

*Also spelt as “*Tire” in some countries***Moisture Control in Tyre Creel Room**

The steel belted of tyres get rusted over a period of time leading to the tyre's quicker wear and tear. However rusting can be delayed if due care is taken during the manufacturing stage, to see that rusting of steel belts does not occur during the bonding process.

Effects of Uncontrolled Humidity

Presence of high humidity during the manufacturing process of radial tyres leads to :

- Improper bonding between steel and rubber
- Loss of strength
- Large rejection rate

**Causes of Uncontrolled Humidity**

During Manufacturing process for preparing the multi-layer tyres, some use only steel belts for the added strength, others add cross knitting of steel wires, which makes it stronger. The room in which steel wires are covered with fabric, converting it into a single bonded ribbon, which is, then braided, is referred to as the Creel Room.

In the Creel Room, various wires of fabric and steel pass through the winding machine from large spools. Presence of high humidity in this room leads to rusting of steel wires, leading to a large rejection rate and loss of strength.

Rusting prevents proper bonding between the steel and rubber. Dehumidification of Creel Room therefore becomes a vital application area.

General Recommendation

Relative Humidity in the Creel Room must be maintained between 20±5% at 25±5°C

Bry-Air Solution

Bry-Air dehumidifiers in creel rooms helps in maintaining conditions of 20±5% RH. Due to the nature of the manufacturing, the area surrounding the creel room may be at a temperature and humidity higher than normal ambient conditions.

In the Creel Room, various wires of fabric and steel pass to the winding machine from large spools. This total area is taken into consideration while calculating moisture load.

Also, sufficient make-up air is introduced to provide the positive pressure in the space.

It is also imperative that when the cord leaves the creel room, it must travel through ambient air. At this time, if the temperature of the cord is below the dewpoint temperature of the ambient, moisture will condense on it and be trapped in the finished ply. Therefore, the cord must never leave the creel room unless it is at a temperature above the dewpoint temperature of the ambient air.

Tyres incorporating the superior radial tyre technology have withstood the test for a longer life than conventional tyres. All this has been made possible due to adherence to quality manufacturing practices. Adding a desiccant dehumidifier to protect the steel cord ensures a “lasting bond, which never tires”