

ABSTRACT

THE EFFECT OF EPOXY FILLER TO THE BEHAVIOUR OF HIGH STRENGTH BOLT CONNECTION

The use of slip critical mechanism for the connection of bridge structure is required to have a rigid and fatigue resistant connection. The occurrence of slip at the connection system could cause fatigue which will impact to the failure of structure. Slip occurs when the load is greater than the slip critical resistance. This condition of overload which is beyond of analysis could cause slip. Moreover slip critical resistance value which works at a connection can not be ascertained due to fluctuating behavior (statistics). Slip can occur because of the gap caused by hole diameter which is larger than bolt diameter at the connection part. The existence of the gap is required for the tolerance of erection. If the existing gap is eliminated without interfering the tolerance of erection (hole diameter is larger than bolt diameter), for example by filling the gap with a filler (after the erection process) in the form of liquid material (ease the filling), then hardens into a high quality material, so the gap as facility of slip can be avoided. By using the filler, the slip may not occur. When the load exceeds the slip resistance, the bearing between the bolt and filler will be contacted so the “free of slip” connection could be achieved.

Keyword: bolt connection, high strength bolt, critical slip, slip, gap, filler