

# STATE OF NEBRASKA

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**Dave Heineman**  
*Governor*

## Construction Guidelines for Grain Handling Facilities

7/19/10



**John Falgione**  
*State Fire Marshal*

### **The following is a list of items that you should be aware of when planning any new construction or remodeling at your grain-handling facility.**

1 - Fill out the "Plan Submittal" form available at the website of the Nebraska State Fire Marshal and send in to the address at the top of the form. Attach a detailed copy of your site plans and include the appropriate fee from the fee schedule.

2 - Once you have received a "Plan Review" approval letter from the State Fire Marshal Agency, you may begin construction.

3 - The following code pamphlets may be applicable to your new or remodel construction;

- NFPA 61 – Standard for the Prevention of Fires and Dust Explosions, 1995
  - NFPA 101 – Life Safety Code, 2000,
  - NFPA 1 – Uniform Fire Code, 2003
  - NFPA 70 – National Electrical Code, 2002
  - NFPA 58 – Liquefied Petroleum Gas Code, 2001
  - NFPA 54 – National Fuel Gas Code, 2002
- NOTE - This is not a complete listing of all the pamphlets that may apply.

4 – Be aware of Interpretation #09-02 and how it applies to **underground** spaces. Interpretation #09-02 can be found at the NE State Fire Marshal website listed below.

5 – Be informed of how the "Nebraska Accessibility Guidelines" may apply to offices, control rooms and other areas that you are constructing or remodeling. The N.A.G. is available at the NE State Fire Marshal website listed below.

6 – NFPA 61 requires Belt Speed Monitoring equipment to be installed on all new legs over 3,000 BPH, even if the leg is installed entirely outdoors. New inside legs over 3,000 BPH require Belt Speed Monitoring, Bearing Sensors and Alignment Sensors.

7 – If your travel distance to a means of egress is greater than 50 feet at the top of a structure or any other working level, you will be required to have two paths of travel to grade level.

8 – NFPA 61 requires some type of dust control system to be installed in grain elevators.

9 –Tunnels located at grade level must have a clear height of at least 5' and have a minimum 24" clear width the entire length of the tunnel.

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- 10 – **Underground** spaces and **aboveground** tunnels may be required to have emergency lighting and illuminated exit signs.
- 11 – NFPA 61 requires all electrical equipment installed where dust may reach explosive levels to be rated Class II, Group G, Division 1 or 2.
- 12 – NFPA 61 requires warehouses greater than 5,000 square feet to be separated from production areas with a fire rated 2 hour fire separation.
- 13 – NFPA 61 and 70 require that doors to MCC rooms and controls rooms are to be dust tight.
- 14 – NFPA 1 requires warehouses with an area greater than 12,000 square feet and storing combustible contents to be protected by a sprinkler system. This does **not** include bulk grain storage warehouses.
- 15 – NFPA 1 requires warehouses to be protected by a sprinkler system whenever high piled storage exceeds 12 feet in height in an area larger than 2500 square feet. This does **not** include bulk grain storage warehouses.
- 16 – A standpipe system will be required on concrete bulk storage silos greater than 75 feet above grade.
- 17 – Note that natural gas lines and propane lines are required to be pressure checked from the property line into the facility before placing into service and documented.
- 18 – Note that bulk anhydrous ammonia tanks and piping must be pressure checked for leaks before use and documented.
- 19 – Boilers must be inspected by the State Boiler Inspector or authorized personnel and documented.
- 20 – All fire alarm systems shall be tested by a state licensed fire alarm inspector.
- 21 – It is your responsibility to ensure that fire sprinkler systems are tested by a state licensed fire sprinkler contractor.
- 22 - Related functions such as fire pumps, underground fire lines, hydrant monitors, standpipes and foam-water systems are required to be tested and approved.
- 23 - Electrical systems must be approved by the electrical inspector.
- 24 - Proper egress must be provided. This includes two approved exits from underground tunnels and pits where dead ends exceed 50 feet and/or common paths of travel exceed 50 feet. Enclosed stair towers must have proper fire rated walls and doors with the appropriate hardware.
- 25 – Any new construction is required to be inspected by the State Fire Marshal’s office before occupancy and/or initial use.

**Note – This is not a complete listing of all the code requirements that may apply to your new construction. Remember that a licensed engineer or architect may be required when planning your new facility.**

Nebraska State Fire Marshal web site - <http://www.sfm.state.ne.us/>

Nebraska Board of Engineers and Architects web site – <http://www.ea.state.ne.us>

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