIR 600

- different options available: flow-through, angular flow-through, collecting
- channel diameter up to DN1000;
- flare or flareless stub pipes;

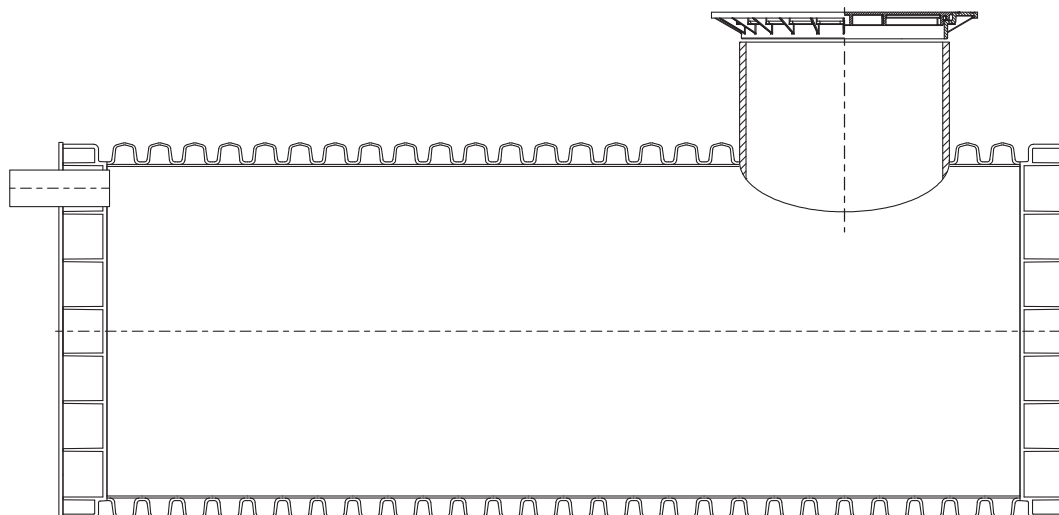


### Discharge manhole DIAMIR 1000

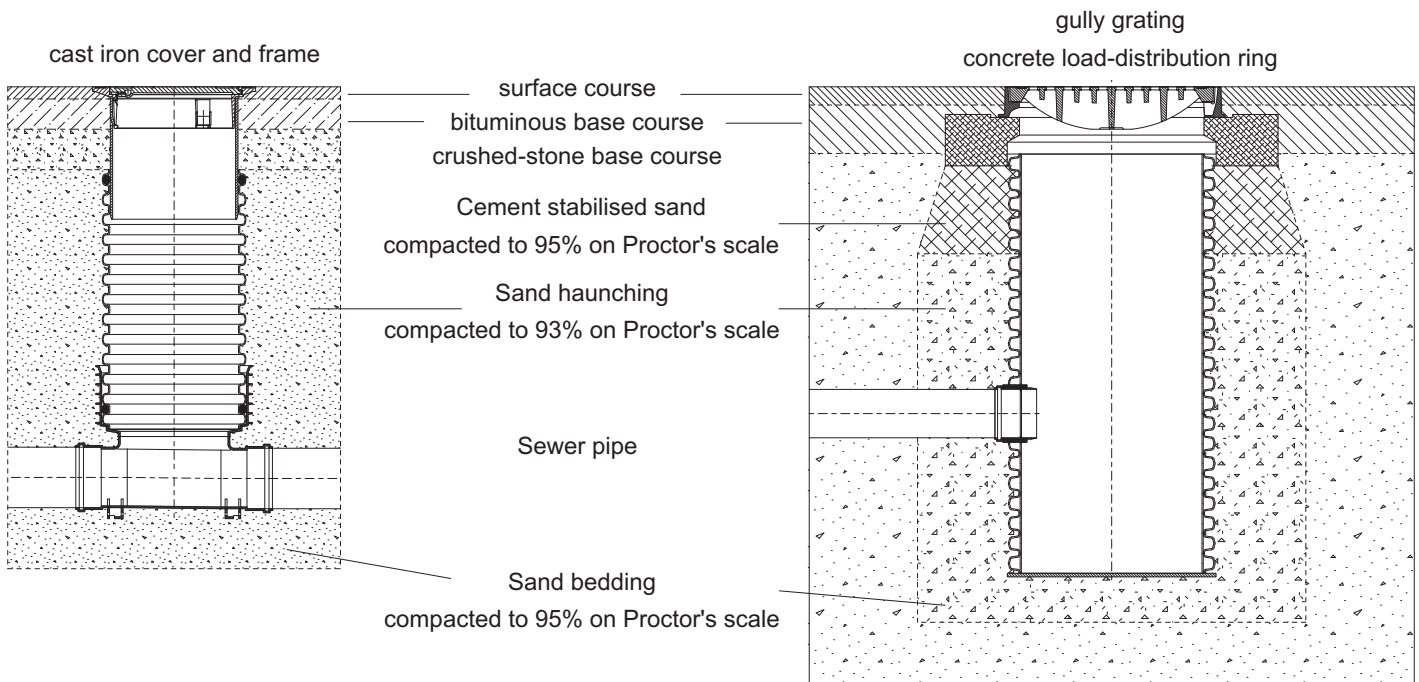
- different options available: flow-through, angular flow-through
- flareless or flange inlet stub pipe
- flare or flareless outlet stub pipes;



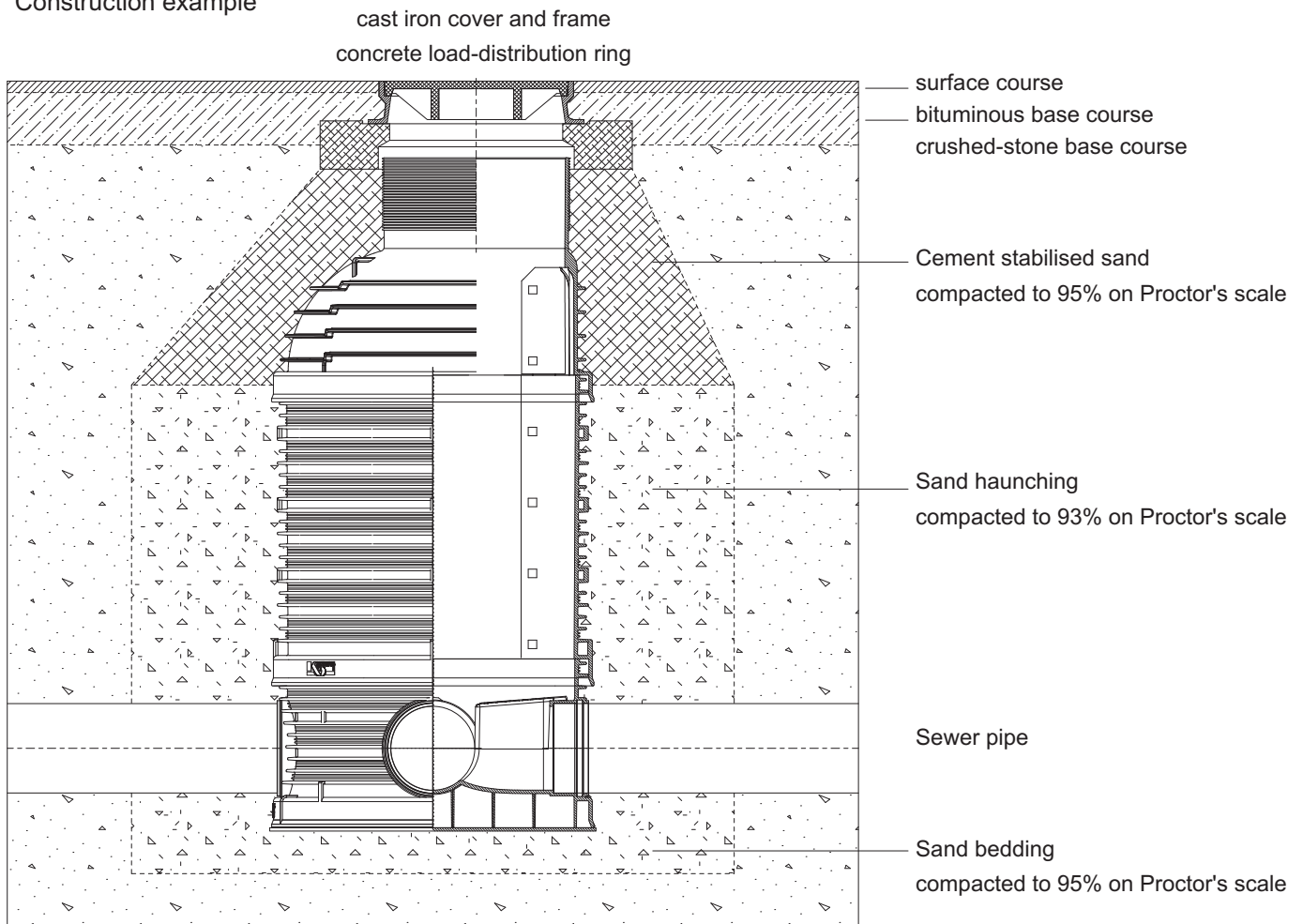
### Horizontal tank



**DIAMIR manhole**  
Construction example



**DIAMIR 1000 manhole**  
Construction example



**Contact details:**

Company / contractor:

Building site:

tel.:

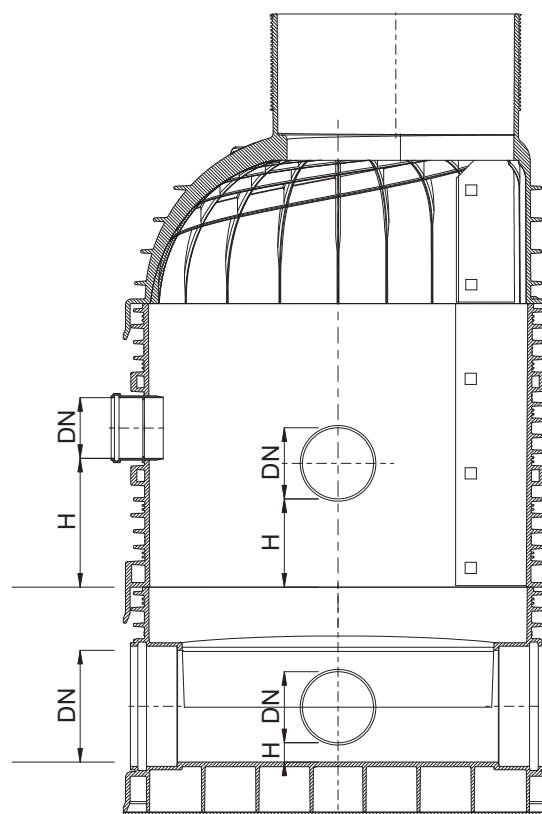
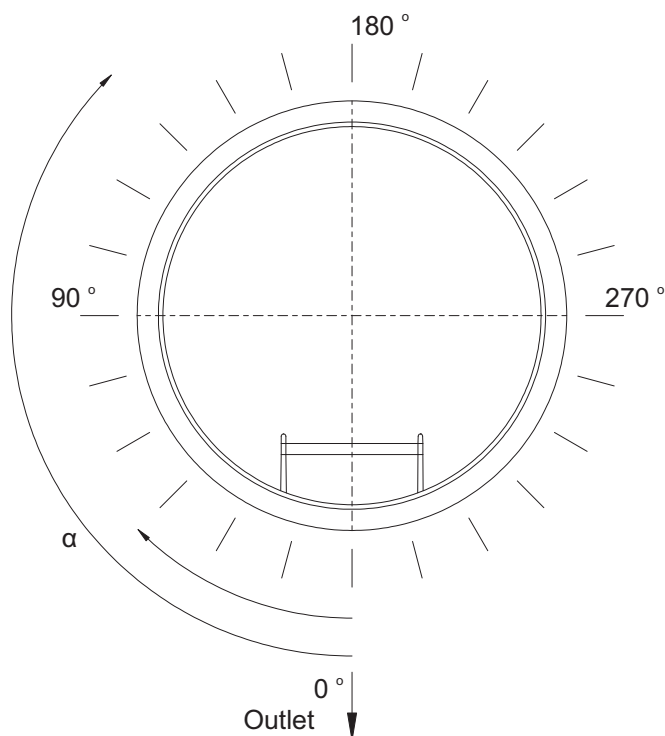
fax:

mobile:

delivery date:

**Flow-through base unit 1000**

with additional inlets



- Flow-through base unit DIAMIR 1000 with additional inlets
- Blind base unit DIAMIR 1000 with additional inlets
- Ring DIAMIR 1000 with additional inlets
- H500
- H500
- H1000
- H750
- H1000

| No.     | DN   | $\alpha$ | H    | Inlet/Outlet slope (standard 0%) |
|---------|------|----------|------|----------------------------------|
| -       | [mm] | [mm]     | [mm] | %                                |
| Outlet  |      | 0°       |      |                                  |
| Inlet 1 |      |          |      |                                  |
| Inlet 2 |      |          |      |                                  |
| Inlet 3 |      |          |      |                                  |
| Inlet 4 |      |          |      |                                  |

**Notes:**

- Distances are measured from the blind base unit invert or from the lowest point of a ring
- available diameters of sewerage plain-wall stump pipes 110; 160; 200; 250; 315; 400; 500
- available diameters of K2-Kan sewerage plain-wall stump pipes 160; 200; 250; 300; 400; 500







## RELIABLE POLISH SYSTEMS



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