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## How to Improve Your ISO Classification

Edward F. Straw shows you how ISO's Public Protection Classification (PPC) program works and how you can improve your ISO classification.

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It's only fair. If you're providing good fire protection for your community, insurance premiums should be lower than in a community with less effective protection.

ISO's Public Protection Classification (PPC) program measures the effectiveness of municipal fire suppression efforts in communities around the country – and helps insurance companies determine premiums for property owners in those communities. In general, the price of fire insurance in a community with a good PPC is substantially lower than in a community with a poor PPC, assuming all other factors are equal.

So, to serve your community, you want to earn the best possible PPC. This article will show you how the program works – and how you can improve your ISO classification.

### How the PPC Program Works

To evaluate your community, ISO's expert staff collects information about your municipal fire-suppression efforts. We use a manual called the Fire Suppression Rating Schedule (FSRS) to assign credit points for various features of your fire protection, including your water supply system, your fire alarm and communications systems, and your fire department. The maximum score is 100 points.

Based on your score, we assign a Public Protection Classification – a number from 1 to 10. Class 1 represents the best public protection, and Class 10 indicates less than the minimum recognized protection.

- **Water supply.** The most fundamental improvement many communities can make is in the water supply. If your water supply doesn't meet minimum FSRS criteria, you generally can't improve beyond a Class 9. However, the FSRS does recognize alternative water supply systems, including dry hydrants, suction points, large-diameter hose (LDH) relays and hauled water using tanker shuttles.

Credit for an alternative water-supply system can be up to 35 points and will allow your jurisdiction to improve from a Class 9. ISO may recognize your tanker-shuttle operation if it can deliver a minimum flow of 250 gpm, uninterrupted, for two hours, and if the water source is available and accessible 24 hours a day, 365 days a year. The FSRS recognizes agreements with neighboring fire departments to supplement the response of tankers and/or supply-site pumpers.

ISO has introduced Class 8B for communities that cannot meet the minimum 250 gpm uninterrupted flows for a two-hour duration in all or a part of their fire-protection area. To achieve a Class 8B classification, you must be able to deliver 200 gpm, uninterrupted, for 20 minutes within five minutes of arrival of the first apparatus at the fire. In addition, your community must score at least five points out of 10 on Receiving and Handling of Fire Alarms and at least 20 points out of 50 on the Fire Department evaluation.

If your community has a public water-supply system with fire hydrants, you can earn up to three points for maintaining the hydrants in good condition and inspecting them twice a year. The inspection program should include flushing the hydrants and conducting a pressure test. The public water authority may perform those tasks.

- **Fire alarm and communications systems.** You may be able to get credit by improving your department's tools for receiving and handling alarms. For example, you can get up to two points by equipping all fire suppression personnel with portable radio voice receivers. If you use an outside siren or a tone pager carried by all personnel, you are eligible for one point.

A possible improvement that should not cost your department any money is simply getting the telephone company to list your emergency and non-emergency (business) numbers in the local directory. You can earn up to 0.4 points.

- **Fire department.** Other than water supply, the single most important item in the FSRS is company personnel. You can earn up to 15 points for personnel, depending on the average number of on-duty firefighters available in fire stations to respond to a structure fire. To evaluate your department, ISO will review one year's worth of response records.

Because of the restricted availability of volunteer firefighters, ISO credits three volunteers as equivalent to one on-duty firefighter. Some volunteer departments have members sleep at the fire station. For the time that the volunteers are on duty at the station, ISO considers them as equivalent to on-duty firefighters.

The FSRS encourages training for firefighters. You can earn up to 3.15 points for a facility to train personnel in suppressing structure fires. Your department does not have to own the facility to get maximum credit. If you arrange for off-site training, we'll confirm that you have permission to use the facility, that you have actually used it within the last year and that you can adequately protect the community while your personnel are away. If you don't have access to a training facility, but conduct training on streets or in other open areas, you can still receive partial credit.

You can also receive credit for company training at your fire station. If each member of your company receives 20 hours a month of training in fighting structure fires, you can earn up to 2.25 points. The training can use such media as video, CD-ROM, computer-based training, and closed-circuit or satellite TV.

Your department's equipment and testing can make a big difference in your score. FSRS Table 512.A (Pumper Equipment and Hose) lists 27 items worth up to a total of 10 points. Hose, nozzles, breathing apparatus, testing of apparatus and hose, radios and a heavy-stream device are particularly important. Visit the ISO Mitigation Online website ([www.isomitigation.com/fire71.html](http://www.isomitigation.com/fire71.html)) for more information.

Finally, you may have heard that ISO has criteria for the age of your apparatus. Not true. Instead, ISO evaluates pump capacity, demonstrated by a test. You may be able to improve your score by buying used or refurbished apparatus, or by maintaining your existing apparatus so it meets standards for capacity. You can also earn up to 1.53 points just for conducting pump tests – something your department can do on its own.

### It's Up to You

Improving your community's ISO classification will require resources and hard work. You and your community's other leaders will have to make decisions about priorities and budgets.

The suggestions in this article may not be appropriate for every fire department, and they are not all inclusive. You will need to weigh the needed criteria for an improved classification against your department's other important responsibilities, including emergency medical responses, hazardous-material responses, fires other than structure fires, technical rescue and public service calls. But the rewards for your department and your community can be significant.

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### ISO CLASS 1 COMMUNITIES

For additional information, visit the ISO Mitigation Online website at [www.isomitigation.com](http://www.isomitigation.com) or telephone ISO at 800-444-4554.

*Edward F. Straw and Dennis Gage will present "Understanding ISO's Fire Grading Program" at Firehouse Expo 2004 in Baltimore, July 13-18.*

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# REQUIRED EQUIPMENT FOR APPARATUS PER ISO

## Engine-Company Equipment

Here's a list of the items ISO considers when evaluating an engine company. The table gives the [Fire Suppression Rating Schedule \(FSRS\)](#) credit points available for each item. You may substitute equivalent equipment for some of the items listed in the FSRS. See the [FSRS Equivalency List](#) for details.

<b>Engine-Company Equipment and Hose</b>	<b>Needed</b>	<b>Points Credit/Unit</b>	<b>Total Points</b>
Booster tank	300 gallons	1/10 gallons	30
<b>Hose</b>			
Booster	200 feet	3/50 feet	12
Extra preconnected 1-1/2" hose may substitute for booster hose.			
1-1/2" carried	400 feet	3/50 feet	24
spare (may also be carried)	200 feet	2/50 feet	8
2-1/2" spare (may also be carried)	200 feet	3/50 feet	12
Heavy-stream appliance (1,000 gpm)	1	100	100
A heavy-stream device is not needed for a Basic Fire Flow of less than 1,500 gpm.			
Distributing nozzle	1	1	5
Foam nozzle (1-1/2" minimum)	1	4	4
<b>Foam</b>			
Carried	10 gallons	3/5 gallons	6
Spare (may also be carried)	15 gallons	2/5 gallons	6
<b>Nozzles</b>			
2-1/2" straight stream with shutoff	2	20	40
2-1/2" combination with shutoff	2	30	60
1-1/2" combination with shutoff	2	10	20
SCBA equipment (30-minute minimum)	4	16	64
Extra cylinders (carried)	4	4	16
Salvage covers (12 ft. x 18 ft.)	2	2	4
Handlight (4V wet or 6V dry)	2	2	4
Hose clamp	1	4	4
Hydrant gate (2-1/2")	1	4	4
Burst hose jacket (2-1/2")	1	4	4
Gated wye (2-1/2" x 1-1/2" x 1-1/2")	1	4	4
<b>Radio</b>			
Mounted	1	32	32
Portable	1	16	16
<b>Ladders</b>			
12-ft. or 14-ft. roof	1	10	10

24-ft. extension	1	15	15
<b>Annual tests</b>			
Pumper (see Table A, below)	1	100	100
Hose (see Table B, below)	1	50	50
		<b>Total:</b>	<b>654</b>

The fire apparatus should also have supply hose and firefighting hose. For maximum credit, the engine company should carry 1,200 feet of hose. This can be 1,200 feet of 2-1/2" or larger supply hose or a combination of 2", 2-1/2", or 3" hose (up to 400 feet) and 2-1/2" or larger hose (up to 800 feet).

**Table A: Pumper Service Tests**

Average Interval between 3 Most Recent Tests	Maximum Points Credit
1 year	100
2 years	75
3 years	50
4 years	25
5 years	0

NFPA Standard 1911, *Standard for Service Tests of Fire Pump Systems on Fire Apparatus*, describes pumper service tests. A pumper service test is similar to the certification test described in NFPA Standard 1901, except that the duration is reduced to 20 minutes at 150 psi, 10 minutes at 200 psi, and 10 minutes at 250 psi. The overload test is not a necessary part of the ISO review.

**Table B: Hose Service Tests**

Average Interval between 3 Most Recent Tests	Maximum Points Credit		
	250 psi	200 psi	150 psi
1 year	50	37	28
2 years	37	27	18
3 years	25	18	12
4 years	12	9	6
5 years	0	0	0

NFPA Standard 1962, *Care, Maintenance and Use of Fire Hose*, describes fire hose tests.

When the hose-test frequency, pressure, or both vary for 2-1/2" and larger hose and for 1-1/2" hose, ISO prorates the credit using 65% for the 2-1/2" and larger hose and 35% for the 1-1/2" hose. Large-diameter hose (LDH) in excess of 3" in diameter should be tested in accordance with NFPA 1962. The highest test pressure needed for 3" diameter and smaller hose is 250 psi.

**Note:** If the community conducts tests but keeps no records of the tests, ISO will reduce the applicable points credit by 20% for Tables A and B.

Either the fire department or an independent testing agency can perform the tests. In either case, the tests should conform with the appropriate NFPA standard.

# Ladder-Company Equipment Credits Fire Suppression Rating Schedule

Here's a list of the items ISO considers when evaluating a ladder company. The table gives the [Fire Suppression Rating Schedule \(FSRS\)](#) credit points available for each item. The equipment listed here is in addition to the needed [service-company equipment](#). You may substitute equivalent equipment for some of the items listed in the FSRS. See the [FSRS Equivalency List](#) for details.

Equipment	Points		
	Needed	Credit/Unit	Total Points
<b>Ladder</b>			
16-ft. roof	1	20	20
20-ft. roof	1	20	20
28-ft. extension	1	20	20
35-ft. extension	1	20	20
40-ft. extension	1	20	20
Elevated stream device*	1	100	100
Aerial ladder/elevating platform*	1	200	200
Annual tests (see Table C)	1	50	50
		<b>Total:</b>	<b>450</b>

\*Of sufficient height to reach the roof of any building or 100 feet, whichever is less. ISO prorates the credit if existing equipment has insufficient reach.

**Table C**  
**Aerial Ladder/Elevating Platform Tests**

Average Interval between 3 Most Recent Tests	Maximum Points Credit
1 year	50
2 years	37
3 years	25
4 years	12
5 years	0

NFPA Standard 1914, *Testing Fire Department Aerial Devices*, describes tests for aerial ladder and elevating platforms.

**Note:** If there are no records of tests, ISO will reduce the applicable points credit by 20% for Table C.

# Service-Company Equipment

Here's a list of the items ISO considers when evaluating a service company. The table gives the [Fire Suppression Rating Schedule \(FSRS\)](#) credit points available for each item. You may substitute equivalent equipment for some of the items listed in the FSRS. See the [FSRS Equivalency List](#) for details.

Equipment	Needed	Points Credit/Unit	Total Points
Large spray nozzle (500-gpm minimum)	1	16	16
SCBA equipment (30-minute minimum)	6	16	96
Extra cylinders (carried)	6	4	24
Salvage covers (12 ft. x 18 ft.)	10	2	20
Electric generator (2,500 watts)	1	25	25
Floodlight (500 watts)	3	4	12
Smoke ejector	1	20	20
Oxyacetylene cutting unit	1	20	20
Power saw	1	20	20
Handlight (4V wet or 6V dry)	4	2	8
Hose roller (equipment hoist)	1	4	4
<b>Pike pole (plaster hook)</b>			
6-foot	2	2	4
8-foot	2	2	4
12-foot	2	2	4
<b>Radio</b>			
Mounted	1	32	32
Portable	1	16	16
<b>Ladder</b>			
10-ft. collapsible	1	4	4
14-ft. extension	1	5	5
		<b>Total:</b>	<b>334</b>

## Fire Chiefs Online - Register | Documents

As a free service to fire departments around the country, ISO is pleased to offer [Fire Chiefs Online](#) — a special website with information and features that can help you improve your ISO Public Protection Classification (PPC®). And Fire Chiefs Online also brings you reports on individual commercial buildings in your jurisdiction — often the largest and most significant properties you have to protect.

If you're a fire chief, you can sign up for access to Fire Chiefs Online. There you'll find:

- convenient ways to notify ISO about the essential fire-protection features in your community
- access to an interactive map of your fire protection area
- information about individual commercial buildings in your jurisdiction

You can use the building information in prefire planning. And if you have facts that differ from what's in our database, let us know. Changes can affect your PPC.

### Here's how to register

If you're a fire chief, you can get a free ID and password for Fire Chiefs Online. Please fill out and submit [this form](#).

To register, you must be the chief officer of your fire department. ISO will independently verify your eligibility, and we will send your username to the e-mail address given below. (Not available in Idaho, Hawaii, Louisiana, Mississippi, North Carolina, and Washington.)