

Discuss the importance of gross wheel load and contact pressure in stress distribution pattern and in pavement design.

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Gross wheel load and contact pressure are important factors in stress distribution pattern and pavement design.

The gross wheel load is the total weight of the vehicle and its load that is transmitted to the pavement. The magnitude of the gross wheel load determines the amount of stress that will be induced in the pavement structure. If the gross wheel load is too high, it can cause excessive stress and damage to the pavement. Therefore, it is important to consider the gross wheel load while designing pavements.

The contact pressure is the pressure that is exerted by the wheel on the pavement surface. It is calculated by dividing the gross wheel load by the area of the tire in contact with the pavement surface.

The contact pressure determines the intensity of stress at the pavement surface. The higher the contact pressure, the higher the stress concentration in the pavement surface. Therefore, it is

important to design pavements that can withstand the contact pressure.

In pavement design, the gross wheel load and contact pressure are considered to ensure that the pavement can withstand the stresses induced by the traffic loads. The pavement thickness and strength are determined based on the gross wheel load and contact pressure to ensure that the pavement can resist the induced stresses without experiencing excessive deformation or cracking.

In summary, the gross wheel load and contact pressure are important factors in pavement design as they determine the amount and intensity of stresses induced in the pavement structure. Proper consideration of these factors is crucial to ensure that pavements can withstand the traffic loads and provide a safe and comfortable driving experience.