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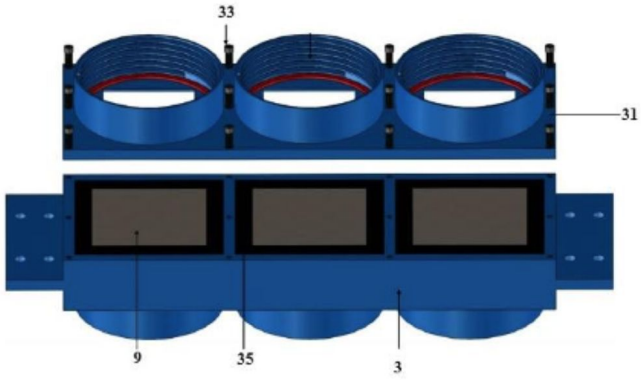
PENDING

(IN202311078557)
An apparatus and method for measuring air permeability of concrete specimen



NEED

Nearly 45% of concrete structure failures stem from undetected cracks caused by air and moisture ingress. Traditional permeability tests lack accuracy and repeatability. But what if this failure rate could be reduced to nearly zero—without redesigning concrete itself?

TECHNOLOGY OVERVIEW

This patent presents an airtight, multi-chamber apparatus that accurately measures the air permeability of concrete samples by applying uniform compressed air and tracking pressure buildup. The system ensures repeatable results and supports multiple samples, enabling early detection of material degradation before structural failure occurs.

TECHNOLOGY KEY FEATURES

Airtight chamber, uniform air distribution, precise pressure tracking, multi-sample testing, five-hour maximum duration. Measures air permeability with ±2.5 kPa accuracy. Prevents reverse air flow. No need for destructive sample testing.

MARKET ANALYSIS

India's construction testing equipment market is growing at 8.1% CAGR; globally, non-destructive testing in construction is expected to reach $4.6B by 2033 at 7.2% CAGR. Drivers include stricter quality norms, rising infrastructure investment, and demand for material longevity. (Sources: IMARC 2024, MarketsandMarkets 2023)

Target Industries

1) Civil testing labs and infrastructure quality control agencies; 2) Construction analytics and monitoring platform developers; 3) R&D units in cement, admixture, and building material innovation for durability-focused product development.

AT A GLANCE

- SDG 9 (Industry, Innovation), SDG 11 (Sustainable Cities), SDG 12 (Responsible Consumption)

Read more here

Technology is available for licensing/ co-development.

Reach out to Prof. Deepak Chitkara, Coordinator, BITS Technology Enabling Centre,
BITS Pilani Contact Details: tec.bits@pilani.bits-pilani.ac.in, 91 1596-255913

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