# BIRCOdicht | Installation Instructions

A number of details must be observed when installing BIRCOdicht. For a comprehensive description please read here.

To guarantee smooth operation, the following general valid installation instructions must be observed:

1. Prior to installation, the correct load class in accordance with DIN EN 1433 must be selected.

2. Thanks to the high level of stability, laying the BIRCOdicht channels is conducted on an earth-moist C 25/30 strip of foundation concrete at least 20 cm high which must be tapered in a conical shape on both sides. No encasing or reinforcement on the sides is generally required. Begin laying the channel line following the outfall with the highest channel at the drain and form the channel line with the next-smallest number.

3. All adjoining pavement surfaces should **permanently run approximately 3 - 5 mm higher than the upper edge of the channel.** Because there is no concrete encasing, the surface pavement can run right up to the channel without any problems.

4. For installation in concrete surfaces or reinforced concrete constructions, running joints must be provided on both sides to compensate horizontal forces that emerge. These joints should be planned at an interval of some 0.2 to 0.5 metres from the channel. Joints running diagonally to the channel line in the adjacent concrete surfaces (in-situ concrete) must be arranged so that they run through a channel end.

5. Proceed analogously when installing the outfall unit.

6. Local particularities can require special installation methods that have to be examined and taken into account by the planner(s). The installation must comply with the latest regulations and guidelines such as ZTVT, ZTV concrete, ZTV bit and RStO.

The following particularities must also be observed:

+ **Moving the channels and PE welding of the channel ends and connection lines must be conducted by an authorised specialist company in accordance with Regulation on facilities for handling water-hazardous substances §3..**

+ The PEHD lining must be protected from mechanical damages and open flame.

+ The BIRCOdicht channels may only be positioned or transported with the assistance of the moving equipment designed for this purpose (bloating guard).

+ Requirements regarding verification and maintenance must be fulfilled in accordance with the official building authority approval (see Page 131).

## General maintenance instructions

+ The nuts of the stud bolts must be inspected on a regular basis.
+ The movable/mechanical components of the shut-off gully must be inspected on a regular basis in regard to functionality.
+ Following an accident, the system components must be thoroughly cleaned and examined regarding their suitability for further use.

# Installation instructions in accordance with DIBt certification

**Installation instructions for traffic areas where substances accrue that are hazardous to water. Fuel depots | Extinguishing water collection points | Chemical companies | Storage, filling and transferring facilities for water-hazardous substances**

## General information

1. The installation of BIRCOdicht may in Germany only be conducted by companies that specialise in such activities in accordance with regulation on facilities for handling water-hazardous substances §3. These companies, including their personnel, must have been trained to do such work by an authorised institution. Special national requirements must be verified locally.

2. BIRCO has prepared installation and processing instructions for the correct installation of BIRCOdicht.

3. The installation requirements stipulated in the general DIBt certification or the installation requirements provided by BIRCO must be complied with.

4. The pre-fabricated parts are to be used together with the channels covers. System components may not be exchanged. Installation is to be conducted in accordance with the BIRCO installation and processing instructions.

5. The company conducting the installation work must supply the operator of the facility with a copy of the general DIBt or applicable water legislation authority certification.

## Installation

1. The pre-fabricated parts must be fitted with all fixtures and connection equipment. Individual parts may not be exchanged.

2. Prior to laying the pre-fabricated parts, the suitability of the substratum in accordance with the applicable provisions must be established.

3. The pre-fabricated parts must be laid flush onto the concrete base layer.

4. Damaged pre-fabricated parts may not be used.

5. The installation of BIRCOdicht may only be conducted by companies that specialise in such activities in accordance with eegulation on facilities for handling water-hazardous substances §3.). These companies, including their personnel, must have been trained to do such work by an authorised institution. Welding of the pre-fabricated parts at the construction site may only be conducted by persons possessing a valid certificate verifying that they have passed the official plastics welding examination in accordance with DVS 2212-1.

6. The welding work (hot gas welding by extrusion of filler material) is to be conducted in accordance with DVS 2227-1.

7. Joints between the pre-fabricated parts and the adjoining sealing surfaces are to be jointed with the joint sealiing system:

+ “MASTERFLEX 700 WW gun grade”
+ “MASTERFLEX 700 FR gun grade”
+ or another system certified for this purpose by an official building authority verification of applicability that takes the official construction and water-related legal requirements into account. The joint sealant system that is used must additionally be certified by an official building authority verification of applicability that takes the official construction and water-related legal requirements into account.

## Inspection of the execution of the work

1. The structure of the concrete encasing in accordance with BIRCO’s stipulations must be examined in regard to the local legal requirements and supplemented if necessary.

2. Sufficient sealing of the substratum is to be verified prior to laying the pre-fabricated parts.

3. Inspection of the welding seams and official logging of such seam inspection is to be conducted in accordance with DVS 2227-1.

4. Inspection of the execution of the joint sealing system is to be conducted in accordance with the requirements of the respective general building authority certification of the joint sealing system.

5. When laying pre-fabricated parts, drawings verifying the correct assembly are to be prepared by the construction supervisor or his/her representative.

6. These drawings must be present at the building site during construction and must be presented to the construction supervisory authorities upon demand. The drawings and the delivery notes must be kept and maintained by the company for a minimum of 5 years following completion of the work.

Continued on the next page

## Conditions for usage, servicing, maintenance

1. Express reference is made here to the necessity for the constant monitoring by the operator of a facility for storing, filling and transferring liquids hazardous to water of the seal or functionality of the pre-fabricated parts in accordance with Regulation on facilities for handling water-hazardous substances §1.

2. Larger quantities of drops accruing during filling or the transfer of liquids hazardous to water must be removed immediately. BIRCOdicht must be cleaned of soiling or the accumulation of mixtures of impurities and liquids that are hazardous to water. Cleaning of BIRCOdicht also includes cleaning of the outfalls and/or silt bucket.

3. It must be ensured that in the event of damages, leaked liquids are removed as quickly as possible according to the following stipulations in accordance with TRwS "Ausführung von Dichtflachen" ('Execution of Sealed Surfaces'): in applications corresponding with the stress stage "High" such liquids must be removed within 8 hours; in applications with the stress stage "Medium" such liquids must be removed within 72 hours; in applications with the stress stage "Low" such liquids must be removed within 3 months.

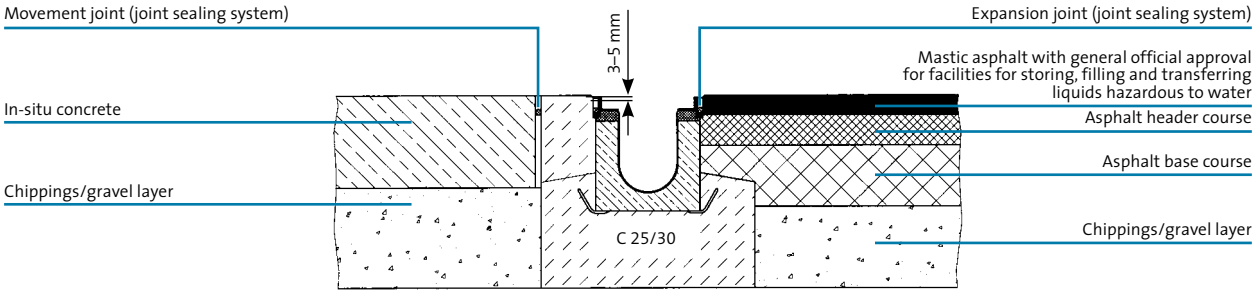
4. The operator of the facility is obligated to appoint only such companies to conduct maintenance, repair and cleaning of the pre-fabricated parts as are specialist businesses as defined by regulation on facilities for handling water-hazardous substances §3 and which are referred for such work by the manufacturer, unless the required work is exempted from this obligation in accordance with applicable state legislative provisions.

5. The operator of the facility must arrange to have inspections conducted by water legislation experts in accordance with applicable state legislative provisions (start-up inspection, regular inspections).

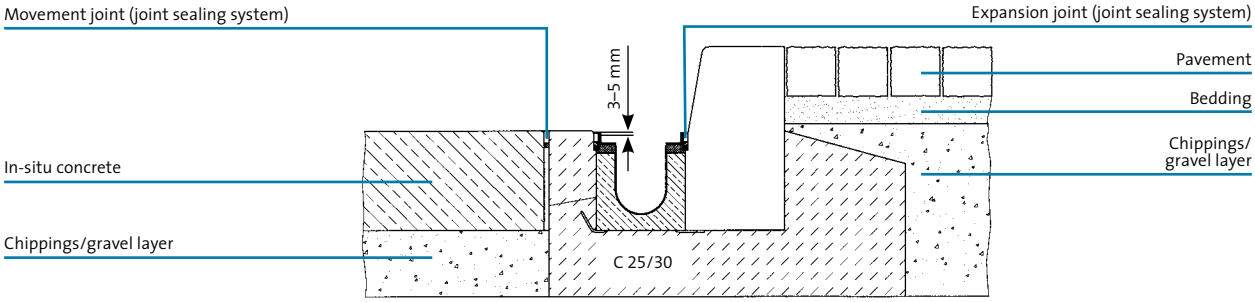
# BIRCOdicht – Installation examples

**Installation instructions for traffic areas subjected to heavy wheel loads.**
**Petrol stations | Acid-protection construction | Filling facilities**

## Class A 15 to E 600, Type M, NW 150 – 300




## Class A 15 to E 600, Type M, NW 150 – 300

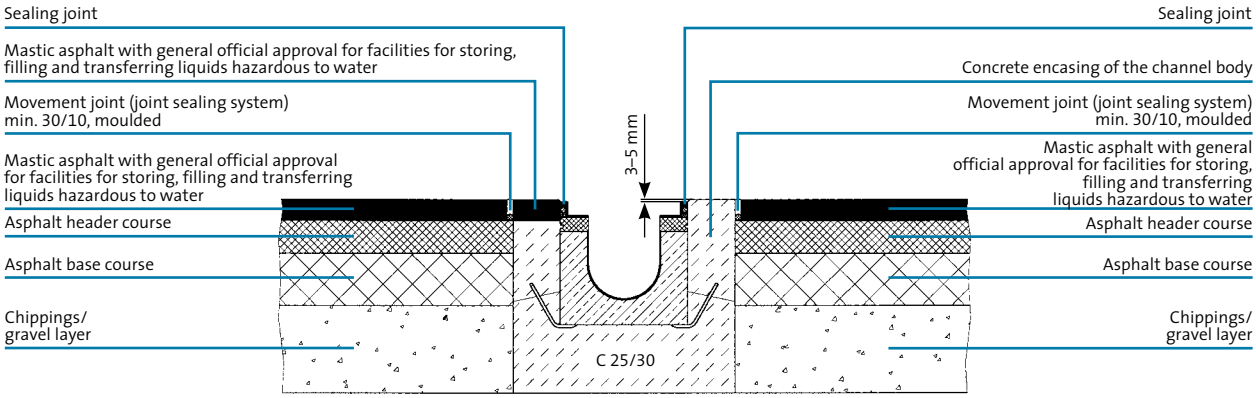



All installation examples are composed on the basis of non-settling, frost-proof substrata in accordance with the German Pavement Design Guidelines (RStO). .For the installation dimensions see Page 134
Exception starting with D 400: not for installation diagonally to the road for motorways and expressways

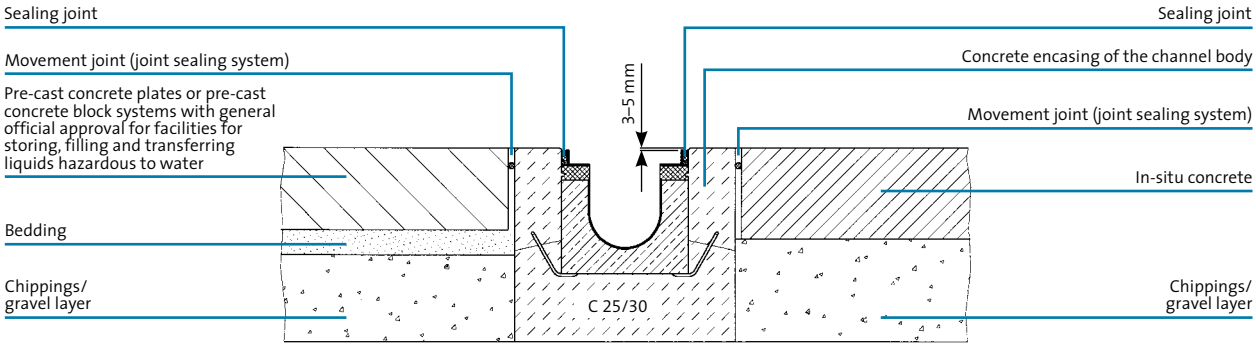
# BIRCOdicht – Installation examples

**Expanded installation instructions for heavy-duty transport areas with frequent traffic. Logistics centres | Transport hubs | Vehicle manœvering | Aircraft pavements**

## Class D 400 to F 900, Type M, NW 150 – 300




## Class D 400 to F 900, Type M, NW 150 – 300




**The channels may not be exposed to any thermal or mechanical loads from the adjacent surface pavements.**

The dimensions of the concrete surround must be adapted to the circumstances on-site and must consist of at least 15 cm. If no bond can be created between the base and the concrete surround, then dowel bars or flotation contols made of Ø 8 mm reinforced bars are to be installed every 30 cm. The concrete qualities indicated are minimum values. Requirements related to the installation location according to DIN 1045-2 or DIN EN 206-1 regarding for instance resistance to frost and de-icing salt are to be taken into account in the choice of the concrete.

**Bolting instructions:**
Torque moments for screwing on the gratings are to be set at M12 = 60 Nm, M16 = 100 Nm. **The bolts on the gratings must be retightened at regular intervals.**

The BIRCOdicht base channels may only be positioned or transported with the assistance of the moving equipment designed for this purpose (bloating guard).

All installation examples are composed on the basis of non-settling, frost-proof substrata in accordance with the German Pavement Design Guidelines (RStO). .For the installation dimensions see Page 134
Exception starting with D 400: not for installation diagonally to the road for motorways and expressways

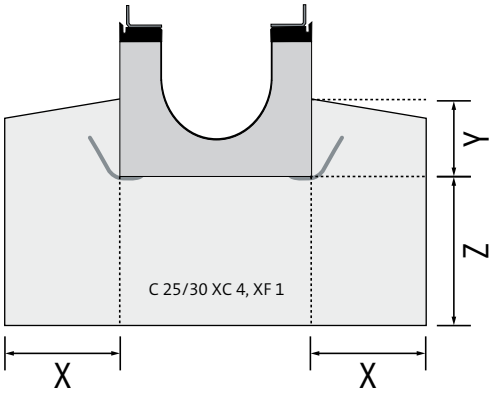
# BIRCOdicht overview

**The manufacturer's installation instructions must be followed in order to comply with the requirements stipulated by DIN EN 1433. The requirements according to the official certification by DIBt apply in regard to installation, verification and maintenance.**

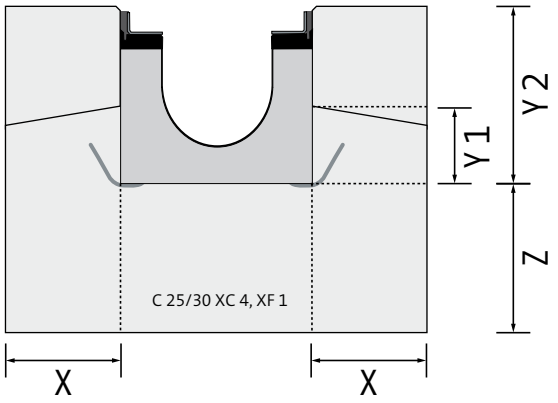
**BIRCOdicht**

| Nominal width | Type | Load class | X | Y/Y 1 | Y 2 | Z | Page |
|---|---|---|---|---|---|---|---|
| BIRCOdicht 150 | M | A 15 – E 600 | ≥ 150 | ≥ 100 | – | ≥ 200 | 132 |
| BIRCOdicht 150 | M | D 400 – F 900 | ≥ 150 | ≥ 100 | Construction height + 5 mm | ≥ 200 | 133 |
| BIRCOdicht 200 | M | A 15 – E 600 | ≥ 150 | ≥ 100 | – | ≥ 200 | 132 |
| BIRCOdicht 200 | M | D 400 – F 900 | ≥ 150 | ≥ 100 | Construction height + 5 mm | ≥ 200 | 133 |
| BIRCOdicht 300 | M | A 15 – E 600 | ≥ 200 | ≥ 200 | – | ≥ 200 | 132 |
| BIRCOdicht 300 | M | D 400 – F 900 | ≥ 200 | ≥ 200 | Construction height + 5 mm | ≥ 200 | 133 |

## Schematic structure




Installation without concrete encasing on the sides




Installation with concrete encasing on the sides