

6 SAFETY RECOMMENDATIONS

6.1 New recommendations

The Safety Investigation Authority, Finland recommends that the Finnish Transport Safety Agency (Trafi) ensure the implementation of the following new recommendations:

6.1.1 Specifying the binding of slit coil packs

The breaking of the radial straps holding the slit coil pack together was preceded by the radial straps becoming loose and displaced during the handling and transport after they were bound at the factory. The loose radial straps allowed the slit coil pack to tilt during transport. In order to ensure that the radial straps are sufficiently tight and that they stay in place, the Safety Investigation Authority recommends that:

SSAB specifies the binding of slit coil packs and verifies it by calculations, taking the stresses due to handling at the factory into account in addition to the lateral accelerations on the coil pack during railway transport. [2017-S3]

It is appropriate to find out the accelerations caused on the load by the railway equipment in cooperation with the railway undertaking using the results from the running characteristics tests of the rolling stock.

6.1.2 Loading slit coil packs on a wagon

The running characteristics of the steel coil carrying wagons fulfil the requirements of European norms¹, but the lateral accelerations on the frame of the wagons come close to the limit value and may even exceed it for short periods of time. In a calculated estimate of the moment of inertia of a loaded wagon resulting from the placement of the load, it was found that it is more advantageous to put heavy coils in cradles 2 and 4 at the centre of the wagon compared to cradles 1 and 5. So that load placement would not cause unnecessary stress to the load's bindings, the rolling stock or the tracks, the Safety Investigation Authority recommends that:

VR finds out the best placement for the coils in the wagons in order to improve the running characteristics of a loaded coil wagon and takes the results into account in the loading instructions. [2017-S4]

6.1.3 Collecting and analysing safety information

Straps have become loose and broken during handling in storage or transport. The problem of the straps becoming loose on coils being rolled and lifted in the storage area had also been identified in SSAB's production. Broken straps had been replaced, but a deviation had not been recorded concerning them. In addition, the investigation found that slit coils had also

¹ EN 14363.

fallen off or tilted during transport on previous occasions, but information was not available for all cases. So that information on the deviations could be utilised, the Safety Investigation Authority recommends that:

In order to identify risks, SSAB collects information about deviations related to binding, storage handling and transport, and deals with them. [2017-S5]

Based on the analysed information, new or incipient risks could also be identified in advance. Deviations that have occurred during railway transport must be handled in cooperation with the railway undertaking.

6.2 Other observations and proposals

In its other comments, the Safety Investigation Authority states that the rail traffic operators are to remind the engine drivers that the threshold of reporting observed potential faults related to safety must remain low.