

Sulfate Attack on Concrete: A Holistic Perspective

Held at the ACI Fall 2016 Convention

ACI SP 317

Philadelphia, Pennsylvania, USA
23 – 24 October 2016

Editors:

Mohamed T. Bassuoni
R. Doug Hooton
Thanos Drimalas

ISBN: 978-1-5108-4271-7

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© (2016) by American Concrete Institute
All rights reserved.

Printed by Curran Associates, Inc. (2017)

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

American Concrete Institute
38800 Country Club Drive
Farmington Hills, MI 48331 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: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

SP-317—1	
Criteria for Concrete Mixtures Resistant to Chemical Sulfate Attack.....	1
Authors: Karthik H. Obla and Colin L. Lobo	
SP-317—2	
Sulfate Resistance of Ternary Blend Concretes: Influence of Binder Composition on Performance	
Authors: R. Brett Holland, Kimberly E. Kurtis, Lawrence F. Kahn	
SP-317—3	
Chemical and Mechanical Characterization of Damage Evolution in Concrete Due to External Sulfate Attack	
Authors: A. Bonakdar and B. Mobasher	
SP-317—4	
Performance of Alternative Binders in Sulfate Environments	
Authors: L.E. Burris and K.E. Kurtis	
SP-317—5	
Durability of Two-Stage (Pre-Placed Aggregate) Concrete to Sulfate Attack	
Authors: M. F. Najjar, A. M. Soliman, T. M. Azabi and M. L. Nehdi	
SP-317—6	
Efficacy of Composite-Strengthening on Axial Capacity of Concrete Subjected to Sulfate-Induced Damage	
Authors: Yongcheng Ji and Yail J. Kim	
SP-317—7	
Criteria for Selecting Mixtures Resistant to Physical Salt Attack	
Authors: Karthik H. Obla and Robert C. O'Neill	
SP-317—8	
Efficacy of Ultrasonic Pulse Velocity Testing to Assess Sulfate-Degraded Concrete	
Authors: Julie Ann Hartell, Andrew J. Boyd, Patrice Rivard	
SP-317—9	
The Effects of Supplementary Cementitious Materials and Exposure Temperature on External Sulfate Attack	
Authors: Ashlee Allison and Michael D.A. Thomas	
SP-317—10	
Sulfate Resistance of Mortar Bars in Calcium, Magnesium, and Sodium Sulfate Using A Vacuum Impregnation Technique	
Authors: Federico M. Aguayo, Thano Drimalas, Kevin J. Folliard	