



AMERICAN NATIONAL STANDARD

ANSI/ASSE Z490.1 – 2016
Criteria for Accepted Practices in Safety,
Health and Environmental Training

American National Standard

ANSI/ASSE Z490.1 – 2016



AMERICAN SOCIETY OF
SAFETY ENGINEERS

The information and materials contained in this publication have been developed from sources believed to be reliable. However, the American Society of Safety Engineers (ASSE) as secretariat of the ANSI accredited Z490 Committee or individual committee members accept no legal responsibility for the correctness or completeness of this material or its application to specific factual situations. By publication of this standard, ASSE or the Z490 Committee does not ensure that adherence to these recommendations will protect the safety or health of any persons or preserve property.

ANSI®
ANSI/ASSE Z490.1 – 2016

American National Standard

**Criteria for Accepted Practices in
Safety, Health and Environmental Training**

Secretariat

American Society of Safety Engineers
520 N. Northwest Highway
Park Ridge, IL 60068

Approved December 7, 2015

American National Standards Institute, Inc.

American National Standard

Approval of an American National Standard requires verification by ANSI that the requirements for due process, consensus and other criteria for approval have been met by the standards developer. Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made toward their resolution. The use of American National Standards is completely voluntary; their existence does not in any respect preclude anyone, whether he/she has approved the standards or not, from manufacturing, marketing, purchasing or using products, processes or procedures not conforming to the standards. The American National Standards Institute does not develop standards and will in no circumstance give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute. Requests for interpretation should be addressed to the secretariat or sponsor whose name appears on the title page of this standard.

Caution Notice: This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken periodically to reaffirm, revise or withdraw this standard. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute.

Published January 2016 by:

American Society of Safety Engineers
520 N. Northwest Highway
Park Ridge, IL 60068
(847) 699-2929 • www.asse.org

Copyright ©2016 by American Society of Safety Engineers
All Rights Reserved.

No part of this publication may be reproduced
in any form, in an electronic retrieval system or
otherwise, without the prior written permission
of the publisher.

Printed in the United States of America

Foreword (This Foreword is not a part of American National Standard Z490.1 – 2016.)

The charter of the American National Standards Committee Z490 on Criteria for Accepted Practices in Safety, Health and Environmental Training was accredited by the American National Standards Institute on April 1, 1998. This standard grew out of the recognized need for improvement in safety, health and environmental training. Quality training is required to ensure that workers and safety, health and environmental professionals have the knowledge, skills and abilities necessary to protect themselves and others in the workplace.

Safety, health and environmental training is an important element of an effective overall safety, health and environmental program.

Historically, safety, health and environmental training has been specifically addressed by only a few regulations with limited scope, such as asbestos, hazard communication and storm water management. The regulations usually specify the technical topics to be covered in a training course, but do not stipulate how to adequately design, develop, deliver and evaluate training.

This standard covers all facets of training, including training development, delivery, evaluation and management of training and training programs. Thus, the criteria were developed by combining accepted practices in the training industry with those in the safety, health and environmental industries. The standard is intended to apply to a broad range of training and training programs.

Industry employers may use this standard to assess the services of external training providers or to audit or improve their own corporate training programs. Training providers may use the standard to assess and improve their training services. This standard may also be used as a basis for development and management of training and training programs, with the annexes and references providing additional information and detail.

Governmental regulations specify mandatory requirements for various safety, health and environmental training. Likewise, the training program may be embedded in a larger safety, human resources or other organizational structure. As a broad-based voluntary consensus standard, this document complements the regulations and organizational policies. However, compliance with this standard does not ensure compliance with governmental regulations or organizational policies, or vice versa.

The Z490 Committee solicits public input that may suggest revisions to the standard. Such input should be sent to the Secretariat, American Society of Safety Engineers, 520 N. Northwest Highway, Park Ridge, IL 60068.

This standard was developed and approved for submittal to ANSI by the American National Standards Committee on Criteria for Accepted Practices in Safety, Health and Environmental Training, Z490. Committee approval of the standard does not imply that all members voted for its approval. At the time of its approval, the Z490 Standards Committee consisted of the following members:

John W. Mroszczyk, Ph.D., P.E., CSP, Chair
 Frank Perry, P.E., CSP, Vice Chair
 Ovidiu Munteanu, Secretary
 Timothy R. Fisher, CSP, CHMM, ARM, CPEA, Assistant Secretary
 Dan McNeill, Assistant Secretary
 Jennie Dalesandro, Administrative Technical Support

Organization Represented

Name of Representative

AHMP – Association of Hazardous Materials Professionals Alexander & Schmidt	Carl Heinlein, CSP, ARM, CRIS Reggie Suga, CHMM Scott Patterson James Schmidt
American Association of Occupational Health Nurses, Inc.	Kay Campbell, Ed.D., RM-C, COHN-S, FAAOHN Mary Gene Ryan, MPH, BSN, COHN-S/SM, CSP, FAAOHN
American Industrial Hygiene Association	Susan Marie Viet, Ph.D., CIH, CET Karin Wetzel, MSPH, CIH
American Society of Safety Engineers	John Mroszczyk, Ph.D., P.E., CSP Frank Perry, P.E., CSP
Arizona State University	Jonathan Klane Fredi Doerstling
Association of Energy Services Companies	Steve M. Olson, CSP Ken Houston
BCSP - Board of Certified Safety Professionals Bresnahan Consulting Associates	Treasa Turnbeaugh, Ph.D., CSP Thomas F. Bresnahan, CSP Thomas E. Heebner, CSP, ARM
Covestro LLC	Terry L. Ketchum
CPWR – Center for Construction Research & Training	Everett “Gene” Daniels, Jr. Don Ellenberger
Edison Electric Institute	Charles J. Kelly Janet Fox
Educational Resource Centers	Mitch Rosen Joshua Scott Jeffrey Painter
Fortis Energy Services, Inc.	Bruce Mahan
ICWUC - International Chemical Workers Union Council	Samuel J. Gualardo, CSP
Indiana University of PA	Charlotte L. Grove, CET, CIT
International Training Consortium (ITC)	William Bergfeld
Laborers-AGC Education & Training Fund (AFL-CIO)	Scott Dunsmore
Lion Technology Inc.	Bruce Guiliani, CSP, CET
National Environmental Safety and Health Training Association	Ronald J. Snyder, M.Ed., CET, CSP
National Fire Protection Association	Guy R. Colonna, P.E.
National Institute of Environmental Health Sciences	Joseph T. Hughes, Jr.
National Institute of Occupational Safety & Health	
National Safety Council	JoAnn Dankert, CHMM, CET Wesley Scott, Ph.D., P.E.
National Safety Management Society	Carl R. Metzgar
National Safety & Transportation Institute	Dennis R. Andrews, Ph.D., PSP, CECD
OIHS, Inc. - Occupational and Industrial Health Systems	Thomas L. Roberts, CIH, CSP, CHMM, REM

OSHA Training Institute Education Center, Rocky
Mountain Education Center
Pamela R. Huck, Inc.
Petroleum Education Council

Property Casualty Insurers Association of America
Safety Priority Consultants, LLC
Safety Through Engineering Inc. (dba STE)

SPAN International Training LLC

Sulphur Institute
Texas Engineering Extension Service, Member of
the Texas A & M University System
T-JENS & T-JENS, Inc.
United Auto Workers

United Safety Associates

University of Illinois at Chicago
U.S. Air Force

U.S. Army Safety & Preparedness Center

U.S. Army Corps of Engineers

U.S. Coast Guard
Vector Risk & Safety, LLC
Vista Training, Inc.

Gary Lietz, Ed.D., CSP

Pamela Huck, CSP
Charles A. Simpson
Jack Barnidge, CSP, CET

Chip Darius, OHST, CET, CSHO
Mike C. Wright, P.E., CPE, CSP
Mark Williams

Daniel J. Snyder
Traci Snyder
Harold H. Weber, Jr., P.E.

David Aistrup, CSHO
David Schaller
Joel N. Tietjens, CSP, CSHM

Luis Vazquez
Steve Shepard
Frank D'Orsi, MS, CSP, ARM

Daniel Scorza
Leslie Nickels
Mark S. Kantorowicz

Robert Baker
Brenda Miller, Ph.D.
Wendy Downing

Karl A. Anderson
David E. Milligan, CSP
Melburn R. Dayton, MS, MHS

Gregory L. Smith, CSP
Angela Remington

Contents	SECTION.....	PAGE
	1. Scope, Purpose and Application	9
	1.1 Scope.....	9
	1.2 Purpose	9
	1.3 Application	9
	2. Definitions	9
	3. Management of a Comprehensive Training Program.....	10
	3.1 Accountability & Responsibility	11
	3.2 Minimum Training Requirements.....	11
	3.3 Resource Management and Administration.....	12
	3.4 Program Evaluation	13
	4. Training Program/Course Development	15
	4.1 Training Development.....	15
	4.2 Needs Assessment.....	15
	4.3 Learning Objectives	16
	4.4 Course Design	16
	4.5 Evaluation Strategy.....	18
	4.6 Criteria for Completion.....	18
	4.7 Continuous Improvement of the Training Course	19
	5. Training Delivery.....	19
	5.1 Trainer Qualifications.....	19
	5.2 Training Delivery Methods and Materials	20
	6. Training Evaluation.....	23
	6.1 General Criteria	23
	6.2 Evaluation Approaches.....	24
	6.3 Continuous Improvement.....	26
	7. Documentation and Recordkeeping	27
	7.1 Systems and Procedure	27
	7.2 Records	27
	7.3 Record Confidentiality and Availability.....	28
	7.4 Issuing Certificates	29
	 Annexes:	
	Preface to Use of Annexes.....	30
	Annex A References.....	31
	Annex B Training Course Development Guidelines	32
	Annex C Safety, Health and Environmental Trainer's Checklist.....	39
	Annex D Virtual Learning.....	45

Explanation of Standard

American National Standard Z490.1 uses a two-column format to provide both specific requirements and supporting information.

The left column, designated "Standard Requirements," is confined solely to these requirements. The right column, designated "Explanatory Information," contains information that is intended to clarify the standard. This column is not a part of the standard.

**AMERICAN NATIONAL STANDARD Z490.1
CRITERIA FOR ACCEPTED PRACTICES IN
SAFETY, HEALTH AND ENVIRONMENTAL TRAINING**

STANDARD REQUIREMENTS

EXPLANATORY INFORMATION

*(Not part of American National
Standard Z490.1)*

1. SCOPE, PURPOSE AND APPLICATION

1.1 Scope. This standard establishes criteria for safety, health and environmental training programs, including program management, development, delivery, evaluation and documentation.

1.2 Purpose. The purpose of this standard is to provide criteria for accepted practices for safety, health and environmental training programs including development, delivery, evaluation and program management.

1.3 Application. This standard is recommended for application by training providers of safety, health and environmental training.

1.3.1 If any of the provisions of this standard are not applicable, the other requirements of the standard shall still apply.

1.3.2 This standard applies to all safety, health or environmental training, whether separate or a part of other training.

2. DEFINITIONS

2.1 Certificate. A written document attesting to the successful completion of a training event by an individual trainee.

2.2 Competent Training Professional. A person prepared by education, training or experience to develop and implement various elements of a training program.