

## R2016-02 Collision of a locomotive with a steel slit coil and derailment in Matkaneva 23 March 2016

On 23 March 2016 at 11.53 am, a locomotive on its way from Kokkola to Ylivieska collided with a steel slit coil on the track at the speed of 120 km/h near the Matkaneva Station. The locomotive jumped over the slit coil, which was lying on its flat side, and became derailed. After being derailed, the locomotive travelled 185 metres and came to rest tilted over the right rail so that the rail was close to the middle of the locomotive.

The slit coil, weighing approximately 3,500 kg, had fallen on the track from a freight train that had passed the site approximately one hour earlier. The slit coil had rolled to the neighbouring track on the western side and come to rest on its flat side on top of one of the rails. Before the locomotive collided with the slit coil, the passenger train IC50 passed the site on the eastern track at 11.45 am. The driver of the passenger train did not notice the slit coil on the neighbouring track.

The driver of the locomotive that collided with the steel slit coil and was derailed sustained minor injuries. 257 metres of track and track equipment were damaged. The costs of repairs to the locomotive and the track caused by the accident amounted to approximately € 500,000. The damaged track at the site of the accident was repaired and ready for operation by 25 March 2016, and the repairs were completely finished on 11 May 2016. Railway transport of slit coils was interrupted after the accident, and they were transported in lorries until 17 August 2016.

The immediate cause of the accident was the breaking of the radial straps holding the slit coil pack together. The break 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. The pack fell over and a slit coil fell off the wagon.

In order to avoid similar accidents, the Safety Investigation Authority recommends that the Finnish Transport Safety Agency (Trafi) ensure that the following recommendations on binding slit coil packs, loading them on a wagon as well as collecting and analysing safety information are implemented:

1. 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.
2. 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.
3. In order to identify risks, SSAB collects information about deviations related to binding, storage handling and transport, and deals with them.

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.