

Installation instructions

The installation of the channel systems must be conducted from on the basis of engineering considerations. Construction documentation must be prepared. The design of any facilities for storing, filling and transferring liquids hazardous to water must take the respectively applicable water legislation provisions governing drainage and the control of precipitation water into account. The requirements from other legal sectors (e.g., work safety, hazardous materials legislation, the German Ordinance on Industrial Safety and Health) remain unaffected and in full effect. The subgrade has to be compacted to an $EV_2 > 45 \text{ MN/m}^2$, if the concrete base has an overlap of $> 50 \text{ cm}$ from channels end. Otherwise, it has to be compacted to an EV_2 of $> 180 \text{ MN/m}^2$, or it must be ensured that in case of heavy trucks circulation an overlap of $> 50 \text{ cm}$ from channels end is guaranteed

The dimensioning of the concrete surrounding (X + Z) must be adapted to local site conditions and equals at least 20 cm. In cases where the connection between subgrade and lateral concrete surrounding of the channel is avoided by for example by expansion joints, then dowel bars made of $\varnothing 8 \text{ mm}$ reinforced steel have to be installed every 30 cm.

The concrete grades indicated are minimum values. Requirements related to the location of installation, such as resistance to freeze-thaw with de-icing salts, must be taken into account by choosing the appropriate concrete grade in accordance with local restrictions respectively.

With complete concrete surrounded channels system, BIRCO recommends a fully sealing of the channel joints, so as to prevent damage through freeze – thaw conditions (see jointing information!)

It must be ensured that installation is performed expertly, taking into account concrete technology aspects.

All adjoining pavement surfaces must run permanently at a level of approximately 3 to 5 mm higher than the upper edge of the channel. In order to achieve this, we recommend laying the first two to three rows of block paving or paving slabs in a mortar bed. Because there is no concrete encasing, the surfacing can run right up to the channel. In the case of block paving or paving slabs being used as the adjoining surfacing, a durable sealing joint of some 10 mm must be established between the channel and the surfacing. The joints between the first two to three rows of the block paving or paving slabs must be sealed durably in a tight and impermeable manner. It must be ensured that horizontal forces, which may result from the expansion or shifting of the pavement, have no impact on the two to three rows of pavement set in the mortar bed.

[*] The concrete surrounding have to be poured and executed free of cracks, if it is part of the visible/circulable surface. The conformity of the watertightness has to be verified according to the local specifications.

Qualified company duty

The laying and sealing work must be conducted by an authorised and schooled company specialising in such work (in accordance with regulation on facilities for handling water-hazardous substances). In addition to these installation instructions, also observe the technical details (jointing) and the usage instructions on the BIRCOPrimer and BIRCOplast containers.

Jointing information:

In accordance with construction technical approval (Z-74.4-34), the channels joints have to be sealed. Sealing and expansion joints have to be conducted according to local valid specifications. The joints between pre-fabricated parts of the channel systems and between pre-fabricated parts and the surfaces to be sealed must be grouted using a joint sealing system that has general official certification or which is technically certified in Europe for the intended purpose. For processing, please observe the instructions on the sealing system packaging, respectively the provided jointing instructions of the sealing system.

Sealing and expansion joints:

Expansion joints in the construction parts adjoining the channel must be planned on the basis of engineering considerations. BIRCO recommends arranging expansion joints parallel to the channel, at a distance of approximately 1m – 2m from the channel line. Expansion joints running transverse to the channel line must be arranged so that they run through a channel joint. We recommend arranging them every 8 to 12 metres (in accordance with DIN 18318, valid edition). The expansion joints (e.g. PE foam sheets) must cover the total cross-sectional area of the channel, as well as the full area of the concrete base and the lateral concrete encasing.

Bolt Connection Information:

For screw fastening of the gratings, torque moments are to be set at M12 = 60 Nm, M16 = 100 Nm. The bolts must be re-tightened at regular intervals.

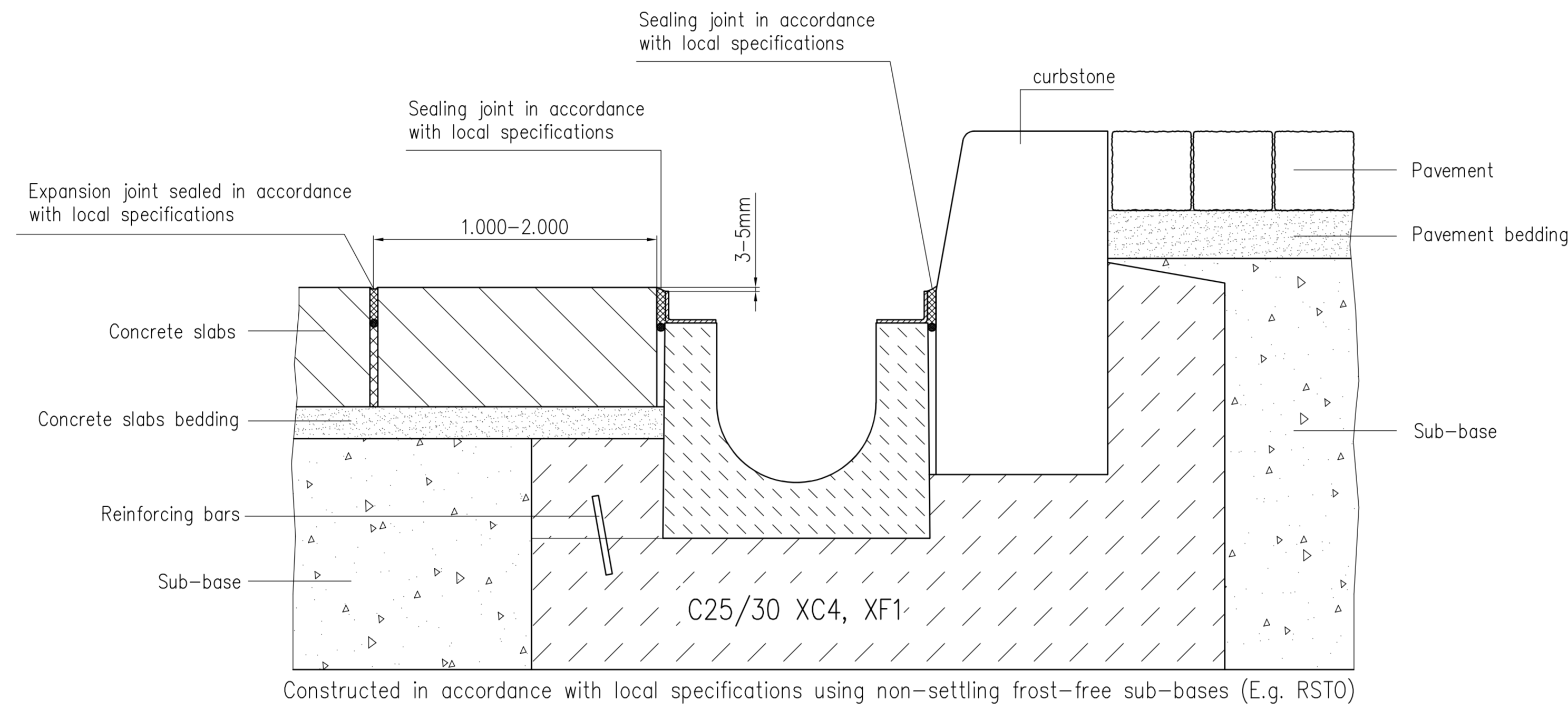
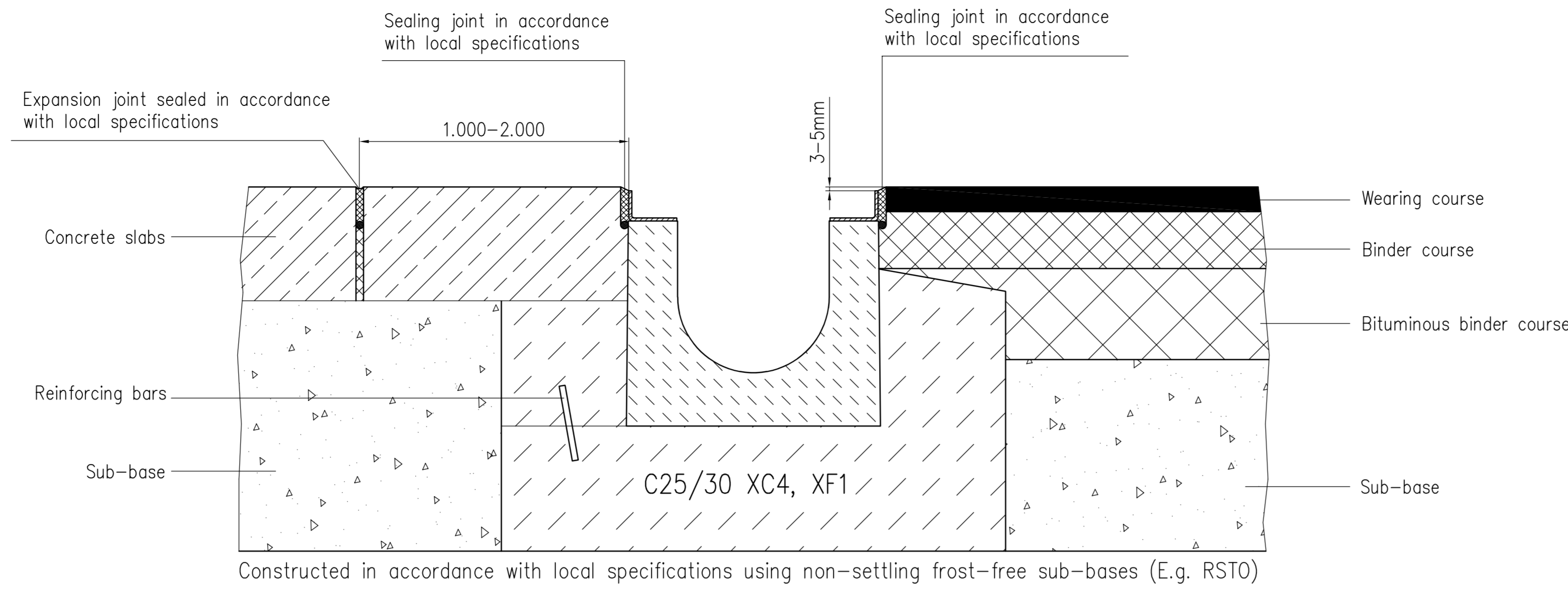
Additional regulations and guidelines

Local particularities have to be examined and taken into account by the planner. Installation must comply with the latest international/local regulations and guidelines .

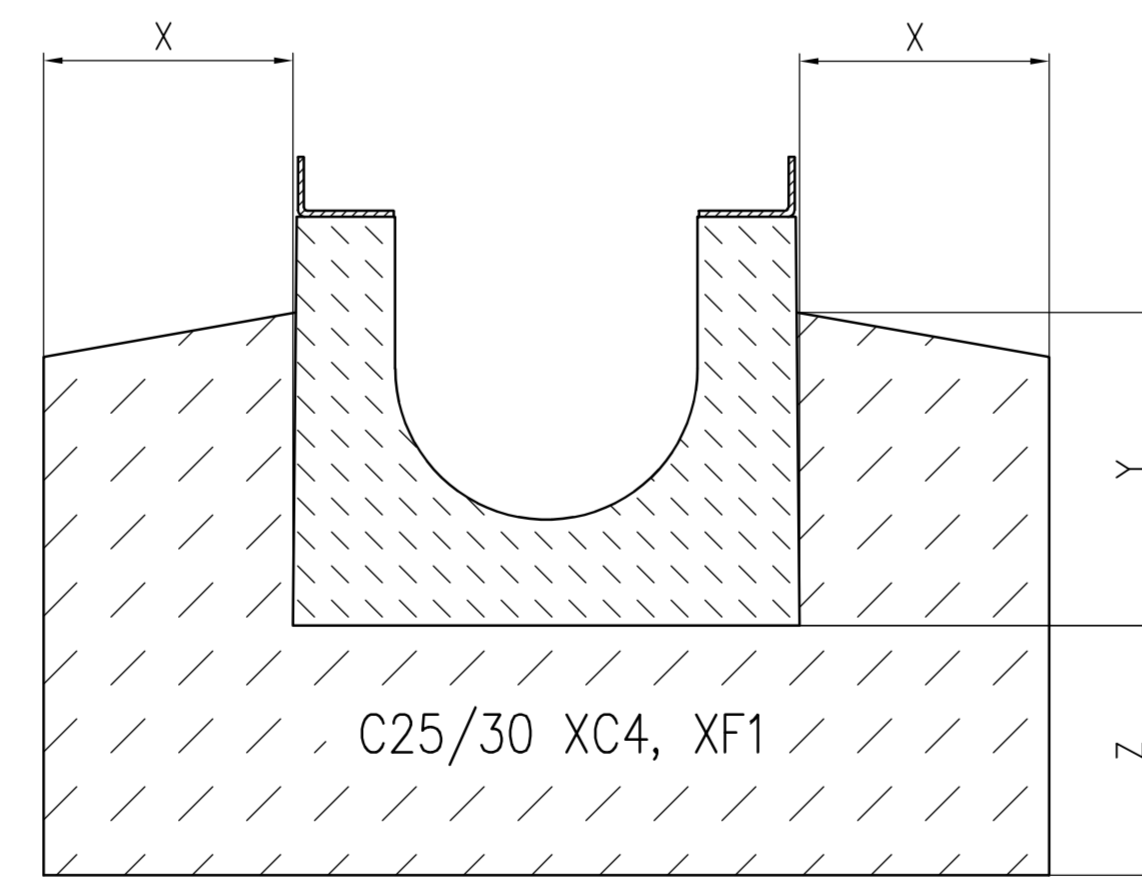
+ The correct load class in accordance with DIN EN 1433 "Drainage channels for vehicular and pedestrian areas" has to be respected.

[+] Exception D 400: not for installation across the roadway in highway and expressways

BIRCOprotect NW 100 / 150 / 200, Type M – load class A15 – E600 [+]



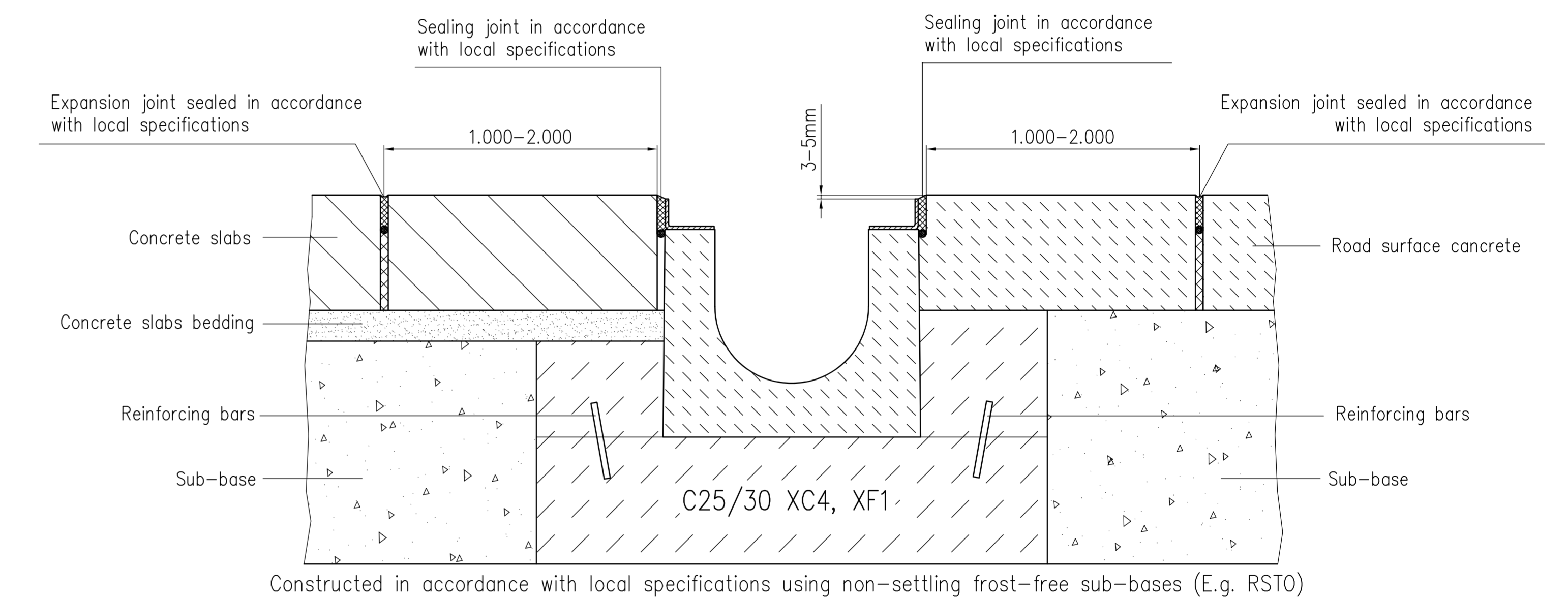
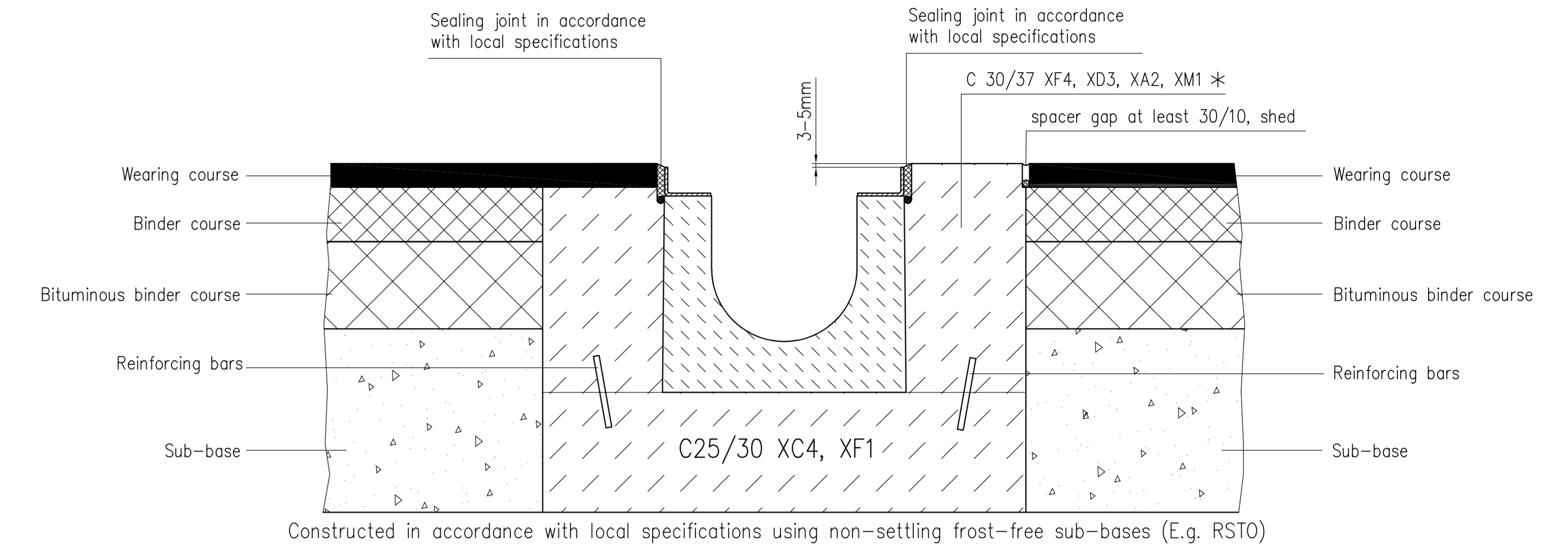
Standard representation (dimensions to be adjusted according the corresponding load class)



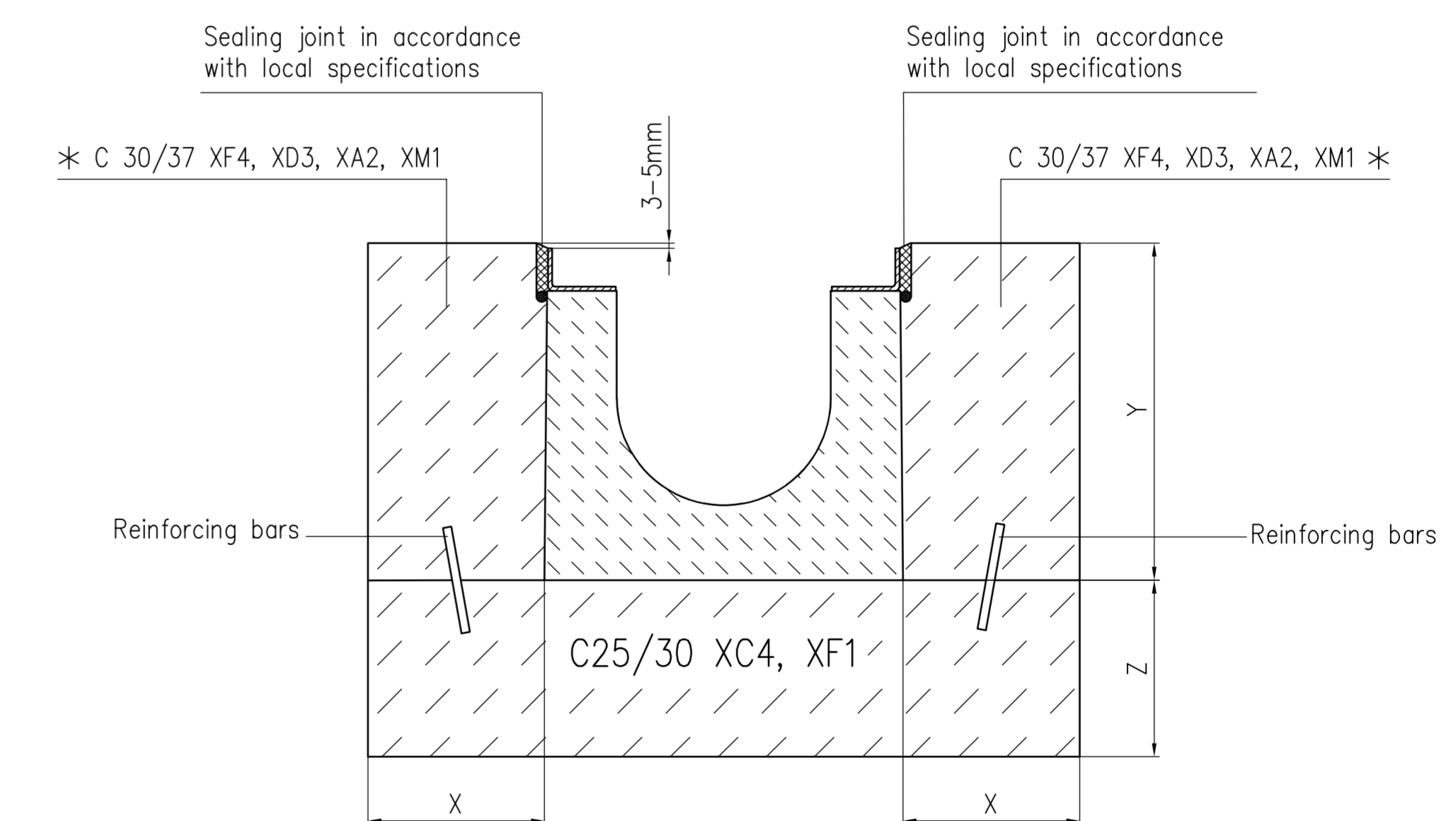
Type	nominal width	Load class	X [mm]	Y [mm]	Z [mm]
BIRCOprotect	100	A 15 – E 600	≥150	≥100	≥200
	150		≥150	≥100	≥200
	200		≥150	≥100	≥200

BIRCOprotect NW 100 / 150 / 200, Type M – load class D400 – F900 [+]

expanded installation instructions for heavy-duty areas subjected to frequent use logistics centers, Transport hubs, maneuvering areas and aircraft pavements



Standard representation (dimensions to be adjusted according the corresponding load class)



Type	nominal width	Load class	X [mm]	Y [mm]	Z [mm]
BIRCOprotect	100	D 400 – F 900	≥150	channel height + 5mm	≥200
	150		≥150		≥200
	200		≥150		≥200

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gen. des/In	Date	Nom	Artikel-Nr. / N° d'article :
02.03.2022	02.03.2022	is	Installation instructions Type M
Maßstab / Echelle :			BIRCOprotect NW 100/150/200 – up to load class F 900
1:5			
CAD: A. D.			
Zeichn. Nr. : j:\ACAD\Einbau\protect\24564a_EN			
Nr. plan :			