Traffic guidance systems: the route to dynamic traffic management

Background

Infrastructure operation and management are two core tasks of government. The costs of carrying out these tasks must be socially justifiable. An integrated approach is increasingly being taken to infrastructural problems. Infrastructure capacity is increasingly assessed in terms of effectiveness and efficiency, with traffic flow management becoming the focus of infrastructure operation. The Directorate-General for Public Works and Water Management (*Rijkswaterstaat, RWS*) wishes to use the network as efficiently as possible with the help of dynamic traffic management. Traffic signalling, as a component of mobility-based intelligent networks, is an element of this concept. Customised information must result in more effective use of the road and rail transport infrastructure.

INTRON

INTRON played a role in the development of the first generation of traffic signalling devices for the Dutch motorways. Since the late 1980s, INTRON has been involved in drafting the requirements and tests for traffic signalling devices. Since then INTRON, as an independent research institute, has been involved in the development of more than 800 traffic signalling devices and in the testing of the mechanical and physical loads on these devices. The aspects tested included penetration by dust and water, stresses caused by vibration and wind, and resistance to temperature fluctuations, frost, salt and ultraviolet radiation. Both the initial type tests and the production checks were included in our total testing programme.

Our know-how

In view of the fact that INTRON was involved in the developments from the very beginning, we have acquired considerable knowledge and know-how, which we make available to companies through technical consultancy. On behalf of various companies, INTRON has developed test protocols with which the companies' production could be organised effectively and efficiently. Our methods contribute to a qualitative selection of materials, products, coatings and metals. These methods have resulted in products such as emergency power stations, substations, traffic signposts, laminated and other traffic signs, signalling devices, tunnel signalling devices, etc.

Companies in the Netherlands and throughout Europe have made use of our services. They include Schott Benelux, Vialis, Brimos, Swarco Futurit, Stork, GTI, Peek Traffic, Fabricom, Zelisco, etc.

References

- From 1989, initial type testing of more than 30 different (tunnel) signalling devices from different companies
- From 1990, acceptance inspection of more than 800 different signalling devices from different companies
- In 2002/2003, for the Directorate-General for Public Works and Water Management, the formulation of functional requirements for traffic signalling devices
- In 1998, for Stork Industrial Modules, the formulation of functional requirements for dynamic traffic signalling devices
- In 1996, for the Directorate-General for Public Works and Water Management, the formulation of technical requirements for control equipment for motorways

Test facilities
INTRON's state-of-the-art laboratory is equipped with a variety of test facilities, including:

- Salt spray test
- Frost thaw equipment
- Weather OMeter test
- Kesternich cabinet
- Vapour test
- Climatic rooms for complete structural elements (2x3x2 m3)
- Impermeability test
- Vibration test
- Thermal expansion test
- Wind resistance test
- Determination of chemical and physical properties of materials (SEM, EDXA, IR, AAS, GC-MS, etc.)

Qualifications
INTRON has all the qualifications required by the Directorate-General for Public Works and Water Management for the independent testing and inspection of traffic signalling devices, high performance paint systems, etc., including

- NEN-EN-ISO/IEC 17025:2000 (Sterlab)
- ISO 9001-2000 (DNV)

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