

DETAILS OF INTERESTING CLAIMS

No: 56

Type of Insurance

LP(M)

Description of damaged item:

Damage on a drying tumble drum for chipboard production

Cause of Loss:

Heavy corrosion

Claim cost:

Description of Incident and Loss Prevention Measures initiated:

Heavy corrosion damage on a drying tumble drum for chipboard production. The drum had several through holes in the mantle after five years of use, though the design age was 30 years.

Corrosion products stemming from the low sulphur fuel in the exhaust gases most likely producing condensates of sulphuric acid on the inside of the drum where it is cooled from the outside during run up and run down periods. These acids concentrate to specific cold spots and give rise to a fast acid induced corrosion.

The drying gases are those produced in a in oil-heater and then blown together through the drum with the chips to be dried. The temperature at the hot side is approx. 250 C° and cools down to approx. 120 C° before leaving the drum. The drum, situated outside in a northern country with a cold climate, has a diameter of approx. 6 m and length of approx. 30 m and is being turned with a gear using a tooth-wheel at one point approximately in the middle of the drum. The outer mantle of the drum is well insulated but the insulation does not cover the width for the tooth-wheel. The drum was repair welded with numerous "bridges" in order to withstand one year of use before it finally will be repaired at the next scheduled shutdown.

The company will start a regular in-service NDT-program for the drum. The insulation at the tooth-wheel will be improved. The burners in the oil-heater will be modified to accept ultra low sulphur fuel that works in a different viscosity range than the now used heavy oil to be used for the run up and the run down periods.

Outline the interesting or unusual aspects of this claim or problems experienced during settlement:

The damage was noticed visually by chance at the yearly shutdown when the tooth-wheel was being inspected. The reason why it had not been noticed before was the fact that the drying process works at a slight under-pressure and thus leaks into the drum are not easy to notice from process parameters. Although the fuel complied with design criteria, the material used for the drum could not cope with the prevailing corrosive environment.