

SIDE/LONGITUDINAL EXPANSION JOINTS



To ensure problem-free functionality, correctly installed side expansion joints must be ensured. Missing or incorrect expansion joints would lead to serious damage of the drains caused by thermal expansion of the surrounding structures and the drains themselves.



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Such damage is manifested by cracks on the top surface of the drains as shown in the images below.

EXPANSION JOINTS MUST BE PROVIDED BOTH BETWEEN INDIVIDUAL DRAIN SEGMENTS AND ALONG THEIR SIDES.

Immediately after the drain segments are installed, an expansion insert is glued to the side using industrial glue. The insert must cover the entire height of the segments. The thickness of the expansion insert depends on type of application and should be clearly indicated in technical documentation.



The insert shall be made of elastic, compressible and stable material (i.e. hardboard dipped in asphalt, EPS 70 polystyrene, etc.) and shall be protected against mechanical damage during installation and compacting of the surrounding structures.

Never use XPS/ extruded polystyrene as expansion insert!

Install individual insert elements next to each other without open gaps.

Gaps shall also be covered with adhesive tape to prevent water from surrounding concrete penetrating into the insert and degrading its functionality.

Expansion inserts next to areas which will be compacted shall be protected against a deformation, compression, or puncture by metal sheeting (minimum thickness 0.7 mm), installed to approximately 20 mm above the level of the compacted layer. This ensures local loads are distributed evenly and prevents the expansion insert from being damaged.



Correctly installed expansion joints prevent the slot drain system from being damaged by thermal changes in the surrounding structures.



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THE EXPANSION JOINT INSERT SHALL BE MADE OF ELASTIC, COMPRESSIBLE AND STABLE MATERIAL (i.e. hardboard dipped in asphalt, EPS 70 polystyrene, etc.). Expansion inserts next to areas which will be compacted shall be protected by metal sheeting (minimum thickness 0.7mm), installed to approximately 20mm above the level of the compacted layer.



Hardboard - a soft fibreboard



EPS polystyrene

Expansion joints on the side of slot drains shall be provided any time the surrounding structures contain cemented layers (such as concrete surface, base concrete layers, stabilising concrete, etc.)

Stabilising concrete is often used under asphalt finishing surface. This concrete layer is heated by the sun, expands and exerts a significant side force on the slot drain next to it. In the absence of a correctly installed expansion joint, this would cause serious damage to the drain segments.

The only reasons for not using a side expansion joint are when the slot drains are covered by earth on one side, or when the surrounding road is made exclusively of non-solid materials (all layers, i.e. gravel base and asphalt finish). In such cases, the sides of the segments should be coated with a single layer of special paint (N 1V; EKM, as per ČSN 73 6129). Correct expansion joint procedure is shown on the following drawing.



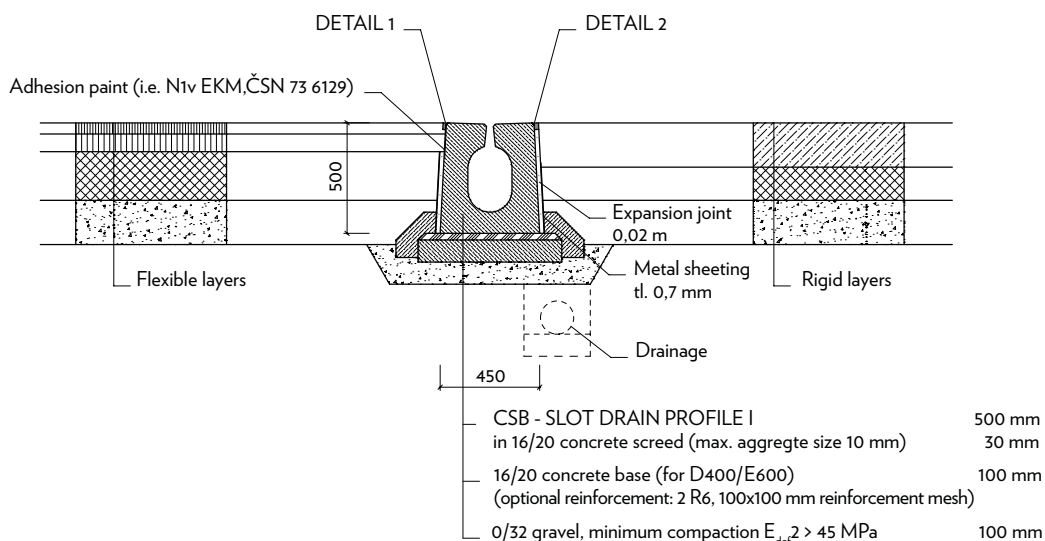


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EXPANSION JOINT MAY ONLY BE OMITTED WHEN SURROUNDING STRUCTURES CONSIST OF UNCONSOLIDATED LAYERS!

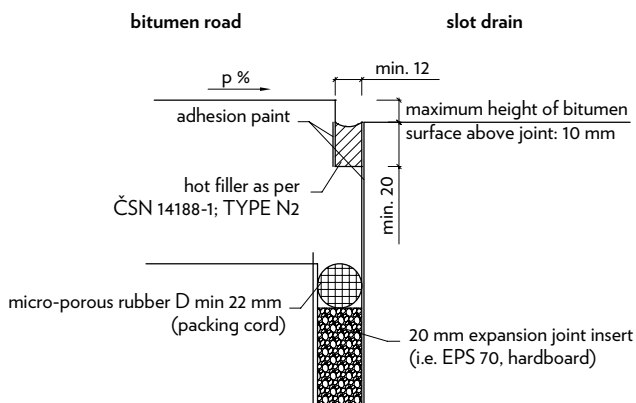
When the surrounding structures contain no consolidated layers (such as screed, concrete, cemented aggregate, layers containing hydraulic bonding compound, etc.) over the entire height of the slot drain segments, expansion joints along the segments may be replaced by adhesion paint.

EXAMPLE CROSS-SECTION (PROFILE I, D400/E600)



DETAIL 1

bitumen surface/slot drain joint



DETAIL 2

concrete surface/slot drain joint

