**How Does the Fire Department Rating Benefit for the Community?**

The Public Protection Classification (PPC™) program recognizes the efforts of communities to provide fire protection services for citizens and property owners. A community's investment in fire mitigation is a proven and reliable predicator of future fire losses. Insurance companies use PPC information to help establish fair premiums for fire insurance — generally offering lower premiums in communities with better protection. By offering economic benefits for communities that invest in their firefighting services, the program provides an additional incentive for improving and maintaining public fire protection.

The program also provides help for fire departments and other public officials as they plan, budget for, and justify improvements.

The most significant benefit of the PPC program is its effect on losses. Statistical data on insurance losses bears out the relationship between excellent fire protection — as measured by the PPC program — and low fire losses. PPC helps communities prepare to fight fires effectively.

Public Protection Classification (PPC™) information plays an important part in the decisions insurers make affecting the underwriting and pricing of property insurance. In fact, most U.S. insurance companies — including the largest ones — use PPC information in one or more of the following ways:

- to identify opportunities for writing new business
- to manage the quality of community fire protection across their book of business
- to review loss experience in various rating territories
- to offer coverages and establish deductibles for individual homes and businesses

Insurance companies — not ISO or NC OSFM — establish the premiums they charge to policyholders. The methodology a company uses to calculate premiums for property insurance may depend on the company's fire loss experience, underwriting guidelines, and marketing strategy.

Here are some general guidelines to help you understand the benefits of improved PPC ratings for residents and businesses:

- PPC may affect the underwriting and pricing for a variety of personal and commercial insurance coverages, including homeowners, mobile home, fine arts floaters, and commercial property (including business interruption).
- Assuming all other factors are equal, the price of property insurance in a community with a good PPC (rating) is lower than in a community with a poor PPC (rating).

**How Does the Fire Department Rating Benefit for the Community** (continued)?

The purpose of an NC OSFM public protection survey is to gather information to determine a Public Protection Classification (PPC™), which insurers use for underwriting and to calculate premiums for fire insurance. The Fire Suppression Rating Schedule (FSRS) recognizes fire-protection features only as they relate to suppression of fires in structures.

In many communities, fire suppression may be only a small part of the fire department's overall responsibility. NC OSFM recognizes the dynamic and comprehensive duties of a community's fire service. We understand the complex decisions a community must make in planning and delivering emergency services. However, we evaluate only features related to reducing property losses from fire.

**What is The Fire Suppression Rating Schedule?**

The Fire Suppression Rating Schedule (FSRS) is a manual containing the criteria ISO and the NC OSFM uses in reviewing the fire prevention and fire suppression capabilities of individual communities or fire protection areas. The schedule measures the major elements of a community's fire protection system and develops a numerical grading called a Public Protection Classification (PPC™).

The FSRS employs nationally accepted standards developed by such organizations as the National Fire Protection Association (NFPA), the American Water Works Association (AWWA), and the Association of Public-Safety Communications Officials (APCO) International. When those organizations update their standards, the ISO evaluation changes as well. The PPC program always provides a useful benchmark that helps fire departments and other public officials measure the effectiveness of their efforts — and plan improvements.

**How the FSRS works**

The FSRS lists many items (facilities and practices) that a community should have to fight fires effectively. The schedule is performance based and assigns credit points for each item. Using the credit points and various formulas, NC OSFM calculates a total score on a scale of 0 to 105.5.

To receive certain PPC ratings, a community must meet minimum criteria. After a community meets those criteria, the PPC rating depends on the community's score on the point scale.

**How the FSRS works** (continued)

After a community meets those criteria, the PPC depends on the community's score on the 100-point scale: PPC Points

- Class 1 90.00 or more
- Class 2 80.00 to 89.99
- Class 3 70.00 to 79.99
- Class 4 60.00 to 69.99
- Class 5 50.00 to 59.99
- Class 6 40.00 to 49.99
- Class 7 30.00 to 39.99
- Class 8 20.00 to 29.99
- Class 9 10.00 to 19.99
- Class 10 0.00 to 9.99

The FSRS considers three main areas of a community's fire suppression system: emergency communications, fire department (including operational considerations), and water supply. In addition, it includes a Community Risk Reduction section that recognizes community efforts to reduce losses through fire prevention, public fire safety education, and fire investigation.

# NEEDED FIRE FLOW

**General**

This item develops Needed Fire Flows for selected locations throughout the city, which are used in the review of subsequent items of this Schedule. The calculation of a Needed Fire Flow ($NFF_i$) for a subject building in gallons per minute (gpm) considers the Construction ($C_i$), Occupancy ($O_i$), Exposure ($X_i$), and Communication ($P_i$) of each selected building, or fire division, as outlined below

**Construction Factor ($C_i$)**

That portion of the Needed Fire Flow attributed to the construction and area of the selected building is determined by the following formula:

**$C_i = 18F (A_i)^{0.5}$**

A = Effective Area

F = Coefficient related to the class of construction:

F = 1.5 for Construction Class 1* (Frame)
= 1.0 for Construction Class 2* (Joisted Masonry)
= 0.8 for Construction Class 3* (Non-Combustible) and
= 0.8 for Construction Class 4* (Masonry Non-Combustible)
= 0.6 for Construction Class 5* (Modified Fire Resistive) and
= 0.6 for Construction Class 6* (Fire Resistive)

**$A_i$ = Effective * Area**

Effective area is a modification of the total building area measured in square feet. The modification considers construction class, building height, fire protection features, division walls, and other factors that contribute to the spread of fire in a building.

**Minimum and Maximum Values**

The minimum value of the construction factor (C) is 500 gpm
The maximum value for construction factor (C) is:
8,000 gpm for Construction Classes 1 and 2
6,000 gpm for Construction Classes 3, 4, 5 and 6
6,000 gpm for a 1-story building of any class of construction

# CONSTRUCTION FACTOR

**C = 18F (√A)**
**A = Effective Area in Square Feet**

| | Construction Class 1 Factor 1.5 | Construction Class 2 Factor 1.0 | Construction Classes 3 and 4 Factor 0.8 | Construction Classes 5 and 6 Factor 0.6 |
|---|---|---|---|---|
| **GPM** | Effective area in Square Feet | Effective area in Square Feet | Effective area in Square Feet | Effective area in Square Feet |
| 500 | 500 | 1,200 | 1,900 | 3,300 |
| 750 | 1,100 | 2,400 | 3,700 | 6,600 |
| 1000 | 1,700 | 3,900 | 6,100 | 10,900 |
| 1250 | 2,600 | 5,800 | 9,100 | 16,200 |
| 1500 | 3,600 | 8,200 | 12,700 | 22,700 |
| 1750 | 4,800 | 10,900 | 17,000 | 30,200 |
| 2000 | 6,200 | 13,900 | 21,800 | 38,700 |
| 2250 | 7,700 | 17,400 | 27,200 | 48,300 |
| 2500 | 9,400 | 21,300 | 33,200 | 59,000 |
| 2750 | 11,300 | 25,500 | 39,700 | 70,900 |
| 3000 | 13,400 | 30,100 | 47,100 | 83,900 |
| 3250 | 15,600 | 35,200 | 54,900 | 97,700 |
| 3500 | 18,000 | 40,600 | 63,400 | 112,700 |
| 3750 | 20,600 | 46,400 | 72,400 | 128,700 |
| 4000 | 23,300 | 52,500 | 82,100 | 145,900 |
| 4250 | 26,300 | 59,100 | 92,400 | 164,200 |
| 4500 | 29,300 | 66,000 | 103,100 | 183,400 |
| 4750 | 32,600 | 73,300 | 114,600 | 203,700 |
| 5000 | 36,000 | 81,100 | 126,700 | 225,200 |
| 5250 | 39,600 | 89,200 | 139,400 | 247,700 |
| 5500 | 43,400 | 97,700 | 152,700 | 271,200 |
| 5750 | 47,700 | 106,500 | 166,500 | 295,900 |
| 6000 | 51,500 | 115,800 | | |
| 6250 | 55,700 | 125,500 | | |
| 6500 | 60,200 | 135,500 | | |
| 6750 | 64,800 | 145,800 | | |
| 7000 | 69,600 | 156,700 | | |

## Occupancy Factors

The factors below reflect the influence of the occupancy in the selected building on the Needed Fire Flow:

| OCCUPANCY COMBUSTIBILITY CLASS* | OCCUPANCY FACTOR ($O_i$) |
|---|---|
| C-1* (Non-Combustible) | 0.75 |
| C-2* (Limited Combustible) | 0.85 |
| C-3* (Combustible) | 1.00 |
| C-4* (Free Burning) | 1.15 |
| C-5* (Rapid Burning) | 1.25 |

**Typical Non-Manufacturing Occupancy Classification**

Classification 1: Steel or concrete products storage, unpackaged

Classification 2: Apartments Hotels
Churches Motels
Court Houses Offices
Dormitories Parking Garages
Hospitals Schools

Classification 3: Amusement park buildings, including arcades and game rooms
Automobile sales and service
Department stores
Discount stores
Food and beverage - sales, service, or storage
General merchandise - sales or storage
Hardware, including electrical fixtures and supplies
Motion picture theaters
Pharmaceutical retail sales and storage
Repair or service shops
Super markets
Unoccupied buildings

Classification 4: Aircraft hangers, with or without servicing/repair
Auditoriums
Building material sales and storage
Freight depots, terminals
Furniture - new or secondhand
Paper and paper product sales and storage
Printing shops and allied industries
Theaters, other than motion picture
Warehouses
Wood product sales and storage

Classification 5: Chemical sales and storage
Cleaning and dying material sales and storage
Paint sales and storage
Plastic or plastic product sales and storage
Rag sales and storage
Upholstering shops
Waste and reclaimed material sales and storage

**Typical Manufacturing Occupancy Classifications**

Classification 1: No current listing

Classification 2: Ceramics manufacturing
Concrete or cinder products manufacturing
Fabrication of metal products
Primary metals industries

Classification 3: Baking and confectionery
Dairy processing
Leather processing
Soft drink bottling
Tobacco processing

Classification 4: Apparel manufacturing
Breweries
Cotton gins
Food processing
Metal coating and finishing
Paper products manufacturing
Rubber products manufacturing
Woodworking industries

Classification 5: Cereal or flour mills
Chemical manufacturing
Distilleries
Fabrication of textile products, except wearing apparel
Meat and poultry processing
Plastic products manufacturing
Textile manufacturing

**Calculation of Needed Fire Flow for Residential Property**

When a wood shingle roof covering on the building being considered, or on exposed buildings, can contribute to spreading fires, add 500 gpm to the Needed Fire Flow.

The Needed Fire Flow shall be rounded off to the nearest 250 gpm if less than 2,500 gpm and to the nearest 500 gpm if greater than 2,500 gpm.

**Residential Flows**

For 1- and 2-family dwellings not exceeding 2 stories in height, the following Needed Fire Flows shall be used:

| DISTANCE BETWEEN BUILDINGS | NEEDED FIRE FLOW |
|---|---|
| More than 30 feet | 500 gpm |
| 21 – 30 feet | 750 gpm |
| 11 – 20 feet | 1,000 gpm |
| 0 – 10 feet | 1,500 gpm |

For 1- and 2-family dwellings with an effective area greater than 4,800 square feet, calculate the Needed Fire Flow using the Needed Fire Flow formula.

## Calculating the Need Fire Flow

Type of Occupancy (Church School etc.) _____

Number of Stories _____
Construction Class _____
Effective Area (Square Footage) _____
Needed GPM from the Construction Table _____ GPM
Occupancy Combustibility Class _____
Occupancy Factor _____

Needed GPM from the Construction Table _____ X Occupancy Factor _____ = _____ GPM

Needed Fire Flow =_____ GPM **(round to the nearest 250 GPM)**

## Emergency communications

A maximum of **10 points** of a community's overall score is based on how well the fire department receives and dispatches fire alarms. Our field representatives evaluate:

- the emergency reporting system
- the communications center, including the number of telecommunicators
- computer-aided dispatch (CAD) facilities
- the dispatch circuits and how the center notifies firefighters about the location of the emergency

Emergency reporting: NC OSFM will credit basic 9-1-1 or Enhanced 9-1-1. Other items evaluated include E9-1-1 wireless, voice over Internet>Protocol (VoIP), and computer-aided dispatch (CAD). **3 points**

Telecommunicators: NC OSFM credits the performance of the telecommunicators in accordance with the general criteria of NFPA 1221, Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems. We also credit emergency dispatch protocols and the telecommunicators' training and certification programs. **4 points**

Dispatch circuits: NC OSFM credits the number and type of dispatch circuits in accordance with the general criteria in NFPA 1221. **3 points**

## Fire department

A maximum of **50 points** of the overall score is based on the fire department. NC OSFM reviews the distribution of fire companies throughout the area and checks that the fire department tests its pumps regularly and inventories each engine and ladder company's equipment according to NFPA 1901. NC OSFM also reviews the fire company records to determine factors such as:

- type and extent of training provided to fire company personnel
- number of people who participate in training
- firefighter response to emergencies
- maintenance and testing of the fire department's equipment

**(The Equipment Lists for an Engine, Ladder and Service are on page 17-20)**

**Engine companies:** NC OSFM compares the number of in-service pumpers and the equipment carried with the number of needed pumpers and the equipment identified in the FSRS. The number of needed engines depends on the basic fire flow, the size of the area served, and the method of operation. **6 points**

**Reserve pumpers**: NC OSFM evaluates the number of reserve pumpers and their pump capacity; other factors include hose and equipment carried. **0.5 points**

**Pump capacity**: NC OSFM compares the pump capacity of the in-service and reserve pumpers (and pumps on other apparatus) with the basic fire flow. NC OSFM considers a maximum basic fire flow of 3,500 gpm. **3 points**

**Ladder/service companies:** Communities use ladders, tools, and equipment normally carried on ladder trucks for ladder operations, as well as for forcible entry, utility shut-off, ventilation, salvage, overhaul, and lighting. The number and type of apparatus depend on the height of the buildings, needed fire flow, and size of the area served. **4 points**

**Reserve ladder/service trucks**: NC OSFM evaluates the number of reserve ladder/service trucks and the equipment they carry. **0.5 points**

**Deployment analysis:** NC OSFM credits the percentage of the community within specified response distances of pumpers (1.5 miles) and ladder/service apparatus (2.5 miles). As an alternative, a fire protection area may use the results of a systemic performance evaluation. That type of evaluation analyses CAD history to demonstrate that, with its current deployment of companies, the fire department meets the time constraints for initial arriving engine and initial full-alarm assignment. The timing is in accordance with the general criteria in NFPA 1710, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments. **10 points**

**Personnel**: ISO credits the personnel available to respond to first alarms for structure fires. For personnel, not normally in the fire station (on-call and off-duty members), NC OSFM reduces credit for the responding members to reflect the time needed for notification, travel, and assembly on the fireground. ISO then applies an upper limit for the credit for personnel because it is impractical for a very large number of personnel to operate a piece of apparatus. **15 points**

**Training**: Trained personnel are vital to a competent fire suppression force. NC OSFM evaluates training facilities and their use; company training at fire stations; training and certification of fire officers; driver/operator, hazardous materials, and recruit training; and building familiarization and pre-incident planning inspections. **9 points**

| | |
|---|---|
| Training Facility & Use | 3.15 points |
| Company | 2.25 points |
| Officer Certification | 0.54 points |
| Officer Training | 0.54 points |
| Pre-Fire Planning | 1.08 points |
| Recruit | 0.45 points |
| New Driver/Operator | 0.45 points |
| Established Driver/Operator | 0.45 points |
| Hazardous Materials | 0.09 points |
| **Training Total Credit** | **9.00 points** |

**Operational considerations**: NC OSFM credits the standard operating procedures for structure firefighting and the establishment of an incident management system. **2 points**

## Water supply

A maximum of **40 points** of the overall score is based on the community's water supply. This part of the survey focuses on whether the community has sufficient water supply for fire suppression beyond daily maximum consumption. NC OSFM surveys all components of the water supply system. We also review fire hydrant inspections and frequency of flow testing. Finally, we count the number of fire hydrants that are no more than 1,000 feet from the representative locations.

Supply system: NC OSFM compares the available water supply at representative community locations with the needed fire flows for those locations. The supply works, water main capacity, or fire hydrant distribution may limit the available supply. **30 points**

Hydrant size, type, and installation: NC OSFM evaluates the design and installation of fire hydrants. **3 points**

Inspection and fire flow testing of hydrants: NC OSFM evaluates the frequency and completeness of fire hydrant inspections and the flow-testing program, which can include the use of calibrated hydraulic modelling. NC OSFM also includes credit for hydrant marking. **7 points**

## Water supply (continued)

**Hydrant Inspection and Flow Testing Credit**

| | |
|---|---|
| Hydrant Inspections | **4 Points** |
| Flow Testing | **2.4 Points** |
| Hydrant Marking | **.6 Points** |
| **Total** | **7 points** |

## Community Risk Reduction

The Community Risk Reduction section of the FSRS offers a maximum of 5.5 points, resulting in 105.5 total points available in the FSRS. The inclusion of this section for "extra points" allows recognition for those communities that employ effective fire prevention practices, without unduly affecting those who have not yet adopted such measures. The addition of Community Risk Reduction gives incentives to those communities who strive proactively to reduce fire severity through a structured program of fire prevention activities.

The areas of community risk reduction evaluated in this section include:

- fire prevention
- fire safety education
- fire investigation

**Fire prevention code adoption and enforcement**: This section assesses the Fire Prevention Code adoption and enforcement capabilities of a community. Items evaluated include adoption and maintenance of one of the model codes; number and qualifications of fire prevention personnel, including certification and continuing education; and fire prevention programs, such as plan review, certificate of occupancy inspections, quality control, code compliance, inspection of private fire protection equipment, fire prevention ordinances, and coordination with fire department training and pre-incident planning activities. **2.2 points**

**Public fire safety education:** NC OSFM evaluates the existence of a fire safety education program; the qualifications, training, and certifications of public fire safety educators; and the activities of the various public fire safety education programs, such as residential fire safety programs, fire safety education in schools, juvenile Firesetter education programs, and fire safety education in occupancies with large loss potential or hazardous conditions. **2.2 points**

**Fire investigation**: This section examines the fire investigation activities of a community and is based on establishing authority to conduct and enforce fire investigations, the number and qualifications of fire investigators, the activities of the fire investigation staff, and the use of the National Fire Incident Reporting System. **1.1 points**

# Community Risk Point Credit Breakdown

## Credit for Fire Prevention Code Adoption and Enforcement 40 Points

**Fire Prevention Code Regulations (PCR)** **10 Points**

Evaluation of fire prevention code regulations in effect.

*For maximum credit for this item, the adopted fire prevention code in effect can be no older than 5 years old.*

**Fire Prevention Staffing (PS)** **8 Points**

Evaluation of staffing for fire prevention activities.

*For maximum credit for this item each non-residential building shall be inspected and the records must be kept.*

**Fire Prevention Certification and Training (PCT)**

Evaluation of the certification and training of fire prevention code enforcement personnel.

**6 Points**

1. *Inspectors Certification* *3 Points*
2. *Inspectors Continuing Education* *3 Points*
   *(24 hours of con-ed needed each year for maximum credit)*

**Fire Prevention Programs (PCP)**

Evaluation of fire prevention programs. **16 Points**

***Plan Review***

*Plan review for new non-residential construction including remodeling and additions, receive a plan review of the fire prevention and fire protection features and are records kept of all the inspections and used to document and track inspection activity.* *6 Points*

***Certificate of Occupancy Inspection***

1. *What percentage of new residential construction receives a fire prevention inspection prior to issuing the Certificate of Occupancy?* *2 Points*
2. *What percentage of new nonresidential construction receives a fire prevention inspection prior to issuing the Certificate of Occupancy?* *2 Points*

***Quality Assurance Program for Enforcement & Inspection Programs***

*Is there a quality assurance program for fire prevention inspectors as appropriate for their position and of the inspectors how many participate in the quality assurance program?* *1 Point*

**Fire Prevention Programs** (continued)

***Code Compliance Follow-up***

*What percentage of violations receive a follow-up inspection to verify fire prevention code compliance?* *1 Point*

***Inspection of Private Fire Protection Equipment***

*What percentage of private fire protection equipment inspected on a routine basis and in accordance with adopted codes?* *1 Point*

***Fire Prevention Ordinances***

*Which fire prevention ordinances have been adopted:*

*Fire Lanes* *.4 Points*

*Fireworks* *.4 Points*

*BBQ Grill* *.4 Points*

*Hazardous Material* *.4 Points*

*Trash and Weeds* *.4 Points*

***Fire Department Training & Pre-Incident Planning Coordination***

*Is there a procedure to share information regarding fire prevention activities with training and pre-incident planning programs?* *1 Point*

## Credit for Public Fire Safety Education 40 Points

**Public Fire Safety Educators Qualifications and Training (FSQT)** **10 Points**

Evaluation of public fire safety education personnel training and qualification as specified by the authority having jurisdiction.

1. *How many Public Fire Educators does the department have* *5 Points*
2. *For maximum credit the public fire educators need to obtain 10 hours per year of continuing education in fire prevention.* *5 Points*

**Public Fire Safety Education Programs (FSP)** **30 Points**

Evaluation of programs for public fire safety education.

***Residential Fire Safety Programs***

*What percentage of the population in the Fire Protection Area is reached with fire safety education programs per year? (for maximum credit department needs to reach 100% of the population)* *10 Points*

***School Fire Exit Drills***

1. *Are the schools in the Fire Protection Area holding at least 1 fire drill per month during the school session?* *5 Points*
2. *Is developmentally appropriate classroom instruction presented on fire safety to all student in early childhood education?* *5 Points*

***Juvenile Firesetter Intervention Program***

*What percentage (averaged over the past three years) of juveniles identified as being involved in fire-play or fire- setting behavior is referred for intervention services? (For maximum credit 100% must be referred)* *5 Points*

**Public Fire Safety Education Programs** (continued)

***Large-loss Potential Occupancies***

*Does the fire department present fire safety education to all occupancies that have a large loss of life potential or hazardous conditions, such as high-rise buildings, hospitals, nursing home, industrial facilities, other large commercial structures or community risk from wildfires? (For maximum credit 100% must be reached)* *5 Points*

## Credit for Fire Investigation Programs 20 Points

**Fire Investigation Organization and Staffing (IOS)** **8 Points**

Evaluation of organization and staffing for fire investigations.

1. *Is an office established with responsibility to conduct fire cause investigations and what percentage of structure fires receive a cause and origin investigation? (For maximum credit a 100% must have a cause and origin investigation).* *4 Points*
2. *Does the number of investigators meet the needs of the fire department?* *4 points*

**Fire Investigator Certification and Training (IQT)** **6 Points**

Evaluation of fire investigator certification and training.

1. *Are there any fire investigators that are certified as Basic Fire and Arson investigator or higher following the criteria contained in NFPA 1033?* *3 Points*
2. *Is there required amount of continuing education hours per year? (For maximum credit, 40 hours per year is required).* *3 Points*

**Use of National Fire Incident Reporting System (IRS)** **6 Points**

Evaluation of the use of the National Fire Incident Reporting System (NFIRS) for the 3 years before the evaluation.

*Has the department been participating in the NIFRS and has the department submitting their report monthly for the last 3 years?* *6 Points*

# Summary of Credit

| **Emergency Communication** | **Points** |
|---|---|
| Emergency Reporting | 3 |
| Telecommunicators | 4 |
| Dispatch Circuits | 3 |
| **Total Emergency Communication Points** | **10** |

| **Fire Department** | **Points** |
|---|---|
| Engine Company | 6 |
| Reserve Engine Company | 0.5 |
| Pump Capacity | 3 |
| Ladder / Service Company | 4 |
| Reserve Ladder / Service Company | 0.5 |
| Deployment Analysis | 10 |
| Personnel | 15 |
| Training | 9 |
| Operational Consideration's (SOP/SOG, ICS) | 2 |
| **Total Fire Department Points** | **50** |

| **Water Supply** | **Points** |
|---|---|
| Supply System | 30 |
| Hydrant Size, Type and Installation | 3 |
| Hydrant Inspection & Condition | 7 |
| **Total Water Supply Points** | **40** |

| **Community Risk Reduction** | **Points** |
|---|---|
| Fire Prevention Code Adoption & Enforcement | 2.2 |
| Public Fire Education | 2.2 |
| Fire Investigations | 1.1 |
| **Total Community Risk Points** | **5.5** |

**Total Points: 105.5**

**Engine Equipment Credit**

| Equipment and Hose | Needed | Points Credit/Unit | Total Points | Percentage of Credit |
|---|---|---|---|---|
| **Booster tank 300 gal or larger** | **300** | 1/10 | 30 | 5% |
| **15' soft-suction or 20' hard-suction** | **1** | 12 | 12 | 2% |
| **1½", 1¾", or 2" hose carried 400'** | **400'** | 3/50 | 24 | 4% |
| **Master stream appliance (1,000 gpm)**<br>Equivalent: Portable attack monitor (1,000 gpm) | **1** | 100 | 100 | 17% |
| **2½" nozzle with shutoff and 1", 1⅛", and 1¼" tips**<br>**Equivalent: Portable attack monitor with solid bore tips** | **1** | 20 | 20 | 3% |
| **2½" combination spray with shutoff**<br>Equivalent:1 ¾" combo nozzle with shutoff w/2 ½" adapter<br>200 gpm combo nozzle with shutoff<br>Portable attack monitor with fog tip | **1** | 30 | 30 | 5% |
| **1½" or 1¾" combination spray with shutoff** | **2** | 10 | 20 | 3% |
| **SCBA (30-minute minimum)** | **4** | 24 | 96 | 16% |
| **Extra cylinders (carried)** | **4** | 6 | 24 | 4% |
| **Salvage covers (minimum size of 12' x 14')**<br>Equivalent:12' X 14' Canvas<br>12X 14 Rip-Stop<br>12 X 18 or Larger canvas or rip-stop | **2** | 2 | 4 | 1% |
| **Electric handlights**<br>Equivalent: 4-volt wet handlight<br>6-volt dry handlight<br>Rechargeable 6 volt handlight | **2** | 2 | 4 | 1% |
| **Hose clamp** | **1** | 4 | 4 | 1% |
| **Hydrant hose gate (2½")**<br>Equivalent:4-Way valve<br>LDH Manifold<br>Trimese | **1** | 4 | 4 | 1% |
| **Gated wye (2½" x 1½" x 1½")**<br>Equivalent: Gated wye with 1 ½" reducers<br>Water thief | **1** | 4 | 4 | 1% |
| **Radio Mounted** | **1** | 32 | 32 | 5% |
| **Radio Portable** | **1** | 16 | 16 | 3% |
| **12' to 16' roof ladder** | **1** | 1 | 10 | 2% |
| **24' extension or larger ladder** | **1** | 16 | 16 | 3% |
| **Annual Pump Test** | **1** | 100 | 100 | 17% |
| **Annual Hose Test** | **1** | 50 | 50 | 8% |

**Ladder/Service Equipment Credit**

| Equipment | Needed | Points Credit/Unit | Total Points | Percentage of Credit |
|---|---|---|---|---|
| **SCBA (30-minute minimum)** | **4** | 24 | 96 | 16% |
| **Extra cylinders (carried)** | **4** | 6 | 24 | 4% |
| **Salvage covers (minimum size of 12' x 14')**<br>Equivalent:12’ X 14’ Canvas<br>12X 14 Rip-Stop<br>12 X 18 or Larger canvas or rip-stop | **6** | 2 | 12 | 2% |
| **Electric generator (3,000 watt)**<br>Equivalent: Mini Generator floodlight<br>Mini Generator fan<br>PTO Driven Inverter | **1** | 25 | 25 | 4% |
| **Portable floodlight (500 watt)**<br>Equivalent: Mini Generator floodlight<br>Tripod floodlight | **3** | 4 | 12 | 2% |
| **Smoke ejector (5,000 cfm)**<br>Equivalent: Mini Generator fan<br>Positive pressure fan<br>Thermal imager device | **1** | 20 | 20 | 3% |
| **Portable thermal cutting unit**<br>Equivalent: Circular saw with composite blade<br>Hydraulic or pneumatic cutting tool<br>Cutting torch<br>Plasma Cutting tool | **1** | 20 | 20 | 3% |
| **Saw – power (chain or heavy-duty rotary type)**<br>Equivalent: Chainsaw with carbide tip cutting blade | **2** | 20 | 20 | 3% |
| **Electric handlights**<br>Equivalent: 4-volt wet handlight<br>6-volt dry handlight<br>Rechargeable 6-volt handlight | **4** | 2 | 8 | 1% |
| **3' or 4' pike pole** | **2** | 2 | 4 | 1% |
| **6' or longer pike pole** | **4** | 2 | 8 | 1% |
| **Radio Mounted** | **1** | 32 | 32 | 5% |
| **Radio Portable** | **1** | 16 | 16 | 3% |
| **24' extension or larger ladder** | **1** | 25 | 25 | 4% |
| **16’ or longer roof ladder** | **1** | 25 | 25 | 4% |
| **10' or longer attic ladder** | **1** | 4 | 4 | 1% |
| **14' combination or longer ladder** | **1** | 5 | 5 | 1% |
| Total Points for a service truck | | | 356 | 100% |

| Additional Equipment for a Ladder Company | | | | |
|---|---|---|---|---|
| **16’ or longer roof ladder** | **1** | 25 | 25 | 4% |
| **35' extension or larger ladder** | **1** | 25 | 25 | 4% |
| Elevated stream device* | **1** | 100 | 100 | 17% |
| Large spray nozzle (1000 gpm) | **1** | 16 | 16 | 3% |
| Aerial ladder/elevating platform | **1** | 200 | 200 | 33% |
| Annual tests | **1** | 50 | 50 | 8% |
| | | | 416 | |
| Total Points for a ladder truck | | | 772 | |

***Of sufficient height to reach the roof of any building, or 100 feet, whichever is less.**
**The credit shall be prorated if existing equipment has insufficient reach.**

## 9S Equipment List

- A tank with at least a 300-gallon capacity.
- Two 200-foot pre-connected hose lines, with a diameter of 1 ½ inches, 1 ¾ inches, or 2 inches, with nozzles that have a minimum flow of 95 GPM.
- At least 20 feet of hard-suction hose in a size to flow the capacity of the engine, or at least 15 feet of soft-suction hose with a diameter of at least four inches.
- Four self-contained breathing apparatus (SCBA) in proper working condition. A SCBA shall be considered in proper working condition if the facepiece, back frame and harness, cylinder, hoses, low air alarms, regulators, and accessories are tested and operational in accordance with manufacturer's recommendations. The SCBA's shall be certified in accordance with NFPA 1981, "Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services."
- Four spare SCBA cylinders.
- One roof ladder at least 12 feet long.
- One extension ladder at least 24 feet long.
- One folding ladder.
- One pike-head axe.
- One flat-head axe.
- One forcible entry tool.
- One pike pole or plaster hook at least 6 feet long.
- Two portable, rechargeable hand lights suitable for use in hazardous conditions in accordance with NFPA 70, "National Electrical Code."
- 100 feet of utility rope, at least ½ inch in diameter.
- Two 20-pound, class BC portable extinguishers.
- One 2½-gallon water extinguisher.
- One first aid kit.
- One bolt cutter at least 14 inches long.
- One two-way radio assigned to the apparatus.
- One traffic vest for each riding position.

**Hose to be carried for maximum credit**

| | | |
|---|---|---|
| 15’ | Soft-Suction or 20’ Hard-Suction Hose | |
| 1,000’ | Supply Hose | 2 ½” to 5” |
| 200’ | Attack Hose | 2” to 2½” |
| 400’ | Attack Hose | 1½”,1¾” or 2” **(2- 200’ lines)** |

**Hose testing requirements for maximum credit**

1. Hose testing must be conducted annually
2. Attack hose is to be tested at 300 psi for five minutes with a maximum length of 300’
3. Supply hose is to be tested at 200 psi for five minutes with a maximum length of 300’