

Draft regulations on requirements relating to tramways, underground railways and suburban railways etc.

Chapter 1. Introductory provisions

§ 1-1. Purpose

The purpose of this regulation is to establish minimum requirements to ensure that the businesses are working systematically and proactively so that the established level of safety is maintained and to the extent it is necessary be improved, as well as the railway accidents, serious railway incidents and railway incidents be avoided.

In addition, the purpose is to establish minimum requirements for universal design.

§ 1-2. Scope

The regulation applies to the operation of the light rail, underground, suburban railway etc.

§ 1-3. Definitions

In this regulations following expressions means:

- a) serious rail event: an unwanted event that under slightly different circumstances could have led to a railway accident,
- b) automatic speed surveillance: the part of the signal system that monitors train speed and enable the trains brakes if the speed is exceeded,
- c) barriers: technical, operational, organizational, or other planned and implemented measures that intend to break an identified unwanted sequence of events,
- d) infrastructure: tracks, substructure, power conditioning, signal system and communication system,
- e) infrastructure manager: the one who has permission to run infrastructure,
- f) train event: any other unwanted event than a railroad accident, which is connected with the railway, and which affect the safety,
- g) train accident: an unwanted or unintended sudden event or a specific number of such events which have harmful follows, including that someone dies or is seriously injured, which causes significant damage to railway material, on the infrastructure, on the property outside the railway or on the environment, and all other similar accidents,
- h) railway business: running of infrastructure, traffic management and/or traffic operations or running infrastructure, traffic management and/or traffic business,
- in) vehicle: a vehicle that runs on its own wheels on railway, including light rail, underground and suburban railway, with or without own traction,
- j) competence: knowledge, skills and attitudes,
- k) risk acceptance criteria: criteria for decision on acceptable risk,
- l) risk analysis: the systematic use of all available information to identify hazards and estimating the risk,

- m) risk evaluation: process to compare described or calculated risk with given risk acceptance criteria,
- n) risk assessment: the overall process that includes a risk analysis and a risk evaluation,
- o) safety management: systematic measures an organization implements to achieve, maintain and further develop the safety level in accordance with specific goals,
- p) safety management system: organization and systems created by a railway company for the purpose of safe management of their business,
- q) signal: the fixed light signal, signposts, pillars, flags, signs and sounds used when driving train and by shunting,
- s) signalling: technical facility that can include interlocking, optical signals, line block, remote control and automatic speed monitoring,
- s) interlocking: the part of the signal system that ensures that signal to drive is given only if certain conditions are met,
- t) shift: vehicles that are moved during shunting,
- u) shunting: the movement of vehicle that are not train,
- v) train: vehicle with traction with or without wagons be driven from a particular starting location to a specific arrival place,
- w) traffic management: train management and other features that coordinates and safeguards the safety of the driving
- x) traffic executive: The business who has permission to run train traffic,
- y) universal design: design or adaption of the main solution for the physical conditions so that the general functions of the business can be used by as many as possible.

Chapter 2. Overall requirements to safety management

§ 2-1. Overall responsibility for safety

The railway business is responsible for a safe operation and control of the risks which occur. The railway business has the duty to perform necessary risk management, and where relevant, collaborate with other businesses.

§ 2-2. Demands for safety management

The railway business shall exercise safety management of the business that is runned for the purpose that the established safety level of the railway is maintained and to the extent it is necessary is improved.

Safety management shall be exercised at all levels of the organization. The railway business shall also ensure that safety management is exercised in the tasks performed by contractors.

§ 2-3. Single error principle and barriers

The business is to be planned, organized and carried out with reference to that a single fault shall not lead to a railway accident.

The railway business shall have barriers that reduce the likelihood of error, danger-and accident situations to evolve. The barriers shall limit possible damages and disadvantages.

The barriers shall be identified, and it shall be known in the business which barriers that are established and what functions they shall safeguard. Where necessary with multiple barriers, it shall be adequate independence between the barriers.

Chapter 3. System for safety management

§ 3-1. Requirements for safety management system

The railway business shall have a safety management system.

The safety management system shall be adapted to the nature and extent of the current business and other aspects of this. The safety management system shall further ensure the management of all risks connected to the business.

The safety management system shall take into account all relevant risks that occur as a result of other business. Safety management system shall show how the control is secured from the top management to different levels, how staff at all levels are involved and how continuous improvement of the safety management system is ensured.

Safety management system shall include the use of contractors. The railway business shall demand the same management and safety requirements for the activities carried out by contractors as to the activities carried out by own business.

The infrastructure manager's safety management system shall take into account the effects of different traffic business and national provisions and include all traffic practitioners to operate in accordance to the requirements of the railway legislation, as well as requirements and conditions set out in the their own permission.

§ 3-2. Documentation

The safety management system shall be documented. The documentation shall be made available and known in an appropriate manner for all personnel with a need for such access.

The railway business shall have an updated list of all rules in the safety management system where among other things, the status of validity of the rules are specified.

The documentation shall be controlled and traceable. The railway business shall have rules for the management and control of documents which are included in the safety management system.

§ 3-3. Procedures, etc.

The railway business shall develop procedures and/or regulations covering all the relevant conditions of importance for safety.

The procedures and/or provisions to ensure compliance with the current, new and altered technical and operational standards and other requirements set out in:

- a) railway legislation,
- b) other relevant rules and
- c) individual decisions made by the authorities.

Chapter 4. The management's responsibility

§ 4-1. The management's responsibility

The top management is responsible for the safety management system to be adopted, documented and obeyed. Moreover, the top management is responsible for the safety management system to be continuously improved.

§ 4-2. Safety policy

The railway business's top management shall develop a documented safety policy. The safety policy shall:

- a) specify the principles for the work of the safety,
- b) be appropriate as a framework for the creation and review of the safety goals,
- c) be incorporated at all levels of the railway business and
- d) be communicated to everyone who works for or on behalf of the railway business.

§ 4-3. Safety targets

The railway business's top management shall work out targets that are suitable to sustain and to the extent it is necessary to improve safety. The targets shall be designed in line with the business's safety policy. Moreover, the targets shall be designed so that the results of the work on safety can be compared with the targets.

The railway business shall have plans that shows when and how the safety targets shall be achieved.

§ 4-4. Risk acceptance criteria

The top management is responsible for establishing risk acceptance criteria. The criteria shall include people, property and environment.

Risk acceptance criteria must be suitable as decision-making criteria for the issues and the detailing level the risk assessment shall cover.

The criteria shall include the overall risk that the business represents and is exposed to as well as the risk the business make for individuals and local conditions.

The criteria shall be established before the risk assessment is carried out.

Risk acceptance criteria shall be based on probability and consequence. The assessments that is the basis for the formulation of the criteria shall be documented.

§ 4-5. Clear responsibilities

The top management is responsible for the rail business is organized so that their responsibility and authority clearly appears.

The top management is responsible for that all tasks of importance for safety are identified. The top management is also responsible for that the tasks of safety importance, as well as responsibility and authority in relation to the tasks are clearly described.

§ 4-6. transfer of Information

The top management is responsible for that it is made a system for the transfer of information between the various levels and functions of the business, as well as with other railway business's to the extent that it is relevant, so that knowledge of conditions of importance to the work on safety is communicated to and processed at the relevant level.

§ 4-7. Emergency preparedness

The top management is responsible for that the rail business has preparedness for emergency situations. Emergency response shall be dimensioned on the basis of the results from analysis for emergency preparedness and be described in own emergency plans.

The railway business shall ensure that the necessary measures are being initiated as soon as possible so that emergency situations do not develop into accident situations and people can be evacuated effectively and safely.

Emergency response shall include, among others:

- a) competent and trained personnel,
- b) Organization, equipment and materials for effective emergency response efforts,
- c) overview of the interface with other relevant businesses that have emergency resources,
- d) a documented emergency plan, with clear role separation, alert lists and efforts plans and
- e) information readiness in crisis situations to ensure that travellers and the public get information about how to behave.

Emergency response shall be coordinated with the relevant public authorities.

The who runs the traffic management is responsible for its own contingency plans and emergency response plans of the other railway companies is coordinated.

Traffic manager shall have rules and communicate this rules that are necessary in order to maintain effective communication with other railway business's and other relevant actors in emergency situations. The rules shall be drawn up in cooperation with the other railway business's.

§ 4-8. Management review

The railway business's top management shall, when necessary and at least once a year, review the safety management system and the results from business's safety work to ensure that the safety management system is still appropriate and up-to-date. By the rewiev the following, among others, shall be taken into account:

- a) results and the implementation of measures for internal audits and audits of contractors, as well as the assessment of compliance with the legal requirements and internal requirements,
- b) to what extent the safety targets are achieved,
- c) new and updated risk assessments,
- d) changing assumptions, including changes in laws and/or regulations,
- e) analysis of railway accidents, serious railway incidents and rail events,
- f) deviations and monitoring of these and

g) follow-up measures after previous reviews by the top management.

Management review to reveal any need for change in the safety policy, the safety goals and action plans and other parts of the safety management system.

Chapter 5. Resource management

§ 5-1. Competence requirements

The railway business shall have the competence requirements that specify the required minimum competence for the execution of all tasks and functions of importance to the railway business's work on safety. The railway business shall further make sure that the skill requirements for tasks that are performed by contractors ensures the expertise that the railway business find necessary.

§ 5-2. Expertise

The railway business shall have available the expertise that is required for the business to operate within acceptable risk.

If tasks of safety importance performed by contractors to the railway business have necessary expertise among other things to be able to specify the requirements for deliverance, follow up the contractor and take a decision on the delivery.

Business's own employees and the employees of contractors, which performs tasks of importance to the railway business's work on safety, shall have sufficient expertise in relation to the tasks.

§ 5-3. Training

The railway business shall have training programs for their own employees, as well as the requirements and systems that ensure that their competence is maintained so that the work of importance for safety can be carried out in a satisfactory way.

The railway business shall require that contractors have systems to ensure that their employees' expertise is maintained in relation to the work of importance for safety that he or she will perform.

§ 5-4. Safety arrangement of the working environment

The railway business to facilitate the working environment for mastering the work tasks of importance for safety.

Chapter 6. Risk assessments

§ 6-1. Risk assessments

The railway business to plan and carry out the risk assessments that are necessary to determine whether the operation of the business is within the acceptable risk. Risk assessments shall be planned and implemented in a systematic and coordinated manner through all enterprise phases.

It shall be stated what is the purpose of the individual risk assessments as well as the assumptions and refinements that are assumed.

Risk assessments shall be carried out according to recognized and appropriate methods.

Risk identification which are included in the risk assessment shall be at a sufficiently detailed level.

When needed shall it be performed sensitivity analysis to determine if the risk assessment is sufficiently robust.

§ 6-2. Follow-up and updating risk assessments

The railway business shall systematically follow up the conditions for, delimitations for and the results of the risk assessments. The railway business shall implement the necessary measures for the management of risks identified in the risk assessments, possibly in collaboration with other business's.

By changes in the assumptions or refinements of risk assessments, or when there is other new knowledge of significance for reviews, risk assessments are updated.

The railway business shall have the list of the performed risk assessments, as well as their validity status, assumptions and refinements. It shall be ensured that complement the match or build reviews on each other.

Chapter 7. Measuring, monitoring and improvement

§ 7-1. Audits

The railway business to systematically carry out audits of its safety management system to assess whether it is satisfactorily documented and obeyed and whether it satisfies the requirements of railway legislation.

The railway business shall systematically carry out audits of contractors to assess whether the contractors comply with requirements in or in pursuance of the agreements.

Audits shall be carried out according to the approved methodology, adopted audit programs and in a way that safeguards objectivity and independence.

§ 7-2. Follow up of railway accidents and railway events

The railway business shall have a system for internal reporting, registration, investigation and analysis of railway accidents, serious railway incidents and rail events.

The railway business shall examine and analyze railway accidents, serious railway incidents and rail events. The events are to be analyzed both individually and in relation to other events to ensure that the necessary actions are identified.

The actions are to be followed up, and the effect to be evaluated. Until the necessary actions are implemented it shall be carried out, if necessary compensatory actions.

§ 7-3. Emergency response exercises

The railway business shall regularly conduct exercises in order to verify that the emergency response works after its purpose.

The railway companies shall coordinate such exercises to the extent that is necessary.

§ 7-4. Follow-up of deviations

The railway business shall record and follow up deviations from the railway legislation and internal regulations. A decision shall be made regarding the importance of the deviations on the safety, , both individually and in relation to other variances.

The railway business shall correct deviations, uncover the reasons for the deviations and take steps to prevent recurrence. The measures are to be followed up and the effect of the measures be evaluated. Until the deviation is corrected, compensating measures are to be conducted if needed.

Chapter 8. Annual reporting to the Norwegian Railway Authority

§ 8-1. Annual reporting

The railway business shall annually report on railway accidents and safety indicators of the previous year.. The reporting shall be sent to the Norwegian Railway Authority within 31. January on the form the Norwegian Railway Authority decides.

The railway business shall prepare an annual safety report on the previous calendar year. The safety report shall be sent to the Norwegian Railway Authority within June 30 on a form decided by the Norwegian Railway Authority.

Chapter 9. Requirements for management of the infrastructure

§ 9-1. General requirements for management of infrastructure

The infrastructure manager shall ensure that the infrastructure at any given time is designed and in such a state that it ensures safe operation. It shall only vehicles compatible with the infrastructure shall be granted access.

The infrastructure manager shall operate and maintain the infrastructure according to the requirements of this regulation, as well as to national and international standards.

Prerequisites and restrictions associated with the design of the infrastructure shall act as foundation for procedures for the operation and maintenance of the infrastructure.

§ 9-2. Principles of traffic management (room block principle)

The railway business shall design and operate the infrastructure as well as perform traffic management, so that the operation of trains on a stretch of road or on a track is controlled in a way that ensures that a train is not running in on a stretch or a track where there is another vehicle (room block principle).

On double track stretches where each track only has traffic going in one direction, trains can be operated based on visibility if the speed is restricted so that they can stop at any time on the visible stretch.

§ 9-3. Signal principles

The infrastructure manager shall have principles of allowable signals and their location, the necessary signal distances and safety zones as well as provisions for the design of the design surface, track plans and interlocking tables.

§ 9-4. Control and maintenance of the infrastructure

The infrastructure manager shall carry out controls with the infrastructure. The infrastructure manager shall have the minimum safety requirements for systems, parts and components.

The infrastructure manager shall have a maintenance plan for each stretch. The maintenance plan shall include limit values for all the systems, parts and components of safety significance indicating when immediate measures shall be taken. The plan will further contain a description of the measures

to be implemented when these limits are exceeded, as well as intervals for maintenance and time for the replacement of safety-critical components. When determining the limit values, considerations of vehicles allowed on the stretch, and the allowed driving speed on the stretch shall be taken into account among other issues.

The infrastructure manager shall document performed maintenance.

§ 9-5. Technical documentation

The infrastructure manager shall have technical documentation for all systems, parts and components.

The documentation shall verify that systems, parts and components are in accordance with the national and international standards that are the basis for projecting and building of infrastructure.

The documentation shall describe the preconditions and limitations that are associated with the infrastructure's design.

§ 9-6. The Register of infrastructure

The infrastructure manager shall have a register of systems, parts and components that are part of the infrastructure. The registry shall identify systems, parts and components using a location-description.

§ 9-7. Operating trains in relation with the operation of the infrastructure

Infrastructure manager can, when operating the infrastructure, operate trains in connection with the control, work, clearance of snow or vegetation etc. on the infrastructure. When operating trains for this purpose the same safety requirements as other traffic apply.

§ 9-8. Traffic management

All traffic on the infrastructure shall be monitored and managed in such a way that the business is operated within acceptable risk levels.

When operating takes place according to the room block principle, the traffic control shall, among other things, make sure that there at all times is an overview of the trains' direction, position, and order. On tracks that are not confirmed free of trains, operation can happen on the basis of visibility if the speed is restricted so that the train can stop on half of the visible stretch.

Traffic controller shall have suitable equipment to carry out traffic management, including being able to communicate with train crew.

Communication in relation to the traffic management shall be saved securely and in sufficient time in relation to the need for any investigation of railway accidents, serious railway incidents and rail incidents.

§ 9-9. Provisions for safe traffic management

The infrastructure manager shall have provisions for traffic management customized to the track's safety standard. The provisions shall reflect the system for traffic management and shall at least include provisions on the signals and their importance for traffic management, and responsibilities, order lines, and communication procedures in traffic management for both the ordinary operation and nonconformance situations.

The infrastructure manager shall have a description of the infrastructure. The description shall be in Norwegian.

§ 9-10. Permission for operating trains and for shunting

A permission must be obtained before trains can run on a track stretch.

A permission must be obtained before shunting can start.

There shall at all times be a list of everyone who has been given permission to operate on the track stretch. The list shall be available to the relevant personnel.

§ 9-11. Provisions for securing work in the track

The infrastructure manager shall make provisions for work in a track, which as a minimum shall include:

- a) guidelines for the initiation of work,
- b) how to ensure the work site so that trains do not come inadvertently into the specified area and
- c) guidelines to ensure that personnel and equipment does not come into conflict with trains that run on nearby tracks.

Chapter 10. Requirements for traffic operation

§ 10-1. General requirements for traffic operator

The traffic operator shall ensure that traffic occurs within acceptable risk, including that the vehicle being used is at all times operated and maintained according to the requirements of this regulation, as well as to national and international standards.

Prerequisites and restrictions relating to the vehicle's design shall be the basis for procedures for the operation and maintenance of the vehicle.

§ 10-2. Control and maintenance of vehicles

The traffic operator will carry out control of the vehicle, and have minimum safety requirements for the systems, parts and components.

The traffic operator shall maintain the vehicle. The maintenance is to ensure that no system, parts or components deteriorate so much that it leads to malfunction. Among other things, safety wear limits for wear exposed parts shall be specified, and intervals for maintenance and replacement for all safety-critical components shall be specified.

The traffic operator shall document performed maintenance.

§ 10-3. Technical documentation

The traffic operator shall have access to updated technical documentation for all systems, parts and components.

The documentation shall be able to verify that the systems, parts and components are in accordance with the national and international standards that are the basis for the engineering and construction of the vehicle.

The documentation shall describe the prerequisites and constraints that are related to the vehicle's design.

§ 10-4. Vehicle register

The traffic operator shall have a register of all vehicles that the business uses. The register shall, at a minimum, identify individual vehicles.

§ 10-5. Regulations for train operating

The traffic operator shall have prepared the necessary provisions for the train operation. The provisions shall be adapted to the infrastructure manager's provisions for safe traffic management.

The traffic operator shall ensure that the personnel related to operation have the necessary documentation required to perform their tasks. The documentation must include all provisions and procedures that are necessary for operation under normal conditions, in the event of irregularities and in emergencies.

The traffic operator shall on the basis of the description of the infrastructure draft a route description. The traffic operator shall ensure that personnel at all times has updated documentation about the stretch that is relevant to each personnel member. Route description shall at least include:

- a) General operating characteristics,
- b) Detailed route information,
- c) Emergency exits for evacuation and
- d) Special conditions with significance for safe operation.

§ 10-6. Provisions on communication

The traffic operator shall have provisions on communication procedures on traffic management.

When using oral communication between the driver and traffic controller the only communication system to be used shall be the system established by the infrastructure manager. Messages of importance for safe operation and shunting shall follow stipulated procedures and shall be repeated. For emergency messages repeated iteration can be omitted.

When using oral communication between the driver and traffic controls, the driver shall provide identification and location, and traffic controller shall give the name of the traffic control unit or stretch.

It is the responsibility of the traffic controller to make sure that he/she is talking to the correct driver.

§ 10-7. Provisions on shunting

The traffic operator shall have provisions for shifting of the vehicles being used, including the use of shunting movements, responsibilities and tasks of the personnel participating in the shunting, the control of vehicles and use of brakes.

A shunting shall at all times have sufficient brake power to be able to be stopped in the shunting area.

§ 10-8. Description of the technical operability

The traffic operator shall have provisions on technical functionality for the vehicles.

§ 10-9. Pairing of vehicles

The traffic operator shall have provisions on the pairing of vehicle that caters to requirements for the functional interface between the vehicles to be connected together.

§ 10-10. Continuous automatic brake system

The vehicles of the train shall be connected to the continuous brake system.

If the train inadvertently is divided, the separate parts shall automatically be brought to a stop by maximum activation of the brakes.

§ 10-11. Demand for hand brake or parking brake

The train shall be equipped with a hand brake or parking brake so that it can be kept in place in the highest and lowest gradient on the path stretch the train will operate. A brake shoe or similar can be used instead of hand brake or parking brake.

§ 10-12. Requirements for the driver

The driver is responsible for secure operation, according to the speed, signals and signs, the trains' braking ability, etc.

The driver shall ensure that departures from the station and stoppage is conducted in a safe manner.

The driver shall modify the speed during shifting to site conditions.

§ 10-13. Special provisions on the operation of the train

In connection with the driver's education, a person in training can operate the train under the supervision of a driver.

When operating trains for maintenance of infrastructure, test driving and driving in connection with salvage, can someone other than the driver drive the train from the same driver's cab if the driver of the train does not have the skills to operate this train.

§ 10-14. Before operation of a train

Before operating trains from the location where the train is prepared, the driver shall at least make sure that the brake test is performed, that the system for awareness control is connected and tried, and that, where appropriate, equipment for automatic speed surveillance is linked in.

§ 10-15. Requirements for trains in traffic

The head and tail of the train shall be marked with light.

The train shall be able to notify with audio signal.

The vehicle's identity number shall be clearly visible on the vehicle.

§ 10-16. Securing the train standing on the stretch

The traffic operator shall have provisions that ensure that the train standing at the stretch does not come accidentally into motion.

Chapter 11. Requirements for infrastructure

§ 11-1. General requirements for infrastructure

The infrastructure shall be designed so that the business is run within acceptable risk levels. Pathways, bed- and substructure, power supply systems, signal and communication systems shall be technically and functionally harmonized.

The infrastructure shall be planned, built and tested in accordance with national and international standards. Infrastructure manager shall perform a safety assessment of deviations from the selected standards. The assessment shall be documented.

Infrastructure manager shall use the EN 50126 standard process when building a new infrastructure and when changing programmable technical systems. By other changes to the infrastructure, the infrastructure manager shall assess whether the change is of such a character that the use of EN 50126 is appropriate. The assessment shall be documented.

Infrastructure manager shall use the standards EN 50128 and EN 50129 when acquiring a new signaling system and by changing the electronic signal facility.

Where it is not specified in this regulation, it is the most recent version of the standards that apply.

§ 11-2. Pathways etc.

Pathways, bed- and substructures as well as the track geometry shall be designed and maintained so that the possibility of derailment is minimalized. Safety limit values for track malfunction, including the warped device, track extensions, height and page fault shall be determined in relation to the vehicles allowed for use on the stretch and its allowable running speeds.

For pathways, located in areas with danger of avalanches or areas with unstable soil conditions, it shall be taken measures so that the business is run within acceptable risk levels.

Tracks for parking shall be in such a manner so that the vehicle does not come into conflict with the track on which the train is operating.

§ 11-3. Platforms, etc.

Platforms and the access to these shall be designed and equipped, including the signalled and clearly marked, so that access to the platform, staying on the platform, and the departure of the train can take place within acceptable risk levels.

The width of the platforms shall be adapted to the number of travelers and speed of passing trains.

The length of the platforms shall be adapted to the length and equipment of trains that stops for loading and unloading. The height and spacing differences between the train and the platform shall be minimized. The platform and the platform equipment shall be designed so that the driver has overview along the entire train during disembarking and embarking.

When constructing new platforms and by significant changes to the existing platforms the infrastructure manager shall ensure universal design of the platforms and the entry to these.

§ 11-4. Tunnels and bridges, etc.

Tunnels and bridges shall be designed and fitted so that they ensure opportunities for evacuation and self-rescue in case of fire and other accidents. It shall be facilitated so that the rescue personnel can effectively perform rescue work, including of persons with disabilities.

Walking paths on bridges shall be shielded with railings. Walkways shall be free of obstacles in the height and width so that the evacuation can take place in a secure way.

Tunnels shall not contain flammable materials. The materials to be used shall in the least possible degree emit smoke and harmful fire gases in the event of fire.

§ 11-5. Level crossings

Level crossings shall be adapted to ensure safe passage for travelers.

New level crossings shall not be constructed where vehicles are operated on an individual permanent way. Level crossings can be constructed at workshop and depot sites which are closed for ordinary traffic, as well as the temporary level crossings at fixed sites.

§ 11-6. Signaling facility

Signal facilities shall be constructed so that they fail during secure conditions. The facility's safety features shall be automatic and independent of the individual operating the facility.

Signals shall be placed so that it's clear which tracks signals apply, and the signal light shall be visible for the train driver in good time before signal passage.

Stretches of tracks with remote controlled signal systems shall be designed with automatic speed surveillance.

On stretches of tracks with remote control, the signal lights shall be logged continuously and stored securely and in sufficient time in relation to the need of any investigation of railway accidents, serious railway incidents and railway events.

§ 11-7. Communication system

Stretches of tracks with remote controlled signal systems shall be designed with a radio system of communication for use in train operation.

On all infrastructure, there shall be a system for emergency communication, so that at any given time there is mutual opportunity for rapid contact between driver and traffic controls.

§ 11-8. Permission to make use of the infrastructure

Before the infrastructure is placed in service the Norwegian Railway Authority shall give permission to take the infrastructure in use. If it later are made changes to the infrastructure, including signal principles, this shall be reported to the Norwegian Railway Authority who will assess whether the change is of such a nature that a new permission to use the infrastructure is required, or if a permission for using the change is required

§ 11-9. Notification about new or modified infrastructure

The notification of new or modified infrastructure shall be sent to the Norwegian Railway Authority as early as possible.

The message shall at least contain:

- a) Name and contact information of the contact person,
- b) Planned progress of the project,
- c) System description,
- d) Safety plan,

- e) Overview of the planned used standards and
- f) Risk assessment.

§ 11-10. Application for permission to take infrastructure in use

Application for permission to take infrastructure in use shall at least contain:

- a) description of the finished infrastructure,
- b) overview of verifications,
- c) safety report,
- d) updated list of standards with an overview of deviations from standards and the safety reviews that is the basis for the businesses' acceptance of deviations,
- e) overview of performed risk assessments with the overview of prerequisites and recommendations from risk assessments as well as the description of how the prerequisites and recommendations are followed up and
- f) safety follow-up plan (SOP).

If an assessor or other independent parties are used, the complete reports and follow-up of these shall be attached.

The Norwegian Railway Authority may require that an assessor be used, and that the Norwegian Railway Authority will have direct contact with the person in question. The assessor shall be accepted by the Norwegian Railway Authority. The Norwegian Railway Authority may also require that independent parties be used for the other types of activities, including verification procedures and enquiries.

Chapter 12. Requirements for vehicles

§ 12-1. General requirements for vehicles

Vehicles shall have a technical design and operational condition that ensures that the business operates within acceptable risk levels.

Vehicles shall be constructed, tested, upgraded and renewed according to reputable, temporal standards. Selected standards to maintain or improve safety for that particular vehicle. A safety assessment of the deviation from the selected standards shall be conducted. The assessment shall be documented.

For all new vehicles or by significant upgrades process standard EN 50126 shall be adhered to.

Where it is not specified in this regulation, it is the most recent version of the standard that applies.

Vehicles shall be constructed so that it can withstand operational and climactic loads it is exposed to during operation.

Vehicles shall be identity marked, in addition to technically and operationally marked..

§ 12-1a. Universal design

New or significantly upgraded vehicles intended for passenger transport shall be universally designed. As the minimum requirements apply:

- a) Inputs shall as far as possible be step-free and custom platform so that on and disembarking can happen without help. Doors to be operated by passengers shall be automatic or will be able to be operated easily.
- b) handles and keep close shall be placed so that both the sitting, standing and walking people everywhere can have the necessary support.
- c) Vehicle to have an appropriate number of priority seats for persons with disabilities. Such seats shall be placed near the door that is suitable for on-and disembarking.
- d) Vehicle shall have an appropriate number of wheelchair spaces.
- e) where passengers move, it shall as far as possible not be some obstacles. It shall be possible to move unhindered by wheelchair between the entrance and wheelchair space.
- f) Door open/close signal-, button for stop, prevent, including steps and sloping plan, and other key features shall be visually and tangible brand.
- g) Vehicles shall be equipped with a communication system for announcements. If the system is automatic or preprogrammed, it could be overridden manually. Visual information shall be able to be read in all lighting conditions and shall stand in satisfying contrast to the background.
- h) Vehicles shall be equipped with emergency call device that shall be visually and tangible brand and provide a visible and audible indication that the device is in use.
- in) surfaces on floors and stairs shall be non-slip.
- j) lighting and contrasts to be so that the key elements, such as the passenger, doors, seats, keep rods, control elements, information, prevent and tagging, emerges clearly.

§ 12-2. Compatibility with the infrastructure

Vehicle shall be certified compatible with the infrastructure it will be used on, including profile, bed- and substructure, power supply systems, signal conditioning, and communications facilities.

Vehicles shall have fixed equipment adapted to the infrastructure's system for emergency communication so that at any given time there is a mutual opportunity for rapid contact between driver and traffic controller.

Vehicles used on routes with automatic speed surveillance shall have equipment that can interact with this.

§ 12-3. Brakes

All vehicles shall have brakes. The brakes shall in all conditions be able to stop the vehicle within a maximum stopping distance defined by the traffic operator. Brake systems shall be designed so that they fail to secure conditions.

Vehicles shall have a parking brake or other equipment for safe parking of the vehicle.

Vehicles intended for passenger transport shall have emergency brake activator that can be operated from any wagon in the train. In new vehicles the driver shall be able to delay the activation of the emergency brake.

The driver's room shall be equipped with a system for alertness control that activates the brakes if the driver falls asleep, or loses consciousness.

§ 12-4. Doors, Windows and interior design

Doors, windows and interior design of the vehicle shall be designed so that the safety of passengers and personnel is ensured.

Remote controlled doors shall be locked while in motion and the driver, from the driver's seat, shall be able to monitor that the doors are closed. Moreover, there shall be devices to open the doors during an emergency, for protection for passengers or personnel from being wedged in, and shutdown option for the individual doors.

§ 12-5. Materials and fire safety

Vehicles shall not contain flammable materials. The materials used shall in the least possible degree emit smoke and harmful fire gases in the event of fire.

§ 12-6. Evacuation

Vehicles shall be designed so that evacuation and self-rescue can occur in case of fire and other accidents. It shall be facilitated so that the rescue personnel can operate effective rescue work, including of persons with disabilities. Emergency exits and escape routes shall be placed, sized and marked so that the evacuation can be conducted in a proper manner.

Vehicles shall have the emergency equipment on board, adapted to the usage of the vehicle. Emergency equipment and the placement of this shall be marked.

Vehicles shall have emergency lights.

§ 12-7. Control procedures

Traffic operator shall have provisions for the testing of brakes, and control procedures which ensure that the vehicle at any given time is in full operating and safe condition.

§ 12-8. Permission to use the vehicle

Before the vehicle is taken into use on the infrastructure, the Norwegian Railway Authority must give permission to use the vehicle. If changes are made to the vehicle, this shall be reported to the Norwegian Railway Authority who will assess whether the change is of such a nature that a new permission to make use of the vehicle is required or a permission to make use of the change is required.

§ 12-9. Notification about new or modified vehicles

Notifications of new or modified vehicles shall be sent to the Norwegian Railway Authority as early as possible.

The notification shall at least contain:

- a) name and contact information of the contact person,
- b) planned progress of the project,
- c) system description,
- d) safety plan,

- e) overview of the standards planned for usage and
- f) risk assessment.

§ 12-10. Application for permission to use vehicles

Application for permission to use a vehicle shall at least contain:

- a) overview drawings and descriptions of the vehicle type,
- b) overview of verifications,
- c) safety report,
- d) updated list of used standards with an overview of deviations and the safety reviews that is the basis for the business' acceptance of the deviations,
- e) overview of the performed risk assessments with the overall view of prerequisites and recommendations from the risk assessments, as well as the description of how the prerequisites and recommendations are followed up,
- f) safety follow-up plan (SOP),
- g) Declaration of compatibility and
- h) any approval from other countries.

If the assessor or other independent parties are used, the completed reports and follow-up of these shall be attached.

Norwegian Railway Authority may require the use of an assessor, and that the Norwegian Railway Authority has direct contact with the person in question. The assessor shall be accepted by the Norwegian Railway Authority. The Norwegian Railway Authority may also require that independent parties are used for other types of activities, including verification and enquiries.

Chapter 13. Authorization of drivers

§ 13-1. Requirements for age and driver's license

Drivers shall be minimum 20 years old. The driver of a train in mixed traffic shall have a class B driver's license.

§ 13-2. Overarching competence requirements

Drivers are supposed to have superior understanding of the traffic system they operate in.

Drivers shall be able to operate trains in a safe manner, and apply the provisions for operation.

Drivers shall be able to make necessary preparation of the vehicle, including safety control of the technical monitoring systems.

Drivers shall be able to consider the braking a train has, and what consequences this has for the operation on the stretch of path in question.

Drivers shall have sufficient Norwegian proficiency, so that they can communicate with traffic control.

Drivers shall be able to apply the provisions for shunting and shall be able to operate a vehicle during shunting.

§ 13-3. Requirements for technical competence

Drivers shall have knowledge of the vehicle's design and construction, including mechanical and electrical construction, automatic speed surveillance, communication system and door system, so that they can consider the vehicle's condition in relation to the requirement of safe performance.

Drivers shall have the understanding of the mode of operation of the braking systems on vehicles and mastering the use and management of these.

§ 13-4. Requirements for competence on infrastructure

Drivers shall have good knowledge about and understanding of the basic mode of operation of the signal facility.

Furthermore, drivers shall have the knowledge of how the track and power supply plant is built, and have knowledge of communications systems.

§ 13-5. Requirements for competence on the interaction between vehicles and tracks

Drivers shall understand how adhesion relation affects traction and braking, as well as know what forces occur between the tracks and vehicles during run time.

Furthermore, drivers shall have the knowledge of the interaction between vehicle and your infrastructure's power supply and signal facility.

§ 13-6. Skill requirements in relation to emergency preparedness and emergencies

Drivers shall be able to deal with emergencies, including emergency procedures and evacuation.

§ 13-7. Requirements for route knowledge

Drivers shall be well known on the route they are operating.

§ 13-8. Requirements for authorization

Drivers shall have authorization given by the railway business. Authorization can only be given to personnel who, through theoretical and practical tests have shown that they meet the competence requirements of this regulation, meets the requirements for physical and mental health and are fit to perform tasks that are attributed to drivers in a safe manner. For drivers that are operating in mixed traffic a class B driver's license is a requirement.

An authorization proof shall be issued, containing at least::

- a) name and address of the railway business that has given the authorization,
- b) name of the driver,
- c) date of issue and of the validity period,
- d) what types of vehicle the driver can operate,
- e) which routes the driver can operate and
- f) any limitations to the authorization.

§ 13-9. *Withdrawal of authorization*

The railway business shall withdraw the authorization from drivers who do not meet the requirements of § 13-8, and shall have the supplementary provisions for when an authorization will be redrawn.

Any new authorization is provided according to § 13-8 of the regulations here.

§ 13-10. *Requirements for a driver's registry*

The manager of a railway business shall have an updated registry of authorized drivers of the vehicles that the business uses.

Chapter 14. Closing provisions

§ 14-1. *Exceptions*

Norwegian Railway Authority can in each case make exceptions from this regulation if special reasons warrant it.

§ 14-2. *The entry into force*

The regulation will take effect on xx.xx.xxxx. From the same time the regulation 6. December 2006 No. 1356 about requirements for light rail, underground and suburban railway, and side tracks etc. (regulation requirements) is repealed.