

THE



STATE OF WYOMING

*Department of Fire Prevention
& Electrical Safety*

MATTHEW H. MEAD
GOVERNOR

LANNY APPLGATE
STATE FIRE MARSHAL

May 10, 2011

Jeremy Kobobel
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Kobobel Fire Protection, LLC
5871 Lockheed Ave
Loveland, CO 80538
(970) 587-7071

Ref: **Plan Review Letter**
Fire Protection Sprinkler System
Torrington High School
Paint Booth & Dust Collector
2401 West E Street
Torrington, WY 82240
Plan Review# 11003 SH (7)

Dear Jeremy,

We have reviewed the fire protection sprinkler system plans and calculations for the above referenced project. This review is limited to the fire protection sprinkler system design for a dust collector trunk duct and spray paint booth with associated room enclosure, within a 4,100 sq ft wood shop building. The remainder of the building does not appear to have fire protection sprinklers (**see Comment 6**).

The room (housing the paint booth) is approximately 250 sq ft and isolates the paint spray booth from the wood shop area. The room's wall construction type is unknown. There will be a 5,100 cfm dust collector just outside the south exterior wall of the building. The dust collector will be supplied with a 15 inch exhaust trunk duct that transitions to a minimum 6 inch trunk duct. The various work stations include five saw tables, lathe, router, planer, three-station spindle sander and a work table. Each work station is provided with a 4 inch branch exhaust duct connecting to the dust collector trunk duct.

The main water feed is a 4 inch underground line with 2½ inch tap supplying a 2½ inch double check valve backflow preventer assembly controlling a 2½ inch riser, feed main and cross main. The overhead piping layout will protect the perimeter of the paint booth room (finish room), above the paint booth and within the paint booth filter compartment. One spot standard orifice sidewall sprinkler will be provided in the 15 inch trunk duct to the dust collector. The duct sprinkler will take supply from the overhead feed-main to the paint booth sprinkler system and will have separate sprinkler control valve and flow switch (**see Comment 5a**).

Your design calculations are based on 5 heads flowing simultaneously, each head with k-factor of 11.2 and an end-head pressure of 12.75 psi (40 gpm). Your calculations, excluding hose stream allowance, show a base-of-riser requirement of 203 gpm at 34 psi. Our calculations concur within reasonable error showing a requirement of 202 gpm at 32 psi at the base of the riser, also excluding hose stream allowance.

Along with your submittal, you have provided a water flow test of 55 psi static and 536 gpm at 37 psi residual. Reduced by hose stream allowance and theoretical yard main friction loss, this water supply exceeds end-head flow and pressure demand as specified. The system as designed is thus considered adequate in accordance with current standards.

Final acceptance will be by field inspection and testing (**see Comments 2, 3 and 4**).

This assessment is contingent on the accuracy of the flow test and other information you have provided for this review. For calculation purposes, a C-factor of 120 was used for all piping. Nominal pipe sizes 2 inch and less were considered Schedule 40 steel. Piping 2½ inch and greater was considered Schedule 10 steel. The length of the 4 inch underground main was calculated as 102 ft from the base of the riser to the effective point of the flow test, with negligible elevation variance.

REVIEW COMMENTS:

1. An electronically reviewed, stamped and accepted PDF drawing, along with this review letter, has been sent to you as an email attachment. **Please print one copy of the accepted drawing and mail it to our Compliance Inspector at the following address:**

**Kris Kolstad
Wyoming State Fire Marshal's Office
117 South 2nd Street, Suite 1
Douglas, WY 82633**

2. When construction is complete, a compliance inspection is required by the Wyoming State Fire Marshal's office. Please submit a request for inspection approximately 21 working days prior to project completion. **Please call Compliance Inspector Kris Kolstad at (307) 358-0752 to acquire acceptance requirements and to arrange a time for acceptance testing.**

3. The acceptance test shall include a hydrostatic test (in accordance with the 2007 Edition of NFPA 13, Chapter 24) maintaining 200 psi for 2 hours. The Contractor shall perform a drain test and inspector test, to assure that adequate water flow is present and that the flow switch initiates local and central station alarm.

4. Upon completion of required testing, provide to the Wyoming State Fire Marshal's Office (or inspector) completed Contractor's Material and Test Certificates, for above ground piping systems, in accordance with NFPA 13 (2007), Figures 24.1.

5. Please coordinate the following with the fire alarm contractor and the dust collector system installer:

a. To assure reliability of the dust collector fire protection system, the valve on the duct sprinkler line must be supervised, and the duct spark detection device and the flow switch on the duct sprinkler line must be monitored by the building fire alarm control system.

b. The dust collector blower should be interlocked with the fire alarm system, such that the blower will be automatically shut down on fire alarm activation.


6. In the event of a fire, the automatic sprinkler system is proven to be the most effective and reliable safeguard for property conservation and life safety. To provide proper fire protection for this property, a fire protection sprinkler system should be installed throughout the entire facility. System design should be based on criteria as defined in the most current edition of NFPA 13.

7. To allow for proper system inspection and testing, provide a valved pressure gauge at the intake side of the backflow preventer.

Please respond as soon as possible to this letter, to acknowledge that you will comply with (or take issue with) each of the preceding review comments. Prior to commencement of construction, all comments must be addressed. Re-submittal of corrected plans is not required.

Thank you. We appreciate your assistance in providing the most current and proper fire protection standards for the citizens of Wyoming. If you have any questions, please call me any time.

Best Regards,

 Bruce Erkiletian, P. E.
Senior Fire Protection Engineer
State of Wyoming Fire Marshal's Office
(307) 777-8710

SIGNATURE

Torrington High Paint Booth & Dust Collector, Torrington
Plan Review Number: **11003 SH (7)**

I. If in agreement with the required corrections please print and sign this sheet or sign it electronically by simply typing your name on the “Sign Here” line below.

Sign Here: _____

Date: _____

To acknowledge receipt of this review, please email this completed “Signature” sheet to the following email address:

codeplanreview@state.wy.us

Or, print and mail to:

PLAN REVIEW
Wyoming State Fire Marshal’s Office
122 West 25th Street
Herschler Building, 1 West
Cheyenne, WY 82002

II. If not in agreement with the required corrections, you may call the Fire Protection Engineer at the Wyoming State Fire Marshal’s Office, (307) 777-8710, to discuss resolution of the issue(s). If resolution cannot be reached, the applicant shall submit objections to the State Fire Marshal’s Office, via email to codeplanreview@state.wy.us or by regular mail to the address above.

Note: If the construction has not commenced within 180 days or if work is suspended or abandoned for 180 days (after the date of our acceptance) the plans and reviews are null and void. The applicant must resubmit plans and plan review fees (if applicable).