

# Terrig

When a building plan involves introducing a higher loading on an existing floor the question is asked - 'Will it be safe?' Whether it is a mezzanine floor support system, a wall built on to an existing concrete ground floor, the load of industrial racking system or whatever else people may wish to do with existing building, large or small, the same question always crops up - 'Is its strong enough?'

The prudent Building Control Officer or Engineer also asks, before signing on approval document, 'How do we know it will be safe?'

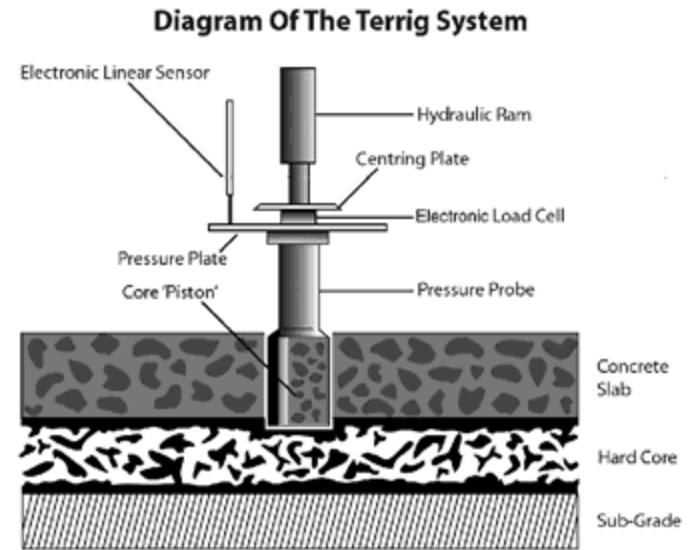
People could be excused for making good guesses, but there was no way of knowing of the state of the ground beneath the floor slabs. Plans or drawings might be found if lucky, but how often did they give real information about the ground on which the concrete floor had been laid years ago?

The truth of the matter is that in the majority of cases the hardcore and ground beneath a concrete floor were unknown characteristics and their strengths could only be guessed at.

The situation still exists and conscientious people attempt to make estimates of the sub-grade reaction  $k$ , often using the Westergaard theory. Now however, a combination of design experience and sophisticated electronics makes it possible to find out the reactive pressure characteristics of the ground underneath the existing concrete slabs however old they are, so that new developments can be erected with complete safety and compliance.

The Kontrad Terrig Testing System has been designed to find out the strength of the hardcore beneath any existing concrete floor. From the test results it is easy to assess the load bearing capacity of the ground on which the floor rests. That enables the designer to estimate the ability of the existing floor to meet the new loading conditions imposed by it fork-lift trucks, racking storage systems, mezzanine floors and other loading systems. The testing is done on site with little inconvenience to existing users of the building and results are known quickly. Guesswork is replaced by measurement in a system which has been proved over a number of years to be effective.

The measurements system is quite a simple process - a cored hole is drilled through the slab. The core itself is left in position to act as a piston for a hydraulic loading system. Precise loading is applied to the core while sophisticated electronic sensors and loading cells take measurements of the deflection and relative load increments.



The digital readout shows the load applied (in terms of kN/Sq m) and the deflection in mm. A simple calculation gives the value for the G.V factor, which is based on measurements of forces and deflection. Several tests can be made at strategic locations so that a picture can be built up of the actual capacity of the sub-base under the concrete floor, structures can then be designed with confidence. The working surface is made good and the core of the concrete taken away for analysis of the slabs characteristics. There is minimum disturbance of work in the test area. The question - 'Will it be safe?' need never be asked again, because it is now possible to know that the new structure will be built on safe ground, and that knowledge can make a Building Control Officer's job much more comfortable.

The Terrig Test system has now been successfully adopted since 1984 by many Architects, Surveyors, Commercial Estate Agents and owners of Industrial Buildings to ascertain the structural adequacy of existing floors to meet building requirements for racking systems, some of the applications of the Terrig System include: -

To establish the suitability of existing slabs to receive stanchions supporting mezzanine floors.

Determination of the structural characteristics of existing floor slabs onto which a new floor slab has to be constructed.

Determination of a floor slabs load carrying capacity to support back to back racking loads.

