

The conveyor chain test-rig is a full scale test equipment designed and built to perform wear test on conveyor chains used in different applications. In the full scale testrig conveyor chain is run against a stationary counter faced material. A maximum chain pre-tension force of 5 kN (i.e. total normal force of 10 kN) and a maximum tangential force of 20 kN can be applied for testing purpose. The wear or the elongation of the chain can be monitored online by means of a LVDT. The normal force and the tangential force is also monitored online during the course of testing.



The chain is continuously rotated over two chain wheels positioned an approximate distance of 1m.

One of the chain wheels is driven by a motor with a nominal speed of 1435 rpm in combination with a reduction box with a ratio of 1:43.7. This results in a nominal rotational speed of 32.8 rpm. The motor is however equipped with a frequency drive which allows to have variable rotational speed between 15 rpm and 50 rpm. Taking a typical working diameter of the chain wheel into account ($D = 150$ mm), the linear velocity of the chain can be chosen to be between 0.1 m/s and 0.4 m/s.

TEST RIG CHARACTERISTICS

Property	Value
Maximum surface velocity of the conveyor chain	0.4 m/s, for nom. diameter of 150 mm
Normal force, i.e. double of chain pre-tension load	0 – 10 kN
Tangential force	0 – 20 kN
Displacement	Max. 25.4 mm (1 inch)
Different chains, sprockets and tracks can be tested	