Following the development of the LVT single support system out of the bi-block ties for ballasted and slab tracks, Sonneville further developed the LVT-System for use in switches and crossings, keeping the advantages of the well-known dual-elasticity also in special trackwork.

With more than 25 years of experience concerning the LVT-System, Sonneville well established the LVT solution known as «LVT S & C» for all types of switches and crossings internationally.
Summary of benefits

Precise track geometry
Due to the top-down installation method, a highly precise track can be constructed.

Standardised, but flexible
Only 5 different basic types of supports are required for any turnout design and are chosen based on the size of the baseplate. If necessary, the insert/dowel position can be adapted to the base plate layout.

Consistent track modulus
The LVT support stiffness between the various sizes is attuned to each other and thus allows achieving a homogeneous track modulus.

Long-term stability
The deep embedment of the supports ensures stable turnout- and switch geometry over the expected lifetime of the LVT S&C system.

Maintenance free
Except standard rail maintenance, the dual elasticity leads to the well-appreciated maintenance-free service life of the switches and crossings.

Economic installation, even in tight conditions
Pre-assembling of rail strings and turnout components with the LVT S&C supports allow superior logistics for various installation conditions, even in tight settings. This, together with the absence of general reinforcement in the track concrete, creates high installation rates, which results in significant economical advantages.

Simple replacement
Even in tight turnout layouts individual LVT S&C components or entire supports can easily be replaced in short night breaks.

Easy solution for motor rods
In the area of the switch motor rods LVT S&C can provide several well established solutions to create enough space for the installation and proper functionality of the motor rods.

Effective surface drainage
The drainage can be designed all the way to the frog area, creating a clean and proper track.
A typical LVT turnout configuration is shown below.

The LVT S & C system is based on 5 standardised LVT support types, which have all the same height, no matter if it is with direct fixation or in combination with a base plate.

All types of LVT supports can be used in combination with standard base plates. Therefore turnout layouts designed for ballasted tracks can be easily adapted. However, LVT supports type 1 and 2 can also be equipped with the standard fastening system used in plain line tracks.

The special trackwork LVT supports maintain the same embedment depth as the plain line supports and therefore generate highly accurate track geometry, also in switches and crossings.

* For example clamp and clip fastening systems are shown.
ADVANTAGES

In terms of performance LVT S&C also maintains all the advantages of plain line LVT, including effective vibration attenuation, exceptional lateral track stability, highly accurate track geometry, vertical adjustability, low maintenance operation and easy access to all components in case of accidental damage.

Due to the standardisation of LVT S&C supports, notable cost savings are achieved.

To obtain a homogeneous track modulus over the entire project length, the stiffness of the LVT supports within the turnout is adjusted to the respective LVT support type.

The fact that LVT turnouts can be fully assembled on the base slab and used for work train traffic prior to final adjustment and concreting in the same manner as plain line LVT eliminates possible logistical constraints on site.

The high installation rates, inherent to the top-down construction method, as well as the absence of general reinforcement in the track concrete, contribute to the economic attractiveness of LVT S&C.