



DWELLING PROTECTION GRADES

Introduction

Fire Underwriters Survey (F.U.S.) is a national organization financed and directed by CGI Insurance Business Services (formerly I.A.O.). The organization assesses, evaluates and grades the quality of public fire defences maintained in Canadian municipalities and communities. This technical information is conveyed to FUS subscribers for use in their fire insurance statistical, rating and underwriting programs. FUS member companies provide approximately 85 percent of the private general insurance written each year in Canada.

Major features assessed during fire protection surveys include:

- 1) Water supply systems
- 2) Fire department administration and operations
- 3) Fire service communications
- 4) Fire safety control including building and fire prevention codes and their enforcement.

These functions are measured against recognized standards of fire protection.

Following the survey and grading, a summary of conditions is forwarded to the municipality. Surveyors are prepared to discuss any comments made with municipal administrators and to assist them in establishing priorities for an improvement program.

Staff members are actively involved in consultations with waterworks departments, consulting firms, fire departments, and various levels of government in providing technical advice on matters relating to municipal fire protection.

Dwelling Protection Grades (D.P.G)

One of the fire insurance classifications we establish and convey to FUS member companies is the Dwelling Protection Grade. The D.P.G. is a numerical system scaled from 1 to 5. One (1) is the highest grading possible and 5 indicates little or no public fire protection. This grading reflects the ability of a community to handle fires in small buildings (e.g. single family dwellings). Please refer to Table 1 outlining the minimum requirements for each of the 5 grades in this system.



Table 1 - FUS DWELLING PROTECTION GRADES - MINIMUM REQUIREMENTS PER FIRE STATION¹

DPG DWELLING PROTECTION GRADE	WATER WORKS SYSTEM	FIRE DEPARTMENT		PUBLIC FIRE PROTECTION CLASSIFICATION (PFPC) ² MINIMUM REQUIREMENTS
		EQUIPMENT	FIREFIGHTERS	
1	Water supply system designed in accordance with Fire Underwriters Survey standard "Water Supply for Public Fire Protection" with a relative classification of 5 or better	Response from within 8 km by road of a standard pumper ³ .	Response of 3 on-duty career members plus fire chief or other officer not required on-duty.	Water Supply and Fire Department must grade PFPC Class 5 or better.
2	Water supply system designed in accordance with Fire Underwriters Survey standard "Water Supply for Public Fire Protection" with a relative classification of 6 or better	Response from within 8 km by road of a standard pumper ³ .	Response of 1 on-duty career member and 15 volunteers ⁴ .	Water Supply and Fire Department must grade PFPC Class 6 or better.
3A	Water supply system designed in accordance with, and meeting the minimum requirements ⁵ of, Fire Underwriters Survey standard "Water Supply for Public Fire Protection"	Response from within 8 km by road of a standard pumper ³ .	15 volunteers ⁴	No Public Fire Protection Classification required.
3B	Not required	2 units required. Standard pumper ³ plus a mobile water supply (tender) with a combined water carrying capacity of not less than 1500 Imp. Gallons	15 volunteers ⁴	No Public Fire Protection Classification required.
4	Not required	Standard pumper ³ or 800 I.gal. tanker with booster pump of 200 I.gpm capacity.	10 volunteers ⁴	No Public Fire Protection Classification required.
5	Unprotected communities or communities not qualifying for Grades 1, 2, 3A, 3B, or 4 above.	Unprotected communities or communities not qualifying for Grades 1, 2, 3A, 3B, or 4 above.	Unprotected communities or communities not qualifying for Grades 1, 2, 3A, 3B, or 4 above.	No Public Fire Protection Classification required.



¹ Refer to additional notes and requirements for interpretation

² The P.F.P.C. is a sophisticated grading system scaled from 1 to 10. One (1) represents the ultimate degree of protection and 10 indicates little or no fire protection. This system evaluates the ability of a community's fire defences to prevent and control major fires that may occur in commercial, industrial and institutional buildings and/or districts.

³ A "standard" pumper refers to a triple combination pumper that is equipped with a major pump, water tank and hose compartment. Fire apparatus should preferably be purchased new and listed in accordance with Underwriters Laboratories of Canada (U.L.C.) S515 titled "Standard for Automobile Fire Fighting Apparatus". Used or rebuilt fire apparatus must be subjected to ULC or Underwriters service tests.

⁴ Fire department volunteer members should work and reside within a reasonable travel distance to the fire station thus avoiding undue delay when responding to fires.

⁵ Absolute minimum water supply volume requirements recognized include a hydrant system capable of delivering 200 l.gpm for 2 hours or 400 l.gpm for 1 hour in conjunction with consumption at maximum daily rate.



ADDITIONAL NOTES AND REQUIREMENTS

DWELLING PROTECTION GRADE 1

1. The water supply system must be equipped with standard hydrants capable of delivering sufficient volume and pressure corresponding to fire protection need. The minimum recognized water must be capable of delivering a minimum of 200 I.g.p.m. for a two (2) hour duration or 400 I.g.p.m. for a one (1) hour duration in conjunction with domestic consumption at the maximum daily rate.
2. At least 3 career fire fighters on-duty 24 hours per day plus a fire chief must respond to fires with apparatus.
3. Fire apparatus must consist of a triple combination pumper rated at 840 I.g.p.m. minimum capacity at 150 p.s.i. and meeting the essentials of Underwriters' Laboratories of Canada (U.L.C.) Standard S515.
4. Equipment must be housed in a well designed and located fire station.
5. Training drills must be held regularly (preferably weekly). Adequate training records must be maintained.
6. An adequate and reliable means of receiving alarms of fire and dispatching fire fighters is necessary (ex. public fire number, pagers etc.).
7. The boundary of the protected area must be clearly established and registered with the Provincial Government.
8. Grade 1 applies to dwellings within 8 kilometres by road of a recognized, responding fire station.

DWELLING PROTECTION GRADE 2

1. Same as Dwelling Protection Grade 1 – water supply must meet minimum insurance grading requirements and meet the fire protection needs for the building structures being protected.
2. At least 1 career fire fighter on-duty 24 hours per day plus 15 fully equipped volunteer or off-shift members must respond to fires with apparatus.
3. Fire apparatus must consist of a triple combination pumper rated 840 I.g.p.m. minimum capacity at 150 p.s.i. and meeting the essentials of Underwriters' Laboratories of Canada (U.L.C.) Standard S515.



4. Equipment must be housed in a well designed and located fire station.
5. Training drills must be held regularly (preferably weekly). Adequate training records must be maintained.
6. An adequate and reliable means of receiving alarms of fire and dispatching fire fighters is necessary (ex. public fire number, pagers etc.).
7. The boundary of the protected area must be clearly established and registered with the Provincial Government.
8. Grade 2 applies to dwellings within 8 kilometres by road of a recognized, responding fire station.

DWELLING PROTECTION GRADE 3A

1. Same as Dwelling Protection Grade 1 – water supply must meet minimum insurance grading requirements and meet the fire protection needs for the building structures being protected.
2. At least 15 fully equipped volunteer fire fighters must be scheduled to respond to fires with apparatus.
3. Fire apparatus must consist of a triple combination pumper rated at 840 I.g.p.m. minimum capacity at 150 p.s.i. and meeting the essentials of Underwriters' Laboratories of Canada (U.L.C.) Standard S515.
4. Equipment must be housed in a well designed and located fire station.
5. Training drills must be held regularly (preferably weekly). Adequate training records must be maintained.
6. An adequate and reliable means of receiving alarms of fire and dispatching fire fighters is necessary (ex. public fire number, pagers etc).
7. The boundary of the protected area must be clearly established and registered with the Provincial Government.
8. Grade 3A applies to dwellings within 8 kilometres by road of a recognized, responding fire station.



DWELLING PROTECTION GRADE 3B

1. Water supply system not required.
2. At least 15 fully equipped volunteer fire fighters must be scheduled to respond to fires with apparatus.
3. Fire apparatus must consist of:
 - 3.1) A triple combination pumper rated at 840 I.g.p.m. minimum capacity at 150 p.s.i. and meeting the essentials of U.L.C. Standard S515.

And

A tanker with a 200 I.g.p.m. permanently mounted pump meeting the essentials of U.L.C. Standard S515.

- 3.2) In addition:
 - (I) The combined tank capacity of the 2 units must total at least 1500 Imperial gallons.
 - (II) A transfer system capable of supplying the pumper is needed. This may be accomplished by pump or dump valve to a portable tank of at least 1000 Imperial gallons capacity.
 - (III) Refill capacity from a hydrant system or using a portable or major pump etc. of 100 I.g.p.m. minimum capacity at 40-60 p.s.i. is needed on each unit.
4. Equipment must be housed in a well designed and located fire station.
5. Training drills must be held regularly (preferably weekly). Adequate training records must be maintained.
6. An adequate and reliable means of receiving alarms of fire and dispatching fire fighters is necessary (ex. public fire number, pagers etc.).
7. The boundary of the protected area must be clearly established and registered with the Provincial Government.
8. Grade 3B applies to dwellings within 8 kilometres by road of a recognized, responding fire station.



*DWELLING PROTECTION GRADE 4**

1. Water supply system not required.
2. At least 10 fully equipped, trained volunteer fire fighters must be scheduled to respond to fires with apparatus.
3. Fire apparatus must consist of a minimum of:
 - 3.1) An 800 Imperial gallon tanker with a 200 I.g.p.m. permanently mounted pump meeting the essentials of U.L.C. Standard S515.

Or

 - 3.2) A triple combination pumper rated at 840 I.g.p.m. minimum capacity at 150 p.s.i. and meeting the essentials of U.L.C. Standard S515 when drafting sources are available.
4. Equipment must be housed in a well designed and located fire station.
5. Training drills must be held regularly (preferably weekly). Adequate training records must be maintained.
6. An adequate and reliable means of receiving alarms of fire and dispatching fire fighters is necessary (ex. public fire number, pagers etc.).
7. The boundary of the protected area must be clearly established and registered with the Provincial Government.
8. Grade 4 applies to dwellings within 8 kilometres by road of a recognized, responding fire station.

DWELLING PROTECTION GRADE 5

1. Applies to unprotected communities or communities not qualifying for Grades 1, 2, 3A, 3B or 4.

* Note – due to the limitations in fire protection, D.P.G. 4 provides, it is seldom assigned



GENERAL COMMENTS

Water Supply

1. Water supply requirements in this information bulletin are strictly minimums and must correspond to fire fighting need. Water works system design should contemplate meeting the recommendations contained in our publication titled “Water Supply for Public Fire Protection”.
2. Standpipes are not eligible for fire insurance grading recognition and are not considered the equivalent of a standard fire hydrant. There is no nationally recognized design standard for standpipes. This results in little or no control over their design, construction and installation. Also, friction losses become extreme when large flows are demanded of small diameter piping (i.e. flows required for standard fire department pumpers).

Fire Department

1. A triple combination pumper is equipped with a major pump, water tank and hose compartment. Fire apparatus should preferably be purchased new and listed in accordance with Underwriters Laboratories of Canada (U.L.C.) S515 titled “Standard for Automobile Fire Fighting Apparatus”.

Used or rebuilt fire apparatus must be subjected to ULC or Underwriters service tests.

2. Fire department members should reside within a reasonable travel distance to the fire station thus avoiding undue delay when responding to fires.
3. Fire departments desiring fire insurance grading recognition should be organized on a sound financial basis such as a tax levy. Areas organized on a society or subscription basis will not be recognized because of the difficulty in identifying residents within the protected area who are current members of the society and the lack of guaranteed funds to adequately finance a fire department year round.



General

Many insurance companies have compressed our advisory “5 tier” system for Dwelling Protection Grades (D.P.G.) into a “3 tier” system for underwriting single-family dwellings. Table 2 is provided for information purposes only. Enquiries should be made with local brokers or agents to determine the impact any improvements in D.P.G.’s may have on insurance rates for single family dwellings.

Insurance Bureau of Canada Dwelling Protection Grades. Statistical “5 tier” System.	System Used by Many Insurance Companies Underwriting “3 tier” system.	Insurance Companies refer to this grade as :
1		
2	Table 1	Protected
3A**		
3B	Table 2	Semi - Protected
4***	Table 2 Or Table 3	Semi – Protected Or Unprotected
5	Table 3	Unprotected

For further information or clarification regarding any of the requirements, please contact:

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** An equivalency to 3A may be granted to communities without hydranted water supplies who achieve Superior Shuttle Accreditation through the Fire Underwriters Survey.

*** Dwelling Protection Grade 4 is treated differently from insurer to insurer based on case-specific relevant conditions