

An ACI Standard

# Specification for Unbonded Single-Strand Tendon Materials

Reported by Joint ACI-ASCE Committee 423

ACI 423.7-14



American Concrete Institute  
*Always advancing*

This is a preview. [Click here to purchase the full publication.](#)



## Specification for Unbonded Single-Strand Tendon Materials

Copyright by the American Concrete Institute, Farmington Hills, MI. All rights reserved. This material may not be reproduced or copied, in whole or part, in any printed, mechanical, electronic, film, or other distribution and storage media, without the written consent of ACI.

The technical committees responsible for ACI committee reports and standards strive to avoid ambiguities, omissions, and errors in these documents. In spite of these efforts, the users of ACI documents occasionally find information or requirements that may be subject to more than one interpretation or may be incomplete or incorrect. Users who have suggestions for the improvement of ACI documents are requested to contact ACI via the errata website at <http://concrete.org/Publications/DocumentErrata.aspx>. Proper use of this document includes periodically checking for errata for the most up-to-date revisions.

ACI committee documents are intended for the use of individuals who are competent to evaluate the significance and limitations of its content and recommendations and who will accept responsibility for the application of the material it contains. Individuals who use this publication in any way assume all risk and accept total responsibility for the application and use of this information.

All information in this publication is provided “as is” without warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose or non-infringement.

ACI and its members disclaim liability for damages of any kind, including any special, indirect, incidental, or consequential damages, including without limitation, lost revenues or lost profits, which may result from the use of this publication.

It is the responsibility of the user of this document to establish health and safety practices appropriate to the specific circumstances involved with its use. ACI does not make any representations with regard to health and safety issues and the use of this document. The user must determine the applicability of all regulatory limitations before applying the document and must comply with all applicable laws and regulations, including but not limited to, United States Occupational Safety and Health Administration (OSHA) health and safety standards.

Participation by governmental representatives in the work of the American Concrete Institute and in the development of Institute standards does not constitute governmental endorsement of ACI or the standards that it develops.

Order information: ACI documents are available in print, by download, on CD-ROM, through electronic subscription, or reprint and may be obtained by contacting ACI.

Most ACI standards and committee reports are gathered together in the annually revised ACI Manual of Concrete Practice (MCP).

**American Concrete Institute**  
**38800 Country Club Drive**  
**Farmington Hills, MI 48331**  
**Phone: +1.248.848.3700**  
**Fax: +1.248.848.3701**

[www.concrete.org](http://www.concrete.org)

# Specification for Unbonded Single-Strand Tendon Materials

An ACI Standard

Reported by Joint ACI-ASCE Committee 423

Carin L. Roberts-Wollmann, Chair

Amy M. Reineke Trygestad, Secretary

Theresa M. Ahlborn  
Robert W. Barnes  
Florian G. Barth  
Asit N. Baxi  
Roger J. Becker  
Kenneth B. Bondy  
Charles W. Dolan  
James P. Donnelly  
Pierre Esselinck  
Martin J. Fradua  
William L. Gamble  
Harry A. Gleich  
Shawn P. Gross

Pawan R. Gupta  
William M. Hale  
H. R. Trey Hamilton III  
Carol Hayek  
Mohammad Iqbal  
Donald P. Kline  
Larry B. Krauser  
Jason J. Krohn  
Mark E. Moore\*  
Theodore L. Neff<sup>†</sup>  
Sami H. Rizkalla  
James Rogers  
Bruce W. Russell

David H. Sanders  
Thomas C. Schaeffer  
Morris Schupack\*  
Richard W. Stone  
Miroslav F. Vejvoda  
Jeffrey S. Volz  
H. Carl Walker  
Zuming Xia  
Paul Zia

*Consulting Members*  
Robert N. Bruce Jr.  
Ned H. Burns

Chunsheng 'Steve' Cai  
Steven R. Close  
Henry J. Cronin Jr.  
Ward N. Marianos Jr.  
Hani Melhem  
Antoine E. Naaman  
Thomas E. Nehil  
Andrea J. Schokker

\*Deceased  
<sup>†</sup>Chair of subcommittee responsible for preparation of specification.

*This material specification provides materials criteria and fabrication requirements for unbonded single-strand tendons.*

**Keywords:** fabrication; post-tensioning; PT coating; tendon; unbonded.

## CONTENTS

### 1—SCOPE, p. 2

- 1.1, p. 2
- 1.2, p. 2
- 1.3, p. 2
- 1.4, p. 2

### 2—DEFINITIONS, p. 2

- 2.1, p. 2

### 3—REFERENCED STANDARDS, p. 3

- 3.1—American Concrete Institute, p. 3
- 3.2—ASTM International, p. 3
- 3.3—International Organization for Standardization, p. 3
- 3.4—Federal Test Method Standard, p. 3

### 4—ORDERING INFORMATION, p. 3

- 4.1, p. 3

### 5—MATERIALS, p. 4

- 5.1—Prestressing steel, p. 4
- 5.2—Post-tensioning (PT) coating, p. 4
- 5.3—Sheathing, p. 4
- 5.4—Anchorages and couplers, p. 4

### 5.5—Connecting components, p. 4

### 5.6—Tape, p. 4

### 6—MANUFACTURE, p. 4

- 6.1—Minimum quantity of post-tensioning (PT) coating, p. 4
- 6.2—Manufacturing processes, p. 4
- 6.3—Sheathing coverage, p. 4
- 6.4—Nonencapsulated systems, p. 5
- 6.5—Encapsulated systems, p. 5

### 7—MECHANICAL PROPERTIES, p. 5

- 7.1—Prestressing steel, p. 5
- 7.2—Post-tensioning (PT) coating, p. 5

### 8—DIMENSIONS, DENSITY, AND PERMISSIBLE VARIATIONS, p. 5

- 8.1—Prestressing steel, p. 5
- 8.2—Sheathing, p. 5
- 8.3—Anchorages, p. 5
- 8.4—Connecting components, p. 6

### 9—ANCHORAGE ASSEMBLY TESTING, p. 7

ACI 423.7-14 supersedes ACI 423.7-07, became effective October 22, 2014, and was adopted and published November 2014.

Copyright © 2014, American Concrete Institute.

All rights reserved including rights of reproduction and use in any form or by any means, including the making of copies by any photo process, or by electronic or mechanical device, printed, written, or oral, or recording for sound or visual reproduction or for use in any knowledge or retrieval system or device, unless permission in writing is granted by the American Concrete Institute.