



Commonwealth of Kentucky

**Public Protection Cabinet**

Department of Housing, Buildings and Construction  
101 Sea Hero Road, Suite 100  
Frankfort, Kentucky 40601  
Telephone: (502) 573 - 0373

# **M E M O R A N D U M**

TO: Fire Sprinkler System Contractors & All Users of the Kentucky Building Code (KBC)

FROM: Phil Craig, Director  
DHBC/ Division of Building Code Enforcement

DATE: August 20, 2015

SUBJECT: *Fire Suppression System Design Requirements*  
(KRS 198B.550 to KRS 198B.630)

This memorandum replaces previous correspondence from the Office regarding KRS 198B.550 to 198.630 as it relates to fire protection sprinkler systems and to clarify the necessary procedures for submitting the Fire Suppression Design Criteria and fire protection system shop drawings. The fire protection system shop drawings shall be submitted to the state or local building official having jurisdiction and must adhere to the following:

- I. The fire suppression design criteria form shall be submitted with the initial set of architectural plans. The design criteria shall be signed and sealed by a professional engineer registered in the Commonwealth of Kentucky or by a KY licensed certificate holder (who is NICET certified at Level III or IV) of a licensed fire protection contractor. Ref. KRS 198B.565 (1)

**Minimum Information Required in Fire Suppression Design Criteria:**

1. Available water flow (gpm), static and residual water pressure (psi).
2. Source of water supply and duration it is available.
3. Source of water flow data (person that conducted test) including date and time of test.
4. Anticipated water flow demand.
5. State the specific classification of the hazard(s).
6. The occupancy or use of the building.
7. Specify the type of fire protection system(s).
8. State the specific NFPA standard(s) to be followed.

**Note:** For your convenience a form is attached for you to submit the above information.



# ***Fire Suppression System Design Requirements***

August 20, 2015

Page 2.

- II. Contractor's shop drawings shall be submitted with all of the technical information to show conformance with the specific NFPA standard(s) and the Kentucky Building Code prior to installation of the system; and
  1. If a professional engineer has submitted the fire suppression design criteria, then the shop drawings shall be submitted through the professional engineer for his approval and then forwarded to the authority having jurisdiction. Ref. KRS 198B.565(2).
  2. If the licensed contractor submitted the design criteria, then the shop drawings shall be submitted directly to the authority having jurisdiction. All drawings shall bear the seals and signature of the licensed certificate holder and the licensed fire protection contractor. Ref. KRS 198B.565(2)(3).
  3. All drawings shall bear the seal and signature of the certificate holder of the licensed contractor or a professional engineer and the seal of the licensed contractor. Ref. KRS 198B.585(2).
  
- III. A licensed plumbing contractor may make the installation where there are ten- (10) sprinklers or less in a building or structure served by a domestic water supply, provided the plans have been approved by the authority having jurisdiction and contain the following information:
  1. A riser diagram showing the source of the water supply, pipe size and arrangement (must comply with NFPA 13 for hydraulic calculations).
  2. Type and size of sprinklers.
  3. Two- (2) check valves or a double backflow prevention device installed between the system and the water supply. Ref. KRS 198B.560(4).

Should there be any questions, please feel free to call upon us.

# KENTUCKY DHBC/ BCE FIRE SUPPRESSION DESIGN CRITERIA WORKSHEET

## FLOW TEST INFORMATION SHEET



1. Reason for Test: Bid Information  Design Base   
Other \_\_\_\_\_
2. Location of Property \_\_\_\_\_  
(Address) (City) (State) (County)
3. Date & Time of Test: Date: \_\_\_\_\_ Time: \_\_\_\_\_ (am) (pm)
4. Test Conducted by: \_\_\_\_\_  
Name Title Affiliation
5. Test Witnessed by: \_\_\_\_\_  
Name Title Affiliation
6. Source of Water Supply: Gravity  Pump  Other: \_\_\_\_\_
7. Name of Water District \_\_\_\_\_ Fire District \_\_\_\_\_
8. Is water supply provided with PRV STA's Yes  No   
(If so what is PRV outlet setting? \_\_\_\_\_ PSIG)
9. **Area Map:** (Draw Sketch showing property location; bounding streets and names, north arrow, hydrant locations and identification numbers, distances from hydrants to property elevations of hydrants and property floors or grade, all water mains and sizes and interconnection valves, etc.)


### 10. Flow Test Data

FLOW AT HYDR. NO.	STATIC AT HYDR. NO.	STATIC PSIG	RESIDUAL PSIG	FLOW GPM	OUTLET COEFFICIENT	ADJUSTED GPM

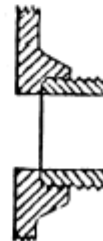
11. See reverse side for graph

12. Signed \_\_\_\_\_

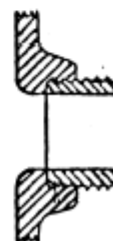
Witness \_\_\_\_\_



Outlet Square and projecting into Barrel Coef. 0.70



Outlet Square and Sharp Coef. 0.80

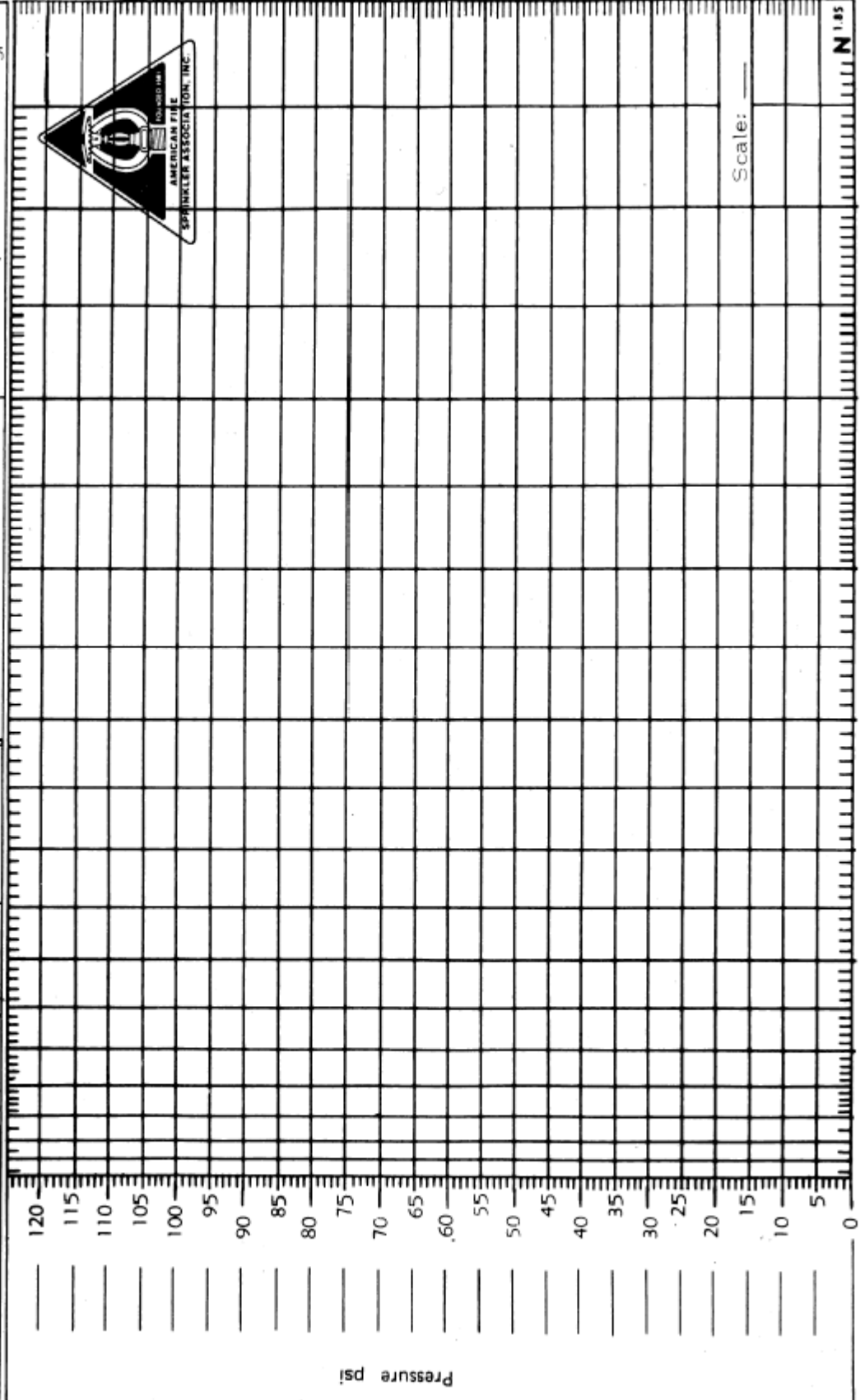


Outlet Smooth and Rounded Coef. 0.90

# KENTUCKY DHBC/ BCE FIRE SUPPRESSION DESIGN CRITERIA WORKSHEET

## WATER FLOW TEST SUMMARY SHEET

Hydrant No.	Outlet I. D.	Pitot Press.	Flow	Residual	Date:	Time:	Cont. No.
1		psi	gpm	psi			
2					Cont. Name:		
3					Address:		
Total Flow					Static Press:	psi	Flow @ 20 psi
							gpm



Scale A 100 200 300 400 600 800 1000 1200  
 Scale B 200 400 600 800 1000 1200 1400 1600 1800 2000  
 Scale C 400 800 1200 1600 2000 2400 2800 3200 3600 4000

Water Flow gpm

### FIRE SUPPRESSION DESIGN CRITERIA

CASE NUMBER<sup>1</sup>: \_\_\_\_\_

DATE: \_\_\_\_\_

PROJECT OR FACILITY NAME: \_\_\_\_\_

STREET ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ COUNTY: \_\_\_\_\_

**WATER FLOW INFORMATION:** (See work sheet on reverse side)

STATIC: \_\_\_\_\_ PSI

RESIDUAL: \_\_\_\_\_ PSI

WATER FLOW: \_\_\_\_\_ GPM

DURATION: <sup>2</sup> \_\_\_\_\_ MIN

SOURCE OF WATER SUPPLY: <sup>3</sup> \_\_\_\_\_

SOURCE OF WATER FLOW DATA: <sup>4</sup> \_\_\_\_\_

DATE AND TIME OF WATER FLOW TEST: <sup>5</sup> \_\_\_\_\_

ANTICIPATED WATER DEMAND: <sup>6</sup> \_\_\_\_\_ PSI

\_\_\_\_\_ GPM

CLASSIFICATION OF HAZARD(S): <sup>7</sup> \_\_\_\_\_

\_\_\_\_\_

OCCUPANCY OF BUILDING: <sup>8</sup> \_\_\_\_\_

SPECIFIC TYPES OF SUPPRESSION SYSTEM(S): \_\_\_\_\_

\_\_\_\_\_

NFPA STANDARD(S) FOLLOWED IN DESIGN: <sup>9</sup> \_\_\_\_\_

**EXPLANATORY NOTES:**

1. CASE NUMBER: (if known) This number is assigned by OHBC upon first plan submittal.
2. DURATION: The length of time that the water source is capable of providing adequate water during a fire condition
3. SOURCE OF WATER SUPPLY: Tank, Lake, Etc.
4. SOURCE OF WATER FLOW DATA: Person or persons who conducted test.
5. DATA AND TIME OF WATER FLOW TEST: Water flow test shall have been conducted within the past six months.
6. ANTICIPATED WATER DEMAND: Minimum water and pressure required to operate this system.
7. HAZARD CLASSIFICATION: Light, Ordinary Group 1, 2, 3, Extra Hazard Group 1, 2; Commodity Type (Rack/Piled)
8. OCCUPANCY OF BUILDING: Mercantile, Restaurant, Office, School, Industrial Plant, etc.
9. NFPA STANDARD(S) FOLLOWED IN DESIGN: 13, 14, 15, 22, 24 etc.

I \_\_\_\_\_, verify that the fire suppression design criteria is in accordance with all applicable codes and standards adopted by the Commonwealth and that the water flow information noted above is true and accurate. I further acknowledge that I have reviewed the anticipated water demand for this system and find the actual water flow and pressure adequate to serve this system. It is understood that I will be responsible for the approval of the final shop drawings prior to their submittal to the Division of Building Codes Enforcement:

COMPANY: \_\_\_\_\_

STREET: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

PHONE: \_\_\_\_\_

AFFIX SEAL AND SIGNATURE HERE