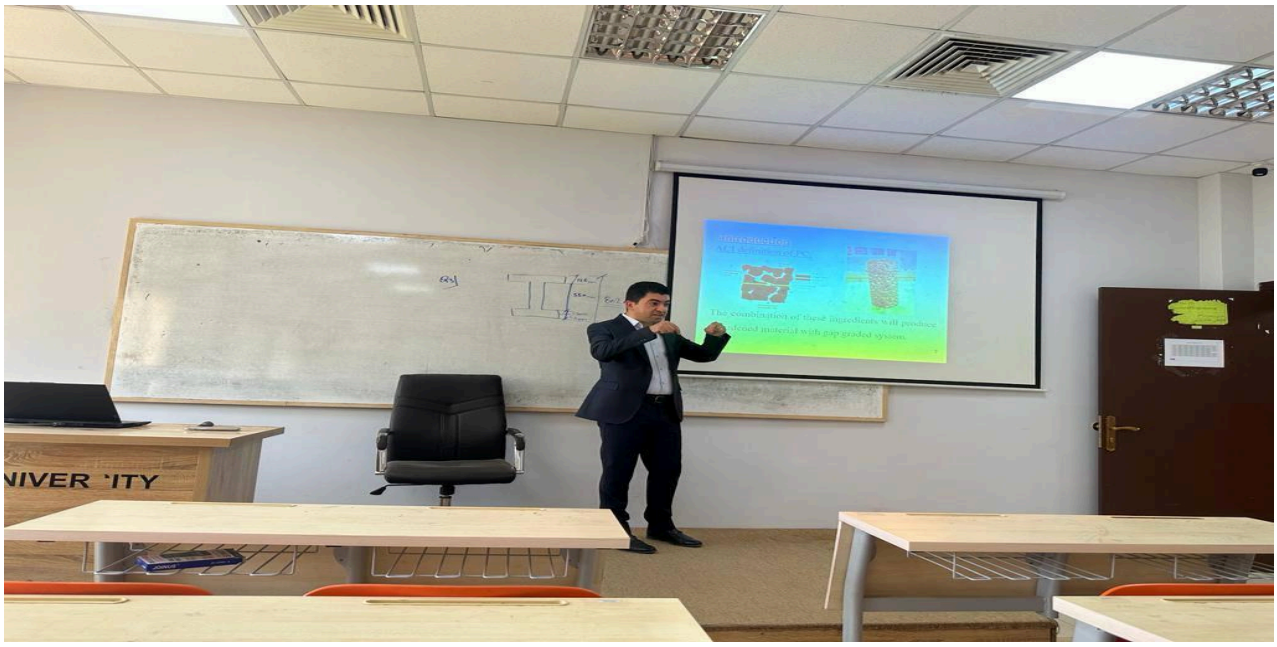
Pervious Concrete

A Seminar at
Soran University (SUN)



This A Seminar at is arranged by SUN's
Engineering faculty, Civil Engineering Department (DCVE)

پوختە:
کۆنکرێتی کونیلەدار جۆرێکی ناوازەی کۆنکرێتە کە پێکهاتووە لە سیستەمێکی پلەبەندی بۆشایی. بە شێوەیەکی باو بەهای دابەزینی نزیکە لە سفر و پێکهاتووە لە چیمەنتۆ، کۆکراوەی پلە یەکسان، ئاو و بەزۆری ماددە وردەکان لەناو دەبات. تێکەڵکردنی پێکهاتەکان دەبێتە هۆی دروستکردنی ماتریکسێکی ڕەق کە ڕێگە بە ئاوی باران دەدات بە ئاسانی تێپەڕێت. ڕێژەی ڕژانی ئاوی ئەم کۆنکرێتە بەزۆری لە نێوان 1.4-12.2 ملم/چرکە دەگۆڕێت، هێزی پەستان و ڕێژەی ئاو بۆ چیمەنتۆ لە نێوان 2.8 بۆ 28 MPa و 0.26 بۆ 0.40، بە ڕێککەوت. جگە لەوەش، ناوەڕۆکی بۆشایی لە مەودای 15-30%دایە. بەگشتی لە کۆنکرێتەکانی کونیلەدار ڕێژەی ماددە چیمەنتۆییەکان لە

نێوان ٢٧٠ بۆ ٤١٥ کیلۆگرام/م٣دایە. توانای گواستنەوەی قەبارەیەکی زۆر ئاو لە ڕێگەی کونیلە زۆر بەیەکەوە بەستراوەکانییەوە بۆ ناو زەوی سوود و تایبەتمەندی سەرەکییە کە کۆنکرێتی کونیلەدار پێشکەشی دەکات، لە ئەنجامی پڕکردنەوەی ئاوی ژێر زەوی و کەمکردنەوە یان لابردنی کێشەکانی پەیوەست بە ئاوی باران.

خلاصة:

الخرسانة المسامية هي نوع فريد من الخرسانة يتكون من نظام متدرج من الفراغات. عادةً ما يكون لها قيمة سحب تقارب الصفر وتتكون من الأسمنت والركام الموحد والماء وعادةً ما تقضي على المواد الدقيقة. يخلق خلط المكونات مصفوفة صلبة تسمح لمياه الأمطار بالمرور بسهولة. تتراوح نفاذية الماء لهذه الخرسانة عادة بين 1.4-12.2 مم / ثانية ، وتتراوح قوة الضغط ونسبة الماء إلى الأسمنت من 2.8 إلى 28 ميجا باسكال و 0.26 إلى 0.40 على التوالي. بالإضافة إلى ذلك ، محتوى الفراغ في حدود 15-30٪. بشكل عام ، في الخرسانة المسامية ، يتراوح محتوى المادة الأسمنتية من 270 إلى 415 كجم / م٣ . تعد القدرة على نقل كميات كبيرة من المياه من خلال مسامها شديدة الترابط إلى الأرض الميزة والميزة الرئيسية التي توفرها الخرسانة المسامية ، نتيجة لتجديد المياه الجوفية وتقليل أو إزالة المشاكل المرتبطة بمياه الأمطار.

Abstract:

Pervious concrete is a unique type of concrete that consists of a gap-graded system. Commonly it has a slump value near to zero and comprises the cement, uniformly graded aggregate, water and usually eliminate fine materials. The mixture of the constituents will make a hardened matrix that permits rainwater to easily pass. The permeability rate of water of this concrete usually changes between 1.4-12.2 mm/s, the compressive strength and water-to-cement ratio (w/c) range from 2.8 to 28 MPa and 0.26 to 0.40, respectively. Besides, the content of void is in the range 15–30 %. In general, in pervious concretes the content of the cementitious material is between 270 and 415 kg/m3. The ability to transport a huge volume of water through its highly interconnected pores into the ground is the main benefit and property offered by pervious concrete, as a result replenishing underground water and decreasing or removing problems linked with rain water.

Speaker Profile

Mr. Aryanfar Haji M. Abd Sherwani (BSc-Eng., M.Sc.) is a construction and building materials' lecturer at DCVE-FENG/SUN. A Ph.D. candidate in Construction Martials/Civil Engineering on a split-side program with Fachhochschule Erfurt - the University of Applied Science and the University of Sheffield. From January 2020 to January 2021, he was a visiting scholar at FH ERFURT-University of Applied Sciences in Germany. His studies are centered on sustainable concrete, self-compacted concrete, geopolymer concrete, building and demolition waste, by-product materials, and waste materials. Several of his works and a book chapter have been indexed in the Clarivate and Scopus databases.

Please view Mr. Aryanfar Haji M. Abd Sherwani Google Scholar Account for more details on his publications.

About Soran University

Soran University (SUN) is located in the city of Soran, which is about a two-hour drive north-east of Erbil (Arbil, Hewlér), the capital of the Kurdistan Region of Iraq (KRIQ). The city is flanked by the famous Korek, Zozik, Henderén, and Biradost mountains. The medieval mountain village of Rewandiz (Rawanduz, رەواندز) is a stone-cast away, and the two cities share this lovely, harmonious upland. While waiting for its green, environmentally friendly building to be erected on a hilltop overlooking the cities of Soran and Rewandiz, its existing city campus has been meticulously set out to accommodate the lovely natural landscape. The new campus will be the first of its type, being walkable, balanced, powered by renewable energy, and compliant with all international environmental regulations. There are 5 Faculties in SUN; Faculty of Arts (FAAR), Faculty of Science (FSCN), Faculty of Education (FEDU), Faculty of Law, Political Science, and Management (FLAW/PSM), and Faculty of Engineering (FENG). Also, there is SUN research centre. Moreover, at SUN, there is a Language Center. SUN signed many Memoranda of Understandings (MoU) with many International Universities,

How to get here

Soran University (SUN) is located in the heart of the city of Soran. The main city campus is easily found on Google Maps for direction.