September 23, 2011

ANSI/ASSE A10.7-2011

Safety Requirements for Transportation, Storage, Handling, and Use of Commercial Explosives and Blasting Agents

ASSE, as secretariat of the A10 Construction and Demolitions Committee, continues to receive numerous inquiries related to the recent approval of the ANSI/ASSE A10.7-2011 American National Standard: Safety Requirements for Transportation, Storage, Handling, and Use of Commercial Explosives and Blasting Agents

Due to these inquiries for information about the standard we have put together a tech brief for those with an interest. The following information below should hopefully be of assistance:

Title: ANSI/ASSE A10.7-2011, Safety Requirements for Transportation, Storage, Handling, and Use of Commercial Explosives and Blasting Agents

Scope: This standard is applicable to the transportation, storage, handling, and use of commercial explosives and blasting agents in the construction industry.

Current Status of the Standard:

Approval Date of Final Action: 8/8/2011
ANSI Standards Action Publication Date: 8/12/2011
Publication Date: September 2011
Effective Date: 12/9/2011

Past Versions:

Originally approved: 1970
Reaffirmed: 1979
Revised: 1998
Reaffirmed: 2005
Revised: 2011
The final version of the A10.7 Table of Contents from the approved standard:

<table>
<thead>
<tr>
<th>Contents</th>
<th>SECTION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General</td>
<td>................................</td>
<td>11</td>
</tr>
<tr>
<td>1.1 Scope</td>
<td>................................</td>
<td>11</td>
</tr>
<tr>
<td>1.2 Purpose</td>
<td>................................</td>
<td>11</td>
</tr>
<tr>
<td>1.3 Exceptions</td>
<td>................................</td>
<td>11</td>
</tr>
<tr>
<td>2. References</td>
<td>................................</td>
<td>11</td>
</tr>
<tr>
<td>2.1 Referenced American National Standard</td>
<td>................................</td>
<td>11</td>
</tr>
<tr>
<td>2.2 Referenced Institute of Makers of Explosives Standards</td>
<td>...........</td>
<td>11</td>
</tr>
<tr>
<td>2.3 Referenced Governmental Publications</td>
<td>................................</td>
<td>11</td>
</tr>
<tr>
<td>2.4 Related Standards</td>
<td>................................</td>
<td>12</td>
</tr>
<tr>
<td>3. Definitions</td>
<td>................................</td>
<td>12</td>
</tr>
<tr>
<td>4. General Requirements</td>
<td>................................</td>
<td>18</td>
</tr>
<tr>
<td>5. Transportation of Explosives</td>
<td>................................</td>
<td>18</td>
</tr>
<tr>
<td>5.1 General Provisions</td>
<td>................................</td>
<td>18</td>
</tr>
<tr>
<td>5.2 Transportation Vehicles</td>
<td>................................</td>
<td>19</td>
</tr>
<tr>
<td>5.3 Operation of Transportation Vehicles</td>
<td>................................</td>
<td>20</td>
</tr>
<tr>
<td>5.4 Underground Transportation</td>
<td>................................</td>
<td>21</td>
</tr>
<tr>
<td>6. Storage of Explosive Materials</td>
<td>................................</td>
<td>22</td>
</tr>
<tr>
<td>6.1 General Provisions</td>
<td>................................</td>
<td>22</td>
</tr>
<tr>
<td>6.2 Classification and Use of Magazines</td>
<td>................................</td>
<td>22</td>
</tr>
<tr>
<td>6.3 Location of Magazines</td>
<td>................................</td>
<td>23</td>
</tr>
<tr>
<td>6.4 Construction of Magazines – General Considerations</td>
<td>.........................</td>
<td>26</td>
</tr>
<tr>
<td>6.5 Construction of Magazines – Specifics</td>
<td>................................</td>
<td>28</td>
</tr>
<tr>
<td>6.6 Operation of Magazines</td>
<td>................................</td>
<td>32</td>
</tr>
<tr>
<td>7. Use of Explosive Materials</td>
<td>................................</td>
<td>33</td>
</tr>
<tr>
<td>7.1 General Provisions</td>
<td>................................</td>
<td>33</td>
</tr>
<tr>
<td>7.2 Blaster – Minimum Qualifications</td>
<td>................................</td>
<td>35</td>
</tr>
<tr>
<td>7.3 Blaster’s Permit Restrictions</td>
<td>................................</td>
<td>36</td>
</tr>
<tr>
<td>7.4 Denial, Revocation or Suspension of Permits</td>
<td>................................</td>
<td>36</td>
</tr>
<tr>
<td>7.5 Loading of Explosive Materials</td>
<td>................................</td>
<td>37</td>
</tr>
<tr>
<td>7.6 Initiation of Explosive Charges</td>
<td>................................</td>
<td>38</td>
</tr>
<tr>
<td>8. Warning Required</td>
<td>................................</td>
<td>39</td>
</tr>
<tr>
<td>9. Procedure After Blasting</td>
<td>................................</td>
<td>39</td>
</tr>
</tbody>
</table>
9.1 Returning to Blast Area .................................................................39
9.2 Inspection of Blast Area............................................................39
9.3 Misfires .............................................................................39
9.4 Blasting Records .................................................................40

10. Ground Vibration, Overpressure and Flying Debris.................40
    10.1 Ground Vibration..............................................................40
    10.2 Overpressure ..................................................................43
    10.3 Flying Debris .................................................................43

Tables:

   Table 1 U.S. Department of Transportation Definitions..........15
   Table 2 Classification and Use of Magazines..........................23
   Table 3 Using ATD and SDT to Determine Distances...............24
   Table 4 Types of Blaster’s Permits .........................................35
   Table 5 Peak Particle Velocity Limits .....................................41
   Table 6 Scaled Distance Equations .........................................42
   Table 7 Overpressure Limits ................................................43

Figures:

   Figure 1 Frequency Versus Particle Velocity .........................41
   Figure 2 Blast Vibration Frequency Versus Maximum Allowable
       Particle Velocity .............................................................42

Appendixes:

   Appendix A Excavation Work in Compressed Air....................44
   Appendix B American Table of Distances for Storage of
       Explosive Materials .........................................................46
   Appendix C Separation Distances of Ammonium Nitrate and Blasting
       Agents from Explosives or Blasting Agents .......................53
   Appendix E Gases Produced by Detonation ............................59
Below you will find the first two sections of the standard.

1. **Scope.**

1.1.1 This standard is applicable to the transportation, storage, handling, and use of commercial explosives and blasting agents in the construction industry.

1.1.2 This standard does not supersede legal requirements, or laws, or regulations by local, state or federal agencies, pertaining to the transportation, storage, handling and use of commercial explosives and blasting agents.

1.1.3 The following exceptions should be noted. The requirements of this standard shall not be applied to pyrotechnics, small-arms ammunition or explosive power packs in the form of explosive-activated or explosive-charged construction devices such as explosive rivets, explosive bolts, explosive charges for driving pins or studs and cartridges for explosive-actuated power tools.

1.2 **Purpose.** The purpose of this standard is to provide the construction industry with reasonable minimum recommendations for establishing and maintaining a level of health and safety with regard to the transportation, storage, handling and use of commercial explosives and blasting agents.

1.3 **Exceptions.** In cases of practical difficulties, unnecessary hardships or new developments, exceptions to the literal requirements may permit the use of other devices or methods, but only when it is clearly indicated by a qualified person that the equivalent protection is thereby secured.

2. **REFERENCES**

2.1 **Referenced American National Standard.**

This standard is intended for use in conjunction with the ANSI/NFPA 70, *National Electrical Code*. When this referenced standard is superseded by a revision approved by the American National Standards Institute, Inc, the revision shall apply.

2.2 **Referenced Institute of Makers of Explosives Standards.**

This standard is also intended for use with the following standards. They are available from the Institute of Makers of Explosives, 1120 19th Street, NW, Suite 310, Washington, DC 20036-3605.

IME Publication No. 2 (June 1991), *The American Table of Distances*

IME Publication No. 12 (February 2007), *Glossary of Commercial Explosives Industrial Terms*

IME Publication No. 27 (January 2005), *Security in Manufacturing, Transportation, Storage and Use of Commercial Explosives*

### 2.3 Referenced Governmental Publications.

This standard is also intended for use with the following publications. They are available from U.S. Government Printing Office, Superintendent of Documents, Washington, DC 20402.

Bureau of Alcohol, Tobacco, and Firearms (Department of the Treasury) Code of Federal Regulations (CFR) Title 27, Part 555. Note: This covers commerce in explosives and is updated at least annually.

U.S. Department of Transportation (DOT), CFR Title 49, Part 173.14(a)

Importation, Manufacture, Distribution, and Storage of Explosive Materials, 18 U.S.C., Chapter 402


U.S. Department of Transportation, CFR Title 49, Parts 100-199

U.S. Department of Transportation, CFR Title 49, Parts 300-399

U.S. Occupational Safety and Health Administration, CFR Title 29, Subtitle B, Chapter XVII and 29 U. S. C. 651 (OSHA Act)

### 2.4 Related Standards.

The following standards are listed for information only and are not essential for completion of the requirements of this standard.

NFPA 1, *Fire Code*

ANSI/NFPA 10, *Portable Fire Extinguishers*

ANSI/NFPA 495, *Manufacture, Transportation, Storage and Use of Explosive Materials*

ANSI/NFPA 498, *Standard for Safe Havens and Interchange Lots for Vehicles Transporting Explosives*

IME Publication No. 1 (September 2006), *Construction Guide for Storage Magazines*
IME Publication No. 3 (October 2009), *Suggested Code of Regulations for the Manufacture, Transportation, Storage, Sale, Possession and Use of Explosive Materials*

IME Publication No. 4 (March 2000), *Warnings and Instructions for Consumers in Transporting, Storing, Handling and Using Explosive Materials*

IME Publication No. 17 (March 2007), *Safety in the Transportation, Storage, Handling and Use of Explosive Materials*

**Information addressing the newly revised ANSI/ASSE A10.7 Standard**

***The link below is the press release addressing the approval of A10.7 and gives logistical details:

***One of the main questions asked by SH&E Professionals is how are voluntary national consensus standards like Z590.3 used by government agencies? The articles below should give some solid insight into this question:


***ANSI Information

http://www.ansi.org/

***Recognition: The standard is revised at this point so there will not be specific citations and/or references of the current version to point to. Some examples below:
