

SCHEDULE 3

Regulation 2

(Annex III to the high-speed Directive) ESSENTIAL REQUIREMENTS

General requirements

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1.1 *Safety*

1.1.1 The design, construction or assembly, maintenance and monitoring of safety-critical components, and more particularly of the components involved in train movements must be such as to guarantee safety at the level corresponding to the aims laid down for the network, including those for specific degraded situations.

1.1.2 The parameters involved in the wheel/rail contact must meet the stability requirements needed in order to guarantee safe movement at the maximum authorised speed.

1.1.3 The components used must withstand any normal or exceptional stresses that have been specified during their period in service. The safety repercussions of any accidental failures must be limited by appropriate means.

1.1.4 The design of fixed installations and rolling stock and the choice of the materials used must be aimed at limiting the generation, propagation and effects of fire and smoke in the event of a fire.

1.1.5 Any devices intended to be handled by users must be so designed as not to impair their safety if used foreseeably in a manner not in accordance with the posted instructions.

1.2 *Reliability and availability*

The monitoring and maintenance of fixed or movable components that are involved in train movements must be organised, carried out and quantified in such a manner as to maintain their operation under the intended conditions.

1.3 *Health*

1.3.1 Materials likely, by virtue of the way they are used, to constitute a health hazard to those having access to them must not be used in trains and railway infrastructures.

1.3.2 Those materials must be selected, deployed and used in such a way as to restrict the emission of harmful and dangerous fumes or gases, particularly in the event of fire.

1.4 *Environmental protection*

1.4.1 The repercussions on the environment of the establishment and operation of the trans-European high-speed rail system must be assessed and taken into account at the design stage of the system in accordance with the Community provisions in force.

1.4.2 The materials used in the trains and infrastructures must prevent the emission of fumes or gases which are harmful and dangerous to the environment, particularly in the event of fire.

1.4.3 The rolling stock and energy-supply systems must be designed and manufactured in such a way as to be electromagnetically compatible with the installations, equipment and public or private networks with which they might interfere.

1.5 *Technical compatibility*

The technical characteristics of the infrastructures and fixed installations must be compatible with each other and with those of the trains to be used on the trans-European high-speed rail system.

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If adherence to these characteristics proves difficult on certain sections of the network, temporary solutions, which ensure compatibility in the future, may be implemented.

Requirements specific to each subsystem

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2.1 *Infrastructures*

2.1.1 Safety

Appropriate steps must be taken to prevent access to or undesirable intrusions into installations on lines travelled at high-speed.

Steps must be taken to limit the dangers to which persons are exposed, particularly in stations through which trains pass at high-speed.

Infrastructures to which the public has access must be designed and made in such a way as to limit any human health hazards (stability, fire, access, evacuation, platforms, etc.).

Appropriate provisions must be laid down to take account of the particular safety conditions in very long tunnels.

2.2 *Energy*

2.2.1 Safety

Operation of the energy-supply systems must not impair the safety either of high-speed trains or of persons (users, operating staff, trackside dwellers and third parties).

2.2.2 Environmental protection

The functioning of the energy-supply systems must not interfere with the environment beyond the specified limits.

2.2.3 The electricity supply systems used throughout the trans-European high-speed rail system must:

- enable trains to achieve the specified performance levels:
- be compatible with the collection devices fitted to the trains.

2.3 *Control and command and signalling*

2.3.1 Safety

The control and command and signalling installation and procedures used on the trans-European high-speed rail system must enable trains to travel with a level of safety which corresponds to the objectives set for the network.

2.3.2 Technical compatibility

All new high-speed infrastructures and all new high-speed rolling stock manufactured or developed after adoption of compatible control and command and signalling must be tailored to the use of those systems.

The control and command and signalling equipment installed within the train drivers' cabs must permit normal operation, under the specified conditions, throughout the trans-European high-speed rail system.

2.4 *Rolling stock*

2.4.1 Safety

The rolling-stock structures and those of the links between vehicles must be designed in such a way as to protect the passenger and driving compartments in the event of collision or derailment.

The electrical equipment must not impair the safety and functioning of the control and command and signalling installations.

The braking techniques and the stresses exerted must be compatible with the design of the tracks, engineering structures and signalling systems.

Steps must be taken to prevent access to electrically-live constituents in order not to endanger the safety of persons.

In the event of danger devices must enable passengers to inform the driver and accompanying staff to contact him.

The access doors must incorporate an opening and closing system which guarantees passenger safety.

Emergency exits must be provided and indicated.

Appropriate provisions must be laid down to take account of the particular safety conditions in very long tunnels.

An emergency lighting system having a sufficient intensity and duration is an absolute requirement on board trains.

Trains must be equipped with a public address system which provides a means of communication to the public from on-board staff and ground control.

2.4.2 Reliability and availability

The design of the vital equipment and the running, traction and braking equipment and also the control and command system must, in a specific degraded situation, be such as to enable the train to continue without adverse consequences for the equipment remaining in service.

2.4.3 Technical compatibility

The electrical equipment must be compatible with the operation of the control and command and signalling installations.

The characteristics of the current-collection devices must be such as to enable trains to travel under the energy-supply systems for the trans-European high-speed rail system.

The characteristics of the rolling stock must be such as to allow it to travel on any line on which it is expected to operate.

2.5 Maintenance

2.5.1 Health

The technical installations and the procedures used in the maintenance centres must not constitute a danger to human health.

2.5.2 Environmental protection

The technical installations and the procedures used in the maintenance centres must not exceed the permissible levels of nuisance with regard to the surrounding environment.

2.5.3 Technical compatibility

The maintenance installations on high-speed trains must be such as to enable safety, health and comfort operations to be carried out on all trains for which they have been designed.

2.6 Environment

2.6.1 Health

Operation of the trans-European high-speed rail system must remain within the statutory noise- nuisance limits.

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2.6.2 Environmental protection

Operation of the trans-European high-speed rail system must not cause a level of ground vibrations which is unacceptable for activities and the immediate environment in the vicinity of the infrastructure and in a normal state of maintenance.

2.7 Operation

2.7.1 Safety

Alignment of the network operating rules and the qualifications of drivers and on-board staff must be such as to ensure safe international operation.

The operations and maintenance intervals, the training and qualifications of maintenance staff and the quality assurance system set up in the maintenance centres of the operators concerned must be such as to ensure a high level of safety.

2.7.2 Reliability and availability

The operation and maintenance periods, the training and qualifications of the maintenance staff and the quality assurance system set up by the operators concerned in the maintenance centres must be such as to ensure a high level of system reliability and availability.

2.7.3 Technical compatibility

The alignment of the operating rules of the networks and the qualifications of drivers, on-board staff and managers in charge of traffic must be such as to ensure operating efficiency on the trans-European high-speed rail system.