



**HYDRAULIC CALCULATION FORMS
AND WATER SUPPLY INFORMATION**
(as required by NFPA 13, 1996 Edition)

GENERAL

Hydraulic calculations shall be prepared on form sheets that include a summary sheet, detailed work sheets, and a graph sheet. (See NFPA 13 for copies of typical forms [Figures A-6-2.2(a), A-6-2.3, and A-6-2.4.]

SUMMARY SHEET

The summary sheet shall contain the following information, where applicable:

- (a) Date
- (b) Location
- (c) Name of owner and occupant
- (d) Building number or other identification
- (e) Description of hazard
- (f) Name and address of contractor or designer
- (g) Name of approving agency
- (h) System design requirements
 - 1. Design area of water application, sq.ft. (m²)
 - 2. Minimum rate of water application (density), gpm per sq.ft. (L/min/m²)
- (i) Total water requirements as calculated including allowance for inside hose, outside hydrants, and water curtain and exposure sprinklers
- (j) Allowance for in-rack sprinklers, gpm (L/min)
- (k) Limitations (dimension, flow and pressure) on extended coverage or other listed special sprinklers

DETAILED WORK SHEETS

Detailed work sheets or computer printout sheets shall contain the following information:

- (a) Street number
- (b) Sprinkler description and discharge constant (K)
- (c) Hydraulic reference points
- (d) Flow in gpm (L/min)
- (e) Pipe size
- (f) Pipe lengths, center-to-center of fittings
- (g) Equivalent pipe lengths for fittings and devices
- (h) Friction loss in psi per ft (bars/m) or pipe
- (i) Total friction loss between reference points
- (j) In-rack sprinkler demand balanced to ceiling demand
- (k) Elevation head in psi (bars) between reference points
- (l) Required pressure in psi (bars) at each reference point
- (m) Velocity pressure and normal pressure if included in calculations
- (n) Notes to indicate starting points, reference to other sheets, or to clarify data shown



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- (o) Diagram to accompany gridded system calculations to indicate flow quantities and direction for lines with sprinklers operating in the remote area
- (p) Combined K-factor calculations for sprinklers on drops, armover, or sprigs where calculations do not begin at sprinkler

GRAPH SHEET

A graphic representation of the complete hydraulic calculation shall be plotted on semi-logarithmic graph paper ($Q^{1.85}$) and shall include the following:

- (a) Water supply curve
- (b) Sprinkler system demand
- (c) Hose demand (where applicable)
- (d) In-rack sprinkler demand (where applicable)

WATER SUPPLY INFORMATION

The following information shall be included:

- (a) Location and elevation of static and residual test gauge with relation to the riser reference point
- (b) Flow location
- (c) Static pressure, psi (bars)
- (d) Residual pressure, psi (bars)
- (e) Flow, gpm (L/min)
- (f) Date
- (g) Time
- (h) Test conducted by or information supplied by
- (i) Other sources of water supply, with pressure or elevation

EXCEPTION:

The Great Oaks Water Company has given notice to the San Jose Fire Department that they will not guarantee that pressures in excess of 40psi will be available at any time. Hence, the maximum Static pressure that may be used in areas supplied by Great Oaks Water Company is 40psi.