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MAINTENANCE

General

As a result of the action of traffic and weather, the surface and main structure of pavements deteriorate with time. Maintenance is hence essential to ensure continuous satisfactory traffic flow, safety and comfort for the users. In addition, this maintenance must be consistent and carefully scheduled, because if it is delayed for too long, the damage accelerates and eventually the pavement will become totally unserviceable. This planned approach is commonly termed as pavement management

To achieve high quality maintenance, thorough knowledge of the types of deterioration and degradation processes causing them is necessary. The different sources of damage and their origin are fairly well understood in the official listings [1] and [2]. They fall into three categories:

- Damage due to major geometrical defects potentially detrimental to safety and riding comfort: subsidence of the pavement, subsidence of pavement edges, potholes and rutting.

- Surface damage caused by loss of binder or aggregates, seepage of mastic from underlying cracks (« fatting up »), or wear of aggregates, such as peeling, stripping, fatting up and polishing, all of which reduce adhesion and lead to unsafe conditions on the road.
- Degradation resulting in longitudinal and transverse cracks, spalled or hollow joints, fine and large pattern cracking. These reduce the imperviousness of the pavement and affect its mechanical behaviour.

These different types of degradation are often combined. For example, subsidence of pavement edges can be followed by alligator cracking with time or a pothole almost invariably corresponding to a fine crazed area that has developed in a box-culvert. Depending on which types of damage are encountered (types and extent), maintenance tasks consist either in repairing the road in selected areas, overlaying the entire surface, or combine it with general or localised support preparations.

