

Behavior of Concrete Structures Subjected to Blast and Impact 2010

At the ACI Fall 2010 Convention'UR/4: 3

**Pittsburgh, Pennsylvania, USA
24-28 October 2010**

Editors:

G. Thiagarajan

E. Williamson

C. Conley

ISBN: 978-1-61839-798-0

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2010) by the American Concrete Institute
All rights reserved.

Printed by Curran Associates, Inc. (2012)

For permission requests, please contact the American Concrete Institute
at the address below.

American Concrete Institute
38800 Country Club Drive
Farmington Hills, MI 48333 USA

Phone: (248) 848-3700

Fax: (248) 848-3701

BKStore@concrete.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

- SP281-1
Comparative Study of Concrete Constitutive Models for Predicting Blast Response"223
Authors: James W. Wesevich, David D. Bogosian, Barry L. Bingham, Johan Magnusson, and Alexander P. Christiansen
- SP281-2
Effects of High-Strength Materials on Blast Response of Reinforced Concrete Panels"23;
Authors: Stephen D. Robert, Carol F. Johnson, and Stanley Woodson
- SP281-3
Capabilities of a Shock Tube to Simulate Blast Loading on Structures"257
Authors: A. Lloyd, E. Jacques, M. Saatcioglu, D. Palermo, I. Nistor, and T. Tikka
- SP281-4
Vehicular Impact Loading and Barrier Design"277
Authors: Mohammad Iqbal
- SP281-5
Structural Evaluation of Reinforced Concrete Bunkers In High Speed Balancing Facilities"293
Authors: Pericles C. Stivaros and A.J.Philippacopoulos
- SP281-6
Behavior and Modeling of Shear-Critical RC Beams Under Impact Loading"2: ;
Authors: Seluck Saatci and F.J. Vecchio
- SP281-7
Dynamic Compressive Toughness of High Strength Fiber Reinforced Concrete"32;
Authors: Lihe Zhang and Sidney Mindess
- SP281-8
Summary of the New Reinforced Concrete Blast Design Provisions in UFC 3-340-02, "Structures to Resist the Effects of Accidental Explosions""352
Authors: William H. Zehrt, Jr. and Patrick F. Acosta
- SP281-9
Full Scale Blast Testing of Hybrid Barrier Systems""374
Authors: N.L. Carey and J.J. Myers
- SP281-10
Use of Carbon Fiber Anchors to Improve Performance of CFRP Strengthened Concrete Structures Subjected to Blast and Impact Loads""393
Authors: Sarah Orton, Matthew Brune, Joseph Kirby, and Matthew Wheeler
- SP281-11
Large-Deflection Response of Fully Grouted Reinforced Masonry Walls to Static and Dynamic Out-of-Plane Pressure""3; 3
Authors: Robert S Browning, John M. Hoemann, and James S. Davidson

SP281-12

Finite Element Simulation of Foam Insulated Prestressed Concrete Sandwich Panels Subjected to Blast Load"⁴³³

Authors: Charles M. Newberry, John M. Hoemann, Bryan T. Bewick, and James S. Davidson

SP281-13

Challenges of FEA Modeling the Performance of Concrete Substructures under Blast Loading"⁴⁵⁵

Authors: Liling Cao, Christopher Pinto, Marguerite Pinto, and John Abruzzo

SP281-14

Explosive Breaching of Reinforced Concrete Walls: Experimental Efforts and Numerical Simulations"^{46;}

Authors: Stephen A. Akers, Denis D. Rickman, John Q. Ehrgott, Jr., and Timothy W. Shelton

SP281-15

Numerical Modeling of Concrete Slabs Reinforced with High Strength Low Alloy Vanadium Steel Bars Subjected to Blast Loads"⁴⁸⁵

Authors: Ganesh Thiagarajan, Anirudha V. Kadambi and Stephen Robert