

Title (en)
USE OF POLYMER MICROPARTICLES IN BUILDING MATERIAL MIXTURES

Title (de)
VERWENDUNG VON POLYMEREN MIKROPARTIKELN IN BAUSTOFFMISCHUNGEN

Title (fr)
UTILISATIONS DE MICROPARTICULES POLYMERES DANS DES MELANGES DE MATERIAUX DE CONSTRUCTION

Publication
EP 1928801 A1 20080611 (DE)

Application
EP 06792315 A 20060928

Priority
• EP 2006009444 W 20060928
• DE 102005046681 A 20050929

Abstract (en)
[origin: US2007068088A1] The use of polymeric microparticles having a cavity in hydraulically setting building material mixtures is described, from 1 to 100% by volume of the cavity of these microparticles being filled with water. In this way, remarkable concrete resistance to the freezing and thawing cycle is achieved, these microparticles providing improved protection for the concrete from the effects of the freezing and thawing cycle, even at a diameter of from 0.1 to 1 mum and in doses which are 1 to 2 orders of magnitude lower than those described in the prior art. Moreover, the compressive strength of the correspondingly hardened concrete is substantially improved, which was likewise not foreseeable.

IPC 8 full level
C04B 16/08 (2006.01); **C04B 24/26** (2006.01); **C04B 28/02** (2006.01)

CPC (source: EP US)
C04B 16/08 (2013.01 - EP US); **C04B 20/0036** (2013.01 - EP US); **C04B 24/2641** (2013.01 - EP US); **C04B 28/02** (2013.01 - EP US); **C04B 2103/0049** (2013.01 - EP US); **C04B 2103/0058** (2013.01 - EP US); **C04B 2111/10** (2013.01 - EP US); **C04B 2111/29** (2013.01 - EP US)

Citation (search report)
See references of WO 2007036365A1

Citation (examination)
• JP 2005206399 A 20050804 - SUMITOMO OSAKA CEMENT CO LTD
• US 2004034147 A1 20040219 - ZAMA YOSHIKI [JP]
• US 6084011 A 20000704 - LUCERO RICHARD F [US], et al
• JP H03267437 A 19911128 - SHIMIZU CONSTRUCTION CO LTD, et al
• DE 2229094 A1 19730118 - SEMPERIT GMBH
• EP 0338739 A1 19891025 - MITSUI CONSTR [JP], et al

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DOCDB simple family (publication)
US 2007068088 A1 20070329; CA 2623881 A1 20070405; CA 2623881 C 20140325; CN 101304958 A 20081112; DE 102005046681 A1 20070405; EP 1928801 A1 20080611; JP 2009509900 A 20090312; JP 5260293 B2 20130814; US 2009099271 A1 20090416; US 8177904 B2 20120515; WO 2007036365 A1 20070405

DOCDB simple family (application)
US 24796205 A 20051011; CA 2623881 A 20060928; CN 200680041801 A 20060928; DE 102005046681 A 20050929; EP 06792315 A 20060928; EP 2006009444 W 20060928; JP 2008532677 A 20060928; US 29088008 A 20081104