# International Journal of Advanced Engineering and Nano Technology

ISSN: 2347 - 6389

**Website: www.ijaent.org** 

**Volume-4 Issue-2, FEBRUARY 2020** 

**Published by:** 

**Lattice Science Publication** 





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	Authors:	Wael Ibrahim, Amal Zamrawi
	Paper Title:	Fire Behavior of RC Flat Slabs Containing Recycled Ceramic Aggregate

**Abstract:** This study is to investigate experimentally fire resistance of flat slab manufactured using recycled crushed ceramics as coarse aggregate. From an economic point of view, this experiment is costly; however, if it managed and done correctly it can save raw materials, and conserve natural resources. The test is carried out on six slabs measuring 1.65\*1.65\*0.15m tested under flexural load exposed to fire under load for about 120 min. Two slabs were control without recycled ceramics aggregate, one slab with recycled ceramics aggregate with ratio of 35%, and three slabs with different ratios of 20%, 35% and 50% cast in layers such that the lower layer which was exposed to fire contains crushed ceramics, and the upper layer from ordinary concrete. This paper examines the feasibility of using ceramics wastes in concrete. The behavior of R.C flat slabs manufactured with recycled crushed ceramics was similar to that the normal concrete.

**1. Keywords:** Fire Resistance, Ceramics, Flexural, Flat Slabs.

#### References

- Samson TASSEW, "Textile Reinforced Ceramic Composites for Structural Infill Slab Applications" Large Structures and Infrastructures for Environmentally Constrained and Urbanized Areas 34th INTERNATIONAL SYMPOSIUM ON BRIDGE AND STRUCTURAL ENGINEERING, VENICE, 2010.
- Moore, D., Lennon, T., Wang, Y. 2007. "Designers' Guide to En 1991-1-2, 1992-1-2, 1993-1-2 and 1994-1-2: Handbook for the Fire Design of Steel, Composite and Concrete Structures to the Eurocodes", Thomas Telford Services Ltd.
- 3. Mehrafarid Ghoreishi, Ashutosh Bagchi and Mohamed A. Sultan "Estimating the Response of Flat Plate Concrete Slab Systems to Fire Exposure" structures in fire, of the 16-international conference, East Lansing, MI, USA, June 2-4 2010, PP. 286-293.
- ASTM C 39. Test method for compressive strength of cylindrical concrete specimens. Annual Book of ASTM Standards, 04.02, 1988:19-23.
- 5. ASTM C496 / C496M 04. Standard test method for splitting tensile strength of cylindrical concrete specimens.
- 6. ASTM C293 02. Standard test method for flexural strength of concrete.
- 7. DIN 50145 (1975) Testing of Metallic Materials; Tensile Test.
- 8. ANSYS theory manual.

Authors:	Wael Ibrahim, Amal Zamrawi
Paper Title:	Punching Behavior of RC Flat Slabs Containing Recycled Ceramic Aggregate

**Abstract:** This paper examines the feasibility of replacing natural aggregate with recycled crushed ceramics in R.C flat slabs. Nowadays, many researchers are trying to use recycled ceramics as coarse aggregate in manufacturing concrete structures to decrease waste construction materials, and save raw materials. The experimental work was carried out on six slabs measuring  $1650 \times 1650 \times 150$  mm with a connected central column tested for punching shear. One slab was control without recycled ceramics aggregate; five slabs with recycled ceramics aggregate with different ratios of 20%, 35%, 50%, 60% and 70% were used.

**Keywords:** Fire Resistance, Ceramics, Flexural, Flat Slabs.

# **References:**

2.

 Moore, D., Lennon, T., Wang, Y. 2007. "Designers' Guide to En 1991-1-2, 1992-1-2, 1993-1-2 and 1994-1-2: Handbook for the Fire Design of Steel, Composite and Concrete Structures to the Eurocodes", Thomas Telford Services Ltd.

 Mehrafarid Ghoreishi, Ashutosh Bagchi and Mohamed A. Sultan "Estimating the Response of Flat Plate Concrete Slab Systems to Fire Exposure" structures in fire, of the 16-international conference, East Lansing, MI, USA, June 2-4 2010, PP. 286-293.

- Amir Javed, Salman Siddique, Ram Prasad V S, "Investigation on ceramic waste and stone dust as aggregate replacement in concrete", International Journal of Engineering Technology, Management and Applied Sciences, March, Vol.3, pp.127-130, 2015.
- 4. Nuno Reis, Jorge de Brito, João R. Correia, Mário R.T. Arruda. Punching behavior of concrete slabs incorporating coarse recycled concrete aggregate Engineering Structures 100 (2015) 238–248.
- 5. Rao HS, Reddy VSK, Ghorpade VG. Influence of recycled coarse aggregate on punching behavior of recycled coarse aggregate concrete slabs. Int J Mod Eng Res 2012;2(4):2815–20.
- ASTM C 39. Test method for compressive strength of cylindrical concrete specimens. Annual Book of ASTM Standards, 04.02, 1988:19-23.
- 7. DIN 50145 (1975) Testing of Metallic Materials; Tensile Test.
- 8. American Concrete Institute: ACI 318M-11. Building code requirements structural concrete and commentary; September 2011.
- British code BS 8110 for design of concrete structures.
- 10. Fib model code for concrete structures 2010. Ernst & Sohn; October 2013. 434 pp.
- 11. European Committee for standardization. EN 1992-1-1 Eurocode 2: design of concrete structures Part 1-1: general rules and rules for buildings; 2004.
- 12. Egyptian Committee for standardization. ECP 203-2018: design of concrete structures; 2018. ANSYS theory manual.

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