Measure 1st Layer Rebar Cover with Maximum Precision

Inspecting the cover and depth of the thin 1st layer rebar (ties)

Measuring the concrete cover over the ties inside columns is crucial for structural health and durability. Concrete cover acts as a protective barrier against harmful elements such as moisture, chlorides, and carbon dioxide which trigger corrosion of the rebar.

Cover meter inspections play a vital role in this process, providing valuable data on concrete cover depth, rebar diameter, and structural integrity. However, traditional cover meters or GPR scanners are not always reliable when dealing with these curved elements.

Challenge

Congested reinforcement, round geometry and huge difference of diameter between thin 1st layer ties and thick 2nd layer longitudinal rebar in columns create a challenge for most cover meters.

When inspecting the cover and depth of the thin 1st layer rebar (ties), you have heavy influence from the thick 2nd layer. This leads to inaccurate measurements of the 1st layer.

Each country also has specific requirements for concrete cover, down to the millimeter. Many cover meters and GPR scanners (with precise dielectric) can only deliver +/- 5 mm accuracy as the best result. With that level of tolerance, the contractors and engineers cannot fully trust if there is acceptable cover. For example in aggressive environments like coastal areas, if the specified cover is 50 mm, and the cover meter says there is 50mm, the +/- 5mm tolerance means that the correct result could be only 45 mm cover, which would not be sufficient for the requirement.

Many cover meters are also too large to precisely follow the curvature of columns. The round column shape also makes it difficult to scan using a device with wheels, since the wheels are usually too large to follow the tight curves. These challenges can translate into unreliable data, wasted time on corrections, and incomplete inspections – all impacting project efficiency and potentially compromising structural safety.

Solution

Thankfully, these challenges are solved when using a cover meter with neighbouring rebar correction (NRC) like the Profometer PM8000. This innovative solution factors in the influence of the neighbouring rebars especially the thick 2nd layer longitudinal rebar, delivering accurate results of the rebar diameter and cover depth, even in densely reinforced columns and beams.

You can say goodbye to complex calculations or manual adjustments to account for the second layer rebars, as the automatic rebar correction does it for you. This streamlines the process for more efficient and precise inspections with high accuracy of +/- 1 mm. With this accuracy, contractors, engineers and asset owners can trust the results because they know it will only be maximum of 1 mm difference.

The PM8000 is also very compact compared to many conventional cover meters, enabling you to deliver effective measurement. It can be used without wheels and standalone, making it easy to follow the tight curvature of round columns with high precision.

How to scan 1st layer rebar using the PM8000

To measure the 1st layer rebar called ties, place the PM8000 in mid-position (between two longitudinal 2nd layer rebar) on the concrete surface as shown in the image, and move it slowly, sweeping parallel to the ties 1st layer rebars. The strongest signal results are obtained when the vertical axis is parallel to the rebar being measured and the measurement center is directly over the rebar.





Used as a standalone device without the iPad or wheels, the PM8000 Lite makes the ideal solution for this application. The Neighbouring Rebar Correction automatically factors in the influence from the 2nd layer rebar, giving you accurate results every time. Now, you can conquer the complexities of inspecting round columns and beams with a reliable, easy-to-use solution.

Experience the benefits of accurate data, efficient inspections, and peace of mind knowing the structural integrity of your project is well assessed with the Profometer PM8000. This standalone use without wheels is available for PM8000 Lite, PM8000 or PM8000 Pro.

SCREENING EAGLE | proceq

Terms Of Use
Website Data Privacy Policy

Copyright © 2024 Screening Eagle Technologies. All rights reserved. The trademarks and logos displayed herein are registered and unregistered trademarks of Screening Eagle Technologies S.A. and/or its affiliates, in Switzerland and certain other countries.