

Impairments:

Some of the impairments that can affect twisted-pair cables include:

- **Near-end crosstalk (NEXT):** This is crosstalk that occurs between the two wires in a twisted pair. It can be caused by imperfect twisting or by damage to the cable.
- **Far-end crosstalk (FEXT):** This is crosstalk that occurs between different twisted pairs in a cable. It can be caused by long cable runs or by inadequate shielding.
- **Attenuation:** This is a decrease in the strength of a signal as it travels through a cable. It is caused by resistance in the wires and by losses in the insulation.
- **Delay skew:** This is a difference in the time it takes for a signal to travel through different twisted pairs in a cable. It can be caused by uneven twisting or by damage to the cable.