



## Análisis de la variabilidad del colapso y su geología en un perfil de loess [

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text (article)

Analítica

The valuable and numerous damages on civil structures that loessial soils from the city of Cordoba have generated because of their collapse susceptibility have been extensively studied by many local researchers. Although every loess has similar origin, mineralogy and grain size distribution, not all loess became collapsible due to their different geological processes. In order to quantify this mechanical instability phenomenon and link this behavior to the geological history of loessial soils, a stratigraphic profile located at Corralito, was studied. This lithologic profile consists of a loess-paleosol sequence that emerges in a 14 m deep naturally open trench, composed of an anthropic upper horizon, followed by an organic horizon, then a mantle of upper loess, and finally in depth, the lower loess I, II and III. Thirty-three undisturbed soil samples were taken along these 14 m profile and laboratory double oedometer tests were carried out. The test results showed that specimens from the anthropic, organic, and upper loess are highly collapsible. Nevertheless, the collapsibility coefficients measured on specimens from lower loess I and III, were close to one highlighting that there is no collapse susceptibility. The different mechanical behavior of the strata was explained based on the processes suffered throughout their geological history. The mechanical stability of the lower loess I and III was attributed to the fact that these horizons correspond to a fragipan and a possible possible horizon cemented with calcium carbonate, respectively

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