Toyota Kohki Co., Ltd., Tokio, 183-0035 Japan

Superior quality moulds from Japan

There are various types of drainage systems in Japan. Recently, there has appeared a system in the market that collects water from permeable road surfaces with the help of lateral openings. Sometimes, a downslope along the direction of water flow is also required. Under ordinary circumstances, however, this approach will be extremely difficult and mean substantial costs to develop the slope inside a drainage system.

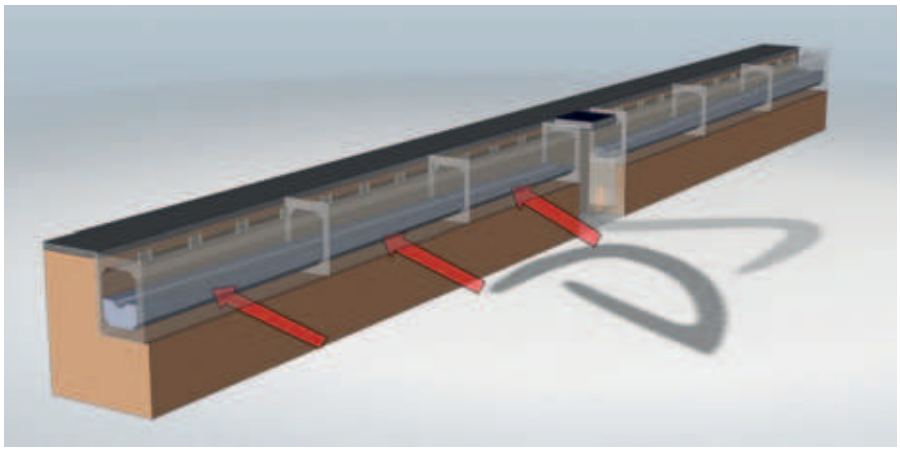

Fig. 1: Discharge water drainage

Figure 1 is an image of sloped inverted blocks inserted into a drainage system for discharge water. The thickness and slope of the inverted blocks vary from one construction site to another and manufacturers insist on meeting their demands for each specific project under construction. In addition, since dimensionings vary with each and every project, production can be is very complicated and cumbersome.
However, all these problems can be solved by the mould system shown in figures 2 and 3. The slope and the thickness of the products are easy to change and the mould is easy to set. Since dimensioning is effected in the mould itself, changes in thickness are simple, the likelihood of mistakes is reduced, and changes in slope directions are possible as well. All these aspects increase productivity in a remarkable manner.

Besides, there are various methods to remove the inner core. Depending on customer requirements, for example, manual roll-backs, the incorporation of special machinery or the installation of jigs on the inner core and removal by crane can be envisaged.

Since the inner core is cantilevered, the roll-back system as shown in figures 4 and 5 is safe to operate and easy to clean after demoulding the product.

Figures 6 and 7 show the structure of the inner core which is a manual, one-touch open/close system. The significant advantage of manual operation is that any problem arising during closing and/or setting the core can be determined by detecting the excess force necessary for the opera-

Fig. 2, 3: Since dimensioning is accomplished in the mould itself, changes in thickness are easy, mistakes are easy to avoid, and direction changes in slope are possible as well

Fig. 4, 5: Roll-back system: safe and easy to clean

tion. Any such necessary excess force may be caused, for example, by insufficient cleaning and detection would not be possible by means of hydraulic devices.
The Furusato product shown in figure 8 is a retaining wall block used for riversides. It is an integrated product linking 6 blocks via rebar. To cast any such sophisticated product, a correspondingly complicated mould is needed.

The inclined bulk-headers mounted on the side jackets make it possible to produce the 6 separate blocks in one mould. Usually, a strong force is required to open the side jackets for de-moulding.

However, the moulds shown in figure 9 and 10 can easily be handled by hand with a simple tool. Furthermore, the mould is user-friendly and does not cause any damage to the blocks despite the high resistance occurring during the stripping process on account of the former's substantial stiffness. In spite of their complex geometry, these moulds boast a high dimensional accuracy that they maintain over the years in the course of their lifetime.

The side jackets must be opened by 90 degrees in order to de-mould the product.