

عنوان مقاله:

Comparison of Compressive and Tensile Strengths of Dry-Cast Concrete with Ordinary Portland and Portland Pozzolana Cements

محل انتشار:

ژورنال مهندسی عمران، دوره 4، شماره 8 (سال: 1397)

تعداد صفحات اصل مقاله: 12

نویسندگان:

Rasyiid Lathifi Amhudo - *Master's Candidate, Department of Civil Engineering, Institut Teknologi Sepuluh Nopember (ITS), Surabaya, Indonesia*

Tavio - *Professor, Department of Civil Engineering, Institut Teknologi Sepuluh Nopember (ITS), Surabaya, Indonesia*

I Gusti Putu Raka - *Professor, Department of Civil Engineering, Institut Teknologi Sepuluh Nopember (ITS), Surabaya, Indonesia*

خلاصه مقاله:

Concrete is the most widely used construction material in the world. Along with the increasing economic needs in the development of construction, precast technology has become a primary solution that leads to the industrialization. The use of precast concrete system offers several advantages, such as rapid erection, higher product quality, lower project cost, better sustainability, and improved occupational health and safety. In general, there are two casting methods used in concrete placement, namely wet- and dry-castings. The dry-cast concrete has also been used for its advantages particularly in precast concrete industries, e.g. its rapid hardening time for fast mold removal (it significantly increases the plant productivity). The use of Portland Pozzolana Cement (PPC) as a replacement to Ordinary Portland Cement (OPC) has become increasingly popular for the past decade. Hence, its application in dry-cast method needs to be further investigated for its mechanical properties such as its compressive and splitting tensile strengths. An experimental work was carried out to examine the properties of dry-cast concrete using both types of cements (PPC and OPC). The development of its compressive strength was also monitored at 1, 7, 14, 21, 28, and 56 days of age. The splitting test was conducted to describe the tensile strength of dry-cast concrete. The observation of crack and failure behaviour of all concrete specimens were also carried out.

کلمات کلیدی:

Compressive Strength; Dry-Cast Concrete; OPC; PPC; Precast Concrete; Splitting Test; Tensile Strength; Wet-Cast Concrete

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/804138>



